



NI 43-101 MINERAL RESOURCE  
AMENDED TECHNICAL REPORT

# RESOURCE ESTIMATE ON THE ESCALONES PORPHYRY COPPER PROJECT

Located in the Santiago Metropolitan Region, Chile  
UTM Location: PSD56 H19 411300E, 6225350N

TriMetals Mining Inc.



Suite 880 – 580 Hornby Street  
Vancouver, British Columbia, Canada V6C 3B6

PREPARED BY:  
HARD ROCK CONSULTING, LLC.



1746 Cole Blvd, Ste. 140  
Lakewood, Colorado 80401  
By Jeffrey Choquette, P.E. (HRC)  
Jennifer J. Brown, P.G. (HRC)

and

David Dreisinger, Ph.D., P.Eng. of Dreisinger Consulting Inc.

Effective Date: 28 June, 2013

Amended Date: 11 July, 2014





# TABLE OF CONTENTS

<b>LIST OF FIGURES .....</b>	<b>3</b>
<b>LIST OF TABLES .....</b>	<b>4</b>
<b>1.0 SUMMARY .....</b>	<b>5</b>
1.1 PROPERTY DESCRIPTION AND OWNERSHIP .....	5
1.2 GEOLOGY AND MINERALIZATION .....	5
1.3 STATUS OF EXPLORATION .....	5
1.4 MINERAL RESOURCE ESTIMATE .....	6
1.5 CONCLUSIONS AND RECOMMENDATIONS .....	7
<b>2.0 INTRODUCTION .....</b>	<b>8</b>
2.1 ISSUER AND TERMS OF REFERENCE .....	8
2.2 SOURCES OF INFORMATION .....	8
2.3 QUALIFIED PERSONS AND DETAILS OF PERSONAL INSPECTION .....	9
2.4 AMENDMENTS .....	9
<b>3.0 RELIANCE ON OTHER EXPERTS .....</b>	<b>9</b>
<b>4.0 PROPERTY LOCATION AND DESCRIPTION .....</b>	<b>10</b>
4.1 PROPERTY LOCATION .....	10
4.2 PROPERTY DESCRIPTION .....	11
<b>5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY .....</b>	<b>15</b>
5.1 ACCESS .....	15
5.2 CLIMATE .....	15
5.3 LOCAL RESOURCES .....	16
5.4 INFRASTRUCTURE .....	16
5.5 PHYSIOGRAPHY .....	16
<b>6.0 HISTORY .....</b>	<b>18</b>
<b>7.0 GEOLOGIC SETTING AND MINERALIZATION .....</b>	<b>20</b>
7.1 REGIONAL GEOLOGY .....	20
7.2 LOCAL GEOLOGIC SETTING .....	22
7.3 STRUCTURE .....	23
7.4 MINERALIZATION .....	24
7.5 TARGET AREAS .....	25
<b>8.0 DEPOSIT TYPES .....</b>	<b>25</b>
<b>9.0 EXPLORATION .....</b>	<b>26</b>
9.1 GEOPHYSICS .....	26
9.2 GEOCHEMICAL SAMPLING .....	28
<b>10.0 DRILLING .....</b>	<b>31</b>
10.1 2011 DRILL CORE RE-SAMPLING PROGRAM .....	41
<b>11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY .....</b>	<b>42</b>
<b>12.0 DATA VERIFICATION .....</b>	<b>43</b>
12.1 SITE INSPECTION .....	43
12.2 DATABASE AUDIT .....	43
<b>13.0 MINERAL PROCESSING AND METALLURGICAL TESTING .....</b>	<b>44</b>
<b>14.0 MINERAL RESOURCE ESTIMATE .....</b>	<b>52</b>
14.1 INTRODUCTION .....	52
14.2 GEOLOGIC RESOURCE MODEL .....	52
14.3 MINERAL RESOURCE STATEMENT .....	61
14.4 ISSUES THAT COULD AFFECT THE MINERAL RESOURCE .....	64
<b>15.0 ADJACENT PROPERTIES .....</b>	<b>64</b>
<b>16.0 OTHER RELEVANT DATA AND INFORMATION .....</b>	<b>65</b>
<b>17.0 INTERPRETATION AND CONCLUSIONS .....</b>	<b>65</b>
<b>18.0 RECOMMENDATIONS .....</b>	<b>66</b>
<b>19.0 REFERENCES .....</b>	<b>67</b>
<b>CERTIFICATE OF QUALIFIED PERSON .....</b>	<b>68</b>
<b>CERTIFICATE OF QUALIFIED PERSON .....</b>	<b>69</b>
<b>CERTIFICATE OF QUALIFIED PERSON .....</b>	<b>70</b>





# LIST OF FIGURES

FIGURE 4-1: LOCATION OF THE ESCALONES PROJECT .....	11
FIGURE 4-2: EXPLOITATION AND EXPLORATION CONCESSIONS .....	13
FIGURE 5-1: ESCALONES PROPERTY ACCESS, INFRASTRUCTURE AND PHYSIOGRAPHY.....	17
FIGURE 7-1: REGIONAL GEOLOGY .....	21
FIGURE 7-2: ESCALONES PROPERTY GEOLOGY WITH DRILL HOLES LOCATIONS (ES-1 TO ES-53) .....	23
FIGURE 10-1: ESCALONES PROPERTY ACCESS, INFRASTRUCTURE AND PHYSIOGRAPHY, AND DRILL HOLE LOCATIONS .....	32
FIGURE 13-1: QEMSCAN COPPER DEPARTMENT FOR THE SIX COMPOSITES.....	46
FIGURE 13-2: SGS BOND BALL MILL WORK INDEX DATABASE .....	47
FIGURE 14-1: DRILL HOLE DISTRIBUTION OF ALL HOLES AT ESCALONES .....	54
FIGURE 14-2: SECTION 6,224,900 N VIEW OF MINERALIZED DOMAINS.....	55
FIGURE 14-3: CU ORDINARY KRIGING BLOCKS VS. NEAREST NEIGHBOR BLOCKS .....	60





# LIST OF TABLES

TABLE 1-1: MINERAL RESOURCE ESTIMATE .....	7
TABLE 4-1: EXPLOITATION AND EXPLORATION CONCESSIONS .....	14
TABLE 9-1: ESCALONES SURFACE SAMPLING (1997 – 1999) .....	29
TABLE 9-2: ESCALONES ROAD CUT CHANNEL SAMPLING .....	30
TABLE 10-1: LIST OF DRILL HOLES COMPLETED ON THE PROPERTY TO DATE .....	35
TABLE 10-2: DRILL HOLE SIGNIFICANT INTERCEPTS .....	36
TABLE 10-3: RESULTS OF RE-SAMPLED DRILL CORE .....	41
TABLE 12-1: ASSAY RESULTS OF THE SITE VISIT SAMPLES COMPARED TO THE ORIGINAL SAMPLES .....	44
TABLE 13-1: SUMMARY OF HEAD ASSAYS .....	45
TABLE 13-2: BOND BALL MILL GRINDABILITY AND BATCH GRIND RESULTS .....	46
TABLE 13-3: SUMMARY OF RESULTS FOR LOCKED CYCLE FLOTATION TESTS .....	48
TABLE 13-4: INTEGRATED BALANCES FOR LCT FLOTATION AND LEACHING OF OXIDE SCAVENGER CONCENTRATE .....	49
TABLE 13-5: INTEGRATED BALANCES FOR EAST ARGUELLES AND WEST OXIDE SULPHIDE COMPOSITES .....	50
TABLE 13-6: SUMMARY OF ICP-SCAN OF COPPER CONCENTRATES .....	51
TABLE 14-1: MINERAL RESOURCE ESTIMATE <sup>1</sup> .....	52
TABLE 14-2: CU RAW ASSAY STATISTICS .....	53
TABLE 14-3: AU RAW ASSAY STATISTICS .....	53
TABLE 14-4: AG RAW ASSAY STATISTICS .....	53
TABLE 14-5: MO RAW ASSAY STATISTICS .....	53
TABLE 14-6: CU COMPOSITE STATISTICS .....	56
TABLE 14-7: AU COMPOSITE STATISTICS .....	56
TABLE 14-8: AG COMPOSITE STATISTICS .....	56
TABLE 14-9: MO COMPOSITE STATISTICS .....	56
TABLE 14-10: SUMMARY OF SPECIFIC GRAVITY SAMPLES .....	57
TABLE 14-11: CU VARIOGRAM RESULTS .....	57
TABLE 14-12: AU VARIOGRAM RESULTS .....	57
TABLE 14-13: AG VARIOGRAM RESULTS .....	58
TABLE 14-14: MO VARIOGRAM RESULTS .....	58
TABLE 14-15: BLOCK MODEL DEFINITIONS FOR ESCALONES .....	58
TABLE 14-16: CU MODELING PARAMETERS .....	59
TABLE 14-17: AU MODELING PARAMETERS .....	59
TABLE 14-18: AG MODELING PARAMETERS .....	59
TABLE 14-19: MO MODELING PARAMETERS .....	59
TABLE 14-20: CU ORDINARY KRIGING VS. NEAREST NEIGHBOR ESTIMATE .....	60
<b>TABLE 14-21: RESOURCE CUTOFF .....</b>	<b>62</b>
TABLE 14-22: MINERAL RESOURCE STATEMENT <sup>1</sup> .....	62
TABLE 14-23: INDICATED RESOURCES BY DOMAIN <sup>1</sup> .....	63
TABLE 14-24: INFERRED RESOURCES BY DOMAIN <sup>1</sup> .....	64





## 1.0 SUMMARY

### 1.1 PROPERTY DESCRIPTION AND OWNERSHIP

The Escalones Property ("Property") is located within the Santiago Metropolitan Region, in Central Chile, approximately 97 km southeast of Santiago and nine km west of the border between Chile and Argentina. A gas pipeline and associated service road pass through the western part of the Property and provide easy access from Santiago.

The total property position controlled by TriMetals Mining Inc. ("TMI"), formerly South American Silver Corp. consists of 9,389 hectares, of which 4,689 hectares are exploitation concessions that are the subject of an option agreement dated February 26, 2004 entered into by South American Silver Chile SCM ("SCM"), with Juan Luis Boezio Sepulveda, as amended (the "Boezio Option"). The remaining 4,700 ha are held 100% by SCM and are exploration concessions. The exploitation and exploration concessions can be maintained indefinitely by paying annual dues in March of each year of approximately US\$8.02 and US\$1.60 per hectare respectively.

### 1.2 GEOLOGY AND MINERALIZATION

The Escalones Property lies within the Miocene to Pliocene age Pelambres-El Teniente Porphyry copper belt, which hosts the world's largest underground copper mine at El Teniente, as well as other large copper deposits at Los Bronces-Andina, Pelambres (Katsura, 2006) and Bajo La Alumbrera in Argentina. Exploration at Escalones has demonstrated that copper mineralization occurs in two forms, (1) as skarn and structurally controlled mineralization hosted by altered sediments and intrusive dykes and sills, and (2) as porphyry style disseminated and stockwork mineralization hosted by an underlying intrusive granodiorite-diorite stock. Rock geochemistry from surface and drill hole samples shows anomalous levels of gold, silver and molybdenum that are spatially associated with the copper mineralization. This spatial relationship may also be due to separate pulses of mineralization or zoning within a much larger porphyry system.

The principal mineralization observed at Escalones consists of metasomatic replacement or skarn-type mineralization hosted by calcareous sediments overlying and adjacent to an intrusive porphyry system. High grade copper ores (>10% copper) were historically mined (Katsura, 2006) at Escalones from exposures of magnetite skarn at Escalones Alto and prospects along Escalones Bajo. Previous drilling has demonstrated that high grade magnetite skarn extends to the east and south from outcroppings at Escalones Alto. Drill intercepts of skarn, up to 113 m, exhibit grades of >1.0% copper with localized intervals grading up to 3.6 g/t gold. Individual narrower drill intervals of 40-75 m contain grades averaging 1.7% copper and values up to 0.48 g/t for gold.

### 1.3 STATUS OF EXPLORATION

In addition to the skarn mineralization, the drilling has encountered copper mineralization as disseminated and stockworks hosted in a sequence of non-calcareous pelitic hornfels, which underlies the skarn, and as disseminated and stockworks hosted by a variety of intrusive rocks, including andesite sills and dykes, and the granodiorite stock. In the Escalones Bajo area, anomalous rock geochemistry in road cuts indicate a stockwork style of mineralization. Porphyry style mineralization was first intersected in drill hole ES-25 in the granodiorite beneath the Meseta, between Escalones Alto and Escalones Bajo. Drilling results show 293 m grading 0.36% copper and 0.09 g/t gold within the granodiorite. It is believed that both the porphyry and skarn mineralization targets in the project area are genetically related components to a larger porphyry system. The drill program in 2012 and 2013 focused on drilling to find the extent of the porphyry mineralization so that it could be added to the resource.



SP, IP, magnetic and ZTEM geophysical surveys have produced several anomalies indicating the presence of buried sulfide mineralization, which has been supported by drilling. The analysis of the ZTEM conductivity data suggests that in addition to the mineralization drilled to date, there may be additional sulphide and secondary mineralization located in a broad zone extending for several kilometres located east of the Meseta paralleling the Arguelles valley as seen in drill hole ES-35. Interpretation of magnetic data shows anomalies that appear to be related to extensions of the skarn mineralization for several kilometres to the north-east, east and southeast of Escalones Alto, towards the Rio Arguelles.

Drilling in 2012-2013 completed 9,070m in 18 holes for a total of 24,939m in 53 diamond drill holes drilled at Escalones. The program included re-opening access roads and the project camp, interpretation of the ZTEM geophysics, environmental work and the drilling.

Interpretation of both the resistivity and magnetic results of the ZTEM survey suggest that both the magnetite skarn and associated sulfide bodies are much larger than indicated by present drilling and that there is considerable potential for a significant expansion of the skarn resource and a new sulphide/secondary sulphide/oxide resource that lies stratigraphically above the skarn striking parallel to the Arguelles valley.

## 1.4 MINERAL RESOURCE ESTIMATE

The resource estimate was completed and reported in a news release issued on June 28<sup>th</sup>, 2013 (filed on SEDAR). The resource included indicated and inferred resources as shown below:

- The updated resource dated 28 June, 2013 includes:
  - Indicated resource of 1.9 billion pounds CuEq\* at a CuEq\* grade of 0.38%
  - Inferred resource of 4.7 billion pounds CuEq\* at a CuEq\* grade of 0.40%
- The deposit includes a higher grade portion particularly within the skarn using a 0.35% CuEq\* cut-off
  - Indicated resource of 235 million pounds CuEq\* at a CuEq grade of 0.65%
  - Inferred resource of 2.0 billion pounds CuEq\* at a CuEq grade of 0.58%
- Copper Equivalent (CuEq\*) calculations reflect gross metal content using approximate 3 year average metals prices as of June 25<sup>th</sup>, 2013 of \$3.71/lb copper (cu), \$1549/oz gold (Au), \$30.29/oz silver (Ag), and \$14.02/lb molybdenum (Mo) and have not been adjusted for metallurgical recoveries. An economic cut-off grade of 0.25% copper equivalent was assumed for this report. Contained metal values may vary from calculated values due to rounding.

The Escalones mineral resource estimate is based on 53 diamond drill holes (24,939 meters) and 15,880 associated assay values collected through June 28, 2013. The resource estimate is categorized as indicated and inferred as defined by the CIM guidelines for resource reporting. Mineral resources are not mineral reserves and do not have not demonstrated economic viability. There is no certainty that all or any part of the mineral resources will be converted into mineral reserves after economic considerations are applied. The Mineral Resource Estimate reported for the Escalones Property is presented in Table 1-1.



**Table 1-1: Mineral Resource Estimate**

Classification	CuEq% Cutoff	Tonnes * 1,000	Cu %	Cu lbs * 1,000	Au g/t	Au Oz	Ag g/t	Ag oz	Mo %	Mo lbs	CuEq% <sup>1</sup>	CuEq lbs * 1,000
Indicated	0.15	405,242	0.243	2,170,281	0.052	673,999	0.528	6,879,224	0.006	51,308,289	0.302	2,701,842
<b>Indicated</b>	<b>0.25</b>	<b>232,561</b>	<b>0.308</b>	<b>1,578,329</b>	<b>0.067</b>	<b>498,012</b>	<b>0.661</b>	<b>4,938,667</b>	<b>0.006</b>	<b>31,908,650</b>	<b>0.380</b>	<b>1,947,232</b>
Indicated	0.35	107,885	0.393	935,279	0.082	284,745	0.877	3,041,487	0.006	14,730,116	0.477	1,134,703
Indicated	0.45	43,319	0.507	484,661	0.092	127,714	1.329	1,850,716	0.006	5,665,736	0.602	574,524
Indicated	0.55	19,395	0.634	271,048	0.098	60,973	1.948	1,214,926	0.005	2,341,742	0.737	315,284
Indicated	0.75	6,141	0.860	116,456	0.107	21,198	2.760	544,871	0.005	722,393	0.979	132,489
Indicated	1.00	1,974	1.120	48,753	0.127	8,091	3.294	209,076	0.004	163,188	1.251	54,456
Inferred	0.15	1,023,299	0.253	5,712,479	0.028	931,176	0.624	20,520,258	0.006	132,275,704	0.300	6,768,823
<b>Inferred</b>	<b>0.25</b>	<b>527,667</b>	<b>0.343</b>	<b>3,992,410</b>	<b>0.036</b>	<b>609,437</b>	<b>0.849</b>	<b>14,397,830</b>	<b>0.007</b>	<b>79,488,676</b>	<b>0.401</b>	<b>4,664,903</b>
Inferred	0.35	233,140	0.463	2,378,257	0.047	349,019	1.205	9,029,026	0.008	40,503,161	0.535	2,750,819
Inferred	0.45	129,938	0.572	1,638,097	0.049	203,645	1.471	6,146,340	0.008	22,270,448	0.648	1,857,501
Inferred	0.55	73,690	0.688	1,117,424	0.051	120,870	1.622	3,841,986	0.007	11,658,186	0.765	1,243,336
Inferred	0.75	24,609	0.950	515,222	0.057	45,400	1.875	1,483,881	0.006	3,224,734	1.029	558,488
Inferred	1.00	8,622	1.300	247,098	0.055	15,342	1.792	496,792	0.003	661,249	1.368	260,062

1) Copper Equivalent (CuEq \*) calculations reflect gross metal content using approximate 3 year average metals prices as of June 25th, 2013 of \$3.71/lb copper (cu), \$1549/oz gold (Au), \$30.29/oz silver (Ag), and \$14.02/lb molybdenum (Mo) and have not been adjusted for metallurgical recoveries. An economic cut-off grade of 0.25% copper equivalent was assumed for this report. Contained metal values may vary from calculated values due to rounding.

2) Mineral resources are not reserves and do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues and are subject to the findings of a full feasibility study.

3) The quantity and grade of reported inferred mineral resources are uncertain in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.

## 1.5 CONCLUSIONS AND RECOMMENDATIONS

HRC recommends that exploration, environmental and engineering studies be continued on the property with the intent to demonstrate the economic viability of the deposit. The size of the budget depends on the rate at which the Company wishes to progress, however a sensible next step might include 20-50 drill holes with associated geology and geochemistry, together with additional metallurgy and early stage engineering studies (PEA), together with the needed environmental studies and permits required to do this.

The budget for this program would include:

- Drilling, 10,000-20,000 meters - US\$2,500,000 - US\$5,000,000
- Road and trenches - US\$400,000
- Geochemistry, ~7,000-15,000 samples - US\$250,000 – US\$550,000
- Geological/Engineering personnel - US\$200,000
- Metallurgy - US\$200,000
- Engineering studies – US\$300,000
- Environmental studies and permitting– US\$200,000
- Other costs – US\$200,000

Total: US\$4,250,000 to US\$7,050,000



## 2.0 INTRODUCTION

### 2.1 ISSUER AND TERMS OF REFERENCE

Jeffrey Choquette of Hardrock Consulting, LLC (“HRC”) was contracted by TriMetals Mining Inc. (“TMI”), formerly South American Silver Corp. to complete a mineral resource estimate for the Escalones Porphyry Copper Project (“Escalones”), and to prepare a technical report in compliance with the requirements of Canadian National Instrument 43-101 – Standards of Disclosure for Mineral Projects (“NI 43-101”). This report presents the results of the resource estimate based on all available technical data and information as of June 28, 2013. This report and the resource estimate herein were prepared in compliance with the disclosure and reporting requirements set forth in NI 43-101, Companion Policy 43-101CP, and Form 43-101F1 (June 2011), as well as with the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Reserves, Definitions and Guidelines (November 2010).

David Dreisinger, Ph.D., P.Eng., President of Dreisinger Consulting Inc., and Vice President of Metallurgy for SASC, was retained to study metallurgical treatment of the Escalones Deposit between 2011 and the present, and to prepare section 13.0 Mineral Processing and Metallurgical Testing in compliance with the requirements of NI 43-101.

This technical report will be used by TMI to fulfill disclosure requirements under Canadian securities laws, including NI 43-101. References in this report to TMI include its predecessor company prior to 2007.

### 2.2 SOURCES OF INFORMATION

HRC sourced information from referenced documents as cited in the text and summarized in Item 19 of this report.

This report is based upon publicly-available assessment reports and unpublished reports and property data provided by TMI, as supplemented by publicly-available government maps and publications. The authors reviewed all available information and believe that the data provided by TMI was collected in a careful and conscientious manner and in general accordance with the standards set forth in NI 43-101. Where appropriate, the authors have included information previously reported in historical reports, including text excerpts and direct reproduction of figure information to illustrate discussions in the text.

Much of the background technical information for this report was extracted from NI 43-101 technical reports completed by Kurt Katsura (2006) and Armitage and Davis (2012) for TMI (filed on SEDAR). The majority of the information in the Armitage and Davis report comes from a review of technical information and data generated during exploration activities on the Property between 1997 and 2011, and Mr. Armitage conducted a comprehensive review of the geological reports, geophysical data, maps, drilling logs and assay data available at that time.

Ms. Jennifer J. Brown, P.G. and Mr. Jeff Choquette, P.E., both of HRC and acting as independent Qualified Persons according to NI 43-101, carefully reviewed and evaluated all available geological data, information, interpretations, and conclusions, including information previously reviewed by Mr. Armitage. In both Ms. Brown’s and Mr. Choquette’s professional and qualified opinion, the geologic interpretations and conclusions presented previously are reasonable and sufficient for use in the current resource/reserve estimate.

Mr. Felipe Malbran provided the majority of the background information for sections six through eleven and sectional geologic interpretations used in the resource estimate. Mr. Felipe Malbran who is a geologist and an expert on the Escalones Property, having managed the exploration on the property since 1997. He is also the Executive Vice President of Exploration for TMI.





Ms. Brown and Mr. Choquette reviewed and evaluated the contents of the material provided by Mr. Felipe. It is their professional and qualified opinion that the geologic interpretations and conclusions presented are reasonable and sufficient for use in the current resource/reserve estimate.

## **2.3 QUALIFIED PERSONS AND DETAILS OF PERSONAL INSPECTION**

The Qualified Persons responsible for this report are Mr. Jeffrey Choquette P.E., Ms. Jennifer J. Brown, P.G., both of Hard Rock Consulting LLC (HRC), and Professor David Dreisinger. Mr. Choquette, personally inspected the Escalones Property ("Property") and drill core from June 3rd to 5th, 2013, accompanied by Felipe Malbran, Executive Vice President of Exploration for TMI. Mr. Malbran has extensive personal knowledge of the Property. Several drill sites, the weather station, exploration camp, and core storage facility were all inspected during the site visit (one day on site and one day at the core facility), and property information and drilling data were collected and reviewed at SCM's Santiago office. Mr. Choquette, P.E., is a professional mining engineer with more than 17 years of domestic and international experience in mine operations, mine engineering, project evaluation, project development, resource and reserve modeling and financial analysis. Mr. Choquette has been involved in industrial minerals, base metals and precious metal mining projects around the world. Mr. Choquette is responsible for Items 1 through 6, co-author of Item 14 with Ms. Brown and Items 15 through 19.

Ms. Brown, P.G., SME - RM, has 17 years of professional experience as a consulting geologist and has contributed to numerous mineral resource projects, including more than fifteen resources estimates throughout the southwestern United States and South America over the past five years. Ms. Brown is specifically responsible for Items 7 through 12 of this report, and co-authored Item 14 with Mr. Choquette.

David Dreisinger Ph.D., P.Eng. of Dreisinger Consulting Inc. did not conduct a personal inspection on the Property as he was responsible for the mineral processing portions of this report. He has made numerous visits to the SGS Minerals Laboratory in Lakefield, Canada to observe metallurgical testing of the Escalones drill core. Professor Dreisinger is specifically responsible for Section 13 of this report,

## **2.4 AMENDMENTS**

This report has been amended from the "RESOURCE ESTIMATE ON THE ESCALONES PORPHYRY COPPER PROJECT Located in the Santiago Metropolitan Region, Chile" prepared for TriMetals Mining Inc., formerly South American Silver Corp. dated August 12, 2013. The amendments reflected in this report include clarification on the sources of information (page 8), removal of apparent reliance on others for surface and drill results (page 8), disclosure of the sources of the information for item 3 (page 10), included all the information about the historic resource required by sections 2.2(d) and 3.4(b) of NI 43-101 (page 19), clarification on selecting the resource cut-off grade (page 61), and Jennifer J. Brown P.G. has been added as a Qualified Person specifically responsible for Items 7 through 12 of this report, and co-authored Item 14 with Mr. Choquette (page 68).

## **3.0 RELIANCE ON OTHER EXPERTS**

During preparation of this report, the authors relied in good faith on information provided by TMI regarding property ownership, mineral tenure, permitting, and environmental liabilities as described in Sections 4 and 5 of this report. An independent verification of land title and tenure was not performed. HRC has not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties. The property, permitting, and environmental information used in Sections 4 and 5 was provided by Mr. Felipe Malbran via a report titled "130724 Escalones Geological Update for Resource Report FM .docx" dated July 24, 2013.





## 4.0 PROPERTY LOCATION AND DESCRIPTION

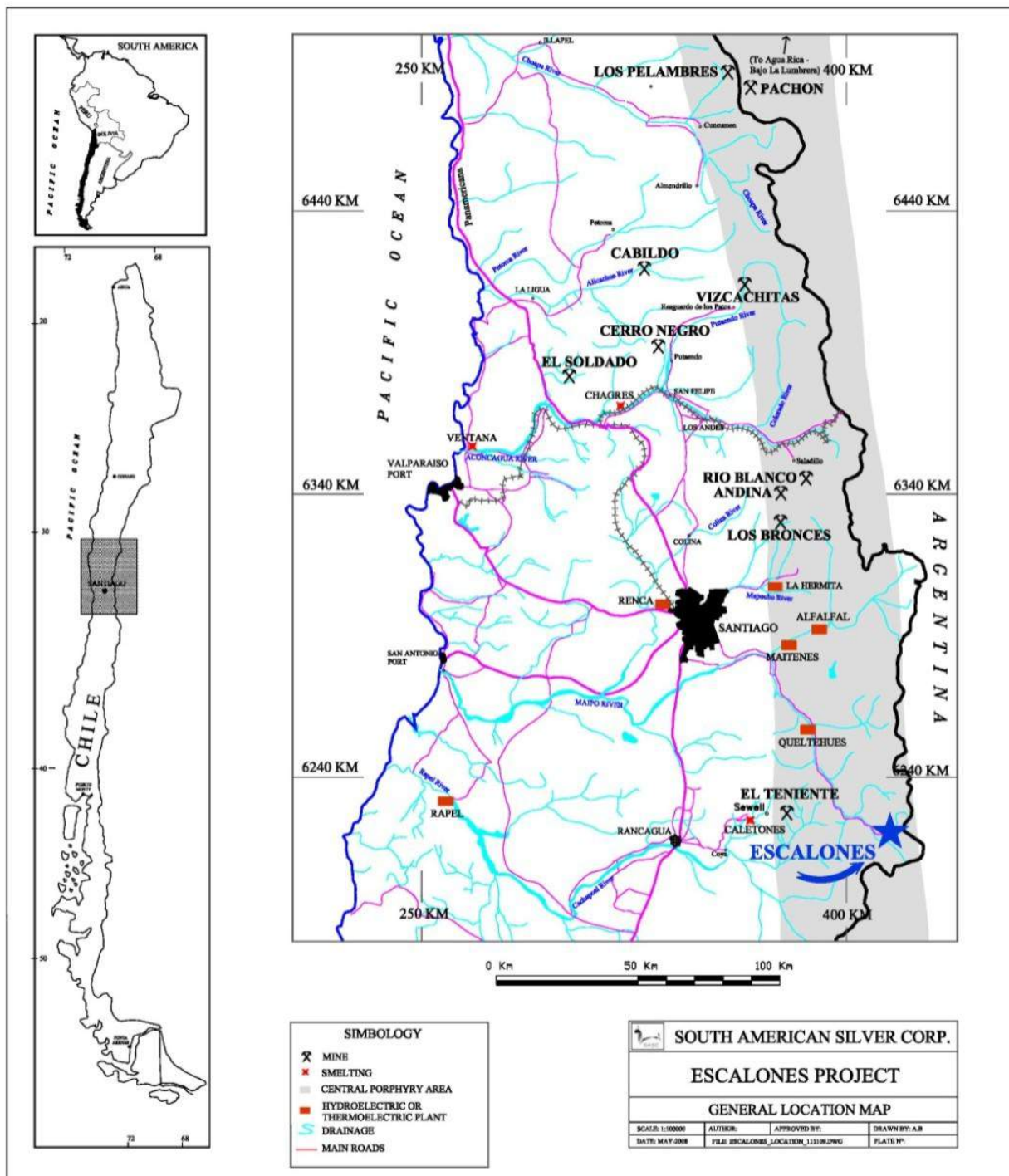
### 4.1 PROPERTY LOCATION

The Property is located within the Santiago Metropolitan Region of Central Chile, approximately 97 km southeast of Santiago, near the headwaters of the Maipo River, and 9 km west of the border between Chile and Argentina (Figure 4-1). Prior to the construction of a gas pipeline and associated service road, there was no access to the Property except by horseback or helicopter. The pipeline road passes through the western part of the Property and provides easy access from Santiago.

Known mineralization on the Property is exposed in two main prospect areas known as Escalones Bajo and Escalones Alto. Escalones Bajo occurs at an elevation of 3,400 metres above sea level (asl), while Escalones Alto occurs 1.5 km to the east at an elevation of approximately 4,077m asl. The area in between is a plateau called the “Meseta” at 3,800m asl. Several roads were constructed between 1997 and 2000 to allow access to both Escalones Bajo and Escalones Alto.

Geologically, the Property is located approximately 35 km due east of the well-known producing underground copper mine El Teniente, within the Los Pelambres to El Teniente porphyry copper belt, which runs north-south through the Chile-Argentina border in the central Andes Mountains.

**Figure 4-1: Location of the Escalones Project**



## 4.2 PROPERTY DESCRIPTION

The total property position controlled by the TMI consists of 9,389 hectares, of which 4,689 hectares are exploitation concessions that are the subject of an option agreement dated February 26, 2004 entered into by SCM, with Juan Luis Boezio Sepulveda, as amended (the "Boezio Option") (Figure 4-2, Table 4-1). The remaining 4,700 ha are held 100% by SCM and are exploration concessions. The exploitation and



exploration concessions can be maintained indefinitely by paying annual dues in March of each year of approximately US\$8.02 and US\$1.60 per hectare respectively.

A predecessor company to TMI previously held similar mineral rights in the period 1996-2001 through its indirect, wholly owned Chilean subsidiary. The property was dropped during 2001 due to the poor economic environment, low copper prices and high ongoing option payments. The Chilean subsidiary entered into a new option agreement on February 26, 2004. That Chilean subsidiary, now South American Silver Chile SCM ("SCM"), is an indirect, wholly owned Chilean subsidiary of TMI.

Pursuant to the Boezio Option, as amended in December 2005, June 2007, June 2009 and June 2013, SCM has the right to purchase the concessions until June 30, 2018 upon payment of a total of US\$7,500,000. To date, a total of US\$2,600,000 has been paid. Additional payments pursuant to the Boezio Option are due as follows:

**Payment Date    Amount**

June 30, 2014	US\$500,000
June 30, 2015	US\$500,000
June 30, 2016	US\$500,000
June 30, 2017	US\$500,000
June 30, 2018	US\$3,000,000

SCM is required to pay all amounts required to protect and maintain the property during the option period. There is a 2% NSR if the price of copper is greater than US\$0.75 per pound and a 1% NSR if the copper price is equal to or less than US\$0.75 per pound. The NSR may be purchased for US\$3,000,000 within the 5 years following the first sale of minerals produced from the property and for US\$5,000,000 thereafter.

If SCM purchases the concessions, the Boezio Option requires SCM to commence exploitation of the concessions within two years thereafter. Until exploitation begins, SCM is required to pay annual advance royalty payments of US\$200,000, which are credited against future royalty payments. Failure to commence exploitation within the two year period triggers an obligation to make annual indemnity payments of US\$300,000 until exploitation begins. In this event, the US\$200,000 annual payments made from the date of exercise of the option are deemed to be indemnity payments, not advance royalty payments. Royalty payments are suspended if exploitation of the mining concessions is suspended for reasons beyond SCM's control (i.e. force majeure, strikes or because price of the mineral is lower than the price established in feasibility study).

The land position held by SCM covers an extensive area surrounding the known exposures of mineralization at Escalones, as well as a potential facilities site nearby. In Chile, the surface can be owned by the State or privately. When the surface rights are owned by the State then the mining rights give one the right to the surface. If the surface is privately owned, then one needs a mining easement (Servidumbre Minera) agreement with the landowner to use the surface and some payment for surface use has to be negotiated. In Chile, mining usually takes precedence over other uses. At Escalones, SCM has obtained a Servidumbre Minera with the GASCO Company, which owns the surface in the project area.

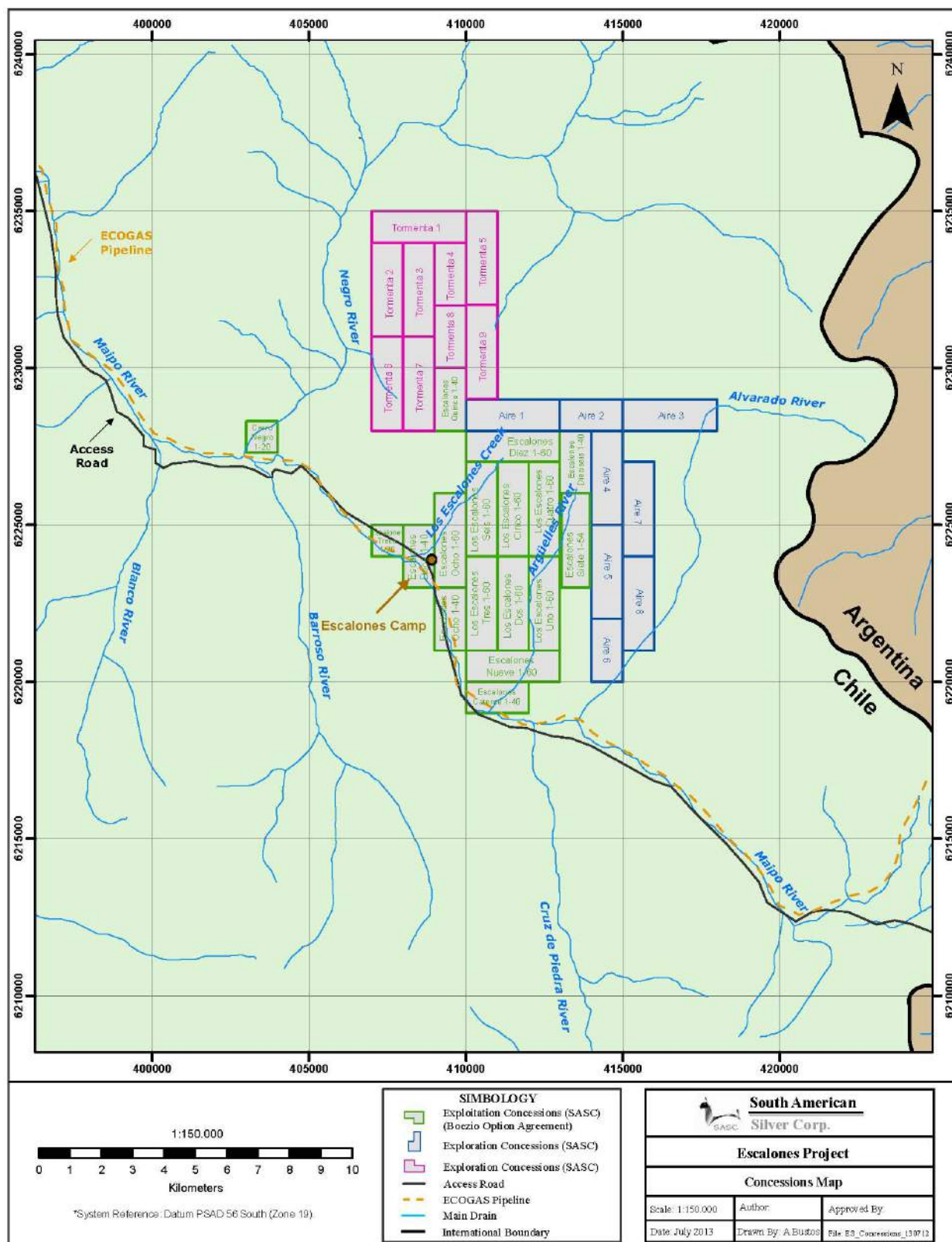
An environmental baseline study is required to be included within a "Declaracion de Impacto Ambiental" DIA (environmental impact statement) prior to drilling. SCM filed an environmental impact statement for the Property in April 2008 and obtained a drilling permit for the Property on August 18, 2009. The Company is presently applying for additional permits to expand the area to be drilled and the number of holes that can be drilled.





There are no known environmental liabilities associated with the Property [and no other significant factors and risks that may affect access, title, or the right or ability to perform work on the Property].

**Figure 4-2: Exploitation and Exploration Concessions**





**Table 4-1: Exploitation and Exploration Concessions**

Claim Name	Id Number	Owner	Concessions	Surface [ha]	Validity
LOS ESCALONES UNO 1/60	13303-0389-8	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	300	Indefinite
LOS ESCALONES DOS 1/60	13303-0390-1	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	300	Indefinite
LOS ESCALONES TRES 1/60	13303-0391-K	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	300	Indefinite
LOS ESCALONES CUATRO 1/60	13303-0392-8	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	300	Indefinite
LOS ESCALONES CINCO 1/60	13303-0393-6	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	300	Indefinite
LOS ESCALONES SEIS 1/60	13303-0394-4	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	300	Indefinite
ESCALONES 7 1/54	13303-0636-6	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	270	Indefinite
ESCALONES 8 1/40	13303-0652-8	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	200	Indefinite
ESCALONES 8 1/60	13303-0637-4	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	300	Indefinite
ESCALONES 9 1/60	13303-0638-2	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	300	Indefinite
ESCALONES 10 1/60	13303-0639-0	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	300	Indefinite
ESCALONES 12 1/40	13303-0653-6	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	200	Indefinite
ESCALONES 13 1/20	13303-0654-4	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	100	Indefinite
ESCALONES 14 1/40	13303-0640-4	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	200	Indefinite
ESCALONES 15 1/40	13303-0641-2	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	200	Indefinite
ESCALONES 16 1/40	13303-0642-0	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	200	Indefinite
PUENTE RATONES 1/26	13303-0669-2	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	219	Indefinite
RIO CLARO 1/30	13303-0670-6	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	300	Indefinite
CERRO NEGRO 1/20	13303-0721-4	Juan Luis Boezio Sepulveda now Sociedad Legal Minera Los Escalones uno uno de San Jose de Maipo	Exploitation	100	Indefinite
AIRE 1	13303-2716-9	SOUTH AMERICAN SILVER CHILE	Exploration	300	30-10-2014



Claim Name	Id Number	Owner	Concessions	Surface [ha]	Validity
		SCM			
AIRE 2	13303-2717-7	SOUTH AMERICAN SILVER CHILE SCM	Exploration	200	30-10-2014
AIRE 3	13303-2718-5	SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	30-10-2014
AIRE 4	13303-2719-3	SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	30-10-2014
AIRE 5	13303-2720-7	SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	30-10-2014
AIRE 6	13303-2721-5	SOUTH AMERICAN SILVER CHILE SCM	Exploration	200	30-10-2014
AIRE 7	13303-2722-3	SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	30-10-2014
AIRE 8	13303-2723-1	SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	30-10-2014
TORMENTA 1		SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	In process
TORMENTA 2		SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	In process
TORMENTA 3		SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	In process
TORMENTA 4		SOUTH AMERICAN SILVER CHILE SCM	Exploration	200	In process
TORMENTA 5		SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	In process
TORMENTA 6		SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	In process
TORMENTA 7		SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	In process
TORMENTA 8		SOUTH AMERICAN SILVER CHILE SCM	Exploration	200	In process
TORMENTA 9		SOUTH AMERICAN SILVER CHILE SCM	Exploration	300	In process
<b>TOTAL</b>				<b>9,389</b>	

## 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

### 5.1 ACCESS

Access to the Property is via paved road from the town of San José de Maipó to San Gabriel and Romeral, then by dirt road along the ECOGAS pipeline right-of-way (Figure 4-2) which follows the Maipó River to Quebrada Escalones. The base camp for the Property is located along the western edge of the Property just above the confluence of Quebrada Escalones and the Maipo River at an elevation of 2,400 m asl (Figure 5-1). A total of 46 km of exploration drill roads access have been built between 1997 and 2000 by the SCM that lead from the base camp and the ECOGAS pipeline access road via a number of switchbacks crossing the Escalones Bajo fault zone and continuing up to the Meseta and the Escalones Alto portions of the Property. Additional drill roads extend from the Arguelles River along the eastern side of Escalones Alto.

### 5.2 CLIMATE

Climate is typical for the central Chilean Andes, with cool to moderate summers and cold winters with an average precipitation of 1,000 mm, occurring primarily between May-October as snow. Winter weather (May to August) can be severe with prolonged periods of freezing temperatures and storms with daytime highs around -10 to 0° C and locally heavy snow pack. Summer temperatures (November to February) range from



2° C at night to 20° C during the daytime. Exploration can be carried out between October and April of the following year.

### **5.3 LOCAL RESOURCES**

The Property is readily accessible from the city of Santiago and town of San Jose de Maipo, where there is an adequate supply of labour, equipment and service requirements for conducting exploration or mining related activities.

### **5.4 INFRASTRUCTURE**

Existing Infrastructure on the Property consists of a seasonal base camp, with the capacity to accommodate 50 persons, situated at lower elevations (2,400 m asl) along the Rio Maipo. Three drill access roads from the camp (9,14 and 22km) have been re-opened, leading up to the main mineralized area. The Property is located adjacent to the ECOGAS pipeline right-of-way, which provides overland access from populated areas near Santiago. The pipeline right-of-way could potentially be developed as a utility corridor for power and other essential services from the hydroelectric plant Quelitehues, approximately 53km downstream.

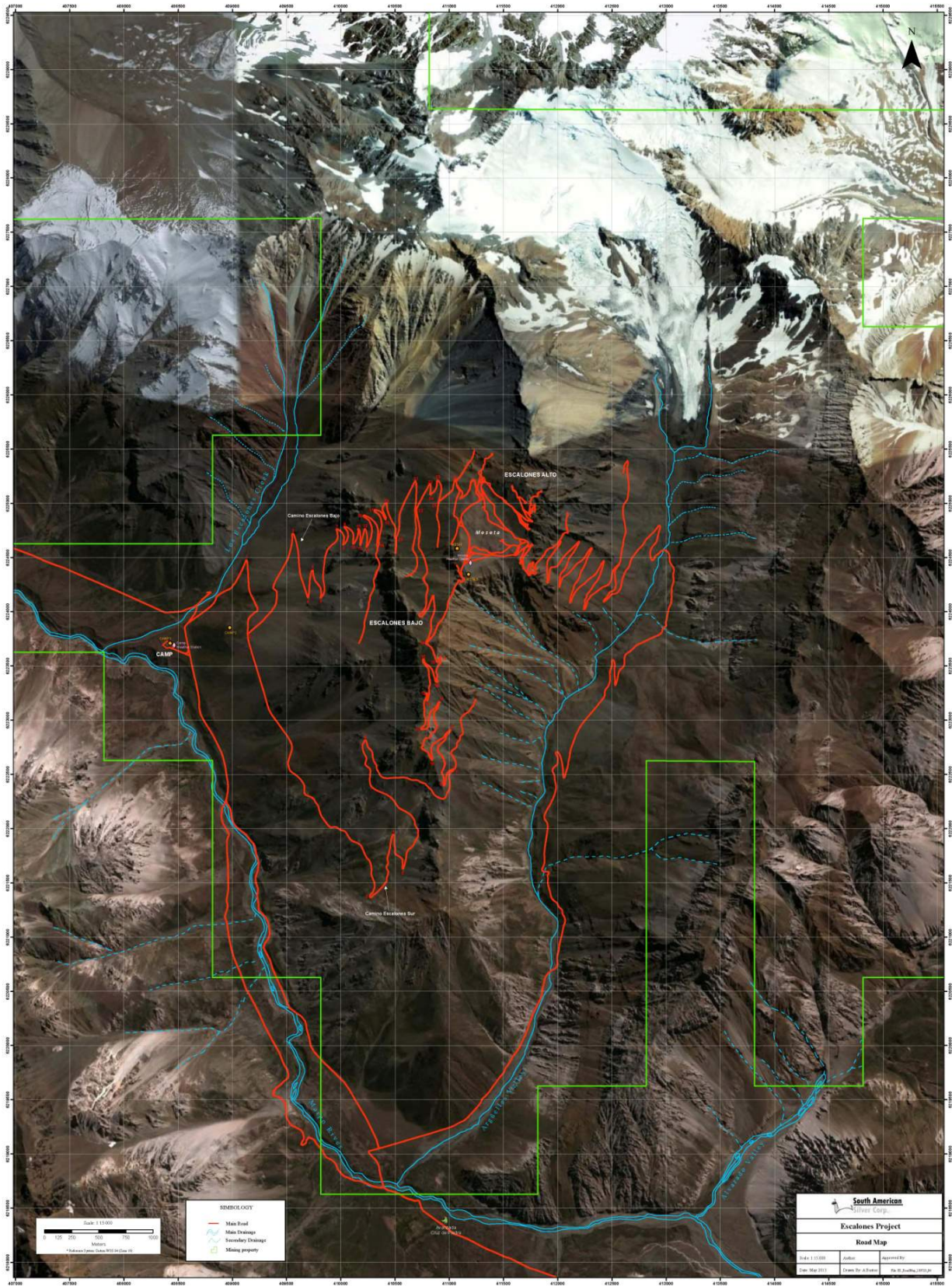
### **5.5 PHYSIOGRAPHY**

The Escalones Property straddles the Cordon Escalones, a very steep and rugged north-trending ridge between the Quebrada Escalones and Rio Arguelles near the headwaters of the Rio Maipo, and approximately 9 km from the border between Chile and Argentina. Elevation of the Property ranges from 2,400 m at the base camp along the Rio Maipo, 3,400 m at Escalones Bajo, 3,800 m on the Meseta, and 4,077 m along the ridge at Escalones Alto. The Property is covered in some areas by glacial moraines and steep talus slopes that locally exceed the angle of repose. Mountainous working conditions can be hazardous in the Mancha Amarilla and slopes east of Escalones Alto towards the Rio Arguelles. The terrain is rugged and typical for this part of the central Andes Mountains in Chile. Vegetation on the Property above 3000 metres is non-existent to sparse with few small forbs and lichens found along the lower talus slopes and moraine deposits.

Prior to the construction of the ECOGAS gas pipeline and associated service road, there was no access to the Property except by horseback or helicopter. Presently, the pipeline road passes through the western part of the Property and provides relatively easy access from Santiago. Mineralization on the Property is exposed in two main prospect areas, or sectors, known as Escalones Bajo and Escalones Alto located 1.5 km to the east. The area in between is a relatively flat and gently sloping moraine covered plateau that is called the Meseta. Mineralization continues in the sub-surface for an additional km to the east side of the Arguelles valley.



**Figure 5-1: Escalones Property Access, Infrastructure and Physiography**





## 6.0 HISTORY

The earliest reports describing geology and mineralization, and the mining and production history for the Escalones Property, are dated 1925 and 1926, respectively (Katsura, 2006). A report dated 1926 gives a total production of 15.4 tonnes at a grade of 12% copper for the month of April 1926. Based on the descriptions in these reports, all of the old adits and surface workings that are observed on the Property were completed prior to 1926. The largest of the underground workings, the Socavon Grande, exploited surface exposures of magnetite skarn at the Escalones Alto sector of the project. These workings consist of an adit approximately 40 m long, another adit eight m long, and scattered prospect pits, at Escalones Alto and Escalones Bajo. Based on initial field observations by the predecessor company in 1996, it appears that no significant exploration or mining on the Property had been conducted since 1926, and the facts in the 1926 report appear to be reasonable based on the observed level of disturbance. To SCM's knowledge, no prior modern exploration has been carried out at the site.

During the latter months of 1996 and early 1997, SCM conducted initial geologic mapping and sampling. In 1997, the building of bulldozer roads commenced to provide access to the area between Escalones Alto and Escalones Bajo. Channel sampling and geological mapping was conducted at these new road cuts and along surface outcrops on the Property.

During the 1997-1998 field season, geological mapping was continued throughout the Property and the bulldozer access roads to Escalones Alto were completed. A total of 36 km of SP geophysical surveys were completed during this season and 310 additional channel samples of road cuts and bulldozer trenches were collected. A permanent camp facility with space for approximately 30 persons, an office, sample preparation and core logging facilities, and warehouse storage was completed at lower elevations adjacent to the ECOGAS pipeline above the confluence of Quebrada Escalones and the Rio Maipo.

The 1998-99 field season included an intensive program of road and trench building, in preparation for drilling, additional geophysical surveys, and geological and structural mapping on a project and broader district scale. Technical studies to determine the radiometric age of selected intrusive rock units, fluid inclusion studies from selected rock samples and preliminary environmental and hydrological studies were conducted for the project. The first phase of diamond core drilling at Escalones Alto commenced in November 1998 and continued through March 1999. A total of nine drill holes (ES-1 through ES-9) were completed, totaling 4,434 metres of core, during this season. Detailed core logging and sampling was conducted for geochemical analyses which showed the presence of strong copper-gold-molybdenum-silver mineralization in the Escalones Alto sector.

The 1999-2000 field season commenced in November 1999 and ended in late April 2000. The field program primarily focused on completing drill access roads on the eastern side of Escalones Alto from the Rio Arguelles, continuation of the diamond drilling activities, and interpreting the results from prior geochemical and geological work. A total of 14 additional holes were completed during the season (ES-10 through ES-23), totaling 5,725 metres for a comprehensive project, totaling 23 holes for 10,159 metres. The primary focus of the drilling was in the Escalones Alto sector, with two holes completed in the Escalones Bajo sector, which tested structural and geophysical targets. An additional 16 km of access roads were completed during the season, bringing the total to 46 km of new access roads completed on the Property.

During the 2000-2001 field season, a two-hole diamond-drilling (ES-24 and ES-25) program totaling 1,212 metres was completed during February to March 2001. One of these holes, ES-25, targeted potential porphyry style mineralization underlying the Meseta area between Escalones Alto and Escalones Bajo. This hole explored beneath the moraine cover and successfully intercepted porphyry-copper style mineralization over much of its length demonstrating that intrusive-hosted porphyry style mineralization is present beneath the Meseta.





SCM terminated its interest in the Property in 2001 due to the poor economic environment, low copper prices and high ongoing option payments. SCM reacquired its interest in 2004. No exploration sampling or analysis was carried out in 2004; however, a number of companies were shown the Property in an effort to locate a joint venture partner. In March 2005, SCM entered into an agreement with Minera Aurex (Chile) Limitada ("Minera Aurex"), a subsidiary of Phelps Dodge Corporation, whereby Minera Aurex could earn up to a 72% joint venture interest in the Property by incurring exploration expenditures, making payments to SCM and completing a feasibility study. In 2005, Minera Aurex completed an IP geophysical survey of the central part of the Property and defined a large sulphide target on the western part of the area known as the Meseta. This target is coincident with a road cut which the SCM previous chip sampling indicated the presence of 160 metres of 0.6% copper. Minera Aurex was unable to obtain the required drill permits to test this target in 2005 due to a change in environmental regulations in the region. On December 28, 2006, Minera Aurex received the required drilling permits from the Chilean government and drilling of five holes (1,294m) was completed in March of 2007. In May 2007, Minera Aurex terminated the joint venture agreement with SCM. At the end of this stage, a total of 30 drill holes (12,664m) had been drilled on the Property.

In April 2008, SCM under the ownership of TMI completed required environmental studies and submitted an Environmental Impact Declaration (DIA) which included a diamond drilling program of 15,000 metres. The environmental license was granted on August 18, 2009. In March 2011, SCM reopened facilities at the Escalones Property in preparation for the exploration program that commenced in Q1-2011. A total of 136 additional channel samples in road cuts at Escalones Bajo and Escalones Alto were collected. During August to October 2011, SCM hired a consultant geologist expert in porphyry copper deposits to carry out an evaluation of the geological model of the Escalones Cu-Mo porphyry-skarn by remapping 3,400 metres of the existing core. In November 2011, a total of 230 line-kilometres covering a total area of 45km<sup>2</sup>, of helicopter-borne ZTEM and aeromagnetic geophysical survey were carried out by Geotech Ltd.

On February 2nd, 2012, Armitage and Davis of GeoVector Management Inc. completed a NI 43-101 compliant resource and report titled "Resource estimate on the Escalones Porphyry Copper Project" for SAC, which included an Inferred Resource of 420 million tonnes of mineralized material containing 3.8 billion lbs of copper at 0.41%, 56.9 million lbs of molybdenum at 61.39 ppm, 610,000 ozs of gold at 0.05 gpt and 16.8 million ozs of silver at 1.24 g/t using a 0.2% copper equivalent cut-off grade. This equates to a copper-equivalent content of 4.5 billion lbs of copper grading 0.49%. (The Copper Equivalent (CuEq %) calculations reflected gross metal content using approximate 3 year average metals prices as of December 2011 of \$3.00/lb copper (Cu), \$1200/oz gold (Au), \$22/oz silver (Ag), and \$16/lb molybdenum (Mo) and have not been adjusted for metallurgical recoveries.) This resource is no longer current and was not relied upon during the completion of the current resource estimate. The majority of this resource is hosted in copper, gold and silver replacement-style mineralization within the skarn with only one drill hole testing porphyry-style mineralization under the Meseta.

In September 2012, the Company announced the results of the 2012 five hole diamond drilling program and the interpretation of the ZTEM conductivity and magnetic geophysical surveys at Escalones, including a new copper oxide zone. During the 2011-2012 season, the Company drilled five holes, totaling 3,205 meters. Diamond drill hole ES-35, located 300 metres E of ES-24, intersected 71 metres of near surface, mixed secondary sulphide/oxide copper mineralization averaging 0.64% copper equivalent ("CuEq"). This hole also intersected high grade skarn mineralization at 456 metres intercepting 4.5 metres of copper mineralization averaging 4.32% CuEq within a 9.25 metres zone averaging 2.39% CuEq. This skarn intercept extends the known skarn such that it has now been traced by drilling approximately 1.7 km horizontally and 1.1 km vertically.

In December 2012, the Company commenced a summer drill program at the Escalones copper-gold project. During the field season 18 additional diamond-drill holes (ES-36 to ES-53) were drilled, completing 9,070 metres to April 2013. A total of 53 diamond drill holes totaling 24,939 meters have been completed on the Project. 15,934 core samples were sent for geochemical analysis during the summer program. In addition, an





initial program of metallurgical test work on Escalones material was commenced at SGS Laboratories in Ontario and was completed in April, 2013. Subsequently a second set of samples were sent to SGS for further metallurgical testing. This program is ongoing. The standard sulphuric acid leach test achieved average copper extraction of 77% from mixed copper oxide/sulphide mineralization. Copper flotation was also successful and rougher/cleaner flotation testing of the porphyry material achieved copper concentrate grades of 25-34%. The metallurgical testing used conventional sulphuric acid and flotation methods although the Company's patented chloride leach was also tested. The patented leach averaged 100% extraction of the copper and 57% of the gallium on both oxide and sulphidic mineralization but with high reagent consumption.

## **7.0 GEOLOGIC SETTING AND MINERALIZATION**

### **7.1 REGIONAL GEOLOGY**

The Property is situated within the Miocene to Pliocene age Pelambres-El Teniente Porphyry copper belt, which hosts the world's largest underground porphyry copper deposit at El Teniente, as well as other large copper deposits at Los Bronces - Andina and Pelambres in Chile, and Agua Rica, Pachon and Bajo La Alumbrera in Argentina (Katsura, 2006). Porphyry copper mineralization within this metallogenic province is associated with igneous activity ranging in age from 4.6 – 7.0 Ma (El Teniente) to 9.7 Ma (Los Pelambres). The general age of igneous activity at the Escalones Property was determined to be between 8.2 to 6.7 ± 0.3 Ma, based on a K/Ar analysis from primary igneous biotite in the granodiorite intrusive (Maus, 1999). Thus, the timing of intrusions and mineralization at Escalones is within the range of other large deposits in the metallogenic province.

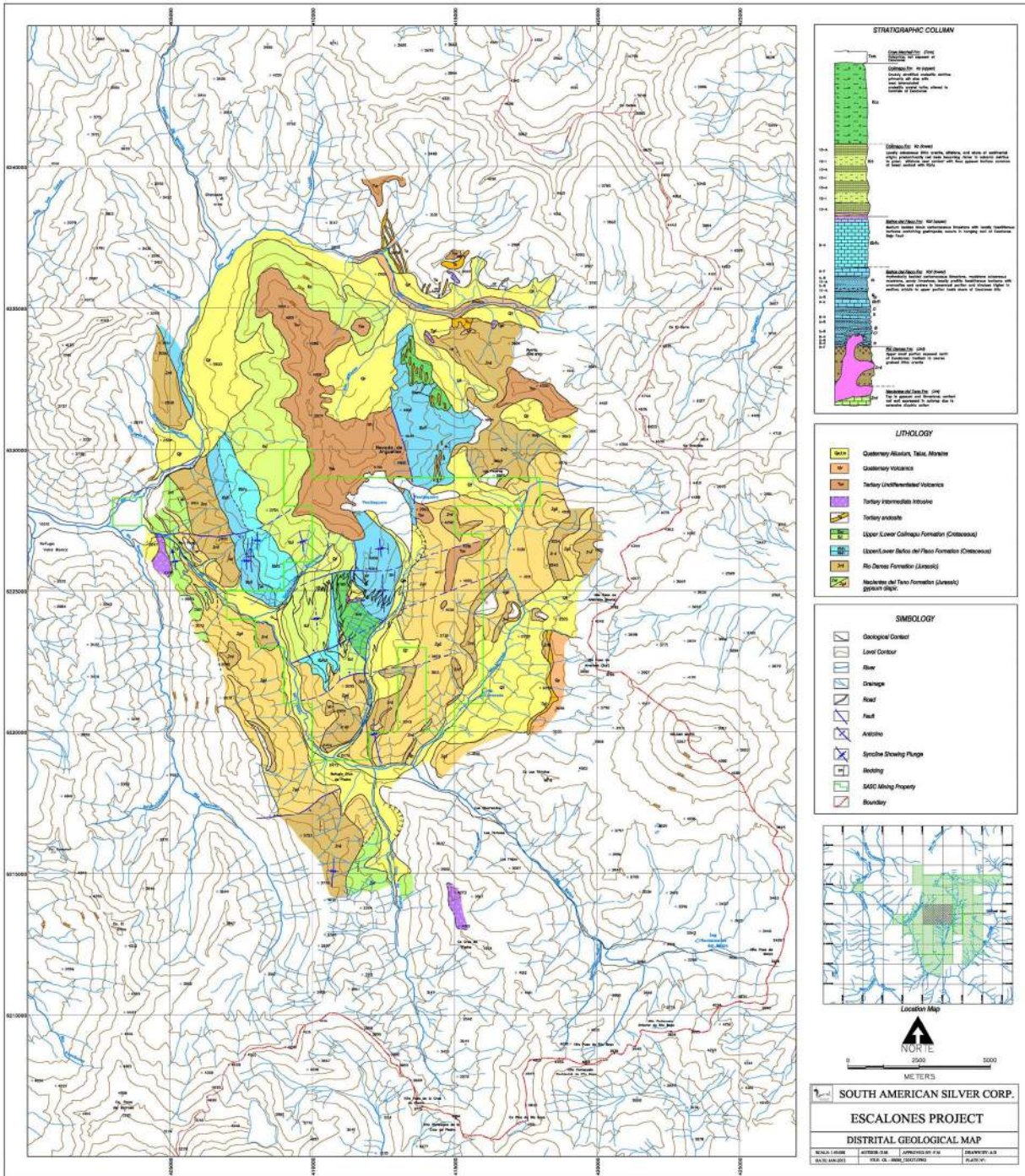
The Escalones Property is located in the central Andes Mountains, within a north-south trending fold and thrust belt consisting of Paleozoic and Mesozoic rocks that exhibit at least six episodes of tectonic and orogenic activity since the Triassic (Klohn, 1960; Charrier, and others, 1981; Ramos, 1988) (Figure 7-1). The rock units exposed in the Property area consist of at least two episodes of Mesozoic transgressive marine and terrestrial sedimentary rocks, which are intercalated with volcanic units. These rock units have been subsequently folded, deformed, and displaced by thrust faulting, and intruded by Tertiary intrusive complexes. All rocks are overprinted by genetically related mineralization and hydrothermal alteration.

Normal faulting associated with regional uplift, and the active erosion by water and glaciers continue to expose deeper portions of the range.





**Figure 7-1: Regional Geology**





## 7.2 LOCAL GEOLOGIC SETTING

The oldest rock units exposed in the Escalones area are identified as sediments of the Upper Jurassic Nacientes del Teno Formation which consist of a sequence of tightly folded red sandstones, shale, sandy limestone and up to 200 m of intercalated gypsum/anhydrite. Regional folding of the Nacientes del Teno Formation has resulted in plastic deformation of the gypsum/anhydrite units, which commonly form diapirs that intrude overlying units and have displaced large blocks of adjacent sediments, often creating a chaotic assemblage of lithologies that obscures contact relations among other rock units. It has also been noted that this formation is commonly associated with detachment faults in the region and that gypsum diapirs migrate along these flat-lying structures (Maus, 1999).

The Rio Damas Formation stratigraphically overlies the Nacientes del Teno Formation, and consists of more than 1,000 m of volcanic andesite flows, tuffaceous sediments, intercalated conglomerates, and a red sandstone unit that were all deposited in a continental setting. Rocks of the Rio Damas Formation typically are highly disrupted, and occur as displaced blocks within gypsum diapirs that are rooted in the underlying Nacientes del Teno Formation. In the project area, a calcareous sedimentary member is referred to as the "Escalones Bajo sedimentary sequence" and is part of the Rio Damas Formation.

The Banos del Flaco Formation conformably overlies the Rio Damas Formation, and consists of a thick package of rhythmically bedded calcareous to carbonaceous mudstone, siltstone and fossiliferous limestone that are locally intercalated with volcanoclastic and andesitic flows. The dark grey to black colour and carbonaceous content are distinctive features that help distinguish the rocks of the Banos del Flaco Formation from both underlying and overlying terrestrial red-bed units in the project area. The Banos del Flaco Formation has also been described elsewhere as the Lo Valdes Formation, where it consists of a 1,300-1,800 metre section representing a continuous period of marine sedimentation in the Andean Basin, during the late Jurassic-early Cretaceous and precedes a widespread compressive orogenic episode which began in the middle Cretaceous (Hallam et. al., 1986). In the project area, the upper calcareous sediments and limestone are referred to as the "Escalones Alto sedimentary sequence" and overlies a siltstone member of the same formation.

The Colimapu Formation overlies the Banos del Flaco Formation and is characterized by up to 3,000 m of red tuffaceous sandstone, intercalated conglomerate, volcanoclastic and andesite flows, and evaporites that were deposited as the Andean Basin was being compressed and uplifted during the middle- Cretaceous.

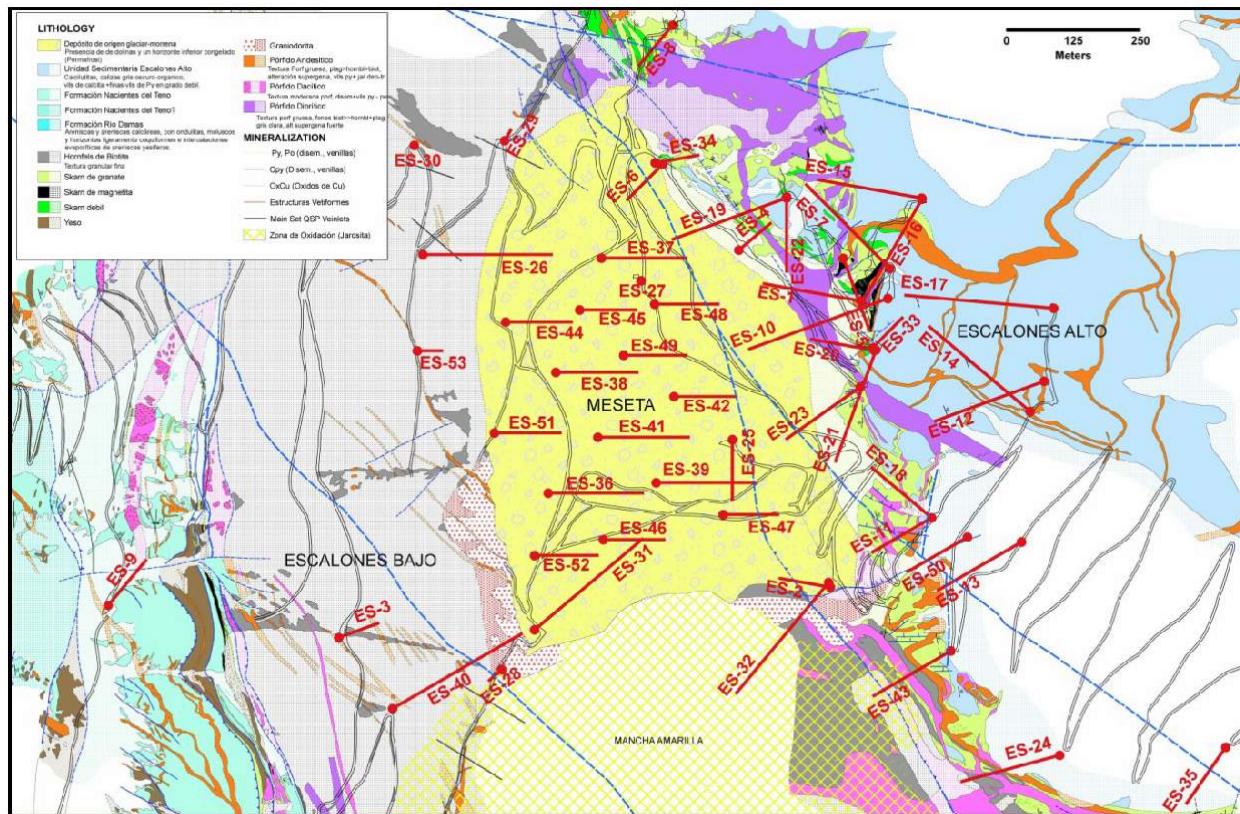
In the Property area, the Colimapu Formation is unconformably overlain by a thick sequence of volcanic rocks consisting of subaerial andesite flow, tuffs, volcanoclastics, breccias, and is locally intercalated with tuffaceous sediments. These rocks have been tentatively correlated with the Late-Cretaceous Coya- Machali Formation and/or the Miocene Farellones Formation in the project area (Maus, 1999). Exposures of very young volcanic rock units have been identified north of the project area along the Cordon Escalones and are possibly recent flows and tuffs originating from Volcan Maipo, an active volcano located approximately 14 km southeast of the project area along the Chile-Argentina border.

At Escalones, the sedimentary rocks have been structurally arranged in a complex manner, such that tuffaceous sediments and carbonates of the Banos del Flaco Formation form the backbone of the Cordon Escalones. Along the north-south Escalones Bajo structure, the tuffaceous siltstones and carbonates of the Rio Damas Formation are in thrust contact with the Banos del Flaco siltstones, and gypsum diapirs have migrated along the structure from the underlying Nacientes del Teno Formation. Along the east side of the Cordon Escalones, the upper limestone and carbonate members of the Banos del Flaco Formation, appear to have been thrust over the lower tuffaceous siltstone member at Escalones Alto, this structural zone appears to be subparallel to primary bedding structures, and are intruded by a series of andesite dykes and sills. The upper carbonate unit of the Banos del Flaco Formation is also referred to as the Escalones Alto sedimentary sequence.



The sequence of sedimentary and volcanic rocks in the Property area have been intruded by a series of intermediate composition dykes, sills and plugs that were emplaced between 8.2 to 6.7 million years ago.

**Figure 7-2: Escalones Property Geology with Drill Holes Locations (ES-1 to ES-53)**



The oldest intrusive rocks occur as andesite dykes and sills that were emplaced subparallel to bedding planes within the Banos del Flaco Formation, along low angle thrust faults and crosscut sedimentary units. A diorite plug and associated dykes crosscut all sedimentary units and the andesite dykes and locally follow zones of recurring faults. The largest intrusion exposed is a granodiorite stock that crops out near the southwest edge of the Meseta and has been intersected in drill holes beneath portions the Meseta area (ES-25). Emplacement of the granodiorite stock produced a broad alteration halo of biotite hornfels in overlying tuffaceous siltstones of the Banos del Flaco Formation. The granodiorite intrusion and adjacent altered rocks are in turn cut by later dacite dykes associated with the evolving intrusive porphyry system. The age of the andesite sills at Escalones was determined to be  $8.2 \pm 0.3$  Ma using a fresh sample containing primary igneous biotite (Maus, 1997). Another age was determined by Geochron labs (1998) to be 6.7 Ma from a fresh sample of the granodiorite intrusion (Maus, 1999). The age of these intrusive rocks help bracket the timing of the evolving intrusive complex at Escalones, and these ages are similar to those from other porphyry copper deposits in the central Chilean Andes, as described above.

### 7.3 STRUCTURE

The Property is located in the central Argentinean-Chilean Andes, which is dominated by a north-south alignment of folded rocks and east-west oriented basement faults (Katsura, 2006). There have been at least six major unconformities documented in the region, characterized by episodes of compressional deformation that resulted in folding, thrust faulting, detachments and normal faulting since the Triassic (Charrier and others, 1981; Ramos, 1988). Unravelling the structural history for a specific area is complicated in the project



area because the gypsum/anhydrite units within the Nacientes del Teno and Colimapu formations deform plastically and are commonly mobilized as diapirs that displace large blocks of adjacent, more competent rocks in the stratigraphic section. The gypsum/anhydrite units commonly form the cores of anticlines in the region and when these are breached by thrust faulting, the gypsum/anhydrite units move along these zones of weakness. The Escalones Bajo structure is an example of a thrust fault where gypsum has migrated along the contact and presents a complicated arrangement of the rock units and blocks within the structures.

In the Property area, rock units of the Nacientes del Teno, Rio Damas, Banos del Flaco, and Colimapu formations have been folded, displaced by gypsum/anhydrite diapirs and locally juxtaposed by a complex series of thrusting and normal faults associated with regional deformation, basement structures and the emplacement and evolution of the underlying porphyry system.

A study was conducted by Glover (1999) to unravel the complex structural history at Escalones, which identified at least three phases of thrust faulting that pre-date emplacement of the intrusive complex and skarn mineralization. This sequence consists of an early phase of westerly oriented thrusting that resulted in placing Banos del Flaco (Escalones Alto) limestone in thrust contact over tuffaceous siltstones that belong to a lower member of the same formation. The second phase is characterized by the east- verging Escalones Bajo thrust fault which is oriented at 350-360°/70-80° W, dykes present in the hanging wall limestone member have been boudined and are locally enclosed by gypsum in the fault zone. Gentle folding in the hanging wall rocks appear to have been synchronous with thrusting, and only affect the upper plate units above the Escalones Bajo Fault zone. Glover (1999) estimates that up to 600 m of displacement occurred along the Escalones Bajo Fault zone and suggests this fault may be part of a larger regional structure that was important in localizing subsequent intrusions and mineralization. Post deformational felsic dykes and magnetite skarn occur within the fault, with relatively unaltered limestone in the hanging wall indicating that the fault acted as an important barrier to hydrothermal fluids during mineralization. The last phase of thrusting is observed west of the Escalones Property, where an easterly oriented thrust appears to truncate the early thrusts. This structure is projected to occur north of Quebrada Escalones and the main project area.

East-west and northeast striking normal faults, dipping north, are observed in the project area to exhibit minor displacements, but locally serve to control emplacement of porphyry dykes. A prominent normal fault occurs in Quebrada Escalones, where the base of Cretaceous volcanics has been displaced 200 m down to the northwest. This fault appears to have been a locus for later emplacement of the porphyry intrusive stock and suggests that normal faulting and extension may have been synchronous with development of the underlying igneous complex. The Escalones Bajo Fault appears to have been reactivated as a normal fault, possibly during and after emplacement of the porphyry intrusion. Slivers of mineralized skarn occur within the broad Escalones Bajo Fault zone and it appears that the fault acted as a conduit and barrier to mineralizing fluids.

## 7.4 MINERALIZATION

Copper mineralization occurs as magnetite skarn, hornfels and stockworks in altered andesite sills, within a package of calcareous sedimentary rocks and along structural zones at Escalones Alto and Escalones Bajo (Katsura, 2006). Disseminated mineralization and stockworks occur in the granodiorite and other porphyry intrusions at the Escalones Property, beneath the Meseta and possibly the Mancha Amarilla areas. Mineralization is dominantly controlled by host rock lithologies and structures and varies according to the location and style of mineralization. The principal host for skarn mineralization is the calcareous sediments adjacent to the Escalones Alto thrust fault/structural zone, and to a lesser extent the andesite sills and dykes within the underlying hornfels pelitic sediments. Structural settings for mineralization occur along both the Escalones Alto and the Escalones Bajo thrust fault zones, where receptive lithologic units have been mineralized along fluid pathways. Copper mineralization consists of chalcopyrite with magnetite and admixed pyrite. Higher copper grades appear to correspond to higher sulfide content and geophysical methods (SP) have proven to be a successful tool in identifying high sulfide areas during previous exploration on the





Property. Extensions of the Escalones Alto skarn zone appear to be open to the north, east and south from the main outcrop area, and these potential areas extend down towards the Rio Arguelles.

Of particular interest is the presence of high gold values within the Escalones Alto skarn zone, which appear to have a correlation with relatively low geochemical values for molybdenum. Assays are reported as high as 13.9 g/t gold from surface sampling and a drill interception of 1.0 metre assayed 3.6 g/t gold (ES-18), from an andesite sill which did not exhibit high copper grades (0.036% copper). This suggests that there could be significant gold credits in the skarn ore zone, but that gold mineralization may not be directly correlated with copper and could be a distinct pulse within the sequence of mineralization. This is also suggestive that the upper portion of the porphyry system at Escalones may include a gold-rich phase, as described in other porphyry systems (Sillitoe, 1991).

Drill hole ES-25 was the first hole to intercept mineralization consisting of disseminated chalcopyrite and stockwork quartz veining with sulfides hosted by the granodiorite stock. Porphyry hosted mineralization consisted of 293 m that averaged 0.36% copper and 0.09 g/t gold. Mineralization appears to be associated with a moderate potassic alteration (secondary biotite) in the granodiorite and suggests that higher grade copper mineralization may be present nearby within a pyrite “shell” of the porphyry system (Guilbert and Park, 1975; Arnott and Zentilli, 2000). Drilling in 2012 and 2013 included several holes which penetrated the same granodiorite as seen in ES-25. These holes were also mineralized.

## 7.5 TARGET AREAS

The Escalones Project as presently known, consists of a large skarn, hornfels and related mineralized intrusives exhibiting weak to moderate porphyry copper alteration zoning and veining. Both the skarn and hornfels and the intrusions are mineralized with copper, gold silver and molybdenum.

Drilling to date has focused on the skarn in the immediate vicinity and to the east of the Meseta (Figure 7-2) and the mineralized intrusions under the Meseta itself.

Additional presently recognized targets include:

- Extensions to the skarn down dip to the east and for several km to the north and south as interpreted from the magnetic survey.
- Extensions to the known intrusions to the south of the Meseta.
- A ZTEM conductivity anomaly, interpreted as secondary sulphides/oxides that parallels the lower west side of the Arguelles valley.
- The west side of the Meseta and the rocks extending to the Bajo Fault (Figure 7-2) where secondary copper sulphides and oxides are seen in outcrop.
- Potential porphyry or skarn target within or deep below the area in the vicinity of the Bajo fault.

## 8.0 DEPOSIT TYPES

Two deposit types typically associated with porphyry copper systems have been identified at the Escalones Property (Katsura, 2006). Historic production and previous exploration has focused primarily on exposed mineralization in the Escalones Alto portion of the Property and down-dip extensions of magnetite-copper skarn that have been exposed in road cuts and intercepted in drilling. The magnetite skarns contain locally high grade copper mineralization (>6%) and carries gold credits (high grade samples up to 13.9 g/t). The skarn continues to be the primary exploration target at the Escalones Property. The majority of the drill holes have explored the upper portions of the skarn and to a limited extent, the down dip extensions of mineralization. A secondary target area for skarn mineralization lies along the Escalones Bajo structure, which exhibits anomalous areas for copper, gold, silver, and molybdenum. Structural evidence indicates that



this fault zone has been active during regional deformation and rejuvenated and active during and possibly post-dating emplacement of the intrusion.

A second deposit type at Escalones is typically lower grade, except where secondary enrichment has taken place, but potentially includes a very large tonnage of copper mineralization hosted by intrusions (buried porphyry system: Sillitoe, 1976). The presence of this target is supported by:

- molybdenum geochemistry in drill core suggestive of a porphyry system with values in the 20 to 100 ppm range being and a high of 443 ppm in the rock samples taken near the contact of the granodiorite intrusion,
- drill intercepts in ES-25 of mineralized granodiorite, 293 metres averaging 0.36% copper and 0.091 g/t gold,
- 2012-2013 drill intercepts below glacial moraine including partially leached granodiorite-diorite with enhanced gold values underlain by a mixed zone including both primary and secondary copper sulphides and copper oxides also within intrusive. In hole ES-36, the best 2 metres in secondary enrichment average 3.04% copper with 0.13 g/t gold.
- re-mapping of the core focusing on structures and vein types indicated that the area called Mancha Amarilla may overlie porphyry Cu-Mo mineralization at depth since near surface alteration includes a late pyritic overprint.
- the delineation of the Cu oxide blanket related to the potassic core and to the "A" type of veining.
- a large SP geophysical anomaly indicating the presence of a large buried sulfide body,
- radiometric dates from the Escalones granodiorite intrusion indicating a similar age to other major porphyry copper systems in the region.

Supporting data from drilling intercepts, structure, geochemistry and geophysics of both skarn and porphyry copper targets on the Escalones Property, suggest the potential for a deep porphyry target and possible structural controls on higher grade gold mineralization within the skarn and intrusive host rocks.

## 9.0 EXPLORATION

The following is a description of surface exploration work completed on the Property to date. This includes historic work and work completed by TMI through 2013. The first phase of work on the Property by TMI included re-opening access roads and the project camp, re-logging and sampling of historic drill holes, re-interpretation of IP (induced polarization) and other geophysics and trench sampling across surface exposures of geophysical anomalies and zones of visible copper mineralization.

### 9.1 GEOPHYSICS

#### GEOPHYSICAL SURVEYS

A total of approximately 8 km<sup>2</sup> of Self Potential (SP) geophysical surveys have been completed to date over much of the Property. The results of this work have proven to be a valuable tool for exploration at Escalones because anomalous values correspond to the mapped extent of hydrothermal alteration, and therefore, can be used to project the limits of the system beneath talus and areas of limited outcrops. Furthermore, highly anomalous values have been shown to be spatially related to copper sulphide mineralization and suggest areas of high sulphide mineral concentrations within the project area.

Results of the SP surveys indicate that a strong SP anomaly measuring approximately 4 km<sup>2</sup> in area, in which values range from -200 to -900 millivolts or lower, are associated with the surface area of hydrothermal alteration and known copper mineralization. The anomaly has in part been confirmed by observations made from the surface and in drill intercepts. Furthermore, strongly anomalous zones of SP response occur east of



the area drilled to date at Escalones Alto, indicating the potential for the continuity of skarn mineralization may extend down-dip to the east towards the Rio Arguelles.

In 2005, Minera Aurex completed a limited Induced Polarization (IP) geophysical survey on the Meseta and further defined a geophysical target on its western side. The geophysical work consisted of approximately 12 km of IP lines that identified a strong response in an area of approximately 1,000 by 500 metres located in the north-west segment of the Property approximately 1,000 metres to the west of the majority of the earlier drilling. This is an area near the margins of the Meseta and west of the main outcropping skarn mineralization. The target is considered to be porphyry copper style mineralization, related to the skarn mineralization.

In November 2011, a total of 230 line-kilometres covering an area of 45 km<sup>2</sup> of helicopter-borne ZTEM and aeromagnetic geophysical survey were carried out by Geotech Ltd. on behalf of TMI. This data underwent further processing by MIRA Geophysics who completed 3D inversions of both the ZTEM resistivity data and the magnetic data. Interpretation shows a magnetic body dipping east at Escalones Alto to a depth of approximately 2,000 metres coincident with the gold-copper magnetite skarn at ES-1. The magnetic body interpreted at Escalones Alto extends the area with copper skarn mineralization for about 4 km in a north-south direction with dips to the east towards the Arguelles River. The 3D inversion interpretation of the ZTEM conductivity includes a large elongate conductive body that includes the near surface mineralization located in ES-35 that included 71 metres of near surface, mixed secondary sulphide/oxide copper mineralization averaging 0.64% copper equivalent ("CuEq"). This conductive body extends several km north-south within the lower part of the Arguelles valley in rocks that overlie the main skarn zone.

#### **9.1.a.i ZTEM Geophysical Survey**

During November 6 to 13, 2011, Geotech Ltd. carried out a helicopter-borne geophysical survey for TMI over the Property situated near San Gabriel, Maipo Valley, Chile. Principal geophysical sensors included a Z-Axis Tipper electromagnetic (ZTEM) system, and a cesium magnetometer. Ancillary equipment included a GPS navigation system and a radar altimeter. A total of 230 line-kilometres of geophysical data were acquired during the survey.

The survey operations were based out of San Gabriel, Maipo Valley, Chile. In-field data quality assurance and preliminary processing were carried out on a daily basis during the acquisition phase. Preliminary and final data processing, including generation of final digital data and map products were undertaken from the office of Geotech Ltd. in Aurora, Ontario. The processed survey results are presented as the following maps:

- Reduced to Pole of TMI
- 3D View of In-Phase Total Divergence versus Skin Depth
- In-Phase Total Divergence (25Hz, 75Hz and 300Hz)
- Tzx In-line In-Phase & Quadrature Profiles over 75Hz Phase Rotated Grid
- Tzy Cross-line In-Phase & Quadrature Profiles over 75Hz Phase Rotated Grid

In a ZTEM survey, a single vertical-dipole air-core receiver coil is flown over the survey area in a grid pattern, similar to regional airborne EM surveys. Three orthogonal axis, air-core coils are placed close to the survey site to measure the horizontal EM reference fields. Data from the four coils are used to obtain the Tzx and Tzy Tipper components at minimum six frequencies in the 25 to 600 Hz band. The ZTEM data provides useful information on geology using resistivity contrasts while magnetometre data provides additional information on geology using magnetic susceptibility contrasts.

The survey was flown in a southwest to northeast (N 9° E azimuth) direction, with a flight line spacing of 200 metres. Tie lines were neither planned nor flown for this survey. The Block exhibits a high relief covering 45 square kilometres, with an elevation ranging from 2,371 to 4,596 metres above sea level. The only visible sign of culture is the gas pipeline road which crosses the southwest corner of the block. There is also a river which runs through the survey area.





## 9.2 GEOCHEMICAL SAMPLING

Surface exploration by TMI has included an intensive program of surface sampling, primarily channel sampling of fresh rock exposures in cuts and trenches excavated by bulldozer during road construction. Although surface sampling is considered a reliable indication of mineralization in the surface environment, the depth, extent and lateral continuity of mineralization can only be confirmed by adequate drilling or tunneling. On the basis of this sampling, a large area at Escalones Bajo was determined to host highly anomalous copper in an area of old workings, while at Escalones Alto, channel sampling of road cuts confirmed that high-grade copper values are associated with the magnetite skarn. Some of the more significant results obtained during the 1997-1998 field season are listed in Table 9-1.

Results of the channel sampling from mineralized skarns exposed in underground workings and in outcrops at Escalones Alto indicated that significant copper grades can occur in both the garnet hornfels and magnetite skarn facies and that the higher gold values are associated primarily with the magnetite in the skarn.

During the second field season (September 1998 to March 1999), bulldozer trenching and road construction in Escalones Alto provided access and exposures for additional detailed sampling. Significant results from two of the road cuts and trenches on the southern face of Escalones Alto are included in Table 9-1 and Table 9-2.

During the 1999-2000 field season, additional high grade copper-(gold) mineralization was discovered at Escalones Alto, and extended the anomalous road cut area identified in the previous season further to the NE. These results included an 81 metre-long channel sample interval that averaged 1.54% copper and 0.74 g/t gold. Within this interval there is a 25 metre section that averaged 2% copper, 2.0 g/t gold and 17 g/t silver. This section of the new road cut at Escalones Alto traverses the core area of the magnetite bearing skarn.

### 2011 GEOCHEMICAL SAMPLING

Surface sampling at both Escalones Alto and Escalones Bajo areas returned significant values for copper, gold, silver and gallium, as highlighted by selected one-metre channel sampling results Table 9-2. Road cuts across surface exposures of this mineralization include 116 metres of 1.4% copper, 0.57 g/t gold and 21 ppm molybdenum (1.83% copper equivalent<sup>1</sup>).



**Table 9-1: Escalones Surface Sampling (1997 – 1999)**

Sample ID	Distance (m)	Copper (%)	Molybdenum (ppm)	Gold (g/t)	Silver (g/t)
<b>Escalones Bajo Road Cut Channel Sampling (1997-1998)</b>					
<b>14943-14950</b>	170	0.51	32		
<b>including</b>	60	1.22	41		
<b>including</b>	20	2	79		
<b>14919-14933</b>	237	0.08	38		
<b>31551-31562</b>	117	0.11	9		
<b>31564-31565</b>	12	0.77	8		
<b>Escalones Alto Road cut Sampling (1997-1998)</b>					
<b>22319-22328</b>	24	1.15	10		
<b>including</b>	17	1.46	10		
<b>22331-22333</b>	30	1.03	13		
<b>including</b>	10	1.45	12		
<b>22334-22338</b>	16.5	1.1	33		
<b>14914-14918</b>	19	0.33	60		
<b>22339-22345</b>	70	0.55	25		
<b>including</b>	20	1.63	1		
<b>22361-22377</b>	35	0.55	7		
<b>Including</b>	6	1.48	8		
<b>Socavon Grande Underground Sampling (1997-1998)</b>					
<b>14733</b>	0.8	1.86		13.93	
<b>Channel C</b>	1.8	2.76		1.75	
<b>Channel D</b>	2	2.61		0.5	
<b>Channel G</b>	11	1.98		0.21	
<b>including</b>	4	3.91		0.55	
<b>Escalones Alto Road Cut Sampling (1998-1999)</b>					
<b>Road Cut No. 1</b>					
<b>32873-32891</b>	19	2.54		0.02	20
<b>including</b>	2	7.41		0.08	46
<b>Road Cut No. 2</b>					
<b>33146-33175</b>	38	1.36		0.22	-
<b>Trench</b>					
<b>33103-33128</b>	26	0.71		1.24	-
<b>Including</b>	8	0.5		3.37	-



**Table 9-2: Escalones Road Cut Channel Sampling**

Sample ID	Distance (m)	Copper (%)	Molybdenum (ppm)	Gold (g/t)	Silver (g/t)	Gallium (g/t)
<b>Selected Escalones Bajo Road Cut Channel Sampling</b>						
<b>14943-14950</b>	170	0.51	32	0.02		
<b>Including</b>	60	1.22	41	0.01		
<b>Including</b>	20	2	79	0.02		
<b>14634-14636</b>	11	1.3	7	0		
<b>14919-14933</b>	237	0.08	38	0		
<b>31551-31562</b>	117	0.11	9	0		
<b>31564-31565</b>	12	0.77	8	0		
<b>111013-111075</b>	126	0.03	3	0	0.6	17.1
<b>Alto Road Cut Channel Sampling</b>						
<b>22319-22328</b>	24	1.15	10	0.24		
<b>Including</b>	17	1.46	10	0.28		
<b>22331-22333</b>	30	1.03	13	0.04		
<b>Including</b>	10	1.45	12	0.05		
<b>22334-22338</b>	16.5	1.1	33	0.13		
<b>14914-14918</b>	19	0.33	60	0.01		
<b>22339-22345</b>	70	0.55	25	0.01		
<b>Including</b>	20	1.63	1	0.02		
<b>22361-22377</b>	35	0.55	7	0.06		
<b>Including</b>	6	1.48	8	0.12		
<b>Road Cut 1:</b>						
<b>32873 – 32891</b>	19	2.54		0.02	20	
<b>including: 32873-32874</b>	2	7.41		0.08	46	
<b>Road Cut 2</b>						
<b>33146-33175</b>	38	1.36		0.22		
<b>Trench</b>						





Sample ID	Distance (m)	Copper (%)	Molybdenum (ppm)	Gold (g/t)	Silver (g/t)	Gallium (g/t)
<b>33103-33128</b>	26	0.71		1.25		
<b>including: 33107-33114</b>	8	0.5		3.37		
<b>111251-111311</b>	116	1.4	21	0.57	8	37.7
<b>Including 111278-111309</b>	64	2.22	21	0.83	12	58.9

## 10.0 DRILLING

The following is a description of drilling completed on the Property to date. This includes historic work (Katsura, 2006; Candia, 2007) and work completed by TMI through 2013. To date a total of 53 drill holes have been completed on the Property totaling 24,939 metres (Table 10-1). The first phase of work on the Property completed by TMI in 2011 included re-logging, and sampling of historic drill holes. The second phase carried out in 2012-2013 included 23 drill holes. Table 10-2 shows significant results of drilling to date. Drill hole locations are shown in Figure 10-1.

Drill hole ES-1 intersected skarn and porphyritic andesite intrusive-hosted copper mineralization beginning at the surface. The highest copper grades occur in the uppermost 377 m of the hole, where the mineralization is hosted by skarn and intrusive andesite sills and dykes. The highest 1.0 metre sample assayed 4.65% copper from within the uppermost interval of skarn, and the upper 377 metre interval averages 0.63% copper. If the 102 m of lower-grade andesite sills and dykes are excluded, the average grade of the remaining 275 m is 0.80% copper. Mineralization in the upper 77 m of ES-1 occurs as disseminated chalcopyrite in magnetite-rich skarn, and as oxides within adjacent intrusive andesite sills, and is underlain by 300 m of intermixed metasomatically altered sediments, highly-altered porphyritic intrusions, and younger dykes and sills. The interval between 377-548 m, to the bottom of the hole, the volume of intrusive-hosted, porphyry style alteration and disseminated mineralization appear to increase, with visible chalcopyrite and bornite observed, and grades varying from a trace to 0.4% copper.

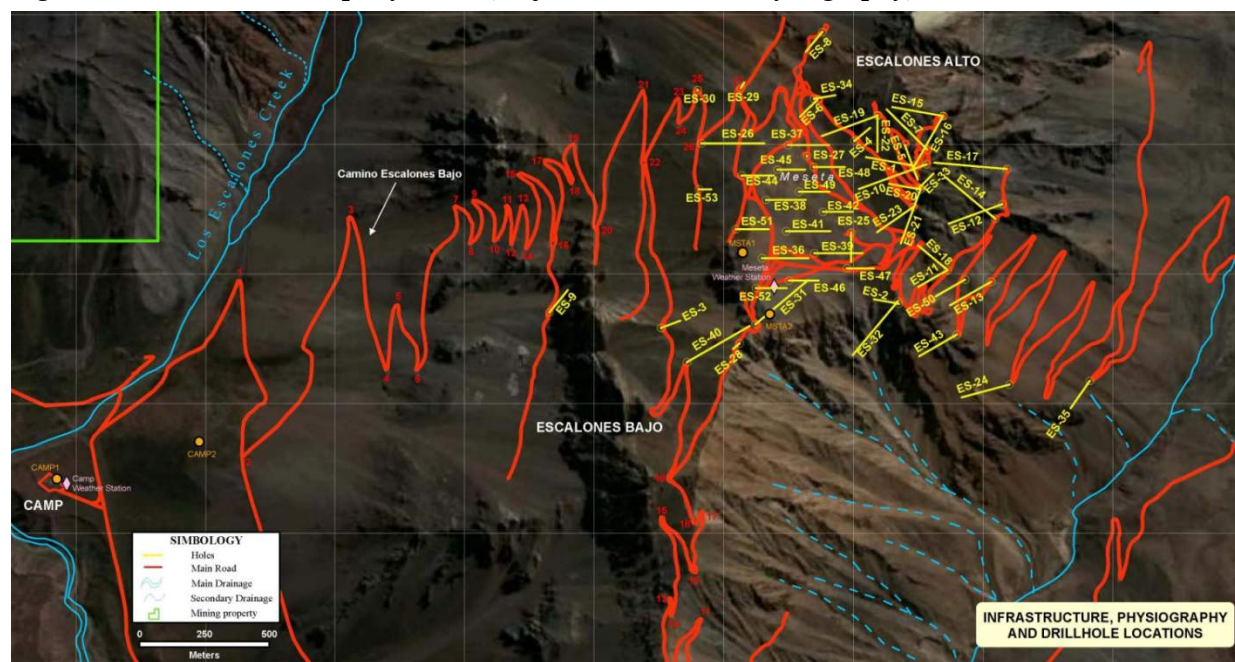
Drill hole ES-2 was collared 550 m south of ES-1 and intersected copper and molybdenum mineralization within an intensely-altered sedimentary sequence of skarn, calc-silicate hornfels, and intrusive dykes and sills. Drill hole ES-2, was drilled to a depth of 286 m, with two significant intercepts within the upper 142m. These results are shown in Table 10-2. Drill hole ES-2 was collared at a position lower in the stratigraphic sequence than ES-1, ES-5 and ES-7, therefore the higher grade magnetite-bearing skarns appear to be absent.

Drill hole ES-3 was collared 1.2 km west of ES-1 near the eastern border of the 1.5 square kilometre Escalones Bajo SP geophysical anomaly. Low grade chalcopyrite mineralization (0.1-0.25% copper) was observed throughout the 462 metre core length with individual assays across 1.0 metre intervals ranging up to 0.8% copper. Anomalous mineralization is primarily hosted by heavily fractured and altered biotite hornfels and porphyritic intrusive dykes. Although the grades intercepted by this drill hole are not as high as those encountered in the Escalones Alto area, anomalous copper was encountered in the presence of strong potassic alteration, and locally intense quartz-sericite-anhydrite veining associated with the chalcopyrite. These features suggest that there is a strong component of the hydrothermal system present in the Escalones Bajo sector.

ES-4 was collared 250 m to the NW of ES-1 with the objective of testing the NW strike continuation of the skarn-hosting calcareous sediments. As with ES-2, the hole appears to have been collared stratigraphically below the principal magnetite skarn-hosting member. However, a number of significant intervals of copper mineralization grading between 0.45% and 1.58% copper were intercepted in both highly altered calcareous sediments and fractured intrusive rock exhibiting disseminated chalcopyrite and bornite.

Drill hole ES-5 was collared approximately 80 m NW of hole ES-1, along the projected strike of the limestone strata that hosts the high-grade magnetite skarn mineralization. ES-5 was oriented towards the south, at right angles to the orientation of ES-1, to obtain a three-dimensional geological and grade distribution profile within the skarn body. The mineralization intersected at the ends of holes ES-1 and ES-5 is 215 m apart.

**Figure 10-1: Escalones Property Access, Infrastructure and Physiography, and Drill Hole Locations**



Drill hole ES-6 is located 464 m NW of ES-1, and intersected biotite hornfels, a rock unit that proved to be a poor host to higher grade mineralization, but often lies in the footwall to the skarn-bearing limestone and calcareous sequence. Only relatively narrow intercepts were encountered, including 11 m grading 0.98% copper and 0.23 g/t of gold between 124 and 135 m depth, and an intercept of 2 m grading 1.5% zinc and 9.5 g/t of silver at 354 m depth.

Drill hole ES-7 was collared 54 m east of ES-1 and drilled towards the NW at -75 degrees to a final depth of 861 m. Strong mineralization extends to a depth of 514 m, throughout the sequence of altered limestone. Weak mineralization occurred within the underlying biotite hornfels.

Drill hole ES-8 was collared 330 m north of ES-6 and located within a geologically complex area. One interval of mineralization was encountered for 7.0 m at 221 m grading 1.37% copper and 0.07 g/t of gold, hosted by magnetite skarn.

Drill hole ES-9 was collared 465 m west of ES-3, located to intersect mineralization in the footwall of the Escalones Bajo fault zone. The hole failed to reach its target and problems were encountered when the hole collapsed while in massive gypsum in the main fault zone.

Additional diamond drilling carried out as part of the second drill program provided highly encouraging results and significantly expanded the area underlain by skarn mineralization, including the definition of the copper





mineralization to depths of up to 500 m beneath the outcropping mineralization at Escalones Alto. The first two drill holes of the 1999-2000 drilling program, ES-10 and ES-11, are located 50 and 417 m east and southeast, respectively, of the high grade mineralization identified in the First Phase drill program during 1998-1999.

Results of holes ES-12 through ES-15 only intercepted low grade copper mineralization. These include: ES-12, 297-388 m averaged 0.27% copper over a 91 metre interval; ES-13, 210-260 m averaged 0.44% copper over a 50 m interval; ES-14, 381-435 m, averaged 0.41% copper over an interval of 54 m; and ES-15 encountered a possible post mineralization intrusive body and did not exhibit intercepts of significant metal values. Additional encouragement was found in ES-16, which is located 190 m NE of ES-1 and was drilled toward the SSW at an angle of -60 degrees.

Geological interpretations suggest that the east-dipping mineralization intersected in ES- 16 will extend to approximately 650 m below the surface before being cut off by a north-south fault near the collar of drill hole ES-10. The road channel sampling results, combined with the surface drilling, therefore, define a significant volume of higher grade mineralization that starts at the surface and is currently open to the east.

Drill holes ES-17 through ES-24 exhibited narrow intervals ranging from 2.0-12.0 m of relatively lower grade copper mineralization averaging 0.4-0.8% copper, with sporadic 1.0 metre intervals that ranged up to 2.75% copper and anomalous in gold values. The higher grade intervals appear to be associated with highly fractured skarn, and local secondary copper enrichment within relatively shallow depths. Of particular note, was a 1.0 metre intercept at 28.0 m in ES-18 in skarn above an andesite sill that assayed 3.6 g/t gold and was not associated with highly anomalous copper mineralization (0.036% copper).

Drill hole ES-25 intersected hydrothermally altered granodiorite and diorite containing porphyry style, stockwork hosted and disseminated chalcopryite, bornite and molybdenite mineralization, along with anomalous gold values. This was the first and only hole to explore the porphyry hosted mineralization at Escalones. Anomalous copper mineralization begins at the base of moraine cover at 55 m and extends to a depth of 430 m. ES-25 is located more than 160 m west of the nearest drill hole that intersected skarn mineralization, and is almost a kilometre east of the mineralization exposed in road cuts at Escalones Bajo, which remain to be drill tested.

Drill hole ES-26 (previously ESC-1) cut mainly sandstone and biotite hornfels affecting to sedimentary rock, with little presence of dykes of diorite and dacites and andesites. The alteration consists principally of quartz sericite veinlets over a fine biotite-silica, related to the hornfels process. Abundant gypsum veinlets are also present from 260 m. The geochemical results on the upper part of the hole were good, before to get the IP anomaly. Between the 42 and 88 m, a continuous zone with copper oxides, little chalcocite and remnants of chalcopryite was found. This interval reported 0.53% total Cu, mostly soluble. Below this interval, until 152 m, the mineralization presents zones with low mineralization and zones with similar grades to the upper part in mixture of oxides, secondary and primary sulphides.

The primary zone, from 200 m down, is characterized by erratic mineralization of chalcopryite > pyrite in veinlets and very little dissemination, associated to a quartz sericite veinlets, quartz and anhydrite veinlets. Also molybdenite is present in veinlets, with quartz and anhydrite. The copper grade reported in analysis is between 0.1 and 0.4% and average close of 0.1% Cu. The Mo values are variable but are more important from 370 m down, reaching a maximum of 602 ppm at 450 m depth.

The drill hole was oriented to reach the main geophysical anomaly. The rock corresponds to a volcano sedimentary sequence, mainly clastic and less porphyritic. The rock is strongly biotitized and then cut by quartz sericite stockwork veinlets, gypsum and anhydrite. Little andesite dykes are also present. Towards the end, one of this dykes present porphyritic texture, biotite alteration and chalcopryite and pyrite mineralization. In general, the alteration and mineralization found in the biotite hornfels in ES-1 is very similar to that found in many of the previous drill holes in the same lithological unit.





Drill hole ES-27 (ESC-2) was located at the upper part of the area of interest, on the “Meseta” zone, a flat area covered by more or less 50 to 60 metres of moraine material. The hole was lost and dropped at 29.8 m because the drill was not strong enough to drill through the post mineral cover.

Drill hole ES-28 (ESC-3) was drilled in the southern part of the area, close to the SW contact of granodiorite with hornfels and close to the border of the “Meseta”. This hole also presented an operational complication because of a sandy fault. Total depth of the hole was 190.2m. The hole started in hornfelized sandstone, cutting several small dioritic dykes. From 52 to 100 m the hole cut a porphyry diorite dyke which is biotitized and argillized. Mineralization is restricted to mainly pyrite with traces to <0.5% chalcopyrite and molybdenite and little copper oxides. Down to 174 m, drilling continued in biotite hornfels which is interpreted to be mainly sedimentary. The rock is mainly quartz, sericite and pyrite, with only traces of chalcopyrite and frequently molybdenite in veinlets. Towards the bottom again the hole presents intercalations of dioritic dykes, with scarce mineralization of chalcopyrite and molybdenite.

At the upper part of the hole the rock contains clays with copper that precipitate copper with chloritic acid at 10%. From 48 to 80 m the geochemical results reported 34 m with 223 ppm Cu and 125 ppm Mo. Molybdenum has high values from the surface confirming the geochemical anomalies in trench samples. Down hole, the geochemical results reported 500 to 2,000 ppm Cu and locally up to 5,574 ppm. The Mo values vary from 17 to 415 ppm Mo and is general higher than in others holes.

Drill hole ES-29 (ESC-4) drilled to a final depth of 281.45 m. The hole started with biotite hornfels of similar to that seen in hole ES-26, with stock work veinlets of pyrite with quartz sericite haloes. The hole did not contain recognized copper oxide mineralization. The primary zone also didn't recognized important chalcopyrite mineralization. At a depth of 126 to 144 m, the hole cut a porphyry dioritic dyke with biotitic alteration and quartz>sericite, and mineralization of pyrite 1-2%. Between the 162 to 178 m the hole cut porphyritic andesite (possible dyke?) with alteration of biotite, quartz and chlorite and mineralization of pyrite 1-2% and traces to <0.5% chalcopyrite. The biotite hornfels at depth presents alteration of quartz sericite with less chlorite and minor Kfeldspar. The mineralization of pyrite varies between 1 to 2%, while the chalcopyrite is in traces and less than 0.5%. The geochemical result reported only anomalous copper values, <0.1% and no Mo anomalies, <10 ppm.

Drill hole ES-30 (ESC-5) was stopped at 219.45 m because the lack of copper mineralization and because it's similar characteristics to the other holes on the area. This drill hole cut a biotite hornfels of moderated intensity, affecting to sedimentary sandstone with clastic texture partially preserved. The core presented clay and gypsum veinlet with low amount of sulphur. The mineralization consists mainly in pyrite 0.5 to 1.5% with traces of chalcopyrite and locally traces of molybdenite. Very local samples reported over 1,000 ppm Cu and also very low grade of Mo was reported (1 to 10 ppm Mo, except one over 100 ppm).

Drilling in the 2012-2013 period focused on drilling the intrusive part of the system underneath the central Meseta area. Limited drilling was carried out on the skarn to the east pending new drill permits.

Nine Drill holes (ES-36, 38, 39, 41, 45, 46, 47, 51 and 52) were drilled on the meseta and intersected mineralized intrusive below 65-85 metres of glacial moraine. All of these holes included intervals of partially enriched mineralization below a partially leached often gold enriched zone. The best intersections were in ES-36 and ES-38 (see Table 10-2). Hole 36 was drilled in the western part of the Meseta into porphyry style mineralization. Below the glacial moraine the hole continued in partially leached bedrock with enhanced gold values. This is underlain by a mixed zone including both primary and secondary copper sulphides and copper oxides. The best 2 metre intersection averaged 3.04% copper with 0.13 g/t gold. The better secondary enrichment averaged 0.99% copper with 0.15 g/t gold and 2 g/t silver over 27 metres, including 2.23% copper with 0.14 g/t gold and 1.4 g/t silver over 6 metres. This intercept continues for a total of 124 metres and averages 0.51% copper with 0.13 g/t gold and 1.1 g/t of silver.



Drill holes ES-37, 42, 44, 48 and ES-49 penetrated hornfels below the moraine cover indicating the boundaries of the intrusive in these areas. Nevertheless, these holes also included some partially enriched mineralization.

Two holes were located in the skarn mineralization on the east side of the Meseta, one of which intersected gold only mineralization in the shales overlying the skarn. This gold intercept in ES-43 is unusual and suggests that there may be a late gold phase cross-cutting the copper rich mineralization.

**Table 10-1: List of drill holes completed on the Property to date**

<b>Hole #</b>	<b>Coordinates WGS84 Northing</b>	<b>Coordinates WGS84 Easting</b>	<b>Elevation [msnm]</b>	<b>Azimuth</b>	<b>Dip</b>	<b>Length</b>	<b>Drilling Season</b>
ES-1	6,224,919	411,732	3,919	280°	-70°	547.47	1998/99
ES-2	6,224,387	411,674	3,694	280°	-70°	286.09	1998/99
ES-3	6,224,293	410,757	3,579	70°	-80°	462.07	1998/99
ES-4	6,225,014	411,503	3,848	50°	-80°	455.97	1998/99
ES-5	6,224,999	411,698	3,949	160°	-75°	547.78	1998/99
ES-6	6,225,174	411,361	3,825	225°	-80°	549.61	1998/99
ES-7	6,224,980	411,785	3,893	315°	-75°	861.32	1998/99
ES-8	6,225,433	411,380	3,819	220°	-70°	291.88	1998/99
ES-9	6,224,353	410,326	3,250	40°	-75°	431.67	1998/99
ES-10	6,224,924	411,782	3,888	250°	-60°	554.49	1999/00
ES-11	6,224,516	411,863	3,606	240°	-70°	379.72	1999/00
ES-12	6,224,770	412,073	3,628	250°	-60°	437.67	1999/00
ES-13	6,224,471	412,031	3,515	240°	-60°	363.86	1999/00
ES-14	6,224,714	412,047	3,615	310°	-60°	495.62	1999/00
ES-15	6,225,111	411,845	3,945	280°	-60°	398.02	1999/00
ES-16	6,225,109	411,845	3,945	210°	-60°	475.65	1999/00
ES-17	6,224,906	412,091	3,645	275°	-60°	559.67	1999/00
ES-18	6,224,516	411,863	3,606	310°	-60°	294.93	1999/00
ES-19	6,225,112	411,593	3,937	250°	-60°	455.97	1999/00
ES-20	6,224,828	411,756	3,893	280°	-60°	242.78	1999/00
ES-21	6,224,829	411,759	3,893	200°	-60°	444.99	1999/00
ES-22	6,225,113	411,592	3,937	180°	-60°	282.12	1999/00
ES-23	6,224,759	411,730	3,837	235°	-60°	339.16	1999/00
ES-24	6,224,074	412,102	3,345	255°	-70°	558.15	2000/01
ES-25	6,224,662	411,491	3,779	180°	-80°	653.49	2000/01
ES-26	6,225,006	410,914	3,652	90°	-65°	572.85	2007
ES-27	6,224,957	411,321	3,797	200°	-85°	29.8	2007
ES-28	6,224,233	411,061	3,770	230°	-80°	190.2	2007
ES-29	6,225,218	411,066	3,710	30°	-85°	281.45	2007
ES-30	6,225,209	410,897	3,620	0°	-90°	219.45	2007
ES-31	6,224,307	411,122	3,793	50°	-75°	1,022.30	2011/12
ES-32	6,224,396	411,671	3,694	220°	-75°	1,045.00	2011/12
ES-33	6,224,832	411,753	3,894	45°	-75°	313	2011/12
ES-34	6,225,177	411,347	3,824	80°	-75°	323.5	2011/12
ES-35	6,224,089	412,412	3,186	215°	-75°	500.7	2011/12



<u>Hole #</u>	<u>Coordinates WGS84 Northing</u>	<u>Coordinates WGS84 Easting</u>	<u>Elevation [msnm]</u>	<u>Azimuth</u>	<u>Dip</u>	<u>Length</u>	<u>Drilling Season</u>
ES-36	6,224,562	411,147	3,796	90°	-75°	689.4	2012/13
ES-37	6,224,999	411,247	3,803	90°	-75°	613.3	2012/13
ES-38	6,224,787	411,162	3,792	90°	-75°	596.3	2012/13
ES-39	6,224,581	411,349	3,773	90°	-75°	722	2012/13
ES-40	6,224,161	410,857	3,648	60°	-65°	661.4	2012/13
ES-41	6,224,666	411,240	3,782	90°	-75°	662.3	2012/13
ES-42	6,224,742	411,382	3,782	90°	-75°	445.7	2012/13
ES-43	6,224,268	411,899	3,533	240°	-70°	492.3	2012/13
ES-44	6,224,880	411,068	3,779	90°	-75°	483.3	2012/13
ES-45	6,224,903	411,206	3,796	90°	-75°	416.5	2012/13
ES-46	6,224,475	411,250	3,787	90°	-75°	446.4	2012/13
ES-47	6,224,522	411,474	3,781	90°	-75°	402.7	2012/13
ES-48	6,224,914	411,346	3,799	90°	-75°	466.3	2012/13
ES-49	6,224,819	411,288	3,792	90°	-75°	459.2	2012/13
ES-50	6,224,480	411,930	3,520	240°	-70°	381.8	2012/13
ES-51	6,224,674	411,047	3,755	90°	-75°	484	2012/13
ES-52	6,224,446	411,122	3,800	90°	-75°	461.5	2012/13
ES-53	6,224,827	410,903	3,680	90°	-75°	186	2012/13

**Table 10-2: Drill Hole Significant Intercepts**

<u>Hole ID</u>	<u>From (m)</u>	<u>To (m)</u>	<u>Length* (m)</u>	<u>Copper (%)</u>	<u>Gold (gpt)</u>	<u>Silver (gpt)</u>	<u>Molybdenum (ppm)</u>
ES-1	0.5	77.0	76.5	1.32	0.13	4.1	15
including	27.0	72.0	45.0	1.75	0.15	5.1	14
	109.0	201.0	92.0	0.62	0.05	2.5	70
including	162.9	187.0	24.1	1.02	0.06	3.5	66
	271.0	377.6	106.6	0.54	0.05	1.2	139
Es-2:	27.5	87.0	59.5	0.42	0.03	1.0	117
including	67.0	74.0	7.0	0.90	0.05	2.0	105
	97.0	142.0	45.0	0.37	0.03	1.0	167
including	126.0	133.0	7.0	0.95	0.03	0.0	180
Es-4:	8.2	14.0	5.8	1.58	0.02	12.0	50
including	11.0	13.0	2.0	3.01	0.04	24.0	70
	136.1	158.0	21.9	0.67	0.08	2.0	119
including	136.1	148.0	11.9	0.94	0.13	3.0	154
	243.0	267.0	24.0	0.77	0.07	1.0	137
	309.0	347.0	38.0	0.45	0.05	1.0	44
ES-5	6.0	119.0	113.0	1.09	0.09	3.4	23



<u>Hole ID</u>	<u>From (m)</u>	<u>To (m)</u>	<u>Length* (m)</u>	<u>Copper (%)</u>	<u>Gold (gpt)</u>	<u>Silver (gpt)</u>	<u>Molybdenum (ppm)</u>
including	6.0	45.8	39.8	1.88	0.14	5.3	42
	38.0	45.8	7.8	3.19	0.23	5.0	24
	96.4	119.0	22.6	1.65	0.18	5.0	17
	185.0	209.0	24.0	0.72	0.08	3.0	49
Entire	6.0	209.0	203.0	0.81	0.08	3.0	36
highest	31.0	31.7	0.7	6.81	0.47	9.0	3
ES-6	124.0	135.0	11.0	0.98	0.23	4.6	88
ES-7	11.1	137.0	125.9	0.77	0.15	4.5	49
including	14.9	74.5	59.6	1.00	0.19	6.3	45
	154.0	217.0	63.0	0.66	0.07	1.8	152
including	165.0	173.0	8.0	1.13	0.15	3.2	491
	192.0	212.2	20.2	0.98	0.08	3.1	150
	287.0	314.0	27.0	0.46	0.06	1.7	35
	354.0	435.0	81.0	0.61	0.06	1.9	90
including	354.0	368.0	14.0	1.02	0.09	3.7	153
	378.0	396.0	18.0	0.93	0.10	3.2	108
	445.0	469.0	24.0	0.68	0.05	1.2	92
including	454.0	463.0	9.0	0.98	0.08	1.7	99
	484.0	514.0	30.0	0.42	0.03	1.0	72
	514.0	861.3	347.3	0.14	0.02	0.2	38
ES-8	181.0	202.0	21.0	0.27	0.03	2.3	118
	212.0	228.0	16.0	0.66	0.04	2.5	67
ES-10	34.0	177.0	143.0	0.56	0.09	2.7	52
including	37.0	54.0	17.0	0.80	0.13	6.2	17
and	117.0	131.0	14.0	1.03	0.22	4.4	60
ES-11	55.5	67.0	11.5	0.75	0.14	4.1	44
	67.0	171.0	104.0	0.26	0.03	1.6	92
	171.0	379.7	208.7	0.35	0.03	0.7	40
including	171.0	181.0	10.0	2.33	0.28	8.1	43
including	174.0	179.0	5.0	4.13	0.49	15.0	60
ES-12	294.0	437.7	143.7	0.23	0.07	0.9	68
	317.0	353.0	36.0	0.41	0.09	1.8	120
	325.0	339.0	14.0	0.50	0.14	1.9	89
including	326.0	329.0	3.0	0.83	0.09	3.1	122
ES-13	209.0	311.0	102.0	0.32	0.04	1.1	56



<u>Hole ID</u>	<u>From (m)</u>	<u>To (m)</u>	<u>Length* (m)</u>	<u>Copper (%)</u>	<u>Gold (gpt)</u>	<u>Silver (gpt)</u>	<u>Molybdenum (ppm)</u>
including	222.0	231.0	9.0	0.69	0.09	3.2	168
and	249.0	254.0	5.0	0.99	0.09	2.9	21
ES-14	331.0	495.6	164.6	0.25	0.03	1.1	74
	424.0	447.0	23.0	0.54	0.07	2.6	38
	424.0	435.0	11.0	0.80	0.12	4.9	33
	425.0	429.0	4.0	1.09	0.17	6.7	54
ES-16	263.0	399.0	136.0	0.76	0.07	3.4	22
including	263.0	333.0	70.0	1.00	0.07	4.8	20
ES-17	401.0	404.0	3.0	0.70	0.19	3.8	65
ES-20	75.0	150.0	75.0	0.55	0.14	1.8	60
	122.0	149.0	27.0	0.89	0.18	2.4	98
	129.0	146.0	17.0	1.01	0.20	2.5	122
including	130.0	132.0	2.0	1.76	0.55	5.1	150
and	142.3	146.0	3.7	1.58	0.19	2.8	113
ES-21	53.0	445.0	392.0	0.32	0.06	0.9	88
	54.0	61.0	7.0	0.75	0.17	5.0	23
	106.0	136.0	30.0	0.62	0.25	1.7	11
	109.0	113.0	4.0	1.02	0.25	1.3	21
	166.0	174.0	8.0	1.31	0.11	3.3	79
ES-22	130.0	141.0	11.0	0.95	0.01	5.8	7
	136.0	137.0	1.0	4.29	0.03	23.0	8
ES-23	3.4	339.2	335.8	0.44	0.07	1.2	76
	47.0	86.0	39.0	0.99	0.18	3.1	54
	63.0	77.0	14.0	1.38	0.17	3.7	60
	174.0	187.0	13.0	1.00	0.09	1.9	121
ES-24	131.0	205.0	74.0	0.34	0.06	2.2	82
	131.0	135.0	4.0	0.76	0.13	8.9	93
	125.0	241.0	116.0	0.30	0.05	1.6	57
ES-25	65.0	358.0	293.0	0.36	0.09	1.0	12
including	197.0	288.0	91.0	0.50	0.10	1.3	12
including	262.0	285.0	23.0	0.68	0.13	1.9	6
ES-26	1.7	572.9	571.2	0.15	-	0.2	58





Hole ID	From (m)	To (m)	Length* (m)	Copper (%)	Gold (gpt)	Silver (gpt)	Molybdenum (ppm)
	44.0	334.0	290.0	0.23	-	0.3	18
	62.0	90.0	28.0	0.56	-	0.4	26
ES-28	0.0	190.2	190.2	0.20	-	0.9	85
	44.0	94.0	50.0	0.45	-	0.8	101
	58.0	74.0	16.0	0.83	-	1.0	86
	134.0	190.2	56.2	0.18	-	0.8	74
ES-29	0.0	281.5	281.5	0.02	-	0.1	4
ES-30	0.0	220.0	220.0	0.02	-	0.1	2
	18.0	22.0	4.0	0.32	-	1.2	2
ES-31	214.0	744.5	530.5	0.20	0.02	0.2	29
	688.5	741.5	53.0	0.45	0.01	0.6	37
	710.0	719.0	9.0	1.01	0.02	1.9	69
ES-32	29.4	661.0	631.6	0.19	0.02	0.6	121
	49.0	83.8	34.8	0.47	0.04	4.2	77
	246.6	248.3	1.7	1.79	0.03	4.8	427
ES-33	181.5	201.0	28.5	0.40	0.02	1.8	1
including	181.5	192.0	10.5	0.83	0.04	3.7	1
ES-34	187.1	323.5	136.4	0.25	0.06	0.3	85
	188.7	215.0	26.3	0.34	0.11	0.1	123
	273.8	323.5	49.7	0.40	0.07	0.6	38
ES-35	148.0	500.7	352.7	0.16	0.01	1.2	23
	447.9	470.5	22.6	1.00	0.03	8.3	5
	456.3	465.5	9.3	2.11	0.07	17.2	5
ES-36	72.1	120.0	47.9	0.07	0.26	1.5	21
	120.0	358.2	238.2	0.41	0.10	0.6	33
including	120.0	244.0	124.0	0.51	0.13	1.1	30
including	129.0	156.0	27.0	0.99	0.15	2.0	39
including	129.0	135.0	6.0	2.23	0.14	1.4	43
ES-38	69.4	131.8	62.4	0.17	0.08	0.2	62
	131.8	199.0	67.2	0.48	0.10	0.2	133
	132.6	145.3	12.7	0.64	0.11	0.1	183
	131.8	596.3	464.5	0.29	0.07	0.4	56



Hole ID	From (m)	To (m)	Length* (m)	Copper (%)	Gold (gpt)	Silver (gpt)	Molybdenum (ppm)
ES-39	74.8	152.0	77.2	0.21	0.08	0.2	27
	152.0	174.4	22.4	0.45	0.15	1.5	46
	152.0	156.2	4.2	0.84	0.12	0.7	60
	152.0	359.0	207.0	0.29	0.09	0.4	32
ES-40	73.9	164.0	90.1	0.21	0.02	0.3	26
	107.5	149.5	42.0	0.30	0.02	0.2	28
	121.5	123.5	2.0	1.97	0.02	0.1	27
	107.5	164.0	56.5	0.26	0.02	0.4	27
ES-41	78.0	198.8	120.8	0.26	0.17	0.9	28
	198.8	236.0	37.2	0.60	0.10	0.6	42
	204.5	219.0	14.5	0.90	0.10	0.7	38
	78.0	348.0	270.0	0.37	0.12	1.0	55
ES-42	74.1	129.0	55.0	0.32	0.10	0.2	9
	57.2	330.5	273.3	0.26	0.08	0.2	11
ES-43	32.0	35.7	3.7	0.00	12.19	0.1	21
including	23.8	35.7	11.9	0.00	4.39	0.1	22
Entire gold only	23.8	73.9	50.1	0.01	1.16	0.1	32
Cu Skarn	73.9	79.0	5.1	1.87	0.32	14.1	77
	107.2	128.8	21.7	0.54	0.07	4.4	45
	145.6	196.0	50.4	0.56	0.08	3.2	137
ES-45	100.0	130.0	30.0	0.52	0.05	0.8	84
	100.0	107.0	7.0	1.43	0.06	2.6	68
	247.0	344.0	97.0	0.52	0.03	0.2	160
	100.0	381.0	281.0	0.33	0.04	0.2	157
ES-46	205.0	245.0	40.0	0.87	0.09	0.6	56
	110.4	342.5	232.2	0.35	0.10	0.5	58
ES-47	84.0	125.5	41.5	0.10	0.13	0.2	11
	125.5	156.6	31.1	0.39	0.10	0.4	40
	233.0	284.0	51.0	0.37	0.04	0.8	30
	86.0	402.7	316.7	0.25	0.08	0.4	38
ES-48	138.5	171.5	33.0	0.45	0.04	0.5	117
	100.4	171.5	71.1	0.36	0.04	0.6	154
	100.4	296.6	196.2	0.26	0.04	0.4	89





Hole ID	From (m)	To (m)	Length* (m)	Copper (%)	Gold (gpt)	Silver (gpt)	Molybdenum (ppm)
	299.6	372.8	73.2	0.28	0.04	0.2	34
ES-49	210.9	223.0	12.1	0.56	0.08	0.1	30
	115.0	268.0	153.0	0.31	0.07	0.5	33
ES-50	192.0	223.0	31.0	0.34	0.02	0.8	56
	352.5	381.8	29.3	0.31	0.02	0.7	44
ES-51	64.8	134.0	69.3	0.41	0.12	0.2	71
	118.9	134.0	15.2	0.50	0.19	0.5	126
	64.8	457.5	392.8	0.31	0.09	0.3	99
ES-52	118.2	152.0	33.8	0.52	0.16	0.6	5
	118.2	133.0	14.8	0.83	0.19	1.1	7
	76.6	204.0	127.4	0.19	0.16	0.5	9
	348.5	383.0	34.5	0.62	0.02	0.1	16
	205.1	461.5	256.4	0.29	0.05	0.3	53
ES-53	48.0	123.0	75.0	0.28	0.03	0.3	26
	48.0	70.6	22.6	0.51	0.03	0.3	19
* The true width is not known							

## 10.1 2011 DRILL CORE RE-SAMPLING PROGRAM

As part of the 2011 program TMI re-assayed drill holes ES-26 to ES-30 for forty-eight elements. These holes were drilled previously by Minera Aurex (Table 10-3).

**Table 10-3: Results of Re-Sampled Drill Core**

Hole ID	From (m)	To (m)	Length (m)	ACME - ICP		ALS Chemex - ME-MS61	
				Copper (%)	Molybdenum (ppm)	Copper (%)	Molybdenum (ppm)
ES-26	1.65	572.85	571.2	0.15	39	0.1503	58
	44	334	290	0.23	13	0.2293	17.6
	62	90	28	0.54	20	0.56357	25.5
ES-28	0	190.2	190.2	0.18	79	0.1967	85
	44	94	50	0.4	95	0.4542	101
	58	74	16	0.67	75	0.82875	86
	134	190.2	56.2	0.17	65	0.18096	74
ES-29	0	281.45	281.45	0.02	3	0.0216	3.6
ES-30	0	220	220	0.02	3	0.017	2
	18	22	4	0.32	1	0.3195	1.8





## 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The following is a description of sample preparation, analysis and security for each Escalones drilling campaign. The authors were not involved in the earlier drill programs; however the authors believe that the work was carried out according to industry standard practices, and consider the results adequate for use in estimating the mineral resources of the Escalones Project.

For drilling completed between 1998 and 2001 (Katsura, 2006) (ES-1 to ES-25), all assays were performed independently by ACME Analytical Laboratories S.A. in Santiago, Chile, using Atomic Adsorption ("AA") analytical methods. Internal checks were performed through standards and the re-analyzing of certain samples. All samples were collected by, or under the direct supervision of a Qualified Person, as defined by NI 43-101, responsible for the program. At the time, Dr. Lawrence A. Dick, Executive Vice President, Exploration for General Minerals Corporation (TMI's predecessor), was the Qualified Person on the Escalones Project. Dr. Dick was assisted by Felipe Malbran, the current Executive Vice President, Exploration for TMI. Emphasis was placed on quality control and the proper handling and numbering of all samples. Samples were analyzed by ACME Laboratory located in Santiago, Chile. Silver and gold were analyzed using fire assay and the AA method while copper was analyzed by AA. The ACME Laboratory in Santiago was not certified. However, ACME Analytical Labs Ltd. in Vancouver, the head office was fully ISO 9001:2000 certified. When results were received they were checked for their geological reasonableness and the field locations were cross-referenced with assay sheet sample numbers to check accuracy. All the results (Ag, Cu, Mo, Pb & Zn) over the detection limits were re-analyzed by AA.

Check samples were collected by Kurt Katsura while preparing the 2006 Escalones technical report. Katsura bagged each sample, affixed the sample tag, described the samples taken, and prepared the sample submittal for delivery to ACME Laboratory located in Santiago, Chile. Katsura considered the sampling methods adequate to ensure that samples taken were secure and would produce meaningful results for the intent of fulfilling the requirements of a NI 43-101 report. The check samples were sent by courier to ACME laboratories in Santiago, Chile for fire assay and AA analysis and then sent to ACME in Vancouver for ICP analysis. Results were checked by re-analysis of 9% of the samples by ACME laboratories in Chile who also insert 3% blank samples and 6% standard samples in each batch analyzed to ensure accuracy.

The cores for drill holes ES-26 to ES-30 drilled by Minera Aurex, were split and samples were sent to ACME laboratory to be analyzed by ICP 1D analysis. Some samples that included copper oxides or secondary copper mineralization were also analyzed for total copper and a sequential copper analysis. Two types of standard samples were intercalated every 40 samples. One standard presents moderated grade in copper and gold (0.25% Cu) while the second is almost barren. Duplicate samples were prepared from the unused coarse material left over from the sample preparation for every 40th sample and were analyzed by Andes Analytical also by ICP. The quality control report did not detect any anomaly in sample analysis.

Samples collected by TMI during the 2011 re-sampling program from cores drilled by Minera Aurex were analyzed by ALS Chemex located in La Serena, Chile. Geochemical analysis of samples in 2011 including Gallium was analyzed using the ICP MS61 method with a four-acid digestion. Felipe Malbran, Executive Vice President of Exploration for TMI, was the Qualified Person for the Escalones project.

Samples collected during the drill program in 2011-2012, were analyzed by Andes Analytical Assay Laboratory located in Santiago, Chile. Gold was analyzed using fire assay and the AA (Atomic Absorption) method while silver, copper, molybdenum and 38 additional elements were analyzed by ICP AES HF43 method with a four-acid digestion. 5% of the samples were duplicated from the existing cores and using a different sample number, analyzed by Andes Analytical Assay Lab. The quality control report did not detect any anomalies in the sample analysis.

Samples collected during the drill program in 2012-2013, were analyzed by Andes Analytical Assay Laboratory located in Santiago, Chile. Gold was analyzed using fire assay and the AA (Atomic Absorption)



method while silver, copper, molybdenum and 38 additional elements were analyzed by ICP AES HF43 method with a four-acid digestion. 5% of the samples were duplicated from the existing cores and using a different sample number, analyzed by Andes Analytical Assay Lab. During this program, 2% of the samples were standard blank and 5% were three different Standard materials from CDN Resource Laboratories Ltd. in Canada. The standards used were: CM24, medium gold, low copper; CM17, high gold, medium copper; CM15, high gold, high copper; and BL10, blank granitic material. The quality control report did not detect any anomalies in the sample analysis. HRC considers the current sample prep, security and analytical procedures appropriate and sufficient for use in estimating the mineral resources of the Escalones project.

## **12.0 DATA VERIFICATION**

### **12.1 SITE INSPECTION**

Jeffrey Choquette, P.E., HRC Mining Engineer and Qualified Person according to NI 43-101, visited the Escalones project site on June 4th, 2013. Several drill sites, the weather station, exploration camp, and core storage facility were all inspected during the site visit. Property information and drilling data were collected and reviewed at SCM's Santiago office on June 3rd and 5th. Hard copies of the original analytical sheets and other pertinent information are stored at the Santiago office in individual binders according to drill hole.

At the time of the site visit, road access was obstructed by snow cover so the property was accessed via helicopter from Santiago to Escalones. The first area visited was the Meseta, which was mostly windblown clear of snow revealing a few identifiable drill sites. The weather station was the only piece of equipment observed on site. From the Meseta, the helicopter flew to the exploration camp located in the valley bottom just below the project site. The exploration camp was on care-and-maintenance status for the winter, with just two people stationed on site for security purposes. All of the drill core is processed and logged at the camp in two covered areas set up with logging tables.

From the exploration camp, the site visit continued down the Maipo valley roughly 45 kilometers to a small village where the core is stored. The core is kept in an old storage building within a gated compound, and work is under way to expand the storage space available to include more of the building. At the core storage facility, a total of five drill holes representing each drilling phase and model domain were reviewed. The mineralized intersections were identified from cross-sections, and intervals for review were laid out in the core storage area. The assay results were compared to the associated core intervals, and random samples selected for quarter splitting were cut by the SCM technicians. The quarter samples were then bagged and tagged for check assay, and the remaining quarter sample was left in the appropriate core box in the core storage. The samples selected for check assay included a mix of moderate and high grade intervals. The samples were tagged by Mr. Choquette and remained with him for the duration of the site visit. The samples travelled back to the Santiago office with Mr. Choquette, where they were shipped via FedEx directly to his home office in Butte, Montana.

### **12.2 DATABASE AUDIT**

HRC received the exploration drill hole database from TMI in Excel format. The database contains data for 53 diamond drill holes (24,939 meters) and 17,820 associated assay values collected through 2013. The drill hole database includes collar coordinates, down hole survey data, assay data, lithology data and specific gravity data. Coordinate data in the database was converted from datum Prov S. Amer 56 to WGS84. Drill hole locations were resurveyed with survey grade GPS (versus previous survey carried out with a hand held GPS unit); ten of the thirty hole locations from previous drill campaigns could not be properly located for resurvey and were mathematically adjusted to the new datum.





HRC completed a cursory manual audit of the database in an effort to identify errors, overlaps, gaps, total drill hole length inconsistencies, non-numeric assay values, and/or negative numbers. No significant inconsistencies and/or errors were identified. The survey, assay, and geology tables maximum sample depth was compared to the maximum depth reported in the collar table for a random selection of drill holes, and no intervals exceeded the reported drill hole depths.

HRC received original assay certificates (Andes Analytical Assay Ltda.; Acme Analytical Laboratories, S.A.; and ALS Minerals, Chile) in pdf format for all samples included in the current drill hole database. A random manual check of greater than 2% of the database against the original assay certificates, focusing on Cu but with frequent spot checks on Au and Ag, revealed 100% accuracy for those records checked.

Samples selected for check assay by Mr. Choquette during the site visit were submitted to ALS Laboratories in Reno, Nevada, for duplicate analysis. The check sample and original assay values are summarized for comparison Table 12-1. The assays of the selected quarter core samples compare reasonably well to the original assays.

**Table 12-1: Assay Results of the Site Visit Samples Compared to the Original Samples**

Drill hole	From	To	Check Sample #	SASC Sample #	Original Assay Values				Check Assay Values				Model Domain
					Cu %	Au ppm	Ag ppm	Mo ppm	Cu %	Au ppm	Ag ppm	Mo ppm	
ES-36	73.5	74.5	111778	114277	0.11	0.57	2.0	6	0.18	0.74	3.6	7	Leach
ES-36	135.0	137.0	111779	114315	0.63	0.12	2.0	76	0.70	0.14	0.7	98	Enrichment
ES-1	40.0	41.0	111780	46087	0.98	0.00	0.9	4	0.74	0.01	1.3	3	Skarn
ES-25	263.0	264.0	111781	72246	0.89	0.07	0.8	5	0.75	0.10	0.7	2	Prim Granodiorite
ES-37	257.3	259.0	111782	112709	0.50	0.07	1.0	34	0.44	0.03	<0.5	49	Biotite Hornfels

Verification efforts confirm that the geologic and geotechnical information, survey data, and assay values included in the Escalones database accurately represent the associated source documentation. Based on the results of the check sample program, HRC's manual database audit, and previous verification of the database by GeoVector Management (2012), HRC considers the data included in the database to be sound and sufficient for use in estimating the mineral resources of the Escalones project.

## 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

An initial batch of six samples of a variety of ore types were submitted to SGS Canada Inc. for testing. The ore samples were selected to assess the broad response of the ore to various metallurgical recovery and extraction techniques. It is not known whether the results from these tests are representative of either these particular ores or the deposit in general, substantial additional test work will be required prior to the completion of any feasibility study. The following text is substantially taken from the SGS report titled: An Investigation into the recovery of copper, gold and molybdenum from Escalones ore samples dated April 8, 2013.

Test work was completed on six composites prepared from eighteen half drill core intervals from the Escalones deposit in southern Chile. These composites comprised mixed mineralization and included oxidized/altered material near surface to sulphidic mineralization in deeper areas. Test work on the six composites included chemical and mineralogical characterization, Bond ball mill grindability testing, batch flotation testing to produce Cu concentrate with high grades and recoveries, leaching tests on the oxide scavenger feeds and concentrates produced from the batch flotation tests, and finally locked cycled flotation testing.





The head assays of the six composites investigated are summarized in Table 13-1 along with the speciation of the copper phases by analytical methods and by QEMSCAN while the copper deportments are shown in Figure 13-1. There was generally good agreement between the analytical speciation and the QEMSCAN for the proportion of copper as primary copper sulphide (chalcopyrite) although there were divergences for the secondary sulphides and the oxides notably for the metallic copper bearing East Arguelles Composite. A breakdown of the copper minerals from the QEMSCAN analysis is shown in Figure 13-1.

**Table 13-1: Summary of Head Assays**

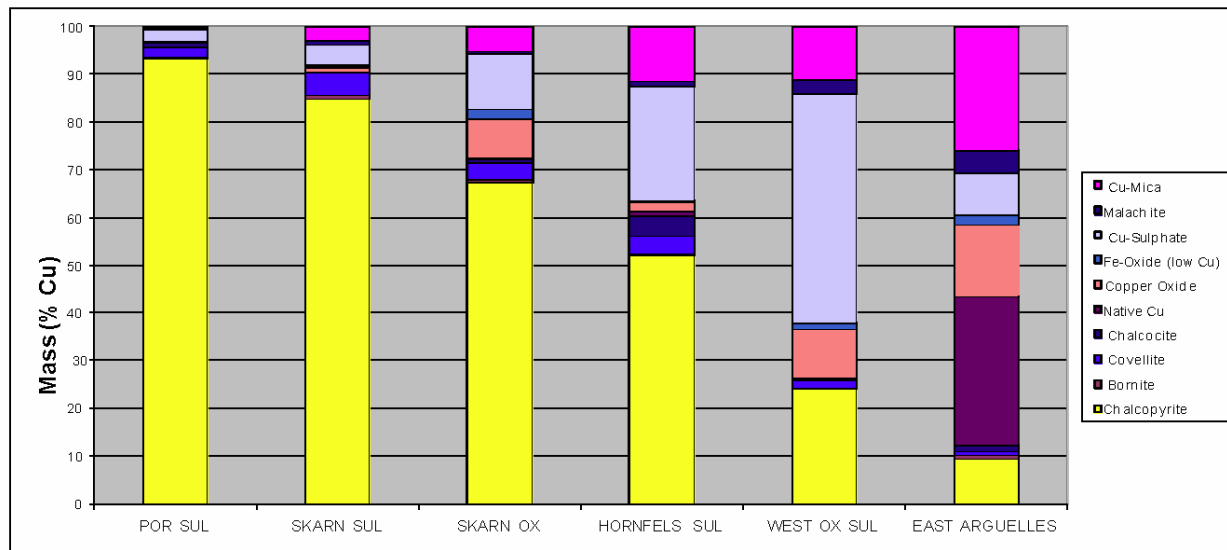
Composite	Method	Analysis (% g/t)										Est Cu as Prim. Cu Sul., %	Est Cu as Sec. Sul., %	Est Cu as Oxide, %	Est Mo as Oxide, %	S as Sulphide, %
		Cu Total	Cu Sol in H <sub>2</sub> SO <sub>4</sub>	Cu Sol in NaCN	Mo Total	Mo Sol	Ag	Au	S	S*	CO <sub>3</sub>					
Porphyry Sulphide	Calc. from Samples	0.38	0.015	0.042	0.003	<0.0005	0.75	0.04	1.24	0.62	<0.05	88.8	7.2	3.9	<16.7	49.6
	Direct QEMSCAN	0.39			0.003				1.24							
		0.36							0.83			88.9	3.3	3.4		
Skarn Sulphide	Calc. from Samples	0.96	0.088	0.16	0.008	0.0009	4.31	0.11	6.25	5.17	2.57	83.5	7.3	9.2	11.3	82.7
	Direct QEMSCAN	0.90			0.008				5.58							
		0.98							5.41			84.8	5.6	9.6		
Skarn Oxide	Calc. from Samples	0.98	0.167	0.32	0.005	0.0014	5.98	0.12	4.75	3.39	3.13	66.9	15.9	17.1	26.7	71.4
	Direct QEMSCAN	0.98			0.005				4.70							
		1.11							4.01			67.3	4.7	28.0		
West Oxide Sulphide	Calc. from Samples	0.47	0.239	0.39	0.006	0.0023	0.52	0.04	1.32	0.57	0.07	16.1	32.6	51.3	37.5	42.8
	Direct QEMSCAN	0.45			0.006				1.26							
		0.45	0.31						1.22			24.0	2.2	73.8		
Hornfels Sulphide	Calc. from Samples	0.38	0.065	0.16	0.006	0.0021	0.56	0.03	1.42	0.94	<0.05	59.4	23.6	17.1	34.0	65.8
	Direct QEMSCAN	0.38			0.005				1.37							
		0.42							0.77			52.1	8.2	39.7		
East Arguelles	Calc. from Samples	0.56	0.231	0.49	0.002	0.0005	0.52	<0.02	1.00	0.92	2.39	12.6	46.2	41.2	36.6	92.0
	Direct QEMSCAN	0.56			0.001				1.00							
		0.47							1.28			9.3	3.0	87.8		

Mineralogical examination indicated that the major phases present in these composites were plagioclase, quartz, k-feldspar, tremolite and secondary biotite/phlogopite. Carbonate minerals, including calcite, ankerite and siderite, were present in all composites in various proportions. The copper bearing minerals were primary and secondary sulphides, metallic copper, copper oxides, carbonates and silicates, and low copper iron oxides.

The Porphyry Sulphide and Skarn Sulphide composites had the highest proportion of copper as primary sulphide (85%-89%), the East Arguelles and West Oxide Sulphide composites the lowest (less than 25%), and the Hornfels Sulphide and Skarn Oxide composites were intermediate (52% and 67% by QEMSCAN respectively).



**Figure 13-1: QEMSCAN Copper Deportment for the Six Composites**



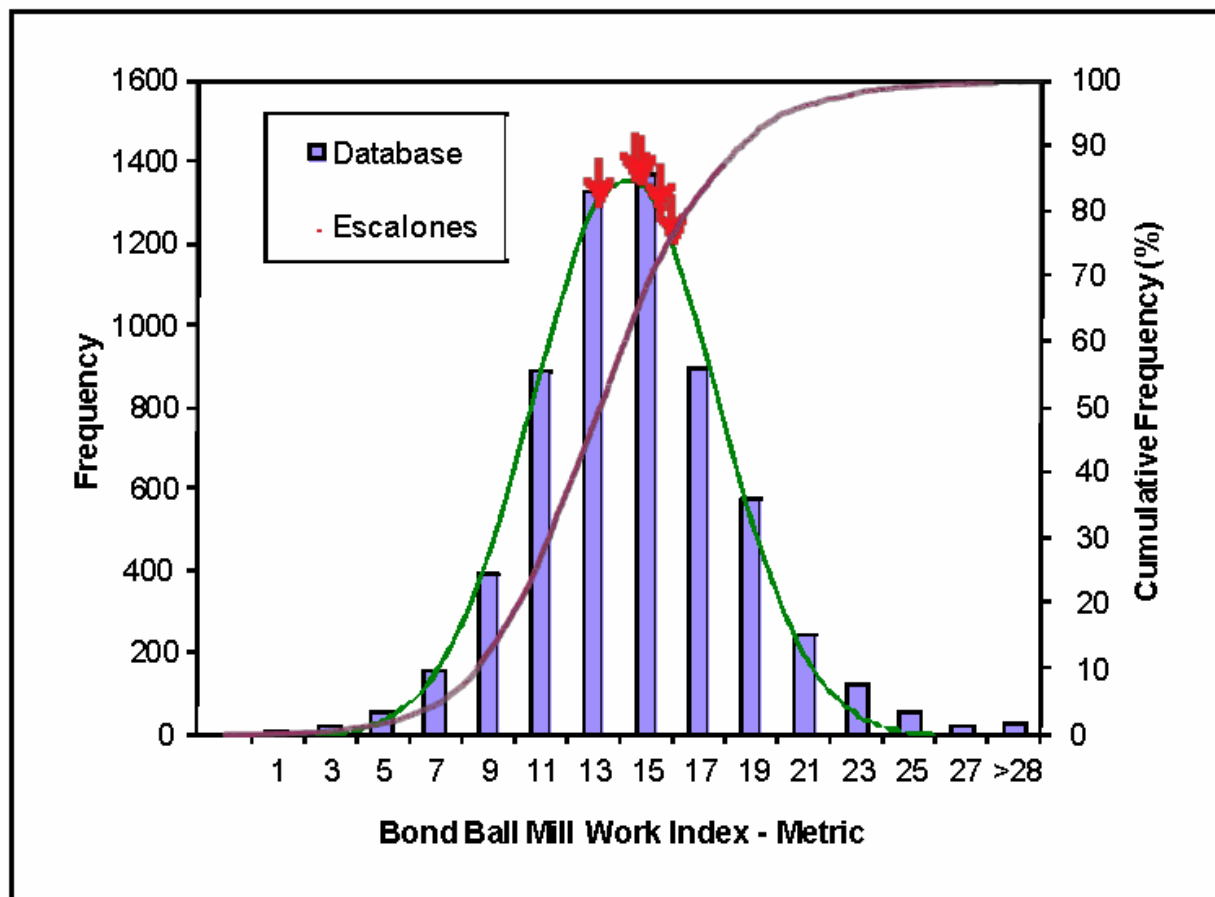
Most of the molybdenum was present as molybdenite (63% to 95%) but the heads were low (0.003 to 0.008% Mo). Most of the sulphur was present as sulphide with the exception of the Porphyry Sulphide and West Oxide Sulphide composites with less than half of the sulphur as sulphide.

The Bond ball mill grindability test performed at 150 mesh of grind (106 microns) identified the Hornfels Sulphide composite as the softest of the lot (13.1 kWh/t) and the West (Oxide + Sulphide) as the hardest (16.0 kWh/t). The samples are considered to be of average hardness. The Bond ball mill grindability results are summarized in Table 13-2 and Figure 13-2 below.

**Table 13-2: Bond Ball Mill Grindability and Batch Grind Results**

Sample Name	Mesh of Grind	F <sub>80</sub> (µm)	P <sub>80</sub> (µm)	Gram per Revolution	Work Index (kWh/t)	Hardness Percentile	P <sub>80</sub> (µm) BM Grind (25 min/2kg)
Porphyry (Sulfide)	150	2,198	86	1.42	14.5	51	104
Skarn (Oxide)	150	2,358	83	1.35	14.7	54	101
Skarn (Sulfide)	150	2,464	81	1.33	14.7	54	115
West (Oxide + Sulfide)	150	2,399	86	1.25	16.0	68	101
Hornfels (Sulfide)	150	2,388	82	1.54	13.1	37	84
East/Arguelles (Oxide + 2nd Sulfide)	150	2,356	84	1.28	15.5	63	144

**Figure 13-2: SGS Bond Ball Mill Work Index Database**



Flotation testing was performed at a feed P80 of around 100  $\mu\text{m}$  with lime addition (0.75 to 1.50 kg/t) to yield a rougher pH of 9.5-10.0 to minimize pyrite flotation. The West Oxide Sulphide composite was floated at its natural pH of 5.0-5.5 as this composite was requiring high lime dosages to get to the desired pH 9.5-10.0. Collector XD5002 (Cytec; undisclosed formulation; 15 to 30 g/t; mostly added to the grind) was used for recovery of the copper minerals with MIBC was the frother. Diesel (5 g/t) was also added to the grind for molybdenum recovery. The rougher flotation time was from 6 to 9 minutes depending on the composite.

Of the six composites, four yielded a marketable copper concentrate (>25% Cu) with reasonable copper recoveries following regrind and cleaning of the rougher concentrate: Porphyry Sulphide, Skarn Sulphide, Skarn Oxide, and Hornfels Sulphide composites. Calgon (sodium hexametaphosphate which is a dispersant; 40 g/t) was used for some composites to better control the selectivity of the froth. The West (Oxide + Sulphide) and East Arguelles composites yielded low concentrate grades (<15% Cu) with low copper recoveries (<15%).

With the exception of the Porphyry Sulphide composite, a scavenger oxide flotation step was required to bring the overall copper recovery by flotation to reasonable levels. This stage aimed to recover some of the non-sulphide copper minerals such as azurite, malachite and cuprite. However, it was not expected to recover chrysocolla, copper sulphate, and low copper iron oxide. Metallic copper is also recovered with the oxides if its surface is tarnished or exhibit heavy oxidation. This oxide scavenger stage was performed by sulphidization conditioning (NaHS to -500 mV) followed by PAX addition (200-300 g/t) once the pulp potential rebounded to -50 mV. The oxide scavenger flotation time was from 6 to 9 minutes and from 40% to 60% of the copper in the sulphide rougher tailing was recovered in this stage.



Locked cycle flotation testing was performed with the four well behaved composites using the same flowsheet and the results are summarized in Table 13-3. The locked cycle tests yielded results generally in line with those obtained with the batch tests with a 2nd Cleaner Concentrate grading 26.3% Cu at 94.7% Cu recovery for the Porphyry Sulphide, 27.1% Cu at 72.2% Cu recovery for the Skarn Oxide, 22.9% Cu at 82.5% Cu recovery for the Skarn Sulphide, and 24.2% Cu at 67.8% Cu recovery for the Hornfels Sulphide. Dilution of the concentrate by pyrite was the most severe for the Skarn Sulphide and the Hornfels Sulphide composites.

**Table 13-3: Summary of Results for Locked Cycle Flotation Tests**

Composite LCT Nb	Product	Weight %	Assays, %					% Distribution										
			Cu	S	Mo	Fe	Ag	Au	Py	SolCu	Cu	S	Mo	Fe	Ag	Au	Py	SolCu
Porphyry LCT 1	2nd Cleaner Con.	1.4	26.3	29.9	0.20	26.3	59.9	1.04	6.07	0.20	94.7	37.4	66.6	17.5	79.8	69.5	6.2	31.4
	Scav. Con.	1.6	0.39	16.8	0.026	12.8	1.16	0.10	30.8	0.075	1.6	23.8	10.1	9.7	1.8	7.4	35.9	13.5
	Scav. Tail	97.0	0.015	0.45	<0.001	1.57	<0.20	<0.005	0.82	0.005	3.6	38.8	23.3	72.8	18.4	23.1	57.9	55.0
	Head	100.0	0.39	1.12	0.004	2.10	1.05	0.021		0.009	100.0	100.0	100.0	100.0	100.0			100.0
Skarn Sulphide LCT 2	2nd Cleaner Con.	3.3	22.9	32.2	0.053	25.8	85.5	2.31		0.079	82.5	22.5	22.8	8.2	79.6	66.6		3.3
	Scav. Con.	9.8	0.69	34.0	0.026	30.7	0.89	0.16		0.31	7.3	70.3	32.7	28.8	2.4	13.4		37.2
	Scav. Tail	86.9	0.11	0.39	0.004	7.58	0.74	0.027		0.055	10.2	7.1	44.5	63.0	18.0	20.0		59.6
	Head	100.0	0.92	4.75	0.008	10.45	3.58	0.116		0.081	100.0	100.0	100.0	100.0	100.0			100.0
Skarn Oxide LCT 3	2nd Cleaner Con.	2.7	27.1	34.0	0.069	33.1	188	2.49		0.49	72.2	21.3	25.0	8.1	70.4	55.2		6.8
	Scav. Con.	8.8	1.79	29.3	0.024	29.7	13.19	0.33		1.10	15.3	58.9	28.5	23.3	15.8	23.6		48.9
	Scav. Tail	88.5	0.15	0.97	0.004	8.67	1.14	0.030		0.099	12.5	19.8	46.5	68.6	13.8	21.2		44.4
	Head	100.0	1.03	4.36	0.008	11.18	7.31	0.124		0.20	100.0	100.0	100.0	100.0	100.0			100.0
Hornfels Sulphide LCT 4	2nd Cleaner Con.	1.0	24.2	33.7	0.36	30.1	38.1	1.25		1.22	67.8	27.8	57.5	12.0	61.1	43.3		13.7
	Scav. Con.	7.1	0.71	8.12	0.013	11.1	0.92	0.081		0.55	13.8	46.6	14.1	30.8	10.3	19.6		43.4
	Scav. Tail	91.9	0.073	0.35	0.002	1.59	<0.20	0.012		0.042	18.4	25.6	28.4	57.2	28.6	37.1		42.9
	Head	100.0	0.36	1.24	0.006	2.55	0.63	0.029		0.09	100.0	100.0	100.0	100.0	100.0			100.0

Acid leaching tests were conducted on samples of oxide scavenger concentrate and the corresponding oxide scavenger feed from batch flotation of all but the Porphyry Sulphide Composite. These were scoping tests with high levels of sulphuric acid addition and acid consumptions from 46 to 209 kg acid per tonne of leach feed.

The overall copper extraction ranged from 67% to 100% and was essentially achieved in the first 12 hours of leaching. The average copper extraction was 83% from the sulphide flotation tailings and 84% from the oxide scavenger concentrates. The iron extraction ranged from 2% to 38%. The copper tenor in the final PLS ranged from 93 mg/L to 3700 mg/L, the higher tenors coming from oxide scavenger concentrate leach tests. Weight losses ranged from 3% for the sulphide tailing samples to 20% for the oxide scavenger concentrate samples.

Integrated material balances for the flotation of the ore and leaching of the scavenger concentrate were calculated. The similarity in copper and sulphur grades and distributions between the oxide scavenger concentrate produced in the batch tests and leached and those produced in the locked cycle tests allowed the copper extractions obtained in the leaches to be applied to the locked cycle results (Table 13-3). Although the scavenger concentrate obtained from the Porphyry composite was not leached, the material balance is presented in the same format as the other composites for comparison purposes.



**Table 13-4: Integrated Balances for LCT Flotation and Leaching of Oxide Scavenger Concentrate**

Composite	Products	Acid Cons. (kg/t)	Weight %	Assays (% g/t, or mg/L)		Distribution %	
				Cu	S	Cu	S
Porphyry Sulphide	Total Copper Recovered					94.7	
	2nd Cleaner Concentrate		1.4	26.3	29.9	94.7	37.4
	Scav Con (Leach Feed)		1.6	0.39	16.8	1.6	23.8
	PLS						
	Leach Residue						
	Scavenger Tail		97.0	0.015	0.45	3.6	38.8
	Combined Residue and Flotation Tail		97.0	0.015	0.45	3.6	38.8
	Head (calc.)	0.0	100.0	0.39	1.12	100.0	100.0
Hornfels Sul.	Head (dir.)			0.39	1.24		
	Total Copper Recovered					79.3	
	Cu 2nd Cleaner Conc		1.0	24.2	33.7	67.8	27.8
	Oxide Scav Con (Leach Feed)		7.1	0.71	8.12	13.8	46.6
	PLS		-	1070	-	11.5	0.6
	Leach Residue		6.3	0.22	9.09	2.3	46.0
	Oxide Scav Tail		91.9	0.073	0.35	18.4	25.6
	Combined Residue and Flotation Tail		98.1	0.082	0.90	20.7	71.7
Skarn Oxide	Head (calc.)	11.1	100.0	0.36	1.24	100.0	100.0
	Head (dir.)			0.38	1.37		
	Total Copper Recovered					85.1	
	Cu 2nd Cleaner Conc		2.7	27.1	34.0	72.2	21.3
	Oxide Scav Con (Leach Feed)		8.8	1.79	29.3	15.3	58.9
	PLS		-	1500	-	12.9	0.5
	Leach Residue		7.6	0.29	33.6	2.4	58.5
	Oxide Scav Tail		88.5	0.15	0.97	12.5	19.8
Skarn Sulphide	Combined Residue and Flotation Tail		96.1	0.16	3.55	14.9	78.2
	Head (calc.)	11.2	100.0	1.03	4.36	100.0	100.0
	Head (dir.)			0.98	4.70		
	Total Copper Recovered					87.8	
	Cu 2nd Cleaner Conc		3.3	22.9	32.2	82.5	22.5
	Oxide Scav Con (Leach Feed)		9.8	0.69	34.0	7.3	70.3
	PLS		-	555	-	5.3	-5.4
	Leach Residue		8.6	0.22	41.9	2.0	75.7
Skarn Sulphide	Oxide Scav Tail		86.9	0.11	0.39	10.2	7.1
	Combined Residue and Flotation Tail		95.4	0.12	4.12	12.2	82.9
	Head (calc.)	4.8	100.0	0.92	4.75	100.0	100.0
	Head (dir.)			0.90	5.58		

Only the outcomes of batch tests are available for the East Arguelles and West Oxide Sulphides composites and the integrated balances for leaching of the oxide scavenger concentrate or the sulphide flotation tailing also show the middlings flotation products which arise from batch testing (Table 13-5).

Most of the copper losses in the combined flotation and leaching tests occurred in the oxide scavenger tailing and any improvement in the performance of the oxide flotation step would benefit the overall outcome.

Leaching of the sulphide flotation tailing increased the total copper recoveries although with a ten-fold increase in acid consumption per tonne of feed.

The upgradability of the flotation concentrate obtained from the East Arguelles and West Oxide Sulphide composites to a level approaching 20% or even 15% copper grade is questionable especially for the West Oxide Sulphide Composite in which the sulphide middlings grade was the same as the copper concentrate. The sulphide flotation removed 25%-30% of the copper which is present in sulphide form and would not easily leach. The oxide scavenger concentrate recovered up to nearly half of the copper present which is easily leachable.

The copper extractions in leaching for the East Arguelles and West Oxide Sulphide composites were the highest of all six composites tested, with 95% and 85% respectively, and whole ore leach (heap leach) should be examined.



**Table 13-5: Integrated Balances for East Arguelles and West Oxide Sulphide Composites**

Composite	Products	Acid Cons. (kg/t)	Weight %	Assays (% g/t, or mg/L)		Distribution %	
				Cu	S	Cu	S
East Arguelles - Oxide Scav Con Leaching	Total Copper Recovered					59.7	
	Cu 3rd Cleaner Conc		1.0	11.3	23.1	22.7	28.6
	Sulphide Middlings		3.5	1.82	4.6	12.3	19.4
	Oxide Scav Con (Leach Feed)		6.5	3.23	5.7	39.3	43.6
	PLS		-	3700	-	37.1	-30.1
	Leach Residue		6.2	0.19	10.1	2.3	73.6
	Oxide Scav Tail		88.9	0.13	0.08	22.8	8.4
	Combined Residue and Flotation Tail		95.1	0.13	0.73	25.1	82.1
	Head (calc.)	6.2	100.0	0.52	0.84	100.0	100.0
	Head (dir.)			0.45	1.26		
East Arguelles - Sulphide Tailing Leaching	Total Copper Recovered					84.9	
	Cu 3rd Cleaner Conc		1.0	11.3	23.1	22.7	28.6
	Sulfide Middlings		3.5	1.82	4.6	12.3	19.4
	Sulphide Tailing (Leach Feed)		95.4	0.34	0.5	62.3	52.0
	PLS		-	391.00	-	62.3	-127.9
	Leach Residue		90.9	0.00	1.67	0.0	179.9
	Head (calc.)	91.0	100.0	0.52	0.84	100.0	100.0
	Head (dir.)			0.45	1.26		
West Ox.-Sul. - Oxide Scav Con Leaching	Total Copper Recovered					51.3	
	Cu 2nd Cleaner Conc		0.5	8.95	41.4	9.6	20.3
	Sulphide Middlings		0.8	8.54	19.2	14.5	15.0
	Oxide Scav Con (Leach Feed)		6.4	3.35	3.8	48.8	25.3
	PLS		-	2950	-	41.7	0.2
	Leach Residue		5.9	0.52	4.07	7.0	25.1
	Oxide Scav Tail		92.3	0.13	0.41	27.1	39.4
	Combined Residue and Flotation Tail		98.3	0.15	0.63	34.2	64.5
	Head (calc.)	0.3	100.0	0.44	0.96	100.0	100.0
	Head (dir.)			0.45	1.26		
West Ox.-Sul. Sulphide Tailing Leaching	Total Copper Recovered					73.9	
	Cu 2nd Cleaner Conc		0.5	8.95	41.4	9.6	20.3
	Sulfide Middlings		0.8	8.54	19.2	14.5	15.0
	Sulfide Tailing (Leach Feed)		98.8	0.34	0.6	75.9	64.7
	PLS		-	299.00	-	64.4	23.0
	Leach Residue		91.2	0.06	0.44	11.5	41.7
	Head (calc.)	4.2	100.0	0.44	0.96	100.0	100.0
	Head (dir.)			0.45	1.26		

The outcome of ICP Scan of the copper concentrate for the four composites having reached the threshold grade of 25% Cu or more is shown in Table 13-6. The concentrates were low in the deleterious impurities (As and Sb). Lead and zinc were the most noticeable contaminants although present at levels below the threshold at which they become problematic.





**Table 13-6: Summary of ICP-Scan of Copper Concentrates**

Element	Unit	Porphyry	Skarn Sul	Skarn Ox	Hornfelds
		F7 3rd Cl Conc	F21 2 <sup>nd</sup> Cl Conc	F22 2 <sup>nd</sup> Cl Conc	F23 2nd Cl Conc
Cu	%	34.1	28.8	33.0	28.4
S	%	32.8	32.9	32.3	33.4
Au	g/t	2.56	2.71	3.39	1.73
Ag	g/t	69	117	208	49.6
Al	g/t	1350	4020	1040	7380
As	g/t	< 40	< 40	< 40	< 40
Be	g/t	< 0.03	0.18	0.1	0.22
Bi	g/t	< 30	< 30	< 30	< 30
Ca	%	0.183	0.882	0.566	0.162
Cd	g/t	< 20	< 20	21	< 20
Co	g/t	33	81	29	132
Cr	g/t	20	101	27	46
Fe	%	30.3	31.4	29.3	28.9
K	g/t	445	387	< 20	2240
Li	g/t	< 10	< 10	< 10	< 10
Mg	g/t	378	1730	448	1430
Mn	g/t	13.9	109	79.1	46.4
Mo	g/t	---	533	210	3340
Na	g/t	451	946	145	1980
Ni	g/t	39	376	228	82
P	g/t	< 200	418	690	225
Pb	g/t	146	185	134	132
Sb	g/t	< 20	< 20	< 20	< 20
Se	g/t	88	39	175	84
Sn	g/t	< 50	< 50	< 50	< 50
Sr	g/t	15.9	17.3	3.83	22.5
Ti	g/t	362	393	96.2	1060
Tl	g/t	< 30	< 30	< 30	< 30
U	g/t	< 40	< 40	< 40	< 40
V	g/t	6	23	7	14
Y	g/t	2.3	2.5	0.7	4.7
Zn	g/t	142	1870	5950	299

Recommendations for future work are:

- Obtain fresh samples of the six lithologies present in the Escalones deposit
- Use the chemical copper speciation method to group the samples from each lithology into three or four categories based on proportion of copper sulphides present;
- Subject the materials to flotation and leaching testing to confirm the results obtained in this program and establish the proportions of copper sulphides for which leaching, flotation and leaching, or flotation would be the most preferred approach;
- Assess amenability to heap leaching of samples with low primary copper sulphide present – notably from the East Arguelles and West Oxide Sulphide areas;
- Refine the conditions for the sulphide flotation stages to improve pyrite rejection, along with the potential benefit of Calgon, and demonstrate stability by locked cycle testing notably for the Hornfels Sulphide and East Arguelles areas;
- Further examine conditions for the oxide scavenger stage to improve flotation recoveries, if possible;
- Define the optimum leach time and assays of both liquors and solids of the kinetic samples, with acid addition under pH control, for a more precise appreciation of the optimum leach retention time.



## 14.0 MINERAL RESOURCE ESTIMATE

### 14.1 INTRODUCTION

The mineral resource reported herein is based on drilling information as of June 28th, 2013. All of the drill hole data, including collars, assays, survey and lithology, were compiled into a database and plotted on sections for geologic interpretation by TMI geologists. Datamine software was then used to generate mineralized wireframe domains based on the geologic interpretations. The mineral resource estimate was then calculated using geostatistical block modeling methods constrained by the mineralized wireframes. Grades for Cu, Au, Ag & Mo were estimated using ordinary kriging method of interpolation. The mineral resources are classified according to the CIM Definition Standards for Mineral Resources and Mineral Reserves (November 27, 2010), and are reported in compliance with the Canadian Securities Administrators National Instrument 43-101, Standards of Disclosure for Mineral Projects (June 30, 2011).

This mineral resource estimate for the Escalones Property was completed by Jeffrey Choquette P.E., Mining Engineer with HRC. Based on his education, project experience and affiliation with a recognized professional association, Mr. Choquette is a Qualified Person according to NI 43-101, and is considered independent of TMI. The Mineral Resource Estimate reported for the Escalones Property is presented in Table 14-1 using a 0.25 % Copper Equivalent (CuEq) cut-off grade for a total indicated resource of 232.561 million tonnes and a total inferred resource of 527.667 million tonnes.

**Table 14-1: Mineral Resource Estimate<sup>1</sup>**

Classification	CuEq% Cutoff	Tonnes * 1,000	Cu %	Cu lbs * 1,000	Au g/t	Au Oz	Ag g/t	Ag oz	Mo %	Mo lbs	CuEq% <sup>1</sup>	CuEq lbs * 1,000
Indicated	0.15	405,242	0.243	2,170,281	0.052	673,999	0.528	6,879,224	0.006	51,308,289	0.302	2,701,842
<b>Indicated</b>	<b>0.25</b>	<b>232,561</b>	<b>0.308</b>	<b>1,578,329</b>	<b>0.067</b>	<b>498,012</b>	<b>0.661</b>	<b>4,938,667</b>	<b>0.006</b>	<b>31,908,650</b>	<b>0.380</b>	<b>1,947,232</b>
Indicated	0.35	107,885	0.393	935,279	0.082	284,745	0.877	3,041,487	0.006	14,730,116	0.477	1,134,703
Indicated	0.45	43,319	0.507	484,661	0.092	127,714	1.329	1,850,716	0.006	5,665,736	0.602	574,524
Indicated	0.55	19,395	0.634	271,048	0.098	60,973	1.948	1,214,926	0.005	2,341,742	0.737	315,284
Indicated	0.75	6,141	0.860	116,456	0.107	21,198	2.760	544,871	0.005	722,393	0.979	132,489
Indicated	1.00	1,974	1.120	48,753	0.127	8,091	3.294	209,076	0.004	163,188	1.251	54,456
Inferred	0.15	1,023,299	0.253	5,712,479	0.028	931,176	0.624	20,520,258	0.006	132,275,704	0.300	6,768,823
<b>Inferred</b>	<b>0.25</b>	<b>527,667</b>	<b>0.343</b>	<b>3,992,410</b>	<b>0.036</b>	<b>609,437</b>	<b>0.849</b>	<b>14,397,830</b>	<b>0.007</b>	<b>79,488,676</b>	<b>0.401</b>	<b>4,664,903</b>
Inferred	0.35	233,140	0.463	2,378,257	0.047	349,019	1.205	9,029,026	0.008	40,503,161	0.535	2,750,819
Inferred	0.45	129,938	0.572	1,638,097	0.049	203,645	1.471	6,146,340	0.008	22,270,448	0.648	1,857,501
Inferred	0.55	73,690	0.688	1,117,424	0.051	120,870	1.622	3,841,986	0.007	11,658,186	0.765	1,243,336
Inferred	0.75	24,609	0.950	515,222	0.057	45,400	1.875	1,483,881	0.006	3,224,734	1.029	558,488
Inferred	1.00	8,622	1.300	247,098	0.055	15,342	1.792	496,792	0.003	661,249	1.368	260,062

1) Copper Equivalent (Cu Eq %) calculations reflect gross metal content using approximate 3 year average metals prices as of June 25th, 2013 of \$3.71/lb copper (cu), \$1549/oz gold (Au), \$30.29/oz silver (Ag), and \$14.02/lb molybdenum (Mo) and have not been adjusted for metallurgical recoveries. An economic cut-off grade of 0.25% copper equivalent was assumed for this report. Contained metal values may vary from calculated values due to rounding.

2) Mineral resources are not reserves and do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues and are subject to the findings of a full feasibility study.

3) The quantity and grade of reported inferred mineral resources are uncertain in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.

## 14.2 GEOLOGIC RESOURCE MODEL

### 14.2.a.i Drill Hole Database

The Escalones mineral resource estimate is based on 53 diamond drill holes (24,939 meters) and 17,820 associated assay values collected through 2013. HRC was provided the drill hole database in Excel format



by TMI which included collar locations, down hole survey data, assay data, lithology data and specific gravity data. The database has been converted to WGS84 datum from the previous datum of Prov S. Amer 56 used in the 2012 resource model. The hole locations have also been surveyed with survey grade GPS versus the previous method of hand held GPS. Ten of the thirty hole locations from previous drill campaigns could not be properly located for resurvey and were mathematically adjusted to the new datum.

The drill hole assays were tagged according to defined mineralized domains and statistics of copper, gold, silver and molybdenum were calculated for each domain. Table 14-2 to Table 14-5 show the assay statistics for each metal and domain. Figure 14-1 shows the drill hole locations used in the estimate.

**Table 14-2: Cu Raw Assay Statistics**

Cu Assays All Samples in Model Extents							
Cu % cutoff	# of Samples	Maximum	Mean	Median	Stand. Dev.	Variance	COV
0.00	17,819	9.99	0.234	0.142	0.362	0.130	1.92
0.15	9,608	9.99	0.418	0.282	0.456	0.208	1.09
0.25	6,508	9.99	0.577	0.405	0.542	0.294	0.94
Cu Assays Skarn Zone							
0.00	5,733	9.99	0.349	0.197	0.534	0.285	1.53
0.15	3,523	9.99	0.566	0.375	0.619	0.383	1.09
0.25	2,728	9.99	0.700	0.485	0.674	0.454	0.96
Cu Assays Enrichment Zone							
0.00	4,056	3.04	0.241	0.176	0.257	0.066	1.06
0.15	2,355	3.04	0.360	0.280	0.281	0.078	0.78
0.25	1,381	3.04	0.476	0.371	0.318	0.101	0.67
Cu Assays Porphyry Zone							
0.00	2,129	5.13	0.148	0.118	0.168	0.028	1.13
0.15	762	5.13	0.264	0.220	0.236	0.056	0.90
0.25	261	5.13	0.400	0.317	0.365	0.133	0.91
Cu Assays Hornfels Zones							
0.00	5,901	3.14	0.129	0.095	0.158	0.025	1.23
0.15	2,968	3.14	0.278	0.222	0.206	0.042	0.74
0.25	2,138	3.14	0.416	0.332	0.280	0.079	0.67

**Table 14-3: Au Raw Assay Statistics**

Au Assays All Samples in Model Extents							
Au g/t cutoff	# of Samples	Maximum	Mean	Median	Stand. Dev.	Variance	COV
0.00	17,819	18.03	0.040	0.020	0.186	0.034	4.57
0.03	8,496	18.03	0.087	0.057	0.287	0.082	3.31
0.06	5,249	18.03	0.136	0.092	0.404	0.164	2.97
Au Assays Skarn Zone							
0.00	5,733	3.63	0.048	0.023	0.091	0.008	1.89
0.03	2,827	3.63	0.096	0.062	0.121	0.015	1.27
0.06	1,769	3.63	0.142	0.101	0.150	0.023	1.06
Au Assays Enrichment Zone							
0.00	5,046	0.62	0.058	0.040	0.057	0.003	0.99
0.03	2,742	0.62	0.080	0.060	0.057	0.003	0.72
0.06	1,517	0.62	0.112	0.090	0.059	0.004	0.53
Au Assays Porphyry Zone							
0.00	2,129	0.41	0.023	0.020	0.027	0.001	1.21
0.03	690	0.41	0.050	0.040	0.033	0.001	0.66
0.06	174	0.41	0.087	0.070	0.048	0.002	0.55
Au Assays Hornfels Zones							
0.00	5,901	18.03	0.025	0.008	0.336	0.113	13.42
0.03	2,237	18.03	0.126	0.040	0.876	0.767	6.95
0.06	1,789	18.03	0.354	0.087	1.638	2.682	4.62

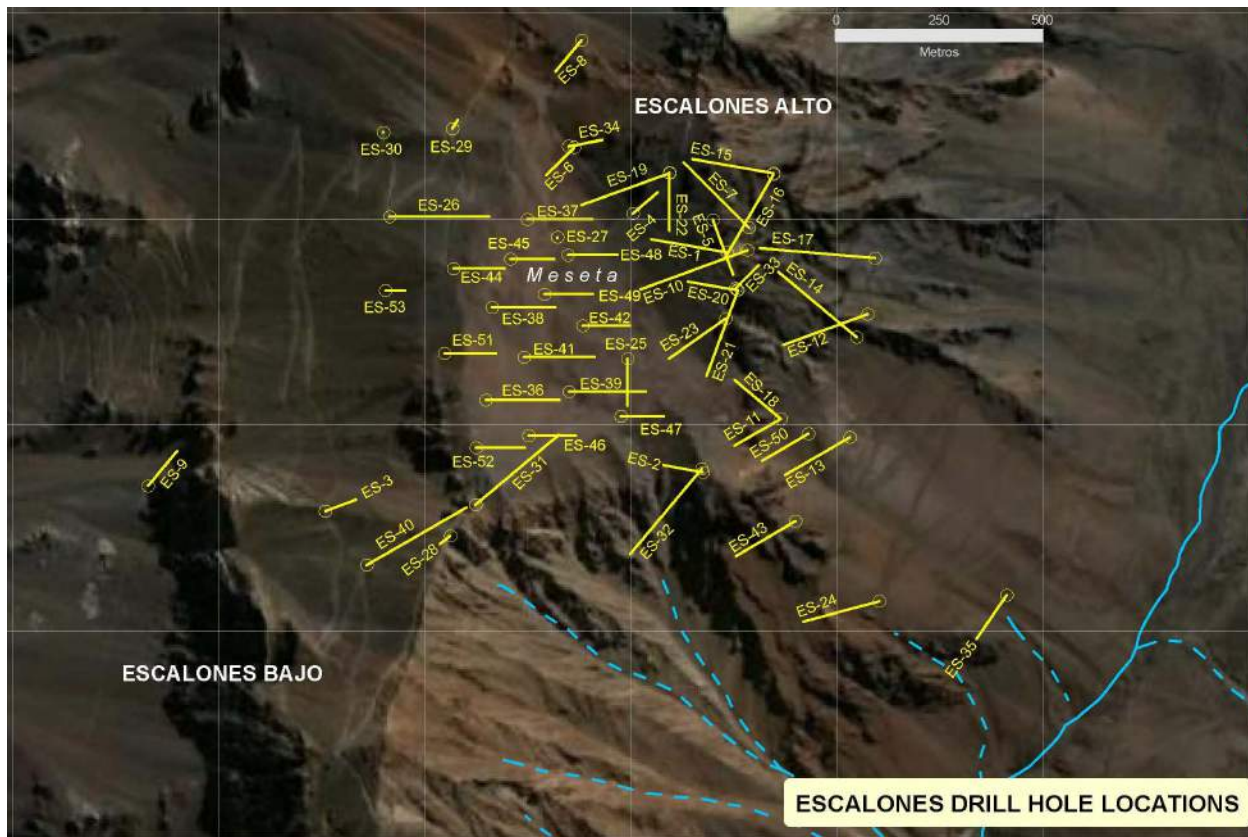
**Table 14-4: Ag Raw Assay Statistics**

Ag Assays All Samples in Model Extents							
Ag g/t cutoff	# of Samples	Maximum	Mean	Median	Stand. Dev.	Variance	COV
0.00	17,819	326.70	0.764	0.300	3.754	14.090	4.91
0.50	7,488	326.70	1.946	1.000	6.262	39.211	3.22
1.00	5,346	326.70	2.807	1.700	7.975	63.605	2.84
Ag Assays Skarn Zone							
0.00	5,733	204.00	1.402	0.600	4.060	16.483	2.89
0.50	3,620	204.00	2.240	1.300	5.101	26.022	2.28
1.00	2,545	204.00	3.072	1.900	6.157	37.900	2.00
Ag Assays Enrichment Zone							
0.00	4,056	90.00	0.495	0.100	1.985	3.941	4.01
0.50	1,164	90.00	1.402	1.000	3.544	12.562	2.53
1.00	716	90.00	1.861	1.100	4.457	19.862	2.39
Ag Assays Porphyry Zone							
0.00	2,129	50.00	0.269	0.100	1.484	2.203	5.52
0.50	228	50.00	1.609	1.000	4.304	18.528	2.67
1.00	139	50.00	2.247	1.000	5.417	29.340	2.41
Ag Assays Hornfels Zones							
0.00	5,901	326.70	0.490	0.300	5.094	25.951	10.40
0.50	2,476	326.70	1.719	0.800	11.284	127.300	6.56
1.00	1,946	326.70	3.478	1.650	18.078	326.819	5.20

**Table 14-5: Mo Raw Assay Statistics**

Mo Assays All Samples in Model Extents							
Mo % cutoff	# of Samples	Maximum	Mean	Median	Stand. Dev.	Variance	COV
0.00	17,819	0.40	0.005	0.002	0.010	0.000	2.09
0.00	8,566	0.40	0.011	0.007	0.015	0.000	1.38
0.01	5,877	0.40	0.015	0.011	0.018	0.000	1.17
Mo Assays Skarn Zone							
0.00	5,733	0.32	0.005	0.003	0.009	0.000	1.60
0.00	3,019	0.32	0.010	0.008	0.011	0.000	1.05
0.01	2,096	0.32	0.014	0.011	0.012	0.000	0.89
Mo Assays Enrichment Zone							
0.00	4,056	0.40	0.006	0.002	0.013	0.000	2.24
0.00	1,827	0.40	0.012	0.007	0.018	0.000	1.55
0.01	1,125	0.40	0.016	0.011	0.022	0.000	1.34
Mo Assays Porphyry Zone							
0.00	2,129	0.22	0.005	0.002	0.011	0.000	2.21
0.00	846	0.22	0.010	0.006	0.015	0.000	1.51
0.01	420	0.22	0.016	0.010	0.020	0.000	1.24
Mo Assays Hornfels Zones							
0.000	5,901	0.20	0.004	0.001	0.009	0.0001	2.45
0.003	2,874	0.20	0.010	0.006	0.015	0.0002	1.46
0.006	2,236	0.20	0.016	0.010	0.019	0.0004	1.20

**Figure 14-1: Drill Hole Distribution of all holes at Escalones**



#### 14.2.a.ii Grade Capping

HRC performed a capping analysis on the raw assay data using histogram plots and probability plots. Based on this analysis a 5.8% copper cap, 0.9 g/t gold cap, 115 g/t silver cap and 0.225% molybdenum cap were applied to the assay values before compositing. An uncapped model was also estimated for comparison purposes and the results were less than 1% of the metal being removed from the estimate as there were only a few outliers in each assay group.

#### 14.2.a.iii Geologic Modeling and Mineralized Domains

Geological modeling was performed by TMI geologists using the raw drill hole data. The skarn, leached, enriched, porphyry, and faults were projected on section and then built into solids based on the section projections. The overburden above the leached and enriched zone was later added and coded as an un-mineralized zone. The solids were checked by HRC with the drilling results and the solids were found to be an accurate representation of the mineralization. The domain solids were then used to tag the assays, composites and blocks in the model. The domain codes in the block model were coded by the following values to define the domains:

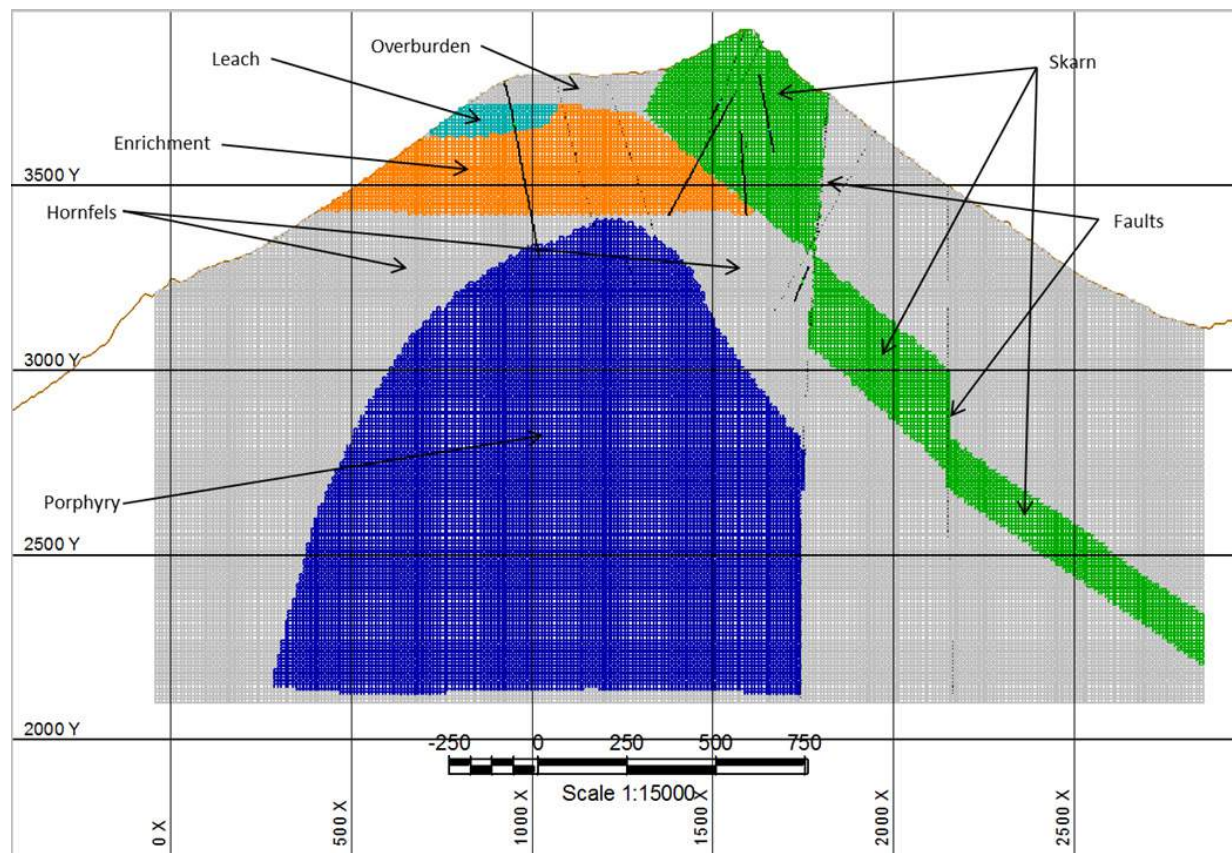
- Skarn = 1,2
- Leach = 3
- Enrichment = 4
- Porphyry = 5



- Hornfels = 6
- Overburden = 99

One meter resolution topography along with an aerial photo were obtained by TMI from satellite imagery and were used in the estimation. Figure 14-2 below shows a sectional view of the solid domains used in the model.

**Figure 14-2: Section 6,224,900 N view of mineralized domains**



#### 14.2.a.iv Compositing

The average length of the drill hole samples is 1.3 meters with 99.7% of the samples being 2.0 meters or less. The most frequent sample length is 1.0 meter with 59% of the samples at this length followed by 2.0 meter samples which represent 22% of the sample set. Considering the assay data statistics, with respect to interval length, HRC chose to composite the data to 3 meter intervals. The composites were tagged by the domains and then used in the variography analysis for each metal and domain. Table 14-6 to Table 14-9 show the composite statistics for each metal and each domain.





**Table 14-6: Cu Composite Statistics**

Cu Composites All Samples in Model Extents							
Cu % cutoff	# of Samples	Maximum	Mean	Median	Stand. Dev.	Variance	COV
0.00	8,412	5.10	0.210	0.140	0.279	0.077	1.33
0.15	4,466	5.10	0.372	0.268	0.336	0.113	0.90
0.25	2,905	5.10	0.515	0.388	0.396	0.156	0.77
Cu Composites Skarn Zone							
0.00	2,197	5.10	0.321	0.200	0.431	0.186	1.34
0.15	1,345	5.10	0.517	0.374	0.478	0.229	0.93
0.25	1,030	5.10	0.634	0.476	0.512	0.262	0.81
Cu Composites Enrichment Zone							
0.00	2,149	2.81	0.240	0.188	0.217	0.047	0.91
0.15	1,344	2.81	0.338	0.275	0.222	0.050	0.66
0.25	779	2.81	0.446	0.368	0.244	0.060	0.55
Cu Composites Porphyry Zone							
0.00	1,218	1.45	0.144	0.121	0.111	0.012	0.77
0.15	462	1.45	0.241	0.210	0.127	0.016	0.53
0.25	164	1.45	0.353	0.303	0.174	0.030	0.49
Cu Composites Hornfels Zones							
0.00	2,848	1.81	0.110	0.086	0.127	0.016	1.15
0.15	1,315	1.81	0.255	0.212	0.153	0.023	0.60
0.25	932	1.81	0.378	0.309	0.207	0.043	0.55

**Table 14-7: Au Composite Statistics**

Au Composites All Samples in Model Extents							
Au g/t cutoff	# of Samples	Maximum	Mean	Median	Stand. Dev.	Variance	COV
0.00	8,412	12.40	0.039	0.020	0.157	0.025	4.04
0.03	3,832	12.40	0.084	0.059	0.247	0.061	2.92
0.06	2,376	12.40	0.128	0.094	0.345	0.119	2.69
Au Composites Skarn Zone							
0.00	2,197	0.91	0.045	0.025	0.065	0.004	1.46
0.03	1,073	0.91	0.087	0.061	0.080	0.006	0.92
0.06	648	0.91	0.127	0.095	0.094	0.009	0.74
Au Composites Enrichment Zone							
0.00	2,149	0.44	0.059	0.044	0.053	0.003	0.90
0.03	1,442	0.44	0.081	0.066	0.052	0.003	0.64
0.06	822	0.44	0.112	0.096	0.051	0.003	0.46
Au Composites Porphyry Zone							
0.00	1,218	0.22	0.022	0.017	0.024	0.001	1.07
0.03	342	0.22	0.051	0.042	0.026	0.001	0.52
0.06	98	0.22	0.086	0.073	0.034	0.001	0.40
Au Composites Hornfels Zones							
0.00	2,848	12.40	0.023	0.007	0.281	0.079	12.32
0.03	975	12.40	0.138	0.042	0.820	0.673	5.97
0.06	808	12.40	0.352	0.084	1.437	2.065	4.08

**Table 14-8: Ag Composite Statistics**

Ag Composites All Samples in Model Extents							
Ag g/t cutoff	# of Samples	Maximum	Mean	Median	Stand. Dev.	Variance	COV
0.00	8,412	59.90	0.636	0.223	1.719	2.956	2.70
0.50	3,258	59.90	1.690	1.000	2.818	7.941	1.67
1.00	2,138	59.90	2.645	1.666	3.686	13.593	1.39
Ag Composites Skarn Zone							
0.00	2,197	41.40	1.277	0.638	2.221	4.935	1.74
0.50	1,365	41.40	2.032	1.233	2.641	6.977	1.30
1.00	924	41.40	2.808	1.833	3.070	9.430	1.09
Ag Composites Enrichment Zone							
0.00	2,149	36.36	0.459	0.100	1.144	1.311	2.49
0.50	650	36.36	1.184	0.870	1.928	3.717	1.63
1.00	299	36.36	1.842	1.388	2.795	7.810	1.52
Ag Composites Porphyry Zone							
0.00	1,218	21.89	0.241	0.100	0.862	0.744	3.58
0.50	152	21.89	1.253	0.700	2.387	5.698	1.90
1.00	57	21.89	2.870	1.427	4.243	18.009	1.48
Ag Composites Hornfels Zones							
0.00	2,848	59.90	0.422	0.217	1.844	3.402	4.37
0.50	1,091	59.90	1.585	0.739	4.276	18.280	2.70
1.00	858	59.90	3.310	1.812	6.871	47.205	2.08

**Table 14-9: Mo Composite Statistics**

Mo Composites All Samples in Model Extents							
Mo % cutoff	# of Samples	Maximum	Mean	Median	Stand. Dev.	Variance	COV
0.00	8,412	0.17	0.005	0.002	0.008	0.000	1.60
0.00	4,268	0.17	0.009	0.007	0.009	0.000	1.04
0.01	2,783	0.17	0.014	0.010	0.012	0.000	0.86
Mo Composites Skarn Zone							
0.00	2,197	0.07	0.005	0.003	0.006	0.000	1.19
0.00	1,209	0.07	0.009	0.007	0.007	0.000	0.72
0.01	794	0.07	0.014	0.010	0.006	0.000	0.55
Mo Composites Enrichment Zone							
0.00	2,149	0.17	0.006	0.003	0.010	0.000	1.66
0.00	1,084	0.17	0.011	0.007	0.012	0.000	1.16
0.01	648	0.17	0.015	0.011	0.015	0.000	0.98
Mo Composites Porphyry Zone							
0.00	1,218	0.11	0.005	0.003	0.007	0.000	1.51
0.00	576	0.11	0.009	0.006	0.009	0.000	1.08
0.01	305	0.11	0.013	0.009	0.011	0.000	0.90
Mo Composites Hornfels Zones							
0.000	2,848	0.13	0.003	0.002	0.007	0.000	1.95
0.003	1,399	0.13	0.009	0.005	0.010	0.000	1.15
0.006	1,036	0.13	0.014	0.010	0.013	0.000	0.92

#### 14.2.a.v Specific Gravity

The database provided by TMI contains 5,138 Specific Gravity (SG) samples from the drill core. The SG samples contained in the database were tagged for each domain and then average and median values were calculated for each domain. The average value for each domain was chosen for the resource estimate and each block was assigned the corresponding density based on the domain codes. The leach domain, which is very small, was assigned the same density as the enrichment zone. Table 14-10 shows the average and median SG of the samples by domain.



**Table 14-10: Summary of Specific Gravity Samples**

Specific Gravity			
Model Domain	# of Samples	Average SG	Median SG
Skarn	2187	2.83	2.74
Porphyry	212	2.60	2.60
Enrichment	552	2.65	2.63
Hornfel	2187	2.69	2.68
<b>Average</b>	<b>5138</b>	<b>2.74</b>	<b>2.70</b>

#### 14.2.a.vi Variography

Variography analysis was completed for copper, gold, silver and molybdenum evaluating all samples and also all four estimation domains to establish the spatial variability of mineralization within each domain. Variography describes how similar sample grades are as a function of distance and direction. This is performed by comparing the orientation and distance used in the estimation to the variability of other samples of similar relative direction and distance. The spherical variograms were constructed using a "Pairwise Relative" method of organizing the variance pairs. The variogram results for copper, gold, silver and molybdenum by each domain are shown in Table 14-11 to Table 14-14. The enrichment domain which also includes the leach domain was found to have a fairly flat dip of 12 to 15 degrees in the main direction of mineralization; the remaining zones had a dip of 48 to 64 degrees.

**Table 14-11: Cu Variogram Results**

Domain	Parameter	Principle-X Axis	Intermediate-Y Axis	Minor-Z Axis	Nugget	Sill
Cu Enrich.	Azimuth (°):	51.2°	138°			
	Dip (°):	12°				
	Range 1 (m):	133	103	87	0.03	0.23
	Range 2 (m):	374	288	245		0.41
Cu Horn.	Azimuth (°):	99°	9°			
	Dip (°):	54°				
	Range 1 (m):	278.0	253.9	196.2	0.08	0.73
	Range 2 (m):	443.0	404.0	312.0		0.88
Cu Porph.	Azimuth (°):	170°	15.3°			
	Dip (°):	-48°				
	Range 1 (m):	148.0	119.4	74.5	0.08	0.00
	Range 2 (m):	410.0	331.0	206.0		0.33
Cu Skarn	Azimuth (°):	53°	334.6°			
	Dip (°):	-64°				
	Range 1 (m):	35.7	19.7	18.3	0.28	0.29
	Range 2 (m):	264.8	146.0	136.0		0.28

**Table 14-12: Au Variogram Results**

Domain	Parameter	Principle-X Axis	Intermediate-Y Axis	Minor-Z Axis	Nugget	Sill
Au Enrich.	Azimuth (°):	115°	22°			
	Dip (°):	-15°				
	Range 1 (m):	75.7	64.7	40.5	0.10	0.11
	Range 2 (m):	372.0	332.0	199.0		0.44
Au Horn.	Azimuth (°):	99°	9°			
	Dip (°):	54°				
	Range 1 (m):	306.2	262.2	202.1	0.30	0.05
	Range 2 (m):	500.0	428.0	330.0		1.04
Au Porph.	Azimuth (°):	170°	86.8°			
	Dip (°):	-48°				
	Range 1 (m):	185.5	134.5	103.0	0.21	0.03
	Range 2 (m):	356.0	258.0	198.0		0.67
Au Skarn	Azimuth (°):	53°	0.8°			
	Dip (°):	-64°				
	Range 1 (m):	52.7	31.4	25.2	0.25	0.20
	Range 2 (m):	175.0	104.0	83.0		0.31



**Table 14-13: Ag Variogram Results**

Domain	Parameter	Principle-X Axis	Intermediate-Y Axis	Minor-Z Axis	Nugget	Sill
Ag Enrich.	Azimuth (°):	115°	22°			
	Dip (°):	-15°				
	Range 1 (m):	147.3	116.9	102.4	0.04	0.24
	Range 2 (m):	340.0	270.0	237.0		0.44
Ag Horn.	Azimuth (°):	99°	9°			
	Dip (°):	54°				
	Range 1 (m):	142.8	117.2	105.1	0.27	0.14
	Range 2 (m):	441.0	362.0	325.0		0.59
Ag Porph.	Azimuth (°):	170°	109.8°			
	Dip (°):	-48°				
	Range 1 (m):	105.0	63.6	62.3	0.04	0.05
	Range 2 (m):	381.0	230.0	226.0		0.23
Ag Skam	Azimuth (°):	53°	1.8°			
	Dip (°):	-64°				
	Range 1 (m):	34.4	25.0	14.6	0.19	0.16
	Range 2 (m):	229.5	167.0	97.0		0.50

**Table 14-14: Mo Variogram Results**

Domain	Parameter	Principle-X Axis	Intermediate-Y Axis	Minor-Z Axis	Nugget	Sill
Mo Enrich.	Azimuth (°):	115°	22°			
	Dip (°):	-15°				
	Range 1 (m):	83.2	67.1	57.6	0.02	0.14
	Range 2 (m):	349.5	282.0	242.0		0.87
Mo Horn.	Azimuth (°):	99°	9°			
	Dip (°):	54°				
	Range 1 (m):	249.2	198.7	190.0	0.32	0.22
	Range 2 (m):	476.0	380.0	363.0		0.46
Mo Porph.	Azimuth (°):	170°	86°			
	Dip (°):	-48°				
	Range 1 (m):	155.0	87.6	68.5	0.33	0.25
	Range 2 (m):	360.0	203.0	159.0		0.22
Mo Skam	Azimuth (°):	53°	3.2°			
	Dip (°):	-64°				
	Range 1 (m):	28.2	19.9	15.9	0.23	0.19
	Range 2 (m):	250.0	176.0	140.0		0.41

#### 14.2.a.vii Block Model

The block was created based on the definitions shown in (Table 14-15). The block model origin coordinates are represented by the maximum easting “X”, maximum northing “Y” and minimum “Z”. The model was not rotated in area direction. Based on the anticipated mining methods, the size of the mineralized domain and the drill hole spacing, HRC chose a block size of 10m × 10m × 10m.

**Table 14-15: Block model definitions for Escalones**

	Y (m)	X (m)	Z (m)
Origin Coordinates WGS84	6,223,750	410,100	2,100
Block Size	10	10	10
Rotation	0	0	0
Number of Blocks	200	290	200

#### 14.2.a.viii Grade Estimation Strategy

Grades for copper, gold, silver and molybdenum were estimated using ordinary kriging. Primary search parameters focus on an elliptical search oriented along the same axes and ranges as the variograms. Only the composites coded for each domain were used to estimate the blocks coded for the same domain. The domain codes were assigned as described in section 14.2.a.iii above with the leach combined with the enriched zone for estimating purposes. For resource classification purposes the grades were estimated using two passes with the first pass at half the variogram range and the second pass at the full variogram range. A minimum of 3 and a maximum of 20 composites are required for block estimation. Composites are further limited to a maximum four per hole to reduce possible hole bias. After estimating the blocks with a kriging variance greater than 1.0 were removed from the estimate with the grades set to zero. Grade modeling parameters are summarized in Table 14-16 to Table 14-19.



**Table 14-16: Cu Modeling Parameters**

Domain	Parameter	Principle-X Axis	Intermediate-Y Axis	Minor-Z Axis	Max/Min #Samples	Max hole per
Cu Enrich.	Azimuth (°):	51.2°	138°		20/3	4
	Dip (°):	12°				
	Pass1 Search Dist. (m):	187	144	122.5		
	Pass 2 Search Dist. (m):	374	288	245		
Cu Horn.	Azimuth (°):	99°	9°		20/3	4
	Dip (°):	54°				
	Pass1 Search Dist. (m):	221.5	202	156		
	Pass 2 Search Dist. (m):	443	404	312		
Cu Porph.	Azimuth (°):	170°	15.3°		20/3	4
	Dip (°):	-48°				
	Pass1 Search Dist. (m):	205	165.5	103		
	Pass 2 Search Dist. (m):	410	331	206		
Cu Skarn	Azimuth (°):	53°	334.6°		20/3	4
	Dip (°):	-64°				
	Pass1 Search Dist. (m):	132.4	73	68		
	Pass 2 Search Dist. (m):	264.8	146	136		

**Table 14-17: Au Modeling Parameters**

Domain	Parameter	Principle-X Axis	Intermediate-Y Axis	Minor-Z Axis	Max/Min #Samples	Max hole per
Au Enrich.	Azimuth (°):	115°	22°		20/3	4
	Dip (°):	-15°				
	Pass1 Search Dist. (m):	186	166	99.5		
	Pass 2 Search Dist. (m):	372	332	199		
Au Horn.	Azimuth (°):	99°	9°		20/3	4
	Dip (°):	54°				
	Pass1 Search Dist. (m):	250	214	165		
	Pass 2 Search Dist. (m):	500	428	330		
Au Porph.	Azimuth (°):	170°	86.8°		20/3	4
	Dip (°):	-48°				
	Pass1 Search Dist. (m):	178	129	99		
	Pass 2 Search Dist. (m):	356	258	198		
Au Skarn	Azimuth (°):	53°	0.8°		20/3	4
	Dip (°):	-64°				
	Pass1 Search Dist. (m):	87.5	52	41.5		
	Pass 2 Search Dist. (m):	175	104	83		

**Table 14-18: Ag Modeling Parameters**

Domain	Parameter	Principle-X Axis	Intermediate-Y Axis	Minor-Z Axis	Max/Min #Samples	Max hole per
Ag Enrich.	Azimuth (°):	115°	22°		20/3	4
	Dip (°):	-15°				
	Pass1 Search Dist. (m):	170	135	118.5		
	Pass 2 Search Dist. (m):	340	270	237		
Ag Horn.	Azimuth (°):	99°	9°		20/3	4
	Dip (°):	54°				
	Pass1 Search Dist. (m):	220.5	181	162.5		
	Pass 2 Search Dist. (m):	441	362	325		
Ag Porph.	Azimuth (°):	170°	109.8°		20/3	4
	Dip (°):	-48°				
	Pass1 Search Dist. (m):	190.5	115	113		
	Pass 2 Search Dist. (m):	381	230	226		
Ag Skarn	Azimuth (°):	53°	1.8°		20/3	4
	Dip (°):	-64°				
	Pass1 Search Dist. (m):	114.75	83.5	48.5		
	Pass 2 Search Dist. (m):	229.5	167	97		

**Table 14-19: Mo Modeling Parameters**

Domain	Parameter	Principle-X Axis	Intermediate-Y Axis	Minor-Z Axis	Max/Min #Samples	Max hole per
Mo Enrich.	Azimuth (°):	115°	22°		20/3	4
	Dip (°):	-15°				
	Pass1 Search Dist. (m):	174.75	141	121		
	Pass 2 Search Dist. (m):	349.5	282	242		
Mo Horn.	Azimuth (°):	99°	9°		20/3	4
	Dip (°):	54°				
	Pass1 Search Dist. (m):	238	190	181.5		
	Pass 2 Search Dist. (m):	476	380	363		
Mo Porph.	Azimuth (°):	170°	86°		20/3	4
	Dip (°):	-48°				
	Pass1 Search Dist. (m):	180	101.5	79.5		
	Pass 2 Search Dist. (m):	360	203	159		
Mo Skarn	Azimuth (°):	53°	3.2°		20/3	4
	Dip (°):	-64°				
	Pass1 Search Dist. (m):	125	88	70		
	Pass 2 Search Dist. (m):	250	176	140		

### 14.2.a.ix Resource Model Validation

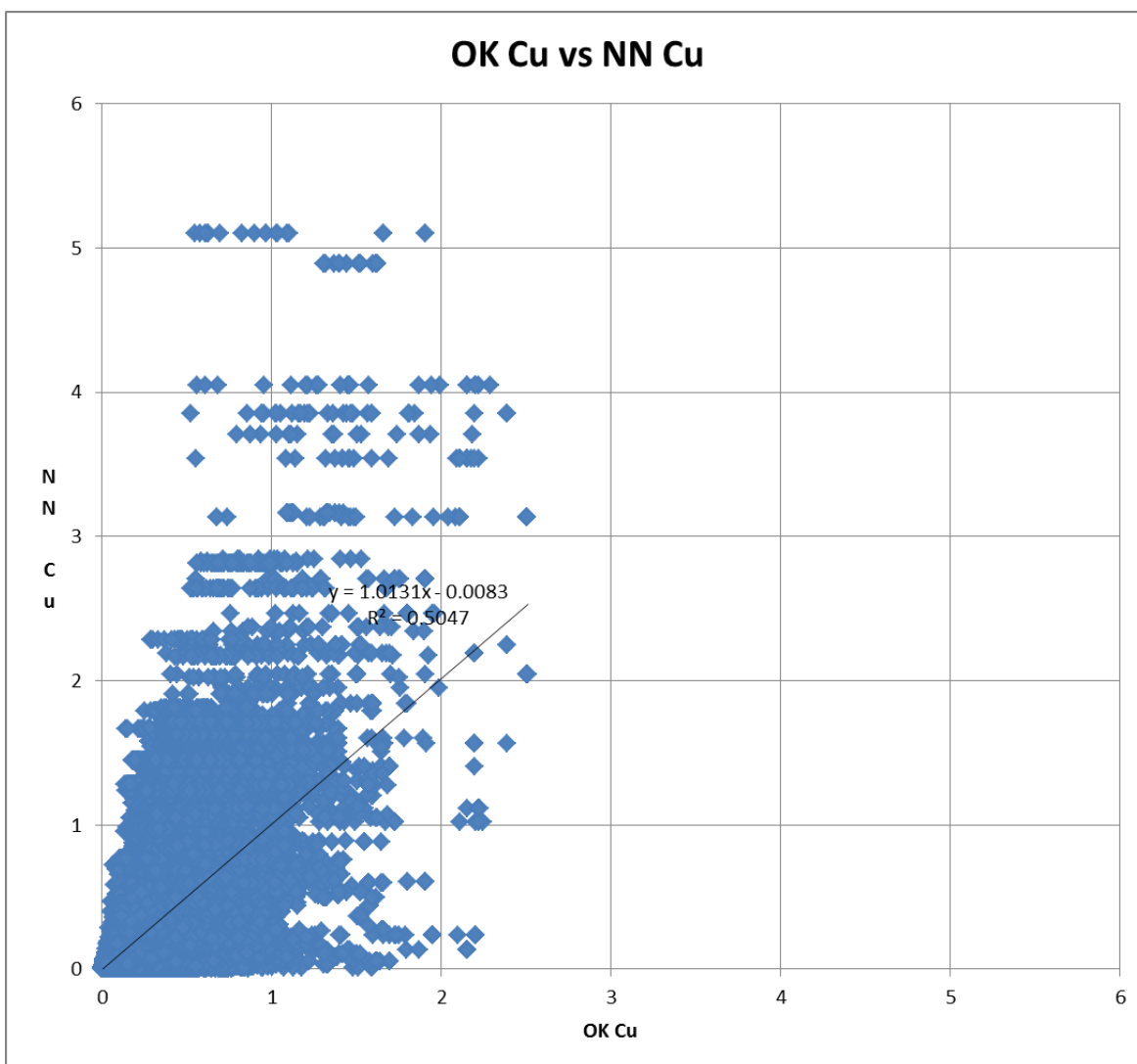
Detailed visual inspection of the block model was conducted in both section and plan to ensure the desired results of the estimation. The estimated grades were checked in relation to the underlying drill hole sample grades and composites. The estimated grades in the model appear to be a valid representation of the underlying drill hole sample data.

To verify the precision of the resource estimate, a nearest neighbor model was also estimated. The nearest neighbor estimate resulted in fewer tons at higher grade as expected using this modeling method. Based on the comparison of the ordinary kriging blocks compared to the nearest neighbor blocks as shown in Figure 14-3 the ordinary kriging values for each block are slightly lower than the nearest neighbor blocks as would be expected. Table 14-20 shows the ordinary kriging grade compared to the nearest neighbor grade at the 0.25% CuEq resource cut off.

**Table 14-20: Cu Ordinary Kriging vs. Nearest Neighbor Estimate**

OK versus NN at 0.25 % Cueq cutoff			
Classification	Tonnes * 1000	OK Cu	NN Cu
Indicated	232,561	0.31	0.32
Inferred	527,667	0.34	0.33

**Figure 14-3: Cu Ordinary Kriging Blocks vs. Nearest Neighbor Blocks**



#### 14.2.a.x Mineral Resource Classification

The resources stated in this report for the Escalones property conform to the CIM and NI 43-101 definitions:

*“A Mineral Resource is a concentration or occurrence of diamonds, natural solid inorganic material or solid fossilized organic material including base and precious metals, coal and industrial minerals in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade,*





*geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.”*

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

*“An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.”*

*“A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.”*

The resource estimate is categorized as indicated and inferred as defined by the CIM Definition Standards for Mineral Resources and Mineral Reserves (November 27, 2010). Mineral resources do not have demonstrated economic viability, and there is no certainty that mineral resources will be converted into mineral reserves after economic considerations are applied.

Blocks were classified as indicated if they were populated during pass 1, were estimated by at least three drill holes, had a kriging variance greater than 1.0 and were within 175m of a composite which is approximately one half the average variogram range. All blocks populated during pass 2 and having a kriging variance greater than 1.0 are classified as inferred.

### **14.3 MINERAL RESOURCE STATEMENT**

Mineral resources for Escalones were estimated by Mr. Jeffrey Choquette, P.E. an appropriate independent qualified person. Table 14-22 presents an estimated range of mineral resources at various CuEq cut off grades in order to demonstrate the sensitivity of the resource estimate with respect to cut-off grade. The Mineral Resource Estimate for the Escalones Property is reported using a base case 0.25 % CuEq cut-off grade for a total indicated resource of 232.561 million tonnes and a total inferred resource of 527.667 million tonnes. Mineral resource estimates for the Escalones Project presented in this report are effective as of the 28th day of June, 2013. The costs used in the cutoff calculation are presented below in Table 14-21. The costs selected are slightly higher than similar large scale operations given the project location. Costs were obtained from “CostMine” for large scale open pit operations with flotation mills. The cutoff was calculated by dividing the total cost per tonne of ore by the copper price less the refining and smelting costs which equates to 4.4 lbs of copper per metric tonne which at 80% recovery equates to 0.25% copper.



**Table 14-21: Resource Cutoff**

Escalones Cutoff			
Mining Cutoff @			\$ 3.71
Cost Center			
Mining	\$/ore tonne		\$ 3.00
Processing	\$/ore tonne		\$ 11.50
G&A	\$/ore tonne		\$ 0.75
Recoveries	tonne		80%
Refining & Smelting cost	per/lb		\$ 0.25
Total cost	\$/ore tonne		\$ 15.25
Copper Selling Price	lbs		\$ 3.71
Cutoff Grade			0.25%

**Table 14-22: Mineral Resource Statement<sup>1</sup>**

Classification	CuEq% Cutoff	Tonnes * 1,000	Cu %	Cu lbs * 1,000	Au g/t	Au Oz	Ag g/t	Ag oz	Mo %	Mo lbs	CuEq% <sup>1</sup>	CuEq lbs * 1,000
Indicated	0.15	405,242	0.243	2,170,281	0.052	673,999	0.528	6,879,224	0.006	51,308,289	0.302	2,701,842
<b>Indicated</b>	<b>0.25</b>	<b>232,561</b>	<b>0.308</b>	<b>1,578,329</b>	<b>0.067</b>	<b>498,012</b>	<b>0.661</b>	<b>4,938,667</b>	<b>0.006</b>	<b>31,908,650</b>	<b>0.380</b>	<b>1,947,232</b>
Indicated	0.35	107,885	0.393	935,279	0.082	284,745	0.877	3,041,487	0.006	14,730,116	0.477	1,134,703
Indicated	0.45	43,319	0.507	484,661	0.092	127,714	1.329	1,850,716	0.006	5,665,736	0.602	574,524
Indicated	0.55	19,395	0.634	271,048	0.098	60,973	1.948	1,214,926	0.005	2,341,742	0.737	315,284
Indicated	0.75	6,141	0.860	116,456	0.107	21,198	2.760	544,871	0.005	722,393	0.979	132,489
Indicated	1.00	1,974	1.120	48,753	0.127	8,091	3.294	209,076	0.004	163,188	1.251	54,456
Inferred	0.15	1,023,299	0.253	5,712,479	0.028	931,176	0.624	20,520,258	0.006	132,275,704	0.300	6,768,823
<b>Inferred</b>	<b>0.25</b>	<b>527,667</b>	<b>0.343</b>	<b>3,992,410</b>	<b>0.036</b>	<b>609,437</b>	<b>0.849</b>	<b>14,397,830</b>	<b>0.007</b>	<b>79,488,676</b>	<b>0.401</b>	<b>4,664,903</b>
Inferred	0.35	233,140	0.463	2,378,257	0.047	349,019	1.205	9,029,026	0.008	40,503,161	0.535	2,750,819
Inferred	0.45	129,938	0.572	1,638,097	0.049	203,645	1.471	6,146,340	0.008	22,270,448	0.648	1,857,501
Inferred	0.55	73,690	0.688	1,117,424	0.051	120,870	1.622	3,841,986	0.007	11,658,186	0.765	1,243,336
Inferred	0.75	24,609	0.950	515,222	0.057	45,400	1.875	1,483,881	0.006	3,224,734	1.029	558,488
Inferred	1.00	8,622	1.300	247,098	0.055	15,342	1.792	496,792	0.003	661,249	1.368	260,062

1) Copper Equivalent (Cu Eq %) calculations reflect gross metal content using approximate 3 year average metals prices as of June 25th, 2013 of \$3.71/lb copper (cu), \$1549/oz gold (Au), \$30.29/oz silver (Ag), and \$14.02/lb molybdenum (Mo) and have not been adjusted for metallurgical recoveries. An economic cut-off grade of 0.25% copper equivalent was assumed for this report. Contained metal values may vary from calculated values due to rounding.

2) Mineral resources are not reserves and do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues and are subject to the findings of a full feasibility study.

3) The quantity and grade of reported inferred mineral resources are uncertain in nature and there has been insufficient exploration to define these inferred resources as an indicated or measured mineral resource and it is uncertain if further exploration will result in upgrading them to an indicated or measured mineral resource category.

Table 14-23 shows the indicated resources reported by each domain and at various cutoff grades. The enrichment domain contains the majority of the indicated material at 75% of the total tonnes and 73% of the contained CuEq metal at the 0.25% CuEq cutoff. Table 14-24 shows the inferred resources reported by each domain and at various cutoff grades. The skarn domain contains the majority of the inferred material at 46% of the total tonnes and 55% of the contained CuEq metal at the 0.25% CuEq cutoff.



**Table 14-23: Indicated Resources by Domain<sup>1</sup>**

Classification	CuEq% Cutoff	Domain	Tonnes * 1,000	Cu %	Cu lbs * 1,000	Au g/t	Au Oz	Ag g/t	Ag oz	Mo %	Mo lbs	CuEq% <sup>1</sup>	CuEq lbs * 1,000
Indicated	0.15	Enrichment	238,599	0.258	1,358,857	0.065	502,052	0.476	3,652,421	0.006	33,198,921	0.328	1,723,819
<b>Indicated</b>	<b>0.25</b>	<b>Enrichment</b>	<b>173,705</b>	<b>0.298</b>	<b>1,140,210</b>	<b>0.073</b>	<b>407,178</b>	<b>0.513</b>	<b>2,864,487</b>	<b>0.007</b>	<b>24,931,520</b>	<b>0.373</b>	<b>1,427,872</b>
Indicated	0.35	Enrichment	86,024	0.366	693,385	0.085	234,298	0.604	1,671,034	0.007	12,374,745	0.449	851,647
Indicated	0.45	Enrichment	30,101	0.460	305,043	0.093	89,977	0.826	799,029	0.007	4,370,888	0.551	365,664
Indicated	0.55	Enrichment	9,993	0.576	126,993	0.097	31,269	1.160	372,766	0.006	1,386,387	0.673	148,336
Indicated	0.75	Enrichment	1,998	0.793	34,937	0.097	6,242	1.599	102,749	0.007	327,800	0.899	39,622
Indicated	1.00	Enrichment	382	1.021	8,586	0.117	1,430	1.010	12,397	0.005	44,813	1.124	9,454
Indicated	0.15	Hornfels	85,668	0.188	355,677	0.025	67,606	0.448	1,234,376	0.005	9,124,087	0.227	428,473
<b>Indicated</b>	<b>0.25</b>	<b>Hornfels</b>	<b>23,364</b>	<b>0.265</b>	<b>136,318</b>	<b>0.031</b>	<b>23,500</b>	<b>0.675</b>	<b>506,682</b>	<b>0.005</b>	<b>2,750,086</b>	<b>0.312</b>	<b>160,663</b>
Indicated	0.35	Hornfels	4,291	0.353	33,401	0.044	6,087	1.082	149,253	0.005	499,909	0.413	39,051
Indicated	0.45	Hornfels	761	0.467	7,846	0.064	1,573	1.956	47,868	0.005	76,805	0.547	9,184
Indicated	0.55	Hornfels	269	0.549	3,258	0.096	827	2.851	24,654	0.004	25,735	0.658	3,902
Indicated	0.75	Hornfels	43	0.668	634	0.116	161	4.253	5,885	0.005	4,756	0.809	767
Indicated	1.00	Hornfels	0	0.000	0	0.000	-	0.000	-	0.000	0	0.000	0
Indicated	0.15	Porphyry	54,603	0.174	208,999	0.028	49,526	0.313	549,082	0.006	6,796,663	0.216	259,851
<b>Indicated</b>	<b>0.25</b>	<b>Porphyry</b>	<b>14,069</b>	<b>0.236</b>	<b>73,043</b>	<b>0.039</b>	<b>17,682</b>	<b>0.504</b>	<b>228,144</b>	<b>0.008</b>	<b>2,326,791</b>	<b>0.294</b>	<b>91,084</b>
Indicated	0.35	Porphyry	1,071	0.292	6,893	0.032	1,086	1.120	38,577	0.013	317,806	0.375	8,863
Indicated	0.45	Porphyry	16	0.367	126	0.023	12	4.304	2,158	0.009	2,964	0.465	160
Indicated	0.55	Porphyry	0	0.000	0	0.000	-	0.000	-	0.000	0	0.000	0
Indicated	0.75	Porphyry	0	0.000	0	0.000	-	0.000	-	0.000	0	0.000	0
Indicated	1.00	Porphyry	0	0.000	0	0.000	-	0.000	-	0.000	0	0.000	0
Indicated	0.15	Skarn	26,373	0.424	246,748	0.065	54,814	1.702	1,443,345	0.004	2,188,618	0.498	289,699
<b>Indicated</b>	<b>0.25</b>	<b>Skarn</b>	<b>21,424</b>	<b>0.484</b>	<b>228,757</b>	<b>0.072</b>	<b>49,653</b>	<b>1.944</b>	<b>1,339,354</b>	<b>0.004</b>	<b>1,900,252</b>	<b>0.567</b>	<b>267,613</b>
Indicated	0.35	Skarn	16,500	0.554	201,600	0.082	43,275	2.229	1,182,623	0.004	1,537,656	0.646	235,142
Indicated	0.45	Skarn	12,441	0.626	171,646	0.090	36,152	2.504	1,001,661	0.004	1,215,080	0.727	199,516
Indicated	0.55	Skarn	9,132	0.699	140,797	0.098	28,877	2.784	817,506	0.005	929,620	0.810	163,047
Indicated	0.75	Skarn	4,099	0.895	80,885	0.112	14,794	3.310	436,236	0.004	389,837	1.019	92,099
Indicated	1.00	Skarn	1,592	1.144	40,166	0.130	6,661	3.842	196,680	0.003	118,375	1.282	45,002
Total Indicated	0.15	All	405,242	0.243	2,170,281	0.052	673,999	0.528	6,879,224	0.006	51,308,289	0.302	2,701,842
<b>Total Indicated</b>	<b>0.25</b>	<b>All</b>	<b>232,561</b>	<b>0.308</b>	<b>1,578,329</b>	<b>0.067</b>	<b>498,012</b>	<b>0.661</b>	<b>4,938,667</b>	<b>0.006</b>	<b>31,908,650</b>	<b>0.380</b>	<b>1,947,232</b>
Total Indicated	0.35	All	107,885	0.393	935,279	0.082	284,745	0.877	3,041,487	0.006	14,730,116	0.477	1,134,703
Total Indicated	0.45	All	43,319	0.507	484,661	0.092	127,714	1.329	1,850,716	0.006	5,665,736	0.602	574,524
Total Indicated	0.55	All	19,395	0.634	271,048	0.098	60,973	1.948	1,214,926	0.005	2,341,742	0.737	315,284
Total Indicated	0.75	All	6,141	0.860	116,456	0.107	21,198	2.760	544,871	0.005	722,393	0.979	132,489
Total Indicated	1.00	All	1,974	1.120	48,753	0.127	8,091	3.294	209,076	0.004	163,188	1.251	54,456

<sup>1</sup> Copper Equivalent (CuEq %) calculations reflect gross metal content using approximate 3 year average metals prices as of June 25th, 2013 of \$3.71/lb copper (Cu), \$1549/oz gold (Au), \$30.29/oz silver (Ag), and \$14.02/lb molybdenum (Mo) and have not been adjusted for metallurgical recoveries. An economic cut-off grade of 0.25% copper equivalent represents a metal price of approximately \$2.50/lb copper.



**Table 14-24: Inferred Resources by Domain<sup>1</sup>**

Classification	CuEq% Cutoff	Domain	Tonnes * 1000	Cu %	Cu lbs * 1,000	Au g/t	Au Oz	Ag g/t	Ag oz	Mo %	Mo lbs	CuEq% <sup>1</sup>	CuEq lbs * 1,000
Inferred	0.15	Enrichment	190,278	0.242	1,013,938	0.045	274,828	0.498	3,048,563	0.006	27,161,160	0.299	1,256,254
<b>Inferred</b>	<b>0.25</b>	<b>Enrichment</b>	<b>112,170</b>	<b>0.300</b>	<b>742,972</b>	<b>0.054</b>	<b>194,967</b>	<b>0.484</b>	<b>1,743,809</b>	<b>0.007</b>	<b>17,552,973</b>	<b>0.366</b>	<b>904,972</b>
Inferred	0.35	Enrichment	50,317	0.381	422,728	0.065	104,937	0.481	777,406	0.008	8,338,207	0.455	504,412
Inferred	0.45	Enrichment	19,113	0.478	201,512	0.072	44,158	0.499	306,466	0.008	3,242,756	0.557	234,711
Inferred	0.55	Enrichment	7,421	0.582	95,189	0.073	17,525	0.549	131,018	0.007	1,157,357	0.660	107,952
Inferred	0.75	Enrichment	1,099	0.843	20,441	0.092	3,252	0.693	24,491	0.005	111,956	0.925	22,423
Inferred	1.00	Enrichment	233	1.125	5,783	0.096	719	0.616	4,618	0.005	26,676	1.210	6,222
Inferred	0.15	Homfels	76,813	0.181	306,351	0.021	52,108	0.584	1,443,049	0.006	10,461,414	0.224	379,432
<b>Inferred</b>	<b>0.25</b>	<b>Hornfels</b>	<b>17,348</b>	<b>0.280</b>	<b>107,195</b>	<b>0.033</b>	<b>18,511</b>	<b>0.949</b>	<b>529,309</b>	<b>0.007</b>	<b>2,614,237</b>	<b>0.338</b>	<b>129,128</b>
Inferred	0.35	Homfels	4,845	0.392	41,895	0.050	7,797	1.515	235,904	0.009	922,640	0.473	50,565
Inferred	0.45	Homfels	1,746	0.521	20,039	0.054	3,034	1.946	109,210	0.009	361,574	0.612	23,564
Inferred	0.55	Homfels	772	0.673	11,454	0.067	1,672	2.935	72,860	0.005	79,387	0.767	13,048
Inferred	0.75	Homfels	465	0.750	7,698	0.091	1,359	3.644	54,524	0.005	48,304	0.867	8,893
Inferred	1.00	Homfels	51	0.839	945	0.174	285	6.047	9,937	0.005	5,696	1.035	1,167
Inferred	0.15	Porphyry	425,695	0.198	1,858,932	0.020	278,118	0.236	3,231,771	0.005	45,558,257	0.232	2,173,641
<b>Inferred</b>	<b>0.25</b>	<b>Porphyry</b>	<b>155,800</b>	<b>0.268</b>	<b>920,092</b>	<b>0.024</b>	<b>121,510</b>	<b>0.305</b>	<b>1,527,621</b>	<b>0.006</b>	<b>19,413,133</b>	<b>0.308</b>	<b>1,056,677</b>
Inferred	0.35	Porphyry	18,390	0.343	139,261	0.039	23,034	0.410	242,178	0.009	3,669,185	0.406	164,724
Inferred	0.45	Porphyry	2,743	0.534	32,317	0.024	2,130	0.395	34,821	0.005	293,110	0.572	34,598
Inferred	0.55	Porphyry	1,222	0.643	17,334	0.011	445	0.408	16,043	0.004	109,561	0.671	18,065
Inferred	0.75	Porphyry	416	0.805	7,378	0.011	147	0.431	5,760	0.003	30,239	0.829	7,601
Inferred	1.00	Porphyry	0	0.000	0	0.000	-	0.000	-	0.000	0	0.000	0
Inferred	0.15	Skarn	330,512	0.348	2,533,258	0.031	326,123	1.204	12,796,875	0.007	49,094,872	0.406	2,959,496
<b>Inferred</b>	<b>0.25</b>	<b>Skarn</b>	<b>242,350</b>	<b>0.416</b>	<b>2,222,150</b>	<b>0.035</b>	<b>274,449</b>	<b>1.360</b>	<b>10,597,093</b>	<b>0.007</b>	<b>39,908,333</b>	<b>0.482</b>	<b>2,574,126</b>
Inferred	0.35	Skarn	159,589	0.504	1,774,373	0.042	213,251	1.515	7,773,538	0.008	27,573,129	0.577	2,031,117
Inferred	0.45	Skarn	106,337	0.590	1,384,229	0.045	154,323	1.666	5,695,843	0.008	18,373,009	0.667	1,564,628
Inferred	0.55	Skarn	64,275	0.701	993,446	0.049	101,228	1.753	3,622,065	0.007	10,311,882	0.779	1,104,271
Inferred	0.75	Skarn	22,629	0.962	479,705	0.056	40,641	1.923	1,399,105	0.006	3,034,235	1.041	519,570
Inferred	1.00	Skarn	8,337	1.308	240,370	0.053	14,337	1.799	482,237	0.003	628,878	1.375	252,672
Total Inferred	0.15	All	1,023,299	0.253	5,712,479	0.028	931,176	0.624	20,520,258	0.006	132,275,704	0.300	6,768,823
<b>Total Inferred</b>	<b>0.25</b>	<b>All</b>	<b>527,667</b>	<b>0.343</b>	<b>3,992,410</b>	<b>0.036</b>	<b>609,437</b>	<b>0.849</b>	<b>14,397,830</b>	<b>0.007</b>	<b>79,488,676</b>	<b>0.401</b>	<b>4,664,903</b>
Total Inferred	0.35	All	233,140	0.463	2,378,257	0.047	349,019	1.205	9,029,026	0.008	40,503,161	0.535	2,750,819
Total Inferred	0.45	All	129,938	0.572	1,638,097	0.049	203,645	1.471	6,146,340	0.008	22,270,448	0.648	1,857,501
Total Inferred	0.55	All	73,690	0.688	1,117,424	0.051	120,870	1.622	3,841,986	0.007	11,658,186	0.765	1,243,336
Total Inferred	0.75	All	24,609	0.950	515,222	0.057	45,400	1.875	1,483,881	0.006	3,224,734	1.029	558,488
Total Inferred	1.00	All	8,622	1.300	247,098	0.055	15,342	1.792	496,792	0.003	661,249	1.368	260,062

<sup>1</sup> Copper Equivalent (CuEq %) calculations reflect gross metal content using approximate 3 year average metals prices as of June 25th, 2013 of \$3.71/lb copper (Cu), \$1549/oz gold (Au), \$30.29/oz silver (Ag), and \$14.02/lb molybdenum (Mo) and have not been adjusted for metallurgical recoveries. An economic cut-off grade of 0.25% copper equivalent represents a metal price of approximately \$2.50/lb copper.

## 14.4 ISSUES THAT COULD AFFECT THE MINERAL RESOURCE

There are no known factors related to permitting, legal, title, taxation, socio-economic, environmental, and marketing or political issues which could materially affect the mineral resource at the time of reporting.

## 15.0 ADJACENT PROPERTIES

There is no information on adjacent properties which might materially affect the Escalones Project.



## 16.0 OTHER RELEVANT DATA AND INFORMATION

The authors know of no other relevant data or information necessary to make the technical report understandable and not misleading.

## 17.0 INTERPRETATION AND CONCLUSIONS

The Escalones Property lies within the Miocene to Pliocene age Pelambres-El Teniente Porphyry copper belt, which hosts the world's largest porphyry copper deposit at El Teniente, as well as other large copper deposits at Los Bronces-Andina, and Pelambres (Katsura, 2006). Exploration at Escalones has demonstrated that copper mineralization occurs in two forms, (1) as high grade copper skarn and structurally controlled mineralization hosted by altered sediments and intrusive dykes and sills, and (2) as disseminated and stockwork mineralization hosted by an underlying intrusive granodiorite stock. Within this framework partial enrichment of the copper mineralization is seen particularly in the near surface within the granodiorite. Also development of secondary copper oxides is seen both in the enriched profile and within near surface altered sediments and dykes.

The principal mineralization observed at Escalones consists of metasomatic replacement or skarn-type mineralization hosted by calcareous sediments overlying and adjacent to an intrusive porphyry system. High grade copper ores (>10% copper) were historically mined (Katsura, 2006) at Escalones from exposures of magnetite skarn at Escalones Alto and prospects along Escalones Bajo, and drilling has demonstrated that high grade magnetite skarn extends to the east and south from outcroppings at Escalones Alto. Drill intercepts of skarn, up to 113 m, exhibit grades of >1.0% copper with localized intervals grading up to 3.6 g/t gold. Individual narrower drill intervals of 40-75 m contain grades averaging 1.7% copper and values up to 0.48 g/t for gold.

In addition to the skarn mineralization, drilling has intersected a very large volume of copper mineralization as disseminated and stockworks hosted in a sequence of non-calcareous pelitic hornfels, which underlies the skarn, and as disseminated and stockworks hosted by a variety of intrusive rocks, including andesite sills and dykes, and the granodiorite stock.

Interpretation of both the resistivity and magnetic results of the ZTEM geophysical survey suggest that both the magnetite skarn and associated sulfide bodies are much larger than indicated by present drilling and that there is considerable potential for a significant expansion of the skarn resource and a potential for a large secondary sulphide/oxide zone paralleling the Argüelles valley in calcareous sediments stratigraphically above the main skarn horizon. These potentially very large additions to the known mineralized system will be available to test once appropriate permits are in place.

The most recent drilling campaign 2012-2013 substantially increased the resource from that announced in December, 2011. Initial metallurgical testing suggests that high quality, clean concentrates can be produced from the mineralization drilled and geophysical and geological interpretation strongly suggest that a significant upside potential exists to expand the resource further.

There are no known significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information or mineral resource.







## 18.0 RECOMMENDATIONS

HRC recommends that exploration, environmental and engineering should be continued on the property with the intent to demonstrate the economic viability of the deposit. The size of the budget depends on the rate at which the Company wishes to progress, however a sensible next step might include 20-50 drill holes with associated geology and geochemistry, together with additional metallurgy and early stage engineering studies, together with the needed environmental studies and permits required to do this.

The budget for this program would include:

- Drilling, 10,000-20,000 meters - US\$2,500,000 - US\$5,000,000
- Road and trenches - US\$400,000
- Geochemistry, ~7,000-15,000 samples - US\$250,000 – US\$550,000
- Geological/Engineering personnel - US\$200,000
- Metallurgy - US\$200,000
- Engineering studies – US\$300,000
- Environmental studies and permitting– US\$200,000
- Other costs – US\$200,000

Total: US\$4,250,000 to US\$7,050,000



## 19.0 REFERENCES

- Arcos, Rodrigo, 2000. Proyecto Escalones Informe Geologico, Temporada 1999-2000, unpublished report for GMC Chile SCM, p. 10.
- Arnott, Alexandra M, Zentilli, Marcos, 2000. Evolution of the potassic alteration assemblage at the Chuquicamata porphyry copper deposit, Chile, Abstracts and Programs, Geological Society of America, v. 32, no. 7, p. 138.
- Armitage, Allan, 2012. Technical Report on the Resource Estimate on the Escalones Porphyry Copper Project, Santiago Metropolitan Region, Chile, Prepared for South American Silver Corp.
- Candia, W, 2007. Escalones Project Final Report, Region Metropolitana, Chile. Minera Aurex (Subsidiaria de Phelps Dodge Mining Company) in-house summary report, p. 13.
- Carlos, K.G., 1960. Geologica de la Cordillera de los Andes de Chile Central in: Instituto de Investigaciones Geologicas Chile, Boletin No. 8.
- Charrier, Reynaldo, 1981. Mesozoic and Cenozoic Stratigraphy of the Central Argentinian-Chilean Andes (32-35 S) and chronology of their tectonic evolution, Beitrage zum VII Geowissenschaftliche Lateinamerika-Kolloquium, Zentralblatt fuer Geologie und Paleontologie, Teil I: Allgemeine, Angewandte, Regionale und Historische Geologie 3-4, p. 344-355.
- Glover, J. Keith, 1999. Summary Report: Structural Geology of the Escalones Property, Unpublished report for General Minerals Corporation, p. 30.
- Guilbert, John M. and Park, Charles F., 1975. The Geology of Ore Deposits, W.H. Freeman and Company, New York, p. 985.
- Hallam, A., Biro-Bagoczky, L., Perez, E., 1986. Facies Analysis of the Lo Valdes Formation (Tithonian-Hauterivian) of the High Cordillera of central Chile, and the palaeogeographic evolution of the Andean Basin, Geological Magazine, v. 123, no. 4, p. 425-435.
- Katsura, Kurt T, 2006. Report on Escalones Property, Santiago Metropolitan Region, Chile, Prepared for South American Silver Corp., p. 39.
- Klohn Giehm, Carlos, 1960. Geologia de la Cordillera de los Andes de Chile central, provincias Santiago, O'Higgins, Colchagua y Curico, in Instituto de Investigaciones Geologicas, Boletino No. 8.
- Kurtz, Andrew C., Kay, Suzanne M., Charrier, Reynaldo, and others, 1997. Revista Geologica de Chile, v.24, no. 1, p. 75-90.
- Malibrán, Felipe, 2013, 130724 Escalones Geological Update for Resource Report FM .docx.
- Maus, Daniel, 1997. Escalones Project, Santiago Metropolitan Region, Chile, Unpublished Company Report for General Minerals Corporation, p. 15.
- Maus, Daniel, 1999. Escalones, Unpublished Company Report for General Minerals Corporation, p. 18.
- Osterman, C., 1997. Fluid Inclusion at Escalones (James Reynolds of Fluid Inc.), Unpublished Company Report for General Minerals Corporation.





## **CERTIFICATE OF QUALIFIED PERSON**

Reference is made to the amended technical report titled “RESOURCE ESTIMATE ON THE ESCALONES PORPHYRY COPPER PROJECT Located in the Santiago Metropolitan Region, Chile” with an effective date of June 28, 2013 (the “Technical Report”).

I, Jennifer J. Brown, P.G., do hereby certify the following as a qualified person (QP) responsible for the Technical Report:

1. I am currently employed as Principal Geologist by Hard Rock Consulting, LLC at 10901 W. Toller Drive, Suite 205, Littleton, Colorado 80127 U.S.A.
2. I am a graduate of the University of Montana with a Bachelor of Arts in Geology (1996), and I have practiced my profession continuously since 1997.
3. I am a Licensed Professional Geologist in the State of Wyoming (PG-3719) and a Registered Professional Geologist in the State of Idaho (PGL-1414), and am a Qualified Person according to NI 43-101 as a Registered Member in good standing of the Society for Mining, Metallurgy, and Exploration (4168244RM) with recognized special expertise in geology and mineral resources. I am also a member of the American Institute of Professional Geologists (MEM-0174).
4. I have 17 years of experience as a consulting geologist, as an employee of six separate engineering and geologic consulting firms and the U.S.D.A Forest Service. I have more than ten collective years of experience directly related to mining and or economic and saleable minerals exploration and resource development, including geologic analysis and interpretation, geotechnical exploration, resource evaluation, and technical reporting.
5. I have participated in the preparation of more than twenty NI 43-101 Technical Reports and have acted as a Qualified Person primarily responsible for technical geologic data and information and for overall content and organization for more than ten NI 43-101 Technical Reports in the past five years.
6. 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.
7. I have not personally inspected the Escalones property in Chile.
8. I am specifically responsible for sections 7 through 12 of the Technical Report, and co-author responsibility with Mr. Choquette Section 14 of the Technical Report.
9. I am independent of TriMetals Mining Inc., formerly South American Silver Corp. as described in section 1.5 of NI 43-101.
10. I have had no prior involvement with the property that is the subject of the Technical Report.
11. I have read NI 43-101 and the Technical Report, and the Technical Report has been prepared in compliance with NI 43-101.
12. At the amended date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Lakewood, CO USA, July 11, 2014

***Signed by “Jennifer J. Brown, P. G.”***

Jennifer J. Brown, Principal Geologist  
Hard Rock Consulting, LLC.





## **CERTIFICATE OF QUALIFIED PERSON**

Reference is made to the amended technical report titled “RESOURCE ESTIMATE ON THE ESCALONES PORPHYRY COPPER PROJECT Located in the Santiago Metropolitan Region, Chile” with an effective date of June 28, 2013 (the "Technical Report").

I, Jeffery W. Choquette, P.E., do hereby certify the following as a qualified person (QP) responsible for the Technical Report:

1. I am currently employed as Principal Engineer by Hard Rock Consulting, LLC at 1746 Cole Blvd, Ste. 140, Lakewood, Colorado 80401 U.S.A.
2. I am a graduate of Montana College of Mineral Science and Technology and received a Bachelor of Science degree in Mining Engineering in 1995.
3. I am a: Registered Professional Engineer in the State of Montana (No. 12265) and a QP Member in Mining and Ore Reserves in good standing of the Mining and Metallurgical Society of America (No. 01425QP)
4. I have 17 years of domestic and international experience in project development, resource and reserve modeling, mine operations, mine engineering, project evaluation, and financial analysis. I have worked for mining and exploration companies for fifteen years and as a consulting engineer for two and a half years. Mr. Choquette has been involved in industrial minerals, base metals and precious metal mining projects in the United States, Canada, Mexico and South America
5. 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.
6. I visited the Escalones site on June 4, 2013 for one day.
7. I am specifically responsible for Sections 1 through 6, co-author of Section 14 with Ms. Brown and Section 15 through 19 of the Technical Report.
8. I am independent of TriMetals Mining Inc., formerly South American Silver Corp. as described in section 1.5 of NI 43-101.
9. I have had no prior involvement with the property that is the subject of the Technical Report.
10. I have read NI 43-101 and the Technical Report, and the Technical Report has been prepared in compliance with NI 43-101.
11. At the amended date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Lakewood, CO USA, July 11, 2014

***Signed by “Jeffrey W. Choquette”***

Jeffrey W. Choquette, Principal Engineer  
Hard Rock Consulting, LLC.





## **CERTIFICATE OF QUALIFIED PERSON**

Reference is made to the amended technical report titled "RESOURCE ESTIMATE ON THE ESCALONES PORPHYRY COPPER PROJECT Located in the Santiago Metropolitan Region, Chile" with an effective date of June 28, 2013 (the "Technical Report").

I, David Dreisinger, P.Eng., do hereby certify the following as a qualified person (QP) responsible for the Technical Report:

1. I am the President of Dreisinger Consulting Inc. with a business office at 5233 Bentley Crescent, Delta, British Columbia. I was retained by TriMetals Mining Inc., formerly South American Silver Corp. to study metallurgical treatment of the Escalones Deposit between 2011 and the present. I am a graduate of Queen's University in Kingston, Canada with a B.Sc. (Metallurgical Engineering, 1980) and a Ph.D. (Metallurgical Engineering, 1984). I am a Fellow of the Canadian Institute of Mining, Metallurgy and Petroleum. I am a Fellow of the Canadian Academy of Engineering.
2. I have practiced my profession continuously since graduation. I have been employed in research and teaching at the University of British Columbia since 1984 and currently hold the title of Professor and Chairholder, Industrial Research Chair in Hydrometallurgy in the Department of Materials Engineering. I have provided consulting services to the global metallurgical industry since 1987. I have been the President of Dreisinger Consulting Inc. since 1998.
3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (Registration Number 15803, May 6, 1987).
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 purpose of NI 43-101.
5. I have not personally inspected the Escalones property in Chile.
6. I am responsible for preparing section 13 of the Technical Report and the mineral processing portions of sections 1 and 17 of the Technical Report.
7. I am not independent of TriMetals Mining Inc. as described in Section 1.5 of NI 43-101.
8. I have read NI 43-101 and the Technical Report and the Technical Report has been prepared in compliance with NI 43-101.
9. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the portions of the Technical Report which I am responsible for, contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Vancouver, BC Canada, July 11, 2014

***Signed by "David D. Dreisinger"***

David Dreisinger, Ph.D., P.Eng. President  
Dreisinger Consulting Inc.

