MINE DEVELOPMENT ASSOCIATES
MINE ENGINEERING SERVICES

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TECHNICAL REPORT
WARINTZA PROJECT, ECUADOR

Submitted to:

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1.0 SUMMARY

1.1 The Property

Mine Development Associates ("MDA") has prepared this Technical Report on the Warintza Project at the request of Equinox Gold Corp. ("Equinox") and its newly incorporated, wholly owned subsidiary Solaris Copper Inc. ("Solaris"). Warintza is a copper-molybdenum project located in southeastern Ecuador, in the province of Morona Santiago, canton Limón Indanza. It consists of three Metallic Mineral Concessions ("the Warintza Concessions") that cover a total of 10,000 hectares. Lowell Mineral Exploration Ecuador S.A. ("Lowell Exploration") owns the Warintza Concessions and at the time of writing of this report is the operator of the project. Lowell Copper Holdings Inc. ("Lowell Copper") holds 99.97% of Lowell Exploration and a nominee shareholder holds the remaining 0.03%. Equinox holds all of the shares of Lowell Copper. On June 20, 2018 Equinox announced that its board of directors had approved a plan of arrangement under which Solaris will acquire all of the shares of Lowell Copper as well as the interest in the Warintza Project. On completion of the arrangement, 60% of Solaris shares will be distributed to Equinox shareholders with the remainder held by Equinox. Solaris will be a reporting issuer, but its shares will not be listed on a public stock exchange.

The Warintza Concessions are subject to a 2% net smelter royalty ("NSR") held by Billiton Ecuador B.V.

In order to maintain the concessions in good standing on an annual basis, conservation patent fees must be paid each calendar year. The last payments for mining patents were validated effective on March 31, 2018 and totaled US$ 96,500 for the three concessions.

1.2 Geology and Exploration Concept

The Andean Cordillera is divided into two sub-parallel ranges, the Cordillera Real on the east and the Cordillera Occidental on the west, with the inter-Andean valley between them. The Warintza Project lies in the Pangui region, in the southeastern part of the Cordillera Real. The target is porphyry copper-molybdenum mineralization.

Porphyry copper deposits in the Pangui region, including Warintza, are associated with upper Jurassic late porphyry intrusive phases of the Jurassic batholiths in the Cordillera Real and sub-Andean regions of Ecuador. The Zamora Batholith is the host to the Warintza mineralization and to some other porphyry deposits in this part of Ecuador.

Four broad groupings of rocks predominate. Those are Jurassic supracrustal rocks, consisting mostly of volcaniclastic and clastic sedimentary rocks, the main Zamora Batholith, an early mineralized quartz latite porphyry, and a varied group of smaller, relatively late intrusions, most in the form of dikes. The supracrustal rocks and the main Zamora Batholith pre-date the mineralizing event. The early quartz latite is probably related to the mineralizing event. The smaller intrusions are probably intra- to post-mineralization. Intrusions that are clearly post-mineralization are relatively rare in the drilled area of Warintza. Steeply dipping faults of varied ages, whose strikes span most of the compass, have had influences on the geometries of the intrusions and paths followed by mineralizing fluids.

There are four known porphyry copper-molybdenum target areas on the Warintza Concessions. They are Warintza Central, Warintza West, Warintza East and Warintza South. The four targets are relatively close to each other, all lying within a 12 kilometer square area centered on Warintza Central. All were originally identified by regional stream sediment sampling, followed by increasingly detailed soil and rock chip sampling along with geological mapping. All of this work culminated in the drilling of 33 core holes at Warintza Central, on which the resource presented in this study is based.

1.3 Alteration and Mineralization

Warintza Central, because it has been drilled, is the best known of the four Warintza targets and forms the basis for most of this discussion.

The first recognized phase of alteration and mineralization affected the early mineralized quartz latite porphyry. Disseminated pyrite, chalcopyrite and molybdenite mineralization was associated with potassic alteration. Hydrothermal biotite was the main expression of the potassic alteration. That hydrothermal biotite was later overprinted, and largely destroyed, by a quartz-sericite dominated alteration assemblage that accompanied the formation of a hydrothermal stockwork breccia. Quartz veinlets, variably mineralized with pyrite, chalcopyrite and molybdenite, form the stockwork. Locally the stockwork grades into a hydrothermal breccia, containing rotated fragments of altered quartz latite porphyry in a quartz-sericite-sulfide cement. The hydrothermal episode that produced the stockwork breccia re-distributed some of the existing copper-molybdenum mineralization and probably introduced additional copper into the system.

The original primary (hypogene[1]) sulfide copper mineralization at Warintza has been partially re-distributed by supergene processes. There are two weathering-related copper zones: an oxidized and leached zone in which primary copper sulfides have been destroyed, and a supergene enriched zone where copper leached from the oxidized zone has been re-deposited as secondary sulfide minerals. There remains a primary zone where the primary sulfide mineralization is largely intact and no weathering-related processes have taken place. In broad terms, the oxidized zone is uppermost, starting at the surface; the zone of supergene enrichment lies below it; and the zone of intact primary mineralization is below the supergene zone. In detail the zonation is more complex. The oxidized zone averages 50 m thick and the supergene averages 90 m thick. Molybdenum was not re-distributed by the supergene processes, but some molybdenite in the oxidized zone may have been partially converted to molybdenum-bearing oxide minerals.

[1] In this report the term "primary" is used to mean "hypogene", in any context describing mineralization.

1.4 Status of Exploration

The Warintza Central target has been sufficiently drilled to justify the estimation of an Inferred resource. Some infill drilling is needed to better understand the controls on mineralization and to more accurately estimate changes in grade and location. In addition, the limits of the Warintza Central mineralization have not been defined and there is a good chance that step-out drilling may result in an expansion of the known resource.

The Warintza West target has been geologically mapped, with surface rock and soil sampling where feasible. It is ready for an initial drill test. Warintza East will probably be drilled at some point as a logical part of step-out drilling from Warintza Central. Warintza South is at present known only as a soil and rock chip sample anomaly that has had limited geological mapping. Additional mapping is required, which may result in Warintza South becoming a drill target.

Circumstances beyond the control of Lowell Exploration prevented further progress in exploration on the Warintza Project after November 1, 2006.

1.5 Resource Estimate

The first mineral resource estimate for the Warintza Project reported in accordance with the disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101 ("NI 43-101") was prepared by one of the authors, S. Ristorcelli of MDA, in 2006 and is reported again, herein. All of the estimated resource is in the drilled part of Warintza Central. It is based on data from 33 holes with geologic data and 2,142 analyses of copper, molybdenum and gold. Copper and molybdenum are the two metals contributing economic value to the resource. Gold was not included as the gold grades are thought to be too low to be of value.

Three copper zones were considered in the resource estimate: leached, supergene enriched, and primary. All of the molybdenum mineralization is modeled as primary, and it spans all three of the copper zones. As mentioned, some oxidation of molybdenite has been noted in the leached zone, but there has been no material redistribution of the molybdenum.

Within the primary mineralization, copper and molybdenum probably occur in both the stockwork mineralization and disseminated mineralization sub-domains, with the former being higher grade than the latter. However, the present drill-hole spacing is too wide to adequately define such sub-domains, so neither the primary copper nor the primary molybdenum domains were sub-divided for this estimate.

In the leached (copper) zone, molybdenum grades are not materially different than in the primary zone. However, there is some evidence that the molybdenite in the oxidized zone is partly coated by ferrimolybdite or some other molybdenum oxide, potentially affecting metallurgical properties. Consequently and pending further investigation, the molybdenum in the oxidized zone is not included as part of the resource.

The Warintza Central resource estimate was kriged. Estimates were also done by nearest-neighbor and inverse distance squared. The reported resource estimate uses a 0.30% copper equivalent[2] cutoff. The Inferred resource estimate is 195,000,000 tonnes of material containing 820,000 tonnes of copper and 60,000 tonnes of molybdenum, with average grades of 0.42% copper and 0.031% molybdenum. The reported resource is presented in Table 1.1, along with estimates at other cutoff grades. The resource was prepared and reported in accordance with the disclosure and reporting requirements of Canadian Securities Administrators' National Instrument 43-101 ("NI 43-101"), Companion Policy 43-101CP, and Form 43-101F1, as well as with the Canadian Institute of Mining, Metallurgy and Petroleum's "CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines" ("CIM Standards") modified in 2014.

As discussed in Sections 1.4, 2.1, 2.5, 4.4, and 6.0, disruptions by third parties caused exploration to cease at Warintza in November 2006. In the last six months, Equinox and Lowell Exploration have been working to improve community relations as described in Section 4.4 but have not yet resolved the social issues that have precluded further exploration at this time. The authors are not experts with respect to social, socio-economic, or political factors and are not qualified to assess social issues in Ecuador; they must rely on the experts providing the information in Section 4.0. While the resources described in Section 14.0 of this report fulfill all the technical requirements to be Inferred resources, whether these resources can continue to be deemed "current" could be materially affected by long-term social, political, and government affairs issues about which the authors are not qualified to make a professional assessment.

Table 1.1: Warintza Project – Inferred Resources

Total Inferred

Cutoff CuEq%	Tonnes	CuEq%	Cu%	Copper (tonnes)	Copper (lbs)	Mo%	Molybdenum (tonnes)	Molybdenum (lbs)
0.25	206,635,000	0.59	0.41	843,000	1,858,497,000	0.030	62,000	136,687,000
0.30	**194,994,000**	**0.61**	**0.42**	**820,000**	**1,807,791,000**	**0.031**	**60,000**	**132,277,000**
0.35	185,356,000	0.62	0.43	802,000	1,768,107,000	0.031	58,000	127,868,000
0.40	164,102,000	0.65	0.46	760,000	1,675,513,000	0.031	51,000	112,436,000
0.45	137,986,000	0.69	0.50	696,000	1,534,417,000	0.032	44,000	97,003,000
0.50	119,852,000	0.73	0.53	640,000	1,410,958,000	0.032	39,000	85,980,000
0.55	103,641,000	0.76	0.56	582,000	1,283,090,000	0.033	34,000	74,957,000
0.60	87,580,000	0.79	0.59	516,000	1,137,585,000	0.034	30,000	65,784,000
0.70	56,867,000	0.87	0.66	373,000	822,324,000	0.036	21,000	46,297,000

1.6 Recommendations

The authors recommend continued exploration of the Warintza Project with a two-phase program. Phase 1 will consist of exploration core drilling of three to four holes at Warintza West and mapping and sampling at Warintza East and Warintza Central plus geophysical surveying. The purpose of this initial drilling is to learn whether Warintza West contains mineralization that has the potential to augment the resource at Warintza Central. Funding is also budgeted in Phase 1 for needed infrastructure, including camps, access paths, bridges, and a helicopter pad that will benefit Warintza West and other parts of the

[2] "Copper equivalent" assumes an in-situ value ratio of 6 copper to 1 molybdenum.

property. Phase 2 will include infill and resource expansion drilling at Warintza Central, preliminary exploration drilling at Warintza East, and additional drilling at Warintza West if the Phase 1 drilling there is successful. Additional infrastructure and surface geochemical sampling plus preliminary metallurgical testing are also budgeted in Phase 2. The authors believe that Phase 2 is warranted, whatever the outcome of Phase 1, but Phase 1 will in part determine the scope and design of the Phase 2 program.

Based on the results of this work, a decision would be made on whether to undertake a new resource estimate.

The recommendations are summarized in Table 1.2.

Table 1.2: Estimated Cost of Recommended Work

Phase	Description	Item Cost	Total Cost for Phase
Phase 1	Exploration Drilling at Warintza West	US $300,000	
	Surface geochemical sampling & mapping	US $60,000	
	Infrastructure	US $150,000	
	Geophysics	US $70,000	
	Contingency	US $120,000	US $700,000
Phase 2	Preliminary Exploration and Follow-Up Drilling at Warintza East	US $225,000	
	Infill Drilling at Warintza West	US$ 600,000	
	Infill Drilling at Warintza Central	US$ 875,000	
	Resource Expansion Drilling at Warintza Central	US $875,000	
	Surface geochemical sampling & Infrastructure	US $150,000	
	Preliminary Metallurgical Testing	US $100,000	
	Contingency	US $565,000	US $3,390,000
			US $4,090,000

2.0 INTRODUCTION

2.1 Terms of Reference

Equinox Gold Corp. ("Equinox"), a TSX-V-listed company with headquarters in Vancouver, British Columbia, Canada, and its newly incorporated, wholly owned subsidiary Solaris Copper Inc. ("Solaris") commissioned the authors to prepare this Technical Report on the Warintza Project in Ecuador. Equinox holds all of the shares of Lowell Copper Holdings Inc., ("Lowell Copper"), formerly called Lowell Copper Inc. Lowell Copper holds 99.97% and a nominee shareholder holds the remaining 0.03% of Lowell Mineral Exploration Ecuador S.A. ("Lowell Exploration"). Lowell Exploration owns the mining rights of the Warintza property. Solaris was incorporated under the British Columbia Business Corporations Act on June 18, 2018. On June 20, 2018, Equinox announced that its board of directors had approved a plan of arrangement under which Solaris will acquire all of the shares of Lowell Copper as well as the interest in the Warintza Project. On completion of the arrangement, 60% of Solaris shares will be distributed to Equinox shareholders with the remainder held by Equinox. Solaris will be a reporting issuer, but its shares will not be listed on a public stock exchange.

In 2006, the authors were commissioned to undertake an independent, technical due-diligence review of the Warintza Project. That review included the first resource estimate prepared and reported in compliance with Canadian National Instrument 43-101 ("NI 43-101"). The review and resource estimate were documented in a 2006 Technical Report (Ronning and Ristorcelli, 2006), as required under the terms of NI 43-101.

The 2006 review and resource estimate were described in a subsequent Technical Report (Ronning and Ristorcelli, 2013) completed by the authors in 2013 for Waterloo Resources Ltd. ("Waterloo"), which is now Equinox. Waterloo was incorporated under the British Columbia Business Corporations Act and changed its name to Lowell Copper Ltd. on July 9, 2013, in conjunction with the completion of a reverse take-over transaction. Lowell Copper Ltd. changed its name to JDL Gold Corp. on October 6, 2016, in conjunction with the completion of a court approved plan of arrangement between Lowell Copper Ltd., Gold Mountain Mining Corp., and Anthem United Inc. JDL Gold Corp. changed its name to Trek Mining Inc. on March 30, 2017, in conjunction with an arrangement agreement that combined JDL Gold Corp. and Luna Gold Corp. On December 22, 2017, Trek Mining Inc. changed its name to Equinox Gold Corp. in conjunction with a court-approved plan of arrangement through which NewCastle Gold Ltd. and Anfield Gold Corp. were combined with Trek Mining Inc. to create Equinox Gold Corp. Equinox has advised the authors that these were name changes in connection with plans of arrangement only where subsidiaries were added under what is now Equinox.

Lowell Exploration, incorporated in Ecuador, is the owner and operator of the Warintza Project. At the time the 2013 report was prepared, Lowell Exploration was controlled by Lowell Copper Inc., which changed its name to Lowell Copper Holdings Inc. on July 9, 2013. Lowell Copper is incorporated under the British Columbia Business Corporations Act.

Essentially all the technical information and much of the Ecuadorian legal and regulatory information in this report was obtained by the authors from employees or representatives of Lowell Exploration. This includes documents received, as well as personal communications in the form of face-to-face conversations in 2006, telephone conversations and email. Throughout this report "Lowell Exploration" is used when referring to the project owner/operator. Lowell Copper's ownership and control of Lowell

Exploration and Equinox's ownership and control of both Lowell Copper and Lowell Exploration are implicit whenever Lowell Exploration or Lowell Copper is mentioned. Where necessary for clarity, Lowell Copper, Lowell Exploration and Equinox are explicitly named.

The authors of the report are Peter A. Ronning, P.Eng. of New Caledonian Geological Consulting ("Ronning") and Steven Ristorcelli, C.P.G., of Mine Development Associates ("Ristorcelli"). Both authors have participated in all aspects of this report, Ristorcelli having the primary responsibility for Section 14.0, describing the resource estimate, and Ronning having the primary responsibility for the remaining sections.

This report was initially completed on June 6, 2006 (Ronning and Ristorcelli, 2006). Circumstances beyond the control of Lowell Exploration prevented further progress in exploration on the Warintza Project after November 1, 2006. The 2006 report was updated on behalf of Waterloo on March 27, 2013 (Ronning and Ristorcelli, 2013). The present report is an update, on behalf of Equinox and Solaris, of the March 2013 report. The following sections of the report have been significantly revised since preparation of the March 2013 report:

- Section 2.1 on Terms of Reference has been revised to describe that this Technical Report is being prepared for Equinox Gold Corp. and Solaris Copper Inc., the date of incorporation of Solaris Copper Inc., the history of the name change of Lowell Copper Inc. to Lowell Copper Holdings Inc. and of Waterloo to Equinox, the two previous Technical Reports on the Warintza Project prepared by the authors, and the relationship of Lowell Copper Holdings Inc. to Equinox and Solaris;
- Section 2.3 on Sources of Information has been updated with the source used to describe the corporate name change, the certificate of incorporation of Solaris, and the addition of a 2018 legal letter and a memorandum;
- Section 2.5 has been updated with additional steps taken by the authors to confirm that no new exploration has been done since November 1, 2006;
- Section 3 on Reliance on Other Experts has been updated with two recent documents and discussion of recent work on community relations added;
- Section 1.1 on The Property and Section 4.0 on land, permitting, and related issues have been updated;
- Section 5.0 on Accessibility, Climate, Local Resources, Infrastructure and Physiography had included discussion of a proposed road between Ecuador and Peru through Warintza, and this discussion has been updated;
- Section 6.0 has been updated with current supporting documentation and information on the events of 2006 that resulted in cessation of exploration on the project;
- The CIM mineral resource definitions in Section 14.7 have been updated to conform to the 2014 revisions to those definitions; however, the resource estimate already met the 2014 revisions;
- Section 14.1 has been updated with a general discussion of the possible impact of environmental, permitting, legal, title, taxation, marketing, social, socio-economic, and political factors on the mineral resource;
- Section 15.0 on Adjacent Properties has been replaced with current information;
- Sections 1.6 and 18.0 on Recommendations have been updated to reflect current discussions with Lowell Exploration and Equinox; and

- Section 19.0 on References has been updated with one new reference, citations to the two previous Technical Reports and the 2018 legal letter and memorandum.

The only revisions to the remaining sections of the report are inclusion of the names "Equinox," "Solaris" and "Lowell Copper" where appropriate, and other minor changes in wording to reflect that this is an updated report.

Lowell Copper advises the authors that no new exploration has been done since November 1, 2006. Steps taken by the authors to confirm this lack of new exploration are described in Section 2.5, its subsections, and Section 12.4 of this report.

The only addition to technical aspects of the report since June 2006 is that of 46 analyses of surface rock samples that had not been available at the time the 2006 report was finalized. These were first described in the report of March 2013 (Ronning and Ristorcelli, 2013). The additional information does not change the conclusions stated in the report of 2006 (Ronning and Ristorcelli, 2006) and repeated in the current report.

Because no additional technical work has been done since 2006, the selection of an effective date for this report was at risk of being arbitrary. June 22, 2018 has been chosen as the effective date, because it is the effective date of the recent affidavit described in Section 2.5.2, which offers reasonable assurance that the technical information contained in this report was complete as of that date.

2.2 Purpose of Report

The purpose of the report is to provide Equinox and Solaris and their investors with a summary of the Warintza Project, including the resource estimate, an independent opinion as to the technical merits of the project, and a discussion as to the appropriate manner of conducting the forthcoming stages of exploration. It is intended that this report may be submitted to those Canadian stock exchanges and regulatory agencies that may require it. It is further intended that Equinox and Solaris may use it for any lawful purpose to which it is suited.

This is a technical report, and the use of some technical terms is unavoidable. Nevertheless, it is expected that persons without technical training and experience in mineral exploration will have occasion to read it. The report is written in plain language to the extent possible, and explanations are provided for many technical terms or jargon.

2.3 Sources of Information

A list of the information that the authors reviewed in preparing this report is to be found in Section 19.0 at the end of the report. Those sources include both documents provided by Equinox, Lowell Exploration and sources in the public domain. In addition to printed material, in 2006 the authors had numerous conversations with employees and management of Lowell Exploration, both in the field and at the company's office in Quito, Ecuador.

For the incorporation of Solaris Copper Inc. described in Section 2.1, the authors reviewed the *Certificate of Incorporation* issued on June 18, 2018 and signed by Carol Prest, Registrar of Companies, Province of British Columbia, Canada.

For the history of the name change described in Section 2.1, the authors reviewed a *Certificate of Change of Name* issued on July 9, 2013 and signed by Carol Prest, Registrar of Companies, Province of British Columbia, Canada certifying that Lowell Copper Inc. changed its name to Lowell Copper Holdings Inc. on that date.

For matters relating to mineral titles and regulatory issues, the authors relied on statements and documents provided by Lowell Exploration and its legal counsel in Ecuador. These documents are described in greater detail in Section 4.0 of this report, some are listed in Section 3.0 and all are listed as references in Section 19.0.

For legal affirmation of the political circumstances that precluded any work of a scientific or technical nature on the Warintza Project between 2006 and the effective date of this report, the authors relied upon a letter dated December 21, 2012 from the Ecuadorian legal counsel of Lowell Mineral Exploration Ecuador S.A. and upon a letter dated April 27, 2018 from the Ecuadorian legal counsel of Lowell Mineral Exploration Ecuador S.A. and Lowell Copper. These letters are described in Section 2.5.1 of this report and are listed in Section 19.0.

For information on steps taken by Equinox and Lowell Exploration in 2018 to improve community relations at the Warintza Project, the authors relied upon a memorandum dated June 16, 2018 from Equinox's Director of Corporate Affairs & Country Director Ecuador. This memorandum is described in Section 4.4 of this report and is listed in Section 19.0.

This report, of necessity, makes use of information generated by geologists in the employ of Lowell Exploration, as well as prior operators of the Warintza Project, and by third parties. The authors have visited the property, collected enough samples to verify that mineralization of the character described exists, and verified that the geology as seen in the field is consistent with the geology described herein. Nevertheless, the authors have made extensive use of information contained in geological reports prepared by other geoscientists, as listed in Section 19.0. Sources of information are acknowledged throughout the text, where the information is used. None of the reports cited contain authors' certificates. The authors of this Technical Report have not determined, nor is it practical for them to determine, who if anyone amongst the authors of the reports they have used may be a Qualified Person as defined in NI 43-101.

2.3.1 Note on Language

Many of the reports and documents that the authors consulted during their review of the project are in Spanish. Both authors are competent to read information relating to technical and scientific aspects of geology and mining in Spanish, and the information gleaned from those reports and documents is presented herein in English, without further acknowledgment of the translation.

Spanish words are retained where appropriate, as for example in the names of locations.

2.4 Personal Inspection by the Authors

Both authors spent the period from the 22nd of March through the 26th of March 2006 in Ecuador working on this technical review. They spent a day and a half examining drill core at a storage facility near the town of Macas. Weather conditions made air access to the property itself problematic, but the authors were able to spend most of one day on the site, visiting several outcrops and collecting seven samples in the field. The authors spent the remainder of their time in Ecuador collecting and reviewing information in Lowell Exploration's files in Quito. Ronning spent some additional time in Quito on the 29th and 30th of March 2006, during which time he had the opportunity to discuss the Warintza Project with Lowell Exploration's legal counsel.

During the course of the review the authors collected 28 samples of material from the Warintza Project, those being 11 samples of coarse reject material or pulps from prior samples of drill core, 10 "duplicate" splits of drill core, and the seven rock samples collected from the surface at Warintza.

Lowell Exploration informed the authors that analyses of 46 surface rock samples were received by Lowell Exploration in 2006, but after the completion of the 2006 report. The additional analyses of 46 surface rock samples were incorporated into the relevant maps and discussions in the 2013 and the current reports. In the authors' judgment the 46 additional samples revealed nothing that affects the conclusions originally expressed in the 2006 Technical Report, all of which are retained in the present one. No conclusions have been added to this Technical Report that were not in the 2006 Technical Report.

2.5 Subsequent Events Since Personal Inspection by the Authors

The authors have not visited the property since 2006, nor have they been active in any aspects of the project since then. All of the information in this report relating to events since 2006 and the current situation at Warintza has been obtained from Lowell Copper and its legal counsel in Ecuador. Lowell Copper has informed the authors, and Lowell Copper's legal counsel in Ecuador has provided the authors with a letter confirming that no new technical information has been generated that was not included in the original version of this report in 2006, with the exception of the 46 additional surface rock chip samples described above.

2.5.1 Letters of December 21, 2012, and April 27, 2018

On the matter of the history of the project since 2006, in order to provide the authors with expert assurance that between 2006 and the effective date of the 2013 report political conditions existed that precluded any exploration or other work of a technical nature on the Warintza Project, Lowell Exploration's legal counsel in Ecuador, Dr. Raúl de la Torre, of the legal firm Perez Bustamante & Ponce, provided the authors with a letter of assurance ("the 2012 de la Torre letter") and a list of supporting documents. This letter was issued on December 21, 2012, and received by the authors on December 31, 2012. In the letter Dr. de la Torre stated "…*Lowell Mineral Exploration Ecuador S.A. has carried out no specific geological-mining activities within its concessions since 2006. The activities and investments made, which have been reported to and approved by the mining authorities, relate to the Company's administrative activities in Ecuador, payment of taxes and contributions, as well as to studies of the areas and cooperation with the mining authorities in their program to make the project known to the communities*."

Supporting documentation was received with the 2012 de la Torre letter, and one of the authors, Ronning, has done a review of the supporting documents to ascertain that they contain no contradictory information. The authors note that the supporting documents are primarily of a legal and administrative nature, which neither author is qualified to evaluate and on which neither author is qualified to express a professional opinion.

The authors received a similar letter dated April 27, 2018, and received by the authors on April 30, 2018, from Lowell Exploration's legal counsel in Ecuador, Dr. Raúl de la Torre, of the legal firm Perez Bustamante & Ponce ("the 2018 de la Torre letter"). Dr. de la Torre stated substantially the same information as quoted above from his December 21, 2012, letter with the sole difference being reference to "mineral exploration work or activities" instead of "geological-mining activities" in the first sentence. In the 2018 de la Torre letter, Dr. de la Torre states "*…Lowell Mineral Exploration Ecuador S.A. has carried out no specific mineral exploration work or activities within its concessions since 2006. The activities and investments made, which have been reported to and approved by the mining authorities, relate to the Company's administrative activities in Ecuador, payment of taxes and contributions, as well as to studies of the areas and cooperation with the mining authorities in their program to make the project known to the communities.*"

2.5.2 Affidavits Effective March 19, 2013, and June 22, 2018

In order to provide additional confidence as to the statements made by representatives of Lowell Exploration and by Dr. de la Torre (see preceding Section 2.5.1), concerning the lack of exploration work since 2006, Lowell Copper Inc. offered to provide the authors with an affidavit from a responsible officer of the company attesting to the facts as described in the 2012 de la Torre letter. The affidavit ("the 2013 affidavit") was issued on March 19, 2013. In it, Mr. David Eric De Witt, a Director and the Corporate Secretary of Lowell Copper Inc., stated that:

a) *on or about November 1 and 2, 2006 third parties caused disruptions at the Warintza property and said actions resulted in Lowell Copper ceasing work on the Warintza property; and*

b) *since November 1, 2006, no additional mineral exploration activities on the Warintza Property have been carried out or authorized by Lowell Copper*.

Equinox and Lowell Copper provided the authors with an affidavit from a responsible officer of the company attesting to the facts as described in the 2018 de la Torre letter. This affidavit ("the 2018 affidavit") was issued effective June 22, 2018, and received on June 26, 2018. In it, Mr. Greg Smith, a Director and President of Equinox Gold Corp. and a Director of Lowell Copper Holdings Inc., states that:

a) *on or about November 1 and 2, 2006 third parties caused disruptions at the Warintza property and said actions resulted in Lowell Copper ceasing work on the Warintza property; and*

b) *since November 1, 2006, no additional mineral exploration activities on the Warintza Property have been carried out or authorized by Lowell Copper.*

2.5.3 Conclusion

In light of the lack of new material information, as confirmed by the letters provided by Lowell Exploration (see Section 2.5.1 above) and the affidavits from the corporate officers of Lowell Copper Inc. and Equinox Gold Corp. and Lowell Copper Holdings Inc. (see Section 2.5.2), and the fact that no changes to the report's conclusions were warranted by the receipt of the 46 samples from 2006 described in Section 2.4, another visit to the site was not necessary prior to submitting this report. Relying on the four documents described in Sections 2.5.1 and 2.5.2, the authors are confident that no technical information was generated for the Warintza Project between November 2006 and the effective date of this Technical Report.

Lowell Copper advises the authors that the lack of exploration work since 2006 was forced by the political situation in Ecuador, that the company is closely following the political situation, and that it is actively working with the appropriate Ecuadorian agencies and local community leaders to make a resumption of the project possible. The authors do not closely follow politics in Ecuador but Lowell Copper's statements are consistent with the little the authors know of events there since 2006 and of the present situation.

3.0 RELIANCE ON OTHER EXPERTS

Section 4.0 of this report contains information relating to mineral titles, permitting, regulatory matters and legal agreements. While the authors are generally knowledgeable concerning these issues in the context of the mineral industry they are not legal or regulatory professionals and are not familiar with these issues as they relate specifically to Ecuador. The information in the report concerning these matters is provided as required by Form 43-101F1 but is not a professional opinion of the authors. The individuals and documents that the authors consulted in compiling that information are listed immediately below and are identified in Section 4.0 where their information is used.

- SUSTITUCION DEL TITULO MINERO CONCESION PARA MINERALES METALICOS, May 3, 2010; three documents formalizing the replacement of the original "Mining Concessions" by the current "Metallic Mineral Concessions", one for each concession comprising the property.
- de la Torre, Raúl, October 31, 2011, letter confirming the status of the three concessions that comprise the Warintza property.
- de la Torre, Raúl, December 21, 2012, letter confirming the status of the three concessions that comprise the Warintza property, describing the political circumstances that led to the cessation of exploration work between 2006 and the present time, and affirming that no exploration work has been done since 2006 (see Section 2.5.1, above).
- de la Torre, Raúl, April 27, 2018, letter confirming the status of the three concessions that comprise the Warintza property, confirming that the mining patents for the current year have been paid, describing the political circumstances that led to the cessation of exploration work between 2006 and the present time, and affirming that no exploration work has been done since 2006 (see Section 2.5.1, above).
- Velasquez, Federico, Director, Corporate Affairs & Country Director Ecuador, Equinox Gold Corp., June 16, 2018, memorandum describing activities to improve community relations at the Warintza Project since 2007 with particular emphasis on activities over the last six months (see Section 4.4, below).

Section 2.5 of this report describes the political and legal circumstances that have precluded further work on the Warintza Project since November 2006. The authors have relied solely on Lowell Exploration's legal counsel in Ecuador, Dr. Raúl de la Torre, of the legal firm Perez, Bustamante & Ponce (the 2012 de la Torre letter and the 2018 de la Torre letter), David Eric De Witt, a Director and corporate Secretary of Lowell Copper Inc. (the 2013 affidavit), and Greg Smith, a Director and President of Equinox Gold Corp. and a Director of Lowell Copper Holdings Inc. (the 2018 affidavit) for the information in Section 2.5 that circumstances of a political nature prevented Lowell Copper from generating any new technical information since 2006.

Section 4.4 of this report describes the efforts to improve community relations at the Warintza Project since 2011, and particularly since February 2018, in the hopes of restarting exploration activities on the property. The authors have relied solely on Equinox's Director of Corporate Affairs & Country Director Ecuador, Mr. Federico Velasquez, for the information in Section 4.4 that describes the work in 2018.

4.0 PROPERTY DESCRIPTION AND LOCATION

(see Figures Figure 4.1 and Figure 4.2)

The Warintza Project area is in southeastern Ecuador, in the province of Morona Santiago, canton Limón Indanza. Figure 4.1 shows the location of the project within Ecuador.

4.1 Property Definition

Table 4.1 describes the Metallic Mineral Concessions that comprise the Warintza property. In the remainder of this report, the three concessions listed in Table 4.1 are referred to collectively as the Warintza Concessions. The concessions are illustrated on Figure 4.2 All the known mineralized zones lie within the concession boundaries.

Table 4.1 Warintza Mineral Concessions of Lowell Mineral Exploration Ecuador S.A.

Name of Concession	CODE No.	Date Requested	Date Granted	Date Transferred to Lowell Exploration	Date of Substitution of Metallic Mineral Concession	Present Area in "Mining Hectares"	Corner Coordinates UTM Grid PSAD 56	
							EASTING	NORTHING
CAYA 21	101083	12 June 2001	20 Sept. 2001	20 July 2004	03 May 2010	2,500	800,000	9,652,500
							810,000	9,652,500
							810,000	9,650,000
							800,000	9,650,000
CAYA 22	101092	12 June 2001	20 Sept. 2001	20 July 2004	03 May 2010	2,500	800,000	9,650,000
							805,000	9,650,000
							805,000	9,645,000
							800,000	9,645,000
CURIGEM 9	100081	13 June 2001	10 June 2002	20 July 2004	03 May 2010	5,000	790,000	9,650,000
							800,000	9,650,000
							800,000	9,645,000
							790,000	9,645,000
					TOTAL	**10,000**		

Table 4.1 was adapted from one originally prepared by Edgar Salazar, a former Manager of Lowell Mineral Exploration Ecuador S.A., and given to the authors by Salazar in 2006, at which time he was still with the company. In its present form it was compiled by Ronning from documents provided by Lowell Mineral Exploration Ecuador S.A. in 2006 and 2011. **It is a layman's interpretation of those documents and is neither a legal nor an expert opinion.** Persons seeking greater assurance as to the concessions that make up the Warintza property should seek a legal or expert opinion.

The most recent information in Table 4.1 comes from three documents, each titled "SUSTITUCION DEL TITULO MINERO CONCESION PARA MINERALES METALICOS", which formalize the replacement of the original "Mining Concessions" by the current "Metallic Mineral Concessions". The "Date of Substitution of Metallic Mineral Concession" in Table 4.1 is the date of each of those three documents.

UTM refers to the Universal Transverse Mercator system of geographic coordinates. PSAD 56 refers to the Provisional South American Datum of 1956.

An earlier Curigem 9 concession was granted to Gatro Ecuador Mineral S.A. in 1996. Earlier Caya 21 and Caya 22 concessions were granted to L. Elizalde in February of 2000 and transferred to Billiton in June of 2000. The replacement of these earlier concessions with new ones having the same names was made necessary by the implementation of a new, reformed mining law.

All concessions were originally granted for a term of 30 years. It is the authors' understanding that under the regulations in force in 2011, the stated term for a concession is 25 years.

On October 31, 2011, Dr. Raúl de la Torre of the legal firm of Perez Bustamante & Ponce, attorneys for the company in Ecuador, wrote to Sr. Jorge Fierro of Lowell Mineral Exploration Ecuador S.A. to confirm the present standing of the concessions. The letter stated that the company is the holder of the following mineral concessions:

a) CAYA 21 (Code 101083) granted by means of a resolution issued on September 20, 2001 by the Regional Mining Office of Azuay and duly registered with the Real Estate Records Office on September 26, 2001. Subsequently, pursuant to a public deed of July 20, 2004, registered on August 2, 2004, mining rights were transferred to Lowell Mineral Exploration Ecuador S.A.

b) CAYA 22 (Code 101092) granted by means of a resolution issued on September 20, 2001 by the Regional Mining Office of Azuay and duly registered with the Real Estate Records Office on September 26, 2001. Subsequently, pursuant to a public deed of July 20, 2004, registered on August 2, 2004, mining rights were transferred to Lowell Mineral Exploration Ecuador S.A.

c) CURIGEM 9 (Code 100081) granted by means of a resolution issued on June 10, 2002 by the Regional Mining Office of Azuay and duly registered with the Real Estate Records Office on June 20, 2002. Subsequently, pursuant to a public deed of July 20, 2004, registered on August 2, 2004, mining rights were transferred to Lowell Mineral Exploration Ecuador S.A.

The letter of December 21, 2012, described in Section 2.5.1 of this report, which is also from Dr. Raúl de la Torre, re-iterates the information in items a), b) and c), above, using identical language. In the same letter Dr. de la Torre indicates that mining patent fees were paid for the three concessions described above on March 16, 2012.

In an email of March 15, 2013, Dr. de la Torre stated the following, concerning the standing and anticipated duration of the Warintza concessions (italicized text is a direct quote):

a) As of the date hereof, the mining concessions are valid and in force.

b) Once initial exploration and outstep exploration are completed, the concessionaire may request that the relevant exploitation contract be executed. A term must be established in the contract which will run from the date the contract is signed through 2034.

It is worth noting that pursuant to the Ecuadorian Mining Law the exploitation contract may be renewed for such time as may be justifiable for adequate exploitation of the deposit.

On April 27, 2018, Dr. Raúl de la Torre of the legal firm of Perez Bustamante & Ponce, attorneys for the company in Ecuador, wrote to the authors to confirm the present standing of the concessions. In exactly the same language as reported above, the letter states that the company is the holder of the three mineral concessions as described in items a), b) and c), above, using identical language. In the same letter, Dr. de la Torre states that conservation patent fees were paid for the three concessions described above on March 31, 2018.

Lowell Exploration advised the authors by email communication on May 14, 2018, that the concessions will be valid at least until 2031.

4.1.1 Mineral Titles in Ecuador

Information under this heading was provided by Lowell Exploration for the authors' 2013 report (Ronning and Ristorcelli, 2013) and then updated for this report. The authors have not verified it independently of Lowell Exploration, nor have they the expertise or ability to do so. Some of the information concerning regulatory matters is derived from a digital file, received from Lowell Exploration containing four pages scanned out of what appears to be an official English version of Ecuadorian mining law ("Mining Law"). Information derived from Mining Law is presented herein as it is understood by the authors, but is a layman's interpretation, and is neither a professional nor an expert opinion.

The mineral rights at Warintza take the form of Metallic Mineral Concessions. Concession boundaries are defined by the coordinates of their corners, expressed in Universal Transverse Mercator ("UTM") coordinates. According to the legal documents in which Metallic Mineral Concessions were substituted for the three original Mining Concessions, the Metallic Mineral Concessions grant the holder the right to prospect, explore, exploit, beneficiate, smelt, refine, and market any metallic mineral substances situated within the concession boundaries, and also to close any mine that is developed[3]. According to Lowell Exploration, these are considered "phases" in mining activities. The exploration phase is subdivided by Ecuadorian law into an initial exploration stage, an advanced exploration stage, and the economic evaluation stage. Each stage has its own characteristics, such as maximum area of the concession, term of duration, timetable for geologic activities, amount of investment, etc. These three stages are mandatory and are performed before the exploitation contract is executed.

The maximum size of any one concession is 5,000 hectares. Concessions have a term of 25 years and can be renewed for additional periods of 25 years, provided applications for renewal are submitted prior to the expiration of the concessions and various conditions as stated in the "Mining Law' are met. To maintain concessions in good standing on an annual basis, Conservation Patent Fees must be paid each calendar year. The Patent Fees are based on a "basic unified salary" ("SBU"), which is equal to US$386[4]. For each hectare, the Patent Fees start at 2.5% of the SBU per annum for the "initial exploration stage", escalate to 5% of the SBU per annum for the "advanced exploration stage", stay at 5% of the SBU per annum for the "economic evaluation stage" and escalate again to 10% of the SBU per annum for the "exploitation phase". The three stages and one phase mentioned in the preceding sentence are summarized in Table 4.2, below, which presents the authors' understanding of Article 38 of the Mining Law.

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[3] This description of the rights of concession holders is Ronning's interpretation of the rights described, in Spanish, in the "SUSTITUCION DEL TITULO MINERO CONCESION PARA MINERALES METALICOS" for the Caya 21 concession. It is a layman's interpretation and is neither a legal nor an expert opinion. Persons seeking greater assurance as to those rights should seek a legal or expert opinion.

[4]The Ecuadorian government raised the SBU (Salario Basico Unificado) to US$386 in 2018, and this amount was used to calculate the Conservation Patent Fees.

Table 4.2 Exploration, Economic Evaluation, and Exploitation

Initial Exploration Stage	Up to four years from the time the concession is granted.
Advanced Exploration Stage	Up to four years; application must be made prior to the end of the Initial Exploration Stage. The application must include a waiver of part of the surface initially granted.
Economic Evaluation Stage	Up to two years, starting once the Initial Exploration Stage or the Advanced Exploration Stage has ended. May be extended, on application, for up to two years.
Exploitation Phase	Commences on the request of the concessionaire, which must be made prior to the end of the Economic Evaluation Stage. Various requirements and conditions apply.

In an internal email dated March 26, 2018, forwarded to the authors on March 28, 2018, Lowell Exploration advised the authors that the concessions comprising the Warintza property are still in the Initial Exploration Period.

4.1.2 Regulatory[5] Holding Costs, Royalties and Taxes

The following first four points about royalties and taxes were received from Lowell Exploration on October 31, 2011, in an untitled and unattributed document. An accompanying email from Lowell Exploration indicated that it was prepared by the company's lawyer in Ecuador. For the current Technical Report, this information has been updated and the fifth point added by Lowell Exploration via an email dated May 8, 2018, with additional information included from a 2016 presentation on the Ecuadorian mining tax regime by Wood Mackenzie (Barnes, 2016).

1.- Conservation Patent:

Mining concessionaires are required to pay the so-called 'conservation patent' for each mining hectare. For the initial exploration period, the conservation patent is equivalent to 2.5 per cent of one basic unified salary (US$386). For the advanced exploration and economic evaluation periods, the conservation patent is equivalent to 5 per cent of the basic unified salary.

For the exploitation period, the conservation patent is 10 per cent thereof.

2.- Royalties

As concerns royalties, the law provides that they cannot be less than 5 per cent of sales. That percentage must be determined in the exploitation contract to be executed between the concessionaire and the State.

[5] "Regulatory" is intended to mean that these are obligations imposed by government authority.

3.- Worker's payment.

Fifteen per cent of taxable income must be distributed as follows: 3 per cent among the workers and the additional 12 per cent must be delivered to the state, which will invest it through sectoral entities for social projects in the area where the mining project is located.

4.- Extraordinary Income Tax

The former "Windfall Tax" described in the 2013 Technical Report (Ronning and Ristorcelli, 2013) has been replaced by the Extraordinary Income Tax ("EIT"). The calculation for the EIT is: EIT = 70% x units produced x (net unit sales price – base unit price). The base unit price is set monthly and is equal to the 10-year average inflation-adjusted price of the metal plus one standard deviation. The EIT applies only after the company has reached discounted payback and the international metal price exceeds the base price.

5.- Income and Value Added Tax

Income tax for mining companies is 22%. The Value Added Tax ("VAT") is 12%, but beginning in 2018, the VAT will be refundable for mineral exports.

The 2018 de la Torre letter reports that Lowell Mineral Exploration Ecuador S.A. has met its obligation to pay the conservation patent fees. The last payments for the fees were validated effective on March 31, 2018, as follows:

Curigem 9	US$ 48,250.00
Caya 21	US$ 24,125.00
Caya 22	US$ 24,125.00

These payments must be made on an annual basis.

4.1.3 History of Tenure of the Warintza Concessions

The description of the history of the tenure of the Warintza Concessions that appears below is taken in part from Sivertz et al., 2006 and in part from a summary prepared by Lowell Exploration.

Billiton Ecuador B.V., now BHP Billiton ("Billiton"), began exploration in southeastern Ecuador in 1994 and identified a number of possible porphyry copper targets in the region. In October 1999, a three-way joint venture was formed amongst Billiton, Corriente Resources Inc. ("Corriente") and Lowell Exploration. Billiton contributed the properties, Lowell Exploration managed the exploration work and Corriente funded the project. The joint venture area included the area of the Mirador property (the subject of Sivertz et al., 2006) and the area where the Warintza Concessions are situated. Under the agreement, Corriente could earn a 70% interest in each of the Billiton projects by completing a feasibility study and meeting certain financial and work commitments. At the completion of each feasibility study, Billiton could elect to back-in for a 70% interest by providing production financing, retain a 30% working interest, or dilute to a 15% Net Profit Interest ("NPI").

Under the terms of the exploration management agreement Lowell Exploration could earn up to 10% of Corriente's interest in certain properties in exchange for managing the exploration of the properties.

In December 2002, Corriente announced that it had received notice from Billiton that the Mirador property was to be separated from the existing copper-gold joint venture in Ecuador, and that the Mirador exploration concessions were to be transferred to Corriente. Billiton was to retain no back-in rights but had the option to retain its 30% participating interest in Mirador or revert to a 2% Net Smelter Royalty ("NSR"). Billiton elected to revert to the 2% NSR interest. At that time, Lowell Exploration held a 10% interest in Corriente's Mirador project. Corriente, in December 2003, granted Lowell Exploration the option to exchange its 10% interest in the Corriente mineral concessions, including Mirador, for a 100% interest in the Warintza Concessions. In June 2004, Lowell Exploration exercised that option and now owns the Warintza Concessions. In 2006 Lowell Exploration advised the authors that Billiton retains a 2% NSR royalty interest in the Warintza property, and so far as the authors are aware this is still the case.

During the period from March 2002 to April 2005, the terms of the Caya 21 and Caya 22 concessions were temporarily suspended under force majeure. The suspension was due to political and community relations issues.

On the 15th of August 2005, the size of two of the Warintza Concessions was reduced. In 2006 Lowell Exploration advised the authors that Billiton has the right to approve such a reduction, but that approval was sought only after the reduction had taken place. In 2006 Lowell Exploration was working to resolve that technical legal issue. However, Lowell Exploration informed the authors in emails dated December 12, 2011, and May 7, 2018, that its legal counsel in Quito had not been able to find any indication that the matter was resolved.

The authors have not reviewed any of the agreements amongst Billiton, Corriente and Lowell Exploration relating to the tenure of the Warintza Concessions. The authors have not verified the status of the Warintza Concessions with the Dirección Nacional de Minería. In 2006 Ronning participated in a discussion with Lowell Exploration's independent legal counsel in Quito at the time, Dr. Patricio A. Ruiz M., during which no problems relating to the mineral tenure at Warintza came to light, except the technical issue relating to Billiton's approval of the reduction in size of two concessions. The authors have no further information relating to the mineral tenure of the Warintza Concessions.

4.1.4 Surface Rights

4.1.4.1 Anecdotal information from 2006

This discussion in this section 4.1.4.1 of the surface rights to the area comprising the Warintza Concessions is largely anecdotal, derived from discussions between the authors and employees of Lowell Exploration, in 2006. Updated information is provided in section 4.1.4.2.

The project lies within the lands of the Shuar indigenous population. The Shuar have historically been hunter-gatherers and subsistence farmers. Individual families have had recognized areas that the community acknowledged as belonging to them, but these family holdings for the most part have not been recorded as legal titles. Ecuadorian law does provide a process whereby families can acquire legal documentation of their title to those lands that the community regards as theirs.

In 2006 Lowell Exploration had embarked on a process of purchasing those surface lands likely to be critical to the future exploration of, and possible production from, the Warintza Concessions. To do so, it had in many instances been necessary for Lowell Exploration to first assist the traditional occupants of the land to acquire legal documentation of their holdings. The process of documentation and purchase was underway in 2006 and was at different stages for various parts of the project area.

4.1.4.2 Information Provided by Lowell Exploration and Lowell Copper in 2018

Lowell Exploration provided the following information to the authors via emails on April 23, 2018, and on May 14, 2018:

Ecuador's Mining Law expressly provides that "mining rights" are independent of the rights over "ownership of land," which are also known as "surface rights." Mining rights and surface rights are of a different nature, have different purposes, and are regulated by different laws.

According to the public registries, Lowell Mineral Exploration Ecuador S.A. owns 2,349.67 hectares of surface rights in the Warintza Project area. Lowell Mineral Exploration Ecuador S.A. has executed purchase contracts for these properties by means of public deeds, namely, through documents signed before a notary public and subsequently registered with the Real Estate Records Office, which is a public registry. According to Ecuadorian legislation, the owner of real property is entitled to enjoy and to freely dispose of that property. The authors note that the current surface rights total about 252 hectares less than the total reported in 2006 and 2013 (Ronning and Ristorcelli, 2006, 2013). Lowell Exploration has advised the authors that in 2006 and 2013, the surface rights shown on Figure 4.2 included a 300-hectare parcel covered by an option agreement to purchase the parcel. However, that agreement was never finalized and the option to buy this parcel has expired.

The surface rights owned by Lowell Mineral Exploration Ecuador S.A. are shown on Figure 4.2. The linear gaps shown on Figure 4.2 between some of the surface rights overlie the Piunts River and Warints River. Lowell Exploration advises the authors that according to Ecuadorian law there is no private property over rivers. Should any future development extend over a river, the permit from the water authority ("SENAGUA") would have to address such development as well as to include its water management in the environmental management plan.

4.2 Permitting

The authors are advised by Lowell Exploration that the requirements to restart exploration at Warintza under the current Initial Exploration Stage are environmental registration, a water permit, and an affidavit regarding environmental impacts of exploration activities.

Environmental registration must be completed online at the Environmental Ministry. Registration was completed for the three Warintza concessions in November 2015.

The water permit is required to use water from local creeks. The issuing authority is known by the acronym SENAGUA. Documentation for the permit was filed in September 2016. On November 9, 2016, Lowell Exploration filed for a favorable answer but has received no response to date from SENAGUA.

An affidavit must be filed stating that the exploration activities will not affect any roads, public infrastructure, authorized ports, sea beaches and sea beds, telecommunications networks, military installations, oil infrastructure, aeronautical facilities, electrical networks or infrastructure, or archeological vestiges or natural and cultural heritage. Lowell Exploration submitted that affidavit in January 2018.

Lowell Exploration has advised the authors that if access is granted, Lowell Exploration will complete the Initial Exploration permits and will immediately start completing requirements for the Advanced Exploration Stage as most of the future drilling will require these permits. The following requirements must be met to move from the Initial Exploration Stage to the Advanced Exploration Stage:

- A request to the mining authority informing them about the change of stage;
- A reduction in the size of the initial concession area;
- An environmental license for the new stage; and
- A water permit for this stage.

Lowell Exploration has commenced the process of applying for an environmental license to drill. However, the license cannot become valid until the water permit is issued.

The authors have no current information as to the permitting steps for advancing the project beyond the first contemplated stage of exploration.

4.3 Environmental Liabilities

The authors are not aware of any significant human-caused environmental impacts on the area of the Warintza Project, prior to the initiation of exploration work by Billiton. Since that time, a wood frame camp was built, footpaths were constructed over much of the property, and drill pads were constructed by hand. The camp has since been destroyed. The authors do not know the status of the helipads or footpaths in 2018. The authors are not qualified persons with respect to environmental matters, but as lay-persons they can comment that no readily apparent environmental degradation of consequence was evident in the limited number of areas they visited.

4.4 Community Relations

In late 2011 the Minister of Non-Renewable Resources offered to visit the Panantza[6] and Warintza communities in response to an invitation made by a Shuar leader who was also a President of one of the local districts. The Minister was not able to meet this specific invitation. In early 2012 a representative of the Ministry of Non-Renewable Resources visited San Miguel, a town near the Panantza project. The representative offered to send a team to start introducing the new mining law in the communities in the area.

[6] Panantza is a community near another mining project in the region. The Panantza project is not a topic of this report, and is mentioned only because some similar political and community relations issues apply.

Lowell Exploration has advised the authors that the community relations team has been active in educating members of the community, through the guidance of, and material provided by, the Ministry of Mines of Ecuador. The community relations team has undertaken numerous educational (Spanish language, leadership, mediation and mining code educational sessions) and informational programs with the objective of opening dialogue and communicating on a proper understanding of (a) the stages of mining, (b) the responsible use of mineral resources and (c) the effects of a resource development in the area.

Equinox provided the authors with a memorandum dated June 16, 2018, describing steps taken by Equinox and Lowell Exploration over the last six months to improve community relations at the Warintza Project. Equinox appointed a Director of Corporate Affairs & Country Director Ecuador in February 2018 to work on improving community relations and moving the project toward exploration activities. Since then, Lowell Exploration has had 36 meetings with local representatives of the two communities involved in the Warintza Project as well as an association working with those communities. Representatives of Lowell Exploration visited the project on two occasions, from April 21 to 22, 2018, and from June 8 to 11, 2018. Lowell Exploration, the two communities, and the association have agreed to meet three times a month to discuss progress in the dialogue, as well as social, economic and health development opportunities for the communities. Lowell Exploration has been invited by the communities and authorized by the association to establish an office in the Warints community. Mr. Federico Velasquez, Director of Corporate Affairs & County Director Ecuador for Equinox noted in the memorandum that "I am optimistic that my efforts will lead to restarting exploration activities at the Warintza Project within the next 12 to 18 months."

The authors do not have the professional background or experience to assess social, socio-economic, or political issues in Ecuador and must rely on the experts described in Section 3.0 and this Section 4.4.

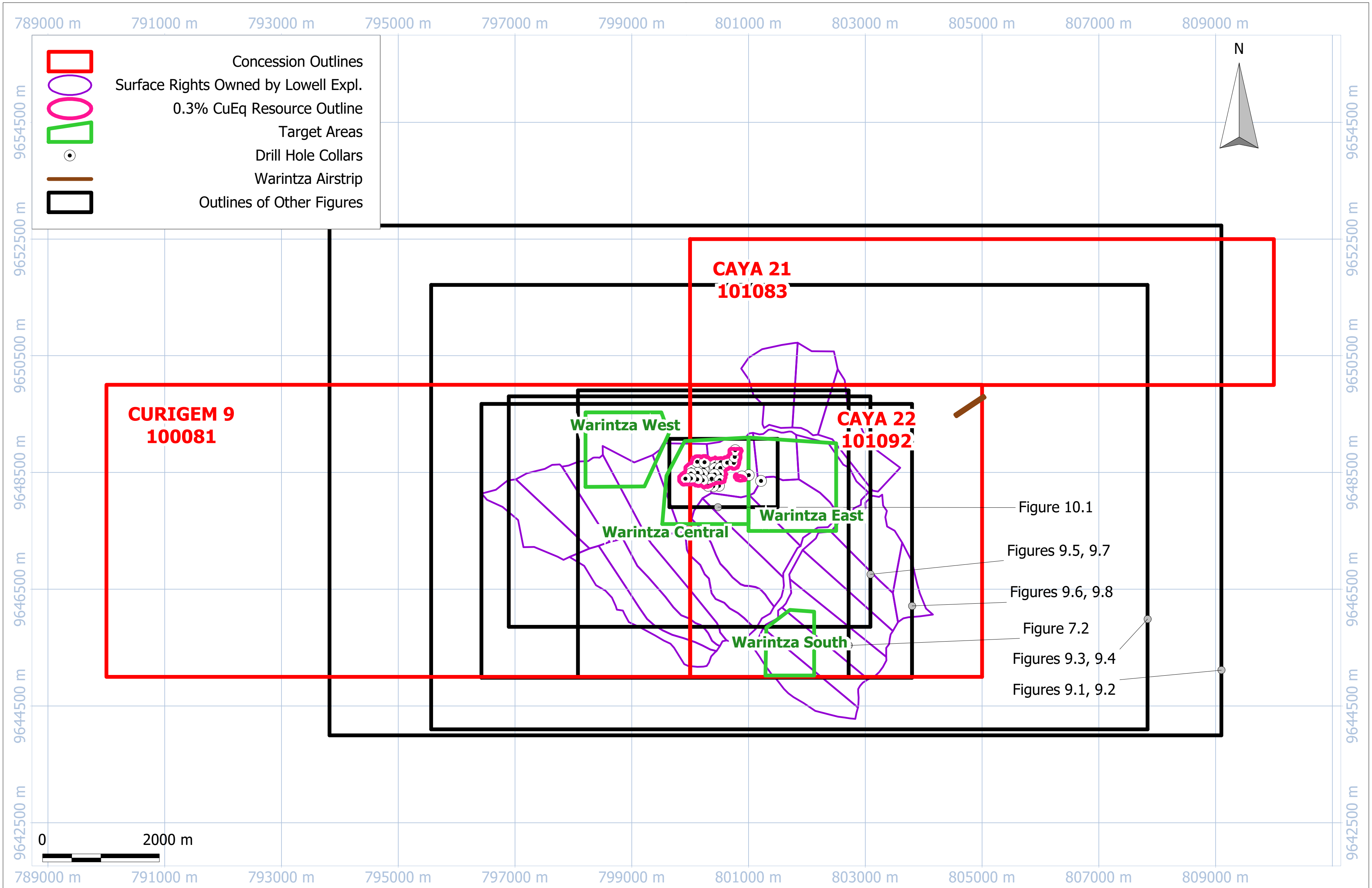
4.5 Risk Factors

The authors lack the expertise and local knowledge to fully assess factors that might compromise Lowell Exploration's rights with respect to the Warintza Property or its ability to perform work there.

Political and social opposition to the project by a segment of the local indigenous community was forcefully expressed by an attack on Lowell Exploration's camp at Piuntz on the Warintza property on November 1 and 2, 2006 (see Section 6.0 of this report). This resulted in the immediate suspension of exploration work on the project.

The authors cannot assess the extent to which the political and social opposition that forced suspension of work on the project in 2006 may have been overcome. Lowell Copper reports that it is continuing to work with the local community and Ecuadorian government agencies to reach a resolution. However, the events described in Section 6.0 are an indication that political and social impediments to exploration at Warintza still exist. Exploration of the Warintza property cannot proceed until a mutually satisfactory resolution of the outstanding issues is achieved and the necessary permits are issued. While the resources described in Section 14.0 of this report fulfill all the technical requirements to be Inferred resources, whether these resources can continue to be deemed "current" remains a risk that could be materially affected by long-term continued social, political, and government affairs issues about which the authors are not qualified to make a professional assessment.

Warintza Project	Assembled By: PAR	Location Map	Latitude Longitude Projection	Figure: 4.1
Lowell Mineral Exploration	Data from various public domain sources			14-May-06



Warintza Project	Drawn By: PAR	Concession Map	UTM Grid Based on PSAD 56	Figure 4.2
Lowell Mineral Exploration	Data from Lowell Mineral Expl.			Last Modified 15-May-18

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Warintza Concessions are in a rugged, heavily forested region with a humid tropical climate. Elevations within the concessions range from a low of about 700 meters in the main drainage to a high of about 2,300 meters on the ridge tops. Typical hillside slopes are between 25º and 40º, with some local slopes that are nearly vertical.

Access within the property in 2006 was achieved by a network of footpaths constructed by Lowell Exploration and prior operators. A number of hand-constructed helipads existed. Any equipment that must be transported beyond the helipads needs to be man-portable.

The climate permits year-round work. Over the course of a typical year low temperatures range from 8°C to 10°C, while high temperatures range from 17°C to 20°C[7]. Approximate rainfall over the course of a typical year is illustrated in the chart below:

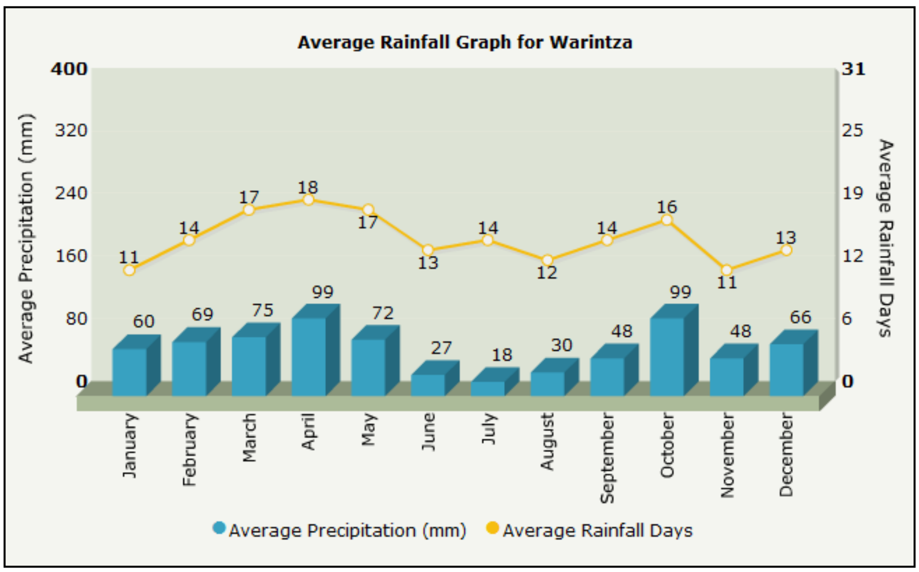


Chart obtained from www.worldweatheronline.com on Dec. 23, 2011

The nearby village of Warintza possesses a grass-covered airstrip about 500 meters long. The walk from the village to the main camp site on the project takes about an hour, on a route about 4 kilometers long with an elevation gain of about 250 meters.

The nearest supply center connected to the national transportation infrastructure is the town of Macas. It has good road connections and a commercial airport capable of handling commercial jet aircraft. There are several scheduled flights daily connecting Macas to the cities of Quito and Cuenca. Small aircraft chartered in Macas can reach the airstrip at Warintza in about 30 minutes. The highly changeable weather and cloud cover can delay flights by a few hours or days.

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[7] Information from www.worldweatheronline.com, obtained Dec 23, 2011.

In 2006 Lowell Exploration reported that a Peru – Ecuador Binational Plan existed to develop infrastructure in the border zone. Apparently an alignment had been designed for a highway beginning in Peru that would pass through the village of Warintza, ultimately connecting to the Ecuadorian road network. Should such a highway be built, it would be a great benefit to the Warintza Project. Lowell Exploration reports that after a bridge over Rio Zamora was completed in 2014, construction of the road to Peru has been almost stalled, and very little work has been completed. However, Lowell Exploration has been told that the local government may resume the construction of the road in 2018.

Another possibility that has been suggested by Lowell Exploration for road access to the site might be upgrading an existing road that at present extends to Panantza, then building a road to a bridge site in a box canyon of the Zamora River, constructing a bridge there and continuing on to build the road past San Carlos (another deposit in the area) to the Warintza deposit. Panantza is approximately 20 kilometers from Warintza. The authors have not seen a map illustrating this proposed route and no costing information is available.

Section 4.1.4 contains a brief discussion of surface rights. Lowell Exploration owns or controls surface rights over much of the area of interest. At present, no studies exist concerning suitable sites for mine infrastructure, should an economically exploitable deposit be outlined at Warintza.

Given the abundant rainfall and many streams on the property, it is reasonable to assume that ample water supplies exist. The authors are not aware of any studies relating to specific sources for possible mine process waters. An application for a permit to use water for drilling has been applied for (see Section 4.2).

The site is remote from existing electrical power infrastructure. The authors are not aware of any formal studies concerning possible sources of power for mine operations. Certainly the option of developing a local power source, possibly hydro-electric, would be a serious consideration, should a mine be developed.

Lowell Exploration reported that it is the company's understanding that the World Bank has done a feasibility study for a hydroelectric plant on the Zamora River about 10 kilometers west of the Warintza deposit. The present authors have not investigated this report.

Lowell Exploration employed many local residents as unskilled workers in its exploration programs. There is no history of mining in the immediate vicinity, and hence no skilled mining workforce available. Were a mine to be developed, skilled personnel from outside the area would be needed. A prudent mine operator would probably use as much local labor as possible and implement a training program to develop skills locally.

6.0 HISTORY

The history of the ownership of the Warintza property is described in Section 4.1.3 of this report.

There is no recorded history of exploration or mining in the Warintza area prior to Billiton's regional exploration work that commenced in 1994. The following summary describes the work done by Billiton, Corriente and Lowell Exploration in the area where the Warintza Concessions are situated.

Prior to the formation of the Billiton-Corriente-Lowell Exploration joint venture in 1999, Billiton conducted an extensive regional geochemical program that resulted in the identification of Warintza and other porphyry copper prospects in the region. Billiton did extensive airborne magnetic and electromagnetic surveys over large areas. A number of prospects received some drilling.

Billiton's early work in the immediate Warintza Project area, which at the time had an area of about 50 square kilometers, included geological mapping, soil sampling, stream sediment sampling, and rock sampling. This work is described in greater detail in Section 9.0 of this report. The early work led to the identification of four areas of interest or targets, Warintza Central, East, West and South (see Figure 4.2).

Subsequent to the formation of the joint venture, the first drilling began at Warintza in January 2000. That phase included the drilling of 2,391.12 meters in 16 core holes (Vaca and León, 2001). The second phase of drilling began in July 2001, comprising 4,140.02 meters of drilling in 17 core holes (ibid.). All of the drilling was in the Warintza Central target. Details of the drilling are described in Section 10.0 of this report.

During the period 2002 through 2003, there was no exploration activity at Warintza, due to resistance from the Shuar community and a focus by the joint venture partners on other projects.

Lowell Exploration acquired sole ownership of the Warintza Project in 2004. In the latter half of that year the company purchased surface rights to approximately 2,700 hectares of the project area (see Section 4.1.4 of this report for the currently held surface rights). The company worked towards reaching an understanding with the Shuar community, leading up to a resumption of exploration activity in 2005. That activity included widespread rock chip and channel sampling, the construction of new footpaths and helipads, and the preparation of new drill platforms in anticipation of a resumption of drilling. In May 2006 a new satellite camp was under construction in the Warintza West target area. Details of the work since 2004 appear in Section 9.0 of this report.

According to Salazar M. (2006) and de la Torre (2018), on November 1 and 2, 2006, Lowell Exploration's camp at Piuntz on the Warintza property was attacked by members of the Shuar communities. On December 26, 2006, the National Mining Directorate was asked to take relevant actions to order eviction and guarantee immediate re-entry into the concessions. Such request has not been granted to date because, upon the issuance of the new Mining Law, the mining authorities must first make the mining project known among the communities. This activity is currently being undertaken, as described in Section 4.4. The company ceased work because of the attack and subsequent political failure to resolve the issues that led to the attack. Lowell Copper advises the authors that no exploration work has been done on the project since 2006, such information having been confirmed by the letters of December 21, 2012 and April 27, 2018, described in Section 2.5.1 of this report and the affidavits effective March 19, 2013, and June 22, 2018, described in Section 2.5.2 of this report.

6.1 Prior Resource Estimates

NI 43-101 describes the manner in which resource estimates may be disclosed, and specifies that such estimates must comply with guidelines set out in the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines, issued in 2000 (hereinafter referred to as CIM 2000), and modified with adoption of the CIM Definition Standards - For Mineral Resources and Mineral Reserves in 2005 ("CIM 2005") and again in 2010 and 2014 (hereinafter referred to as CIM 2014). Some details of CIM 2014 appear in Section 14.0 of this report. In April 2018 the document was available on the internet at:

http://web.cim.org/standards/MenuPage.cfm?sections=177&menu=178

Prior to the authors' preparation in 2006 of the first resource estimate that conformed to CIM Guidelines and reporting following NI 43-101 standards (Section 14.0), three resource estimates, by two different parties, had been prepared since the 2001 drill program at Warintza. None of the three estimates were reported following NI 43-101 regulations.

6.1.1 Vaca and León, 2001

Vaca and León described what they referred to as a "Calculation of Reserves." The use of the term "calculation" is discouraged by NI 43-101 as "estimation" more accurately describes the level of confidence that can be achieved. Though Vaca and León used the term "Proven Reserves", their estimates were not part of a pre-feasibility or more detailed study, incorporating the economic parameters that would be required to qualify their estimates as Reserves in compliance with NI 43-101. Their work would be considered an "Estimation of Resources", had it been done in compliance with NI 43-101. Their term "Proven Reserves" would most closely correspond to the current term "Measured Resources", though the present authors do not believe that the existing data and the methods that were employed warrant a classification as high as "Measured".

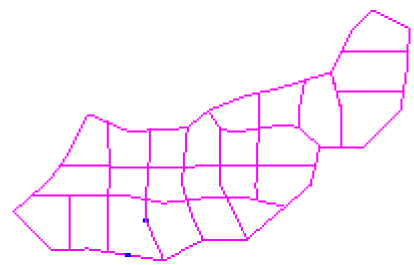
Vaca and León did estimates using two methods, one polygonal and the other sectional. These two estimates comprise two of the three resource estimates mentioned in Section 6.1, above.

6.1.1.1 Estimate Using the Polygonal Method

The methods and parameters employed by Vaca and León to arrive at their polygonal estimate are briefly summarized in point form:

- Each drill hole was assigned a horizontal range of influence of half the distance to each of the nearest neighboring drill holes on all sides. In the case of drill holes on the edge of the array, not surrounded by other holes, molybdenum in soil samples was used as a guide to subsurface mineralization and thus as an indication of the horizontal influence to assign in those directions where drill hole data were not available. Figure 6.1 illustrates the polygons used by Vaca and León.

Figure 6.1: Polygons Used in Vaca and León Resource Estimate



Plan view, north up. The east-west dimension of the polygon array is about 1,050 meters. This figure is intended only to illustrate the method employed, not to show details of the work.

- Each polygon was assigned a vertical range according to the total length of the mineralized intercept in the corresponding drill hole.
- Each polygon was assigned a composited grade based on the average grade over the mineralized length of the drill hole. Whether length-weighted averaging was used is not explicitly stated in Vaca and León, 2001.
- Specific gravities had been measured using a water immersion method of samples at several locations in each drill hole. The locations had been chosen to represent the varied characteristics of the rocks. There were between 4 and 16 measurements of specific gravity for each drill hole. For the purpose of the resource estimate the specific gravity measurements for each drill hole were averaged.
- The estimates in Table 6.1 include a number for CuEq (copper equivalent grade). Vaca and León state that the copper equivalent grade was "… a result of applying the proportions or transformations established in the methodology of the investigation." Elsewhere they state that the copper equivalent grade was calculated "… considering molybdenum as the co-product of greatest interest, for this project." The present authors have not found any further details concerning the calculation of copper equivalent grade and are unsure whether molybdenum was the only co-product considered.
- Vaca and León had differentiated three types of mineralization; these were leached, enriched and primary[8]. For the most part their estimates (Table 6.1) lump the enriched and primary material together. They do present one estimate for supergene (enriched) material, but that estimate is stated without a cutoff grade.

[8] The leached, enriched and primary zones are described in sections 7.2 and 14.0 of this report.

Table 6.1: Summary of Vaca & León Polygonal Resource Estimate

Cutoff Grade (Cu %)	Au ppb	Cu %	Mo ppm	CuEq %	Millions of Tonnes
Supergene (Enriched) plus Primary					
1.00	121.11	1.4479	317.91	1.7071	8.22
0.90	108.57	1.3053	298.43	1.5461	11.10
0.80	97.39	1.1619	284.10	1.3868	27.03
0.70	93.53	1.0662	304.90	1.3039	37.47
0.60	84.64	0.9788	318.05	1.2188	47.01
0.50	71.01	0.7966	317.84	1.0302	67.67
0.40	70.88	0.7959	321.65	1.0319	83.48
0.30	65.49	0.7207	309.07	0.9472	95.73
Supergene Only					
	59.69	0.7163	315.12	0.9437	72.05
Overburden (Leached)					
Overburden	72.80	0.0684	347.40	0.3221	47.74

Notes: This table is copied, with some re-formatting and translation to English, from Table 7 of Vaca and León, 2001. The precision shown is derived from the source document.
Au = gold, Cu = copper, Mo = molybdenum, CuEq = copper equivalent

Equinox, Solaris and the report authors do not consider the historical polygonal resource estimate presented in Table 6.1 to be current. A qualified person has not done sufficient work to classify the historical estimate as current. Accordingly this estimate should not be relied upon.

6.1.1.2 Estimate Using the Sectional Method

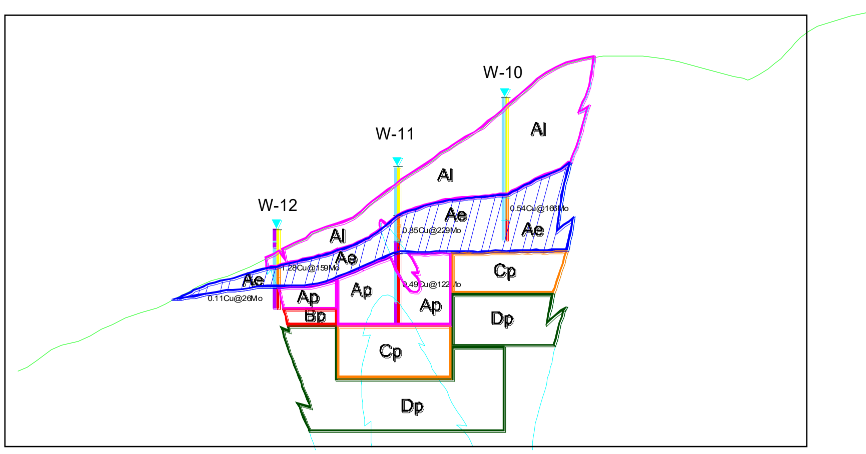
The methods and parameters employed by Vaca and León to arrive at their sectional estimate are briefly summarized in point form:

- Nine north-south sections, spaced 100-meters apart, were used.
- The method employed a geological interpretation, estimating volumes within geological and structural boundaries.
- Drill holes were assigned an influence of half the distance to the next drill hole. Those holes on the edge of the drill-hole array were assigned influences of 100 meters on those sides where there are no bounding drill holes.
- Four types of blocks were designated. The four types are described below and are illustrated in Figure 6.2:
    - Type A: extending from their corresponding drill hole to a distance of 50 meters. In some instances half the distance to the nearest drill hole was used.

- Type B: extending 50 meters horizontally from the limits of Type A blocks, unless limited by adjacent holes or changes in the style of mineralization. These were assigned the same grades as adjacent Type A blocks in the same mineralized zone.
- Type C: extending 50 meters below the lower limits of Type A blocks. These were assigned the same grades as adjacent Type A blocks in the same mineralized zone.
- Type D: extending 50 meters laterally from the limits of Type C blocks. These were assigned grades “equal to or less than” the grades in the Type A blocks on which they depend.

- Drill-hole grades and specific gravities were composited within each of the leached, enriched and primary zones, using the block boundaries.
- In the case of drill holes that were not deep enough to penetrate the primary mineralization, grades in the primary zone below the shallow holes were estimated from adjacent drill holes. This is best explained with reference to an illustration, as in Figure 6.2.
- In the case of those sections on which no drill hole penetrated the primary mineralization, grades in the primary zone were estimated from adjacent sections.

Figure 6.2: Illustration of the Sectional Method of Vaca and León



Extracted from Figure 9 in Appendix 6 of Vaca & León, 2001. Blue hatching represents the supergene zone. Leached zone above supergene, primary zone below. Grades in the block Cp, below W-10, were estimated to be the same as the grades intercepted in hole W-11.

The results of Vaca and León’s sectional resource estimate appear in Table 6.2.

Table 6.2: Summary of Vaca & León Sectional Resource Estimate

Cutoff Grade (Cu %)	Au ppb	Cu %	Mo ppm	CuEq %	Millions of Tonnes
Supergene (Enriched) plus Primary					
0.90	150.94	1.6451	326.24	1.9244	7.60
0.80	117.82	1.2789	294.40	1.5253	27.01
0.70	111.51	1.0860	338.13	1.3554	41.7
0.60	100.68	0.9636	338.37	1.2270	63.75
0.50	84.25	0.8180	325.50	1.0645	107.74
0.40	80.53	0.7641	319.95	1.0052	117.26
0.30	74.19	0.6952	313.60	0.9297	136.53
Supergene Only; Blocks of Types A & C					
	66.55	0.7488	320.78	0.9850	92.78
Blocks of Types B & D					
	68.87	0.4956	296.33	0.7155	72.26
Overburden (Leached)					
	66.49	0.1193	331.09	0.3034	56.31

Notes: This table is copied, with some re-formatting and translation to English, from Table 8 of Vaca and León, 2001. The precision shown is derived from the source document.
Au = gold, Cu = copper, Mo = molybdenum, CuEq = copper equivalent

Equinox, Solaris and the report authors do not consider the historical sectional resource estimate presented in Table 6.2 to be current. A qualified person has not done sufficient work to classify the historical estimate as current. Accordingly this estimate should not be relied upon.

6.1.1.3 Discussion of the Polygonal and Sectional Resource Estimates

The polygonal and sectional resource estimates of Vaca and León (2001) were not done with the intention of reporting in accordance with the disclosure and reporting requirements set forth in NI 43-101 and CIM 2014. Their purpose was to give the then-operators of the Warintza Project an idea of where the project stood with respect to resources using internal guidelines. The estimates served that purpose. They are presented in this report as a matter of historical record, not as current estimates that meet NI 43-101 reporting standards.

6.1.2 Marín Suárez, 2005

In February 2005, Dr. Ing. Alfredo Marín Suárez issued an estimation of the resources at Warintza, at the request of Lowell Exploration. Marín Suárez used the same database as had Vaca and León four years previously. He used the leached, enriched and primary zones as earlier described by Vaca and León (see Section 7.2.3 of this report for descriptions of these zones). Marín Suárez prepared numerous diagrams, including histograms, probability plots, variograms and correlation diagrams for each element of interest in each of the three zones. There is little discussion or interpretation of the statistical diagrams.

Marín Suárez states that he estimated the resources using "the kriging technique of Matheron". Cross sections and a block diagram are presented. There is no additional detail in the report as to the estimation procedures. Results are reported in three separate tables, one for each of the three mineralized zones. They appear in Table 6.3, copied, with some re-formatting, from Marín Suárez, 2005.

Table 6.3: Measured and Indicated of Marín Suárez, 2005

Cut-Off (Cu %)	Tonnes	Cu (%)	Mo (ppm)	CuEq (%)
Leached Zone				
0.00	58,529,688	0.08	303	0.27
0.35	367,188	0.44	397	0.69
0.40	264,375	0.46	396	0.71
0.50	44,063	0.54	455	0.82
Supergene Enriched Zone				
0.00	79,708,750	0.58	191	0.70
0.35	71,601,750	0.62	195	0.74
0.40	67,351,625	0.63	197	0.75
0.50	50,683,875	0.69	205	0.82
0.70	17,091,250	0.86	248	1.01
Primary Zone				
0.00	111,458,750	0.48	247	0.63
0.35	72,324,688	0.63	224	0.77
0.40	67,739,750	0.64	219	0.78
0.50	51,916,313	0.70	217	0.84
0.70	19,435,813	0.89	258	1.05

Notes: Table copied from tables in Section 5 of Marín Suárez, 2005.
CuEq = copper equivalent, calculated using the relationship 400 ppm Mo = 2,500 ppm Cu (0.25% Cu).
The term "Measured and Indicated" is used in this table as it was in the original report. Its use in this manner is not in accordance with NI 43-101 and CIM 2014 regulations and guidelines. See the following discussion.

Equinox, Solaris and the report authors do not consider the historical kriged resource estimate presented in Table 6.3 to be current. A qualified person has not done sufficient work to classify the historical estimate as current. Accordingly this estimate should not be relied upon.

6.1.2.1 Discussion of the Marín Suárez Estimate

The Marín Suárez report does not contain any statement as to whether the resource classification used is intended to comply with any published standard. It is not in compliance with NI 43-101 and CIM 2014 standards, nor is there any indication that it was intended to be. "Measured" and "Indicated" resources are terms used in CIM 2014, but these are two classes and must be reported separately in order to be in compliance. There is no indication that any data verification or review of the quality control and quality assurance data was done, tasks that are critical to provide enough confidence to give a resource a classification as high as Indicated. This resource estimate is reported here as part of the historical record of the Warintza property but is not a current resource in compliance with NI 43-101.

6.1.3 Summary Comment Concerning Historic Resource Estimates

The historical resource estimates described in Section 6.1 and its subsections are superseded by the estimate described in Section 14.0 of this report. The authors deem the estimation procedures described in Section 14.0 to be appropriate for an estimate reported in accordance with the disclosure and reporting requirements of NI43-101 for the Warintza deposit at its present stage. The procedures described in Section 6.1 relating to the historic estimates served the estimators' purposes at the times the estimates were done, but there is no indication that compliance with NI43-101 was one of their purposes.

In Sections 11.6 and 12.0 of this report the authors describe their review of quality control and quality assurance information and the steps they took to verify the data used in the current resource estimate. The authors consider such a review and verification to be necessary to produce an estimate in compliance with NI43-101. There is no indication that similar reviews and verification were mandated or done in support of the historic estimates described in Section 6.1.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Geological Setting

7.1.1 Regional Geological Setting

(see Figure 7.1)

The discussion that follows is translated and adapted from Vaca and León, 2001.

The Andean Cordillera is divided into two sub-parallel ranges, the Cordillera Real on the east and the Cordillera Occidental on the west, with the inter-Andean valley between them. The Warintza Project lies in the Pangui region, in the southeastern part of the Cordillera Real.

In the early Mesozoic the evolution of the northwestern margin of South America was controlled by a tectonic-magmatic subduction regime. Starting in the late Jurassic there was accretion of oceanic and continental terranes. The resulting collage of different terranes was accreted onto the Amazon craton. The Warintza deposit and other porphyry copper deposits in the vicinity are in the Salado Terrane and plutons that intrude it.

The Salado Terrane represents a back-arc basin related to a lower Jurassic island arc. The Santiago Formation, part of the basin assemblage, forms part of the basement in the Warintza area. It is comprised of marine limestones, mudstones, sandstones and pyroclastic rocks.

In the middle to upper Jurassic the local environment was a continental volcanic arc with associated sedimentation. The Misahuallí and Chapiza formations were deposited in this environment and now form part of the basement at Warintza. The Chapiza Formation consists of a sequence of clastic continental sedimentary rocks with some intercalation of pyroclastic material near its top. The Misahuallí is a sequence of red mudstones, sandstones, conglomerates and tuffaceous sedimentary rocks. The upper member of the Misahuallí crops out in the vicinity of Warintza, where it consists predominantly of calc-alkaline volcanic rocks: basalts, andesites, dacites and pyroclastic rocks with few sedimentary rocks.

The Zamora Batholith intrudes the Jurassic supracrustal rocks. It is a calc-alkaline, multi-phase intrusion with variable compositions including quartz diorite, tonalite, and granodiorite. Late phases include stocks of quartz latite, monzogranite and quartz monzonite.

7.1.1.1 Porphyry Copper Deposits in the Regional Context

The discussion that follows is copied from a report prepared by Lowell Exploration. Citations are as presented in the Lowell Report, but are not in the references listed in Section 19.0 for the present report.

" **<u>Regional Geology</u>**

" Porphyry copper deposits in the Pangui region are associated with Upper Jurassic late porphyry intrusive phases of the Jurassic batholiths of the Abitagua Subdivision in the Cordillera Real and sub Andean regions of Ecuador. The Abitagua Subdivision (Aspden and Litherland, 1992) includes three large batholiths including the Zamora Batholith that hosts the known deposits.

“ The Mesozoic batholiths extend into Colombia where they occur as a belt of Triassic to Jurassic age along the eastern side of the Central Cordillera and in the Santander Massif near the border with Venezuela (Hall and Calle, 1982). The prospective belt also extends into northern Peru. Porphyry copper mineralization is present not only in southeast Ecuador but also at the Mocoa deposit in southern Colombia (Sillitoe and Jaramillo, 1982).

” Radiometric dating suggests the intrusion of the batholiths took place between 150 and 190 My [*million years ago – MDA*] (Aspden and Litherland, 1992; Aspeden et al., 1992a). However, dating by Billiton suggests that the porphyry mineralization is associated with the younger Upper Jurassic porphyry intrusive phases of the Zamora Batholith with ages of 152 to 157 My. There is a definite association between the mineralized porphyries and the batholiths as no mineralized porphyries are found outside the batholith in the Copper Belt area.

“ **Regional Structure**

” North and northwest lineaments predominate in the area and control the emplacement of the Zamora Batholith and smaller plutons. There is a marked linear distribution of the soil geochemistry anomalies in the San Carlos to Panantza district, which is also reflected in the northwest oriented distribution and elongation of the mineralized porphyries and the associated mineralized and altered zones, but the regional trend of porphyry copper belt is nearly North-South.

“ **Regional Geophysics**

“ A regional helicopter magnetic and electromagnetic survey was flown in January to February 1999 over the Belt. … The porphyries are partially encircled by resistivity highs and are centered on reduced to pole magnetic lows.”

7.1.2 Local and Property Geology

(see Figure 7.2)

Only about 7 % of the area of the Warintza Concessions has been examined in sufficient detail to be represented on the geological map of the property. The present geological map is based on one prepared by Lowell Exploration in September 2005. That map is the latest iteration in a process of geological mapping and interpretation that began with Billiton.

Four broad groupings of rocks predominate in the mapped part of the Warintza Concessions. Those are the Jurassic supracrustal rocks, the Zamora Batholith, an early mineralized quartz latite porphyry, and a varied group of smaller, relatively late intrusions, most in the form of dikes. The supracrustal rocks and the Zamora Batholith pre-date the mineralizing event. The early quartz latite is probably related to the mineralizing event. The smaller intrusions are probably intra- to post-mineralization. Intrusions that are clearly post-mineralization are rare in the drilled area of Warintza Central.

The descriptions that follow make use of the terms “Warintza Central,” “Warintza East,” “Warintza West” and “Warintza South.” These terms refer to mineralized or geochemically anomalous zones that are described in Section 7.2 of this report. Their locations are illustrated on Figure 7.2.

The descriptions that follow are derived for the most part from Vaca and León, 2001. Other sources are acknowledged where used in the text.

7.1.2.1 Pre-Mineralization Supracrustal Rocks: Chapiza – Misahuallí Formations

For mapping at the property scale, this term is used to group supracrustal rocks that pre-dated or were contemporaneous with the emplacement of the Zamora Batholith. They are mapped in the central and eastern part of the property. They are known to exist at Warintza West, but there they have not been mapped sufficiently to appear on Figure 7.2.

In the Warintza Central area, rocks assigned to the Chapiza – Misahuallí have been observed in drill holes. There they consist of andesitic flows and porphyries containing phenocrysts of hornblende and plagioclase. Small quartz phenocrysts ("quartz eyes") are present but rare.

Where they appear on Figure 7.2 in the Warintza East area, the Chapiza – Misahuallí rocks have been metasomatized and are labeled as metasomatic units on the map.

7.1.2.2 Granitic Rocks of the Zamora Batholith

Rocks recognizable as belonging to the Zamora Batholith are found in the valley of the Río Piuntz. Their pattern of distribution suggests an approximate east-west trend, possibly influenced by regional structural trends. Zamora rocks are also found south of Warintza Central and Warintza East. Rocks believed to be part of the batholith were intercepted in some drill holes at Warintza Central.

In relatively fresh outcrops, the Zamora rocks have granular to hypidiomorphic textures with medium crystal sizes. Dark minerals, mainly biotite and hornblende, typically comprise about 12 % of the rock. The dark minerals are intergrown with quartz and plagioclase. The composition of the rocks is in the granodiorite to tonalite range.

7.1.2.3 Early Quartz Latite Porphyry

Vaca and León (2001) suggest that the early porphyry is a late, fractionated phase of the Zamora Batholith. The term "early" porphyry comes about because it appears to have been emplaced just before or contemporaneously with the earliest mineralization. As a field term the early porphyry has been described as quartz diorite, but Vaca and León describe petrographic work by J. Guilbert (2000) in which it was found to be a quartz latite. The porphyry contains phenocrysts of subhedral feldspar and rare quartz, in a matrix that originally consisted of hornblende and biotite with some plagioclase, quartz and minor potassium feldspar.

In reports pre-dating 2001, an "intra-mineral porphyry" was described. One outcome of the 2001 drilling was the conclusion by Vaca and León that the so-called "intra-mineral porphyries" were really varied products of hydrothermal alteration affecting the early quartz latite porphyry. (Alteration is discussed in Section 7.2.1 of this report).

7.1.2.4 Late Dikes

The late dikes have varied compositions. They are considered to be late- to post-mineralization. Some of the late dikes described in the drill logs are in fact mineralized, though less so than the early porphyry. The present authors did not see any unmineralized dikes in the drill core. Some of the more notable types are described in the following sections.

7.1.2.4.1 Hornblende Porphyry Dikes

The characteristic hornblende porphyry dikes are found in the south-central part of the area of intense hydrothermal alteration. They are 10 to 15 meters thick and appear to strike approximately northwest – southeast. They contain phenocrysts of plagioclase and hornblende in a matrix of fine grained plagioclase, quartz and mafic minerals. Quartz eyes are present but rare.

These rocks contain traces of pyrite and magnetite but lack any mineralized veinlets. They are believed to be late- to post-mineralization. These hornblende porphyries were intercepted in the tops of holes W-22 and W-30, and in several other parts of W-30, where they exhibit low copper, molybdenum and gold values by contrast with the enveloping rocks.

7.1.2.4.2 Diabase or Andesite Dikes

These are found in some of the drill holes that intercepted the volcanic basement rocks as drill-hole intercepts of no more than 5 meters. They are most abundant in holes W-13 and W-16, on the eastern side of the drill-hole array, in an area underlain by the metasomatized equivalent of the Chapiza Formation. These dikes are thought to be post-mineralization, and they do have very low copper, molybdenum and silver contents compared to the enveloping rocks.

The diabase or andesite dikes are aphanitic or locally porphyritic, with andesitic compositions. They tend to be found in shears near fault zones. They do not appear in Figure 7.2.

7.1.2.4.3 Rhyodacite to Rhyolite Dikes

Dikes with rhyodacitic to rhyolitic compositions have been identified in the area of Warintza West. They are late, cream- to pink-colored dikes, exhibiting strong quartz-sericite alteration. Quartz eyes are prominent, in a fine-grained matrix of quartz and feldspar. These rocks contain pyrite, but samples have yielded low copper and molybdenum values.

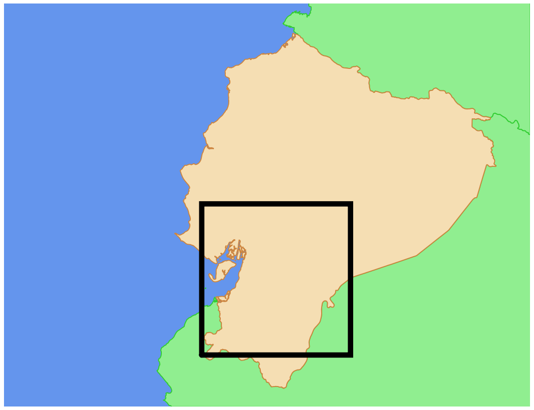
7.1.2.5 Structural Geology

The only structural features described in the Warintza area are faults. Folding of the supracrustal rocks, if it exists, has not been mapped. The character of the recognized deformation is generally brittle.

Studies of satellite images and photo-interpretations (Boshier, P., 2000, referenced in Vaca and León, 2001) identified regional lineations with an east-northeast – west-northwest orientation. The intersections of these structures with northwest-southeast and northeast-southwest structures appear to influence the emplacement of intrusive bodies (Vaca and León, 2001).

On a more local scale Vaca and León (2001) described large-scale east-west-trending faults in the vicinity of Warintza that they interpreted as distensional structures. They interpreted these as the principal conduits for the Jurassic magmas. A subsequent regime of compressional tectonics produced north-south-, northeast-southwest- and northwest-southeast-trending faults. Each of these orientations is exhibited by one or more of the faults illustrated in Figure 7.2.

Area Covered by Map



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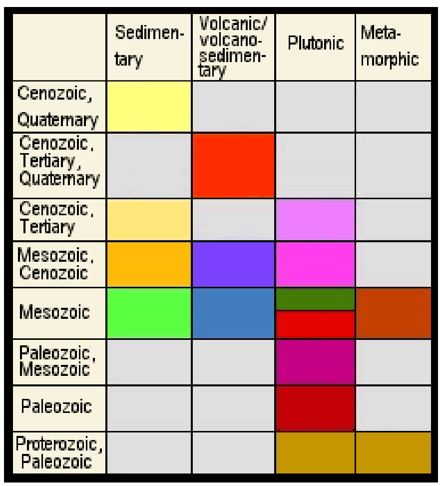
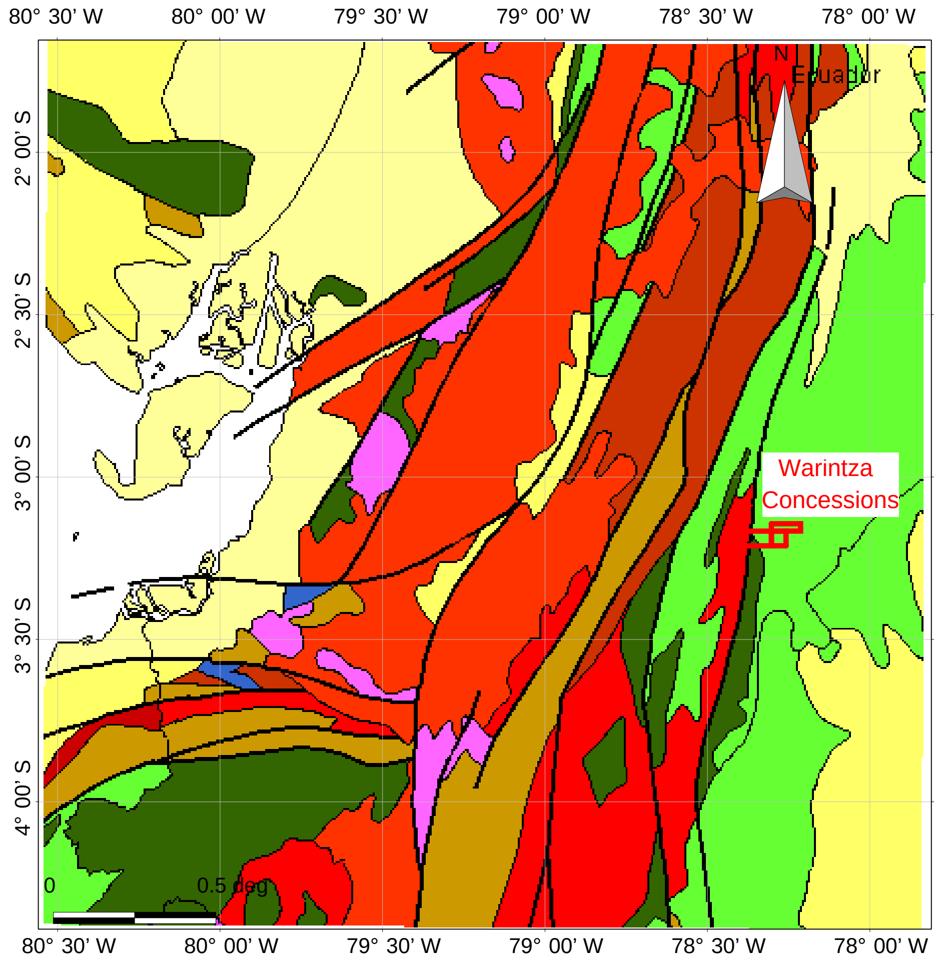
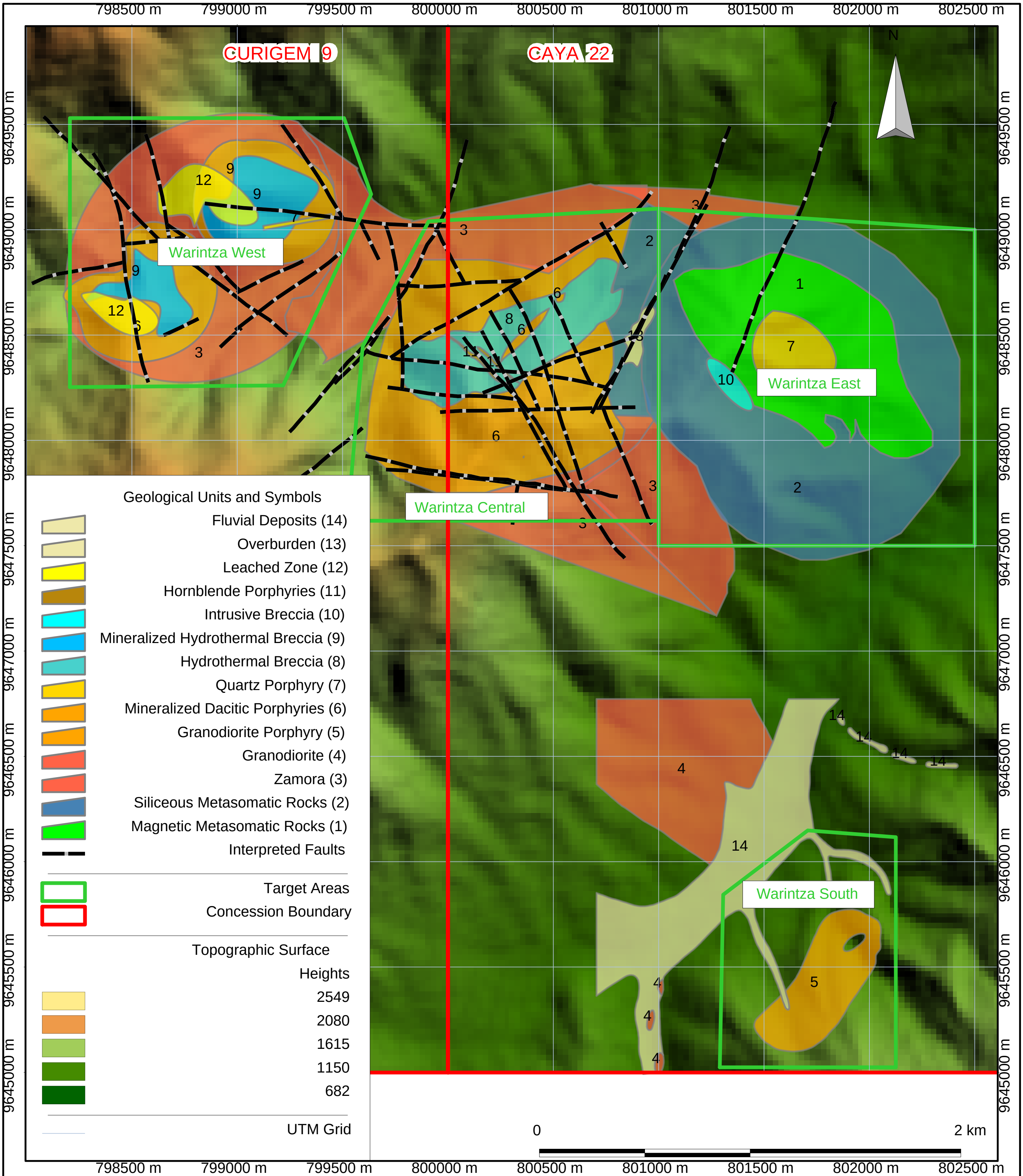




Warintza Project	Assembled by: PAR	Regional Geology	Latitude-Longitude Projection 1 degree is approximately 110 kilometers	Figure 7.1
Lowell Mineral Exploration	Geology from GIS Andes online map by BRGM			14-May-06



Warintza Project	Drawn By: PAR	Property Geology	UTM Grid Based on PSAD 56	Figure 7.2
	Data from Lowell Mineral Expl.			07/03/2013

7.2 Mineralization

This section includes descriptions of the alteration and the mineralization found on the Warintza property. The alteration is discussed in this section as it is considered to be intimately related to the mineralization. Unless otherwise stated, in this section (7.2) the discussion focuses on the Warintza Central area, where more detailed work has been done than in the other known mineralized target areas. The other target areas are discussed in Section 7.3.

7.2.1 Alteration

Most of this discussion of alteration is based on observations from the Warintza Central area, where all of the drilling completed to date took place.

7.2.1.1 Potassic Alteration

The early quartz latite porphyry exhibits an alteration assemblage that consists of variable proportions of hydrothermal biotite, quartz, and sericite. The hydrothermal biotite is thought to be an early alteration product, whereas the quartz-sericite may be a later overprint related to the hydrothermal stockwork breccia described in Section 7.2.1.3. The hydrothermal biotite is variably chloritized.

This alteration assemblage is found in outcrops in a relatively restricted area in the northern part of Warintza Central. The best examples in drill holes are in W-18 and W-19, along the northern edge of the drill-hole array. The potassic alteration may originally have been more prominent and may have been the characteristic alteration of the quartz latite porphyry. The quartz-sericite overprint may have destroyed the earlier potassic assemblage in most of the part of Warintza Central that has been drilled.

7.2.1.2 Quartz Sericite Alteration

Vaca and León (2001) described several quartz-sericite dominant alteration assemblages, including:

- Quartz – sericite – secondary biotite – chlorite – illite. This assemblage is thought to be related to the hydrothermal stockwork breccia, described in 7.2.1.3.
- Quartz – sericite – chlorite – illite. This is the most common style of alteration in Warintza Central and Warintza West.
- Quartz – sericite – silica. This assemblage is found in Warintza Central and Warintza West.
- Quartz – sericite – chlorite – epidote.

7.2.1.3 Hydrothermal Stockwork Breccia

Perhaps the most important alteration product that plays host to mineralization is the hydrothermal stockwork breccia. Vaca and León (2001) chose to describe the hydrothermal breccia as a lithologic type, whereas the present authors have classed it as an alteration product. This is simply a different emphasis for classification purposes, not a difference of opinion as to its nature.

The hydrothermal stockwork breccia underlies much of Warintza Central, and most of the drill holes were collared within it. The texture grades from a stockwork of quartz-sulfide veinlets to a crackle breccia to a true breccia of altered rock fragments in a cement of quartz, sericite, chlorite and sulfides. For the most part the protolith was the potassically altered quartz latite porphyry, though Vaca and León (2001) recognized some fragments of biotite-altered volcanic basement. In drill core the present authors noted a much greater proportion of stockwork and crackle breccia than of true breccia with rotated fragments. Where breccia is present, fragments predominate over cement. The entire unit is pervasively altered by the quartz-sericite-sulfide assemblage.

A "mineralized hydrothermal breccia" has also been identified in Warintza West. Vaca and León (2001) describe the alteration in Warintza West as having a higher proportion of sericite relative to quartz than does the alteration in Warintza Central. They suggest that the alteration in Warintza West may be more retrograde than in Warintza Central, involving a significant component of meteoric waters. It is not clear whether the mineralized hydrothermal breccia in Warintza West is part of the same, or a later event, than the hydrothermal stockwork breccia in Warintza Central.

7.2.1.4 Late Hydrothermal Breccia

Vaca and León (2001) describe a later hydrothermal breccia encountered in two drill holes near the northern and southern edges of the drill-hole array. This breccia contains displaced and rotated fragments of rock in a cement dominated by milky quartz. It contains pyrite, but has relatively low contents of copper and molybdenum, though quartz-pyrite-molybdenite veinlets are sometimes found in it.

7.2.1.5 Silicification

South of the main body of hydrothermal stockwork breccia there is a zone in which silicification has overprinted earlier quartz-sericite alteration. Some similar alteration is found in low-lying parts of Warintza West, along the main drainage. This is believed to be a late stage of alteration, perhaps related to some of the late dikes.

7.2.1.6 Propylitic Alteration

The quartz-sericite or phyllic alteration zone at Warintza is surrounded by a propylitic zone that affects rocks of the Zamora Batholith. The propylitic zone is characterized by partial chloritization of the mafic minerals, and minor epidote found mainly in fractures.

7.2.2 Relationship of Alteration to Primary Mineralization

Primary mineralization at Warintza Central appears to be related to two principal events. The intrusion by the early quartz latite porphyry brought with it the potassic alteration and early copper-molybdenum mineralization. The hydrothermal stockwork breccia event superimposed the quartz-sericite alteration zone on the earlier potassic zone, partially destroying the latter. The hydrothermal event added to and may have re-distributed some of the earlier copper mineralization.

Most of this discussion of the relationship between alteration and mineralization is based on information from Warintza Central. Descriptions relating to other target areas on the property are explicitly identified as such.

The deposit model for the resource estimate described in Section 14.0, as defined by existing drilling and at a cutoff of 0.30% CuEq, is approximately one kilometer long, 400m wide, and 300m thick. It trends approximately N60ºE.

7.2.2.1 Mineralization Related to the Quartz Latite Porphyry

Mineralization related to the quartz latite porphyry is most recognizable in those parts of the porphyry that are least affected by the later hydrothermal event. The concentration of sulfides related to the quartz latite porphyry, based on visual estimates by the core loggers, is in the order of 1 – 2 %, and the pyrite:chalcopyrite ratio is in the order of 8:2 or 7:3. Disseminated chalcopyrite is found associated with secondary biotite and chlorite. Chalcopyrite is rare in veinlets, and where present, it is subordinate to the assemblage quartz + pyrite + molybdenite + chlorite. The copper grade ranges between about 0.15 to 0.45 % Cu, varying with the location in what remains intact of this early phase of mineralization.

Molybdenite associated with the quartz latite porphyry and potassic alteration is found disseminated, in quartz + molybdenite veinlets, in quartz + molybdenite + pyrite + chalcopyrite veinlets, in pyrite + molybdenite + (chalcopyrite) veinlets, and rarely, in molybdenite veinlets. Molybdenum grades are typically in the range 250 to 360 ppm Mo.

7.2.2.2 Mineralization Related to the Hydrothermal Stockwork Breccia

This hydrothermal event produced strong quartz-sericite alteration, may have remobilized some of the earlier mineralization, and brought with it minor disseminated copper and considerably more copper in veinlets. It is not clear that the hydrothermal event added molybdenum to the system, though it probably remobilized some of it, increasing the molybdenum grades locally. The copper grades are highest where the quartz-sericite alteration is most intense, with the original porphyry textures of the quartz latite largely obliterated. Copper grades in the primary mineralization are in the order of 0.70 % to 0.80 %, with molybdenum in the range 250 ppm Mo to above 600 ppm Mo. Visual estimates of the sulfide concentrations are in the order of 3 to 5 %, with a pyrite:chalcopyrite ratio in the range 2:3 to 1:1. Chalcopyrite is found disseminated, in fractures, and in veinlets with quartz. Molybdenite is found disseminated and in veinlets. Veinlets are present with the combinations quartz + molybdenite, quartz + pyrite + chalcopyrite + molybdenite, and quartz + pyrite + chalcopyrite.

7.2.3 Supergene Modification of the Mineralization

This discussion of the effects of supergene processes on the mineralization pertains mainly to the Warintza Central area, where drill hole data provide geologic and grade information in the third dimension.

Supergene processes have partially re-distributed the copper mineralization. In a general sense, this results in three styles of mineralization: a leached zone in which primary sulfides have been destroyed, a supergene-enriched zone where copper leached from the oxidized zone has been re-deposited as secondary sulfide minerals, and a primary zone where the primary sulfide mineralization is largely intact and no supergene enrichment has taken place. In broad terms the distribution of the three zones is as would be expected; the oxidized zone is uppermost; the zone of supergene enrichment lies below it; and the zone of intact primary mineralization is at the bottom.

The thicknesses of the leached and supergene zones are defined from the drill data. When present, the leached zone averages 50 m thick and ranges from 20 to 140 m thick. The enriched zone averages 90 m thick and ranges from 15 to 240 m thick.

In detail, the zonation is more complex. The area is rugged and may have been tectonically active during the period of the supergene re-distribution of mineralization. The water table probably varied over time as the supergene mineralization formed. Subsequent and continuing erosion, at variable rates influenced by the topography, has removed parts of each of the mineralized zones.

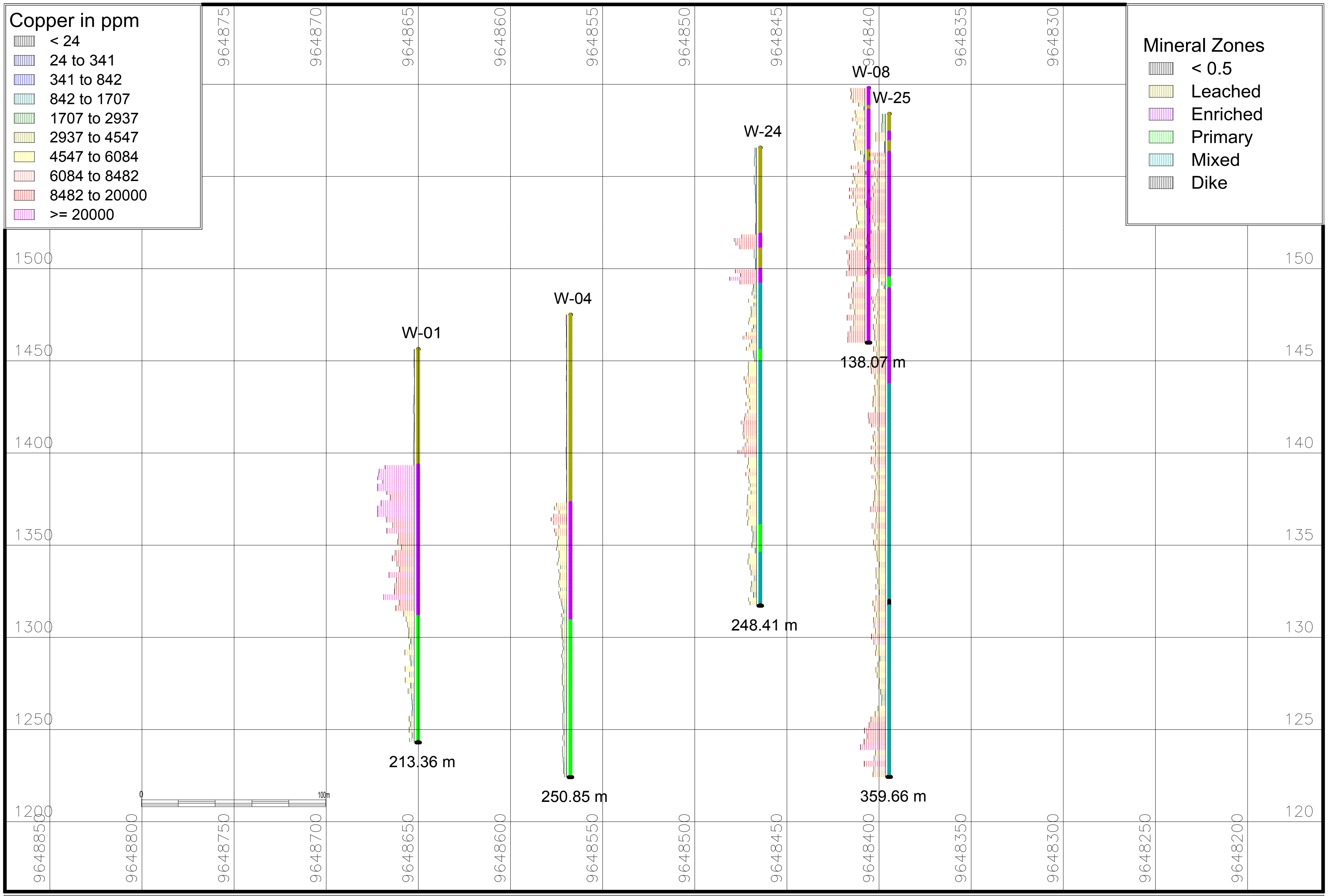
Some drill holes intercepted well developed, cohesive zones of supergene copper enrichment, beneath a consistently leached cap. Others intercepted one or more "perched" zones of supergene enrichment with leached material above and below. Many holes contain mixed zones of supergene and primary mineralization, which were modeled as supergene for this resource estimate. The authors noted that most of the supergene chalcocite mineralization they examined in drill holes co-exists with primary chalcopyrite; in other words, most of the supergene mineralization is to some degree mixed with primary mineralization.

illustrates the variable configuration of the leached and supergene zones on section 800,400 East (the section is identified by its UTM easting). Hole W-01 exhibits simple zoning, with an upper leached zone about 60 meters thick containing low copper grades, a single middle cohesive enriched zone about 75 meters thick containing relatively high copper grades, and the lower primary zone with intermediate copper grades. W-24 is more complex, having a thin supergene zone within the leached cap, another thin supergene zone at the base of the leached cap, and a mixed zone with intermediate copper grades occupying most of the hole. Hole W-25 has only a thin leached cap, a supergene zone about 125 meters thick with a thin intercalation of primary mineralization, and at least 210 meters of mixed primary and supergene mineralization, in which the hole ended.

Vaca and León (2001) observed that supergene-enriched zones tend to be thicker at higher elevations, and thinner but higher grade at lower elevations. Comparing holes W-25 and W-01 in Figure 7.3, that appears to be the case. In detail however, considering all of the drill holes, the grade and thickness variation is too complex to be described by a simple elevation relationship, though the elevation is certainly one factor.

Molybdenum is relatively immobile during supergene processes and does not appear to have been re-distributed. The authors have noted, however, that some molybdenite grains in the oxidized parts of the mineralization are rimmed by a yellowish mineral. This could be ferrimolybdite, in which case it would have implications with respect to the recovery of molybdenum in the oxidized zone.

The overall distribution and conformation of the mineralization is discussed further in Section 14.0 of this report.



Warintza Project	Drawn by PAR	Mineral Zones and Grades on Section 800400 E		Figure 7.3
	Data From Lowell Mineral Exploration			10 May 2006

7.3 Mineralized Target Areas

(see Figure 7.2)

The preceding discussions of mineralization have focused on Warintza Central, that being the best-studied and the only drilled part of the property.

Other target areas exist, the most prominent being Warintza West followed by Warintza South and Warintza East. Work by Lowell Exploration has also brought to light mineralization on the southern side of Warintza Central, south of the drilled area, in an area referred to as El Trinche.

7.3.1 El Trinche

The area that Lowell Exploration personnel refer to as El Trinche is on the south side of the ridge whose north flank is occupied by the drilled area of Warintza Central. In those maps accompanying this report that show outlines of target areas, the authors have drawn the boundary of Warintza Central to include the El Trinche area. It is not yet, however, established that the mineralization in the drilled area and that in the El Trinche area are indeed part of the same body. The El Trinche area as known at present lies between about 9,647,750 and 9,648,000 north, and between about 800,300 and 800,600 east. There has been little sampling to the immediate south of these limits, so it is conceivable that additional sampling could result in the discovery of extensions of the El Trinche mineralized area.

For sampling purposes, Lowell Exploration has driven four short adits in the El Trinche area. In those adits and in outcrops, mineralization has been identified that consists of disseminated pyrite, chalcocite and some chalcopyrite. Twenty-four of 37 rock samples from the area contain copper exceeding 1,000 ppm, with the highest grade of 8,100 ppm Cu coming from a 1 meter by 1 meter panel sample. Molybdenum values appear to be negligible in the El Trinche area.

The following description is paraphrased from a description reported by E. Salazar of Lowell Exploration in June 2005:

Visiting the galleries (adits), it was found that the porphyries in the "El Trinche" zone have been affected by strong tectonism with a main direction of 330°; this tectonism has resulted in the development of crackle breccias. Sulfide concentrations in these rocks are between 5 and 10 % by volume; pyrite, some chalcopyrite and chalcocite are the main minerals.

As noted in the first paragraph of this section, El Trinche and the drilled part of Warintza Central are on opposite sides of a rugged ridge. Whether the mineralization on opposite sides of the ridge connects to form a single body is not known, but testing the possibility is warranted.

7.3.2 Warintza West

Pan concentrate samples collected during Billiton's regional work yielded relatively high copper values in streams draining the area that is now referred to as Warintza West (see Figure 9.1). Two pan concentrates also yielded relatively high molybdenum values. In terms of target area size, Warintza West is similar in order of magnitude to Warintza Central, the former covering almost 200 hectares and the latter covering at least 120 hectares, using the outlines that appear on Figure 7.2 and other figures as guides.

Copper in rock chip samples, most of which were collected along drainages, is also relatively elevated in Warintza West (see Figure 9.5 and Figure 9.6), though not so high, as a group, as the rock chip samples from Warintza Central. Conversely however, the surface rock chip samples from Warintza West appear to have slightly higher molybdenum contents than those from Warintza Central (see Table 7.1)[9]. Breccia has been found in shallow test pits within the Warintza West area.

Ronning briefly visited the eastern part of Warintza West, in an area known as Quebrada Pelada. Ronning collected two rock chip samples (see Section 12.3.3 for a description of the sampling). They contained 340 and 520 ppm copper with 170 and 100 ppm molybdenum. The copper values are lower than most of Lowell Exploration's samples but indicate the presence of mineralization. The molybdenum values are consistent with those obtained by Lowell Exploration. Ronning's samples were collected from a stream-washed outcrop of quartz veinlet stockwork in what is probably quartz latite porphyry.

Table 7.1: Summary Statistics, Surface Rock Chip Samples, Central and West

Rock Chip Sample Statistic	Warintza Central	Warintza West
Number of Samples	38	33
Minimum Cu ppm	39	20
Median Cu ppm	2,367	1,230
Mean Cu ppm	3,833	1,670
Maximum Cu ppm	15,961	4,656
Minimum Mo ppm	1	4
Median Mo ppm	30	37
Mean Mo ppm	74	93
Maximum Mo ppm	547	846
Only Billiton's rock chip samples are used in this comparison. The digital database for these samples does not contain descriptions, for which reason they are considered to represent point data, not having known dimensions.		

Lowell Exploration reports chalcocite mineralization in test pits at Warintza West. The authors have not observed these pits.

Soil samples collected from Warintza West have copper values that are similar to those from Warintza Central, but in general, have lower molybdenum values (Table 7.2). This is somewhat surprising, given that rock chip samples from Warintza West have comparable molybdenum values to Warintza Central.

[9] These comparisons of sample populations at Warintza West with those at Warintza Central do not employ formal statistical tests for similarity or differences. They are simply based on examination of Table 7.1

Table 7.2: Summary Statistics, Soil Samples, Central and West

Soil Sample Statistic	Warintza Central	Warintza West
Number of Samples	84	69
Minimum Cu ppm	2	8
Median Cu ppm	398	500
Mean Cu ppm	487	499
Maximum Cu ppm	2,240	1,393
Minimum Mo ppm	below limit	below limit
Median Mo ppm	46	10
Mean Mo ppm	165	28
Maximum Mo ppm	1,234	223

The limited work that has so far been done at Warintza West indicates that the area contains mineralization similar to the more-explored mineralization at Warintza Central. With further work the mineralization at Warintza West will likely be found to differ in detail from that at Warintza Central, but it is probably part of the same mineralizing system and might eventually prove to be an extension of Warintza Central. The prospective area at Warintza West covers at least 120 hectares.

Warintza West and Warintza Central are separated by two deeply incised stream valleys with a comparatively low ridge between the streams. Soil samples from the ridge between the streams contain relatively high copper (see Figure 9.3), but the molybdenum concentrations are not very high (Figure 9.4). There are few rock chip samples from the area between Warintza Central and Warintza West. This area is mapped as being underlain by rocks of the Zamora Batholith, which is considered less prospective than the porphyries at Warintza Central and Warintza West. Still, the presence of copper in soils between the two known areas of mineralization is significant and merits some follow-up.

7.3.3 Warintza East

Warintza East lies immediately to the east of Warintza Central, separated from it by a slight saddle. It has at its center a small body of igneous rock, about 400 meters across in plan view, called quartz porphyry on Figure 7.2. Puente (2001) described it as "Diorite Porphyry with Quartz Eyes." The quartz porphyry is surrounded by an annulus of rock termed "magnetic metasomatic rocks," that is in turn surrounded by an outer annulus of "siliceous metasomatic rocks." The metasomatic rocks are altered versions of the Chapiza – Misahuallí formations that pre-date the intrusive events. There is a small body of intrusive breccia at the head of one drainage. The authors have not visited Warintza East but have seen examples of rocks from the area. Some of them resemble skarn.

Puente (2001) described quartz-sericite alteration as the most important type of alteration in Warintza East. He noted remnants of potassic alteration in some of the drainages, and locally propylitic alteration peripheral to the quartz-sericite zone. All prior types of alteration were overprinted in much of the area by strong silicification. Puente described the silicification as having "erased" pre-existing mineralization.

The most important mineralization that Puente (2001) observed is in the quartz porphyry, where he found 2% sulfides with a pyrite/chalcopyrite/bornite ratio of 5/4/1 associated with intense quartz-sericite alteration. This material yielded copper grades in the order of 4,000 ppm Cu. Near the contact zones of the quartz porphyry, there were up to 3% sulfides, with a pyrite/chalcopyrite ratio of 4/6 and copper grades in the order of 5,000 ppm Cu.

Drill hole W-13 is the closest drill hole to Warintza East, having been drilled near the edge of the area in the silicified metasomatized rocks. It contains anomalous copper values, up to as high as 3,975 ppm Cu, averaging about 1,700 ppm Cu over the entire 92 meters of the hole. Molybdenum grades were more erratic and generally low, but one three-meter interval did contain 442 ppm Mo.

Copper values in soils from Warintza East are similar to the copper values over Warintza Central (Table 7.3). Molybdenum values in soils are considerably lower. Rock samples from Warintza East contain generally less copper than those from Warintza Central, but the Warintza East rocks do contain elevated copper (Table 7.4). The molybdenum content of rocks at Warintza East is similar to the molybdenum in rocks from Warintza Central, in contrast to the lower molybdenum in Warintza East soils.

There is too little information to characterize the mineralization at Warintza East, but the suggestion from existing data is that it is broadly similar in style if not in grade to the mineralization at Warintza Central, but with some skarn-like material. Additional exploration is needed to determine the style of mineralization with more confidence.

Table 7.3: Summary Statistics, Soil Samples, Warintza Central and East

Soil Sample Statistic	Warintza Central	Warintza East
Number of Samples	84	157
Minimum Cu ppm	2	31
Median Cu ppm	398	389
Mean Cu ppm	487	515
Maximum Cu ppm	2,240	2,313
Minimum Mo ppm	below limit	below limit
Median Mo ppm	46	14
Mean Mo ppm	165	29
Maximum Mo ppm	1,234	174

Table 7.4: Summary Statistics, Surface Rock Chip Samples, Warintza Central and East

Rock Chip Sample Statistic	Warintza Central	Warintza East
Number of Samples	38	25
Minimum Cu ppm	39	205
Median Cu ppm	2,367	1,987
Mean Cu ppm	3,833	2,414
Maximum Cu ppm	15,961	6,056
Minimum Mo ppm	1	1
Median Mo ppm	30	68
Mean Mo ppm	74	90
Maximum Mo ppm	547	246
Only Billiton's rock chip samples are used in this comparison. The digital database for these samples does not contain descriptions, for which reason they are considered to represent point data, not having known dimensions.		

7.3.4 Warintza South

Warintza South is about two kilometers south of the main anomaly at Warintza Central. It is described in a recent (as of 2006) report by Lowell Exploration as being an area of subdued topography without rock outcrops. Billiton collected few rock chip and stream sediment samples in the area, but there are three lines of what appear to be ridge-top soil samples that contain relatively high copper values. Concentrations of copper, molybdenum and gold in the soil samples are summarized in Table 7.5, below.

Table 7.5: Summary Statistics, Soil Samples, Warintza South

Soil Sample Statistic	Copper, ppm	Molybdenum, ppm	Gold, ppb
Number of Samples	33	33	33
Minimum	64	1	2.5
Median	589	14	8
Mean	813	40	10
Maximum	2567	185	44

Lowell Exploration has collected 73 rock samples in the Warintza South area, and these demonstrate the presence of copper and molybdenum having the concentrations summarized in Table 7.6, below. The higher copper and molybdenum values are in the vicinity of the mapped porphyry (see below), though not all are within the mapped area of the porphyry.

Table 7.6: Summary Statistics, Surface Rock Chip Samples, Warintza South

Rock Chip Sample Statistic	Copper, ppm	Molybdenum, ppm	Gold, ppm
Number of Samples	73	73	73
Minimum	50	5	0.0025
Median	300	10	0.0025
Mean	468	51	0.004
Maximum	1900	760	0.019
In the digital database all these samples are described as approximately 5 meter channel samples.			

The higher copper and molybdenum values are in the vicinity of the mapped porphyry (see below), though not all are within the mapped area of the porphyry.

There has been little geological mapping in the Warintza South area, but a porphyry is indicated on Figure 7.2, approximately coincident with the anomalous copper in soils. This is a target that merits follow-up surface exploration work.

Neither of the authors has visited Warintza South.

8.0 DEPOSIT TYPES

The Warintza deposit is a copper-molybdenum porphyry-style deposit associated with calc-alkaline igneous rocks. The porphyry-deposit model is well established, and many such deposits are located around the Pacific Rim, including the Andean Cordillera of South America.

Dr. David Lowell of Lowell Exploration has noted that the concentric pattern of silicate and Cu, Mo, Au, Zn zoning at Warintza resembles a number of other porphyries that he has worked on in the Philippines, Papua New Guinea, and Chile.

Economic or potentially economic porphyry deposits contain mineralization distributed within large volumes of rock, at grades that usually require low cost bulk mining to be economic. Most mines based on porphyry deposits are open pits. Thus it is important that porphyry deposits contain large volumes of mineralization relatively near to the surface.

9.0 EXPLORATION

Some of the regional exploration work by Billiton that led to the discovery of the Warintza mineralization has been alluded to earlier in this report. For example, Billiton commissioned a regional helicopter magnetic and electromagnetic survey that was flown over the region in January to February 1999. They found that the areas now known to contain porphyry deposits are partially encircled by resistivity highs and are centered on reduced-to-pole magnetic lows.

This section describes exploration work on or directly related to the Warintza Concessions.

9.1 Pan Concentrate Stream Sediment Survey

(see Figure 9.1 and Figure 9.2)

The earliest mention of exploration specifically directed towards the Warintza area that the authors have found is a description of a pan concentrate stream sediment survey conducted by Billiton (Quevedo et al., 1999). Quevedo et al. describe the hydrographic basin of the Rio Warintza as having an area of approximately 90 square kilometers, within which Billiton's crews collected about 200 pan concentrate samples. It was interpretation of these samples that originally led to the discovery of the Warintza mineralization.

The authors have not found any detailed descriptions of the methods employed to collect the pan concentrates.

Lowell Exploration has a digital data file containing analyses and locations for 241 pan concentrate samples distributed over about 90 square kilometers. These are probably the Billiton pan concentrates. Figure 9.1 and Figure 9.2 are maps showing the results for copper and molybdenum.

9.2 Soil Geochemical Surveys

(see Figure 9.3 and Figure 9.4)

According to Quevedo et al. (1999), Billiton conducted a ridge-crest soil geochemical survey in the area, covering 64.1 kilometers of lines along the crests of ridges. They state that 641 soil samples were collected from the "B" soil horizon. No further details of the methods used are provided.

The results for copper and molybdenum in the ridge-crest soil samples successfully highlighted the four target areas that are the focus of exploration efforts on the project, Warintza Central, West, East and South.

Though the ridge-crest soil samples were spaced a reasonable 100 meters apart, the ridge crests themselves are widely and variably spaced, so that the overall pattern of ridge-crest soil samples was erratic. Billiton decided to undertake a grid of soil samples over the areas of greatest interest, using an east-west base line with north-south cross lines spaced at 200-meter intervals. Samples were spaced at 100-meter intervals along the base and cross lines. The rugged terrain prevented Billiton's crews from covering as much area as was originally intended, especially towards the west. As a result, the grid covered much of Warintza Central and Warintza East, but little of Warintza West. The final grid comprised 34 kilometers of lines from which 340 samples were collected. Including both the ridge-crest and grid samples, 981 soil samples were collected, distributed over an area of about 4,000 hectares.

Lowell Exploration has digital data files containing analytical results and locations for 981 soil samples, probably the Billiton samples. The samples were analyzed for 35 elements. The results for copper and molybdenum are displayed in map form in Figure 9.3 and Figure 9.4. The patterns of copper and molybdenum in soil are undoubtedly complicated by both mechanical and chemical dispersion in this rugged, wet terrain. Nevertheless, they clearly highlight the four target areas.

9.3 Rock Geochemical Surveys

Billiton, during the period it explored the Warintza Project, and more recently Lowell Exploration carried out rock geochemical surveys on the Warintza Concessions.

9.3.1 Billiton Rock Geochemical Surveys

(see Figure 9.5 and Figure 9.7)

During geological mapping, Billiton's crews collected 139 rock samples from outcrops exposed along stream channels (Quevedo et al., 1999). The majority of the samples come from areas characterized by quartz-sericite alteration. They are described as having been collected over lengths of 10 to 20 meters. No statement was made by Quevedo et al. (1999) as to whether the samples were continuous over those lengths, though it is unlikely that they were. To the degree possible, the chips were cleaned of copper oxides and secondary sulfides such as chalcocite and covellite. Presumably the intent of this cleaning was to limit the effects of copper transported chemically in the stream waters. It might also have the effect, however, of biasing the copper values on the low side in areas where the mineralization of interest consists in whole or in part of supergene copper. The sample sites are distributed over an area of about 1,000 hectares.

The rock samples were analyzed for 35 elements at Bondar-Clegg and Company Ltd. ("Bondar-Clegg"). Lowell Exploration has the results in digital form. Figure 9.5 and Figure 9.7 illustrate the results for copper and molybdenum in map view. Both elements clearly highlight the Central, West and East target areas. There are no rock samples from the area of the copper and molybdenum soil anomalies at Warintza South.

9.3.2 Lowell Exploration Rock Geochemical Surveys

(see Figure 9.6 and Figure 9.8)

After Lowell Exploration took over the project, the company's workers collected 513 rock samples. Each sample was described as being one of five types. The types and the quantities of samples are listed in Table 9.1. The sample sites are distributed over an area of about 1,200 hectares, including the four main target areas.

Table 9.1: Number and Type of Rock Samples Collected by Lowell Exploration

Sample Type	Number of Samples	Description
Canal	256	Channel cut into rock with hammer and chisel over measured length
Chips	237	Series of chips collected over measured length using hammer and chisel; not necessarily contiguous
Float	2	Rock chips from a loose boulder
Panel	15	Face of rock chipped off within a panel of measured width and length using a hammer and chisel
Volad	3	The authors do not have a description of this sample type.

As a whole, the Lowell Exploration samples tend to contain marginally lower copper grades and higher molybdenum grades than those collected in earlier years by Billiton. This is likely due to different collection methods, and the fact that Lowell Exploration's samples come from different sites that contain a broader spectrum of alteration and mineralization styles than the Billiton ones.

9.4 Geological Mapping

(see Figure 7.2)

During the period that Billiton and Corriente operated the Warintza Project, the geological mapping of the target areas evolved from early, fairly generalized maps prepared by Billiton to more detailed maps prepared as attention focused in certain areas. The map that appears in Figure 7.2 is based mostly on one prepared in September 2005 by Lowell Exploration's geological team but incorporates some material from earlier maps that did not appear in the 2005 map.

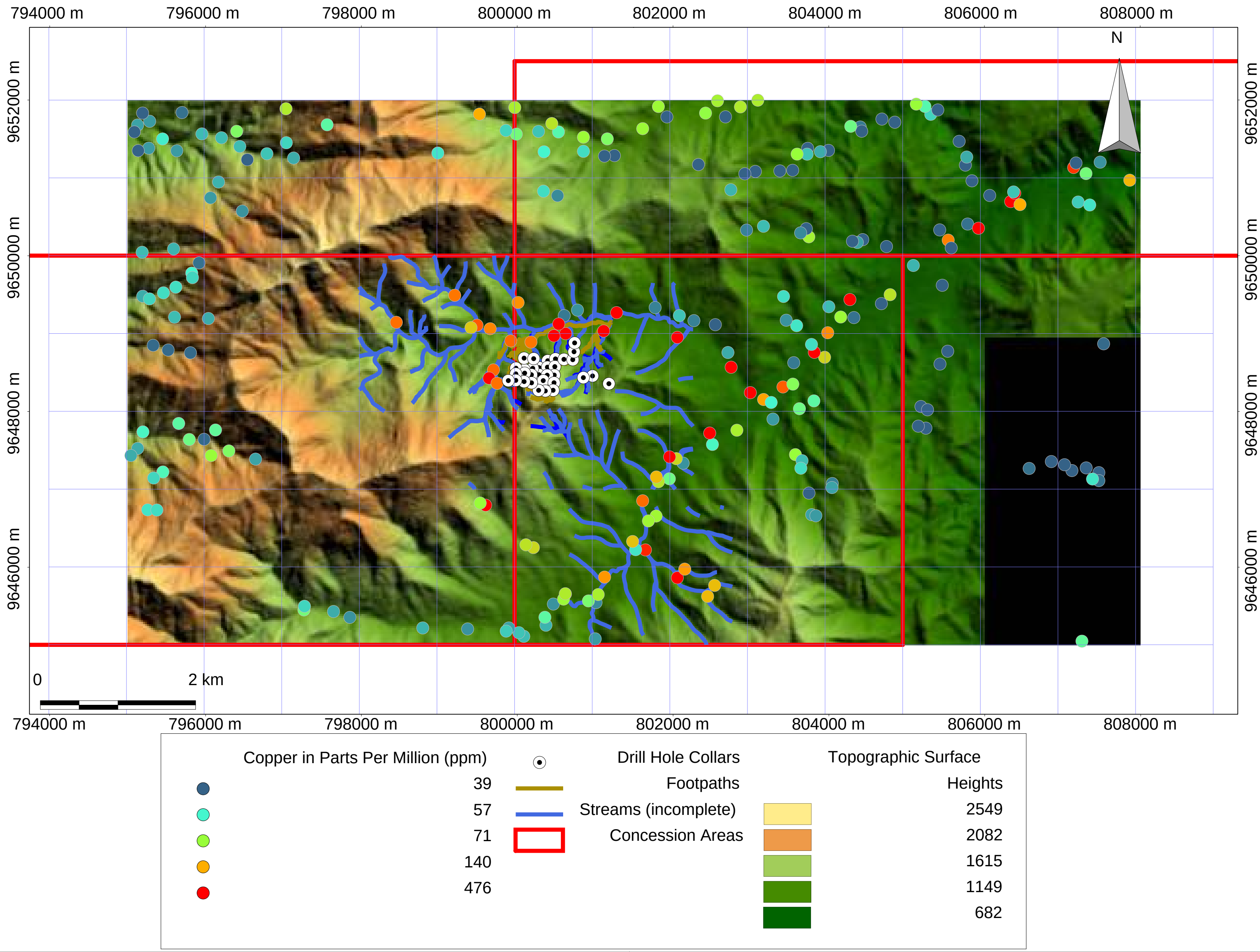
The geological mapping is still quite general. The rugged, jungle-covered terrain has few good exposures of fresh rocks, except in water-washed outcrops along the drainages and man-made outcrops along some of the trails. In Warintza Central there is drill information to aid the mapping, but the holes are spaced on the order of 100 meters apart, making it difficult to correlate small units such as dikes from hole to hole in either map or section view.

The mapped area covers on the order of 1,000 hectares, or about a tenth of the property. It covers the known target areas, though Warintza South is only partly mapped.

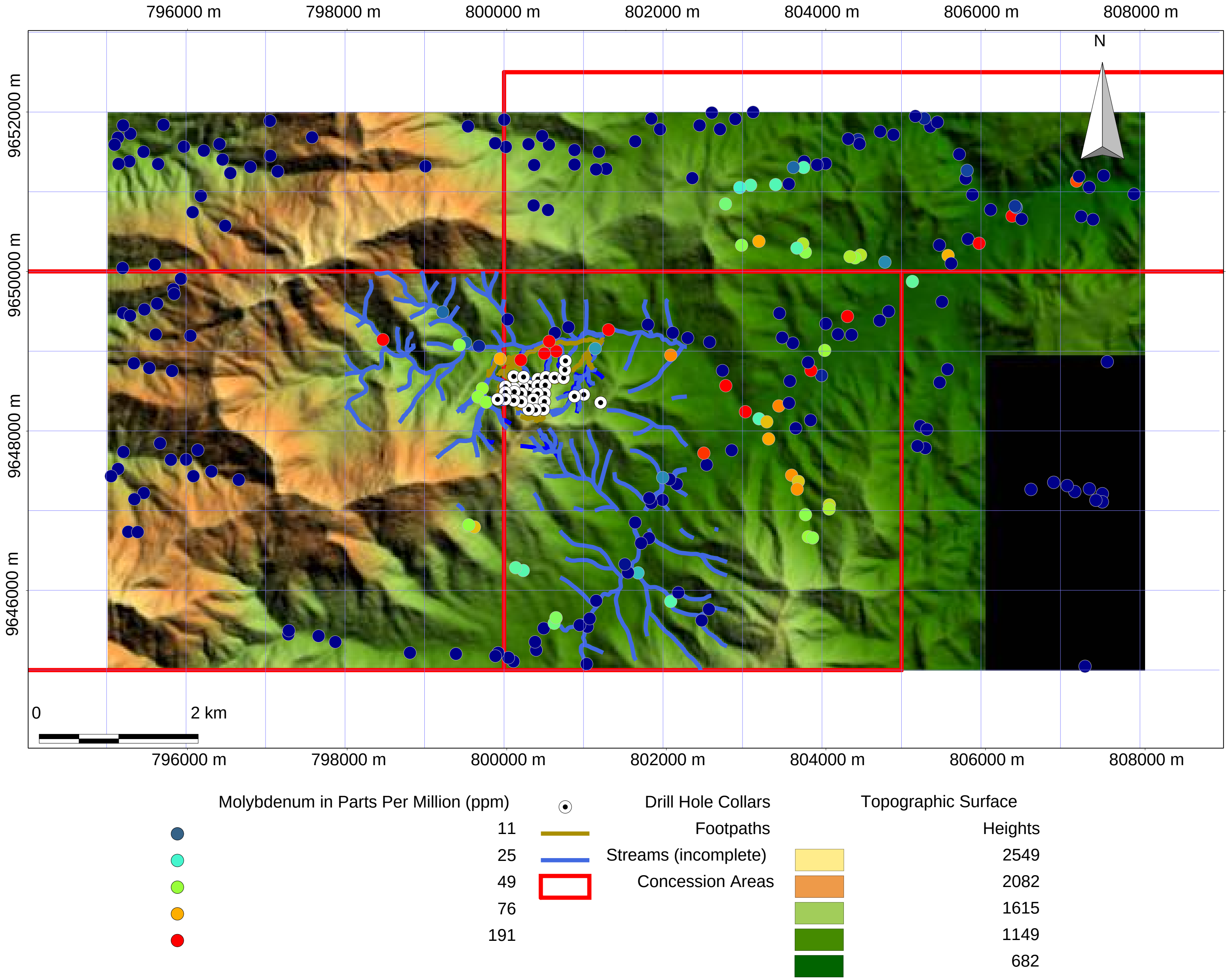
9.5 PIMA Studies

Billiton submitted 212 specimens from Warintza for analysis using a portable infrared spectrometer ("PIMA") (Quevedo et al., 1999). Most of the samples were from the quartz-sericite or propylitic alteration zones. Quevedo et al. do not identify the locations of the PIMA samples.

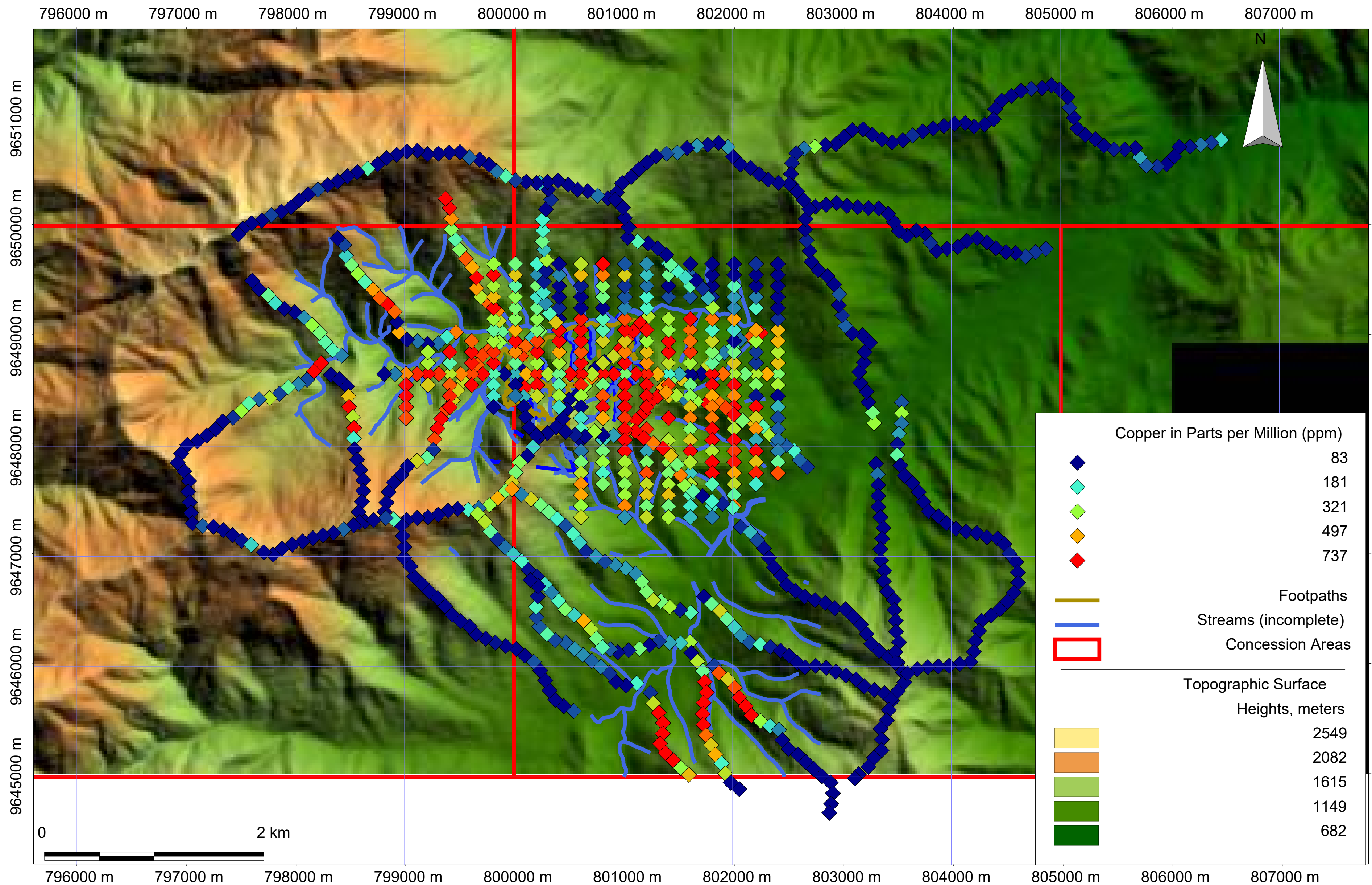
The predominant alteration assemblage in the samples studied consisted of sericite, illite, muscovite, quartz, pyrite and anhydrite. This corresponds to the assemblage referred to in most of the present report as quartz-sericite. Some specimens contain phlogopite, a remnant of the early potassic alteration.



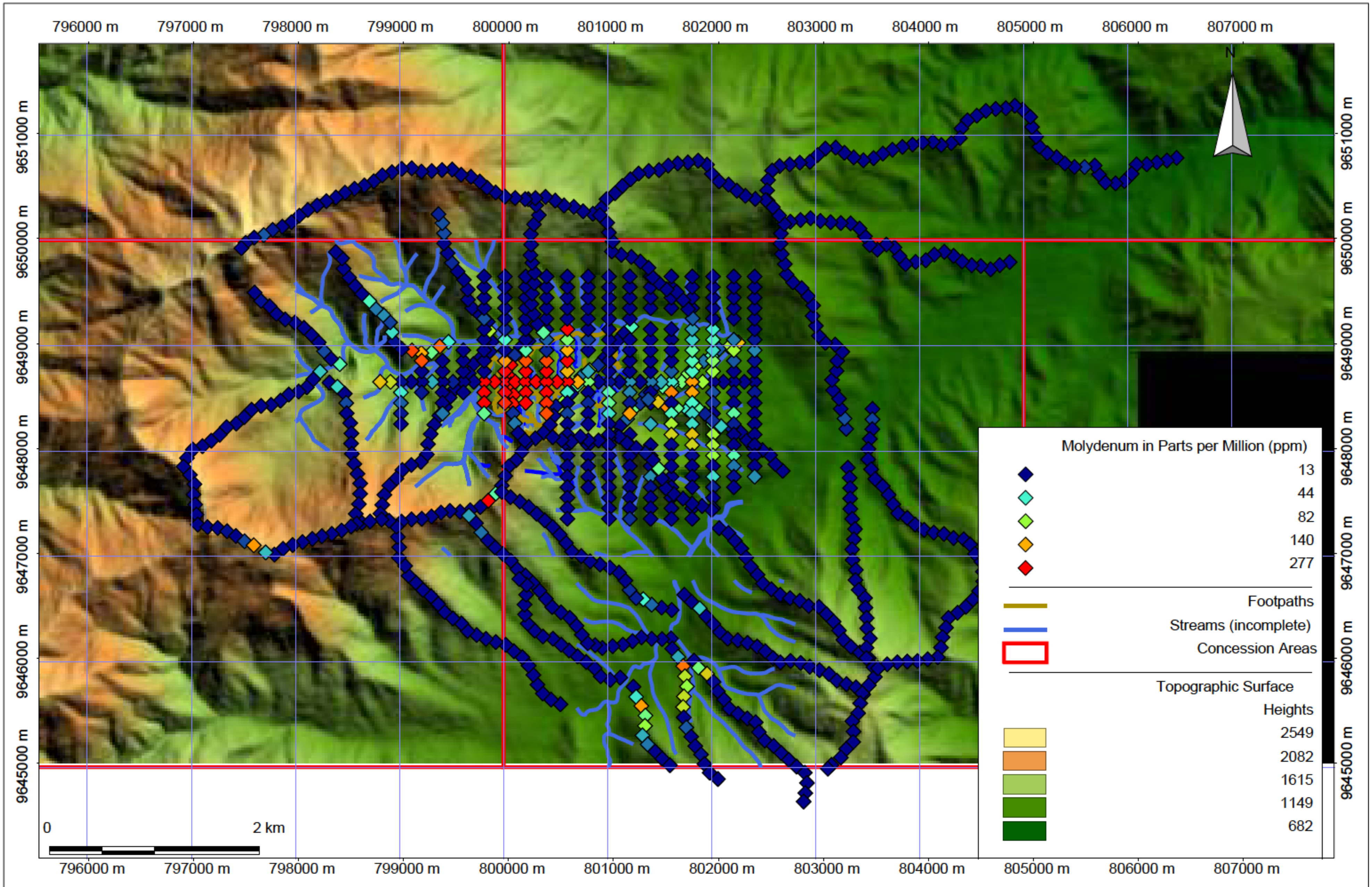
Warintza Project	Drawn By: PAR	Copper in Billiton Pan Concentrate Samples	UTM Grid based on PSAD 56	Figure 9.1
Lowell Mineral Exploration	Data from Lowell Mineral Exploration			11-May-06



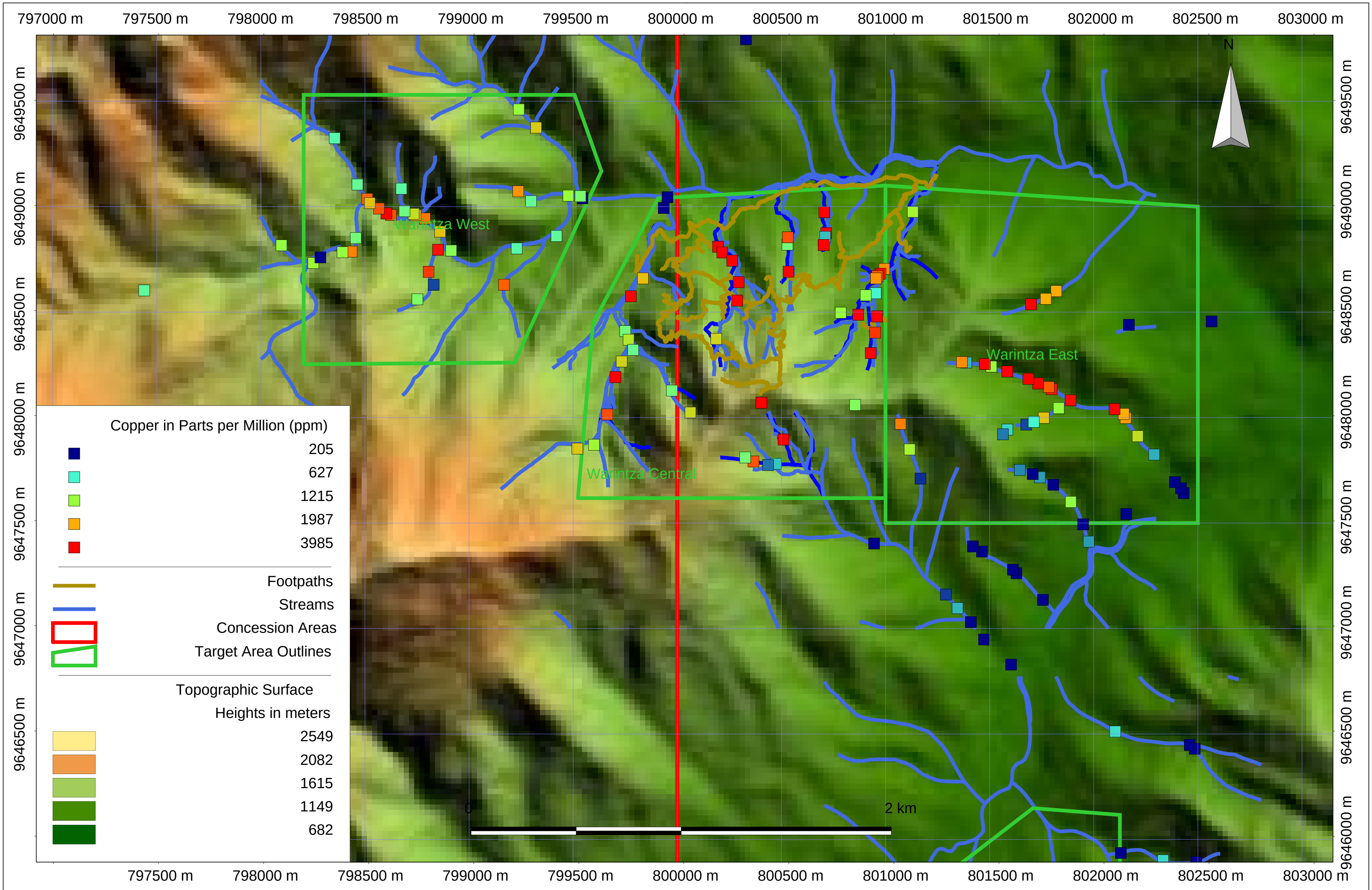
Warintza Project	Drawn By: PAR	Molybdenum in Billiton Pan Concentrate Samples	UTM Grid based on PSAD 56	Figure 9.2
Lowell Mineral Exploration	Data from Lowell Mineral Exploration			11-May-06



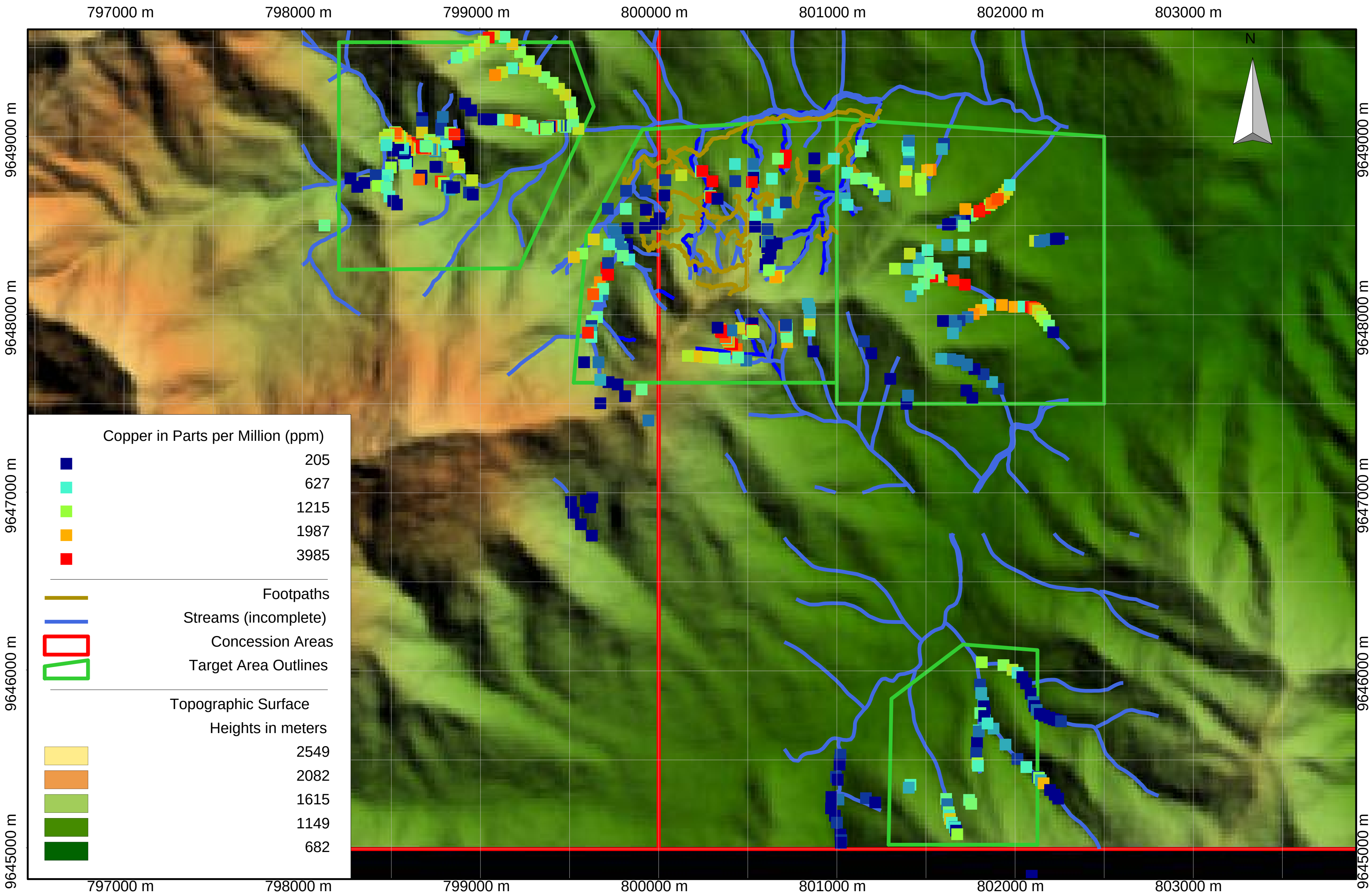
Warintza Project	Drawn By: PAR	Copper in Billiton Soil Samples	UTM Grid based on PSAD 56	Figure 9.3
Lowell Mineral Exploration	Data from Lowell Mineral Exploration			11-May-06



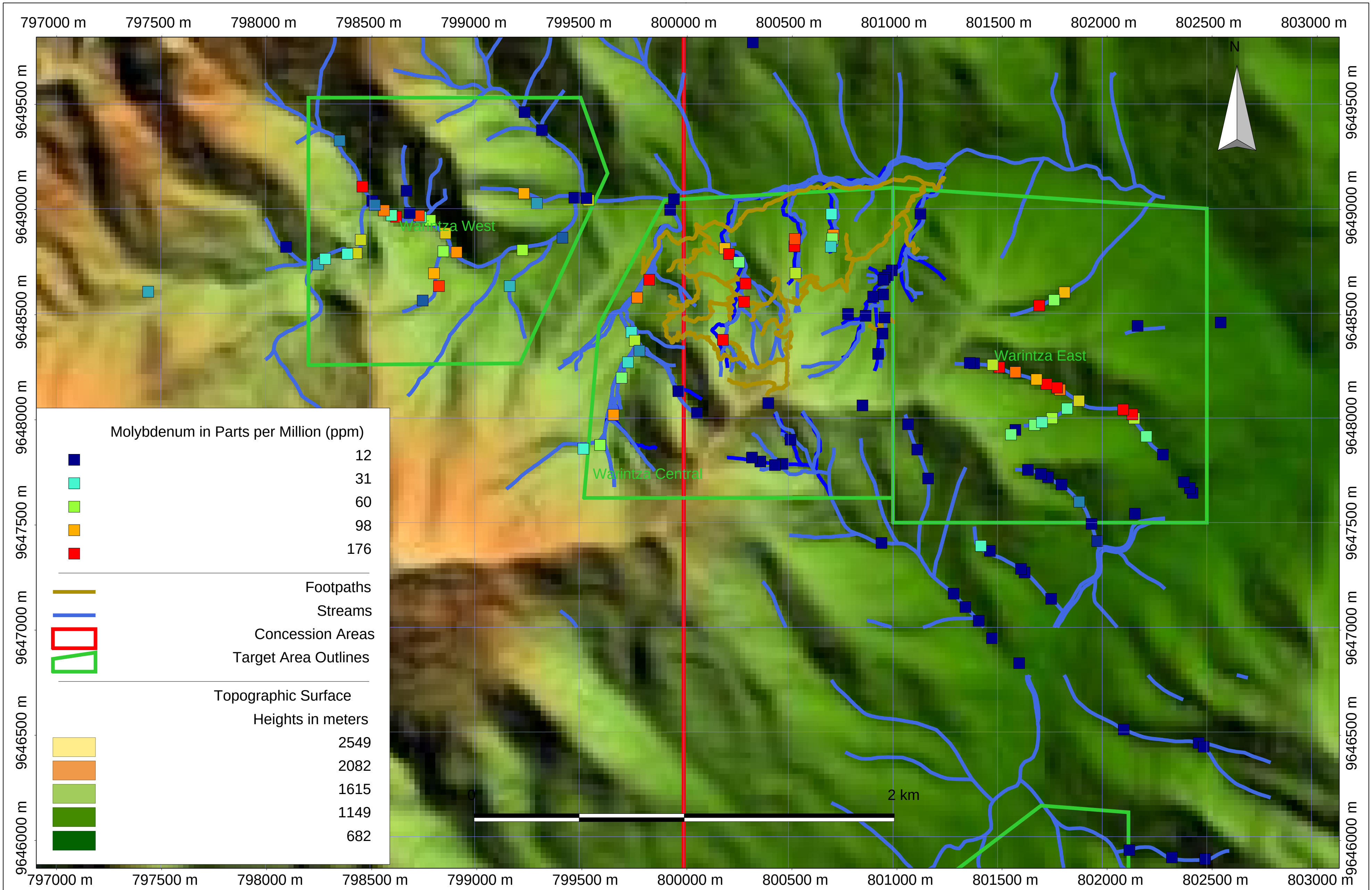
Warintza Project	Drawn By: PAR	Molybdenum in Billiton Soil Samples	UTM Grid based on PSAD 56	Figure 9.4
Lowell Mineral Exploration	Data from Lowell Mineral Exploration			11-May-06



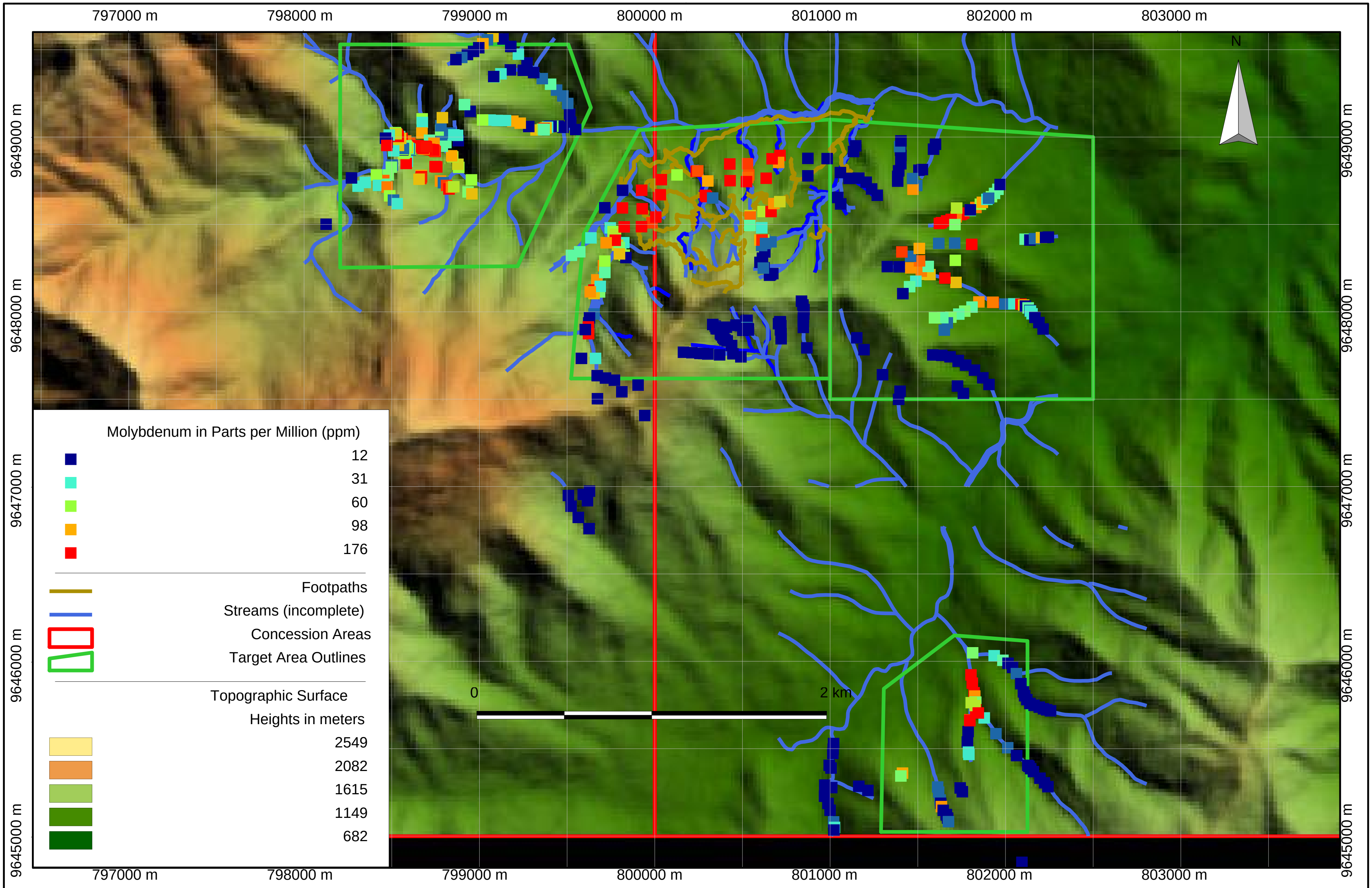
Warintza Project	Drawn By: PAR	Copper in Billiton Rock Chip Samples	UTM Grid Based on PSAD 56	Figure 9.5
Lowell Mineral Exploration	Data from Lowell Mineral Exploration			11-May-06



Warintza Project	Drawn By: PAR	Copper in Lowell Exploration Rock Chip Samples	UTM Grid Based on PSAD 56	Figure 9.6
Lowell Mineral Exploration	Data from Lowell Mineral Exploration			11/12/2011



Warintza Project	Drawn By: PAR	Molybdenum in Billiton Rock Chip Samples		Figure 9.7
Lowell Mineral Exploration	Data from Lowell Mineral Exploration			11-May-06



Warintza Project	Drawn By: PAR	Molybdenum in Lowell Exploration Rock Chip Samples	UTM Grid Based on PSAD 56	Figure 9.8
Lowell Mineral Exploration	Data from Lowell Mineral Exploration			11/12/2011

10.0 DRILLING

The Billiton-Corriente-Lowell Exploration joint venture began the first drilling at Warintza in January 2000. Corriente funded the drilling, while Lowell Exploration managed the project and did the field work. That phase included the drilling of 2,391.12 meters in 16 core holes (Vaca and León, 2001). The second phase of drilling began in July 2001, comprising 4,140.02 meters of drilling in 17 core holes (ibid.). All of the drilling was in the Warintza Central target.

A plan view of the drill hole collars appears in Figure 10.1. Representative drill holes are illustrated on cross sections in Figure 7.3 and Figure 14.3 through Figure 14.5.

10.1 Drilling Procedures

The original intent was to place drill holes on 100-meter centers on a square grid. The difficult terrain made it necessary to adjust the planned locations to accommodate what could be achieved in reality, so the actual layout of drill holes departs from the idealized grid (see Figure 10.1). The true locations of the drill holes were subsequently surveyed. The survey method is not specified in the reports available to the present authors.

During the first drilling campaign, no down-hole surveys were conducted. In the second phase, down-hole surveys were done using an instrument, described by Quevedo et al. (1999) as a "Tropary"[10], comprised of a magnetic compass and a camera to record readings. Down-hole survey data are available for each of holes W-20 through W-32. Readings were done at two depths in each hole, except for W-30 in which readings were taken at three depths. At each depth, three separate readings of direction and inclination were obtained. The three readings were averaged to obtain the direction and inclination to be used. The down-hole surveys are incorporated into the database used for the estimation described in Section 14.0.

As access to the project area is by footpath or helicopter, small drills were used that could be readily disassembled into man-portable components. The drill contractor in both phases was Kluane International. In the first phase, a hydraulic-drive rig with two 40 horsepower motors was used. It had an estimated capability of drilling up to 360 meters. The deepest hole drilled in that campaign was about 250 meters.

In the second phase of drilling, a hydraulic-drive rig with three 35 horsepower motors was used. It was estimated to be capable of drilling to depths of as much as 520 meters. The deepest hole drilled in that campaign was about 367 meters.

In both drill campaigns, the holes were started using NTW bits that produce approximately 56-millimeter diameter core. Once the hole became too deep for the small drill to continue with NTW bits, the core size was reduced to BTW, about 42 millimeters. The depth at which the reduction happened was recorded.

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[10] Quevedo et al. used this term and spelling, although the description of the instrument indicates that it was not in fact a Tropari, which does not use a camera.

10.2 Core Handling Procedures

The core was loaded into wooden core boxes at the drill sites. Lids were put on the boxes and they were packed along the footpaths to the camp site, where the core was logged and processed. The steps in core logging and processing were as follow:

- The core was photographed using a conventional film camera.
- The core was measured and the recovery was calculated.
- The rock quality designator ("RQD") was calculated.
- The density of veinlets and degree of brecciation were recorded.
- The mineral zones (leached, enriched or primary) were identified in order to guide the sampling.
- The core was logged in detail, recording characteristics including rock types, alteration assemblages, and features of the mineralization. The descriptions available to the present authors do not make it clear as to whether the detailed logging preceded or followed the sampling.
- The core was sampled. See Section 10.3 for more information about the sampling.

Initially the core was stored in a shed at the camp site. In 2005 Lowell Exploration moved the drill core, by foot and then by small aircraft, to the town of Macas, where in 2006 it was stored on a private property, in racks in a shed built for the purpose.

Considering the amount of handling that the drill core has undergone during transport, it was in good condition in 2006.

10.3 Sampling of Drill Core

The drill core was sampled using a rock saw with a diamond-impregnated blade, at the camp site. The samples were cut and bagged in one-meter intervals in the field. Persons who were involved with the project at the time report that the saw was cooled with a constantly flushing water system, with no re-circulation of the water. In sections of core that were too broken to be sawn, a scoop or spoon sampling method was used, taking approximately half of the material for the sample.

The sample intervals for analysis were standardized within each zone; 3 meters in leached material in the first two holes and then 5 meters in leached material in subsequent holes, 2 meters in the enriched zone, and 3 meters in primary mineralization. These sample intervals were obtained by compositing the one-meter samples from the field, at the laboratory's preparation facility in Quito. The chosen sample intervals were rigorously adhered to, and samples were not stopped at geological changes or zone boundaries. Thus locally, individual samples could span two or more rock types, or include sections of two mineral zones (leached, supergene enriched or primary). These procedures are unlikely to have biased the global grade picture but do produce a degree of imprecision in defining the boundaries between the mineral zones. As it is likely that the mineral zones have distinct metallurgical characteristics, it would be desirable in future drilling to use geological criteria for selecting sample intervals.

There are a few instances of mineralized veinlets running sub-parallel to the core axis for several decimeters. This is inevitable, given the highly varied orientations of veinlets, and while it will locally bias the sample assays high, it is probably not significant on a global basis. It is important to clearly identify such intervals in the drill logs.

The resource estimate discussed in Section 14.0 is in one sense a comprehensive summary of the results of the drill-hole sampling, including grades and, to the extent known, true dimensions.

10.4 Drilling Procedures in Relation to the Mineralization

All but two of the drill holes are vertical. In considering the orientations of the drill holes relative to the true dimensions of the mineralization, several factors have to be taken into account. One is the attitude of the original controls on the primary mineralization. In this deposit, which contains disseminated and stockwork-style primary mineralization, the direction of the drill holes probably makes little difference in terms of biasing the sampling. The authors did note a few instances of near-vertical mineralized veinlets that ran along lengths of drill core for a few decimeters. These would bias the grades locally and even impact the estimation, but there are many other orientations of veinlets, so that almost any drill-hole orientation would probably encounter a few core-parallel veinlets.

Another consideration is the attitude of the contacts between the leached, supergene and primary zones. These contacts have considerable local variation, and vertical drill holes are a reasonable choice, provided enough are drilled to properly delineate the contacts.

The vertical drill holes will reveal fewer near-vertical features than in fact exist. This could be an issue if there are any unmineralized or differently mineralized, steeply dipping dikes within the resource. Few such dikes are known, possibly because few exist or possibly because the vertical drill holes missed them.

Some previous workers, for example Vaca and León (2001), have suggested that the faults in the area may have influenced both the pathways of magmas and of the mineralizing fluids. The outcrop pattern of the mapped faults suggests that most of them are steeply dipping. If the structures were pathways for mineralizing fluids, it is conceivable that the grades of primary mineralization vary laterally away from the structures, and that there could be steeply dipping concentrations or depletions of mineralization adjacent to steeply dipping structures. Vertical drill holes could well miss such steeply dipping features. These observations are too general to provide a basis for grade estimation but these factors should be continually monitored as the drill information and geologic evidence become more abundant and detailed.

The results of the drilling are incorporated into the discussions of the geology (Section 7.1.2), mineralization (Section7.2) and resource (Section 14.0).

10.5 Comments on Technical Issues

In general the drilling and core handling procedures were of good professional standard, and confidence can be placed in the resulting data. The following comments relate to some technical issues that should be considered in future drill programs.

10.5.1 Effect of the Size of the Drill Core

It has been mentioned that each drill hole was started using NTW equipment and then reduced to BTW when the machine could no longer progress with the larger diameter equipment. Depths of core size reduction varied from 30 m to 100 m. In examining the core, the authors noticed that in some instances the reduction in core diameter coincided with some or all of the following effects:

- The smaller diameter core in some instances appeared to have poorer recovery.
- The smaller diameter core tended to be more broken than the larger diameter core, resulting in lower RQD values.
- Locally, there seemed to be slight but discernible reductions in the reported grades for some metals, including molybdenum, in the smaller diameter core. Further study is warranted prior to the next drill campaign to determine if this apparent reduction in grade is a real and significant effect.

10.5.2 Core Recovery

The core recovery at Warintza appears to have been very good. Two issues were noted that will adversely affect calculated and recorded core recovery.

- The method used for measuring core and calculating the recovery was unconventional. Rather than measure the core recovery from block to block and then using the resulting data to mark off the core in one-meter intervals, essentially the reverse was done. The core was marked off in one-meter intervals based on an assumption of 100% recovery, and then, subsequently, the recovery was measured from meter to meter.
- Those measuring the core did not allow for the fact that drillers will sometimes let core extend beyond the back of the core tube, so that, for example, a nominal 5-foot run actually contains a bit more than 5 feet of core. In such instances, prior workers recorded only 5 feet (theoretically 100%) of recovery. This could have the cumulative effect of making the calculated percent core recovery over multiple runs artificially low.

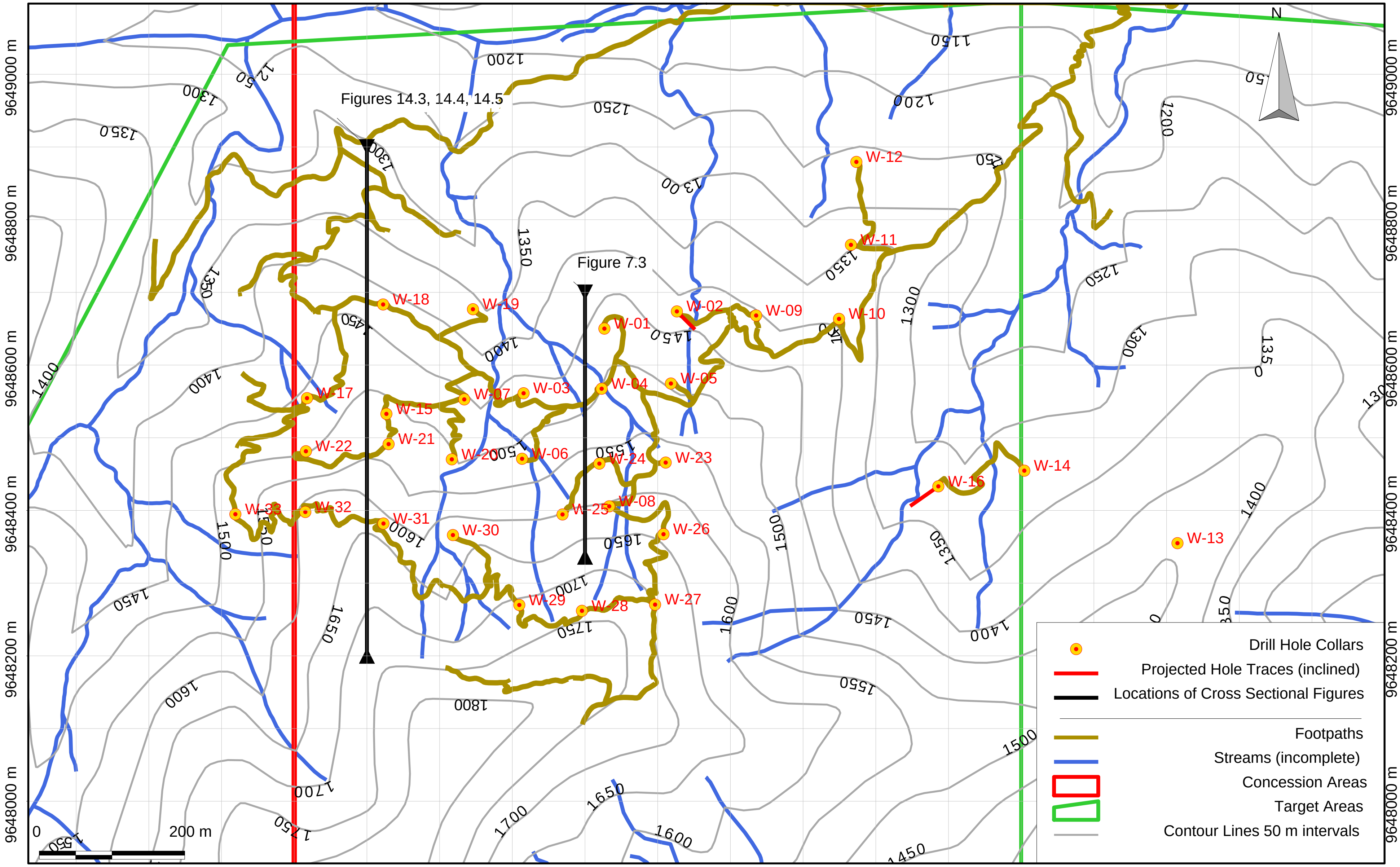
In no case, in spite of the above methodology, was core recovery of over 100% recorded. The actual effects of these two issues on the present resource estimate are likely to be negligible, but in future drill campaigns procedures should be adopted to arrive at a more accurate estimate of core recovery.

10.5.3 Rock Quality Designation

Corriente's workers used a conventional method for estimating the RQD, defining the RQD as the total length of intact core greater than 100 mm in length (the "threshold value") in a given core run, divided by the total length of the core run. This corresponds to the original definition of RQD, developed for NX drill core. Some geologists and engineers believe that the threshold value should be adjusted for core diameter, using, for example, 75 mm for BQ core and 50 mm for AQ core. Others argue that the number of natural breaks in a length of core will be the same, no matter what the core diameter, and favor the retention of a 100 mm threshold value in all cases. Prior workers at Warintza took the latter course. The present authors prefer adjusting thresholds according to core diameter using the common formula of two times the diameter of the core being measured. This is important for Warintza given the marked change in the recorded RQD value that was noted where the core diameter changes.

10.5.4 Specific Gravity

The typical size of the core samples used to determine specific gravity ("SG") was about 10 grams, an unusually small sample size to use. The authors recommend using larger sample sizes for measuring specific gravity in future drilling campaigns at Warintza. Measurements and calculations should be done with a keen awareness of the effect of rock porosity on the results of the specific gravity measurements, when using the common water-immersion methods.



Warintza Project	Drawn By: PAR	Drill Hole Plan Map	UTM Grid Based on PSAD 56	Figure 10.1
Lowell Mineral Exploration	Data from Lowell Mineral Expl.			Last Modified 04-Mar-13

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

Almost all of the field sampling of stream sediments, soils, rocks and drill core done at the several stages of the Warintza Project was done by employees of whichever company was the operator at the time the work was done, or by employees of Lowell Exploration. The only exception known to the authors is their own 2006 sampling. The early surface sampling was conducted by Billiton employees; the cutting of the drill core was done by Corriente employees or by employees of Lowell Exploration contracted to Corriente; and the rock sampling for Lowell Exploration was done by employees of that company. Most of the sampling was done by laborers or technicians, supervised by geologists. It is noteworthy that when the authors were sampling, those laborers were particularly zealous with cleaning the surfaces and getting representative samples.

All of the samples would have been under the control of the operator's or project manager's employees, until such time as they were shipped to the preparation laboratory. While in transit, they would have been under the control of the freight contractor. In the case of drill core, once the samples arrived in Quito the driver of the delivery vehicle was required to first report to the manager at Corriente's office. The manager accompanied the driver and samples to the laboratory and gave the laboratory instructions for handling and processing the samples.

11.1 Billiton Surface Samples

The authors have several spreadsheets and other data files containing results for the surface samples (stream sediments, soils and rocks) analyzed for Billiton. The authors do not have laboratory certificates or original electronic data files issued by Bondar-Clegg.

11.2 Drill Core Samples

The drill core was sawn for sampling purposes at the project campsite, and samples were collected on one-meter intervals. The resulting numbered samples were bagged and carried from the campsite via footpaths to the airstrip at the village of Warintza. From there they were shipped by chartered aircraft to Macas, from whence commercial transporters carried and delivered them to Bondar-Clegg's sample collection facility in Quito.

As noted in Section 10.0, Corriente used sample intervals ranging from 2 to 5 meters for analyses. The one-meter samples received from the field were composited at Bondar-Clegg's sample preparation facility to create the required 2-, 3- or 5-meter composite samples. According to an unattributed report found in Lowell Exploration's electronic files, the compositing procedure was as follows:

- The original one-meter samples were crushed and pulverized.
- The pulverized material was split into quarters. The splitting procedure is not stated.
- One quarter of the pulverized material from each one-meter sample was mixed and homogenized into the composite of pulverized material. The mixing and homogenizing procedure is not stated.

Bondar Clegg prepared and analyzed the samples using procedures whose codes and limits are set out in Table 11.1 and Table 11.2

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Table 11.1: Bondar-Clegg Sample Preparation Codes

Code	Code	Comment
40	SAMPLETYPE=R	ROCK
41	PB0=98	COMPOSITING
42	PI0=580	DRYING/KG
43	PD0=9	OTHER

Table 11.2: Bondar-Clegg Sample Analysis Codes

Element	Method	Code	Units	Lower Limit	Upper Limit
Au	FA-30	EH3	PPB	5	10,000
Ag	AA	EA5	PPM	0.1	50.0
Cu	AA	EA5	PPM	1	20,000
Pb	AA	EA5	PPM	2	10,000
Zn	AA	EA5	PPM	1	20,000
Mo	AA	EA5	PPM	1	20,000

Bondar-Clegg's preparation procedure at the Quito facility consisted of grinding all of the sample to pass a 10 mesh screen, producing a coarse crush. A 250-gram split of the coarse crush was pulverized to pass a 150 mesh (106 micron) screen. A total of 100 grams of the resulting pulp was sent to Bondar-Clegg's laboratory in North Vancouver, B.C., for analysis.

For the gold analysis, a 30 gram sub-sample was prepared using a fire assay fusion, and gold was determined using atomic absorption spectrometry. Further details of this procedure can be found in the document "MDFA30/50/60: Soil, Silicate and Ore Analysis of Gold by Fire Assay Fusion/AAS Analysis," prepared by Bondar-Clegg.

Analyses for copper, lead, zinc and molybdenum employed a multi-acid near-total digestion, with determinations by atomic absorption spectrometry. This method is described in the document "MDGA30: Total Acid Digest Method for the Determination of Base Metals," prepared by Bondar-Clegg.

11.3 Lowell Exploration Surface Samples

The description that follows was written in 2006. There has been no sampling since 2006.

Lowell Exploration's surface samples were carried along footpaths from the camp on the Warintza Project to the airstrip at the village of Warintza. From there they were transported by chartered aircraft to the town of Macas, and thence by commercial freight services to Quito. The samples were prepared at

ALS Chemex's facility in Quito, and then sent to ALS Chemex's laboratory in Lima, Peru or North Vancouver, B.C., for analysis.

The sample preparation procedures were the same as those described in Table 11.3 for the independent check samples. Gold was analyzed using ALS Chemex's method code Au-AA23. Copper and molybdenum were analyzed using method code AA46. These method codes are also described in Table 11.3.

11.4 Independent Check Samples

The authors' check samples, described in Section 12.3, all remained under the control of one of the authors, or within locked suitcases that could not have been tampered with unnoticed, from the time they were collected until their delivery to ALS Chemex's preparation facility in Quito. The samples were all crushed, pulverized and sub-sampled at the Quito facility. The analyses were done at ALS Chemex's laboratory in North Vancouver, B.C., Canada. The methods employed are listed in Table 11.3. No quality control measures were taken by the authors, nor would such measures be warranted for these samples.

11.5 Laboratory Certification

The surface and drill core samples analyzed for Billiton and later Corriente were all analyzed by Bondar-Clegg in North Vancouver, B.C. Bondar-Clegg has since been taken over by ALS Chemex. The authors have no information as to what standards organizations' certifications Bondar-Clegg may have held.

More recent samples analyzed for Lowell Exploration, and for the authors, were analyzed by ALS Chemex. Lowell Exploration's samples were analyzed either at ALS Chemex's laboratory in Lima, Peru, or at the laboratory in North Vancouver, B.C. The authors' samples were analyzed in North Vancouver.

According to ALS Chemex's 2004 Schedule of Services and Fees, their laboratories in North Vancouver and Lima had ISO 9001:2000 registration at the time. It is probable that since the 2004-2006 period, ALS Chemex has acquired updated or additional certifications. However, more recent certifications have no relevance to the samples described in this report.

Table 11.3: ALS Chemex Analytical Procedures

Element	ALS Chemex Procedure Code	Detection Range, ppm or %	Description of Method
Sample Preparation			
	CRU-31		Crush sample to 70% passing 2 mm screen
	SPL-21		Split sample with riffle splitter
	PUL-36		Pulverize 1.5 kg to 85% passing 75 micron screen
MDA Samples 9001 to 9028 and Lowell Exploration Samples			
Gold	Au-AA23	0.005 to 10 ppm	fire assay fusion of 30 gram sub-sample; analysis by atomic absorption spectrometer
MDA Samples 9001 to 9011 (Pulps and Coarse Rejects)			
Copper	Cu-AA62	0.01 to 50 **%**	$HF-HNO_3-HClO_4$ acid digestion and atomic absorption spectrometry (AAS)
Molybdenum	Mo-AA62	0.001 to 10 **%**	$HF-HNO_3-HClO_4$ acid digestion and atomic absorption spectrometry (AAS)
MDA Samples 9012 – 9021 (Drill Core Samples)			
Copper	Cu-AA61	1 to 10,000 ppm	$HF-HNO_3-HClO_4$ acid digestion and atomic absorption spectrometry (AAS)
Copper	Cu-AA62	0.01 to 50 **%** (overlimits)	$HF-HNO_3-HClO_4$ acid digestion and atomic absorption spectrometry (AAS)
Molybdenum	Mo-AA61	2 to 10,000 ppm	$HF-HNO_3-HClO_4$ acid digestion and atomic absorption spectrometry (AAS)
Molybdenum	Mo-AA62	0.001 to 10 **%** (overlimits)	$HF-HNO_3-HClO_4$ acid digestion and atomic absorption spectrometry (AAS)
27 other elements	ME-ICP61	varies by element	$HF-HNO_3-HClO_4$ acid digestion, HCl leach and induced coupled plasma atomic emission spectrometry (ICPAES)
Molybdenum	Mo-AA62	0.001 to 10 **%**	$HF-HNO_3-HClO_4$ acid digestion and atomic absorption spectrometry (AAS)
MDA Samples 9022 to 9028 (Surface Samples)			
27 elements incl. Cu, Mo	ME-ICP61	varies by element	$HF-HNO_3-HClO_4$ acid digestion, HCl leach and induced coupled plasma atomic emission spectrometry (ICPAES)
Lowell Exploration Samples			
Copper	Cu-AA46	0.01 to 50 **%**	Aqua regia digestion, HCl leach with complexing agents, AAS or ICPAES finish
Molybdenum	Mo-AA46	0.001 to 10 **%**	Aqua regia digestion, AAS finish
Notes: Information about procedures is derived from ALS Chemex's 2004 Schedule of Services and Fees, USA and International.			

11.6 Quality Control Procedures

During the drill campaign in 2000, in which holes W-01 through W-16 were drilled, no formal quality control monitoring program was implemented. The 2001 drill campaign, in which holes W-17 through W-33 were drilled, did include a formal quality control monitoring program. It is described in an electronic document whose author is not stated. The description of the quality control procedures given herein is derived from that document.

Corriente introduced control samples, as pulps, into the regular sample shipments to Bondar-Clegg's Vancouver lab. Two control samples, a standard and a duplicate, were inserted into each sequence of 20 regular samples. A numbering scheme was used to keep track of the duplicates and standards.

In the case of duplicate samples, the final digit in the sample number identified it as a duplicate. Regular samples had "0" as their final digit; duplicates would have the same number as the original sample except that "1" was the final digit.

Three copper standards were used: a high standard with an accepted grade of 11,740 ppm Cu, a medium standard with an accepted grade of 5,585 ppm Cu, and a low standard with an accepted grade of 145 ppm Cu. No standards for molybdenum or other elements were used.

Standards were identified by the fifth digit of the sample number, with 7 identifying the high-grade standard, 8 the medium-grade standard and 9 the low-grade standard.

The standards were originally created by Billiton for use in a drill program at Billiton's (in 2006 Corriente's) San Carlos project. Billiton had conducted a program of round-robin analyses to establish accepted values for their standards. See Section 11.6.1 for a description of the round-robin testing and results.

The description of the program does not state whether Corriente or the preparation laboratory was responsible for the insertion of the duplicate and standard pulps into the sample sequence. In the case of the pulp duplicates, presumably the preparation lab inserted them after preparing the pulps.

The quality control procedures were relatively conventional, but incomplete and less rigorous than is currently recommended for such programs. Some comments are:

- The numbering system would have made it possible for the analytical laboratory to identify duplicate and standard samples, over time.
- If the standards and duplicates were inserted into the sample sequence by the preparation laboratory, an agent of Bondar-Clegg, the potential existed for information as to which samples were quality control samples to be passed on to the analytical laboratory. There is no evidence that this took place in this instance.
- Some field (split core) duplicates and coarse reject duplicates should have been included in the quality control program. The field duplicates would test for small-scale variability of the mineralization and for possible sampling errors. The duplicates of coarse reject material would check for problems in the sample reduction and compositing process, from the arrival of the drill core at the lab to the production of the pulp.

- Blanks should have been inserted into the sample stream.
- The information that the authors have found indicates that the pulp duplicates were analyzed by Bondar-Clegg, the same lab used for the original samples. This acts as a check on the analytical precision, but does not check the accuracy of the lab, nor does it detect any biases in the analyses. To check accuracy and detect biases, some pulp duplicates should have been analyzed at one or more other laboratories.

  There is an electronic document, entitled "Corriente Copper Belt, Ecuador, Sample Protocol 2000," which does indicate that duplicate splits were taken from 1 in 10 pulps and sent to ALS Chemex Laboratories in North Vancouver for analysis. The authors have not found any results that are identifiable as being analyses of such duplicates in the case of Warintza samples.

- Molybdenum may well be an important commodity in the Warintza deposit, but only copper standards were used. Some molybdenum standards should also have been used.

11.6.1 Round-Robin Testing of the Standard Samples

The authors have not found any descriptions of the methods used to prepare Billiton's standard samples. A spreadsheet file containing the results of the round-robin analyses used to determine the accepted values for the samples is available. The three standards are labeled GEM 1, GEM 2 and GEM 3. These correspond to standards numbered 7, 8 and 9, respectively, on the Warintza laboratory data sheets.

For the round-robin testing, each standard was analyzed 12 times by each of 5 different laboratories. Those laboratories were Bondar-Clegg, Chemex, Loring Labs, SGS and CIMM. The accepted value for each standard was taken to be the mean value of all 60 analyses. Some statistics for each of the standards are listed in Table 11.4.

Table 11.4: Results of Round Robin Analyses of Billiton Standards

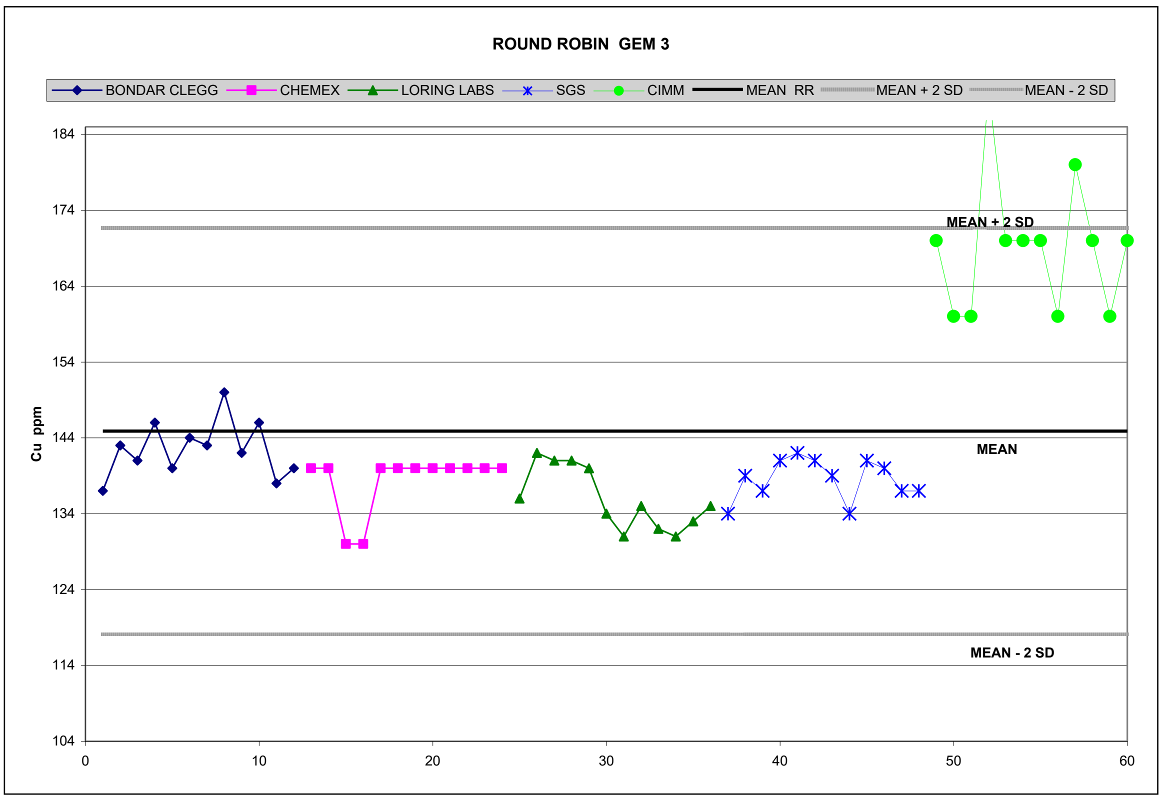
Statistic	GEM 1 (7)	GEM 2 (8)	GEM 3 (9)	GEM 3 (9)
No. of Labs	5	5	5	4 (CIMM excl.)
No. of Analyses	60	60	60	48
Mean (ppm Cu)	11,740.03	5,584.83	144.88	138.81
Standard Deviation	531.39	255.73	13.39	4.25
Variance	282,379.66	65,399.66	179.39	18.03
Std. Error Mean	68.60	33.02	1.73	0.61
Co. of Variation	4.53 %	4.58 %	9.24 %	3.06 %
Precision	9.05 %	9.16 %	18.49 %	6.12 %

Notes: Billiton calculated the values in the shaded cells. The present authors calculated the other statistical parameters in order to give a more complete statistical summary of the results of the round-robin analyses.

Billiton also prepared charts to graphically illustrate the results obtained for each standard. One example of such a chart, for GEM 3, is shown in Figure 11.1. The GEM 3 chart was selected as an example because it illustrates a possible bias in the analyses at one laboratory, CIMM. The last column in Table 11.4 shows statistics for GEM 3 if the CIMM samples are excluded; the authors did evaluations that both excluded and included the CIMM values. The measures of dispersion, such as the Precision, improve considerably if the CIMM results are excluded for GEM 3. In the cases of GEM 1 and GEM 2, the charts did not suggest such a strong bias by any laboratory and the measures of dispersion are acceptable with the results from all the laboratories included.

In general, the results of the round robin tests indicate that the GEM standards are acceptable as monitors of quality control.

Figure 11.1: Results of Round Robin Analyses for Standard GEM 3

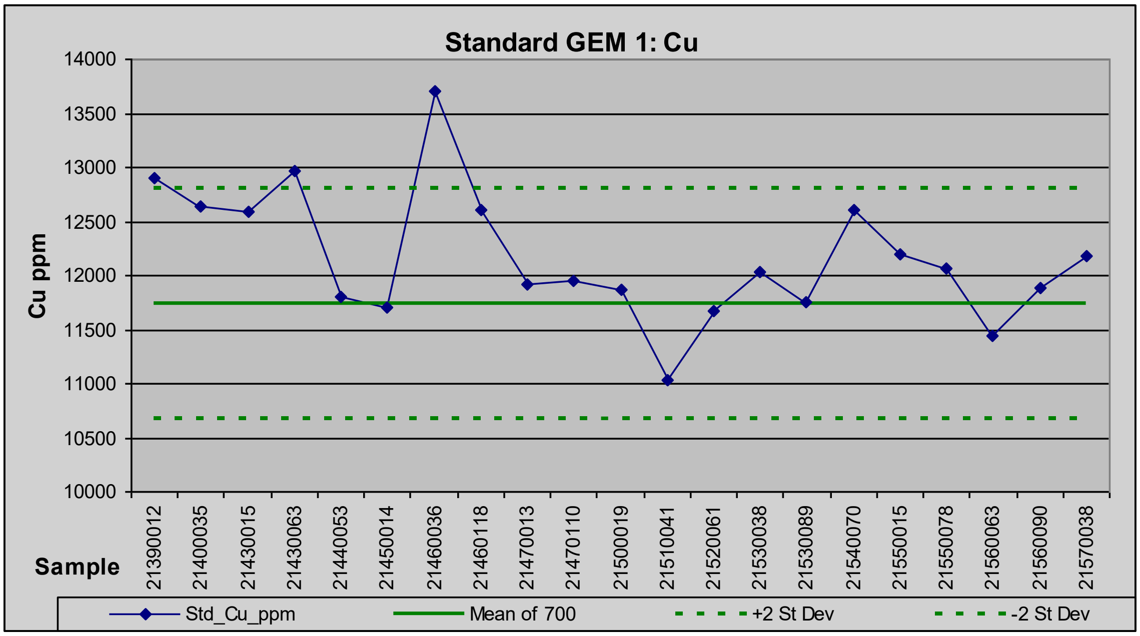


(Billiton prepared Figure 11.1.)

11.6.2 Monitoring the Analyses of the Standard Samples

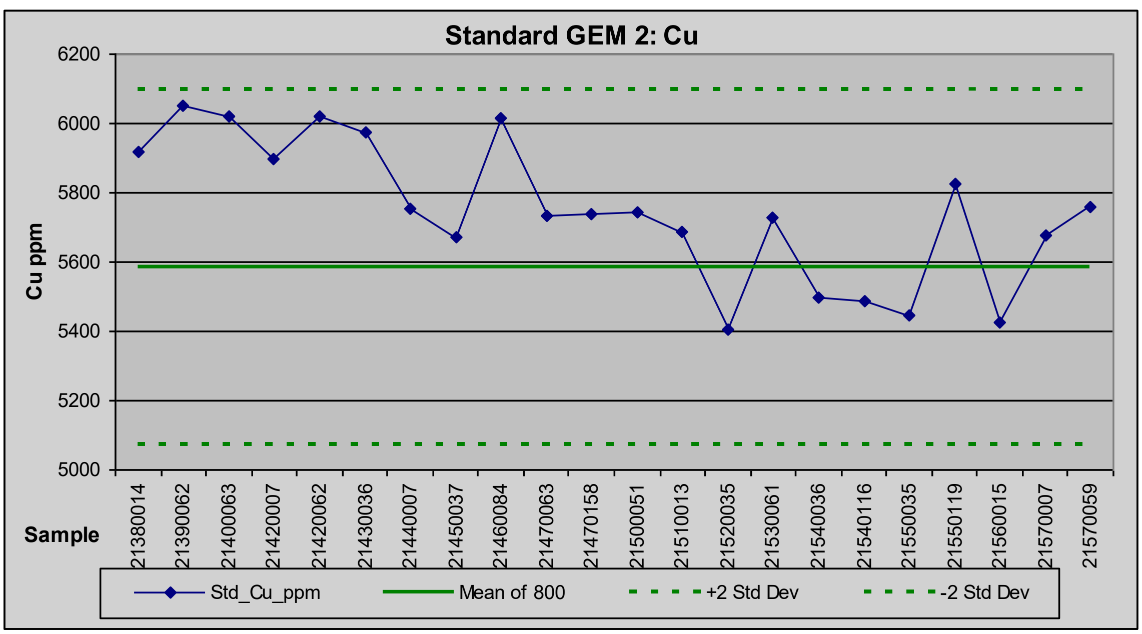
The copper results for the standards inserted into the sample stream for drill holes W-17 through W-33 are plotted in Figure 11.2, Figure 11.3, Figure 11.4 and Figure 11.5. Brief discussions follow each graph.

Figure 11.2: Time Series Plot Standard GEM 1



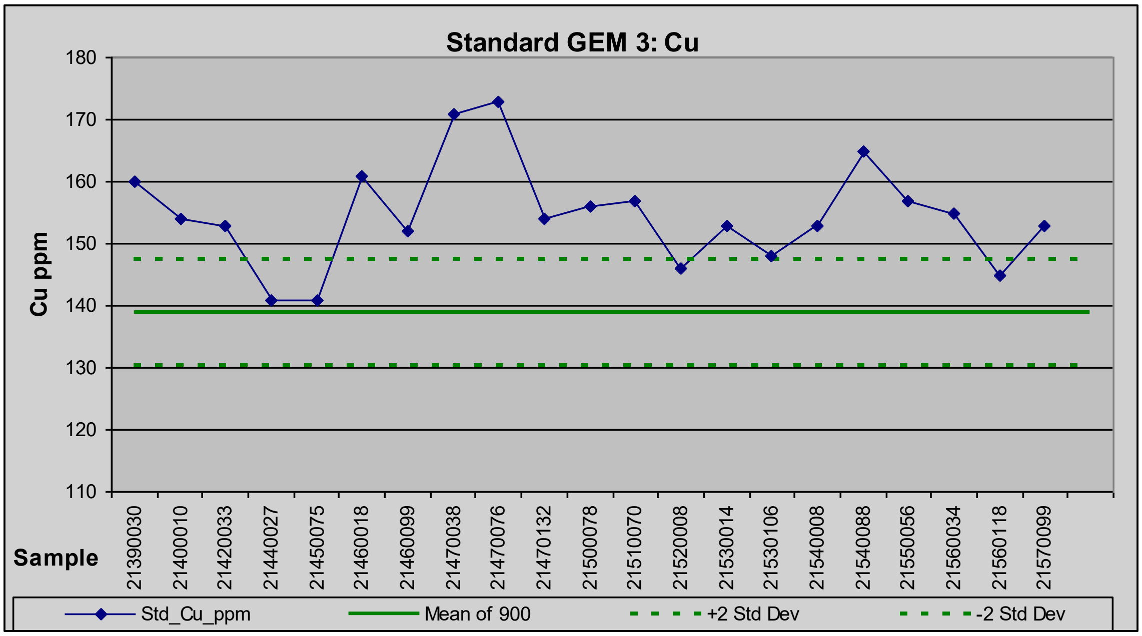
In the case of the high-grade standard, 15 of 17 samples are at or above the mean, suggesting a systematic high bias. Three samples exceed the upper control line.

Figure 11.3: Time Series Plot, Standard GEM 2



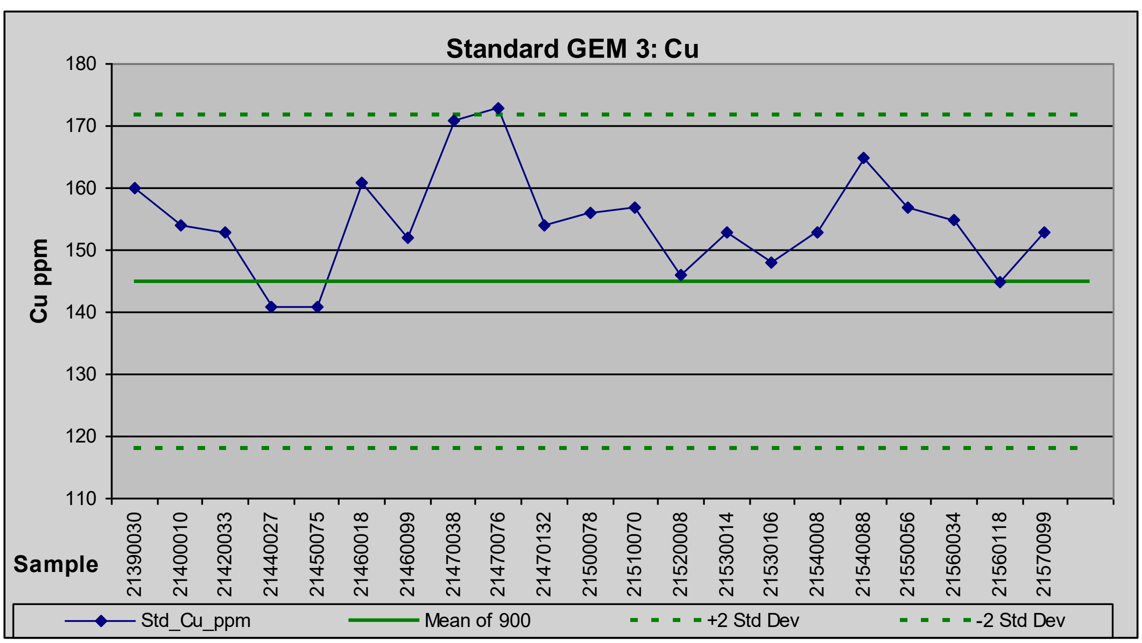
There were no failures in the analysis of this intermediate grade standard. The first 13 analyses do exhibit some bias in that all of them are above the mean value for the standard, not dissimilar from the early samples in GEM 1. The remaining nine analyses are spread around the mean.

Figure 11.4: Time Series Plot, Standard GEM 3



For this graph of the low-grade standard, the control values shown (the mean, mean plus 2 standard deviations and mean minus 2 standard deviations) are based on 48 of the 60 round-robin analyses. The CIMM analyses are excluded (last column in Table 11.4). This makes for quite tight limits on the control values. Using those tight limits, all but four of the 21 analyses of the low-grade sample fail, on the high side, and all are high, adding some credence to the CIMM values.

Figure 11.5: Time Series Plot, Standard GEM 3



For this graph of the low-grade standard, the control values shown are based on all 60 round robin analyses. This relaxes the limits on the control values considerably, so that only one of the copper analyses would be considered a failure. There is still a bias, although minor, on the high side. At these low grades, the effect on the resource estimate would be insignificant.

The authors suggest that if the same standards are used in future drill campaigns, they should undergo another series of round-robin analyses. Any anomalies such as the CIMM analyses in the low-grade standard (Figure 11.1) should be resolved before the standards are used for monitoring quality control.

In future drilling campaigns, any failures in the analyses of standards should trigger a re-analysis of all samples in the affected batch. For the present resource estimate at the Inferred level, the results from the monitoring of copper standard samples are satisfactory.

No molybdenum standards were used. During the round-robin analyses of the copper standards, some but not all of the laboratories did molybdenum analysis. The molybdenum contents of the copper standards are too low to be very meaningful as monitors of the quality of molybdenum analyses in this deposit. The molybdenum results are not presented herein. The authors have reviewed the molybdenum results from the analyses of the standards during the drill program and note that no high spikes occurred. Molybdenum standards should be used in future drill campaigns.

11.6.3 Analyses of Duplicate Samples

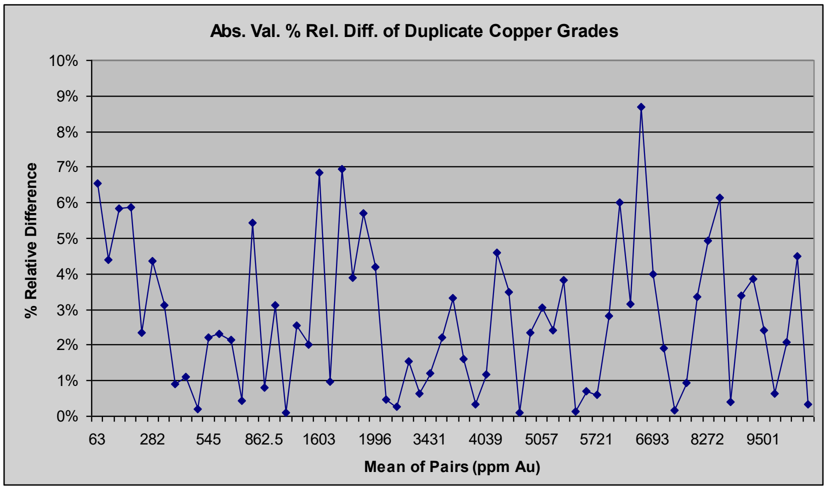
11.6.3.1 Copper Duplicates

Figure 11.6, Figure 11.7 and Figure 11.8 illustrate the results of the duplicate pulp sample analyses for copper. Simple statistics appear in Table 11.5. Comments follow each figure. In general, the results show that the duplicate pulp analyses, both of which were analyzed at Bondar-Clegg, both in the same sample batch, correspond well, as would be expected.

Table 11.5: Summary Statistics for Copper in Duplicates

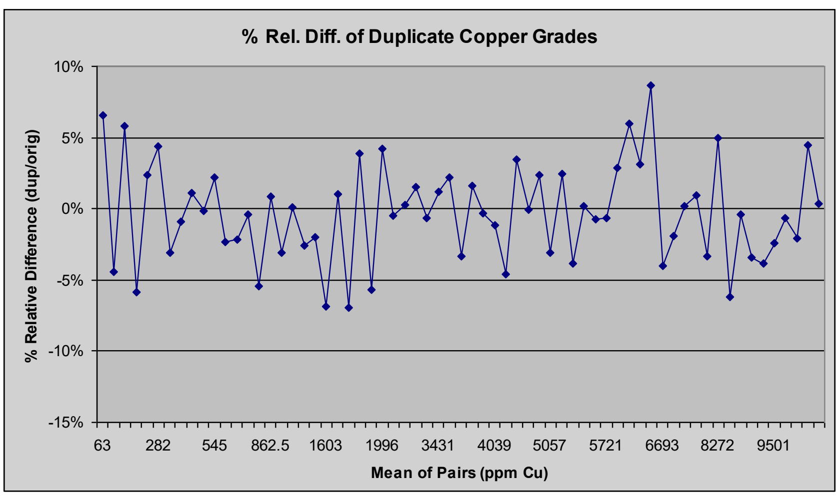
	Mean of Pair	Sample Cu_ppm	Duplicate Cu_ ppm	% Relative Difference	ABSV % Rel. Diff.
Valid N	65	65	65	65	65
Mean	4071	4075	4067	0%	3%
Std. Dev.	3400	3400	3401	3%	2%
CV	0.835	0.835	0.836	-11.295	0.764
Minimum	63.0	61.0	65.0	-7%	0%
Maximum	13613.5	13591	13636	9%	9%

Figure 11.6: Absolute Percent Relative Difference of Copper Grades in Duplicates



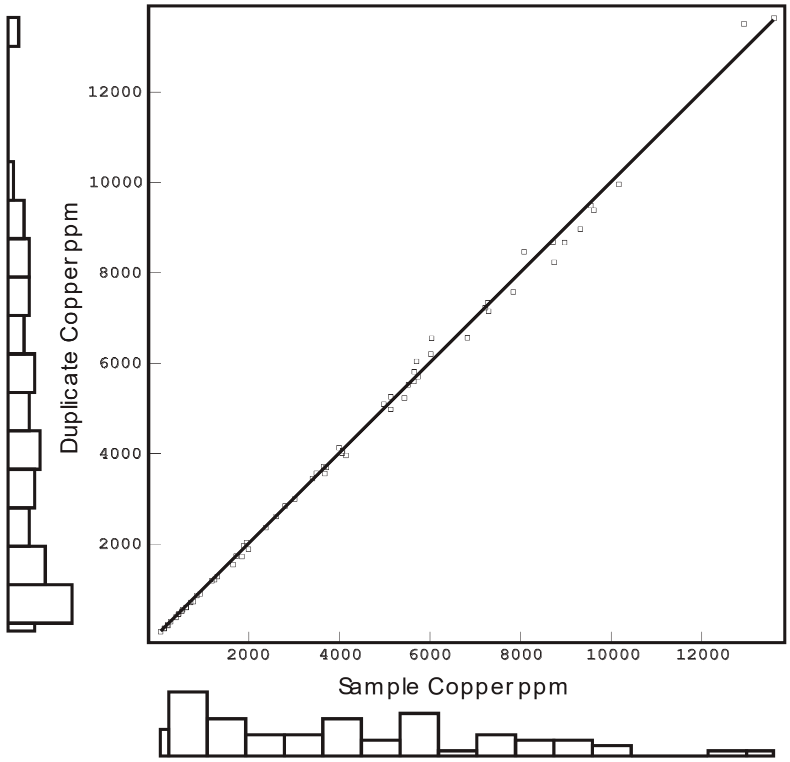
For duplicate pairs, this graph illustrates the absolute amount by which the higher exceeds the lower, expressed as a percentage of the lower. In all cases it was less than 9% and in all but one, less than 7%. It is interesting that the relative difference does not change with grade.

Figure 11.7: Percent Relative Difference of Copper Grades in Duplicates



These are the same data as shown in Figure 11.6, except that the percentages are positive if the duplicate exceeds the original sample, and negative if the duplicate is less than the original. This diagram suggests that, while there may be a high or low bias within specific grade ranges, there is no overall bias between the originals and the duplicates, again as would be expected when using the same lab.

Figure 11.8: Scatter Diagram Copper Duplicates[11]



The low scatter evident in this plot suggests good precision. A regression line and a y=x line are both plotted on the graph, but the regression line is so close to the y=x line that they are indistinguishable.

The duplicate pulp analyses give no cause for concern, but in fact are only a check of the precision of the analyses done by the same lab within the same batch.

11.6.3.2 Molybdenum Duplicates

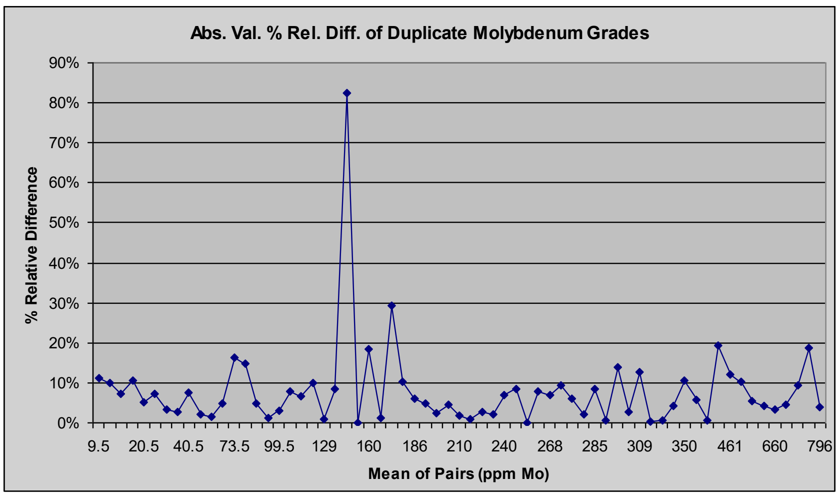
Figure 11.9, Figure 11.10 and Figure 11.11 illustrate the results of the duplicate pulp sample analyses for molybdenum. Comments follow each figure. Simple statistics appear in Table 11.6.

[11] This and similar diagrams are modified output from P-Res v 2.0 by Bentzen and Sinclair, 2003.

Table 11.6: Summary Statistics for Molybdenum in Duplicates

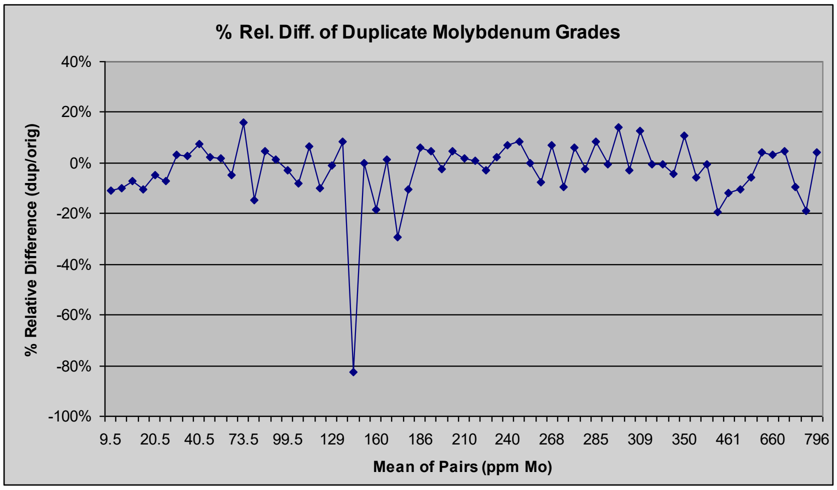
	Mean of Pair	Sample Mo_ppm	Duplicate Mo_ ppm	% Relative Difference	ABSV % Rel. Diff.
Valid N	65	65	65	65	65
Mean	245	248	243	-3%	8%
Std. Dev.	195	199	193	13%	11%
CV	0.795	0.801	0.793	-4.740	1.381
Minimum	9.5	10.0	9.0	-83%	0%
Maximum	795.5	814	811	16%	83%

Figure 11.9: Absolute Percent Relative Difference of Molybdenum Grades in Duplicates



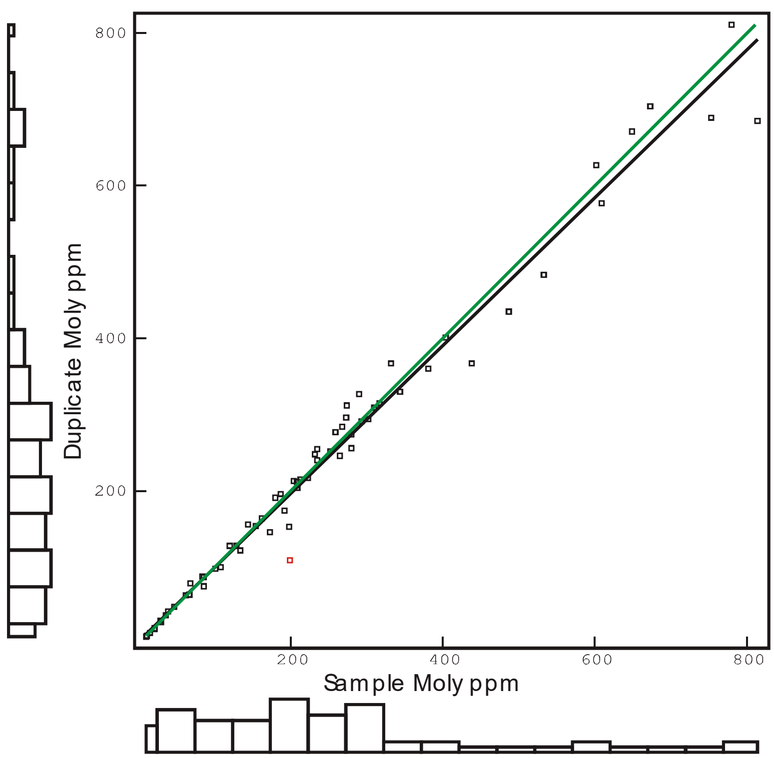
For duplicate pairs, this graph illustrates the absolute amount by which the higher exceeds the lower, expressed as a percentage of the lower. In general, the results are acceptable, but there is one notable difference exceeding 80% at 154 ppm Mo, and another of 29% at 175 ppm Mo. These pairs should have been re-analyzed. If they were in fact re-analyzed, the authors have not found the data.

Figure 11.10: Percent Relative Difference of Molybdenum Grades in Duplicates



These are the same data as shown in Figure 11.9, except that the percentages are positive if the duplicate exceeds the original sample, and negative if the duplicate is less than the original. This diagram suggests that there is little apparent bias between the originals and the duplicates, although on average the duplicates were 3% lower than the originals (Table 11.6). If the average percent difference is calculated without the one extreme value, the duplicates were on average 2% lower than the originals.

Figure 11.11: Scatter Diagram Molybdenum Duplicates



The scatter evident in this plot is considerably greater than the scatter in the equivalent plot for copper. A reduced major axis regression line (black) and a y=x line (green) are both plotted on the graph. The deviation of the regression line, slightly to the right of the y=x line, corroborates the indications in Figure 11.10 that the duplicate analyses have, on average, slightly lower molybdenum values than the originals. There is a considerable increase in the scatter at higher molybdenum values.

The red point represents the duplicate pair with the extreme difference of 83%.

The duplicate pulp analyses indicate that the analytical precision in Bondar-Clegg's molybdenum analyses is acceptable for use in the present estimate of Inferred resources. Careful monitoring of the molybdenum analyses will be required in future drill programs.

11.7 Adequacy of Sample Preparation, Analysis and Security

In the opinion of the authors, the sample preparation, analysis and security procedures employed in the Warintza Project were adequate to support the conclusions expressed in this report, including the Inferred resource estimate described in Section 14.0.

12.0 DATA VERIFICATION

The data verification described in sections 12.1 and 12.2 was conducted in 2006 and is taken from the 2006 report (Ronning and Ristorcelli, 2006). Sections 12.3 and 12.4 are taken from the 2013 report (Ronning and Ristorcelli, 2013). In the absence of any additional data, there has been no further data verification conducted for the current report.

12.1 Drill-hole Database

The critical data to be verified for this report are those that the authors used in the preparation of the resource estimate described in Section 14.0. Only drill hole data were used. The types of data and the verification steps are itemized below.

Analyses	From Lowell Exploration, the authors received the analyses as digital files, both as a compiled set and as the spreadsheets transmitted from Bondar-Clegg at the time the analyses were completed. It is normal practice to verify some part of the electronic analytical data by comparing them with signed paper certificates. Lowell Exploration did not have certificates in its possession but was able to obtain an incomplete set of copies from Corriente in Quito. The copies were not accompanied by signature pages. The authors also obtained a second set of digital files from Corriente in Vancouver. The photocopied certificates contain results for 728 analyses, 34% of the total number of analyses in the database. They are from holes W-01 through W-14. Approximately 5% are not legible. The authors compared all of the legible analyses to the database and found no discrepancies. There were no discrepancies between the sets of electronic data files from different sources.
Core Recoveries	The method that was used to measure and estimate the core recoveries was flawed. The method used would likely result in an under-estimation of the recovery averaged over a large number of measurements. While examining the drill core, the authors noted that the core recovery in general appears good. The authors checked for transcription errors in transferring core recoveries from the original paper logs to the electronic database. In 1,659 measurements in 10 holes, 16 transcription errors were identified, an error rate of about 1%. This is deemed acceptable.

Specific Gravities	The sample sizes used for measuring specific gravities, at about 10 grams, were smaller than would normally be used. The authors identified the formula that had been used for calculating specific gravities and checked the calculations, using the original water-immersion measurements from the field. Seven out of 266 measurements were found to have been improperly calculated or transcribed from the field data into the database. Those seven were corrected.
Rock Quality	The authors checked for transcription errors in transferring the calculated RQDs from field data sheets to the electronic database. A total of 547 measurements in seven holes were checked. Fifty-five errors were identified, for a high error rate of 10%. However, 54 of the errors were in one hole, whose entire electronic RQD data set differed from the field data. If that hole were not considered, the error rate would have been a very small 0.2%. RQD was not used in resource estimation in this study.
Geological Data	During the course of examining the drill core, the authors had both the original drill logs and the electronic database available. The authors did a subjective evaluation of whether the core, the written logs and the electronic database were in reasonable agreement. They were found to correspond reasonably well to each other, taking into account the many subjective decisions that are made in logging drill core.

12.2 Surface Analytical Data

The authors do not have any of the original analytical data for surface samples collected by Billiton or Corriente. No attempt was made to verify those analytical data.

Digital data files from ALS Chemex are available for the surface rock samples collected in 2005 by Lowell Exploration. The authors have done a few spot checks of these data against those in the electronic database used to generate Figure 9.6 and Figure 9.8, but have not performed the sort of systematic checking that was applied to the drill-hole data. The spot checks found no problems.

12.3 Independent Samples

The authors collected 28 rock samples belonging to three categories as part of their due diligence efforts in 2006. Those three categories were: pulp or coarse reject material from the original drill core samples, new duplicate samples collected from the drill core, and samples collected from the surface in the field.

12.3.1 Pulp or Coarse Reject Duplicates

Lowell Exploration had pulps and/or coarse reject material from the original drill core samples stored at its office in Quito. The authors selected five coarse rejects and six pulps to be re-analyzed. Using only coarse rejects would have been preferable, but they are not available for all the samples.

The authors made no attempt to split the samples. One of the authors delivered them to ALS Chemex's reception and preparation facility in Quito for splitting, and they were sent from there to ALS Chemex in North Vancouver, B.C., for analysis. The samples were in the control of one of the authors from the time sampled to the time delivered to ALS Chemex and only the authors knew which samples were to be taken, prior to taking those samples.

12.3.2 Duplicate Samples from Drill Core

The authors selected "duplicate" samples from 10 intervals of drill core for re-analysis. The authors were limited in the type of sampling that they could do. While Lowell Exploration had set up a good core storage facility in Macas, it did not at the time of the authors' visit in 2006 have any sampling equipment there. The preferred sampling method would have been to saw quarter-core splits from the remaining half core. However, that was not possible. The authors decided that the alternative of taking the remaining half-cores from the 10 sample intervals, leaving nothing for reference, was not warranted. Instead, only highly broken intervals were selected for "duplicate" sampling. The samples were collected simply by scooping out about half of the material in the box, from each of the 10 sample intervals, using one's hand or a common spoon. Larger pieces were broken with a rock hammer, with about half of each piece going into the sample. These samples were either always in the control of the authors or locked in suitcases such that any tampering would have been noted.

The pitfalls of this procedure are many. The choice to sample only highly broken intervals induces a selection bias before any sampling is done. The scooping method is imprecise. The considerable handling that the core boxes have undergone during transport means that in broken material, some of the fines have settled into cracks in the core boxes, so that fine material may not be properly represented in the sample.

The samples collected this way cannot be expected to yield results that in all cases are nearly equal to the originals, but they can serve to confirm the presence of mineralization.

12.3.3 Field Samples

The authors collected seven rock samples in the field at Warintza in 2006. They ranged from channel samples to grab samples. They were all collected using a hammer with or without a chisel, either by one of the authors or by a worker supervised by one of the authors. Descriptions of each sample follow:

9022 Channel sample 2 meters long in vertical face; weathered material at site of drill hole W-18.

9023 Channel sample 1 meter long.

9024 Channel sample 1.5 meters long.

9025 Selected chips along a 4 meter cleaned surface.

9026 0.8 meter series of contiguous chips.

9027 1.2 meter series of contiguous chips.

9028 3 random chips or grab samples collected from outcrops along a trail.

The results of copper and molybdenum analyses of the independent samples are presented below (Table 12.1), with the equivalent results from the original Corriente work, where applicable.

Table 12.1: Copper and Molybdenum Analyses in Independent Samples

Sample Number	Cu %	Mo %	Type	Corriente Sample No.	Cu %	Mo %
Pulps or Rejects						
9001	0.50	0.026	pulp	10714600450	0.510	0.025
9002	3.13	0.039	pulp	10714900460	3.20	0.034
9003	0.56	0.032	reject	1251940810	0.57	0.036
9004	0.47	0.117	reject	1251960820	0.46	0.113
9005	0.72	0.017	reject	1251980830	0.73	0.017
9006	0.11	0.021	pulp	10204000080	0.11	0.019
9007	0.41	0.028	pulp	10204500090	0.40	0.024
9008	0.85	0.028	pulp	10204800100	0.90	0.024
9009	1.61	0.012	pulp	10205000110	1.55	0.013
9010	0.35	0.012	reject	1331730570	0.33	0.012
9011	0.42	0.017	Reject	1331760580	0.42	0.017
Drill Core						
9012	0.016	0.039	core	1220700140	0.014	0.038
9013	0.92	0.040	core	1220930210	1.27	0.126
9014	0.97	0.076	core	1222080680	1.09	0.066
9015	1.10	0.023	core	1322190730	1.04	0.026
9016	0.05	0.102	core	1210800160	0.05	0.081
9017	0.58	0.036	core	1211460320	0.61	0.057
9018	0.93	0.035	core	1211660390	1.14	0.032
9019	0.50	0.081	core	1200380080	0.09	0.068
9020	0.19	0.136	core	10612800490	0.27	0.088
9021	0.71	0.042	core	1231910660	0.72	0.052

Surface Samples				
9022	0.018	0.076	channel	
9023	0.065	0.020	channel	
9024	0.027	0.007	channel	
9025	0.440	0.031	chip	
9026	0.034	0.017	chip	
9027	0.052	0.010	chip	
9028	0.027	0.042	grabs	
Notes: Several different analytical procedures were used to produce the analyses in this table. Some results were originally reported in ppm and have been converted to percent for ease of comparison. Pulps, rejects and drill core were analyzed using the ALS Chemex procedures that most closely approximate the original Bondar-Clegg procedures.				

The original and 2006 check results for the pulps and rejects compare quite closely, as would be expected. The original and new check results for the drill core compare well, given the disparity in sampling methods (see Section 10.3). Two exceptions are the molybdenum in sample pair 9013 / 1220930210, and the copper in sample pair 9019 / 1200380080. The authors have no specific explanation for these two instances of significant differences, but a few such occurrences are to be expected, given the imprecision inherit in attempting to duplicate drill core samples, compounded by the less-than-ideal sampling methods used to collect the authors' check samples.

The authors' surface samples yielded relatively low copper and molybdenum values, but they are anomalous and do indicate the presence of a mineralized system.

In summary, the independent check samples serve their purpose of confirming that a mineralized system of the type described by the owners does exist at Warintza.

12.4 Data Verification Post 2006

As described in Section 3.0 of this report, Lowell Copper and its legal counsel in Ecuador have assured the authors that no exploration work has taken place at the Warintza Project since 2006. Given the impracticality of a new field visit, in order to do some additional verification of this, in 2011 the authors requested that Lowell Exploration provide them with a current version of the exploration database for the project. The database was delivered by email on November 22, 2011. One of the authors, Ronning, compared it to the database used in 2006 for the preparation of the report that year. That comparison showed the databases to contain the same information, with the exception of analytical results for 46 additional surface rock samples present in the database of 2011 that were received in 2006 after finalization of the database used by the authors in the preparation of the report of June 2006. Those 46 samples were incorporated into the relevant maps and discussions of the 2013 report (Ronning and Ristorcelli, 2013), which are also used in this report. They are not relevant to the resource estimate described in Section 14.0 of this report and in the authors' opinions have no material effect on the interpretations and conclusions that were expressed in the 2006 version of the report. No further verification has been conducted since 2011.

12.5 Adequacy of the Data

The authors believe that the data on which they have relied for this report are adequate to support the interpretations, conclusions and recommendations expressed herein.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 General

The authors are aware of only one sequence of metallurgical tests performed on a single sample of material from Warintza. That work is summarized in Section 13.2. The authors are also aware that some "sequential"-leach copper analyses were done on supergene mineralization from Warintza. Such analyses involve sequential dissolution of copper from a sample using different reagents and provide information as to the leachability of supergene copper mineralization. The authors have not found the results of the sequential analyses.

Despite the paucity of test data, the rather typical and common mineralogy of the deposit suggests that the mineralization should be metallurgically recoverable. Test work is required to confirm this. Some matters that should be considered in future metallurgical test work include:

- The highest-grade copper mineralization is in the supergene enriched zones. Much of the supergene mineralization co-exists with primary copper sulfides, which means that extraction procedures may need to be effective for both types.
- Molybdenum has the potential to be a significant contributor to the economics of exploiting the Warintza deposit. Solution extraction methods that might be suitable for the supergene copper mineralization would not extract the molybdenum.
- Most of the molybdenum mineralization consists of molybdenite. However, the authors observed a secondary mineral, possibly ferrimolybdite, coating some molybdenite grains in the oxidized zone. Ferrimolybdite could affect the recovery of molybdenum and therefore molybdenum in the oxidized leached zone is not reported in this resource.

13.2 Resource Development Inc. Test Work

In 2002 Corriente commissioned Resource Development Inc. ("RDI") to do preliminary metallurgical testing of three samples of material, one of which was from Warintza (Resource Development Inc., 2002). The RDI draft report does not describe the samples, nor their sources, in detail. It does state that "Approximately 75 kilograms of each sample consisting of analytical rejects of RC cuttings were received for the study." There has been no RC drilling at Warintza, so that description cannot be correct for the sample from Warintza. Probably the samples consisted of coarse reject material from the analytical laboratory's preparation facility. One of the samples, but not the one from Warintza, is described as containing a significant amount of copper oxide. Since no such statement is made concerning the Warintza sample, it probably did not contain a significant proportion of oxide material and hence probably did not come from the oxide zone of the deposit. This conclusion is consistent with a finding that the Warintza sample contained only 0.028% acid soluble copper. The acids used are not stated. Nevertheless, this leads to the inference that most of the copper in the Warintza sample was probably primary rather than supergene, since it is likely that supergene copper minerals would have dissolved more readily in an acid.

The discussion that follows in the remainder of this Section (13.2) is adapted and abridged from RDI (2002). Whereas the RDI discussion dealt with samples from three projects, only the results for the

Warintza sample are used herein. In descriptions of procedures, the plural term ("samples") refers to all of the samples and the singular refers only to the Warintza sample.

The primary objectives of the RDI study were to determine the hardness of the samples, the recoverability of copper and gold into a copper concentrate, and the grade of the concentrate. The scope of the test program included sample preparation and head analyses of the samples, Bond's ball mill work index determination, rougher flotation tests at three grind sizes, and a cleaner test on each sample to access product quality.

The Warintza sample contained 437 ppm molybdenum, but no work was done to assess the recoverability of the molybdenum.

The samples were crushed to minus 10 mesh, blended and split into 2-kilogram charges for flotation test work. A 2-kilogram charge was pulverized and split for chemical analyses and x-ray fluorescence ("XRF") analyses. The head grade analyses of the Warintza sample for copper, gold and silver are shown in in Table 13.1.

Table 13.1: Head Grades of Warintza Metallurgical Sample

Cu, %	0.732
Cu (acid soluble), %	0.028
Au, g Au/tonne	0.21
Ag, g Ag/tonne	3.09
Notes: Adapted from part of Table 1 of RDI (2002)	

The samples that RDI received for metallurgical testing were not suitable for Bond's ball mill work index determinations, as they were too finely crushed. RDI did receive a separate sample of drill core from another of Corriente's deposits. Using a Bond's work index determined for that material, RDI used an indirect method to calculate Bond's work indexes for the Warintza and other samples. The results for Warintza appear in Table 13.2. RDI classified the material as "moderately hard."

Table 13.2: Calculated Bond's Work Index for Warintza Sample

X_F, µm (80% passing feed size)	1382
X_P, µm (80% passing product size)	133
Work Index	17.54
Notes: Adapted from part of Table 4 of RDI (2002)	

A series of laboratory grind tests was undertaken to establish the time required to obtain targeted grinds of P_{80} (80% passing) of 65, 100 and 150 mesh for each sample. In each case approximately 2 kilograms of material were ground in a laboratory rod mill at 50% solids for 10, 20, 30 and 45 minutes. The ground material was then deslimed on a 400-mesh screen and the products were dried. The plus 400-mesh fraction was dry screened from 20 to 400 mesh. The screen fractions were weighed and the particle size distribution was determined. The grind time requirements for the Warintza sample appear in Table 13.3.

Table 13.3: Grind Time Requirements for Targeted Grind Size

Mesh Size	Grind Time, minutes
P_{80} = 65 mesh	20
P_{80} = 100 mesh	27
P_{80} = 150 mesh	45
Notes: Adapted from part of Table 5 of RDI (2002)	

Following the grind studies, bench-scale rougher flotation tests were performed at three grind sizes: P80 of 65, 100 and 150 mesh. A simple reagent suite was employed, consisting of lime as a pH modifier, potassium amyl xanthate ("PAX") as a collector and methyl isobutyl carbonyl ("MIBC") as a frother.

The test procedure consisted of grinding a 2-kilogram sample with 250 g/T lime in a laboratory rod mill at 50% solids for a known time to obtain the desired particle size. The ground pulp was transferred to a flotation cell and the pH was adjusted with an additional 20 to 75 g/t lime to obtain a pH of ±8. Collector (60 g/T PAX) and frother (15 g/T MIBC) were added to the pulp and conditioned for one minute. Two concentrates were collected at cumulative times of 1 and 4 minutes. The flotation pulp was again conditioned for 2 minutes with additional collectors (20 g/T PAX) and frother (5 g/T MIBC) and a third concentrate was collected at 6 minutes. The concentrates and flotation tailings were filtered, dried, pulverized and submitted for copper analyses. Gold and silver analyses were also obtained for the tailings. The test results for Warintza material are summarized in Table 13.4.

Table 13.4: Summary of Rougher Flotation Results

Grind, P_{80} mesh	Recovery (10 minutes)			Feed		Tailing	Rougher Flotation Conc. Grade, % Cu
	Wt., grams	Cu, %	Au, %	Calculated % Cu	Assayed g Au/T	Assayed g Au/T	
65	16.75	94.4	72.3	0.809	0.21	<0.07	4.56
100	13.84	94.2	71.3	0.804	0.21	<0.07	5.47
150	14.03	94.0	71.3	0.777	0.21	<0.07	5.21
Notes: Copied from part of Table 6 of RDI (2002)							

According to RDI (2002) the highlights of the test results were:

- The copper recoveries for Warintza material were in the 94% range in 10 minutes of flotation.
- The majority of the copper (75% to 90%) floated in four minutes of flotation time.
- The recovery of copper was independent of the grind size within the range investigated.

- The gold recoveries were calculated based on feed and flotation tailing assays. The gold recovery from the Warintza sample was 71%. The gold may be associated with copper minerals.

One open-circuit cleaner flotation test was performed on each sample to determine the quality of the possible product. No attempt was made to optimize the process conditions in the cleaner circuit. The test conditions for the cleaner flotation were selected based on RDI's previous experiences treating primary copper ores.

The test procedure consisted of floating a rougher concentrate at a primary grind of P80 of 100 mesh with lime, PAX and MIBC for 10 minutes. The rougher concentrates were reground for 15 minutes in a laboratory ball mill. The pH of the ground pulp was adjusted to 10.5 with lime and conditioned for one minute with 10 g/T PAX and 5 g/T MIBC. The first cleaner concentrate was collected for 4 minutes. The first cleaner concentrate was re-cleaned in second-cleaner flotation at pH>10.5 and three timed concentrates collected for cumulative times of 0.5, 1 and 2.5 minutes. The products were analyzed for copper and the first second-cleaner concentrate was also analyzed for gold.

The product quality of the second-cleaner 0.5 minute and 2.5 minute concentrate product are shown in Table 13.5.

Table 13.5: Second-Cleaner Concentrate Product Quality

	0.5 Minute Product	**2.5 Minute Product**
Cu, %	15.1	11.93
g Au/T	1.23	
Notes: Adapted from part of Table 7 of RDI (2002).		

In commenting on the test results, RDI (2002) noted that:

- Concentrate grades in the Warintza sample were postulated to have been lower than might have been achieved, due to the presence of pyrite, which also floats readily and may have gone into the concentrate with the copper minerals. A higher flotation pH, greater than 11, may be required to depress the pyrite in the concentrate.
- Additional testing may be required to optimize the regrind time and cleaner flotation process conditions to determine the quality of product that can be produced in the second cleaner concentrate.

RDI (2002) stated that, based on its experience of other similar primary copper deposits, it is likely that a copper concentrate assaying 24% to 28% Cu could be produced. RDI indicated a need for additional testing.

14.0 MINERAL RESOURCE ESTIMATES

The first mineral resource estimate for the Warintza Project reported in accordance with the disclosure and reporting requirements set forth in NI 43-101 was prepared by one of the authors, S. Ristorcelli of MDA, in 2006 and is reported, again, herein. The resource estimate meets the requirements of Canadian Securities Administrators' National Instrument 43-101 ("NI 43-101") in that it was prepared in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum's "CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines" ("CIM Standards") modified in 2014. Both authors have reviewed the estimate and believe that it fairly represents the resource in light of the available data.

14.1 Introduction

The project has only Inferred resources, all of which lie in the Warintza Central area, situated between the Warintza West and the Warintza East areas. While the stage of exploration is still early even in the Warintza Central area, the behavior and predictability of the mineralization intersected to date in the drilling are such that the newly defined resource can be classified as Inferred. This is the first and only formal and public resource estimate done on Warintza to date, and the authors feel that additional drilling and study should result in both upgrading and expanding the resource. The resource remains open in several directions. Presently, the deposit as defined by existing drilling and at a cutoff of 0.30% CuEq is approximately one kilometer long, 400m wide, and 300m thick. It trends approximately N60ºE.

As discussed in Sections 1.4, 2.1, 2.5, 4.4, and 6.0, disruptions by third parties caused exploration to cease at Warintza in November 2006. In the last six months, Equinox and Lowell Exploration have been working to improve community relations as described in Section 4.4 but have not yet resolved the social issues that have precluded further exploration. The authors are not experts with respect to social, socio-economic, or political factors and are not qualified to assess social issues in Ecuador; they must rely on the experts providing the information in Section 4.0. While the resources described in Section 14.0 of this report fulfill all the technical requirements to be Inferred resources, whether these resources can continue to be deemed "current" remains a risk that could be materially affected by long-term continued social, political, and government affairs issues about which the authors are not qualified to make a professional assessment.

Although the authors are not experts with respect to any of the following additional aspects, they are not aware of any unusual environmental, permitting, legal, title, taxation, or marketing factors that may materially affect the Warintza mineral resources as of the date of this report.

14.2 Data

The Warintza drill database is made up of data from Warintza Central only. The database is composed of 33 drill holes with 2,142 copper, molybdenum and gold assays and fewer of silver, lead and zinc (Table 14.1). The database used in this study was constructed from data received from Lowell Exploration and audited by Ronning and Ristorcelli (see Section 12.1).

Table 14.1: Descriptive Statistics of the Warintza Database

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
From	2158					0.0	363.0	m
To	2158					2.0	366.9	m
Length	2158		3.0			0.1	7.0	m
Cu	2142	0.29	0.35	0.41	1.17	0.00	6.20	%
Mo	2142	229	279	253	0.91	4	2987	ppm
Au	2142	38	55	70	1.27	3	1380	ppb
Ag	775	1.1	3.2	18.8	5.98	0	500	ppm
Pb	775	6	20	80	4.08	1	1423	ppm
Zn	2142	12	32	154	4.83	2	3482	ppm
Core Recovery	2131	99	94	12	0.12	5	100	%
RQD	1507	27	31	21	0.66	2	96	%
Specific Gravity	265	2.55	2.56	0.23	0.09	1.45	3.42	g/cm3

14.3 Specific Gravity

Lowell Exploration took 265 specific gravity measurements. MDA loaded these into the database and evaluated them within the context of the three main mineralized zones defined by variable weathering (Table 14.2) primary, enriched and leached. The specific gravity was measured on very small samples (~10 g), which will not fairly represent void space and hence would certainly overstate specific gravity. To compensate for this, and for unavoidable bias in sample selection, the measured values were reduced by the factors indicated in Table 14.2.

Table 14.2: Specific Gravity Data

Mean Specific Gravities

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum
Primary	83	2.57	2.58	0.26	0.10	1.00	3.25
Enriched	109	2.58	2.58	0.23	0.09	1.45	3.08
Leached	73	2.43	2.47	0.23	0.09	1.97	3.42

	Factors	Accepted	Explanation
Primary	2%	2.5	Open veinlets and vuggy
Enriched	2%	2.5	Open veinlets and vuggy
Leached	3%	2.4	Open/leached veinlets and vuggy

14.4 Mineral Domains

Lowell Exploration personnel provided cross sectional geologic interpretations of the Warintza Central resource area. The interpretation included lithologic units and contacts, style of weathering (primary, enriched and leached zones) and faulting. These cross sections along with quantile plots of copper and molybdenum metal grades were used to guide the resource modeling (Figure 14.1 and Figure 14.2).

The copper quantile plot (Figure 14.1) demonstrates well the main copper zones and domains at Warintza. Not including the unmineralized material (<~0.04% Cu), the three slopes on the plot likely represent three main styles of mineralization: <~0.04% Cu is essentially un-mineralized material and much of this is in the leached zone; >~0.04 to <~0.4% Cu is dominated by disseminated copper mineralization; >~0.4 to <~1.3% Cu is dominated by stockwork copper mineralization; and >~1.3% Cu represents higher grades generally in the enriched copper mineralization.

Molybdenum mineralization has essentially three domains: >~8 ppm Mo to <~100 ppm Mo; >~100 to <~1100 ppm Mo; and >~1100 ppm Mo (Figure 14.2). The unmineralized material grades up into disseminated molybdenum (>~8 ppm Mo to <~100 ppm Mo), and higher grades (>~100 to <~1100 ppm Mo) are dominated by stockwork mineralization. The highest grades (>~1100 ppm Mo) represent thick veins, clots or shears with often-gaudy molybdenite. Very little if any re-mobilization of the molybdenum occurred during weathering.

Copper mineralogy in the primary zone is dominated by chalcopyrite, while chalcocite dominates the enriched zone. Little copper occurs in the leached zone, and what does occur is dominated by isolated secondary copper sulfides, possibly some copper oxides, and maybe some remnant chalcopyrite. The latter would be in small amounts and with local distribution.

Molybdenite is the dominant molybdenum mineral in all parts of the deposit. In the oxidized zone the authors noted some instances in which the molybdenite appeared to have a yellowish coating, possibly a product of oxidation. Molybdenum mineralogy in the oxide zone merits further study, as it can have an impact on the recoverability of molybdenum. Because of metallurgical reasons, in that the molybdenum in the leached zones would not be recoverable, molybdenum in the leached zone is not reported in the resource, although it does exist.

MDA used Lowell Exploration's geological interpretations and geologically coded drill data, as well as color-coded plots of grades (as defined by the quantile plots) to define domains. MDA's interpretation left the leached, enriched and primary zones as defined by Lowell Exploration personnel relatively unchanged, with only minor and local modifications. When present, the leached zone averages 50 m thick and ranges from 20 to 140 m thick. The enriched zone averages 90 m thick and ranges from 15 to 240 m thick.

In most cases, zones defined by Lowell Exploration personnel as "mixed zones" were coded as enriched, since a mixed zone was not segregated. An attempt was made to segregate the primary copper mineralization into distinct mineral domains, but once the enriched and leached zones were segregated, too few samples existed in the primary mineralization to adequately define the domains. With more drilling into the primary mineralization, the possibility of segregating additional styles of mineralization in the sulfides into domains should be investigated.

The molybdenum mineralization, as defined by the grade domains, holds together very well with the domains forming continuous though gradational domains. Unfortunately, the drilling is too sparse to segregate these zones without the use of artificial hard boundaries. Several attempts were made to segregate the molybdenum domains, but all were unsuccessful. For this reason, the molybdenum grades were estimated without domains. While estimating without domains imparts some risk, the effects of using hard boundaries in this porphyry system with widely spaced holes would lead to unrealistic abrupt changes in grade distribution. The danger of smearing out the high-grade zone, which does not seem to have happened, is tempered by the fact that the mineralization is open-ended.

Lowell Exploration's east-west oriented sections were used to define the primary, enriched, and leached zones. These were sliced to and then re-interpreted on north-south-oriented sections, and again Lowell Exploration's geologic sections were used as a guide. The domains defined are listed in Table 14.3. After the domains were defined on the two sets of oriented sections, the north-south sections were used to create solids. The solids were used for coding the block model.

Table 14.3: Mineral Domains of Warintza Central

Zone	Description
1	Primary Copper
3	Enriched Copper
5	Leached Copper
1	All Molybdenum

Figure 14.1: Quantile Plot of Copper Grades

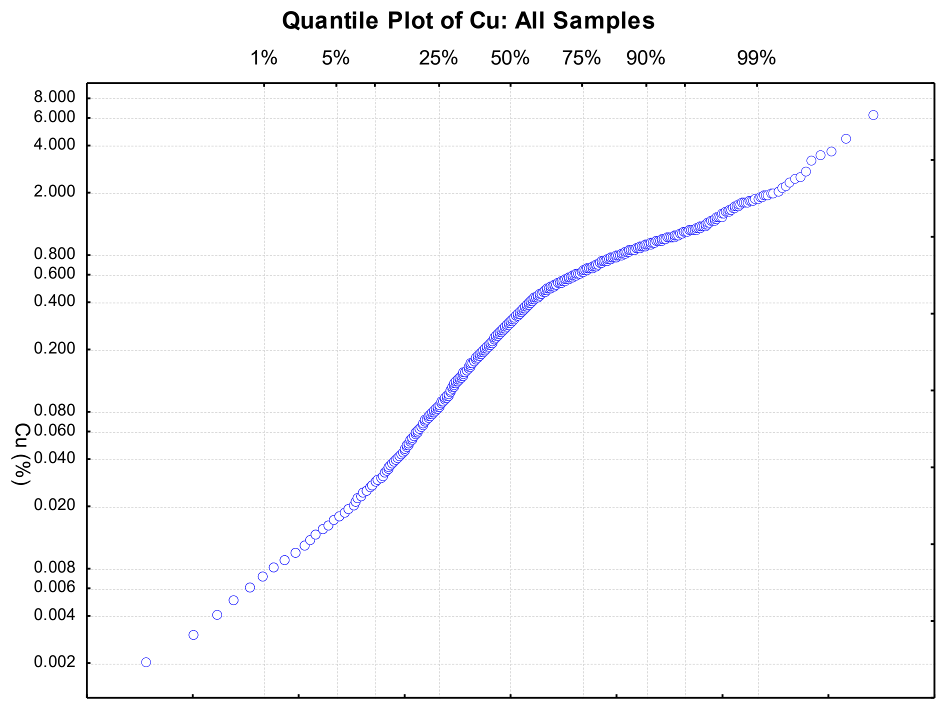


Figure 14.2: Quantile Plot of Molybdenum Grades

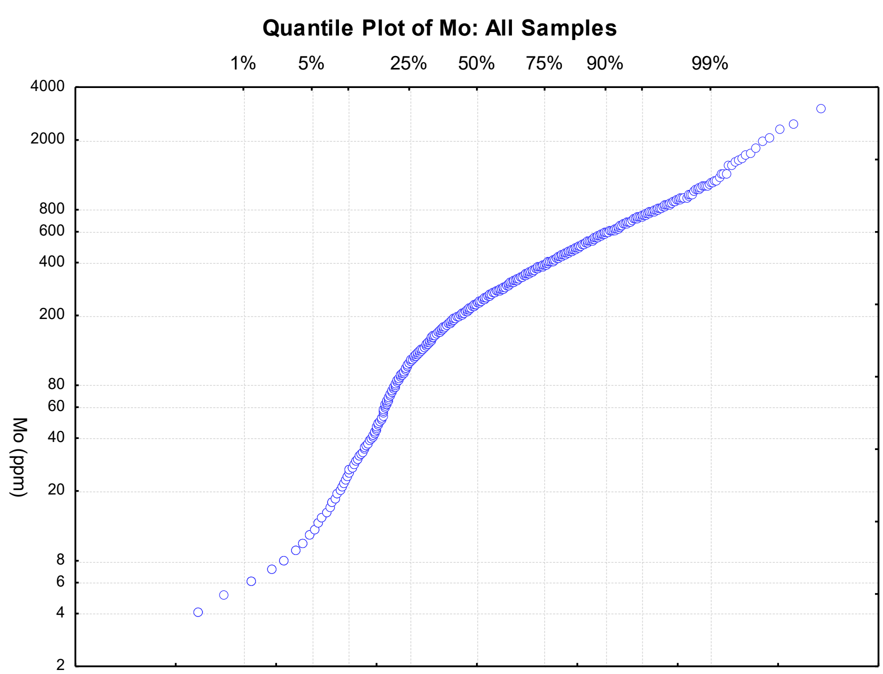
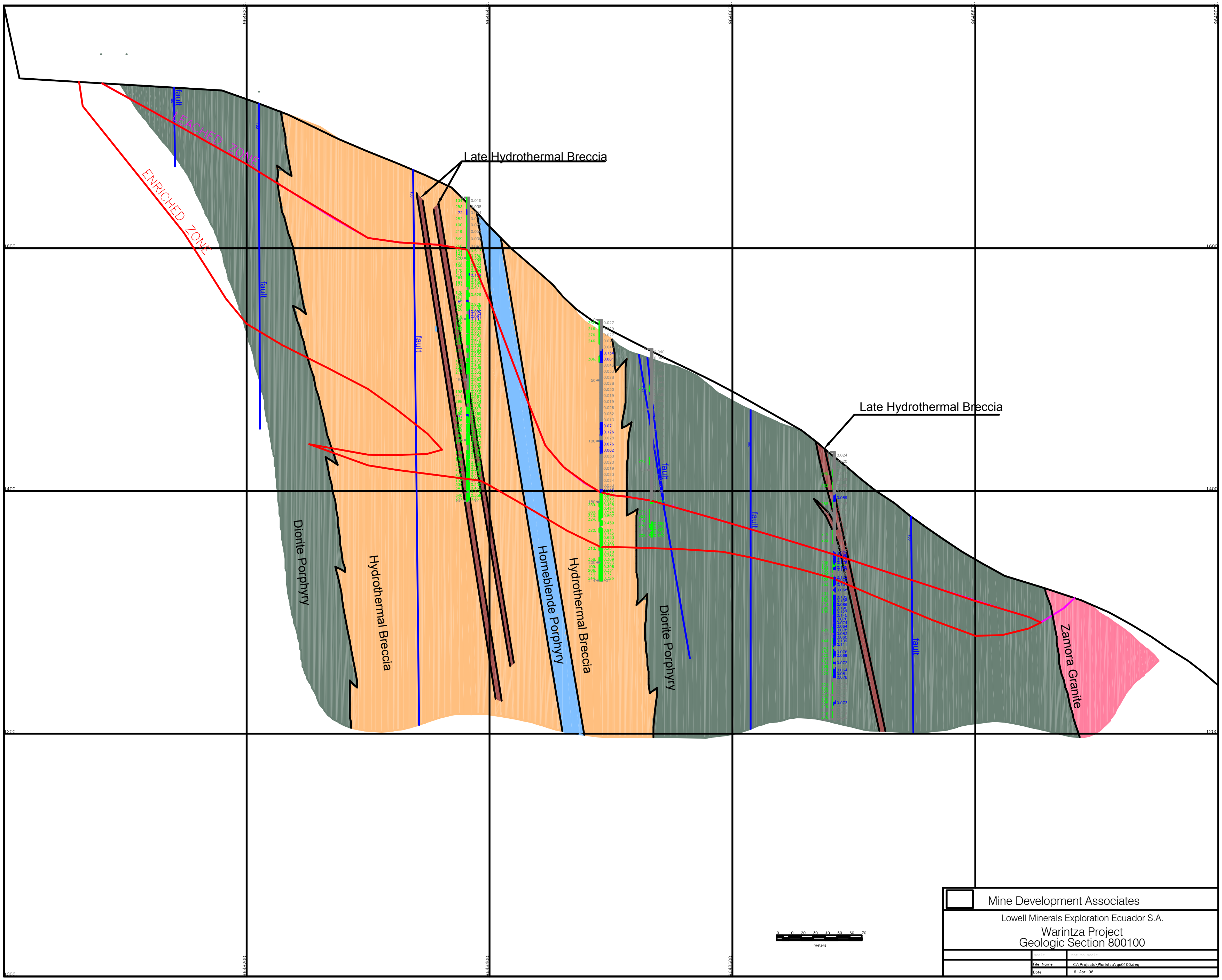


Figure 14.3 Cross Section 800,100 - Geology and Zones



14.5 Assay Statistics

Once the domains were defined, the drill-hole samples were coded by these zones and statistical analyses were completed on each zone. Descriptive statistics of the sample analyses for copper and molybdenum are presented in Table 14.4 and Table 14.5, respectively. Capping the high-grade outliers was done on the assays as shown in these tables. Note that capping was only done in the primary and enriched zones and only the primary zone was materially impacted by the capping. After capping the outlier sample grades, the samples were composited to 10-meter lengths. Descriptive statistics of the composites are given in Table 14.6.

Table 14.4: Sample Descriptive Statistics of Copper Domains

Min Zone Primary (ZONEC 1)

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	699	3.0	2.8	0.000	0.00	0.1	5.0	m
Cu	691	0.316	0.395	0.402	1.02	0.004	6.200	%
Difference			-4%					
Cu_Cap	691	0.316	0.381	0.279	0.73	0.004	1.500	%
Mo	691	250	303	284	0.94	4	2987	ppm

Min Zone Enriched (ZONEC 3)

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	1022	3.0	2.6	0.000	0.00	0.1	6.0	m
Cu	1017	0.500	0.536	0.439	0.82	0.005	3.600	%
Difference			0%					
Cu_Cap	1017	0.500	0.535	0.432	0.81	0.005	2.700	%
Mo	1017	207	242	227	0.94	4	2278	ppm

Min Zone Leached (ZONEC 5)

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	434	5.0	4.6	0.000	0.00	2.0	7.0	m
Cu	434	0.034	0.053	0.056	1.06	0.002	0.498	%
Difference			0%					
Cu_Cap	434	0.034	0.053	0.056	1.06	0.002	0.498	%
Mo	434	262	303	246	0.81	6	1425	ppm

"ZONEC X" refers to the code used for each zone (domain) in the modeling software. Codes are described in Table 14.3

Table 14.5: Sample Descriptive Statistics of Molybdenum

Molybdenum All Samples

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	2158	3.0	3.0	0.000	0.00	0.1	7.0	m
Mo	2142	229	279	253	0.91	4	2987	ppm
Difference			0%					
Mo_Cap	2142	229	279	253	0.91	4	2987	ppm

Table 14.6: Composite Descriptive Statistics

Primary

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	208		9.3			0.0	10.0	m
Cu	207	0.315	0.395	0.372	0.94	0.026	4.269	%
CuCapped	207	0.315	0.381	0.259	0.68	0.026	1.479	%
Mo	207	286	303	205	0.68	4	1236	ppm

Enriched

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	275		9.5			0.0	10.0	m
Cu	274	0.487	0.536	0.394	0.73	0.007	2.199	%
CuCapped	274	0.487	0.535	0.389	0.73	0.007	2.199	%
Mo	274	227	242	185	0.76	4	1188	ppm

Leached

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	214		9.2			1.0	10.0	m
Cu	214	0.038	0.053	0.049	0.92	0.002	0.280	%
CuCapped	214	0.038	0.053	0.049	0.92	0.002	0.280	%
Mo	214	270	303	231	0.76	7	1246	ppm

Molybenum Domain

	Valid N	Median	Mean	Std.Dev.	CV	Minimum	Maximum	Units
Length	670		9.7			0.0	10.0	m
Mo	667	256	279	207	0.74	5	1246	ppm
Mo Capped	667	256	279	207	0.74	5	1246	ppm

14.6 Estimation

Variograms were calculated from the composites for each copper domain and for the molybdenum domain. In spite of there being so few drill data, good grade continuity was displayed by most of the zones; the primary mineralization was the least well defined and this was likely due to having so few samples. The dominant direction was east-west along the axis of the mineralization with the secondary axis being vertical. The shortest ranges were north-south.

The composite samples were used to estimate grades into the blocks. While three estimating techniques were completed to assess variance between them and ascertain the degree of risk, the kriged model is the one being reported in the Inferred resource. The other two techniques were nearest neighbor and inverse distance squared ("ID^2"). Specifics of the estimation are presented in Table 14.7 and Table 14.8. Figure 14.4 and Figure 14.5 present cross sections through the copper and molybdenum models at section 800,100.

Figure 14.4 Cross Sectoin 800,100 - Gology, Zones and Copper Model

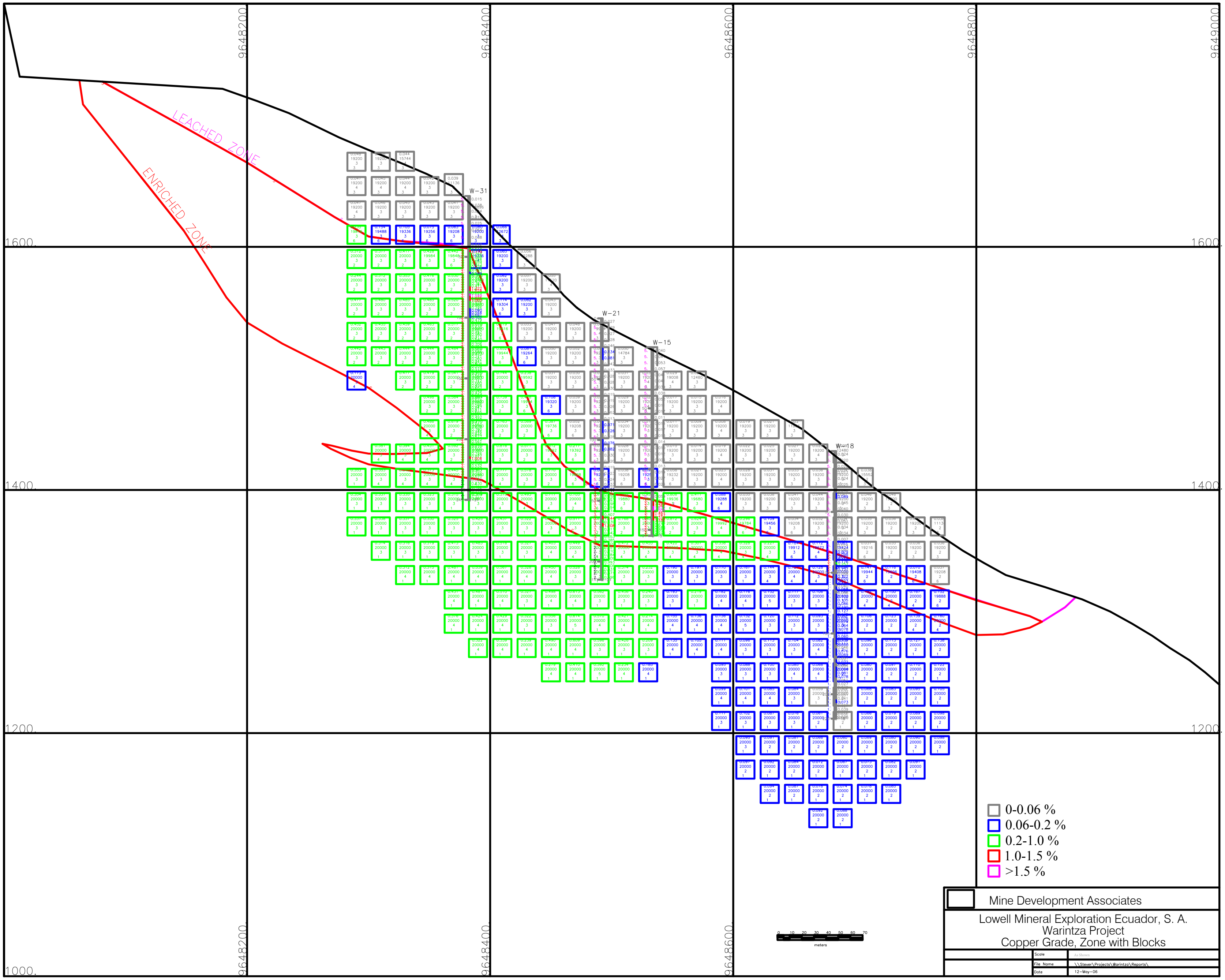


Figure 14.5 Cross Section 800,100 - Geology Zones and Molybdenum Model

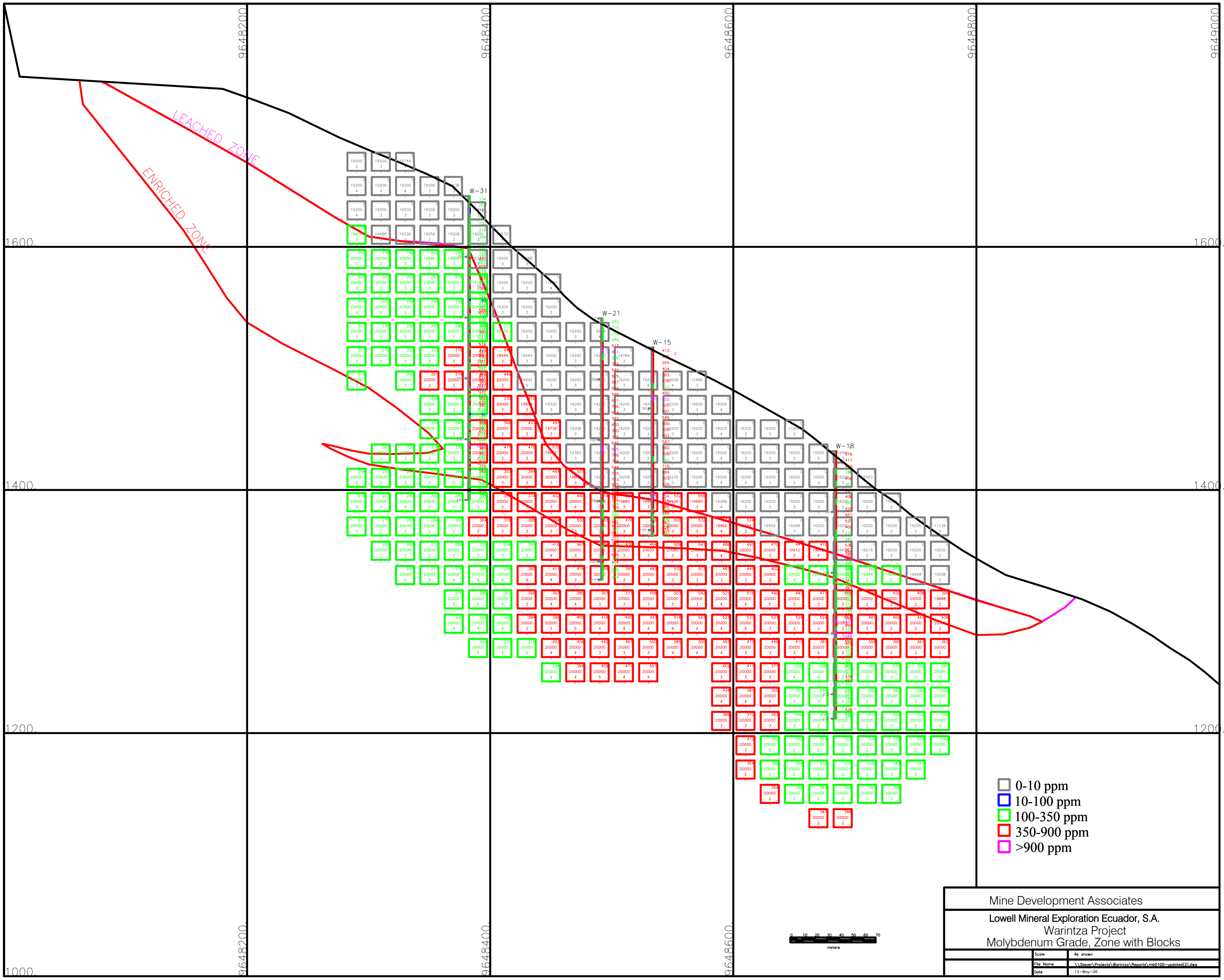


Table 14.7: Estimation Parameters for Copper by Mineral Domain

Description	Parameters
Copper – Leached – kriged	
No. of Samples: minimum/maximum/maximum per hole	2 / 12 / 4
Nugget (C_o) / Sill (C_1)	0.0006 / 0.0027
Range in major / semi-major / minor (m)	260 / 170 / 170
Major / semi-major / minor (°)	0 / -35 / 0
Search distances in major / semi-major / minor (m)	300 / 150 / 100
Maximum distance to closest point (m)	200
High-grade restriction: grade / limiting range	0.2 % Cu / 100 m
Copper – Enriched – kriged	
No. of Samples: minimum/maximum/maximum per hole	2 / 12 / 4
Nugget (C_o) / Sill (C_1) / Sill (C_2)	0.0182 / 0.0419 / 0.0901
Range (C_1) in major / semi-major / minor (m)	350 / 40 / 300
Range (C_2) in major / semi-major / minor (m)	500 / 170 / 330
Major / semi-major / minor (°)	90 / 0 / 0
Search distances in major / semi-major / minor (m)	300 / 150 / 100
Maximum distance to closest point (m)	200
High-grade restriction: grade / limiting range	0.6 % Cu / 100 m
Copper – Primary – kriged	
No. of Samples: minimum/maximum/maximum per hole	2 / 12 / 4
Nugget (C_o) / Sill (C_1)	0.0133 / 0.0674
Range in major / semi-major / minor (m)	300 / 100 / 270
Major / semi-major / minor (°)	90 / 0 / 0
Search distances in major / semi-major / minor (m)	300 / 150 / 150
Maximum distance to closest point (m)	200
High-grade restriction: grade / limiting range	0.4 % Cu / 100 m

Table 14.8: Estimation Parameters for Molybdenum

Description	Parameters
Molybdenum – kriged	
No. of Samples: minimum/maximum/maximum per hole	2 / 12 / 4
Nugget (C_o) / Sill (C_1) / Sill (C_2)	9800 / 6800 / 27000
Range (C_1) in major / semi-major / minor (m)	250 / 250 / 250
Range (C_2) in major / semi-major / minor (m)	430 / 250 / 430
Major / semi-major / minor (°)	90 / 0 / 0
Search distances in major / semi-major / minor (m)	300 / 150 / 100
Maximum distance to closest point (m)	200
High-grade restriction: grade / limiting range	1200 ppm / 100 m

14.7 Mineral Resources

MDA classified the resource based on geological and quantitative confidence as Inferred, in accordance with the "CIM Definition Standards - For Mineral Resources and Mineral Reserves" (2014) and therefore Canadian National Instrument 43-101. While the estimation was performed prior to 2014, MDA completed the work such that it fulfills even the requirements of the 2014 CIM definitions. CIM mineral resource definitions are given below:

Mineral Resource

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.

The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

Material of economic interest refers to diamonds, natural solid inorganic material, or natural solid fossilized organic material including base and precious metals, coal, and industrial minerals.

The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of Modifying Factors. The phrase 'reasonable prospects for eventual economic extraction' implies a judgment by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. The Qualified Person should consider and clearly state the basis for determining that the material has reasonable prospects for eventual economic extraction. Assumptions should include estimates of cutoff grade and geological continuity at the selected cut-off, metallurgical recovery, smelter payments, commodity price or product value, mining and processing method and mining, processing and general and administrative costs. The Qualified Person should state if the assessment is based on any direct evidence and testing.

Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron, potash deposits and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However, for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time.

Inferred Mineral Resource

An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

An Inferred Mineral Resource is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources must not be included in the economic analysis, production schedules, or estimated mine life in publicly disclosed Pre-Feasibility or Feasibility Studies, or in the Life of Mine plans and cash flow models of developed mines. Inferred Mineral Resources can only be used in economic studies as provided under NI 43-101.

There may be circumstances, where appropriate sampling, testing, and other measurements are sufficient to demonstrate data integrity, geological and grade/quality continuity of a Measured or Indicated Mineral Resource, however, quality assurance and quality control, or other information may not meet all industry norms for the disclosure of an Indicated or Measured Mineral Resource. Under these circumstances, it may be reasonable for the Qualified Person to report an Inferred Mineral Resource if the Qualified Person has taken steps to verify the information meets the requirements of an Inferred Mineral Resource.

Indicated Mineral Resource

An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Pre-Feasibility Study which can serve as the basis for major development decisions.

Measured Mineral Resource

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.

A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.

Mineralization or other natural material of economic interest may be classified as a Measured Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such that the tonnage and grade or quality of the mineralization can be estimated to within close limits and that variation from the estimate would not significantly affect potential economic viability of the deposit. This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral deposit.

Modifying Factors

Modifying Factors are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.

The Warintza Central resource is classified as Inferred. The Inferred classification is assigned because of the early stage of the project, the limited QA/QC data, the dominance of vertical (as opposed to angled) drilling, the lack of definition of the limits of mineralization (it is open-ended in several directions), the limited specific gravity data, the lack of metallurgical data and the incomplete understanding of the "post-mineralization" breccias and dikes. However, the predictability of the deposit and the sound geologic model support this as an Inferred resource. Much of the risk that would typically be associated with a project at this stage is minimized at Warintza Central because the defined mineralization is open-ended. It is also likely that the classification of future resource estimates will be raised with further work, including additional drilling and additional geological, geotechnical and sample integrity studies.

In order for a block-model block to be classified as Inferred, the block required composites from at least two drill holes in the grade estimation, with at least one composite being within 100 m of the block in question or at least two samples from any hole or holes with the closest sample being within 30 m of the block. In addition, an estimated grade for both copper and molybdenum was required for a block to be Inferred. The molybdenum in the leached zone is not reported as there is no accepted method of extraction of oxidized or dominantly oxidized molybdenum.

Copper equivalent calculations were made for reporting purposes. The copper equivalent grade for copper plus molybdenum was calculated as follows: CuEq(%) = Cu(%) + (6*Mo(ppm)/10000). Copper-equivalent calculations reflect gross metal content and have not been adjusted for metallurgical recoveries or relative processing and smelting costs. The copper-equivalent grades were used only for establishing cutoff grades for reporting. Tabulating the material in this manner produces a more accurate presentation of the spatial association of copper and molybdenum, while at the same time giving credit to both elements.

As the gold grades are so low (~50 ppb), MDA did not estimate gold. If it is demonstrated that certain areas have higher gold grades in definable domains or that these low grades add economic value, then gold can be included in future estimates.

Table 14.9 presents the total Inferred resource at variable cutoffs; the reported resource is at a cutoff of 0.3% CuEq. Table 14.10 and Table 14.11 present the Inferred resources by type of mineralization. The reported Inferred resource at a 0.3% CuEq cutoff has 194,994,000 tonnes grading 0.61% CuEq, or 0.42% Cu and 0.031% Mo.

Table 14.9: Warintza Project – Inferred Resources

Total Inferred

Cutoff CuEq%	Tonnes	CuEq%	Cu%	Copper (tonnes)	Copper (lbs)	Mo%	Molybdenum (tonnes)	Molybdenum (lbs)
0.25	206,635,000	0.59	0.41	843,000	1,858,497,000	0.030	62,000	136,687,000
0.30	**194,994,000**	**0.61**	**0.42**	**820,000**	**1,807,791,000**	**0.031**	**60,000**	**132,277,000**
0.35	185,356,000	0.62	0.43	802,000	1,768,107,000	0.031	58,000	127,868,000
0.40	164,102,000	0.65	0.46	760,000	1,675,513,000	0.031	51,000	112,436,000
0.45	137,986,000	0.69	0.50	696,000	1,534,417,000	0.032	44,000	97,003,000
0.50	119,852,000	0.73	0.53	640,000	1,410,958,000	0.032	39,000	85,980,000
0.55	103,641,000	0.76	0.56	582,000	1,283,090,000	0.033	34,000	74,957,000
0.60	87,580,000	0.79	0.59	516,000	1,137,585,000	0.034	30,000	65,784,000
0.70	56,867,000	0.87	0.66	373,000	822,324,000	0.036	21,000	46,297,000

Table 14.10: Warintza Project – Inferred Resources: Primary

Primary Inferred

Cutoff CuEq%	Tonnes	CuEq%	Cu%	Copper (tonnes)	Copper (lbsX1000)	Mo%	Molybdenum (tonnes)	Molybdenum (lbsX1000)
0.25	149,170,000	0.55	0.36	542,000	1,194,905,000	0.031	46,000	101,413,000
0.30	**140,532,000**	**0.56**	**0.37**	**526,000**	**1,159,631,000**	**0.031**	**44,000**	**97,003,000**
0.35	133,454,000	0.58	0.39	515,000	1,135,381,000	0.032	42,000	92,594,000
0.40	114,476,000	0.61	0.42	479,000	1,056,014,000	0.032	36,000	79,366,000
0.45	90,576,000	0.66	0.47	423,000	932,555,000	0.032	29,000	63,934,000
0.50	75,616,000	0.69	0.50	377,000	831,143,000	0.033	25,000	55,116,000
0.55	62,936,000	0.73	0.53	333,000	734,139,000	0.033	21,000	46,297,000
0.60	50,756,000	0.76	0.56	284,000	626,113,000	0.034	17,000	38,223,747
0.70	30,058,000	0.85	0.63	189,000	416,674,000	0.036	11,000	24,251,000

Table 14.11: Warintza Project – Inferred Resources: Enriched

Total Enriched

Cutoff CuEq%	Tonnes	CuEq%	Cu%	Copper (tonnes)	Copper (lbs)	Mo%	Molybdenum (tonnes)	Molybdenum (lbs)
0.25	57,465,000	0.69	0.52	301,000	663,591,000	0.028	16,000	35,274,000
0.30	**54,462,000**	**0.72**	**0.54**	**294,000**	**648,159,000**	**0.029**	**16,000**	**35,274,000**
0.35	51,901,000	0.73	0.55	287,000	632,727,000	0.030	16,000	35,274,000
0.40	49,626,000	0.75	0.57	281,000	619,499,000	0.031	15,000	33,069,000
0.45	47,410,000	0.77	0.58	274,000	604,067,000	0.032	15,000	33,069,000
0.50	44,236,000	0.79	0.59	263,000	579,816,000	0.032	14,000	30,865,000
0.55	40,705,000	0.81	0.61	249,000	548,951,000	0.033	13,000	28,660,000
0.60	36,823,000	0.83	0.63	232,000	511,472,000	0.034	12,000	27,545,000
0.70	26,809,000	0.90	0.69	184,000	405,651,000	0.036	10,000	22,046,000

14.8 Discussion, Qualifications and Recommendations

The Warintza Central resource is presently defined to only an Inferred level. The lack of Measured and Indicated resources is mostly a reflection of the early stage of exploration. Even though the exploration is at an early stage, the project is well understood geologically and there are no strong indications of serious sample integrity issues. Additional information clarifying the relationship between grade and rock type will greatly help in building confidence in future estimates. In the future, sections should be oriented roughly perpendicular to the main trend of the mineralization, which is N60ºE.

The higher grades of copper and molybdenum do not necessarily coexist spatially but can overlap. Dr. David Lowell of Lowell Exploration has noted that, based on experience with other porphyry deposits, one might not expect potentially economic primary copper mineralization to extend significantly beyond the molybdenum geochemical anomaly. The present authors observe, however, that in the case of Warintza there is some evidence that the primary copper and molybdenum zones, though overlapping, are distinct. Thus, while caution is certainly called for when modeling either metal independently, at this stage neither of the two metals should be assumed to control or limit the extent of the distribution of the other.

The "post-mineralization" dikes and breccias remain problematic. While not segregated for this study, future geologic work should concentrate on better defining their orientation, grade, and volume. The dikes were not segregated for the following reasons:

- The total volume of those rock types is probably less than 5% of the total volume of material in the mineralized zone (3% by number of intercepts);
- The “post-mineralization” dikes are likely very steeply dipping or vertical. As all but two of the drill holes are vertical, the dikes are impossible to model with any certainty for location or size;
- The grades of all metals within these “post-mineralization” rocks are different from the country rock mineralization and each “post”-mineralization rock type has its own unique metal ratios. None is barren and hence none is conclusively “post- mineralization”; and
- A thorough and consistent geologic understanding of the late dikes and breccias is lacking.

15.0 ADJACENT PROPERTIES

This section of the report corresponds to Item 23 of NI Form 43-101F1.

Lowell Copper has informed the authors that Lowell Mineral Exploration Ecuador S.A. acquired five new concessions, four of which are adjacent to the three Warintza Concessions described in this report with one lying to the northwest. Those concessions are listed in Table 15.1. The location of the five new concessions relative to the three Warintza Concessions described in this report is shown in Figure 15.1.

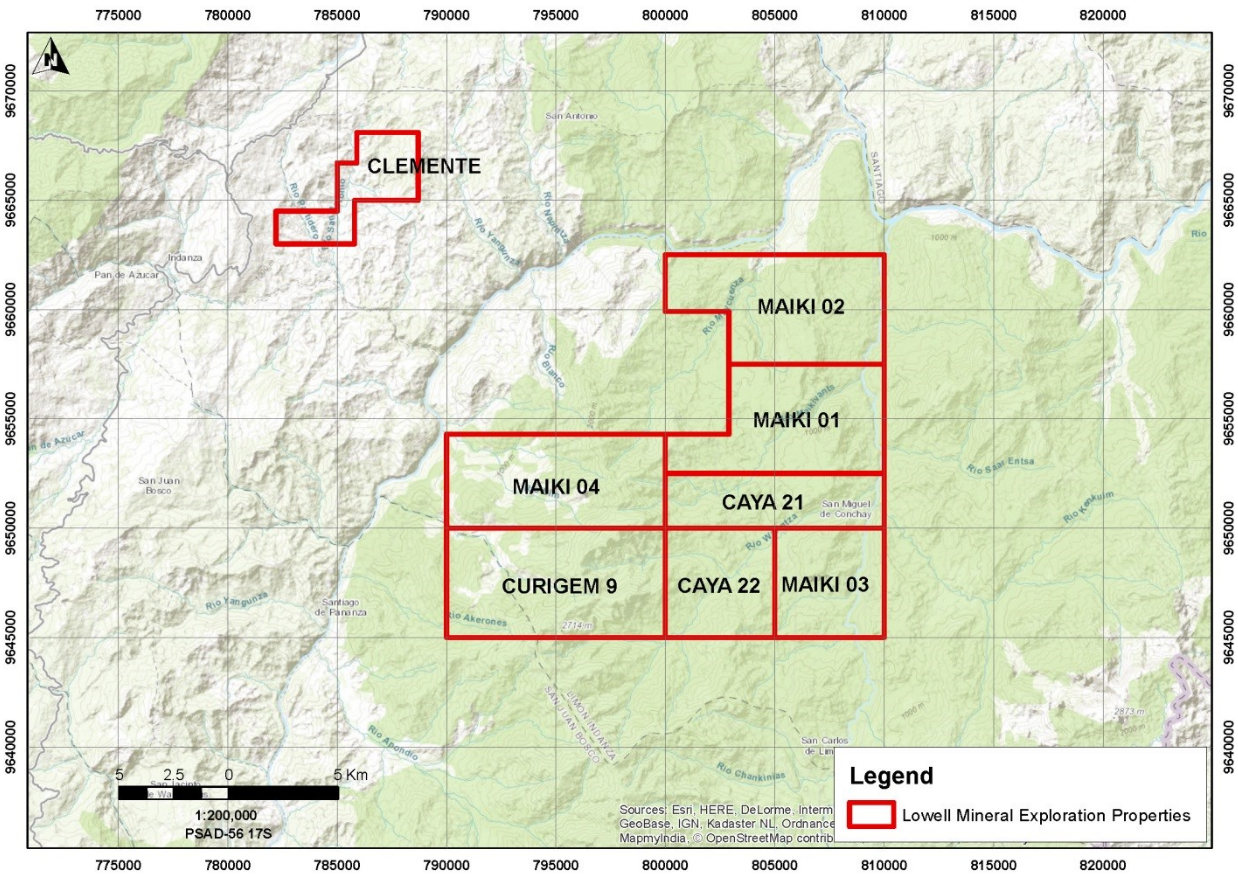
Table 15.1: Adjacent and Nearby Concessions of Lowell Mineral Exploration Ecuador S.A.

Name of Concession	Date Granted	Present Area In "Mining Hectares"	Corner Coordinates UTM Grid PSAD 56	
			Northing	Easting
Maiki 01	04 January 2017	4,072	9654300	800000
			9654300	802900
			9657500	802900
			9657500	810000
			9652500	810000
			9652500	800000
Maiki 02	04 January 2017	4,304	9662500	800000
			9662500	810000
			9657500	810000
			9657500	802900
			9659900	802900
			9659900	800000
Maiki 03	07 February 2017	2,500	9650000	805000
			9650000	810000
			9645000	810000
			9645000	805000
Maiki 04	04 January 2017	4,300	9654300	790000
			9654300	800000
			9650000	800000
			9650000	790000
Clemente	07 February 2017	1,601	9664500	782200
			9664500	785000
			9666700	785000
			9666700	785900
			9668100	785900
			9668100	788700
			9665000	788700
			9665000	785800
			9663000	785800
			9663000	782200

Table 15.1 was compiled by the authors from documents provided by Lowell Mineral Exploration Ecuador S.A. in 2018, specifically the concession titles for each of the five concessions. **It is a layman's interpretation of those documents and is neither a legal nor an expert opinion.** Persons seeking greater assurance as to the concessions described in this section should seek a legal or expert opinion.

UTM refers to the Universal Transverse Mercator system of geographic coordinates. PSAD 56 refers to the Provisional South American Datum of 1956.

Figure 15.1: Adjacent and Nearby Concessions of Lowell Mineral Exploration Ecuador S.A.
(The projection and coordinates of this map are the Universal Transverse Mercator system of geographic coordinates ("UTM").)



Lowell Copper has informed the authors that Lowell Exploration has performed no exploration work in the five new concessions. Note that some of the samples illustrated on Figure 9.1, Figure 9.2, Figure 9.3 and Figure 9.4 probably were collected from locations now included within one or more of the concessions listed in Table 15.1. Those samples were collected for Billiton before Lowell Exploration became the owner of the Warintza Project. The authors have not evaluated the significance of those samples, and the authors have no further information about these new concessions. They did not exist at the time of the authors' site visit. While it is likely that the Maiki concessions will in due course become part of an expanded Warintza Project, they are not part of the project described in this report and are not topics of this report.

Lowell Copper advises the authors that information concerning these concessions is in the public domain.

16.0 OTHER RELEVANT DATA AND INFORMATION

This section of the report corresponds to Item 24 of NI Form 43-101F1.

The authors are not aware of any information, not mentioned in this report, that would affect the conclusions expressed herein or whose omission makes this report misleading.

17.0 INTERPRETATION AND CONCLUSIONS

This section of the report corresponds to Item 25 of NI Form 43-101F1.

The exploration done at the Warintza Project to date has successfully identified and partly delineated one porphyry copper-molybdenum deposit at Warintza Central. Three additional target areas are known within a 12 square kilometer area surrounding Warintza Central. The project has only Inferred resources, all of which lie in the Warintza Central area, situated between the Warintza West and the Warintza East areas. The geology and geochemistry known to date suggest that those latter two areas also could contain mineralized deposits, but no drilling has yet been done there. Further exploration may reveal that these additional target areas contain other deposits, or extensions of the mineralization at Warintza Central. About 40% of the property has been explored to some degree. The remainder of the property is not well explored and remains as a target for future reconnaissance exploration work.

The initial discovery of the Warintza mineralization was an outcome of regional exploration work by Billiton in the mid-1990's. Regional stream-sediment sampling using pan concentrates revealed anomalous concentrations of copper and other metals in streams draining the Warintza area (Figure 9.1 and Figure 9.2). Soil sampling along ridge crests and subsequently on a grid pattern highlighted the four known target areas (Figure 9.3 and Figure 9.4). Rock chip sampling confirmed the presence of mineralization suggested by the stream sediments and soil samples (Figure 9.5 through Figure 9.8).

In 2000 and 2001 the then-operator (funding party), Corriente, drilled more than 6,500 meters in 33 holes at Warintza Central. That drilling further confirmed the presence of a significant copper-molybdenum porphyry deposit and served as the basis for the Inferred resource estimate described in Section 14.0 and tabulated in Table 14.9.

The Warintza Project clearly merits additional work, at several levels. Infill drilling is required within the area of the Inferred resource, to further define the controls on mineralization. That infill drilling would have the objective of upgrading the classification of the resource. The drilling to date has not defined the limits of the mineralized body at Warintza Central, so step-out drilling is required, with a good probability that it will result in an increase in the known dimensions of the mineralization.

There is very preliminary and incomplete information about the metallurgical characteristics of mineralization at Warintza Central. With a known resource on the property, preliminary metallurgical testing is clearly merited, and will be a necessity if the classification of the resource is to be upgraded from Inferred to a class that will support economic studies to at least the level of pre-feasibility. By analogy to other, similar porphyry deposits and with Warintza's common mineralogy, the authors believe it is likely that metallurgical testing will show the mineralization to be amenable to conventional metallurgical processes.

The three other known target areas, Warintza West, Warintza East and Warintza South, are at different stages of the exploration process. Warintza West is ready for some initial exploration drilling, and step-out drilling on the open west end of Warintza Central is heading toward Warintza West. Warintza East is adjacent to Warintza Central. The alteration and mineralization visible on the surface at Warintza East suggest that it may be a metasomatic environment. Some initial exploration drilling is warranted.

With the present state of knowledge, Warintza South is just a geochemical anomaly. It does clearly merit follow-up, including geological mapping, to the extent possible given the reportedly few outcrops.

There is a good chance that Warintza South will evolve into a target for initial exploration drilling in the future.

17.1 Risks and Uncertainties

17.1.1 Risks and Uncertainties Affecting the Resource Estimate

During the drill campaign in 2000, in which holes W-01 through W-16 were drilled, no formal quality control monitoring program was implemented. The 2001 drill campaign, in which holes W-17 through W-33 were drilled, did include a formal quality control monitoring program. The quality control procedures in 2001 were relatively conventional for that time, but incomplete and less rigorous than is currently recommended for such programs (see Section 11.6). This is a minor factor in the authors' judgment that the classification of the resource described in Section 14.0 must be limited to Inferred at this time.

The preliminary and incomplete nature of the information about the metallurgical characteristics of the mineralization within the resource area carries with it the risk that the necessary more detailed future work will reveal hitherto unsuspected metallurgical problems. Such problems could reduce or at the worst preclude the potential for the Warintza deposit to be profitably exploited.

The major factors that create risk in the resource estimate and dictate the Inferred classification are simply normal ones for an early-stage project. Additional geological detail is required that can only be generated by infill drilling. Such drilling may show that the continuity of the mineralization is less than has been modeled using the current, relatively sparse information. This could result in reductions in the estimated tonnages and/or grades of mineralization. The authors emphasize that this is a normal exploration risk. Furthermore, the uncertainty implies both downside risk and upside potential.

While the resource described in Section 14.0 fulfills all the technical requirements to be an Inferred resource, whether these resources can continue to be deemed "current" remains a risk that could be materially affected by social, political, and government affairs issues about which the authors are not qualified to make a professional assessment.

17.1.2 Risks and Uncertainties Affecting Potential Additional Discoveries

The Warintza property contains targets for future exploration that could lead to the discovery of additional mineralization having the potential to add to the currently-estimated resource. There is, however, no certainty that future exploration will lead to such discoveries. This is a normal exploration risk.

17.1.3 Political and Social Risks

In Sections 2.5, 4.5 and 6.0 of this report, political and social opposition to the Warintza Project are described. Recent work and progress made by Equinox and Lowell Exploration to improve community relations is described in Section 4.4, but the social issues have not yet been resolved. This opposition represents a risk that could, at the worst, prevent any further exploration of the project. This type of risk exists to varying degrees in most regions of the world. Any discussion of how to manage this type of risk is beyond the scope of this Technical Report and the expertise of the authors.

18.0 RECOMMENDATIONS

This section of the report corresponds to Item 26 of NI Form 43-101F1.

The Warintza Project merits work ranging from advanced exploration such as infill drilling at Warintza Central through preliminary exploration drilling at Warintza East and West to reconnaissance-level work on other parts of the Warintza Concessions. Lowell Exploration has advised the authors that as a matter of corporate strategy the company prefers to undertake additional exploration drilling in Warintza West before undertaking infill drilling at Warintza Central and exploration drilling at Warintza East. These recommendations are made in light of that preference.

18.1 Drilling Logistics and Costs

These recommendations include generalized cost estimates. The authors have not done detailed budgeting, which should be part of a more extensive project planning process. The political situation in Ecuador for more than a decade has meant that very little mineral exploration drilling has been done, so recent information as to costs is not readily available. The authors have based the recommended drilling costs on discussions with staff of Lowell Exploration in South America.

Considering all aspects of the drilling, including direct drill costs, geological supervision, sampling, field support costs, and analyses, current drilling costs are estimated to fall in the range of about US $200 to US $250 per meter. Given the logistical challenges at Warintza, it is reasonable to expect that drilling costs there would be towards the high end of the spectrum. The authors have elected to use an estimated cost for drilling of US $250 per meter, all-inclusive. Drilling costs described below and in Table 18.1 and Table 18.2 include direct drill costs, geological supervision, field support costs, sampling, and analyses.

18.2 Phase 1 - Exploration Drilling and Surface Exploration

In both Warintza East and Warintza West, sufficient information exists to justify preliminary exploration drilling, in order to learn more about the mineralization that has so far been seen and sampled only at the surface. Evidence of supergene enrichment in outcrop at Warintza West makes drill testing there a priority for Lowell Exploration as Phase 1. The expected outcome of this initial drilling is to learn whether Warintza West contains mineralization that has the potential to augment the resource at Warintza Central. In addition, some mapping and sampling will be undertaken at Warintza East and Warintza Central prior to preliminary exploration drilling at the former and drill resource expansion at the latter.

Specific locations for exploration drill holes are not recommended herein. These are best decided by those managing the project in the field and will be decided based on a combination of geological information and logistical feasibility.

Approximately 1,200 meters of drilling, in three to four holes, at an estimated cost of US $300,000 would serve as a reasonable first-pass test at Warintza West.

The suggested Phase 1 budget also includes US $60,000 for geochemical sampling at all three areas; $150,000 for needed infrastructure, including camps, access paths, bridges, and a helicopter pad that will benefit Warintza West and other parts of the property; plus $70,000 for geophysical surveying.

With a 20% contingency, the total estimated cost for Phase 1 is US $700,000.

18.2.1 Decision Point

Phase 1 will lead to a decision point as to the scope of Phase 2. Whether or not additional mineralization with the potential to contribute to the resource at Warintza is discovered during Phase 1 will be an important factor in a decision as to how to allocate resources for drilling during Phase 2.

18.3 Phase 2 – Infill and Resource Expansion Drilling and Related Studies

Phase 2 should include infill drilling within the area of the Warintza Central resource to better define the resource and additional drilling to expand the resource. In addition, preliminary exploration drilling should be undertaken at Warintza East. If the first three to four drill holes at Warintza West in Phase 1 are successful, additional drilling there to identify a resource will be undertaken. The authors believe that Phase 2 is warranted, whatever the outcome of Phase 1. What will be affected by the outcome of Phase 1 are how the drilling for resource expansion is allocated and also the potential size of that drilling campaign.

18.3.1 Preliminary Exploration and Follow-Up Drilling

Guided by the mapping and sampling results at Warintza East in Phase 1, US$225,000 is budgeted for preliminary exploration drilling there to drill three holes for a total of 900 meters.

If the exploration drilling at Warintza West in Phase 1 proves successful in identifying mineralization that has potential to contribute to the resource at Warintza, 2,400 meters of follow-up drilling are recommended at an estimated cost of US $600,000 to attempt to determine the size and continuity of the mineralization at Warintza West.

18.3.2 Infill Drilling at Warintza Central

To upgrade parts of the resource to the Indicated or Measured category, it will be necessary to have more information as to the spatial distribution of several elements, including structures that may control the distribution of mineralization, dikes that may have different grades than the bulk mineralization, the stockwork and disseminated zones in the primary mineralization and the detailed boundaries of the leached, enriched and primary types of mineralization. Defining dikes and structures that are likely to be steeply dipping will require drilling inclined holes. The holes should be deep enough to penetrate and better define the primary mineralization. The specific locations, orientations and depths of individual drill holes are best decided by the geologists running the program. Based on an assumption that 10 to 12 drill holes totaling 3,500 meters and costing US $250 per meter will be required, the cost for the first stage of infill drilling would be in the order of US$ 875,000.

18.3.3 Resource Expansion Drilling at Warintza Central

The Inferred resource at Warintza Central is open for additional exploration drilling on all sides. There are some weakly mineralized holes at the edges of the drill-hole array but they are too few to define the limits of the mineralization. Step-out drilling has a good chance of extending the known dimensions of the mineralized body. Decisions as to specific drill-hole locations, directions and depths are best left to the geologists guiding the program, but the authors estimate that at least 10 to 12 inclined drill holes, totaling 3,500 meters, are warranted. At US $250 per meter the cost of drilling these holes would be in the order of US $875,000.

18.3.4 Additional Costs of Phase 2

An additional US$150,000 is budgeted in Phase 2 surface geochemical sampling and for camps, access paths, bridges and other necessary infrastructure to carry out Phase 2.

A preliminary metallurgical testing program should be designed by a professional metallurgist in close association with a geologist familiar with the project geology. At this early stage of the program, consideration should be given to both conventional milling with flotation, and a less-expensive leaching process that would extract the supergene copper mineralization and/or any oxide copper mineralization that may be defined. Test work should also be done to define the molybdenite recoveries and changes in recovery spatially. A suggested cost for preliminary metallurgical testing is in the order of US $100,000.

18.3.5 Contingency and Total Cost for Phase 2

The total for Phase 2 including infrastructure, drilling, metallurgical testing, and surface geochemical sampling is US$2,825,000. Due to the large number of highly variable factors involved in exploration costs in this relatively remote area of Ecuador, the authors have added a contingency of approximately 20% for Phase 2, which brings the total estimated cost for Phase 2 to US $3,390,000.

18.3.6 Decision Point

The work described in Phases 1 and 2 of the recommendations is intended to bring the Warintza Project to a decision point. The principal decision would be whether to undertake a new resource estimate to incorporate newly delineated mineralization and/or upgrading part of the resource to a higher classification than Inferred.

18.4 Estimated Total Cost

The estimated total cost for exploration of the Warintza Project, rounded up to the nearest US$10,000, is set out in Table 18.1, below.

Table 18.1: Estimated Cost of Recommended Work

Phase	Report Section	Description	Item Cost	Total Cost for Phase
Phase 1	18.2	Exploration Drilling at Warintza West	US $300,000	
	18.2	Surface geochemical sampling & mapping	US $60,000	
	18.2	Infrastructure	US $150,000	
	18.2	Geophysics	US $70,000	
	18.2	Contingency	US $120,000	US $700,000
Phase 2	18.3.1	Preliminary Exploration and Follow-Up Drilling at Warintza East	US $225,000	
	18.3.1	Infill Drilling at Warintza West	US$ 600,000	
	18.3.2	Infill Drilling at Warintza Central	US$ 875,000	
	18.3.3	Resource Expansion Drilling at Warintza Central	US $875,000	
	18.3.4	Surface geochemical sampling & Infrastructure	US $150,000	
	18.3.4	Preliminary Metallurgical Testing	US $100,000	
	18.3.5	Contingency	US $565,000	US $3,390,000
				US $4,090,000

(Subcategories are rounded to nearest $5,000.)

Table 18.2 shows the estimated total cost for exploration apportioned by target area at Warintza.

Table 18.2: Estimated Cost of Recommended Work by Target Area
(All costs on this table are in US $)

Task	All targets	Warintza West	Warintz Central	Warintza East	Other	GRAND TOTAL
Camps, access paths, bridges, helipad, etc.	210,000			35,000	20,000	265,000
Surface Geochem & Geological Mapping		25,000	10,000	25,000	35,000	95,000
Other (Geophysics)	70,000					70,000
Discovery Drilling		300,000		225,000		525,000
Follow-Up Drilling		600,000				600,000
Resource Expansion Drilling			875,000			875,000
Infill drilling			875,000			875,000
Metallurgical Testing	100,000					100,000
Contingency	80,000	185,000	355,000	55,000	10,000	685,000
TOTAL	**455,000**	**1,110,000**	**2,115,000**	**340,000**	**65,000**	***$4,090,000***

(Subcategories are rounded to nearest $5,000; total is rounded to nearest $10,000.)

19.0 REFERENCES

This section of the report corresponds to Item 27 of NI Form 43-101F1.

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2018: Letter addressed to Peter Ronning and Steven Ristorcelli, dated April 27, 2018, affirming the mineral rights held by Lowell Mineral Exploration Ecuador S.A., and attesting to the political circumstances surrounding the cessation of work in November of 2006.

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Ronning, Peter A., and Ristorcelli, Steven
2006 (June 6): Technical Report, Warintza Project, Ecuador. Technical Report prepared for Lowell Mineral Exploration LLC.

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2013 (March 27): Technical Report, Warintza Project, Ecuador. Technical Report prepared for Waterloo Resources Ltd.

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2006: 2006 Report of Technical Activities, internal report for Lowell Mineral Exploration Ecuador S.A.

Sivertz, George, Ristorcelli, Steven and Hardy, Scott
2006: Technical Report Update on the Copper, Gold, and Silver Resources and Pit Optimizations, Mirador Project, Ecuador. Consultant’s report by Mine Development Associates for Corriente Resources Inc.

Vaca, Eduardo M.
2005: Letter to Ing. Edgar Salazar describing the exploration work completed during October of 2005.

Vaca, Eduardo and Leon, Juan
2001: Proyecto Warintza, Anomalias Central y Oeste; Evaluacion Inicial y Recomendaciones de las Fases de Perforacion. Report for EcuaCorriente S.A., December 2001.

Velasquez, Federico
2018 (June 16): Memorandum to the authors of this Technical Report regarding the Warintza Project in Ecuador.

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1999: Series of petrographic descriptions in a clear plastic envelope. Author's name handwritten on the front of the first description, probably by someone else. Date guessed based on "99" in page header.

Various unattributed and/or undated documents as listed:

2004: Computer file folder containing various iterations of a report on the Warintza Project. Dates of accompanying emails are all in December of 2004.

No date: Appears to be a summary document, containing sections on geology, structure, geophysics, exploration, drilling, reserves, location and access, etc.; about 20 pp.

No date: Summary: Summary document similar to the preceding one, but differing in details of formatting and wording. May be an earlier document.

No date: Proyecto "Warintza", Consideraciones para la Reinterpretación y Actualización de los Registros de Sondajes.

20.0 DATE AND SIGNATURE

Effective Date of report: June 22, 2018

Completion Date of report: June 26, 2018

"P. Ronning" Date Signed: June 26, 2018
Peter A. Ronning, P.Eng.

"S. Ristorcelli" Date Signed: June 26, 2018
Steven Ristorcelli, C. P. G.

Peter A. Ronning, P. Eng.
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Gibsons, B.C., Canada V0N 1V6
Vancouver phone (604) 684-6864
e-mail peter@ronning.ca
consulting to the mineral exploration industry since 1989

Re: the report entitled "Technical Report, Warintza Project, Ecuador" with the effective date of June 22, 2018, completed on June 26, 2018.

(hereinafter referred to as "The Technical Report")

I, Peter Arthur Ronning, P.Eng. of 1450 Davidson Road, Gibsons, B.C., V0N 1V6, hereby certify that:

1. I am a consulting geological engineer, doing business under the registered name New Caledonian Geological Consulting, at the address set out above.
2. I am a graduate of the University of British Columbia in geological engineering, with the degree of B.A.Sc. granted in 1973. I also hold the degree of M.Sc. (applied) in geology, granted by Queen's University in Kingston, Ontario, in 1983.
3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia, Registration Number 16,883.
4. I have worked as a geologist and latterly as a Professional Engineer in the field of mineral exploration since 1973, in many parts North and South America. I have explored and evaluated mineral deposits having characteristics generally similar to the deposit(s) that are the subject of the Technical Report, including porphyry copper and/or molybdenum deposits in British Columbia, Chile and Nevada, USA.
5. By reason of qualifications noted in items 2, 3 and 4, above, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101 with respect to the contents of The Technical Report.
6. I am a co-author of the Technical Report. I am the principal author of all parts of it except Section 14. I have reviewed and participated in the editing of Section 14 and I concur with its contents. I spent the period from the 22nd of March through the 26th of March, 2006 in Ecuador working on this technical review. That period included a day and a half examining drill core and most of one day in the field at the project site.
7. Prior to undertaking to prepare the initial version of The Technical Report in 2006, I had not had any involvement with the Warintza Project.
8. As of the Effective Date of the Technical Report, to the best of my knowledge and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
9. I am independent of the issuer, vendor, and the property applying the tests set out in Section 1.5 of NI 43-101. Except as herein noted, I neither own, control, nor expect to receive a beneficial interest in the Warintza property, nor in any corporation or entity whose value one could reasonably expect to be affected by the conclusions expressed in the report. I may inadvertently be the beneficial owner of an interest in any publicly traded company through participation in mutual funds over whose portfolios I have no control.
10. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with those documents.

"P. Ronning"

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — P. A. RONNING

OQM CERTIFIED

26 June 2018

STEVEN RISTORCELLI, C. P. G.

I, Steven Ristorcelli, C. P. G., do hereby certify that I am currently employed as Principal Geologist by:
Mine Development Associates, Inc., 210 South Rock Blvd., Reno, Nevada 89502.

1. I am co-author of the report entitled "*Technical Report, Warintza Project, Ecuador*" prepared for Equinox Gold Corp. and Solaris Copper Inc. with an Effective Date of June 22, 2018 and dated June 26, 2018. I am the principal author for Section 14 of this Technical Report. I have reviewed and participated in the editing of the remaining sections of the report, and I concur with their contents. I have relied on other experts as described in Section 3.

2. I graduated with a Bachelor of Science degree in Geology from Colorado State University in 1977 and a Master of Science degree in Geology from the University of New Mexico in 1980. I am a Registered Professional Geologist in the state of California (#3964) and a Certified Professional Geologist (#10257) with the American Institute of Professional Geologists.

3. I have worked as a geologist continuously for 40 years since graduation from undergraduate university. During that time I have been engaged in the exploration, definition, and modeling of more than a dozen porphyry deposits in North America and South America, and have estimated the mineral resources for those deposits.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

5. I had not had prior involvement with the property before the work was initially completed in 2006. I visited the project and worked with company files and reviewed core during the period from the 22nd of March through the 26th of March, 2006. I co-authored two Technical Reports on the project dated 2006 and 2013 prior to the current Technical Report.

6. I have been co-author of two previous Technical Reports on the Warintza Project dated 2006 and 2013. I am independent of Equinox Gold Corp., Solaris Copper Inc., and all their subsidiaries as defined in Section 1.5 of NI 43-101 and in Section 1.5 of the Companion Policy to NI 43-101.

7. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

8. As of the Effective Date of this report, to the best of my knowledge, information and belief, this Technical Report contains all the scientific and technical information that is required to be disclosed to make this Technical Report not misleading.

Dated this 26th day of June, 2018

"S. Ristorcelli"
Signature of Qualified Person
Steven Ristorcelli, C. P. G.