MINE DEVELOPMENT ASSOCIATES
MINE ENGINEERING SERVICES

Updated Technical Report on the
Red Hills Project
Presidio County, Texas

Prepared for

Tosca Mining Corporation

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1.0 SUMMARY

Mine Development Associates ("MDA") has prepared this updated Technical Report on the Red Hills copper and molybdenum project, Presidio County, Texas, at the request of Tosca Mining Corporation ("Tosca"). This report and the resource estimate have been prepared in compliance with the disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101 ("NI 43-101"), Companion Policy 43-101CP, and Form 43-101F1, as well as with the Canadian Institute of Mining, Metallurgy and Petroleum's "CIM Definition Standards - For Mineral Resources and Reserves, Definitions and Guidelines" ("CIM Standards") adopted by the CIM Council on November 27, 2010.

Porphyry molybdenum and near-surface copper mineralization is associated with Laramide latite and quartz monzonite intrusions that form the Red Hills stock. The purpose of this report is to provide an updated technical summary of the Red Hills project, including the first publically reported, NI 43-101-compliant mineral resource estimate for the Red Hills deposit.

1.1 Location and Ownership

The Red Hills property is located in southwest Texas, about 25mi by road north-northwest of the town of Presidio, which is situated on the Rio Grande on the border with Mexico. The Red Hills project lies just south of the southeastern corner of the Chinati Mountains at the western end of the Shafter mining district.

The Red Hills property consists of about 2,880 acres of private land, specifically Sections 2 and 3 of Block 7 of the Houston and Texas Central Railway survey; Sections 33 and 34 of Block 7 of the Manuel Tarin survey; Sections 186 and 187 of Block 7 of the Matias Cubier survey; and Section 1 of Block A of the Houston and Texas Central Railway survey. Tosca has an agreement with Red Hills Copper, Inc. whereby Tosca can purchase all of the stock in Red Hills Copper, Inc., thereby acquiring the mineral rights to five of the seven sections and an option to purchase the mineral rights to the remaining two sections and surface rights to all seven sections. Tosca also has a sublease exploration agreement with Red Hills Copper, Inc. allowing Tosca to enter, explore, and test the Red Hills property.

In addition to the 2,880 acres of land discussed above, approximately 660 additional acres in Sections 8 and 9 of Block 7 of the Houston and Texas Central Railway survey are the subject of a letter from Red Hills Copper, Inc. to Tosca, agreeing to include that land in the option to purchase agreement for 48 months, subject to a survey and additional terms.

Red Hills Copper, Inc. retains a 2% net smelter returns royalty on the Red Hills property.

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1.2 Geology and Mineralization

This part of southwest Texas lies at the junction of three physiographic provinces: the Basin and Range Province to the west, the Great Plains to the east, and the Mexican Highlands to the south. It also lies at the boundary of two late Cretaceous-early Tertiary structural provinces – the highly deformed Chihuahua tectonic belt to the west and the stable Diablo platform to the east. The Red Hills lie in the Mexican Highlands, just at the boundary between the Chihuahua tectonic belt and the Diablo platform. Between 38 and 31 Ma, magmatism generated a number of calderas in west Texas, including the Chinati Mountains caldera, located immediately to the north of the Red Hills project, that produced differentiated alkali-calcic to alkali suites of ash-flow tuffs, intra-caldera lava flows, and intrusions.

Cretaceous and Permian sedimentary rocks, primarily limestone with minor sandstone and shale, occur within the district and in the Red Hills area are locally tilted to the south. A roughly east-trending fracture zone that cuts the sedimentary rocks is mineralized sporadically along a 7mi trend including the Red Hills on the west and the Shafter/Presidio deposits on the east. Middle Tertiary volcanic rocks overlie the Cretaceous units, particularly in the Chinati Mountains and on the plateau east of the town of Shafter.

Immediately southeast of the Chinati Mountains lies the Red Hills stock, variously described as consisting of hornblende-augite andesite, quartz monzonite, monzonite, or latite porphyry intrusive phases. The Red Hills stock intruded Permian limestone, sandstone, siltstone, and dolomite. U-Pb dating of zircon from phyllically altered quartz monzonite of the Red Hills stock yielded an age of 64.2 $\pm$ 0.2 Ma. Re-Os analysis of molybdenite yielded an age of 60.2 $\pm$ 0.3 Ma for the mineralizing event. These dates identify the Red Hills stock as the easternmost exposure of the Laramide porphyry copper-related intrusions of Arizona and New Mexico. The Red Hills stock is made up of latite porphyry and quartz monzonite porphyry. Within the western part of the stock, potassic alteration was overprinted by extensive quartz-sericite-pyrite (phyllic) and argillic alteration, and there are local zones of intense silicification. Hypogene mineralization extends to the surface in many areas, with local areas of secondary enrichment. A leached cap with oxidized iron sulfides gives the reddish colors to exposures that led to the name "Red Hills." Localized skarn alteration has formed in altered roof pendants and wall rocks of Permian strata immediately adjacent to the stock.

The mineralization of interest at the Red Hills project is porphyry molybdenum and near-surface copper mineralization that covers an area of about 4,000ft (east-west) by 3,000ft (north-south) and is still open to the south under post-mineral cover. The porphyry molybdenum mineralization, accompanied by low-grade copper mineralization, lies in the western part of the stock and, to a lesser extent, within slabs of intruded sedimentary rocks. Molybdenite is associated with quartz-sulfide stockwork veins that form a roughly circular zone, about 3,000ft in diameter, centered on the porphyry but also extending up into the sedimentary roof pendants. The higher grade (>0.05% Mo) core of molybdenum mineralization forms a horseshoe-shaped zone that is about 2,000ft in diameter and open to the south, although this shape might be a reflection of incomplete drill coverage.

In addition to the porphyry molybdenum mineralization, there is an enriched chalcocite blanket that developed below the oxide-sulfide transition zone at depths ranging from directly below the outcrop surface to up to 300ft on the south side of the deposit. This chalcocite blanket overprints the upper portion of the porphyry molybdenum system and also extends laterally to the east and west into the sedimentary wallrock. Copper grades of 0.1% Cu to 0.5% Cu, with localized mineralization at over 1% Cu, characterize the chalcocite blanket, while the hypogene copper mineralization beneath the zone of enrichment averages less than 0.03% Cu.

Localized pyrite-chalcopyrite deposits occur as replacements of sedimentary beds in various shapes, sizes, and grade along the margin of the stock. Peripheral hornfels and localized skarn bodies are enriched in zinc, lead, and silver in limestones along the margins of the Red Hills stock.

1.3 Exploration and Mining History

The Shafter mining district was first explored in 1880, with silver production beginning in 1883. The Presidio silver-lead-zinc mine in the eastern part of the district was the district's only large mine. The Red Hills mine in the western part of the district, where the current Red Hills project is located, produced two carloads of malachite and azurite and was the only area of the Shafter district where copper was mined.

Phelps Dodge Corp. ("Phelps Dodge") reportedly discovered and began evaluation of the Red Hills stock in the 1950s. From 1955 to 1983, American Smelting and Refining Company ("ASARCO"), Phelps Dodge, American Metal Climax, Inc. ("Amax"), and Duval Corp. ("Duval") explored the Red Hills, primarily focused on exploration for a porphyry copper deposit. These four companies drilled a total of 89 holes on what is the current Red Hills property during that period, with Duval drilling 70 of them from 1971 to 1973 and an additional four in 1983. Duval outlined the copper-molybdenum porphyry zone with their 1970s drilling. In addition, Duval conducted regional exploration with geochemical and IP surveying.

Gold Fields Mining Corp. ("Gold Fields"), who had been active in the eastern part of the Shafter district since 1977 and had discovered the Shafter silver deposit currently under development by Aurcana Corp., joined Duval in a joint venture from April 1980 to March 1983 that included exploration in the vicinity of the Red Hills. The joint venture undertook geochemical and geophysical prospecting and drilled 12 holes, primarily south and west of the Red Hills porphyry system but within the current boundaries of Tosca's property, searching for precious-metals mineralization. These holes are not part of the current project database.

Rio Grande Mining Company ("Rio Grande") acquired much of the Shafter district in 1994 and 1998, including the Red Hills property. After purchasing the Red Hills files and drill logs from Penzoil in 1995, Rio Grande conducted pre-feasibility studies in 1997 to determine the viability of extracting the shallow copper mineralization at Red Hills and prepared resource estimates (now considered historic) of the copper-molybdenum porphyry mineralization. Rio Grande was then acquired by Silver Assets, Inc., who was subsequently acquired by Silver Standard Resources Inc. in 2000.

In February 2008, Red Hills Copper, Inc. acquired the mineral rights to five of the sections at Red Hills from Rio Grande. In 2011, Red Hills Copper, Inc. leased the surface rights to all seven sections at Red Hills and acquired an option to buy the surface rights as well as the mineral rights to the two remaining sections from a private landowner.

In March 2011, Tosca signed an agreement with Red Hills Copper, Inc., which allows Tosca to purchase all of the stock in Red Hills Copper, Inc. over a five-year period. On May 14, 2011, Tosca initiated a core drilling program at Red Hills and has drilled 31 holes totaling 16,294ft to date. In addition, Tosca has conducted limited surface mapping.

1.4 Drilling and Sampling

The Red Hills database used for the resource estimate includes 90 drill holes completed by previous operators and 31 drill holes completed by Tosca in 2011 for a total of 60,131ft. Of these holes, 98 were core, 20 were rotary, and three were a combination of rotary and core. Duval drilled 70 of the holes in the database. The assay data for two of the historic rotary holes were removed from the data used in the resource estimate due to concerns over significant down-hole contamination of the high-grade (>1%) copper.

Six of Tosca's holes targeted the high-grade copper mineralization located northeast of the Red Hills stock, of which one intersected 65ft averaging 6.9% Cu, but the remaining five encountered only thin, isolated intervals with more than 1.0% Cu. The remaining 25 holes intersected the near-surface copper blanket in the west, north, and southeastern portions of the deposit. Eight of these latter holes were extended to vertical depths of up to 1,300ft to target the underlying molybdenum mineralization. Tosca's drilling confirms the historic drill results within the copper blanket and also provides evidence for significant mineral potential within the deeper molybdenum mineralization.

Fourteen of Tosca's holes were drilled as twins of historic core and conventional rotary drill holes.

1.5 Mineral Processing and Metallurgical Testing

METCON conducted a froth flotation study on seven composite core samples from Tosca's 2011 drilling at Red Hills, using assay rejects. Total copper head grades in five of the samples ranged from 0.16 to 0.78 percent; the head grades in two samples were below the detection limit of 0.001 percent. Molybdenum head grades ranged from 0.0041 to 0.0963 percent. Bulk locked-cycle flotation testing yielded copper and molybdenum recoveries averaging approximately 61 percent and 86 percent, respectively.

Comminution testing by METCON on one composite sample yielded an abrasion index of 0.1819, a crusher work index of 6.85 kW-hr/ton, a rod mill bond work index of 12.90 kW-hr/ton, and a ball mill bond work index of 14.26 kW-hr/ton.

1.6 Mineral Resource Estimate

The mineral resource estimate is based on drill information provided to MDA by Tosca; the database used for the estimate is current as of November 4, 2011. The resource estimate discussed in this section was finalized on February 15, 2012. No estimate of mineral reserves has been made for this report.

The copper and molybdenum resources at Red Hills were modeled and estimated by evaluating the drill data statistically, utilizing the geologic interpretations developed by Tosca and MDA to interpret mineral domains on 29 cross sections spaced at 100ft intervals, rectifying the mineral domain interpretations on longitudinal sections spaced at 20ft intervals, analyzing the modeled mineralization statistically to establish estimation parameters, and interpolating grades into a three-dimensional block model. Lithology, oxidation, and copper and molybdenum mineral-domain models were created for the Red Hills project. All modeling of the Red Hills resources was performed using Gemcom Surpac® mining software.

The stated resource is fully diluted to 20ft by 20ft by 20ft blocks and tabulated on a molybdenum-equivalent ("MoEq") grade cutoff that is reasonable for deposits of this nature and for the expected mining conditions and methods. The block dimensions were chosen as practical sizes for open-pit mining a deposit of this kind.

Molybdenum-equivalent ("MoEq") cutoffs were utilized in the tabulation of the resources, with the molybdenum-equivalent grades calculated as follows:

$$MoEq\% = Mo\% + (Cu\% * 0.1806)$$

This formula is based on 1) prices of US$14.00 per pound molybdenum and US$3.25 per pound copper, and 2) metallurgical results that suggest molybdenum recoveries of about 90 percent and copper recoveries of about 70 percent.

The Red Hills reported resources are presented in Table 1.1.

Table 1.1 Red Hills Molybdenum and Copper Reported Resource

Class	Cutoff (%MoEq)	Tons	%MoEq	%Mo	lbs Mo	%Cu	lbs Cu
Indicated	0.025	26,740,000	0.080	0.054	28,700,000	0.14	77,398,000
Inferred	0.025	263,840,000	0.056	0.051	268,450,000	0.03	151,349,000

There are no Measured resources at Red Hills at this time, due to a) the limited QA/QC and density data, and b) some geologic uncertainties as to spatial location and grade distribution. Indicated resources are limited to a) using only the surveyed drill holes, which includes all 2011 drill holes and 21 historic drill holes, and b) blocks with elevations above 3,600ft (an approximate depth of 500ft) due to the sparse drilling below this elevation. All other resources are Inferred due to the issues noted above plus some uncertainty in historic drill-hole locations and the lack of original assay data for the historic drilling.

There are no classified resources outside of the current land boundary. In consideration of the depth limits to any potential open-pit mining, the Red Hills resource was constrained to a bottom elevation of 2,800ft, approximately 1,200ft below the surface. All material below this elevation was not classified and is therefore not included within the current resource.

The current resource includes material that is in close proximity to the current land boundary. Recent agreements between Tosca, Red Hills Copper, Inc., and the adjoining property owner indicate that there is a reasonable expectation that Tosca will be able to secure surface rights to the adjoining property. Accordingly, MDA allowed the inclusion into the current classified resource of all material within their current land boundary.

The copper resource is fully contained within the near-surface copper blanket, and there is a significant tonnage of molybdenum-only material in the resource. The low copper grades within the total Red Hills resource result from the "spreading" of the copper over the full resource. If the copper mineralization is evaluated from a copper-only standpoint, the copper resource at a 0.15% Cu cutoff grade (comparable to a 0.027% MoEq cutoff grade) contains an Indicated resource of 8,040,000 tons of 0.35% Cu (56,400,000lbs Cu) and an Inferred resource of 12,720,000 tons of 0.25% Cu (63,400,000lbs Cu).

The molybdenum and copper mineralization is open to the south under post-mineral cover, and it is expected that additional drilling will increase the size of the resource. Additional infill drilling is recommended to bring greater confidence to the interpretation of the molybdenum mineralization and increase the resource classification. Additional specific gravity measurements are recommended to better define the modeled density and provide increased confidence in the tonnage estimates.

1.7 Conclusions

The Red Hills is a porphyry molybdenum deposit overprinted with a near-surface zone of copper enrichment. Molybdenum grades of greater than 0.05% Mo occur over a vertical thickness of over 2,000ft in the core of the porphyry deposit. Copper grades are more variable within the enrichment blanket, though a consistent horizon of 0.15% Cu to 0.05% Cu occurs over a significant portion of the deposit.

MDA has reviewed the project data and the drill-hole database and has visited the project site. MDA believes that the data provided by Tosca, as well as the geological interpretations derived from the data, are generally an accurate and reasonable representation of the Red Hills deposit.

The Red Hills deposit contains both Indicated and Inferred resources, with the great majority of the deep molybdenum classified as Inferred. All of the current resource is on Tosca land. The stated resources are constrained by a bottom elevation of 2,800ft, which is at an approximate depth of 1,200ft below surface. Existing agreements indicate that Tosca has a reasonable expectation of acquiring the adjacent property, so Tosca should have the ability to fully access the current resource.

The molybdenum and copper mineralization is open to the south under post-mineral cover, and it is expected that additional drilling will increase the size of the resource.

1.8 Recommendations

MDA believes that additional drilling is needed to upgrade the previously defined copper and molybdenum mineralization and to explore for additional porphyry molybdenum mineralization at depth and along the southern extension of the deposit; the latter target represents a significant opportunity to expand the current resource.

Thirty holes for a total of about 60,000ft are planned. It is expected that the proposed drill program will allow for a resource classification of Indicated for a significant portion of the deep porphyry molybdenum mineralization. The upper portions of many of these holes will also serve to upgrade and potentially expand the copper enrichment blanket.

A preliminary economic assessment is currently underway and will be completed in early 2012. Upon positive results, Tosca should proceed to feasibility-level studies that can be undertaken concurrently with the proposed 2012 drill program.

This proposed drilling, feasibility-level studies, additional metallurgical test work, and other ancillary tasks are estimated to cost $5.5million.

2.0 INTRODUCTION

Mine Development Associates ("MDA") has prepared this updated Technical Report on the Red Hills copper and molybdenum project, Presidio County, Texas at the request of Tosca Mining Corporation ("Tosca"), a Canadian-based company listed on the TSX Venture Exchange. Porphyry molybdenum and near-surface copper mineralization is associated with Laramide latite and quartz monzonite intrusions that form the Red Hills stock.

This report and the resource estimate have been prepared in compliance with the disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101 ("NI 43-101"), Companion Policy 43-101CP, and Form 43-101F1, as well as with the Canadian Institute of Mining, Metallurgy and Petroleum's "CIM Definition Standards - For Mineral Resources and Reserves, Definitions and Guidelines" ("CIM Standards") adopted by the CIM Council on November 27, 2010.

2.1 Project Scope and Terms of Reference

The purpose of this report is to provide an updated technical summary of the Red Hills project, including the first publically reported, NI 43-101-compliant mineral resource estimate for the Red Hills deposit. This report has been prepared under the supervision of Paul G. Tietz, Senior Geologist for MDA, who is a qualified person under NI 43-101. The mineral resources were estimated and classified under the supervision of Mr. Tietz. Mr. Tietz has no affiliations with Tosca except that of independent consultant/client relationship. During the early 1980s, Mr. Tietz worked for Gold Fields Mining Corporation while the company was engaged in a joint venture with Duval Corporation exploring sections adjacent to but not including the section containing the porphyry mineralization that is the subject of this report. The mineral resources reported herein for the Red Hills project are estimated to the standards and requirements stipulated in NI 43-101.

MDA staff (not Mr. Tietz) worked on pre-feasibility studies of the Red Hills copper-molybdenum project for Rio Grande Mining Company, a prior operator, in 1997.

The work conducted for this report included a site visit; data and database compilation; review of pertinent reports and data relative to the general setting, geology, project history, exploration activities and results, methodology, quality assurance, interpretations, drilling programs, and metallurgy provided to MDA by Tosca; estimation of the resource; and reporting.

MDA has relied on the data and information provided by Tosca for the completion of this report. In addition, MDA has relied upon the references cited in Section 20.0. The author's mandate was to review and comment on substantive public or private documents and technical information listed in Section 20.0. The mandate also required an on-site inspection and the preparation of this independent Technical Report containing the author's observations, conclusions, and recommendations.

Mr. Tietz conducted a site visit on April 7 and 8, 2011. During that visit, the author reviewed the geologic setting, inspected the mineralization outcropping along the historic drill roads, confirmed the location of a number of the historic drill holes, and assisted Tosca in locating the drill sites for the proposed 2011 drill holes. Mr. Tietz conducted a second site visit on August 30 and September 1, 2011.

The purpose of the visit was to review the Red Hills project drilling results, logging/sampling procedures, and geology, in preparation for the current mineral resource estimate. A limited amount of core was evaluated, while a day was spent at the project site checking drill-hole locations and reviewing the completed drill program.

MDA has made such independent investigations as deemed necessary in the professional judgment of Mr. Tietz to be able to reasonably present the conclusions discussed herein.

The Effective Date of this report is February 15, 2012, which is the date of the resource estimate. The dates of other pertinent technical information are noted in the report.

2.2 Definitions and frequently used acronyms and abbreviations

Measurements are generally reported in English units in this report.

Frequently used acronyms and abbreviations

Ag	silver
Au	gold
°F	degrees Fahrenheit
ft	foot (feet)
ICP/OES	inductively coupled plasma optical emission spectrometry
in	inch
kW-hr/ton	kilowatt-hours per ton
lbs	pounds
Ma	million years
mi	mile(s)
Mo	molybdenum
oz	troy ounce (12 oz to 1 pound)
oz/ton	troy ounce per short ton
ppm	parts per million
RQD	rock quality designation
ton	short ton

Currency Unless otherwise indicated, all references to dollars ($) in this report refer to currency of the United States.

3.0 RELIANCE ON OTHER EXPERTS

The author is not an expert in legal matters, such as the assessment of the legal validity of mining claims, private lands, mineral and surface rights, and property agreements in the United States. The author did not conduct any investigations of the environmental or social-economic issues associated with the Red Hills project, and the author is not an expert with respect to these issues.

The author relies on information provided by Tosca, by Mark Hedrick, attorney with the firm of Kemp Smith in El Paso, Texas, and by Ellyson Abstract and Jeff Davis County Abstract & Title Co. as to the title of the private mineral and surface rights comprising the Red Hills project (Section 4.2). MDA relies on information provided by Tosca and by Mark Hedrick as to the terms of property agreements and the existence of applicable royalty obligations (Section 4.3). The author relies on information provided by Tosca and by Golder Associates concerning environmental issues and permitting (Sections 4.4 and 4.5). Section 4.0 in its entirety is based on information provided by Tosca, and the author offers no professional opinion regarding the provided information.

MDA has relied on Tosca to provide full information concerning the legal status of Tosca Mining Company, as well as current legal title, material terms of all agreements, and material environmental and permitting information that pertain to the Red Hills property.

MDA has relied upon Rodrigo R. Carneiro, a metallurgical engineer with METCON Research, Tucson, Arizona, for information on metallurgical testing for Tosca performed by METCON Research and described in Section 13.2of this report. Mr. Carneiro is a qualified person under NI 43-101.

4.0 PROPERTY DESCRIPTION AND LOCATION

The author is not an expert in land, legal, environmental, and permitting matters. This Section 4.0 is based entirely on information provided to the author by Tosca; sources provided by Tosca are indicated below. The author presents this information to fulfill reporting requirements of NI 43-101 and expresses no opinion regarding the legal or environmental status of the Red Hills property.

4.1 Property Location

The Red Hills property is located about 25mi by road north-northwest of the town of Presidio in Presidio County, southwest Texas (Figure 4.1). The town of Presidio lies on the Rio Grande on the border with Mexico. The Red Hills are situated on the western end of the Shafter mining district about 6.5mi west of the ghost town of Shafter. The Shafter district forms a rectangular area about 6.5mi from east to west and about three miles from north to south, with the ghost town of Shafter in the northeast part of the rectangle.

The Red Hills project lies just south of the southeastern corner of the Chinati Mountains at approximately 29.8° North latitude and approximately 104.37° W longitude. The project is located on the Chinati Peak 15-minute and Presidio, Texas, 1:250,000 topographic quadrangle maps.

4.2 Land Area

The following information on land area is current as of February 9, 2012.

The Red Hills property consists of about 2,880 acres of private land, specifically Sections 2 and 3 of Block 7 of the Houston and Texas Central Railway survey; Sections 33 and 34 of Block 7 of the Manuel Tarin survey; Sections 186 and 187 of Block 7 of the Matias Cubier survey; and Section 1 of Block A of the Houston and Texas Central Railway survey (Figure 4.2) (Jeff Davis County Abstract & Title Co., Abstractor's Certificate, 2012; Mark Hedrick, written communication, 2012; Ellyson Abstract, written communication, 2011). All but Section 33 are contiguous. Tosca has not surveyed the property boundaries and has no record of prior surveys.

The surface rights of all seven sections listed above are owned by Wyck D. Livingston (Jeff Davis County Abstract & Title Co., Abstractor's Certificate, 2012; Mark Hedrick, written communication, 2012). Red Hills Copper, Inc. holds an exploration and purchase option agreement to purchase the surface rights from Livingston (see Section 4.3.2). As described in Section 4.3.1, Tosca has an agreement to purchase all of the stock of Red Hills Copper, Inc.

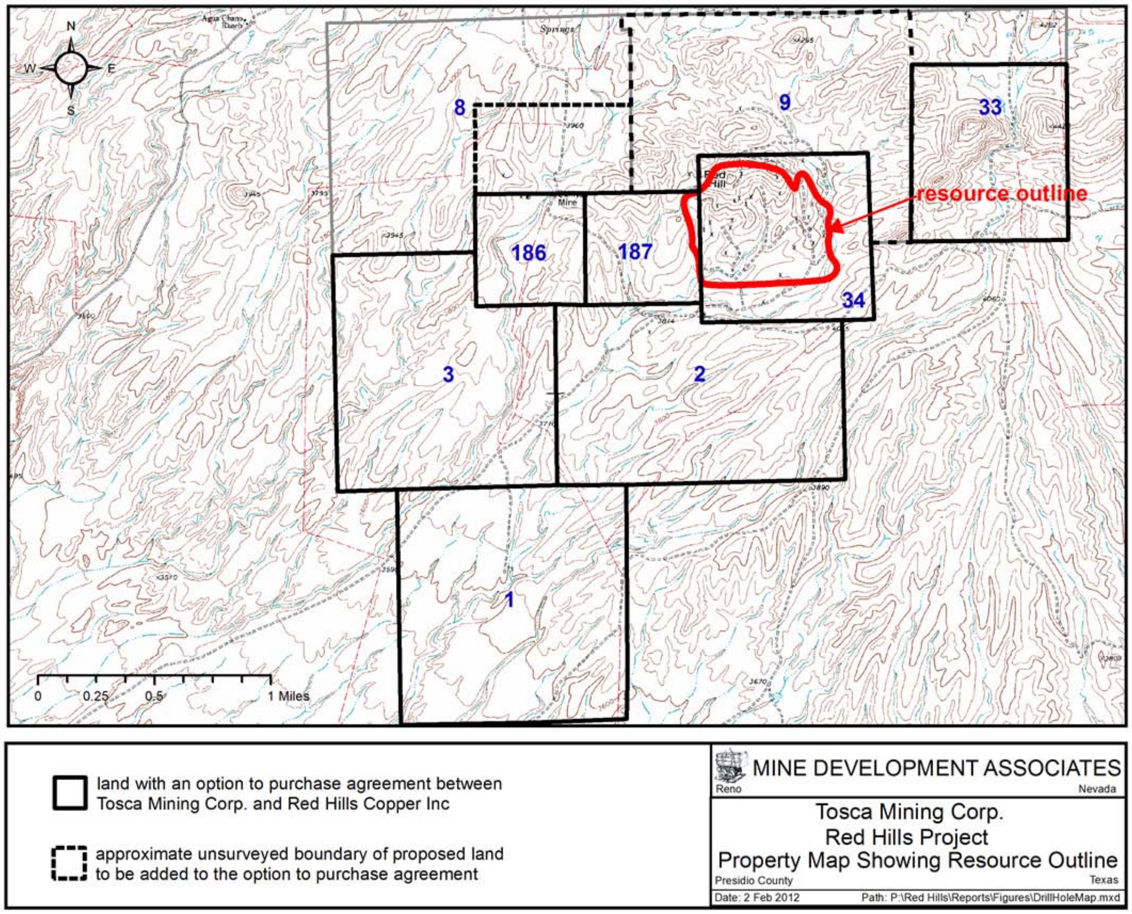
The mineral rights to Sections 2, 33, 34, 186, and 187 are owned by Red Hills Copper, Inc. (Jeff Davis County Abstract & Title Co., Abstractor's Certificate, 2012; Ellyson Abstract, 2011; Mark Hedrick, written communication, 2011, 2012). The mineral rights to Section 1 and Section 3 are owned by Wyck Livingston (Jeff Davis County Abstract & Title Co., Abstractor's Certificate, 2012; Ellyson Abstract, 2011; Mark Hedrick, written communication, 2011, 2012). As described in Section 4.3.2, Red Hills Copper, Inc. has an agreement with Livingston that includes an option to purchase the mineral rights to Sections 1 and 3. According to Mark Hedrick, an attorney with the firm of Kemp Smith in El Paso, Texas, based on his analysis of "*the title company list of recorded documents, review of some of those* *documents, and information found online regarding the history of some of the companies in the chain of the mineral title on the 5 sections for which Red Hills Copper, Inc. has claimed to have title to the minerals on the property (the other 2 sections are apparently titled to Livingston…)…this analysis would indicate the validity of Red Hills Copper, Inc's claim to the minerals*" (written communication, May 31, 2011).

The Red Hills copper-molybdenum mineralization that is the focus of this report occurs primarily in section 34, Block 7 of the Manuel Tarin survey, with a small portion extending into Section 187, Block 7 of the Matias Cubier survey (Figure 4.2).

Tosca has requested and Red Hills Copper, Inc. and Wyck D. Livingston have agreed by letter to amend their respective agreements to include approximately 660 acres comprising the west ¾ of Section 9 and the east ¼ of Section 8 of Block 7 of the Houston and Texas Central Railway survey for a term of 48 months from February 8, 2012. This additional property is shown by dashed lines on Figure 4.2.

Figure 4.1 Location of the Red Hills Project

Figure 4.2 Red Hills Project Property Map
(Land information provided by Tosca (2011); resource outline added by MDA (2012))



4.3 Agreements and Encumbrances

The information in this sub-section is current as of February 9, 2012 (Mark Hedrick, 2012, written communication via Tosca; written communication dated February 9, 2012 from Tosca).

4.3.1 Tosca Mining Corp. and Red Hills Copper, Inc.

On March 28, 2011, Tosca signed an agreement with Red Hills Copper, Inc., a private Texas Corporation, which allows Tosca to purchase all of the stock of Red Hills Copper, Inc. in return for cash payments in the amount of $10,900,000 and the issuance of 2.1 million common shares of Tosca over a five-year period, while earning an equity interest (Mark Hedrick, 2011, written communication via Tosca; www.toscamining.com/projects.html). The first commitment is due May 1, 2012 and is for $575,000 and 400,000 shares.

Red Hills Copper, Inc. retains a 2% net smelter returns royalty on the Red Hills property.

A sublease exploration agreement dated March 23, 2011 between Red Hills Copper, Inc. and Tosca allows for Tosca's entrance to and exploration and testing of the Red Hills property. This agreement describes all of the operational aspects of the project, at least up to the time of the exercise of the option to acquire the property and the commencement of mining (Mark Hedrick through Tosca, written communication, 2011). This agreement is being assigned from Tosca to its subsidiary, Red Hills Mining Corp.

Tosca reports that in a letter from Red Hills Copper, Inc. to Tosca Mining Corp. dated February 9, 2012, Red Hills Copper, Inc. agreed to a request from Tosca to amend and modify their agreement to include approximately 660 additional acres described in Section 4.2 for a period of 48 months, subject to an annual fee of $40,000 and other terms.

4.3.2 Red Hills Copper, Inc. and Wyck Livingston

The following information was provided by Mark Hedrick through Tosca (written communication, 2011).

An Exploration and Purchase Option Agreement dated February 9, 2011 and an addendum dated March 2, 2011, between Red Hills Copper, Inc. and Wyck Livingston provides that Red Hills Copper, Inc. be allowed to lease the surface rights to the seven sections described in Section 4.2 for exploration purposes and have an option to buy all surface rights owned by Livingston as well as the mineral rights to Section 1 of Block A and to Section 3 of Block 7.

Tosca reports that this agreement requires annual payments of $170,000 to Livingston by Red Hills Copper, Inc.

Tosca reports that in a letter from Wyck D. Livingston to Red Hills Copper, Inc. dated February 8, 2012, Mr. Livingston offered to amend his agreement with Red Hills Copper, Inc. to include approximately 660 additional acres described in Section 4.2 for a period of 48 months subject to all terms of the option to purchase agreement as well as additional terms, including an additional annual payment of $40,000.

4.4 Environmental Permits

The following information on required environmental permits has been provided by Golder Associates (“Golder”) (Taylor, 2011); Golder reports that there have been no changes since their 2011 memorandum to the Texas Pollutant Discharge Elimination System regulations or to the Texas Commission on Environmental Quality Air Permit regulations that would impact mining facilities (written communication, January 18, 2012). As stated below, there are no permits required for exploratory drilling. The permits needed for future development and mining would be addressed as the need arises.

<u>Texas Pollutant Discharge Elimination System (“TPDES”) Stormwater Construction General Permit</u>
For initial construction activities, the facility will be required to obtain a TPDES Stormwater Construction General Permit. This requires filing of a Notice of Intent (“NOI”) to Discharge seven days prior to commencing construction activity. The facility will be required to prepare a Stormwater Pollution Prevention Plan (“SWPPP”) and implement a range of erosion and sediment controls and pollution prevention measures in order to qualify for coverage. The fee to file is $225 electronically and $325 for a paper NOI. Once initial construction is complete and mining development has begun, any

subsequent construction occurring during the mining phase of the project can be included in the TPDES Multi-Sector General Permit ("MSGP").

Permit preparation and approval timeframe: < 60 days

<u>TPDES Multi-Sector Stormwater General Permit ("MSGP")</u>
Prior to commencing mining activities, a MSGP for stormwater discharges must be obtained. The NOI must certify that a SWPPP has been prepared and that Best Management Practices have been implemented for control of stormwater discharges. The MSGP also requires that periodic monitoring and inspections be conducted including benchmark monitoring, routine facility inspections, quarterly visual monitoring, water quality monitoring and annual comprehensive site compliance inspections. The fee to file the NOI is $100.00.

Permit preparation and approval timeframe: < 60 days

<u>TPDES Industrial Wastewater Permit</u>
Any discharge of process wastewater to a water of the U.S. requires an individual TPDES permit. The wastewater must also meet the appropriate surface water quality standards at the point of discharge. The Texas Commission on Environmental Quality ("TCEQ") recommends that an application for a TPDES permit be submitted 330 days prior to discharging. TCEQ will conduct an administrative review followed by a technical review. After the TCEQ completes the review process, a permit is drafted and the applicant is given the opportunity to review and provide comments on the draft permit. Once any differences over requirements in the draft permit are resolved, the applicant is required to publish notice in a local and widely distributed newspaper. This public notice informs the public that a draft permit has been prepared for disposal of wastewater. The public may provide comments or request a public meeting or public hearing on the draft permit. The permit fee is $1,250 and it is anticipated that the permit process will take 9-12 months. Any appeals of the permit by third parties may extend the permitting process. This is typical when the discharge is to an impaired or special water. However, the site discharges to various intermittent washes that are not classified as impaired. The specific reach where the Red Hill watershed would discharge to the Rio Grande is located approximately 10-13 miles downstream. This segment of the Rio Grande has been placed on the draft 2010 303(d) list for chloride and TDS.

Permit preparation and approval timeframe: 12-18 months

<u>Prevention of Significant Deterioration ("PSD") Air Permit to Construct</u>
TCEQ requires that an air permit be obtained prior to commencing construction. Facilities that will emit greater than 250 tons per year of pollutants, including particulate matter, that are in an attainment area (an area that is currently attaining air quality standards) are required to obtain a PSD permit to construct. The permit application must include a detailed best available control technology ("BACT") review, detailed air emission modeling of on and off-site impacts and confirmation of no impacts to sensitive areas. The closest sensitive area is Big Bend National Park, which is considered a Class I air quality area, and is a high priority area protected under the Clean Air Act. The TCEQ permit review takes approximately 9-18 months, depending on the level of public comments. It is recommended that a preliminary model be run during the pre-feasibility phase of the project to determine optimal location of

the facilities and potential BACT necessary to meet air quality standards at the property boundaries and to minimize public concerns. Permit application fees vary depending on the capital cost of the project.

Permit preparation and approval timeframe: 14-24 months (including preliminary modeling)

Title V Federal Operating Air Permit

A Title V Permit to operate is required for major sources of air pollutants over 100 tons per year. For a new facility, an abbreviated operating permit application must be submitted to TCEQ. The TCEQ will then inform the applicant, in writing, of the deadline for submitting the full application. The Title V permits do not impose new limitations beyond those specified in the permit to construct, but they do require additional recordkeeping and reporting requirements and can impose additional monitoring requirements. Title V Operating Permits are valid for 5 years, after which, they must be renewed. The review period for a Title V permit is approximately 1 year. Because the facility must first receive the permit to construct, the facility is allowed to operate while the Title V permit is being processed.
Permit preparation and approval timeframe: 12-14 months

Exploration Drilling and Installation of Piezometers

Neither the State of Texas nor the Railroad Commission (which regulates uranium, lignite and coal mining) requires permits for metals mining. Consequently, there are no permits required for exploratory drilling. Furthermore, there are no permits required for the installation of piezometers to monitor groundwater elevations at the mine.

Building Permits

Building permits are typically issued by the cities within Presidio County. According to Presidio County, building permits in rural areas, including the Shafter area are issued by the County Judge. An evaluation of required permits and their review timeframes will be obtained. It is anticipated that the timeframe for building permit review and approval will be of minimal duration.

4.5 Environmental Liabilities

The following information on environmental liabilities has been provided by Golder Associates (“Golder”) (Taylor, 2011).

Golder conducted a site visit on June 8, 2011 to identify potential environmental liabilities at the Red Hills property. The site visit was led by Dr. Sadek E. El-Alfy, Tosca Mining Corporation (“Tosca”) and was attended by Tekla Taylor, R.G. and David Kidd, P.E. of Golder Associates, Inc. The Red Hills project is located approximately six miles west of Shafter in the Chinati Mountains. The mineralization is located at a summit that reaches over 4,200ft and is surrounded on all sides by undeveloped ranchland that is privately owned. Unpaved roads intersect the site and provide access to various water tanks, stock ponds, animal feeders and to the area where exploration drilling activities are presently occurring. Golder accessed the project from Highway 67 and traversed portions of the surrounding agricultural property. Observations were made of the project area and surrounding property to identify potential environmental impacts to the site. Due to the size of the property and the historical use, the assessment was limited to areas accessible by vehicle and to areas where exploration-related activities are occurring.

Based on visual observations made during our site visit and discussions with Tosca regarding current and historical activities conducted at the site, there were no environmental impacts identified. It is our recommendation that upon completion of drilling, the boreholes be capped or plugged.

Golder conducted a preliminary review of potential threatened and endangered species in the area and cultural and historical resources which could possibly impede development of the project. The Texas Parks and Wildlife Department has prepared a list of rare species that are found or have potential to be found in Presidio County. The mineralized area is located at moderate elevation and is surrounded by semi-desert mountains and hills with low desert vegetation and grasses. There are federally listed plant species and state listed reptile species that may be present in the vegetated areas; however, it is not anticipated that their habitat would be found along the slopes of the mineralized area. Confirmation of the potential for listed species and their habitats to be found near the mineralized area should be made with the local biologist and a survey conducted at the site. Should listed species be found at the project area, a plan will be required to ensure their protection.

A review of the Texas Archeological Sites Atlas was conducted to determine the potential for encountering archaeological resources in the area of the mineralization. The review concluded that there are documented prehistoric sites located in and around Pelillos Canyon, northwest of the Red Hills property and in Cibolo Creek Ranch east of the project area. With respect to historic sites, mining activities during the late 19th century and early 20th century suggest that structures may be present near the project area. Archeological surveys conducted in surrounding areas in the 1970s and 1990s yielded 76 archaeological sites. Based on the likelihood of encountering historic and pre-historic cultural resources in the project area, it is recommended that the project area be surveyed prior to any future construction. Should any resources be located, appropriate documentation and mitigation may be undertaken.

Currently, there is little groundwater data available in the area. However, the Texas Water Development Board has reported that many of the streams in the Presidio area are recharging the aquifer and that there is thought to be significant groundwater storage in the basin. Water wells are located down elevation and are producing groundwater used by the local rancher to provide water to stock and wildlife. Further review of local data and evaluation of the aquifer will be necessary to determine available yields.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access to Property

The Red Hills project is located in southwest Texas, about 25mi by road north-northwest of the border town of Presidio. Access to the property from El Paso, Texas is east via Interstate 10 to Van Horn (118mi), then southeast via US highway 90 to Marfa (78mi), then south-southwest via US highway 67 to the ghost town of Shafter (40mi), then about 5 to 6mi west to the project via a dirt/partial gravel ranch road. Presidio is 18mi south of Shafter on US highway 67.

The closest major airport is at El Paso.

5.2 Climate

The climate in this part of west Texas is arid to semi-arid, with annual rainfall of 10 to 12in (Peterson, 1973). Rainfall occurs primarily in July, August, and September as torrential cloud bursts. Serious droughts occur about every 10 years.

High temperatures in summer are generally in the 80s (www.wunderground.com) but can reach 120°F (Peterson, 1973), and average high temperature in winter is usually in the 50s (www.wunderground.com). The low in winter averages in the 20s but can reach 0°F (Peterson, 1973).

Exploration and mining can be conducted on the property year round.

5.3 Physiography

The property is situated on the slopes above the Rio Grande valley on the south side of the Chinati Mountains (Figure 5.1). The Red Hills are situated at about 4,000ft in elevation. Maximum relief in the area is 5,200ft between Chinati Peak (7,730ft) and Presidio (2,550ft).

Cibolo Creek is the major perennial stream in the area, which feeds into the Rio Grande at Presidio.

The main vegetation of this rugged high-desert terrain is cactus and succulents.

Figure 5.1 Physiography of the Red Hills and Vicinity

Red Hills in center of image, with the Chinati Mountains to the north (right).

5.4 Local Resources and Infrastructure

Presidio, Texas, is the nearest population center and a source of supplies and labor, with an estimated population of 7,400 in 2009.

Water is available on adjoining properties. As of 1997, Rio Grande Mining Company (1997c) had reported that water is available from the mine shaft on the Shafter silver property, which is not controlled by Tosca, about 4.5mi east of the Red Hills.

West Texas Utility’s 69KV transmission lines serve the Shafter silver property (Rozelle and Tschabrun, 2008).

As shown on Figure 4.2 and discussed in Section 14.0, the mineral resource lies close to the northwestern property boundary of Section 34. Additional land would be required in order to access all of the known mineralized material. Recent agreements between Tosca, Red Hills Copper, Inc., and the adjoining property owner indicate that there is a reasonable expectation that Tosca will be able to secure surface rights to the adjoining property.

6.0 HISTORY

The following history of the Red Hills project has been taken from Rio Grande Mining Company (1995, 1997a, 1997c, 1998c), Peterson (1973), Rozelle and Tschabrun (2008), Smith (2011), Naylor (1982b), Balfour Holdings Inc. (2000), and Tosca's website, with information from other references as cited.

The Shafter mining district in west Texas was first explored in 1880, and silver production began from the Mina Grande deposit in 1883. The American Metal Co., subsequently merged with Climax Molybdenum Company to form American Metal Climax, Inc. ("Amax"), acquired the Shafter property in 1926 (throughout the rest of this report, Amax will be used to refer to American Metal Co. as well as American Metal Climax, Inc.). Gold Fields Mining Corporation ("Gold Fields"), formerly known as Azcon Corp., acquired the Shafter property from Amax in 1977 and discovered the Shafter silver deposit, the down-dip extension of the previously mined Presidio mine, during exploration between 1977 and 1982. In addition to their work at the Presidio mine, Gold Fields conducted regional mapping and drilling between Shafter and the Sullivan mine, located 1,500ft to the west of the Red Hills, and identified scattered occurrences of silver, zinc, and gold mineralization within the Shafter district. Gold Fields ended their exploration in the Shafter district in April 1983. The Shafter silver deposit is now held by Aurcana Corp.

Most of the production of the mines in the Shafter district was of lead, zinc, and silver; the Presidio mine was the area's only large mine. The Presidio produced two million tons of silver-lead-zinc ore from 1880 to 1943 (Peterson, 1973); reportedly the mine yielded 35.92 million ounces of silver at an average grade of 15.4oz Ag/ton, of which about 84% of the silver (30.29 million ounces) was recovered after processing in the local Shafter mill (Rio Grande Mining Co., 1998a). Gold Fields identified a silver "resource" at the Shafter silver deposit adjacent to the Presidio mine of 29.68 million ounces of silver with a grade of 7.6oz Ag/ton at a cutoff of 3oz Ag/ton plus a "potential open-pit resource" of about 3 million ounces of silver averaging about 6oz Ag/ton (Rio Grande Mining Co., 1998a). The Red Hills mine in the southwest-central part of Section 34, Block 7 in the western part of the Shafter district produced two carloads of malachite and azurite and was the only area of the Shafter district where copper minerals were mined (Peterson, 1973).

The Red Hills project lies on the western end of the Shafter district, about 5mi west of the Presidio mine. The various previous operators in the Red Hills area have held mineral and/or surface rights to somewhat differing packages of land parcels in and around the Red Hills. The description below does not discuss the specific land holdings of each operator, but with the exception of Gold Fields, each operator has held Section 34, which is where most of the porphyry copper-molybdenum mineralization that is the focus of this report is located.

Phelps Dodge Corp. ("Phelps Dodge") reportedly discovered and began evaluation of the Red Hills stock in the 1950s. American Smelting and Refining Company ("ASARCO"), Phelps Dodge, Amax, and Duval Corp. ("Duval") explored the Red Hills between 1955 and 1983, primarily focused on exploration for a porphyry copper deposit. ASARCO drilled 12 holes in the Red Hills in January-July 1955. Phelps Dodge undertook geologic mapping, geochemical sampling, induced polarization ("IP") and resistivity geophysical surveying, and vertical magnetic intensity surveying at Red Hills in the 1960s. They drilled three holes north and east of the main area of mineralization in 1965, of which only two (RH-1 and RH-2) are within the current boundaries of Tosca's property. In 1966, Amax leased the property and drilled one deep hole within the south-center portion of the deposit in January-February 1967. Amax dropped their leases in March 1967.

In 1970 and 1971, Duval leased the Red Hills property and subsequently purchased the mineral rights to five of the current seven sections in May 1976. Duval referred to the project as the Hinton project. The Red Hills porphyry deposit is located in Section 34, and almost all of Duval's exploration work was in that section. Duval drilled 70 holes into the Red Hills stock and outlined the copper-molybdenum porphyry zone in 1971 to 1973. In addition, Duval conducted a regional exploration program with geochemical, magnetic, and IP surveying to search for other mineralized zones. Peterson (1973) reported that IP surveys performed by both Phelps Dodge and Duval identified the same anomaly which is located in the same area as Duval's geochemical anomaly. The main IP anomaly is elliptical with the long axis trending east-southeast. Duval's IP survey consisted of 5,800 feet of line with a 200ft dipole spacing in the vicinity of DDH 31. Duval personnel carried out the survey. One line was oriented north-south, while a second line ran N82°W (Anon., 1975). Duval's resistivity profile indicated bedding, while profiles of metal factor and frequency effect showed weak sulfide anomalies, but the anomalies did not correspond to the better copper mineralization shown by drilling (Anon., 1975). Duval conducted a vertical intensity magnetic survey along three lines in the same general area as their IP survey. The profile of magnetic values was relatively flat except for skarn contacts, and there was no observed correlation of magnetic values with sulfide mineralization (Anon., 1975). Duval also conducted detailed chip sampling of mineralized outcrops of Permian sedimentary rocks to the east and west of the Red Hills stock, which outlined zones of gold and silver anomalies. Out of 28 samples, 18 had values ranging from 0.005oz Au/ton to 0.33oz Au/ton; six had silver values ranging from 2oz Ag/ton to 21.2oz Ag/ton. The mineralization was generally just below the Permian/Cretaceous contact, often associated with igneous sills.

More than 250 geochemical samples had been taken over the Red Hills porphyry deposit located in Section 34 as of 1975 (Anon., 1975). All samples were analyzed for copper and molybdenum, and selected samples were analyzed for lead and zinc. Several samples were also assayed for gold and silver with no significant results (Anon., 1975). However, because of the varied rock types and extensive leaching, the geochemical values were difficult to interpret (Anon., 1975). There appeared to be a better correlation between the molybdenum geochemical values and the drill results than with copper (Anon., 1975). Molybdenum is generally zoned toward the center core of the Red Hills stock. Lead and zinc increase outward from the center core of the stock, with the highest values near the contact, associated with skarn mineralization.

Gold Fields and Duval participated in a joint venture from April 1980 to March 1983, which included exploration in the Red Hills area; Gold Fields was the operator (Fitz-Gerald, 1983; Naylor, 1982b; Whitney, 1982a; Helming, 1983; operating agreement of the joint venture). The joint venture did not include Section 34 that was controlled by Duval and that contained the porphyry mineralization but covered sections south, west, and east of Section 34. Gold Fields was primarily interested in the precious-metal potential of the Shafter district. Gold Fields staff undertook both surface and subsurface mapping and sampling in 1982, including the Sullivan mine area to the west of the Red Hills (Whitney, 1982b; Naylor, 1982a; Russell, 1982, 1983a). Handwritten notes on an assay certificate from Skyline Labs, Inc. indicate that Gold Fields sampled the Red Hills porphyry in 1982. Soil sampling identified anomalous lead and zinc and weakly anomalous silver in soils in Section 33, east of the Red Hills stock, and in Section 187, west of the stock but east of the Sullivan mine. Rock samples taken from prospect pit dumps and mineralized fractures in both these areas found anomalous gold, silver, lead, and zinc. The joint venture ran two north-trending gravity profiles – one over the Red Hills stock and one just west of Section 34 – in October 1982 in an attempt to define the lateral limits of the stock under the Quaternary gravels. However, the stock did not offer enough of a density contrast with the surrounding Permian sedimentary rocks to be able to define it by gravity surveying (Naylor, 1982b).

The joint venture engaged EM Technology of Boulder, Colorado, to conduct controlled-source AMT (audio-magneto tellurics) surveys in the Shafter and Red Hills areas in early 1983 (Helming, 1983; Knox, 1983). The AMT method produced an anomaly that was generally coincident with the Shafter silver deposit, and subsequent surveys were conducted over large tracts of Duval and Gold Fields land in the Red Hills area. Six north-south lines were run across Sections 33, 34, 186, 187, and 2. MDA has no information on the results of this surveying in the Red Hills.

A resistivity survey was run across the Livingston Ranch property in early 1983, including two north-south lines run over the Red Hills (Russell, 1983d). MDA has not seen the results of this work.

The joint venture drilled 12 holes primarily south and west of the Red Hills but within the current property boundaries in late 1982 and early 1983. Several of these holes targeted the Sullivan mine west of the Red Hills, which contains silver, lead, and gold mineralization in high-grade veins, in the hopes of encountering mineralization within the Mina Grande Formation, but only weak silver mineralization was found with some zinc (Russell, 1983a, 1983b, 1983c). Holes were drilled along the southern margin of the Red Hills to test the buried contact of the Mina Grande limestone with the Red Hills porphyry; results were poor due to great gravel thicknesses as well as strong silicification of the intrusion (Kastelic, 1983). These Gold Fields/joint venture holes are not in the current project database.

Gold Fields dropped their lease and purchase option for the surface rights in March 1983 and also terminated their joint venture with Duval in March 1983.

Duval ran five ground magnetometer survey lines at the Red Hills in 1983 using the Unimag II, but they were not found to be helpful in locating drill holes (Helming, 1983). Duval also drilled an additional four holes in Section 34 during 1983, apparently seeking precious-metal-bearing contact metasomatic or manto-type deposits (Helming, 1983). Although this drilling failed to find precious-metal mineralization, the 1983 drilling near the intrusive-sedimentary rock contact in the southeast corner of Section 34 encountered 70ft of chalcocite enrichment from 120 to 190ft, averaging 0.47% copper, in DH-68 (Helming, 1983).

A total of 89 holes were drilled in the Red Hills copper-molybdenum porphyry mineralization on Tosca's current property by prior operators, most of which were drilled by Duval in 1971 through 1973. This total does not include 12 holes drilled by Gold Fields on the current Red Hills property but outside the area of the porphyry mineralization, and it does not include one of Phelps Dodge's holes that was drilled outside the current property. The database used by MDA contains the 89 holes drilled by Duval, Phelps Dodge, Amax, and ASARCO, which are discussed further in Section 10.0.

Duval quitclaimed the mineral rights of the five sections comprising their Red Hills property to Gold Fields in April 1984. According to a compilation of recent mineral transactions at Red Hills by Mark Hedrick, an attorney with the firm of Kemp Smith in El Paso, Texas (written communication, 2011), Siltex Resources, Inc., who merged with Belcor, Inc. in late 1993 or early 1994, acquired the mineral rights from Gold Fields in July 1994. These transactions dealt with the five sections of mineral rights currently held by Red Hills Copper, Inc., including Sections 34 and 187, where the porphyry copper-molybdenum mineralization is located.

Rio Grande Mining Company ("Rio Grande"), a subsidiary of Belcor, Inc., acquired all of Gold Fields' mineral holdings (Ellwood, 1996) in October 1994 and acquired the surface rights to 16,871 acres on the Livingston ranch, including the surface rights to the Red Hills project, through an exploration and purchase option agreement from the owner of the private ranch land in April 1998 (Balfour Holdings Inc., 2000); that agreement also included the Shafter-Presidio mine area. No work had been done on the Red Hills since 1983. After purchasing the Red Hills files and drill logs from Penzoil in 1995, Rio Grande conducted pre-feasibility studies to determine the viability of extracting the shallow copper mineralization at Red Hills in 1997 (Rio Grande Mining Co., 1997a, 1997b, 1997c, 1998a, 1998b; 1998c; 1998d; 1998e) and prepared "resource" estimates (now historic) of this mineralization that are described in Section 6.1.

In 1997, Rio Grande took samples from around Duval's drill holes 24 and 52 (Burgess, 1997b). Duval had apparently blasted and bull-dozed an exposure about 60ft along the drill road that exposed fresh mineralization. The drill log for hole 52 indicated high-grade copper-molybdenum mineralization beginning at the surface. About 100lbs of hand-samples along the exposure that exhibited chalcocite and oxide copper mineralization were taken from the exposure at hole 52. Samples from the vicinity of hole 24 included one taken about 60ft south of the collar consisting of soil and rock pieces and one taken about 90ft south that was collected from a highly oxidized outcrop; no copper was visible in either sample. These samples were sent to Kappes, Cassiday & Associates in Reno, Nevada, for metallurgical testing (Kappes, Cassiday & Associates, 1998), the results of which are described in Section 13.0.

Other than the sampling for metallurgical test work, Rio Grande did not undertake any exploration or drilling of the Red Hills property.

Silver Assets, Inc. acquired Belcor, Inc. and its subsidiary, Rio Grande, through a number of stock transactions in 1996, 1999, and 2002. Silver Assets, Inc. was acquired by Silver Standard Resources Inc. through stock purchases in 2000.

In February 2008, Red Hills Copper, Inc., a Texas corporation, acquired the mineral rights to five of the sections (Sections 2, 33, 34, 186, and 187) at Red Hills from Rio Grande (Mark Hedrick, written communication, 2011).

In March 2011, Tosca signed an agreement with Red Hills Copper, Inc., which allows Tosca to purchase all of the stock of Red Hills Copper, Inc. over a five-year period (see Section 4.3.1). Tosca's exploration of the property is discussed in Section 9.0.

6.1 Historic Mineral Resource and Reserve Estimates

All of the following estimates and their classifications pre-date NI 43-101 reporting requirements and are not known to be NI 43-101 compliant; they are presented here only as historical information. Terminology used by the authors of these reports, such as "reserves" and "resources," is shown in quotation marks and may not reflect the use of those terms as defined by NI 43-101. MDA has not verified any of these estimates described in this subsection, and the issuer is not treating these estimates as current mineral resources. These historic estimates are superseded by MDA's mineral resource estimate described in Section 14.0.

Duval had estimated that as of 1973 the Red Hills deposit contained over 5.5 million tons averaging 0.5% copper and that 21 drill holes contained drill-intervals greater than 100ft in length averaging 0.06% molybdenum (Peterson, 1973). Duval had roughly estimated that the Red Hills stock "will probably produce" about 10 million tons of 0.80% copper and 20 million tons of 0.05% molybdenum, but that included 10 proposed drill holes (Peterson, 1973). Balfour Holdings Inc. (2000) reported that Duval had outlined a "resource" of 15 to 20 million tons grading 0.35% copper with 40% carrying 0.06% to 0.12% molybdenum but gave no further details.

Rio Grande (Rio Grande Mining Company, 1995) prepared a "preliminary drill-indicated resource" estimate in November 1995. They estimated that the Red Hills deposit consists of about 25.5 million tons of copper and molybdenum mineralization, outlined by 85 drill holes drilled prior to 1980. Of this, 17.1 million tons consist of copper-bearing rock averaging 0.35% copper, of which 5.0 million tons have a grade of 0.40% copper and 12.1 million tons have a grade of 0.33% copper and 0.056% molybdenum (0.15% and 0.03% cutoff, respectively). Another 8.3 million tons, indicated down to a maximum pit depth of 350ft, consist of "overlying and/or adjacent" molybdenum-bearing rock that averages 0.07% molybdenum (0.03% cutoff); two holes to over 1,000ft in depth had grades of 0.10% to 0.15% molybdenum. Rio Grande noted that there are an additional 2.9 million tons of "low-grade" copper mineralization averaging 0.14% copper and an additional 4.7 million tons of low-grade molybdenum mineralization averaging 0.037% molybdenum. Additional molybdenum mineralization with grades of 0.07% to 0.15% was reportedly delineated to pit depths of 400 to 500ft and lies below the copper mineralization.

Rio Grande (Rio Grande Mining Company, 1997a, 1997b, 1997c) revised their estimate in 1997 as part of an internal pre-feasibility study (Rio Grande Mining Co., 1997c) and noted the presence of a higher-grade copper core in the shallow open-pit "resource," which contains an estimated 4.8 million tons averaging 0.62% copper at an average depth of 170ft. This includes 4.63 million tons averaging 0.065% molybdenum. In addition, there are reportedly 7.9 million tons averaging 0.35% copper that comprise the remainder of the shallow open-pit resource (Rio Grande Mining Co., 1997b). These combine for a "total open pit copper resource" of 12.7 million tons averaging 0.44 % copper (cutoff of 0.20% copper) with a strip ratio of 1.7:1. Rio Grande reported a "potential drill-indicated copper resource" of 12.93 million tons averaging 0.52% copper. Strip ratios were said to range from 2 to 2.5 tons of overburden to one ton of ore (Rio Grande Mining Company, 1997c). Rio Grande also reported an "open pit reserve" of over 17 million tons averaging 0.35% copper with 38 million tons of overburden (Rio Grande Mining Company, 1997c).

Lyntek, Inc. (1997) described a possible scenario for open-pit mining and heap leaching a "reserve" of five million tons of "mineable" copper (4,789,500 tons averaging 0.62% copper) at a rate of 1.2 million tons per year with future expansion to mine an additional eight million tons of lower-grade copper mineralization, based on Rio Grande's "reserve" calculations. Their scenario included a solvent extraction-electrowinning ("SX-EW") plant to extract the copper. Rio Grande (Rio Grande Mining Company, 1997c) evaluated various options in their pre-feasibility study, focusing on shallow and higher-grade production options because the larger, deeper open-pit tonnage was not thought to be financially attractive at that time. One option included an open-pit mine with underground mining of the 6% copper zone northeast of the pit, followed by crushing and screening of material, then flotation of the fine fraction along with the underground mineralization and leaching of the oversize material. Another option assumed that all material would be crushed and leached with metal recovery by a cementation or SX-EW circuit. Rio Grande noted that significant metallurgical testing would be needed to confirm the efficiencies of these options.

7.0 GEOLOGIC SETTING AND MINERALIZATION

7.1 Geologic Setting

7.1.1 Regional Geology

The following information on the regional geology has been taken from Peterson (1973), Rozelle and Tschabrun (2008), and Gilmer *et al.* (2003).

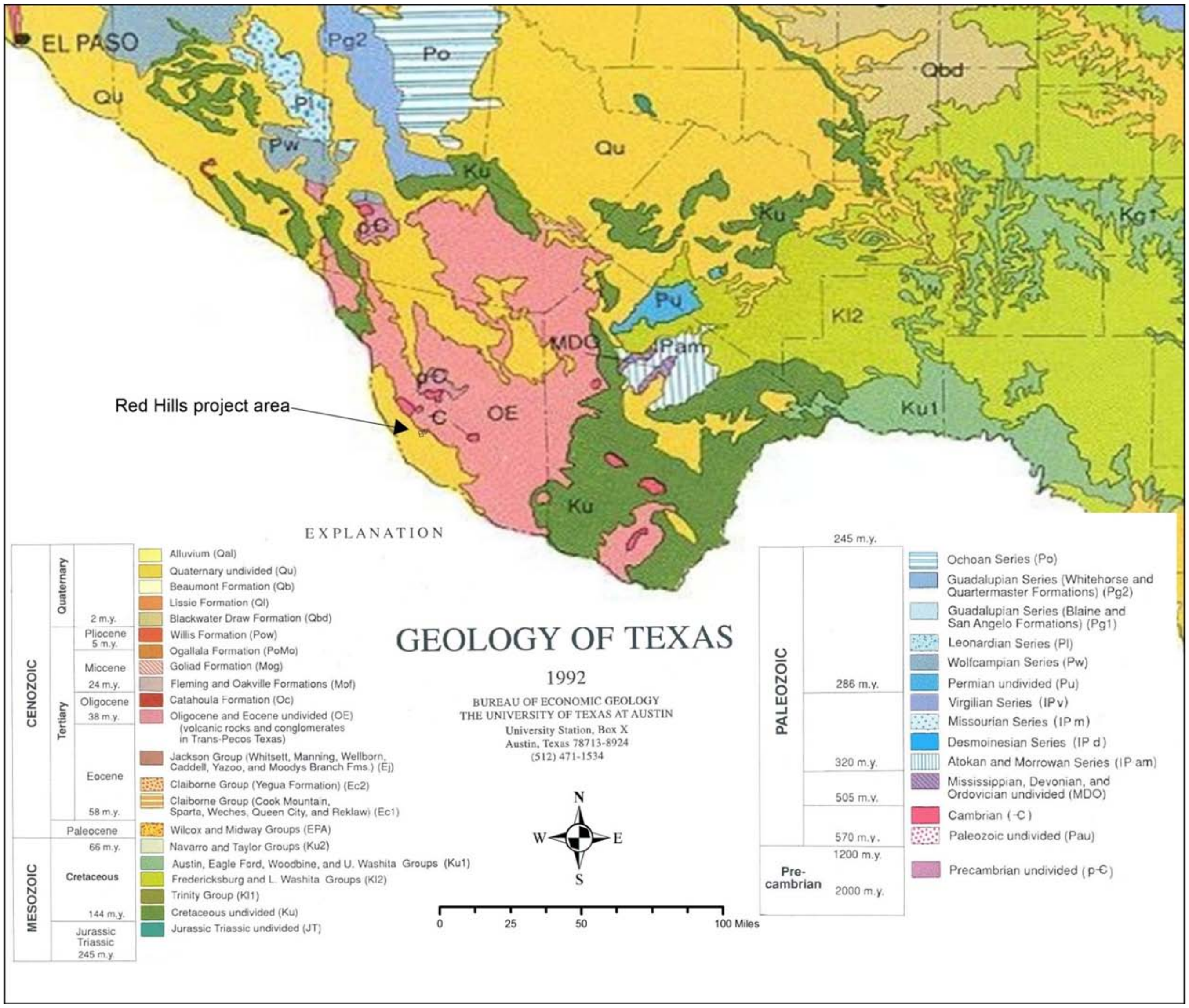
Near the intersection of the 104th meridian with the 31st parallel north of the Red Hills near Van Horn, Texas, is the junction of the Basin and Range Province to the west, the Great Plains to the east, and the Mexican Highlands to the south. The Chinati Mountains, which lie immediately north of the Red Hills, are part of the Mexican Highlands province, which is block-faulted on the west. Most of the topography within the Chinati Mountains region is controlled by gentle folds, flexures, faults, and igneous intrusions.

In southwestern Texas, a thick Jurassic-Cretaceous sedimentary basin formed on the older Paleozoic basement (Figure 7.1). The Mesozoic sedimentary basin was thrust faulted and folded during the Laramide orogeny and contains thick carbonate sequences which extend for over 1,000mi from southeastern Arizona and southern New Mexico, through northern Mexico and southwestern Texas. The thick sequence of Mesozoic sedimentary rocks represents a transgressive succession deposited during subsidence of the eastern area of the basin. The carbonate formations in the basin often exceed 10,000ft in thickness and consist of continuous sections of platform- and basin- deposited limestones with minor dolomite sequences.

During the late Cretaceous-early Tertiary Laramide orogeny, the Cretaceous rocks were folded, overturned, and cut by thrust faulting in the intensely deformed Chihuahua tectonic belt. To the east lies the relatively stable Diablo platform, where the corresponding Cretaceous rocks are flat lying. The Red Hills lie in the boundary area between the deformed Chihuahua tectonic belt and the stable Diablo platform to the east.

Between 38 and 31 Ma, magmatism generated a number of calderas in west Texas, including the Chinati Mountains caldera, that produced differentiated alkali-calcic to alkali suites of ash-flow tuffs, intra-caldera lava flows, and intrusions.

Figure 7.1 Regional Geologic Map of Southwest Texas



7.1.2 Local Geology

The following information has been taken from Rozelle and Tschabrun (2008), Ross (1943), Bogle (2000), Gilmer *et al.* (2003), Peterson (1973), and Kastelic (1983), with information from additional sources as cited.

The strata in the Shafter mining district appear to form part of a broad dome with cross-cutting faults. The oldest rock unit exposed is Permian limestone, with some interlayered shale and other sedimentary rocks. These Permian limestones and siliciclastic rocks formed in the Marfa Basin, the westernmost of three large Permian basins in west Texas. The Permian rocks are over 1,000ft thick and are subdivided into the following formations from youngest to oldest:

- Mina Grande Formation – Massive yellow, dolomitic limestone unit that is completely eroded at many places;

- Ross Mine Formation – Alternating beds of black limestone, chert, and yellow sandy shale, becoming more calcareous in the upper part;

- Cibolo Formation - Interlayered beds of limestone and clays, collapse breccia, with a unit of hard, fine yellow limestone at the top;

- Alta Formation - Shales at the base grading up into yellow sandstone at the top; and

- Cieneguita Formation - Basal unit containing shales, chert, and beds of limestone and conglomerate. Peterson (1973) describes this unit as Pennsylvanian.

Permian carbonate rocks are the main hosts for the district's silver mineralization to the east of the Red Hills.

Unconformably overlying the Permian units are the Presidio Formation, which is 450ft thick, and the Shafter Limestone, both of which are Cretaceous in age. The Cretaceous units cover much of the Permian strata and may also contain silver mineralization in places. The Presidio Formation crops out near the Presidio mine and consists of five major subdivisions, although there is considerable lateral variation in lithology and thickness of the units:

- Cap Rock Unit – 25ft to over 50ft-thick, massive, hard arenaceous limestone;

- Shell Breccia Unit – 110 to 165ft-thick, soft sandstone and arenaceous limestone;

- Tripartite Unit – over 75ft-thick, medium-bedded to massive limestone, shell breccia, and sandy limestone;

- Conglomerate Unit – 90 to 120ft-thick, sandy limestone, calcareous sandstone, and conglomerate; and

- Basal Unit - 50 to 90ft-thick clays and arenaceous limestone.

The Shafter Limestone is exposed around the town of Shafter and forms a prominent ridge southeast of Shafter. The unit rests unconformably on the Presidio Formation and is over 1,000ft thick. The Shafter Limestone consists primarily of limestone with interlayered marl and sandstone. It is less varied than the Presidio Formation, but facies changes from sandstone to limestone can be abrupt.

Overlying the Shafter Limestone unit is the Cretaceous Walnut Formation that varies from 80 to 120ft in thickness. The Walnut Formation is distinguished from the Shafter Limestone by being a more mixed unit with less limestone, a greater proportion of marl and clay, and very little sand.

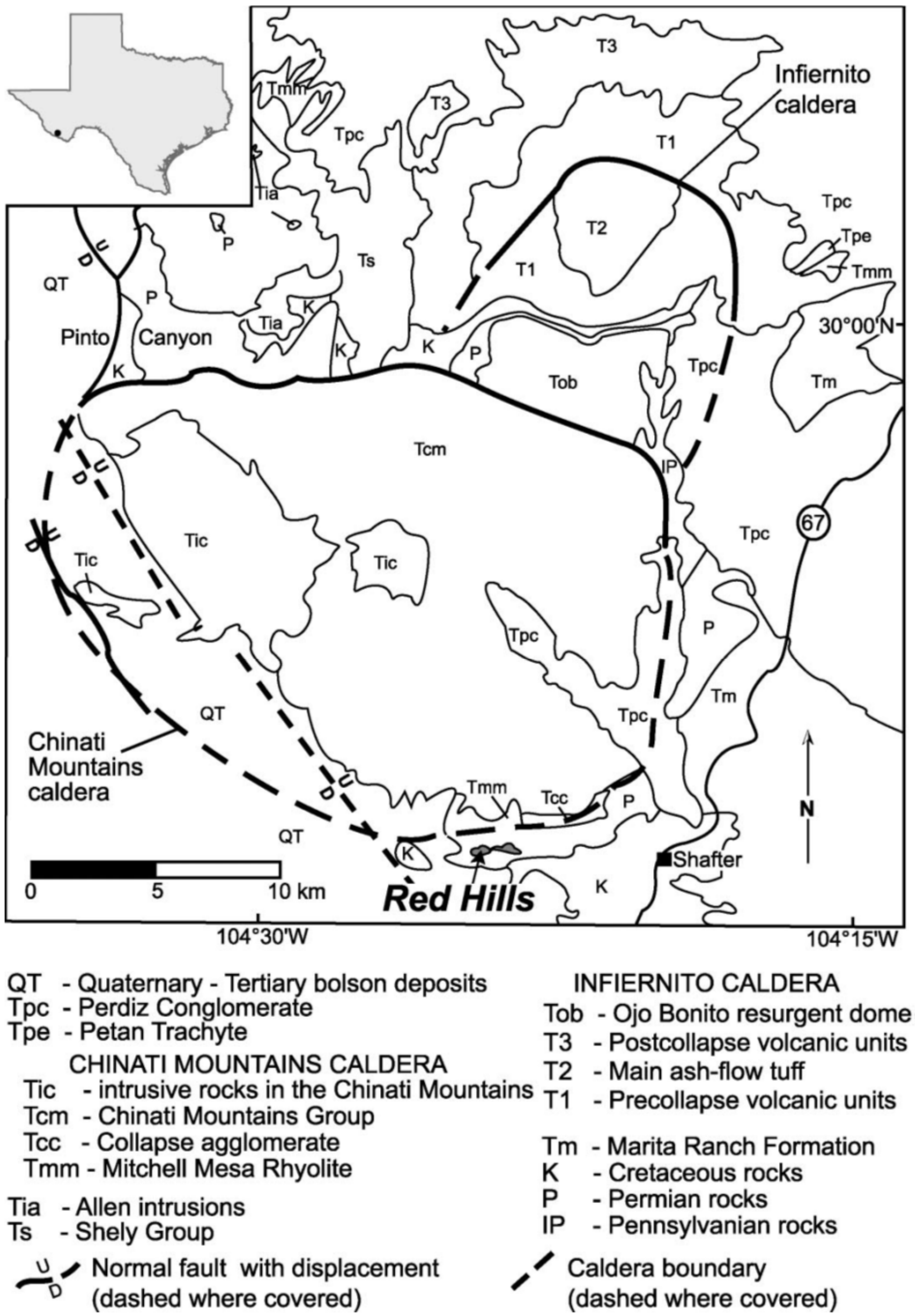
Mid-Tertiary volcanic rocks occur along the edges of the Shafter district, and intrusions of andesite and diorite occur within the district, including at the Red Hills. In the central part of the Chinati Mountains and on the plateau east of Shafter, trachyte, rhyolite, andesite, and tuffs of Tertiary age are exposed. The Chinati Mountains Group of peralkaline rhyolite and trachyte flows and tuffs of Oligocene age is almost entirely confined to the Chinati Mountains caldera. The Morita Ranch Formation, composed of basalts, rhyolite, and ash-flow tuff, lies east, south, and north of Shafter and is older than the Chinati Mountains Group. These volcanic rocks rest unconformably on the Cretaceous units and have undergone some faulting but only minor deformation.

The Chinati Mountains caldera, which has been dated at 32 Ma, was a major volcanic center that produced an alkali-calcic suite of ash-flow tuffs, flows ranging from basalt to rhyolite and trachyte, and intrusions of gabbro, alkali granite, and alkali granophyre.

Southeast of the Chinati Mountains, a circular intrusive stock variously described as hornblende-augite andesite (diorite?), quartz monzonite, monzonite, or latite porphyry occurs in the Red Hills. The Red Hills stock has been dated as 64 to 60 Ma (Gilmer *et al.*, 2003). The Red Hills lie less than a mile south of the structural margin of the Chinati Mountains caldera (Figure 7.2). However, radiometric dating has shown that the Red Hills stock is not related to the Chinati Mountains caldera but instead is part of the older Laramide magmatic arc that accompanied Laramide deformation as far east as the Trans-Pecos region of southwest Texas (Gilmer *et al.*, 2003).

As described in Section 7.1.1, this part of west Texas lies between the intensely deformed Chihuahua tectonic belt to the west and the relatively stable Diablo platform to the east. Post-Permian erosion preceded Cretaceous uplift and removed much of the Upper Permian strata before Cretaceous deposition. Cretaceous and Permian rocks south of the Chinati Mountains in the Red Hills area are locally tilted and faulted. Strata dip outward away from the Chinati Mountains caldera, probably as a result of caldera development. Normal faults of considerable displacement cut the sedimentary and igneous rocks, producing the horst and graben structure of the Chinati Mountains during the late Cenozoic. Minor shear zones and thrust faults occur along the southern boundary of the Chinati Mountains, and reverse faults are reported at the Presidio mine (Peterson, 1973). A strong set of generally east-trending, steeply dipping fractures and normal faults cuts the sedimentary rocks of the Shafter district and may be ring fractures related to subsidence of the Chinati Mountains caldera. The roughly east-trending fracture zone is mineralized sporadically along a 7mi trend including the Red Hills on the west and the Shafter/Presidio deposits on the east.

Figure 7.2 Location of the Red Hills Relative to the Chinati Mountains Caldera
(From Gilmer *et al*., 2003)



7.1.3 Project Geology

The following information has been taken from Gilmer *et al.* (2003), Peterson (1973), Whitney (1982a), and Anonymous (1975), with additional information provided by Tosca or as otherwise cited.

At the Red Hills, a circular quartz monzonite porphyry (Gilmer *et al.*, 2003) stock of Laramide age has intruded Permian limestone, sandstone, siltstone, and dolomite. U-Pb dating of zircon from phyllically altered quartz monzonite of the Red Hills stock yielded an age of 64.2 $\pm$ 0.2 Ma. Re-Os analysis of molybdenite yielded an age of 60.2 $\pm$ 0.3 Ma for the mineralizing event. A sample of sericite that had previously yielded a K-Ar age of 56.6 $\pm$ 1.4 Ma was re-purified and analyzed by $^{40}Ar/^{39}Ar$ step-heating, yielding data consistent with an age of ca. 61 Ma (Gilmer *et al*., 2003). The Red Hills stock is distinctly older than all other Tertiary (48 to 17 Ma) magmatism in the Trans-Pecos region, including the nearby 32 Ma Chinati Mountains caldera. The Laramide ages of the Red Hills stock extend the Laramide magmatic province of Arizona, southwestern New Mexico, and northern Mexico eastward and suggest that Laramide subduction-related magmatism and deformation are coextensive over a broad area of southwestern North America (Gilmer *et al*., 2003).

The Red Hills stock intrudes Permian sedimentary rocks that are overlain by the Cretaceous Presidio Formation, described in Section 7.1.2. The Permian units mapped at the Red Hills are identified as the Ross Mine Formation and the overlying Mina Grande Formation. The Red Hills quartz monzonite porphyry intrudes the limestone and clastic units of the Ross Mine Formation. The sedimentary sequence in the Red Hills area strikes nearly east-west and dips about 30° to the south.

Duval's mapping indicated that the Red Hills stock is made up of both quartz monzonite and latite porphyry (both field terms) (Helming, 1983). Duval geologists thought that quartz monzonite post-dated mineralization and that the latite porphyry was related to mineralization (Helming, 1983). Tosca's 2011 drilling indicates that the quartz monzonite can be altered and mineralized, indicating that it also is a pre- or syn-mineral intrusive phase. Pervasive hydrothermal alteration, as described below, often makes recognition of the intrusive protolith difficult.

The Red Hills stock outcrops in two areas, which have been traced to within 115ft of each other and are inferred to be contiguous beneath alluvial cover. The western part of the stock, which constitutes the Red Hills porphyry copper-molybdenum system, is extensively altered and mineralized, but the eastern part is less altered and lacks concentrations of sulfide minerals. In the western part, potassic alteration was overprinted by extensive quartz-sericite-pyrite (phyllic) and argillic alteration; there are also local zones of intense silicification in the stock. Hypogene mineralization extends to the surface in many areas, with local areas of secondary enrichment. A leached cap with oxidized iron sulfides gives the reddish colors to exposures that led to the name "Red Hills" (Figure 7.3). The unaltered stock consists predominately of quartz monzonite porphyry with minor quartz latite inclusions and associated dikes. The weakly altered parts of the stock show chlorite and epidote replacing mafic phases, suggesting some degree of hydrothermal alteration. Dikes up to about 33ft wide of quartz monzonite and quartz latite are common in the sedimentary wall rocks but are absent in the stock. Zones of intense silicification are present along roughly east-trending faults and within the stock. Alteration of roof pendants of Permian strata is very similar to that of adjacent skarn bodies.

Surface mapping by Gold Fields primarily south and west of the Red Hills indicated that latite and monzonite porphyry sills extensively intruded both Permian and Cretaceous sedimentary rocks and that less common, narrow dikes followed fractures radiating from the Red Hills system (Whitney, 1982a). The sills reached thicknesses of 200ft or more, but wall-rock alteration was either non-existent or was limited to garnetiferous skarns and marbleized zones 3 to 5ft in thickness. Alteration is mostly moderate to locally intense argillic with weak silicification/sericitization in the southeast portion of Section 34. Post-mineral volcanic and diabase dikes were mapped in the southeast part of Section 34 (Helming, 1983).

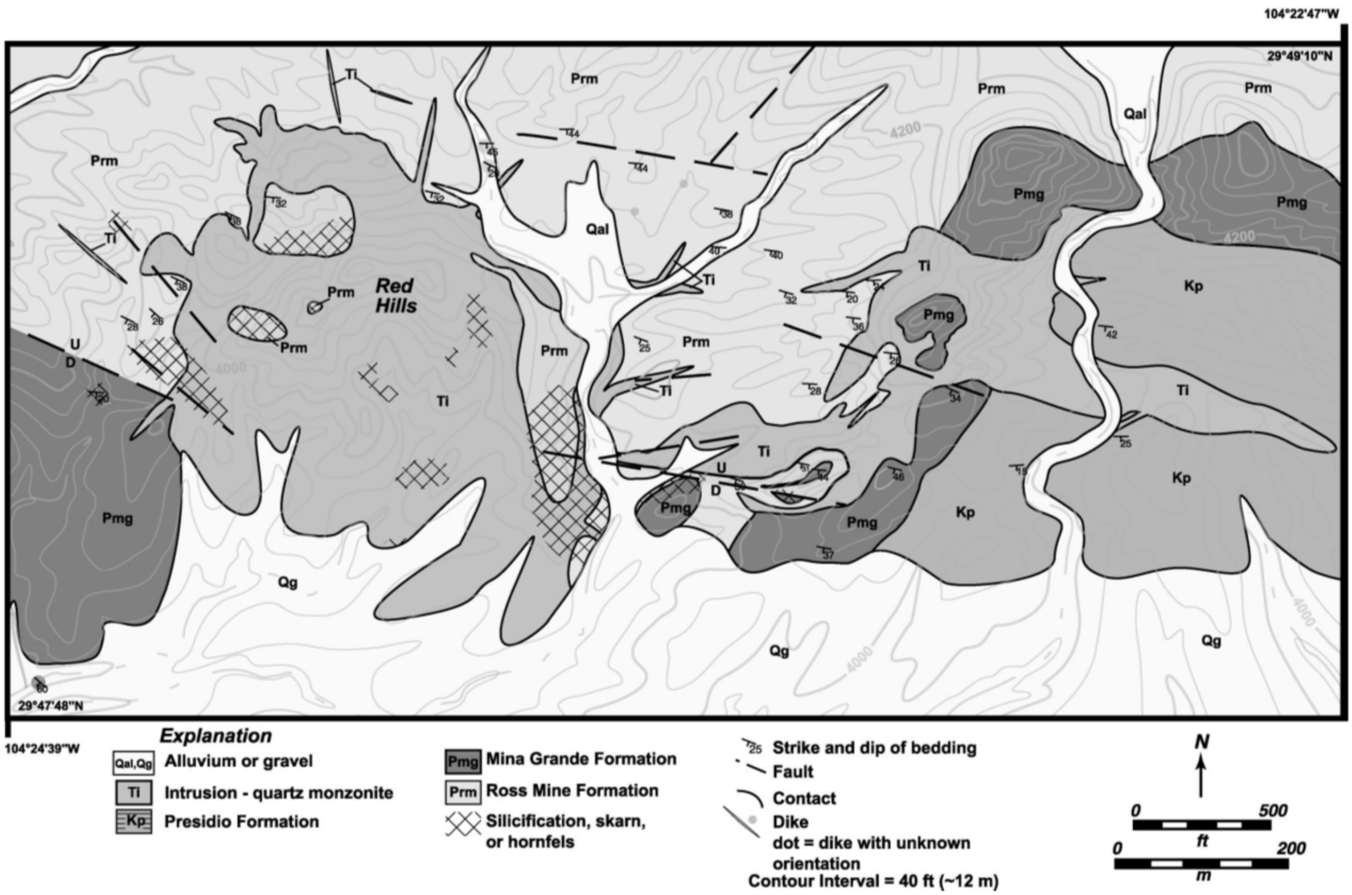
Faults, joints, and veins are roughly parallel and are oriented east-west. Many of the faults appear to post-date the emplacement of the Red Hills porphyry and show local dip-slip offset.

Jasperoids were mapped in the southeast corner of Section 34 by Duval, but other geologists had mapped them as skarn (Helming, 1983). They vary in texture, color, and structure and commonly show relict breccia zones. Occasional small patches of gossan in the jasperoids have yielded strongly anomalous base-metal values, but precious-metal values are generally low for both gossan and jasperoid. Helming (1983) noted that the absence of calc-silicates indicated the jasperoids in the southeast corner of Section 34 were not skarns. Ferruginous jasperoid that rarely carries copper staining or galena is sparsely distributed in the weakly altered sedimentary rocks away from the intrusive contacts (Whitney, 1982a).

Figure 7.3 Alteration Forming the Red Hills

Figure 7.4 shows the geology of the Red Hills and vicinity.

Figure 7.4 Bedrock Geology of Red Hills and Vicinity
(From Gilmer *et al*., 2003)



7.2 Mineralization

The following information has been taken from Gilmer *et al.* (2003), Price and Henry (1982), Rio Grande Mining Company (1997c), Peterson (1972a, 1972b), and Oakley (1971), with additional information provided by Tosca or MDA or as otherwise cited.

Porphyry molybdenum and near-surface copper mineralization at Red Hills covers an area about 4,000ft long (east-west) and 3,000ft wide (north-south), though the southern limit of mineralization for both metals is not well-defined and is considered to be open in this direction. The porphyry molybdenum mineralization, accompanied by only weakly anomalous copper mineralization, occurs as quartz-sulfide stockwork veins within a hydrothermally altered Laramide stock and, to a lesser extent, within slabs of intruded sedimentary rocks. Molybdenum mineralization occurs above, with, and beneath the copper mineralization; molybdenum above the copper mineralization occurs primarily as unidentified oxide mineral(s). The higher grade core of the molybdenum deposit, containing molybdenum grades ranging from 0.05% Mo to over 0.1% Mo, is associated with increased quartz-sulfide stockwork veining (see

Figure 7.5 drill core sample). The center core forms a roughly horseshoe-shaped zone, about 2,000ft in diameter and open to the south, although this shape might be a reflection of incomplete drill coverage.

Figure 7.5 Quartz-Pyrite-Molybdenite Veinlets at Red Hills

Most of the historic holes drilled within this zone were stopped at an average depth of about 430ft while still in molybdenum mineralization. Five of Duval's holes were drilled past 1,000ft in depth, all of them intersecting molybdenum mineralization from top to bottom. Duval's hole DD7 was drilled to a vertical depth of 2,106ft and averaged 0.076% Mo throughout. Eight of Tosca's drill holes targeted the molybdenum mineralization to depths of up to 1,300ft, and all eight encountered significant thicknesses of greater than 0.03% Mo mineralization. Tosca hole TMC-18 was drilled to a vertical depth of 1,199ft and averaged 0.084% Mo.

Multi-element analysis of Tosca's drill samples indicates elevated levels of rhenium associated with the molybdenum mineralization. Rhenium concentrations of 0.5-1.0 part per million were encountered over a vertical thickness of up to 500ft throughout the mineralized porphyry.

In addition to the porphyry molybdenum mineralization, there is an enriched chalcocite blanket that developed below the oxide-sulfide transition zone at depths ranging from directly below the outcrop surface to up to 300ft on the south side of the deposit. The chalcocite blanket represents a zone of supergene copper enrichment that overlies, and extends laterally away from, the porphyry system. Copper grades of 0.1% Cu to 0.5% Cu, with localized mineralization at over 1% Cu, characterize the chalcocite blanket, while the hypogene copper mineralization beneath the zone of enrichment averages less than 0.03% Cu. The major control of the chalcocite is the depth of oxidation, with localized control along sub-horizontal structures. There is only minor lithologic control because the chalcocite crosses contacts between altered sedimentary rocks and the various intrusive phases without changing its smooth, curving trend. Oxide copper minerals were observed above 100ft in depth.

Localized pyrite-chalcopyrite deposits occur as replacements of sedimentary beds in various shapes, sizes, and grade along the margin of the stock. The stock created peripheral hornfels and skarn bodies that are enriched in zinc, lead, and silver in limestones along the margins of the stock, most notably just west of Red Hills where silver-lead mineralization was produced from high-grade veins at the old Sullivan mine.

Most of the feldspar-destructive alteration associated with the unoxidized, pyritic, stockwork-veined porphyries is sericite; alunite occurs in only minor amounts (Price, 1982). However, alunite is abundant in shear zones and in zones of apparently intense supergene weathering, where it is associated with kaolinite-group minerals. Propylitic alteration occurs in pyritic porphyry about 650ft north of the main stockwork zone (Price, 1982). Skarns are present with andradite-chalcopyrite-quartz, grossularite/andradite-diopside-calcite-quartz, and diopside-tremolite-plagioclase-quartz associations.

Three distinct stages of hypogene sulfide mineralization were reported based on re-logging of ASARCO's drill holes by Duval (Metz, 1971):

- Quartz-pyrite veins with indistinct boundaries "soaking" into argillized wall rock;
- Quartz-molybdenite veins with sharp boundaries and generally microscopic molybdenite, in which pyrite is rare; and
- Pyrite veinlets with no quartz or molybdenite.

A 2011 petrographic analysis of three samples of Tosca drill core (Rossetti, 2011) indicates that molybdenite occurs as small flakes within both veinlets and altered host rocks and is evenly distributed (at the scale of the thin sections). Molybdenite is mostly related to K-feldspar-bearing veins and related potassic alteration. However, some molybdenite also occurs with K-feldspar-free veins and related phyllic alteration, suggesting that either molybdenite precipitation continued during the later phyllic stage or that molybdenite which formed during the potassic alteration stage remained stable during the phyllic stage (Rosetti, 2011).

The most important minerals found at the property are molybdenite and chalcocite. Chalcopyrite makes up a very minor part of the protore; pyrite up to 10% by volume predominates in the protore. Molybdenite occurs below the oxide-sulfide boundary as disseminated grains, in veinlets alone, with pyrite on the edges of quartz veinlets, and as paint on fracture surfaces.

Price (1982) reported the following geochemical concentrations based on limited chemical analyses of outcrop samples:

- Copper – 0.17% in sericitized stockwork-veined porphyry and 0.42% in skarn;
- Molybdenum – 0.028% in porphyry but little in skarn;
- Zinc – 0.20% in skarn but only 40 ppm in porphyry; and
- Silver – 1 ppm in porphyry and 2 ppm in skarn.

Duval intersected shallow high-grade copper mineralization in three drill holes located northeast of the porphyry stock that indicate a zone of about 100ft in thickness, vertically, with grades of 3% to 9% copper; the zone was considered to be open at the ends but very narrow (Rio Grande Mining Co., 1995; Tosca website). Hole DH36 intersected 110ft grading 9.09% copper from 70ft to 180ft in depth. Hole RD59 intersected 70ft grading 7.74% copper from 140ft to 210ft in depth. Hole RD55 intersected 80ft grading 6.8% copper from 110ft to 190ft in depth. These three holes are aligned along a northeast trend across a distance of 195ft and are situated about 300ft northeast of the main body of the Red Hills stock. Burgess (1997a) indicated that the holes appear to lie in a steeply dipping vein or shear zone trending about N55°E. Duval placed four holes on both sides of the shear zone but failed to intersect the high-grade mineralization, possibly because their holes were drilled vertically (Burgess, 1997a). Tosca targeted this high-grade zone with six core holes. One hole (TMC-03) intersected 65ft averaging 6.9% Cu, similar in tenor and thickness to the historic drill intercepts, but the remaining five holes encountered only isolated, thin (<5ft-thick) intervals of greater than 1.0% Cu. Tosca's drilling encountered a complicated mix of altered intrusive dikes/sills and hornfelsed sedimentary rock. It is not clear whether the high-grade copper is aligned along a northeast-trending structure or localized along the irregular intrusive contacts. Tonnage potential appears to be limited.

Duval investigated seven intrusive pipes located from 1,500ft to 7,500ft northwest of the Red Hills stock but found no copper or molybdenum mineralization. Three of the pipes were of latite porphyry similar to the rocks in the Red Hills stock; four pipes seemed to consist of orthoclase in a fine-grained matrix of ultramafic minerals.

8.0 DEPOSIT TYPE

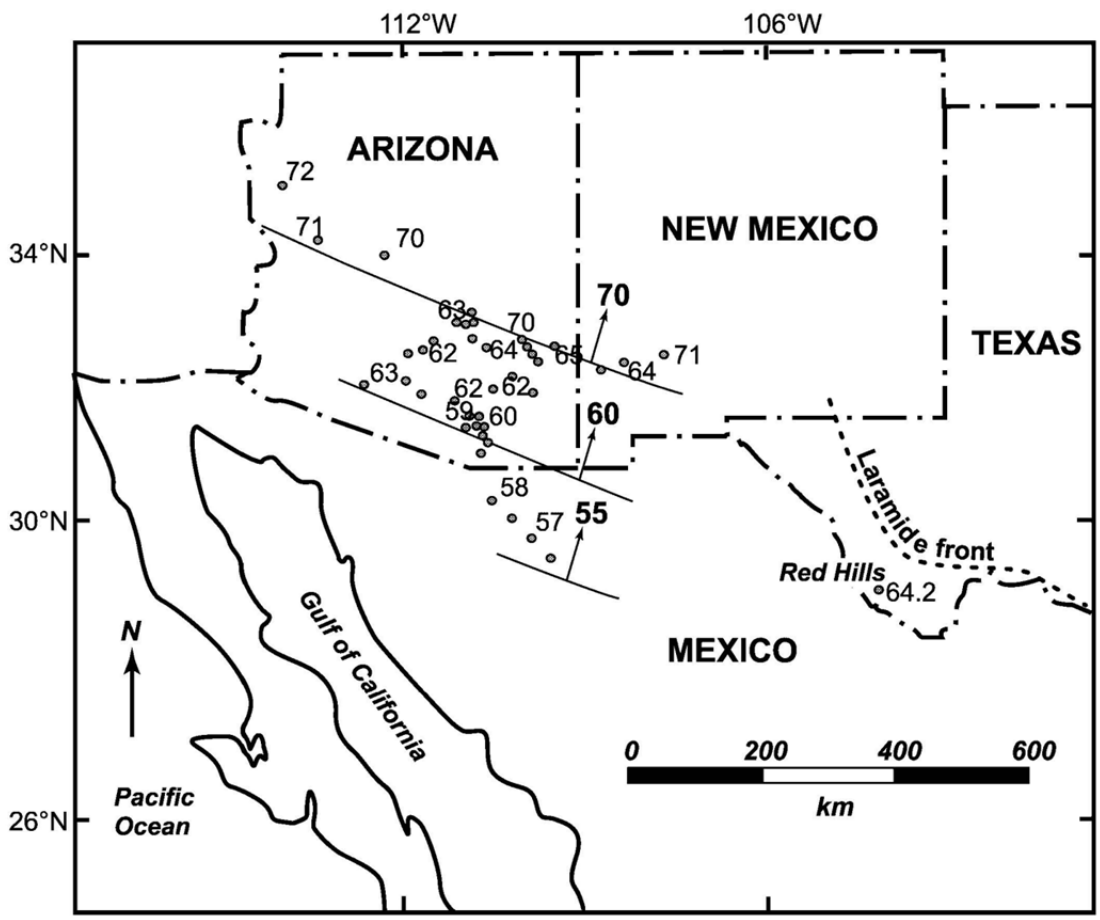
The following information has been taken from Gilmer *et al.* (2003) and Price and Henry (1982).

Porphyry copper-molybdenum deposits are the principal commercial source of copper and an important source of molybdenum and other metals. These deposits form from hydrothermal systems that deposit copper- and molybdenum-bearing minerals in stockwork fractures within subduction-related intrusions emplaced at shallow levels in the crust. A major province of Laramide (75 to 54 Ma) porphyry copper deposits lies in southern Arizona, southwestern New Mexico, and northern Mexico (Figure 8.1).

At the Red Hills, porphyry copper-molybdenum mineralization occurs within a Laramide stock and intruded sedimentary rocks. An enriched chalcocite-bearing blanket is also present.

The mineralization at Red Hills represents the easternmost porphyry copper-molybdenum system in southwestern North America, lying about 185mi east of the closest Laramide porphyry copper deposit. The Red Hills intrusive system is contemporaneous with and genetically related to other Laramide magmatic systems (75 to 54 Ma) that host porphyry copper deposits in Arizona, southwestern New Mexico, and northern Mexico.

Figure 8.1 Age Distribution of Porphyry Copper Deposits in Southwestern North America
(From Gilmer *et al.*, 2003; ages in Ma)



9.0 EXPLORATION

Exploration by prior operators is described in Section 6.0.

Tosca acquired the Red Hills property in March 2011. On May 14, 2011, Tosca initiated a core drilling program at Red Hills, and a total of 31 holes, for a total footage of 16,294ft, were completed by the end of August 2011. The purpose of this drill program was to collect samples for metallurgical testing, to verify previous drilling within the near-surface copper blanket, to provide a preliminary assessment of a high-grade copper zone discovered by previous operators, and to test lateral and deeper extensions of molybdenum mineralization. The Tosca drill details and results are discussed in Section 10.5. All of the Tosca drill data was used by MDA in the mineral resource estimate discussed in Section 14.0 of this Technical Report.

Except for limited surface mapping and the drilling, Tosca conducted no further exploration on the property.

In September 2011, Tosca contracted with PhotoSat Information Ltd (“PhotoSat”) to provide high definition, 2.5ft-contour, topographic control over the Red Hills property. Control points were located at Tosca drill collars and were surveyed by a professional surveyor (Trujillo Surveying, Alpine, TX). The control survey and resulting DEM surface and topographic contour maps are in Texas State Plane Zone 4, Texas South Central, NAD83 datum. All coordinates are in US Survey Feet. All project data, which prior to Tosca were in a local coordinate system, have been converted to Texas State Plane coordinates.

10.0 DRILLING

10.1 Summary

The Red Hills drill database includes 90 drill holes completed by previous operators and 31 drill holes completed by Tosca in 2011 (Table 10.1). MDA notes that the dates and order of the ASARCO, Phelps Dodge, and AMAX drill holes shown on Table 10.1 are as taken from drill-hole logs, but the Phelps Dodge logs were clearly not original, and there was no information to verify the date of drilling. The 1965 date of Phelps Dodge's drilling seems at odds with reports that Phelps Dodge was the first company to explore the Red Hills, but MDA cannot resolve this possible discrepancy. Phelps Dodge drilled a hole, RH-3, that lies immediately outside the current property boundary, but the drill data were included in the historic database provided to MDA by Tosca. The data for this hole were used in the geologic model, but no mineralization outside the current land boundary was included in the current resource estimate. A summary of the Red Hills drilling is in Table 10.1, while Figure 10.1 is a location map of the drill holes currently within the project database.

Table 10.1 Red Hills Drilling Summary

Company	Year	# of Holes			Footage		Total	
		Core	Rotary	Rotary/Core	Core*	Rotary	# of Holes	Footage
ASARCO	1955	12			6,592.0		12	6,592.0
Phelps Dodge	1965	3			2,181.0		3	2,181.0
AMAX	1967	1			2,912.0		1	2,912.0
Duval	1971-1973	47	20	3	24,616.0	6,184.0	70	30,800.0
Duval	1983	4			1,352.0		4	1,352.0
Tosca	2011	31			16,294.0		31	16,294.0
Total		98	20	3	53,947.0	6,184.0	121	60,131.0

* core footage includes rock bit drilling of up to 50ft of surficial material

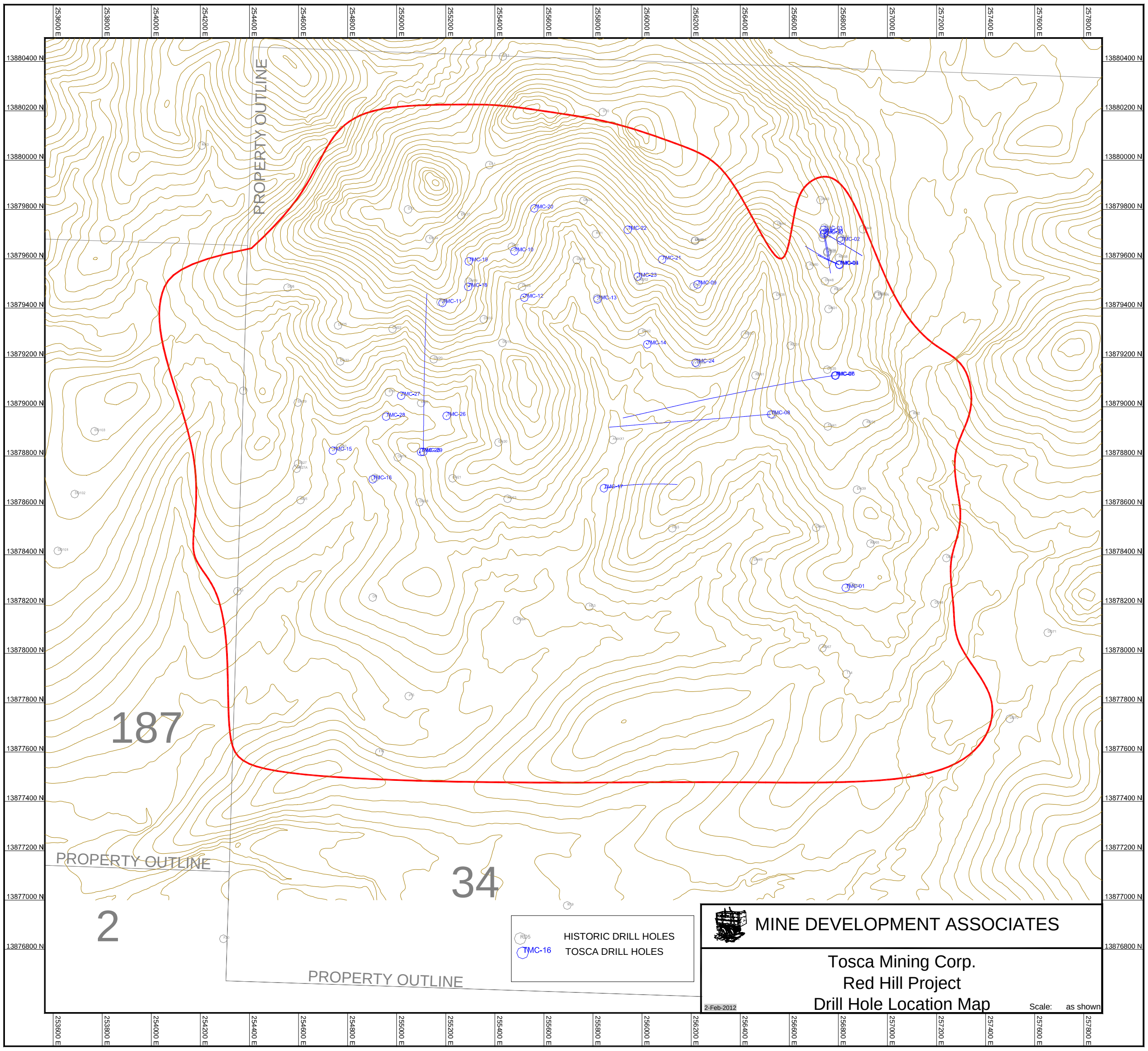
10.2 Drilling by ASARCO, Phelps Dodge, and Amax

MDA has no information on drilling contractors or rigs used by operators prior to Duval. All three companies drilled core holes and notations on the drill logs indicate that drilling was with NQ, NX, and BX-size core.

10.3 Duval Corp.

MDA has virtually no details about Duval's drill program. Drill logs indicate that Metler Brothers Drilling Co. and a company called Ellenburg were the core drill contractors in 1971 to 1972, with most holes apparently drilled by Metler Brothers. Ellenburg is shown as the driller on logs from four of the first holes drilled in 1971. Logs from Duval's 1973 rotary drilling indicated Venture Drilling Co. was the contractor. Logs for the four core holes drilled by Duval in 1983 appear to suggest that Duval may have done their own drilling. MDA found no information on the types of rigs or drill procedures used for any of Duval's holes. Core size is unknown for the majority of drilling though notations on some drill logs from the 1971 drill campaign indicate that NX-size core was used.

Figure 10.1 Location Map of Drill Holes at Red Hills
(Mineral resource outline shown in red)



10.4 Gold Fields Mining Corp.

Gold Fields drilled 12 core holes within the current Red Hills property in 1983 as part of a joint venture with Duval. Boyles Brothers was the drill contractor. Drill logs indicate drilling was with NC and NX core. The Gold Fields drilling targeted silver mineralization outside of the current copper-molybdenum resource area. None of the Gold Fields data is included within the current drill database.

10.5 Tosca Mining Corp.

Tosca contracted with Ruen Drilling of Clark Fork, Idaho, to conduct core drilling on the Red Hills project. Drilling commenced in May 2011, and a total of 31 holes, for a total footage of 16,294ft, were completed by the end of August 2011. All Tosca drilling is HQ size.

The Tosca drill core is taken to a core shed in Marfa, Texas, for logging and photographing by contract geologists employed by Tosca. The core is logged for geology, core recovery, and RQD. Sample intervals are marked in the core box and noted on a sample data sheet. Each box of core is then moistened with a spray bottle of water, and the core is photographed. MDA has received drill logs, including geotechnical data, and assay results for all Tosca drill holes.

Six holes (TMC-02 through TMC-05, and TMC-30 and TMC-01) were drilled targeting the high-grade copper mineralization located northeast of the Red Hills stock. The remaining 25 holes intersected the near-surface copper blanket in the west, north, and southeastern portions of the deposit. Eight of these latter holes were extended to vertical depths of up to 1,300ft to target the underlying molybdenum mineralization. Tosca's drilling confirms the historic drill results within the copper blanket and also provides evidence for significant mineral potential within the deeper molybdenum mineralization. The holes targeting the shallow high-grade copper mineralization returned mixed results. TMC-03 intersected 65ft averaging 6.9% Cu, similar in tenor and thickness to the historic drill intercepts, but the remaining five holes encountered only isolated, thin (<5ft-thick) intervals of greater than 1.0% Cu. The morphology of the high-grade copper mineralization is still unclear, but tonnage potential within this zone appears to be limited.

Fourteen of Tosca's holes were drilled as twins of historic core and conventional rotary drill holes. See Section 12.4 for a discussion of the twin-hole results.

10.6 Drill-Hole Collar Surveys and Down-Hole Surveying

MDA has no information on collar surveys or down-hole surveying by operators prior to Tosca. All historic collar data were in a local grid coordinate system prior to Tosca, but they have been converted to Texas State Plane coordinates.

All Tosca drill holes, along with five historic holes whose collars were still in place, were surveyed by Trujillo Surveying using a Topcon G4 Hyper plus RTK system, TC250 data collection. The survey used the Texas State Plane Zone 4, NAD83 datum, and all coordinates are in feet. An additional 15 historic drill collars were surveyed by Tosca using a hand-held GPS unit. The remaining 69 historic drill collars have no original collar-survey information.

MDA transformed the 69 un-surveyed historic collar locations, which were in a local grid coordinate system, into Texas State Plane coordinates using Gemcom Surpac® mining software. After plotting the transformed collar locations on the 2011 PhotoSat orthophoto topography, MDA revised the collar location for 21 historic drill holes to best fit the topography and drill-road locations. Some of the drill-collars' coordinates were changed by up to 100ft. The remaining 58 un-surveyed historic holes were left in-place since there was no obvious visual evidence to suggest they should be moved. After the northing and easting coordinates were updated, the drill collars were pressed to the topographic surface to determine the collar elevations. The uncertain collar locations have contributed to the restriction in mineral resource classification to Inferred only for the un-surveyed historic drill holes.

Down-hole surveys are conducted on all holes drilled by Tosca using a Reflex EZ-Shot drill-hole survey tool, providing azimuth as well as inclination. Short holes have one measurement at the bottom, usually around 250ft, and deeper holes are surveyed every 200ft.

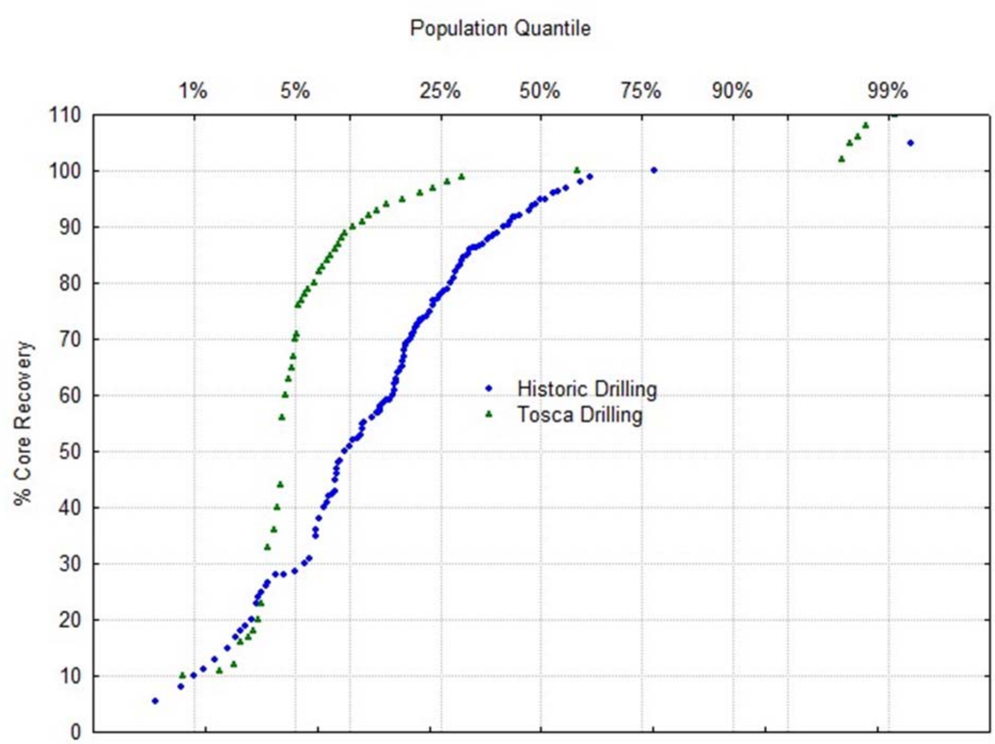
The are no down-hole surveys in the database for the historic drill holes. The concern over down-hole drill location is mitigated by the vertical drill orientation for all historic drill holes and the generally shallow final depths for the majority of historic holes.

10.7 Core Recovery

Core recovery data are available for all Tosca drill holes. MDA reviewed the data for completeness and checked for any errors in the interval data and in the calculations of the core recovery and RQD data. Minor changes were made to the data sets, none of which is considered significant. Drill logs for 66 of the 69 historic core holes contain core-recovery data. MDA compiled the core-recovery data for these drill holes and added these data to the Red Hills database.

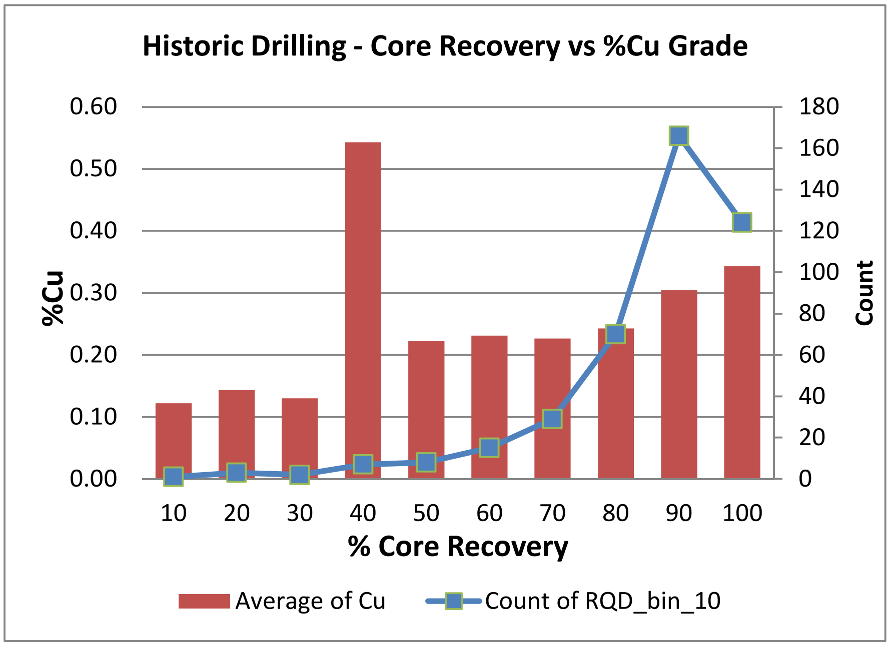
Core recovery averaged 91 percent for all Red Hills core holes; the Tosca drilling averaged 98 percent core recovery, while the historic drilling averaged 88 percent core recovery. A comparison of the Tosca and historic core-recovery data is shown in Figure 10.2. The core-recovery values are in the vertical axis while the population quantile values are shown using a logarithmic scale along the horizontal axis. The logarithmic scale was used to accentuate the differences at the lower population percentiles. The graphs illustrate that while the median core-recovery values for Tosca and the historic drilling are 95 and 100 percent, respectively, indicating that the majority of drilling had excellent recovery, a significant fraction of the historic drill core had poor to moderate core-recovery values. The bottom ten percent of the historic data has core recoveries of approximately 65 percent or less. At the same population percentile, the Tosca data is at 95 percent core recovery.

Figure 10.2 Comparison of Tosca and Historic Core Recovery



MDA compared the historic core recovery data against the corresponding down-hole copper grade to determine if the low core recoveries introduced any significant bias into the assay data. Figure 10.3 shows the copper grades (red vertical bars) and the number "Count" of intervals (light blue line with blue data points) plotted in the vertical axis, while core recovery is plotted along the horizontal axis. The figure includes those mineralized intervals assaying 0.1% Cu or greater, with the very high-grade (>5% Cu) samples from drill hole DH36 excluded due to their tendency to skew the statistics. The core recovery data have been separated into distinct bins for each 10 percent increase in recovery. So the "70" value in the horizontal axis contains all data points which have core recovery values between 70 and 79 percent.

Figure 10.3 Historic Drilling – Core Recovery versus Copper Grade



Copper grades within the mineralized material show a general decrease in grade with lower recoveries. The small sample population at the very low recoveries (<50 percent) creates some uncertainty with any interpretations, but it is apparent that there is about a 25 percent drop in copper grade going from 100 percent core recovery to 80 percent core recovery. The high spike in grade within the 40 percent recovery bin is skewed high by a single 2.2% Cu assay. If this one sample is removed from the data set, the copper grade decreases to about 0.3% Cu.

The decrease in copper grade with decreasing core recovery can be attributed to the fracture-controlled nature of the copper mineralization and the likelihood that the drill intervals with lower core recoveries are from more highly fractured ground. It is evident from the Tosca drill core that much of the copper mineralization within the near-surface enrichment zone is along fractures, with the stronger mineralization associated with a stockwork of chalcocite-filled thin fractures. Selective core loss within these highly fractured zones would result in a corresponding decrease in copper grades. A similar analysis of the core recovery and molybdenum grades shows the same pattern of decreasing grade with core loss. These results indicate that the use of the historic core assay data is possibly providing a conservative aspect to the current resource estimate.

10.8 Project Drill Database

MDA compiled the Red Hills project drill data from two sources. The pre-2011 collar and assay drill data were transferred from the digital database used by MDA for the 1997 pre-feasibility study completed for Rio Grande (Rio Grande Mining Company, 1997c), while the 2011 collar, down-hole survey, assay, and core-recovery drill data were provided by Tosca. In addition to these sources, MDA added to the database the lithology and oxidation drill data for all of the Red Hills drilling and also the core-recovery data from the pre-2011 drilling. This information was taken from the digital copies of the historic and Tosca drill logs.

As of January 2012, the Red Hills project database contains 121 drill holes totaling 60,131ft. The drill total includes 98 core holes totaling 51,913.5ft (86% of total drill footage), 20 conventional rotary holes totaling 4,765ft, and three holes started with rotary but finished with core that total 3,452.5ft. The Red Hills drill-hole assay database contains 5,713 molybdenum assays and 6,297 copper assays.

As discussed in Section 12.4 and Section 14.2, the assay data for historic rotary holes RH55 and RH59 were removed from the data used in the current resource estimate due to concerns over significant down-hole contamination of the high-grade (>1%) copper.

11.0 SAMPLE PREPARATION, ANALYSIS, AND SECURITY

11.1 Historic Operators

MDA has no information on the sample security measures employed by the historic operators.

11.1.1 Drill Sampling

Virtually no core or other samples remain from drilling by previous operators (Rio Grande Mining Co., 1997a; Burgess, 1997b). About 50 core boxes from about three drill holes, all in poor condition, remain in a warehouse in Marfa, Texas.

ASARCO's drill holes appear to have been sampled on irregular intervals. Phelps Dodge's two holes were sampled on 10ft intervals for copper assaying, but results for MoS_2, percent sulfur, gold, and silver are only shown every 50ft. MDA cannot determine whether the every-50ft sample data represent one 10ft sample taken every 50ft or one 50ft composite sample. Amax's single hole was sampled on 10ft intervals. Most of Duval's holes were sampled on 10ft intervals, although there are a few with 5ft or irregular sample intervals.

11.1.2 Sample Preparation and Analyses

For the two holes drilled by Phelps Dodge, data provided to MDA include assays on sheets titled "Certificate of Assay," but there is no indication of the laboratory that performed the analyses. It is possible that Phelps Dodge used an in-house lab for their analyses, but MDA has no information to suggest or confirm that.

Based on assay certificates in the data provided to MDA, it appears that for Duval's 1971 drilling, Southwestern Assayers & Chemists, Inc. ("Southwestern") of Tucson, Arizona, was the primary assayer. A handwritten note indicates that they only assayed for copper on every fifth sample below 500ft. Apparently some samples were checked by Duval's laboratory at their mine at Sierrita, Arizona, with some additional checks by Southwestern. A handwritten note described problems with assay results and noted that samples sent to Duval's Sierrita mine for checking did not agree with the original Southwestern results. Another handwritten note references some incorrect standards, indicating there may have been some use of standards for quality assurance and quality control ("QA/QC").

For Duval's 1972 drilling, most of the assay certificates are from "Duval Corporation" and indicate that samples were assayed for copper and molybdenum. A hand-written note states that unspecified samples were sent for checking to Duval's lab at their Sierrita mine in Arizona. There are also assay certificates identified as being for check samples dated 1972 from Southwestern.

For Gold Fields' 1982 drilling as part of their joint venture with Duval, Gold Fields used their own assay laboratory for analyses. Silver and gold were analyzed by fire assay; the assay certificates do not indicate the method of analysis for copper, lead, and zinc. In early 1983, Gold Fields used Skyline Labs, Inc. ("Skyline") of Wheat Ridge, Colorado, for most of their analyses, although some original analyses were performed by Gold Fields' own assay laboratory. Silver and gold were analyzed by fire assay; the assay certificates do not indicate the method of analysis for lead and zinc. Check assays were run by Gold Fields' laboratory.

11.2 Tosca Mining Corp.

11.2.1 Drill Sampling

The Tosca drill core was sampled on a continuous basis with no gaps in the sample-interval sequence. Sample intervals are generally 5ft within the near-surface copper mineralization and 10ft for weakly mineralized intervals or within the generally continuous, deeper molybdenum mineralization. Sample intervals can be less depending on the location of geologic contacts. The beginning and end of a sample interval are marked with a 2 to 3in piece of red flagging in the box with the depth written on it as well as a tick on the box where it is located, in order to reconstruct intervals if shifting occurs in transit. The drill samples are numbered consecutively using unique sample numbers rather than using the hole numbers and depth for sample identification.

Following geologic logging, the insertion of sample interval markers, and photographing, the core from the first seven holes was shipped by truck whole to Skyline Assayers & Laboratories ("Skyline") in Tucson, Arizona, who cut it for sampling. At Skyline, an MDA representative oversaw the collection of samples following the sample-interval guidelines set by Tosca's geologist. For all subsequent core holes, the core was cut and sampled by Tosca personnel at Tosca's initial core shack in Marfa, Texas, located about one hour north of the project site, and then at Tosca's more permanent facility in Presidio, Texas, located about one-half hour south of the project site.

11.2.2 Sample Preparation and Analyses

For the drilling program initiated by Tosca in May 2011, samples were sent to Skyline for analysis. According to their website, Skyline is ISO/IEC 17025:2005 accredited.

Skyline provided sample preparation for all samples using their code SP-1. Samples were crushed (up to 5kg) to plus 75% -10 mesh, split, and pulverized with hardened steel to plus 95% -150mesh. All samples were analyzed for copper and molybdenum by ICP/OES (Skyline code MEA) and for a 34-element trace-element geochemistry package by *aqua regia* leach with analysis by ICP/OES (Skyline code TE-2).

11.3 Sample Security

Tosca personnel transported the core from the drill rig to their locked Marfa and Presidio core facilities on a daily basis. The first seven Tosca holes were logged at their Marfa facility, and the whole core was then transported by Tosca personnel to the secure Skyline facility for cutting and sampling. Upon completion of the sampling, the core was transported back to Marfa. For the remainder of the drill program, all core was stored at Tosca's initial core facility/warehouse in Marfa, Texas, and then at Tosca's more permanent facility in Presidio, Texas. All Tosca core is currently stored in Presidio, Texas behind a locked gate and protected from the weather by a permanent structural cover. Core samples awaiting shipment to Skyline were kept within the locked facilities. Tosca personnel shipped the samples by commercial truck to Skyline.

11.4 Specific Gravity Determinations

MDA reviewed the historic literature and can find no density data for the Red Hills project. A single 12cu.ft/ton tonnage factor apparently was used for all material in historic resource estimates.

Tosca shipped 37 core samples from nine holes to Metcon Research for specific gravity measurements. The samples were collected from various areas within the deposit, including the near-surface oxide zone, the underlying copper-rich supergene blanket, and the deeper porphyry-hosted molybdenum mineralization. Metcon used the wax immersion method (ASTM method C 914-79) to determine the bulk density values. The results show individual values ranged from 2.13g/cm^3 to 3.37g/cm^3, with the copper blanket averaging 2.67g/cm^3 and the deep molybdenum mineralization averaging 2.49g/cm^3. A more detailed discussion of the density data is provided in Section 14.5.

11.5 Quality Assurance/Quality Control

Except for the limited check sampling completed by Gold Fields, MDA has no information on QA/QC for the historic drill programs at Red Hills.

The Tosca QA/QC program used blanks, standards, and core duplicate samples. Tosca has conducted no check assaying of their original drill core samples, either as pulp duplicate assays or replicate pulps from the original coarse rejects.

Except for Tosca's first seven holes that were processed at Skyline, the QA/QC samples were inserted by Tosca personnel before the samples were shipped to Skyline. Three commercial standards (high, medium, and low grade for Cu and Mo) in addition to blank material were used for quality control. The blank material used for the first 13 Tosca drill holes consisted of post-mineralization volcanic rocks collected on-site. A commercial blank consisting of clean sand was used for the Tosca holes TMC-14 through TMC-31. A blank was inserted into the sample stream after approximately every 40 samples, using the same numbering sequence as the original samples, while a standard sample was inserted into the sample stream after approximately every 20 samples. The blanks were not specifically inserted after visually higher-grade samples.

Quarter-core duplicate samples were cut by Tosca for 28 samples and submitted with the original samples to Skyline. The duplicate samples were given unique sample ID's that often were not directly after the original sample to be duplicated. This kept the sample blind to the lab.

11.6 Summary Statement

MDA is of the opinion that the sampling methods, security, and analytical procedures used by Tosca are adequate for mineral resource estimation. The relative lack of information concerning the historic drill sampling and analyses lowers the confidence in these data, although the work was conducted by reputable companies, and it is expected that the work was conducted using industry standard practices. The authors are not aware of any sampling or assaying factors that may materially impact the mineral resource estimate discussed in Section 14.0.

A more systematic program of specific gravity measurements is recommended due to the importance of bulk density in the determination of resource tonnage. Combined with more detailed geologic modeling, as discussed in Section 14.5, the additional measurements would bring greater precision to the resource estimate, resulting in more confidence in any future economic analysis.

12.0 DATA VERIFICATION

12.1 Database Audit

MDA completed an audit of the drill-hole database in preparation for the current mineral resource estimate discussed in Section 14.0. MDA's focus was on the drill-hole collar, down-hole survey, and assay data. A rigorous audit of the geology and geotechnical data was not completed, but these data were reviewed for completeness, reasonableness, and often spot-checked against the core photos and drill logs in the process of building the geologic model. Any corrections, changes, or additions to the database were communicated to Tosca. The resulting Red Hills database is considered to be of high quality and can support the resource estimate and classification discussed in Section 14.0.

The historic drill database was provided to MDA by Tosca. The drill database for the 2011 Tosca drill program was compiled primarily by MDA using a) the original drill logs and down-hole survey data provided by Tosca, b) the assay data downloaded directly from Skyline, and 3) the collar coordinates provided by Trujillo Surveying.

The MDA audit of the historic data was conducted on the digital drill data in ".csv" spreadsheet format provided by Tosca. MDA used pdf copies of drill logs, which included hand-written assay data and drill-collar coordinates, and some original internal assay data sheets, to audit the historic data. No original assay certificates, collar-survey data, or core photos are available for the historic drill holes. MDA verified approximately 20 percent of the pre-Tosca drill data against the drill logs.

MDA's audit of the Tosca data was conducted as the data were compiled. Any corrections to the data were completed before loading into the database. Where minor discrepancies were noted, MDA checked the data against the original drill logs, core photos, and assay data. The original assay certificates downloaded directly by MDA from the Skyline laboratory website, along with the sample-interval data provided by Tosca, were used to create the 2011 drill-assay database.

As a final check, all of the collar, down-hole survey, and geology data were also checked spatially when plotted on cross-sections and in plan view. This 3-D spatial check included plotting and comparing all drill collars against the 2.5ft-contour topographic surface.

12.2 MDA Independent Verification of Mineralization

12.2.1 Site Visits

Mr. Tietz conducted a site visit on April 7 and 8, 2011. During that visit, the author reviewed the geologic setting, inspected the mineralization that outcrops along the historic drill roads, confirmed the location of a number of the historic drill holes, and assisted Tosca in locating the drill sites for the proposed 2011 drill holes. Mr. Tietz conducted a second site visit on August 30 and September 1, 2011. The purpose of this visit was to review the Red Hills project drilling results, logging/sampling procedures, and geology, in preparation for the current mineral resource estimate. A limited amount of core was evaluated, while a day was spent at the project site checking drill-hole locations and reviewing the completed drill program.

Data verification procedures conducted by MDA while on site included:

- **Geology Verification** - Comparisons of core and drill-log geology, sample intervals, and assay data found no significant discrepancies.
- **Drill-Site Verification** - MDA used a hand-held GPS to check the locations of 15 historic drill sites and all 31 Tosca drill holes. The hand-held GPS cannot achieve survey-level accuracy, but it serves to verify that in general terms drill holes are where the database indicates they should be. MDA did not identify any discrepancies in the locations of drill holes.

- **Mineralization Verification** - MDA collected a total of nine verification quarter-core duplicate samples from three core holes (TMC-07, TMC-08, and TMC-12). All nine samples were from intervals within the deeper Mo mineralization. [MDA's oversight of the original sampling of holes TMC-01 through TMC-06 (see Section 11.2.1) served as verification of the shallow copper mineralization.] The core samples were cut by project personnel but independently sampled, given a unique "blind" sample number, and bagged for shipment by MDA. The samples were sent directly to Skyline in Tucson, Arizona and were analyzed using the same analytical techniques as the project drill samples. The purpose of MDA's sampling was solely to confirm the presence of molybdenum mineralization in concentrations of similar tenor to those reported by Tosca. The results of the quarter-core sampling, along with the original Tosca values, are shown in Table 12.1.

Table 12.1 MDA Verification Sampling – Core

MDA sample ID	Hole_Id	From	To	Mo pct		Cu pct	
				Original	MDA	Original	MDA
11951	TMC-07	735	740	0.198	0.246	< 0.01	< 0.01
11952	TMC-07	740	745	0.118	0.155	< 0.01	< 0.01
11953	TMC-07	745	750	0.167	0.136	< 0.01	< 0.01
11954	TMC-08	345	350	0.138	0.089	< 0.01	< 0.01
11955	TMC-08	355	360	0.083	0.112	< 0.01	< 0.01
11956	TMC-08	365	370	0.154	0.178	< 0.01	< 0.01
11957	TMC-12	725	730	0.113	0.058	< 0.01	< 0.01
11958	TMC-12	730	735	0.045	0.031	< 0.01	< 0.01
11959	TMC-12	740	745	0.08	0.035	< 0.01	< 0.01

MDA had no significant concerns with the status of the drill-hole database or general geologic knowledge as they pertain to the development of the copper and molybdenum mineral models and the resulting resource estimate.

12.3 MDA Analyses of QA/QC Data

The Red Hills database contains QA/QC data that include analyses of standards, blanks, and quarter-core duplicates. All of the data described herein date from the 2011 Tosca drill program, and the discussions in these sections apply only to that time period. All of the 2011 QA/QC sample analyses were conducted by Skyline. There are no historic QA/QC data.

12.3.1.1 2011 Standard Analyses

A total of 73 standard samples were submitted to Skyline. Two samples were removed from the data set due to very high differences between the standard results and accepted values, possibly resulting from a lab or Tosca clerical error. Three unique analytical standards were used. The three standards were commercial copper-molybdenum standards purchased as pulps from WCM Minerals, Canada. Analytical specifications, including the accepted value and plus or minus two standard deviations ("2SD"), for the three standards are shown in Table 12.2. One standard sample was inserted into the sample stream at an approximate rate of one standard for every 20 drill samples, using the same numbering sequence as the original core samples. As pulps, they were not blind to the lab.

Table 12.2 WCM Minerals - Sample Standard Specifications

	%Cu		%Mo	
standard	mean	2SD	mean	2SD
CU166	0.138	0.01	0.018	0.002
CU126	0.43	0.02	0.082	0.003
CU121	0.97	0.04	0.042	0.003

The results of the four lower-grade individual standard analyses indicate good correlation in general with the accepted standard value, with only minor variance between the mean value of the standards and the accepted value, and just isolated values lying immediately outside of the two-standard-deviation limits, The high-grade copper results from standard CU121 (see Figure 12.1) and the high-grade molybdenum results from standard CU126 (see Figure 12.2) were more variable than the accepted limits with many values outside, both above for molybdenum and below for copper, of two standard deviations from the accepted value. In both figures, the standard results are shown as black dots and line, with the mean value of the standards values as a solid red line. The accepted value is a solid green line with the upper and lower two-standard-deviation limits as dashed green lines. The copper results for the high-grade copper standard CU121 has many values, and also the mean value, below the lower two-standard-deviation limit, indicating a low bias in the Skyline assays. Conversely, the results for the higher-grade molybdenum standard CU126 indicate a high bias in the higher-grade Skyline assays with many values at, or just above, the upper two-standard-deviation limit. The limited number of standard analyses makes any determination inconclusive, but it appears that at the higher copper and molybdenum grades, the Skyline results deviate from the accepted values for the WCM standards.

Figure 12.1 Standard CU121 Copper Values

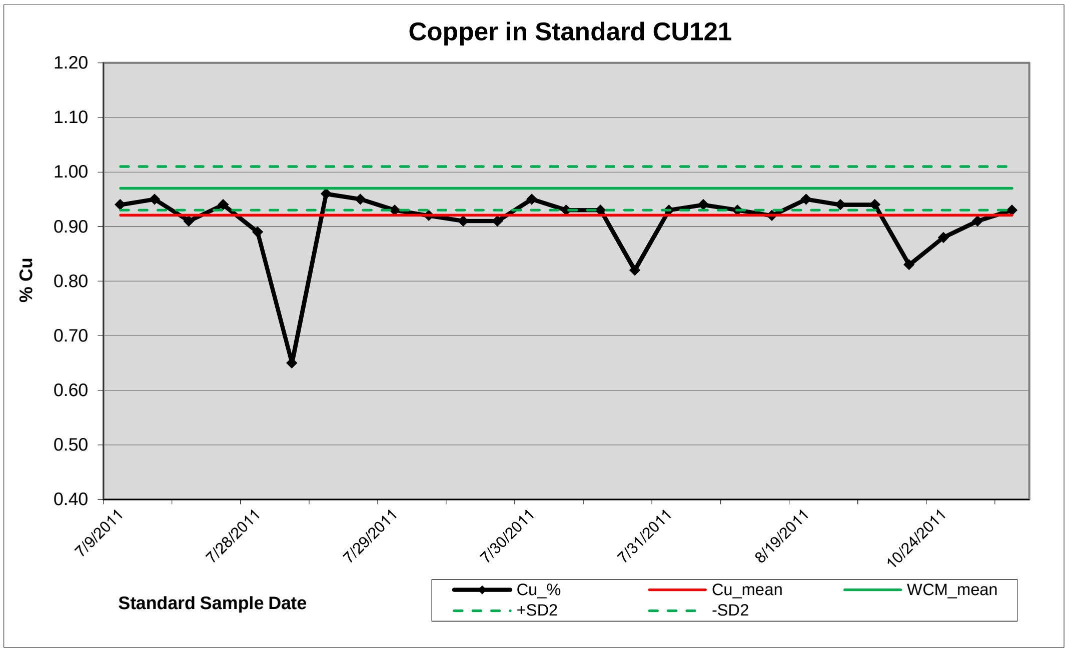
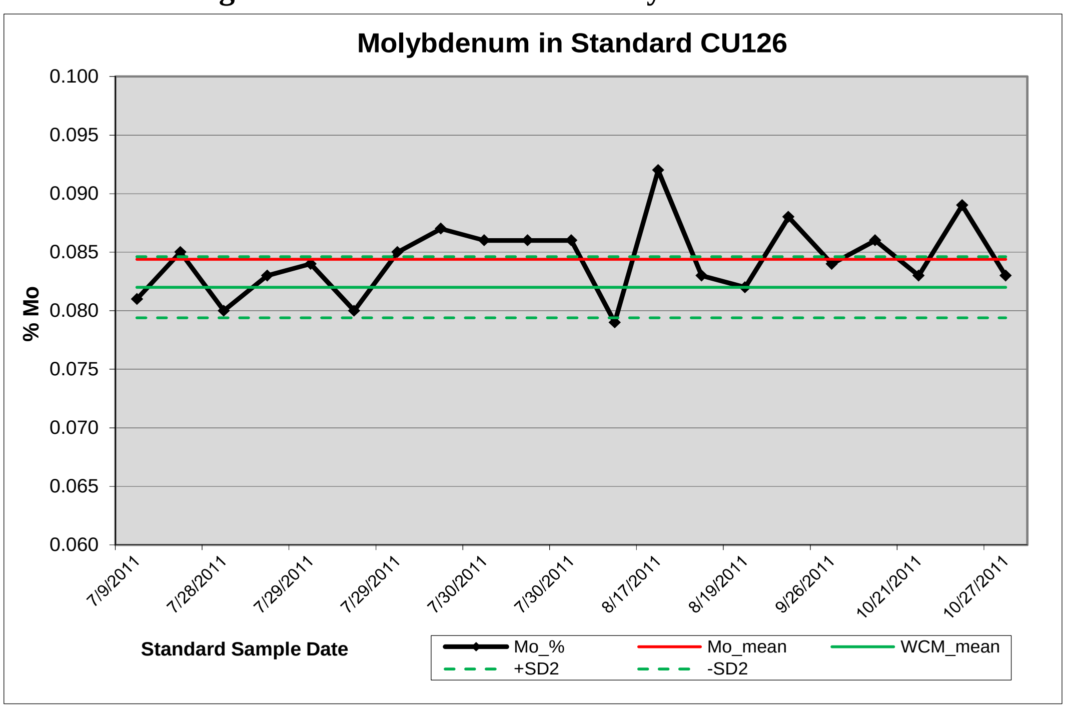


Figure 12.2 Standard CU126 Molybdenum Values



12.3.2 2011 Blank Analyses

A total of 48 blank control samples were submitted to Skyline. The blank material used for the first 13 Tosca drill holes consisted of post-mineralization volcanic rocks collected on-site. A commercial blank consisting of clean sand was used for the Tosca holes TMC-14 through TMC-31. Blank samples were inserted into the sample stream at an approximate rate of one blank for every 40 drill samples, using the same numbering sequence as the original core samples. The blanks were not specifically inserted after visually higher-grade samples. The commercial blanks were submitted as pulps so they were not blind to the lab.

The blank copper and molybdenum assay results are plotted in time sequence (blue) in Figure 12.3 and Figure 12.4, respectively. The analytical results for samples immediately preceding the blanks are plotted in red, with a different scale on the right side of the Y axis. The purpose of plotting the preceding sample results is to gain a visual impression as to whether there is any tendency for blanks analyzed immediately after a high-grade sample to show increased copper or molybdenum. The copper results show only the first blank sample assayed greater than the 0.01% Cu detection limit. This sample was preceded in the sample stream by a high-grade sample that assayed over 15% Cu; the blank "failure" is likely due to lab contamination. The relatively low value in this one blank, after an extremely high-grade core sample, and the less than detection values in all other blank samples, indicate that lab contamination is not a significant concern with the 2011 copper data. The molybdenum blank results show two blank samples with elevated molybdenum values greater than, or very similar to, the preceding sample. All other blank values are at or less than the 0.001% Mo detection level. An analysis of the full database indicates that these two samples are likely not blanks but are either another QA/QC type or an original sample. MDA attribute these two molybdenum blank "failures" to clerical errors.

Figure 12.3 Red Hills Blank Analyses – Copper Values

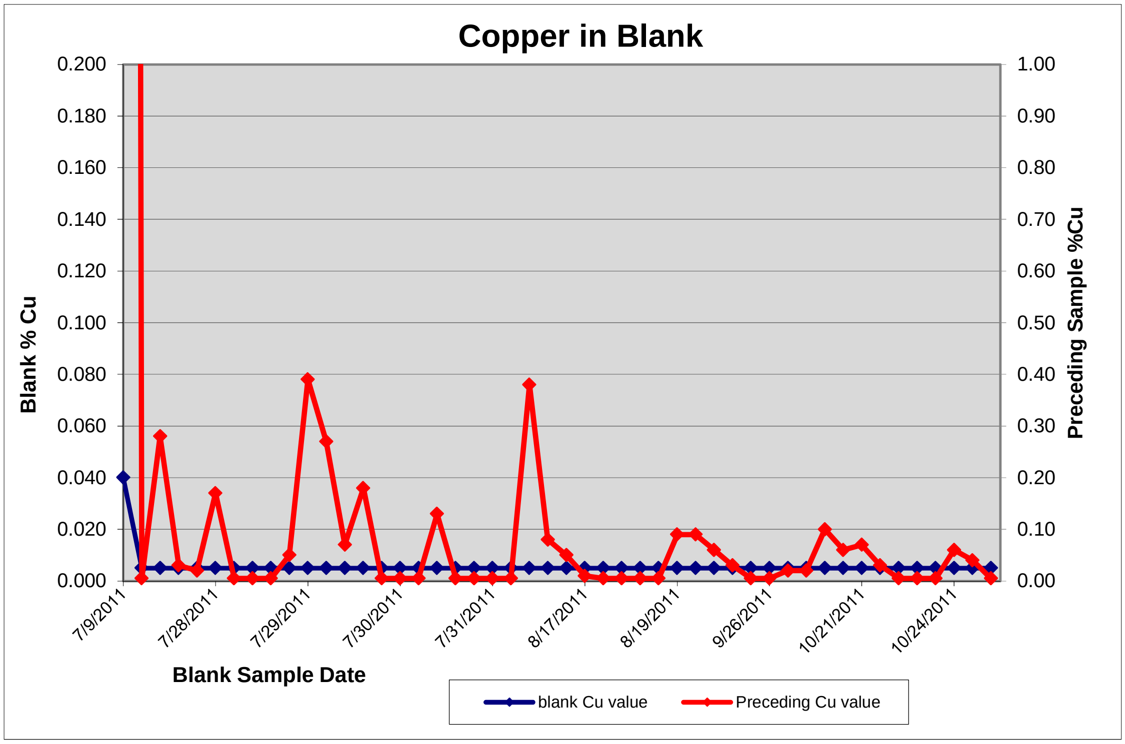
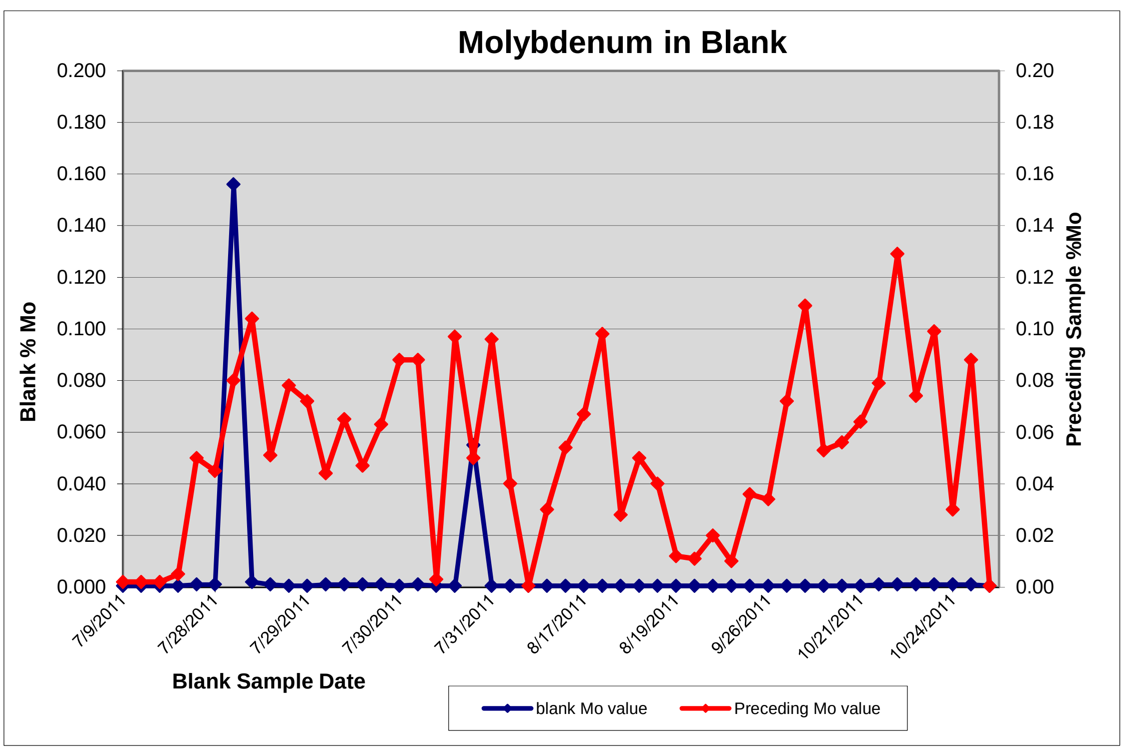


Figure 12.4 Red Hills Blank Analyses – Molybdenum Values

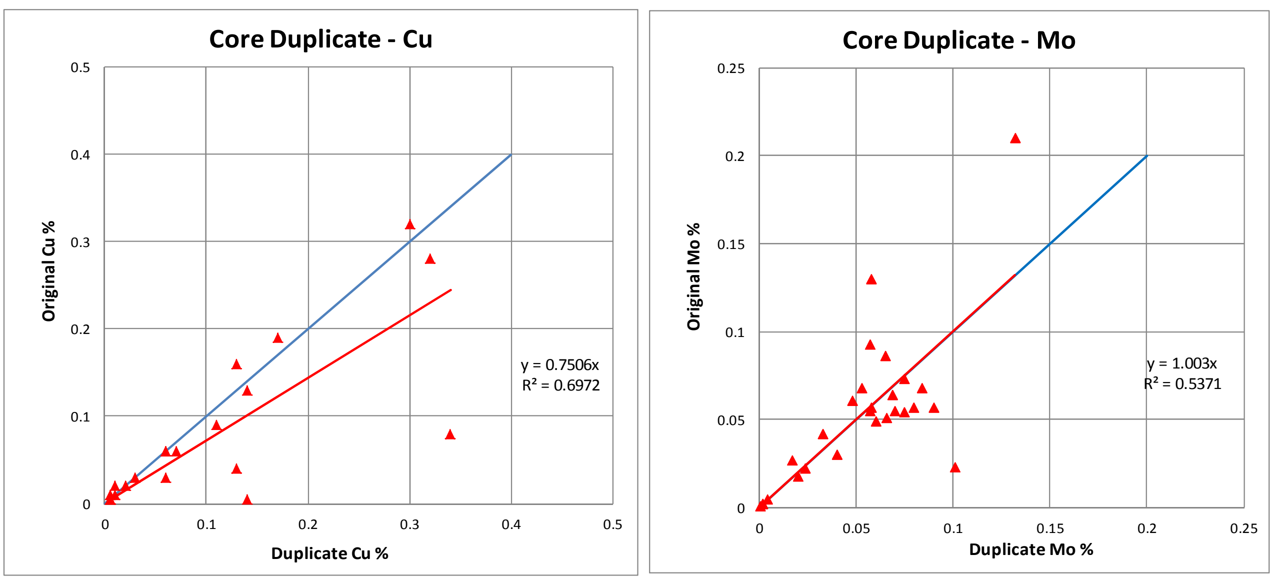


12.3.3 2011 Quarter-Core Duplicate Analyses

Quarter-core duplicate samples were prepared for 28 sample intervals and submitted with the original samples to Skyline. The duplicate samples were given unique sample ID's that often were not directly after the original sample to be duplicated. This kept the sample blind to the lab. The quarter-core duplicate samples were collected at approximate every 80 sample intervals and were not specifically taken at visually higher grade intervals.

The copper and molybdenum quarter-core results are shown in Figure 12.5 as scatterplot graphs, where the original assay is in the vertical axis while the duplicate is in the horizontal axis. The 1:1 correlation line is blue, while the trendline for the duplicate pairs is red. The copper grades are generally low (<0.03% Cu), and a single duplicate analysis on a 15% Cu sample was removed from the data set since the original and duplicate values would radically skew the statistics. The duplicate copper assays are on average a higher grade than the original assay; with mean grades of 0.065% Cu and 0.085% Cu for the original and duplicate values, respectively. The difference in mean copper grades is primarily caused by three sample pairs which have significantly higher duplicate values than the original value. The three sample pairs have a greater than 100 percent difference and lie well below the blue correlation line in Figure 12.5. There is relatively good correlation between most of the other sample pairs, so the observed variability in these three samples is likely due either to the inherent localized variability in the mineralization or possible sub-sampling error/bias.

Figure 12.5 Quarter-Core Duplicate Analyses



The molybdenum original and duplicate pair values have similar mean values; 0.054% Mo and 0.053% Mo for the original and duplicate, respectively, and the trendline for the data is almost on top of the blue correlation line. Though there is no bias in the data, the graph in Figure 12.5 shows increased variability with grade, with differences between the original and duplicate of up to 50 percent.

The quarter-core duplicate data are very limited, and the above conclusions are considered very preliminary.

12.4 Twin Hole Analyses

Fourteen of Tosca's holes were drilled as twins of historic core and conventional rotary drill holes. The twin program served to verify the historic assay results for the copper blanket mineralization and confirm the use of the historic drill results in the current resource estimate.

Drill spacing between the Tosca and twin pair ranged from 5ft to 55ft. The locations of five of the historic twin holes were not known precisely since later disturbance concealed the actual collar, but it is thought that the Tosca twin was located within about 50ft of its historic pair.

The twin pair comparison data are shown in Table 12.3. The twin data are separated into Tosca core versus historic core, in the top half of the table, and Tosca core versus historic rotary in the bottom half. Drill type, interval length (in feet), and average copper grades are shown for each hole, with the difference in copper values between the twin pairs in the far right column. At the bottom of each data set are the weighted averages for each drill type. The mineralized intervals were chosen so that the interval drill depth and thickness were similar between twin pairs.

Table 12.3 Twin Hole Analyses

Hole_ID	type	from	to	thickness	%Cu	%Cu-diff*	%Mo	%Mo-diff*
DH35	core	130	200	70	0.29	12%	NA	
TMC-06	core	130	198	68	0.33			
D14	core	10	250	240	0.18	-9%	0.056	1%
TMC-09	core	0	240	240	0.16		0.056	
DD7	core	50	220	170	0.39	-47%	0.063	-15%
TMC-10	core	45	220	175	0.20		0.053	
DH26	core	20	290	270	0.11	-18%	0.060	-1%
TMC-12	core	20	290	270	0.09		0.060	
DH17	core	40	190	150	0.14	12%	0.064	-18%
TMC-13	core	40	185	145	0.16		0.053	
H10	core	21.5	352	330.5	0.40	-62%	NA	
TMC-15	core	19	350	331	0.16			
DH19	core	90	366	276	0.20	200%	0.067	3%
TMC-18	core	89	369	280	0.61		0.070	
				historic core average	**0.24**	**-1%**	**0.062**	**-4%**
				Tosca core average	**0.24**		**0.059**	

Hole_ID	type	from	to	thickness	%Cu	%Cu-diff	%Mo	%Mo-diff
RD66	rotary	60	200	140	0.29	-33%	NA	
TMC-01	core	70	210	140	0.19			
HD4	rotary	80	330	250	0.72	-13%	0.055	19%
TMC-11	core	75	320	245	0.63		0.065	
RD62	rotary	10	155	145	0.10	-50%	0.093	-1%
TMC-14	core	10	155	145	0.05		0.092	
D1	rotary	40	300	260	0.16	-31%	0.038	-13%
TMC-16	core	39	299	260	0.11		0.033	
RD52	rotary	0	150	150	0.50	-30%	0.067	-9%
TMC-23	core	9	159	150	0.35		0.061	
RD54	rotary	60	180	120	0.28	-49%	0.060	2%
TMC-24	core	59	179	120	0.14		0.061	
				historic rotary average	**0.36**	**-25%**	**0.059**	**1%**
				Tosca core average	**0.27**		**0.059**	
RD59**	rotary	80	240	160	3.52	-98%	NA	
TMC-02	core	80	240	160	0.08			

* a positive value indicates a higher average copper grade in the Tosca core hole

** RD59 data removed from the resource database

The comparison of the individual Tosca core versus the historic core pairs indicates that while the copper grades, and to a lesser extent the molybdenum grades, can be variable, there is not a consistent high or low bias in either data set. The weighted average copper and molybdenum grades for each core-type data set are very similar, suggesting no relative difference between Tosca and historic core drilling.

For the Tosca versus historic rotary holes, there is a consistent decrease in copper in the Tosca holes both in the individual pairs and in the weighted averages. This relationship though is not evident in the molybdenum data, where the two data sets are similar with no evident bias. Analyses of the individual rotary hole copper grades do not indicate significant down-hole contamination, though there is a general smoothing of the grade variability within the mineralized intervals in all of the rotary holes likely due to the nature of the drilling technique and also the larger sample lengths (10ft rotary samples versus the 5ft core samples). Also observed, though not in a consistent pattern, are that the higher-grade intervals in the rotary holes have a higher maximum copper grade than the same interval in the Tosca core. Examples of the grade smoothing and the higher copper grade are shown in the drill depth versus copper grade graphs in Figure 12.6 and Figure 12.7, respectively.

Figure 12.6 TMC-01 versus RD66 Twin Pair Copper Analyses

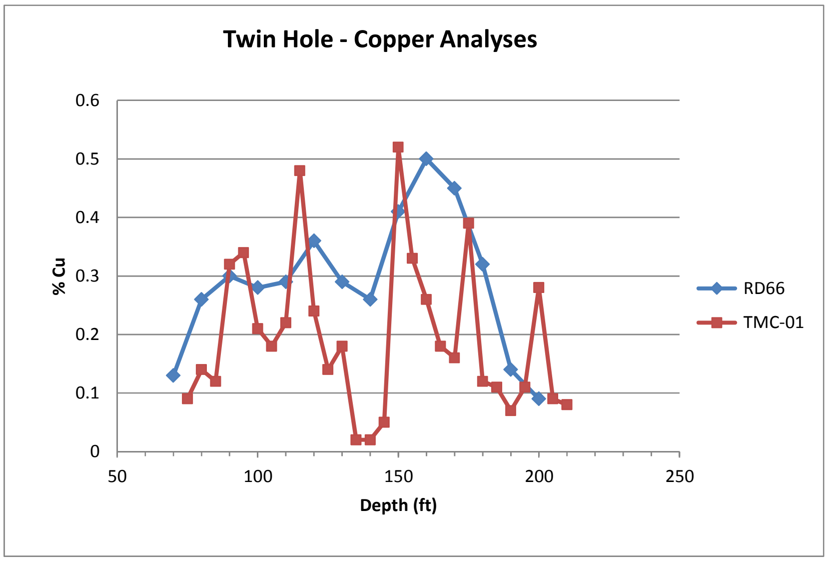
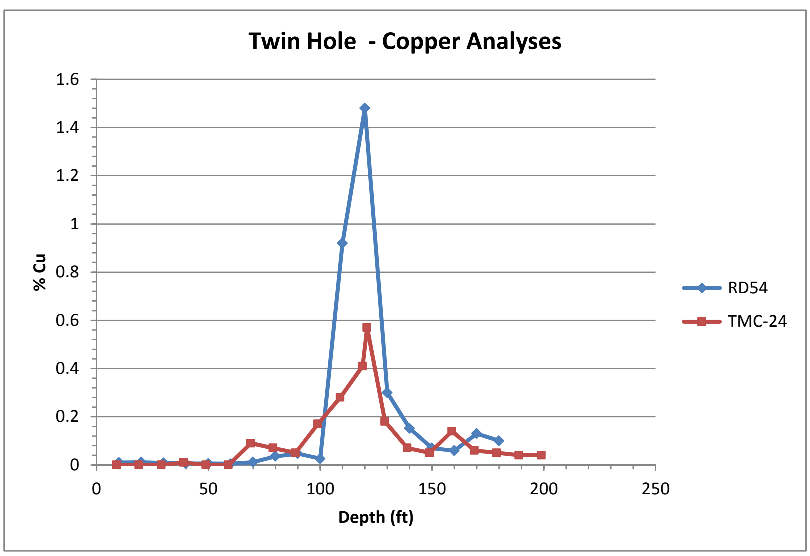


Figure 12.7 TMC-24 versus RD54 Twin Pair Copper Analyses



At the bottom of Table 12.3, are the results for the twin pair of historic rotary hole RD59 and Tosca core hole TMC-02. RD59, a conventional rotary hole drilled vertically, intersected 70ft averaging 7.74% Cu, while TMC-02 contains only one 5ft sample that assayed over 1% Cu. These holes are located in the high-grade copper area situated about 300ft northeast of the main body of the Red Hills stock. It is possible that RD59 drilled directly down a narrow, high-grade structure, but the results from TMC-02, and the other Tosca holes in this area (as discussed in Section 10.5), raise concerns over possible down-hole contamination. For this reason drill hole RD59 and also nearby historic rotary hole RD55, which assayed 80ft of 6.8% Cu, were removed from the data set used in the current resource estimate.

12.5 Summary Statement on Data Verification

The author is of the opinion that the data verification procedures support the geologic interpretations and confirm the database quality. Therefore the Red Hills database is adequate for use in estimating and classifying a mineral resource. Principal findings from the data verification are:

- The collar, down-hole survey, and assay database for the 2011 Tosca drilling is of high quality with only minor errors noted and corrected.
- The collar, down-hole survey, and assay database for the historic drilling lacks original data sources. MDA has no reason to question the authenticity of the historic data, but there is no way to complete a thorough audit.
- The drill data support the geologic interpretations and style of mineralization used in the resource model.
- The QA/QC data from the Tosca holes indicate that the copper and molybdenum data are sufficiently accurate for use in mineral resource estimation.
- The lack of historic QA/QC data and original data sources, along with the variability and possible high bias in the historic rotary data, contribute to the restriction of mineral resource classification to Inferred only for much of the historic drilling.

MDA recommends that a comprehensive program of quality control using blanks, standards, and quality assurance duplicate sampling, including pulp, coarse reject, and quarter core, be continued in 2012 and through the life of the project.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Historic Metallurgical Testing

The following information has been summarized by MDA from historic references as cited.

Duval submitted two samples of copper-molybdenum mineralization from the Red Hills to their Sierrita, Arizona, laboratory for flotation and leaching tests in 1974 (Flagg, 1974); MDA has no information on where these samples were taken or what part of the mineralized area each represents. Each sample was thoroughly mixed by repeated passes over a riffle splitter. Representative portions were cut from the resulting products and were then stage-crushed through 10-mesh. Chemical analyses of head samples yielded 0.655% total Cu and 0.055% Mo for the "high-grade" sample and 0.172% total Cu and 0.039% Mo for the "low-grade" sample. Microscopic examinations of polished sections from the high-grade sample showed that pyrite was the most abundant sulfide present. Copper occurred primarily as digenite with a lesser amount as covellite and very small amounts as chalcopyrite and bornite. Arsenopyrite and molybdenite were the only other sulfide minerals observed. Although not observed, the presence of chalcanthite was indicated by the presence of water-soluble copper in the chemical analyses. The microscopic examination indicated that the sulfides were of generally very small particle size and uniformly distributed through the gangue and that most of the digenite occurs as thin coatings on very small grains of pyrite. Digenite also occurs as partial to total replacements of arsenopyrite and pyrite.

The high-grade mineralization was subjected to flotation tests, but the report provided to MDA was incomplete and did not contain the results (Flagg, 1974). A later summary of work by Duval (Anon., 1975) reported that the high-grade sample was made from a composite of a number of unspecified diamond drill intercepts and quoted the conclusion that "*flotation of Hinton* [Red Hills] *ore of the type submitted can be expected to yield only fair recoveries of copper and molybdenum into a rather low grade concentrate*."

Kappes, Cassiday & Associates ("KCA") performed metallurgical tests on three samples from Red Hills submitted to them by Rio Grande in October 1997 (KCA, 1998). The samples were identified as 24-1 (KCA 25983), 52-1 (KCA 25984), and 52-3 (KCA 25985) and were surface samples taken adjacent or near Duval holes 24 and 52 (see Section 6.0 for details). Acid bottle-roll leach tests were conducted on the three samples, which were crushed to minus 100 mesh, with the results shown in Table 13.1.

Table 13.1 1998 Bottle-Roll Leach Tests on Red Hills Surface Samples
(From Kappes, Cassiday & Associates, 1998)

KCA Sample No.	Duval Hole – Rio Grande Sample #	Average Head % Cu	Extraction % Cu
25983	24-1	0.008	43.4
25984	52-1	0.62	50.0
25984	52-1	0.62	47.9
25985	52-3	0.35	58.8
25985	52-3	0.35	53.1

13.2 Metallurgical Testing for Tosca Mining Corp.

Rodrigo Carneiro, a metallurgical engineer with METCON Research ("METCON") and a qualified person under NI 43-101, takes responsibility for this subsection.

METCON conducted a froth flotation study on seven composite samples from the Red Hills project. The composite samples were prepared from Tosca's 2011 core samples based on instructions received from Tosca. The composite samples, each weighing between 50kg to 190kg, were reconstituted using assay rejects supplied by Skyline.

Each composite sample was stage crushed to 100 percent minus 10 mesh, and test charges of 1,000 grams were split using a rotary splitter for head assays and froth flotation study. The test charges for froth flotation study were placed inside a freezer to avoid oxidation.

The froth flotation study was conducted at a grind size of approximately 80 percent passing 74 microns, a pulp density of 25 percent solids, and pulp pH at 11. These process parameters are considered to be well within industry standards for this type of mineralization.

Bulk rougher flotation and bulk cleaner flotation tests were conducted for determining the best flotation parameters to conduct a bulk locked-cycle flotation study. Locked-cycle flotation testing is a means of determining the ultimate concentrate and tailing values when recycling product is considered as in normal plant practice. The metallurgical data developed under locked-cycle flotation on the Red Hills project composites are summarized in Table 13.2 below.

Table 13.2 Results of Flotation Testing on Red Hills Composite Drill Samples

Locked Cycle Flotation Testing On Composite Samples Average Metallurgical Results Summary of Results							
Sample ID	Head Grade		Grade			Recovery	
	Total Cu (%)	Mo (ppm)	Mass Recovery (%)	Cu (%)	Mo (%)	Cu (%)	Mo (%)
Composite 1	0.46	41	4.75	5.70	0.08	63.37	68.43
Composite 2	0.26	438	1.39	10.66	2.36	64.95	81.41
Composite 3	0.31	513	1.24	10.92	3.07	52.26	86.69
Composite 4	0.78	682	4.28	14.80	1.24	85.61	91.30
Composite 5	0.16	562	2.95	3.70	1.54	64.86	89.48
Composite 6	<0.001	728	0.42	1.11	14.85	63.03	93.23
Composite 7	<0.001	963	0.42	0.28	19.32	30.54	90.50

The following comments relate to the bulk locked-cycle flotation testing conducted on these seven composite samples from the Red Hills Project.

- Total copper head grade in five of the composites ranged from 0.16 percent to 0.78 percent. Total copper head grade in two composites was below the detection limit of 0.001 percent.
- Molybdenum head grade ranged from 41 ppm (0.0041 percent) to 963 ppm (0.0963 percent).

- Copper and molybdenum recoveries averaged approximately 61 percent and 86 percent, respectively.

- The highest copper recovery of approximately 86 percent was obtained on Composite 4.

- The highest molybdenum recovery of approximately 93 percent was obtained on Composite 6.

- The metallurgical data developed showed that copper and molybdenum head grades did impact copper and molybdenum recoveries.

In addition to the bulk locked-cycle flotation testing, a composite sample from the Red Hills project was submitted for Crusher (Impact ("CWi")), Ball Mill Bond Work Index ("BMWi"), Rod Mill Bond Work Index ("RMWi"), and Abrasion Index ("Ai") testing. The comminution data developed are summarized below:

- Abrasion Index (Ai): 0.1819
- Crusher Work Index Test (CWi): 6.85 kW-hr/ton
- Rod Mill Bond Work Index (RM Wi): 12.90 kW-hr/ton
- Ball Mill Bond Work Index (BM Wi): 14.26 kW-hr/ton

14.0 MINERAL RESOURCE ESTIMATE

14.1 Introduction

This section describes the first NI 43-101-compliant, publicly released mineral resource estimate for the Red Hills project. No estimate of mineral reserves has been made for this report.

Mineral resource estimation described in this Technical Report for the Red Hills project follows the guidelines of Canadian National Instrument 43-101 (“NI 43-101”). The modeling and estimation of gold resources were done under the supervision of Paul G. Tietz, a qualified person with respect to mineral resource estimation under NI 43-101. Mr. Tietz is independent of Tosca by the definitions and criteria set forth in NI 43-101; there is no affiliation between Mr. Tietz and Tosca except that of an independent consultant/client relationship.

Although MDA is not an expert with respect to any of the following factors, MDA is not aware of any unusual environmental, permitting, legal, title, taxation, socio-economic, marketing, or political factors that may materially affect the Red Hills mineral resources as of the date of this report.

The resource estimate includes the data and analyses resulting from Tosca’s 2011 work program at the Red Hills project. This program included the completion of 31 diamond drill core holes. The drilling targeted both the near-surface copper blanket and the underlying porphyry-style molybdenum mineralization. Tosca’s drilling confirmed the historic drill intercepts, provided better understanding of the deposit geology, and furnished sample material for metallurgical testing.

The work done by MDA for the current resource estimate included assisting Tosca personnel in the development of the drilling program, including drill-hole locations and orientations, and the creation of the drill database. MDA was provided copies of all Tosca and historic drill logs, and all Tosca assay results were received directly from the laboratories. MDA made two site visits and analyzed the 2011 QA/QC data.

The database used for the resource estimate was current as of November 4, 2011. The mineral resource estimate was completed on February 15, 2012.

14.2 Resource Database

As of January 2012, the Red Hills project database contains 121 drill holes totaling 60,131ft. The drill total includes 98 core holes totaling 51,913.5ft (86% of total drill footage), 20 conventional rotary holes totaling 4,765ft, and three holes started with rotary but finished with core that total 3,452.5ft. The Red Hills drill-hole assay database contains 5,713 molybdenum assays and 6,297 copper assays.

All of the Red Hills sample data were used in developing the geologic and mineral models, though two historic rotary drill holes (DH55 and DH59) were not used in estimating the resources due to concerns over possible down-hole contamination (see discussion in Section12.4).

The database includes down-hole survey information for all of Tosca’s drilling, while there are no down-hole survey data for the historic drill holes. The lack of historic down-hole data is somewhat mitigated by the vertical drill orientation for all historic drill holes and the general shallow final depths for the majority of historic holes.

The project coordinates, including topography, are in State Plane coordinates, Texas South Central, with NAD83 datum using US Survey Feet.

Surveyed collar locations using Texas State Plane coordinates are available for all Tosca drill holes and five historic holes. Using the surveyed holes as control points, all other historic drill-collar data, which were based on a local grid in the original database, have been converted to the Texas State Plane coordinate system. After conversion, MDA manually moved 21 historic drill locations to best fit the Texas State Plane-based topography. The discrepancies noted between the historic collar data and the 2011 survey create some uncertainty in the actual location of many of the historic drill collars.

Geologic information from the Tosca and historic drill logs were entered by MDA into the database to assist in the development of the geologic model.

14.3 Deposit Geology Pertinent to Resource Modeling

The mineralization of interest at the Red Hills project is porphyry molybdenum and near-surface copper mineralization that covers an area of about 4,000ft (east-west) by 3,000ft (north-south). The molybdenum and copper mineralization is primarily hosted within a Laramide-age intrusive stock, although high-grade copper mineralization and the outer limits of the low-grade molybdenum mineralization extend into the variably altered Paleozoic and Cretaceous-age sedimentary wall rocks. The Red Hills stock is made up primarily of latite porphyry and quartz monzonite porphyry phases. Pervasive potassic alteration, overprinted by extensive quartz-sericite-pyrite (phyllic) and argillic alteration, with local zones of intense silicification, can make recognition of the protolith difficult. The contact between the intrusive and sedimentary wall rocks is highly irregular, with numerous sills and dikes observed in surface outcrop and interpreted within drilling. Localized skarn alteration has formed in altered roof pendants and wall rocks of limestone immediately adjacent to the stock.

Molybdenum, with only weakly anomalous copper mineralization, is associated with quartz-sulfide stockwork veins. The molybdenum mineralization is centered on the porphyry but also extends up into the sedimentary roof pendants. The higher-grade core of the molybdenum deposit, containing molybdenum grades ranging from 0.05% Mo to over 0.1% Mo, is associated with increased quartz-sulfide stockwork veining and zones of pervasive silicification. Evaluation of the Tosca drill core indicates that the stockwork veins are dominantly sub-vertical in orientation, though it is not yet understood if there is a preferential strike orientation to the mineralized veining.

The center core of molybdenum mineralization forms a roughly horseshoe-shaped zone, about 2,000ft in diameter and open to the south, although this shape might be a reflection of incomplete drill coverage. Current drilling has encountered significant molybdenum mineralization to depths of over 2,000ft, and mineralization is considered to be open to the south under post-mineral cover.

Copper mineralization occurs primarily as an enriched chalcocite blanket that developed below the oxide-sulfide boundary at depths ranging from the outcrop surface to 300ft. The chalcocite blanket represents a zone of supergene copper enrichment that overprints the upper portion of the porphyry molybdenum system and also extends laterally to the east and west into the sediment wallrock. Copper grades of 0.1% Cu to 0.5% Cu, with localized mineralization at over 1% Cu, characterize the chalcocite blanket, while the hypogene copper mineralization beneath the zone of enrichment averages less than 0.03% Cu. The major control on the chalcocite is the depth of oxidation, with the chalcocite crossing contacts between altered sedimentary rocks and the various intrusive phases without changing its smooth, curving trend. There is some localized control of the high-grade mineralization along sub-horizontal structures and sediment/wallrock contacts. Structurally(?)-controlled copper grades of up to 20% Cu occur within a complex mix of altered sedimentary rocks and intrusive dikes/sills located 300ft northeast of the intrusive stock. Drilling has indicated that the very high-grade samples are of limited extent.

A west-thickening wedge of post-mineral alluvium that is up to 100ft thick overlies the far western edge of the deposit. Up to 100ft of alluvium and a discontinuous horizon of Tertiary volcanic rocks, which together can be up to 300ft thick, are present over the southern portion of the deposit. The mineralization is blind under the post-mineral cover and represents an exploration target to the south.

14.4 Resource Models

Lithology, oxidation, and molybdenum and copper mineral-domain models were created for the Red Hills project. All models are based on cross-sectional interpretations drawn on 29 east-west cross sections spaced 100ft apart. The post-mineral alluvium and mineral domains models were further refined in 3-D using 20ft-spaced, north-south-oriented, longitudinal (“long”) sections, which were used to code the block model on a partial percentage basis. The 3-D rendering of the oxidation model consisted of a sulfide solid which coded the block model on a block in – block out basis. These 3-D models were used to assign density values, control grade estimation, determine metallurgical rock types, and classify the resource estimate. All modeling of the Red Hills resources was performed using Gemcom Surpac® mining software.

14.4.1 Lithology Model

MDA created a cross-sectional geologic model of the porphyry intrusion, surrounding altered sedimentary wallrock, and overlying alluvium cover. MDA used the drill logs and core photos extensively in the geologic modeling. All of the lithologies were used to control the copper and molybdenum domain models, though the bedrock type appears to play only a minor role in the localization of the copper blanket. Almost all of the significant molybdenum mineralization is within the intrusive stock. The location and nature of the intrusive/sedimentary contact at depth is not well understood due to limited drill information. The various intrusive phases were not modeled separately due to inconsistencies in the drill data and the difficulty in recognizing the intrusive type due to pervasive hydrothermal alteration.

The post-mineral alluvial cover was further refined in 3-D due to its importance in determining density and controlling grade estimation. The intrusive and sedimentary wallrock units were not taken to 3-D. It is recommended that future work, including additional density sampling of both the intrusion(s) and the sedimentary wallrock, will focus on a more refined geologic interpretation leading to the inclusion of the bedrock geology in the 3-D model.

14.4.2 Oxidation Model

The oxide-sulfide boundary at Red Hills has a strong control on copper mineralization due to the weathering and leaching of copper from the oxide material and subsequent supergene enrichment as chalcocite immediately below the oxidation boundary. The oxide-sulfide boundary is also the upper limit of sulfide molybdenum mineralization, a mineral form amenable to the flotation recovery process that is currently being considered by Tosca.

A surface marking the boundary between predominantly oxidized rocks and predominantly unoxidized rocks was interpreted using geologic logs, core photos, and oxidation codes in the database. As interpreted, the oxide boundary occurs at depths ranging from the topographic surface to up to 300ft along the south side of the deposit. Over the main area of the deposit, the oxidation surface is usually less than 100ft in depth. It is important to note that oxidation locally extends below the modeled oxidized/unoxidized boundary, primarily along thin structures, but the data are not sufficient to define these zones with confidence, and therefore they were not modeled. The boundary surface was rectified in 3-D to the drill-hole locations and then converted into a sulfide solid, which was used to code the block mode on a block in – block out basis. All material above the sulfide solid is considered to be oxidized.

14.4.3 Molybdenum and Copper Mineral Domain Models

Unique molybdenum and copper mineral domain models were created based on, and guided by, the lithologic and oxidation model cross-sections. Analysis of the molybdenum and copper assay quantile-quantile plots indicated subtle population groups within each metal, resulting in the identification of three domains for molybdenum and four domains for copper that were subsequently modeled on the sections.

A low-grade molybdenum domain is characterized by a range of grades of ~0.01% Mo to 0.03% Mo and generally represents weak, sporadic, quartz-sulfide vein mineralization within an outer shell around the center core of the deposit. Isolated, thin, high-grade veins can occur within the outer low-grade shell. The high-grade molybdenum domain is defined by grades generally exceeding ~0.05% Mo that are associated with strong quartz-sulfide stockwork veins, and associated silicification, within the core of the deposit. The high-grade core is defined by hundreds of feet of drill sampling containing continuous grades of over 0.05% Mo. A mid-grade domain was constructed that represents a transitional area around the center core. The mid-grade domain is characterized by a range of grades of ~0.03% Mo to 0.05% Mo, though there is often a mixture of all grade ranges within this domain.

The low-grade outer shell of molybdenum mineralization covers an area about 3,000ft in diameter, while the center high-grade core is a horseshoe-shaped zone open to the south and about 2,000ft in diameter. The transitional (mid-grade) zone varies in thickness from less than 50ft to over 200ft. The outer limits of mineralization and the mid- and high-grade domain boundaries are interpreted to be sub-vertical in orientation, though the dominantly vertical drill pattern and the limited drilling at depth have created some uncertainty in locating the domain boundaries. The mineralization as modeled is considered to be open at depth and to the south under post-mineral cover.

Copper mineralization occurs primarily as an enriched chalcocite blanket that developed below the oxide-sulfide boundary. Copper mineralization overprints the upper portion of the porphyry molybdenum system and also extends laterally to the east and west into the sedimentary wallrock. The low-grade copper domain is characterized by a range of copper grades of ~0.03% Cu to ~0.15% Cu. The low-grade mineralization forms a continuous, sub-horizontal zone of weak copper mineralization that extends over a 4,000ft east-west by 3,000ft north-south area. The mid-grade copper domain is characterized by a range of copper grades of ~0.15% Cu to ~0.4% Cu, while the high-grade copper domain is characterized by a range of copper grades of ~0.4% Cu to ~1.2% Cu. The mid-grade domain occurs as a 20ft- to 50ft-thick, generally continuous horizon within the center of the north half and also in the southeast corner of the deposit. Within localized areas, possibly due to structural or minor lithologic control, the mid-grade domain can be up to 200ft thick. The high-grade domain occurs sporadically within the north half of the deposit with sub-horizontal lenses 10ft to 30ft thick and localized thicknesses of up to 60ft. A fourth, very high-grade domain was created primarily to spatially control the extreme high grades (>1.2% Cu) that occur in the localized area 300ft northeast of the intrusive stock.

The cross-sectional mineral-domain envelopes were digitized; the digitized envelopes were sliced at 20ft horizontal intervals; and the resultant slices were used to guide interpretation on the north-south oriented long sections. The lithology and oxidation boundary interpretations were also used as a guide for the long sections. The long-section interpretations were then used to code the block model.

North-looking cross sections illustrating the copper and molybdenum mineral domains superimposed over the geology are given in Figure 14.1 and Figure 14.2.

Figure 14.1 Section 13879000N Red Hills Geologic and Mineral Domain Model

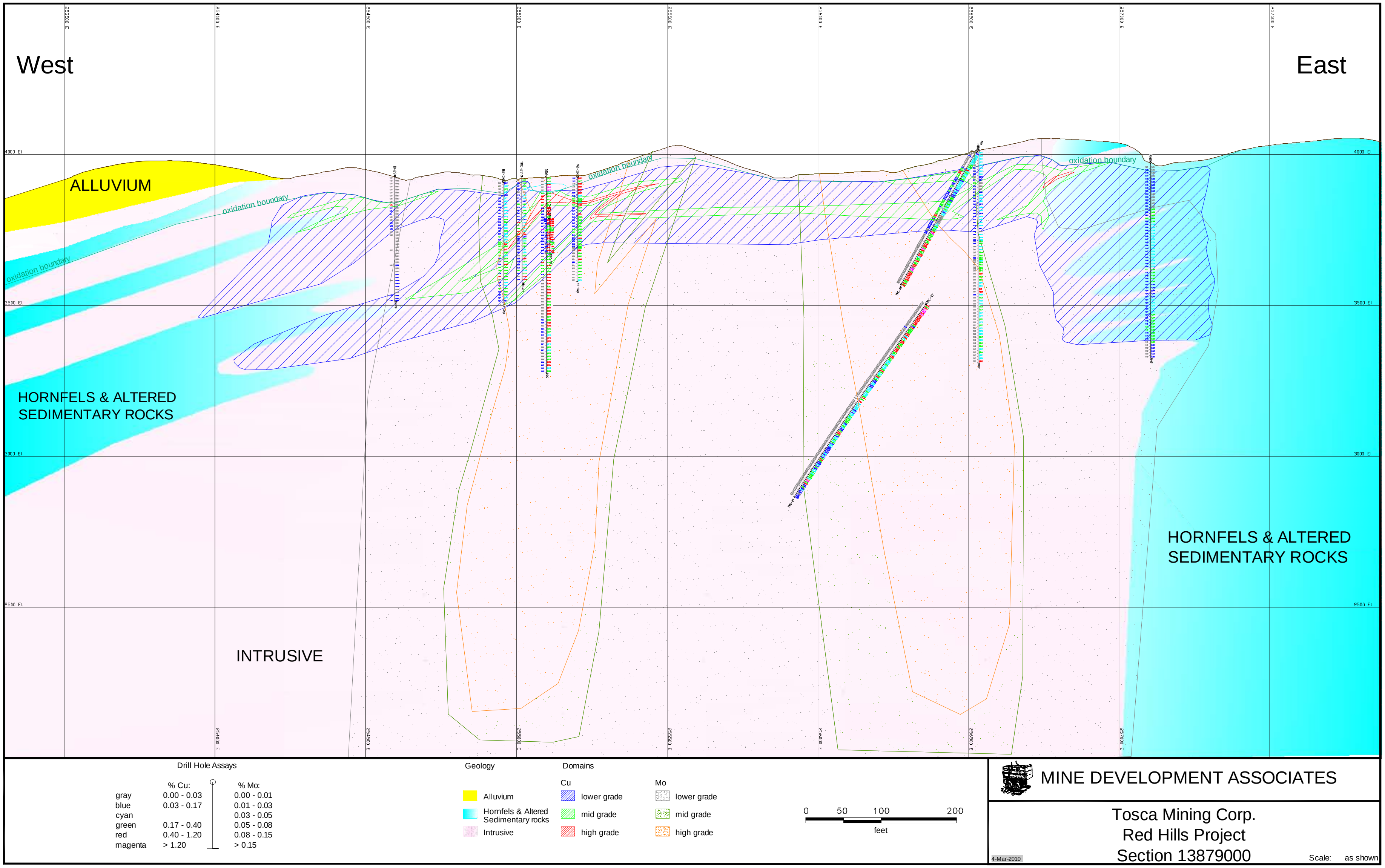
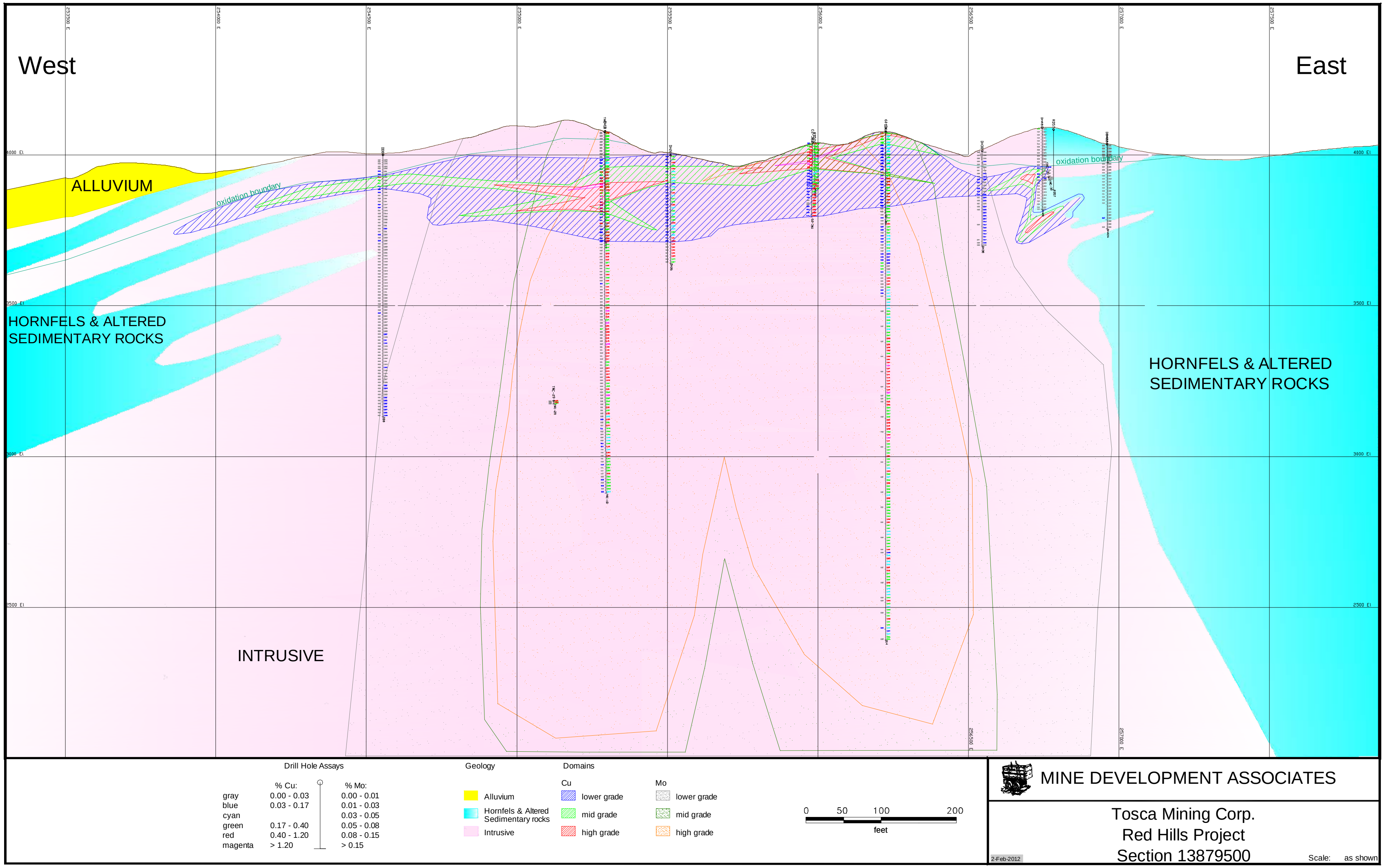


Figure 14.2 Section 13879500N Red Hills Geologic and Mineral Domain Model



14.5 Density

The Red Hills density database consists of 37 specific gravity measurements on Tosca's 2011 drill core. All of the density samples were from variably mineralized porphyry intrusive rocks. The measurements were conducted by Metcon Research in Tucson, Arizona, using the water immersion method to calculate the specific gravity value. The specific gravity data were converted to tonnage factor values for use in the geologic model and estimate.

MDA assigned a specific mineral and oxidation type to each density value by correlating the drill-core density data with modeled geology at the same down-hole location. MDA's analysis of all of the density data was done in the context of the geologic model, and it was determined that three values, each representing a unique rock type, would be assigned to the model. MDA also assigned a representative density value to the alluvium material which overlies the southern portion of the deposit. The alluvium density value does not impact the resource estimate, since it is not a host for mineralization, but would be a factor in any future open-pit mining economic analyses.

The general statistics for the four modeled density types are shown in Table 14.1. Due to the occasional fractured nature of the deposit and to account for the unavoidable sample-selection bias, the measured density values for the "Oxide," "Sulfide," and "Cu blanket" were factored down by about 1%. The factored data, shown in the "Model TF" column in Table 14.1, reflect the actual tonnage factor values assigned to the Red Hills block model.

The density data do not include any measurements from the skarn and hornfelsed sedimentary rocks which occur along the west, east, and north edges of the Red Hills deposit. It is not expected that the density value(s) for these rock type would differ significantly from the current data, but the lack of density data for these rock types creates some uncertainty in the resource model and estimate.

Table 14.1 General Descriptive Statistics of Red Hills Tonnage Factor Values by Rock Type

	Model TF	Tonnage Factor Statistics (cuft/ton)					
Type	(cuft/ton)	Count	Mean	Median	Min.	Max.	Std.Dev.
Oxide	**13.90**	6	13.75	13.76	12.62	15.05	0.82
Sulfide	**13.00**	24	12.86	12.83	11.88	13.82	0.42
Cu blanket	**12.50**	7	12.13	12.48	9.51	13.03	1.23
Alluvium	**18.00**						

14.6 Sample Coding, Capping and Compositing

The cross-sectional molybdenum and copper domains were used to code samples in the drill database. A statistical analysis of the coded samples, along with a spatial analysis of the domains, was made to assess validity of these domains. Descriptive statistics of Mo and Cu by mineral domain are provided in Table 14.2

Note that for model and database coding purposes, the low-, mid-, high- and very high-grade domains are defined by numbers 100, 200, 300, and 400, respectively. Assay, composite, and estimation parameter tables in subsequent report sections refer to these number codes.

Table 14.2 Red Hills Mineral-Domain Assay Descriptive Statistics

Mo Coded Assays

Domain	Assays	Count	Mean (% Mo)	Median (% Mo)	Std. Dev.	CV	Min. (% Mo)	Max. (% Mo)
100	Mo	1198	0.020	0.016	0.018	0.898	0.000	0.410
	Mo Cap	1198	0.019	0.016	0.013	0.653	0.000	0.100
200	Mo	839	0.039	0.038	0.018	0.456	0.000	0.230
	Mo Cap	839	0.039	0.038	0.016	0.409	0.000	0.110
300	Mo	2562	0.073	0.067	0.035	0.472	0.000	0.630
	Mo Cap	2562	0.073	0.067	0.033	0.454	0.000	0.559
All	Mo	4599	0.052	0.047	0.037	0.706	0.000	0.630
	Mo Cap	4599	0.052	0.047	0.035	0.682	0.000	0.559

Cu Coded Assays

Domain	Assays	Count	Mean (% Cu)	Median (% Cu)	Std. Dev.	CV	Min. (% Cu)	Max. (% Cu)
100	Cu	1777	0.08	0.06	0.08	0.99	0.00	2.10
	Cu Cap	1777	0.08	0.06	0.05	0.69	0.00	0.40
200	Cu	527	0.25	0.23	0.12	0.48	0.01	1.01
	Cu Cap	527	0.25	0.23	0.12	0.48	0.01	1.01
300	Cu	164	0.72	0.65	0.32	0.45	0.12	2.21
	Cu Cap	164	0.71	0.65	0.31	0.43	0.12	1.50
400	Cu	45	5.76	4.75	4.33	0.75	0.47	21.00
	Cu Cap	45	5.67	4.75	4.06	0.72	0.47	16.00
All	Cu	2513	0.25	0.09	0.92	3.69	0.00	21.00
	Cu Cap	2513	0.25	0.09	0.89	3.61	0.00	16.00

Quantile plots of the coded assays for each metal by domain were made to assess the mineral-domain populations and identify possible high-grade outliers that might be appropriate for capping. Descriptive statistics of the coded assays by domain, as well as visual review of the spatial relationships of the possible outliers and their potential impacts during grade interpolation, were also considered in the process of determining appropriate assay caps (Table 14.3). The effects of the assay capping, which for the Red Hills deposit is very minor, can be partially evaluated by examination of the descriptive statistics of the mineral-domain assays (Table 14.2).

Table 14.3 Red Hills Mo and Cu Assay Caps

Domain	Capping Values			
	Mo%	No. Capped (% of samples)	Cu%	No. Capped (% of samples)
100	0.100	3 (0.3%)	0.40	4 (0.2%)
200	0.110	6 (0.7%)	-	No capping
300	0.400	1 (0.04%)	1.50	1 (0.6%)
400	-	-	16.0	1 (2.2%)

Compositing was done to 20ft down-hole lengths (the model's block height), honoring all mineral-domain boundaries. The length-weighted composites were used in the block-model grade estimation. Composite descriptive statistics are presented in Table 14.4

Table 14.4 Red Hills Mineral-Domain Composite Descriptive Statistics

Mo Composites

Domain	Count	Mean (% Mo)	Median (% Mo)	Std. Dev.	CV	Min. (% Mo)	Max. (% Mo)
100	580	0.019	0.017	0.011	0.568	0.002	0.064
200	368	0.039	0.039	0.012	0.312	0.001	0.110
300	1085	0.073	0.069	0.026	0.360	0.004	0.234
All	2033	0.052	0.050	0.032	0.611	0.001	0.234

Cu Composites

Domain	Count	Mean (% Cu)	Median (% Cu)	Std. Dev.	CV	Min. (% Cu)	Max. (% Cu)
100	832	0.08	0.07	0.04	0.56	0.00	0.40
200	259	0.25	0.23	0.09	0.38	0.03	0.62
300	93	0.71	0.62	0.26	0.36	0.30	1.50
400	26	5.67	3.89	3.64	0.64	1.34	11.82
All	1210	0.25	0.09	0.86	3.48	0.00	11.82

14.7 Block Model Coding

The 20ft-spaced long-section alluvium and mineral-domain polygons were used to code a three-dimensional block model that is comprised of 20ft by 20ft by 20ft blocks. In order for the block model to better reflect the irregularly shaped limits of the various mineral domains, as well as to explicitly model mineral-grade dilution, the percentage volume of each mineral domain within each block is stored (the "partial percentages"). If 50% or more a block is inside the alluvium, it is coded as being in alluvium.

The oxidation model solid is used to code the block model in a block in – block out manner based on the location of the block centroid in relation to the oxidation solids. The percentage of each block that lies below the topographic surface is also stored for use in the calculation of block tonnages.

14.8 Resource Estimation

Variography was performed using the composites of each metal and from each mineral domain, at various azimuths, dips, and lags. Acceptable variogram models were obtained from composites from copper domain 100, as well as the combined 200-400 copper domains. Acceptable variograms were also obtained for all molybdenum domains together, though the preferred vertical strike orientation was strongly influenced by the vertical drill orientation and the widely-spaced drill holes. The two copper variograms models and the single molybdenum variogram model provided geologically reasonable orientations for the global strike and dip for copper and molybdenum mineralization. They were used to guide the choice of estimation parameters in the inverse-distance interpolations and were also used in the ordinary krige interpolations.

The estimation parameters applied to the molybdenum- and copper-grade estimations at Red Hills are summarized in Table 14.5. The first-pass search distances take into consideration the results of both the variography and drill-hole spacing. The second and third passes were designed to estimate grade into all blocks coded to the mineral domains that were not estimated in the first pass. Unique search ellipse orientations were used for the west and east halves of the molybdenum mineralization to better approximate the domain morphology.

Molybdenum grades were interpolated using inverse distance to the second power, while copper grades were interpolated using inverse distance to the third power. The lower inverse distance power for the molybdenum was used to help smooth the localized grade variation in the estimate. To further assist in decreasing local grade variation at elevations below 3,600ft, below which there is a relative lack of samples due to the widely-spaced drill pattern, both the maximum number of composite samples and the maximum number of samples from each drill hole used to estimate a block were increased. The widely spaced drill pattern contributes to the restriction of mineral resource classification to Inferred only for model blocks below an elevation of 3,600ft.

Both molybdenum and copper grades were also interpolated using ordinary krige and nearest-neighbor methods. The mineral resources reported herein were estimated by inverse-distance interpolation, as this technique was judged to provide results superior to those obtained by ordinary kriging. The nearest-neighbor estimation was completed as a check on the other interpolations.

The estimation passes were performed independently for each of the mineral domains, so that only composites coded to a particular domain were used to estimate grade into blocks coded by that domain. An exception to this was instituted for all blocks that are coded to Mo domain 200, whereby these blocks were interpolated using domain 100, 200, and 300 composites. This procedure has the effect of smoothing the grade boundary between the two domains. The estimated grades were coupled with the partial percentages of the mineral domains to enable the calculation of a single weight-averaged block-diluted grade for each block.

Table 14.5 Red Hills Estimation Parameters

Search Ellipse Orientations

Estimation Area	Major Bearing	Major Plunge	Tilt
Cu all domains	0	10	0
Mo west domains	30	0	70
Mo east domains	150	0	70

Estimation Parameters: Red Hills Cu Domain 100

Estimation Pass	Search Ranges (ft)			Composite Constraints			
	Major	S-Major	Minor	Min	Max	Max/hole	Min Holes
1	200	200	50	2	12	3	2
2	500	500	250	1	12	3	1
3	1000	1000	1000	1	12	3	1

Estimation Parameters: Red Hills Cu Domains 200,300,400

Estimation Pass	Search Ranges (ft)			Composite Constraints			
	Major	S-Major	Minor	Min	Max	Max/hole	Min Holes
1	150	150	50	2	12	3	2
2	300	300	150	1	12	3	1
3	750	750	750	1	12	3	1

Estimation Parameters: Red Hills Mo All Domains Above 3,600ft elevation

Estimation Pass	Search Ranges (ft)			Composite Constraints			
	Major	S-Major	Minor	Min	Max	Max/hole	Min Holes
1	250	250	200	2	12	3	2
2	600	400	400	1	12	3	1
3	1500	1500	1500	1	12	3	1

Estimation Parameters: Red Hills Mo All Domains Below 3,600ft elevation

Estimation Pass	Search Ranges (ft)			Composite Constraints			
	Major	S-Major	Minor	Min	Max	Max/hole	Min Holes
1	250	250	200	2	18	6	2
2	600	400	400	1	18	6	1
3	1500	1500	1500	1	18	6	1

Red Hills Kriging Parameters

Estimation Domain	Orientation			Nugget	First Structure				Second Structure			
	Major Axis	Plunge	Tilt	c0	c1	Ranges (ft)			c2	Ranges (ft)		
Cu 100	0	0	0	0.0010	0.0360	250	150	20	0.0070	500	400	75
Cu 200-400	30	0	0	0.0200	0.1750	175	90	30	0.0310	200	200	200
Mo all	0	90	0	0.0050	0.0720	250	250	200	0.0770	525	300	300

14.9 Mineral Resources

MDA classified the Red Hills resources in order of increasing geological and quantitative confidence into Inferred and Indicated categories defined by the "CIM Definition Standards - For Mineral Resources and Mineral Reserves" in 2010 so as to be in compliance with Canadian National Instrument 43-101. CIM mineral resource definitions are given below:

Mineral Resource

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

A Mineral Resource is a concentration or occurrence of diamonds, natural solid inorganic material, or natural 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.

The term Mineral Resource covers mineralization and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of technical, economic, legal, environmental, socio-economic and governmental factors. The phrase 'reasonable prospects for economic extraction' implies a judgement by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. A Mineral Resource is an inventory of mineralization that under realistically assumed and justifiable technical and economic conditions might become economically extractable. These assumptions must be presented explicitly in both public and technical reports.

Inferred Mineral Resource

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

Due to the uncertainty that may be attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration. Confidence in the estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of *public disclosure. Inferred Mineral Resources must be excluded from estimates forming the basis of feasibility or other economic studies.*

Indicated Mineral Resource

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics 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.

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

Measured Mineral Resource

A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are 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.

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

MDA classified the Red Hills resources by a combination of distance to the nearest sample and the number of samples, while at the same time taking into account reliability of underlying data, and understanding and use of the geology. The composites used for the classification criteria were composites on samples within any of the copper domains. The criteria for resource classification are given in Table 14.6.

Table 14.6 Criteria for Red Hills Resource Classification

No Measured resource	
Indicated (above 3,600ft elevation only)	
Minimum no. of samples /minimum no. of holes / maximum distance (ft): Tosca holes only	2 / 1 / 150
Minimum no. of samples /minimum no. of holes / average distance (ft): Surveyed holes only	3 / 2 / 100
All material not classified above but lying above 2,800ft elevation is Inferred	

There are no Measured resources at Red Hills at this time, due to a) the limited QA/QC and density data, b) some geologic uncertainties as to spatial location and grade distribution, and c) the uncertainty of location for more than half of the drill holes used in the interpolation. Indicated resources are limited to a) using only the surveyed drill holes, which includes all 2011 drill holes and 21 historic drill holes, and b) blocks with elevations above 3,600ft (an approximate depth of 500ft) due to the sparse drilling below this elevation. All other resources are Inferred due to the issues noted above plus the lack of original assay data for the historic drilling. None of these deter from the overall confidence in the global project resource estimate, but they do detract from confidence in some of the accuracy required for Measured and Indicated resources.

Because of the requirement that the resource exists “in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction,” MDA is reporting the resources at cutoff grades that are reasonable for deposits of this nature that will be mined by open-pit methods. As such, some economic considerations were used to determine cutoff grades at which the resource is presented. MDA considered reasonable metal prices, extraction costs, and recoveries, albeit in a general sense, in determining cutoff grades.

Molybdenum-equivalent (“MoEq”) cutoffs were utilized in the tabulation of the resources, with the molybdenum-equivalent grades calculated as follows:

$$MoEq\% = Mo\% + (Cu\% * 0.1806)$$

This formula is based on 1) prices of US$14.00 per pound molybdenum and US$3.25 per pound copper, and 2) metallurgical results that suggest molybdenum recoveries of about 90 percent and copper recoveries of about 70 percent. Molybdenum-equivalent grades were not modeled but were calculated solely for the determination of cutoff values for molybdenum and copper resource reporting.

There are no classified resources outside of the current land boundary. In consideration of the depth limits to any potential open-pit mining, the Red Hills resource was constrained by a bottom elevation of 2,800ft, approximately 1,200ft below the surface. All material below this elevation was not classified and is therefore not included within the current resource.

The current resource includes material that is in close proximity to the current land boundary. Recent agreements between Tosca, Red Hills Copper, Inc., and the adjoining property owner indicate that there is a reasonable expectation that Tosca will be able to secure surface rights to the adjoining property. Accordingly, MDA allowed the inclusion into the current classified resource of all material within their current land boundary.

The Red Hills total reported resources are tabulated in Table 14.7. The stated resource is fully diluted to 20ft by 20ft by 20ft blocks and is tabulated on a MoEq% cutoff grade of 0.025% MoEq. All material, regardless of which metal is present and which is absent, is tabulated. Because molybdenum and copper exist, but do not always co-exist on a local scale, the MoEq grade is used for resource tabulation. The block diluted resources are also tabulated at additional cutoffs in Table 14.8 in order to provide grade-distribution information.

The copper resource is contained within the near-surface copper blanket, and there is a significant tonnage of molybdenum-only material in the resource. The low copper grades shown in the resource tables result from the "spreading" of the copper over the full resource. If the copper mineralization is evaluated from a copper-only standpoint, the copper resource at a 0.15% Cu cutoff grade (comparable to a 0.027% MoEq cutoff grade) contains an Indicated resource of 8,040,000 tons of 0.35% Cu (56,400,000lbs Cu) and an Inferred resource of 12,720,000 tons of 0.25% Cu (63,400,000lbs Cu).

Figure 14.3, Figure 14.4, and Figure 14.5 show the classified resource block model grades for Cu%, Mo%, and MoEq%, respectively, superimposed over the geology for Red Hills cross section 13879000N. Note that in the MoEq% block model (Figure 14.5), block grades under the reported resource 0.025% MoEq cutoff are shown as grey model blocks, while those above the cutoff are shown in blue, green, and red.

Table 14.7 Red Hills Total Reported Resources – MoEq% Tabulation

Class	Cutoff (%MoEq)	Tons	%MoEq	%Mo	lbs Mo	%Cu	lbs Cu
Indicated	0.025	26,740,000	0.080	0.054	28,700,000	0.14	77,398,000
Inferred	0.025	263,840,000	0.056	0.051	268,450,000	0.03	151,349,000

Table 14.8 Red Hills Block Diluted Resource at Various MoEq% Cutoffs

Cutoff	Red Hills Indicated Resources - Total Deposit					
(%MoEq)	tons	%MoEq	%Mo	lbs Mo	%Cu	lbs Cu
0.020	28,020,000	0.077	0.052	29,080,000	0.14	78,412,000
0.025	**26,740,000**	**0.080**	**0.054**	**28,700,000**	**0.14**	**77,398,000**
0.030	25,550,000	0.082	0.055	28,310,000	0.15	75,988,000
0.035	24,550,000	0.084	0.057	27,970,000	0.15	74,312,000
0.040	23,580,000	0.086	0.058	27,570,000	0.15	72,525,000
0.050	21,670,000	0.090	0.061	26,590,000	0.16	68,584,000
0.060	19,420,000	0.094	0.064	24,990,000	0.16	63,790,000
0.070	15,730,000	0.101	0.067	21,190,000	0.19	58,385,000
0.080	11,520,000	0.110	0.070	16,020,000	0.23	52,281,000
0.100	5,250,000	0.137	0.068	7,170,000	0.38	39,833,000
0.120	2,400,000	0.171	0.062	2,980,000	0.61	29,107,000
0.140	1,450,000	0.200	0.061	1,780,000	0.77	22,284,000
0.200	340,000	0.323	0.061	410,000	1.45	9,844,000

Cutoff	Red Hills Inferred Resources - Total Deposit					
(%MoEq)	tons	%MoEq	%Mo	lbs Mo	%Cu	lbs Cu
0.020	353,660,000	0.047	0.043	306,180,000	0.02	163,186,000
0.025	**263,840,000**	**0.056**	**0.051**	**268,450,000**	**0.03**	**151,349,000**
0.030	219,610,000	0.062	0.056	247,460,000	0.03	136,222,000
0.035	195,370,000	0.066	0.060	235,290,000	0.03	117,417,000
0.040	175,160,000	0.069	0.064	224,010,000	0.03	97,333,000
0.050	149,770,000	0.073	0.069	206,620,000	0.02	68,213,000
0.060	117,270,000	0.078	0.075	175,020,000	0.02	47,036,000
0.070	75,320,000	0.086	0.082	123,270,000	0.02	34,326,000
0.080	44,240,000	0.094	0.089	78,780,000	0.03	24,721,000
0.100	12,110,000	0.113	0.103	24,960,000	0.05	13,311,000
0.120	2,860,000	0.130	0.110	6,290,000	0.11	6,475,000
0.140	310,000	0.167	0.072	450,000	0.52	3,250,000
0.200	40,000	0.245	0.056	50,000	1.05	873,000

Note: rounding may cause apparent inconsistencies

Figure 14.3 Section 13879000N Red Hills Block Model: Cu Block Grades

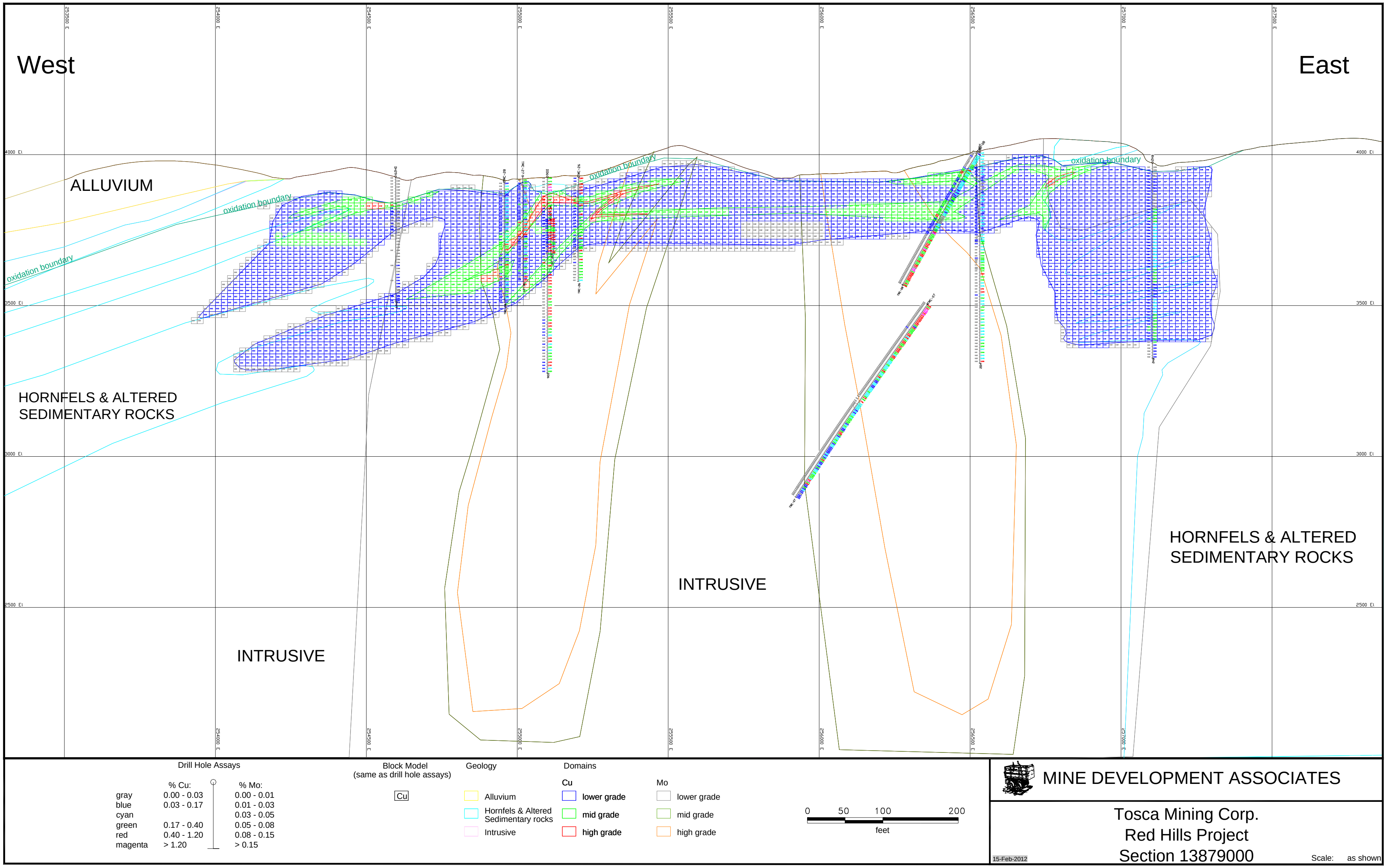


Figure 14.4 Section 13879000N Red Hills Block Model: Mo Block Grades

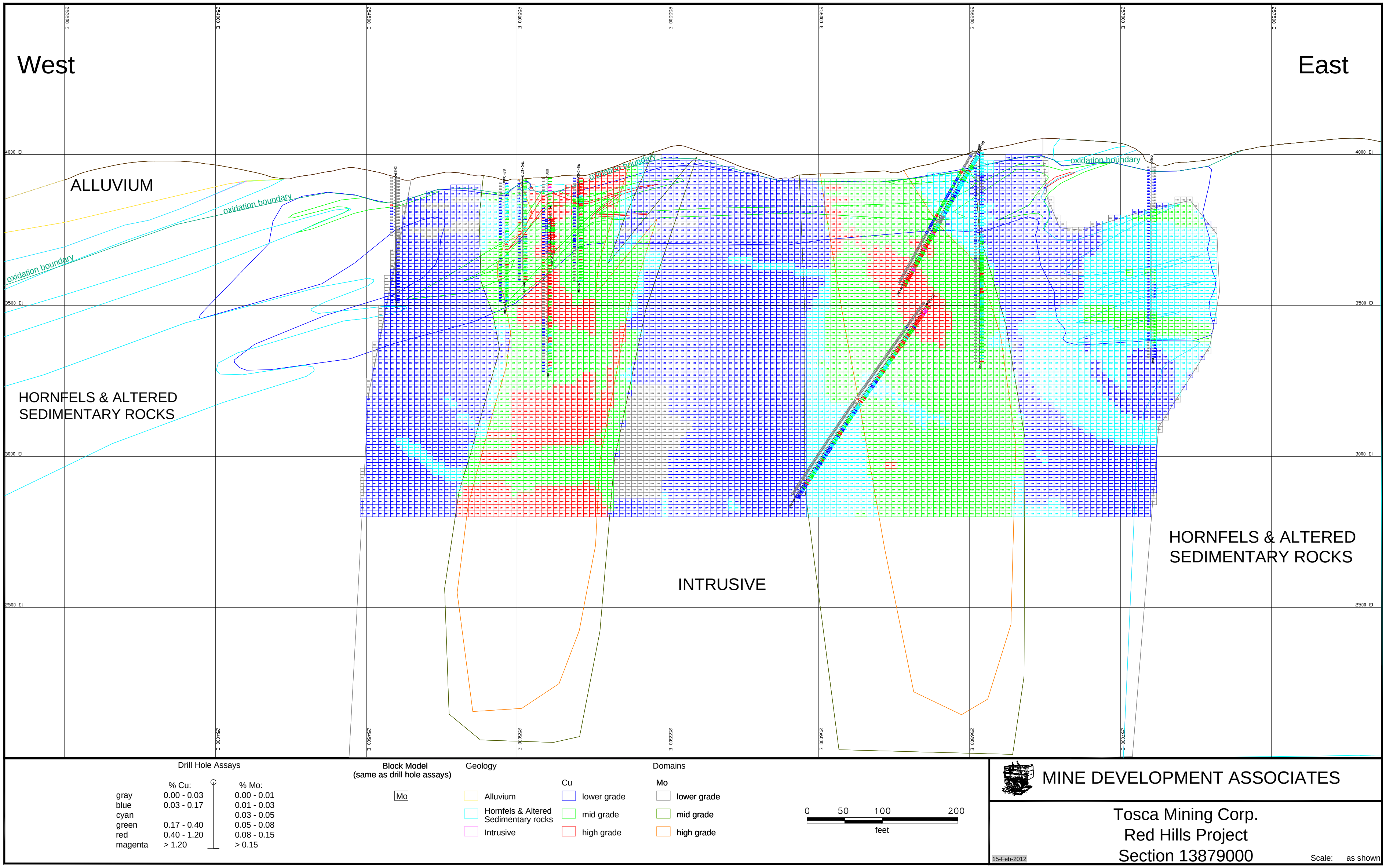
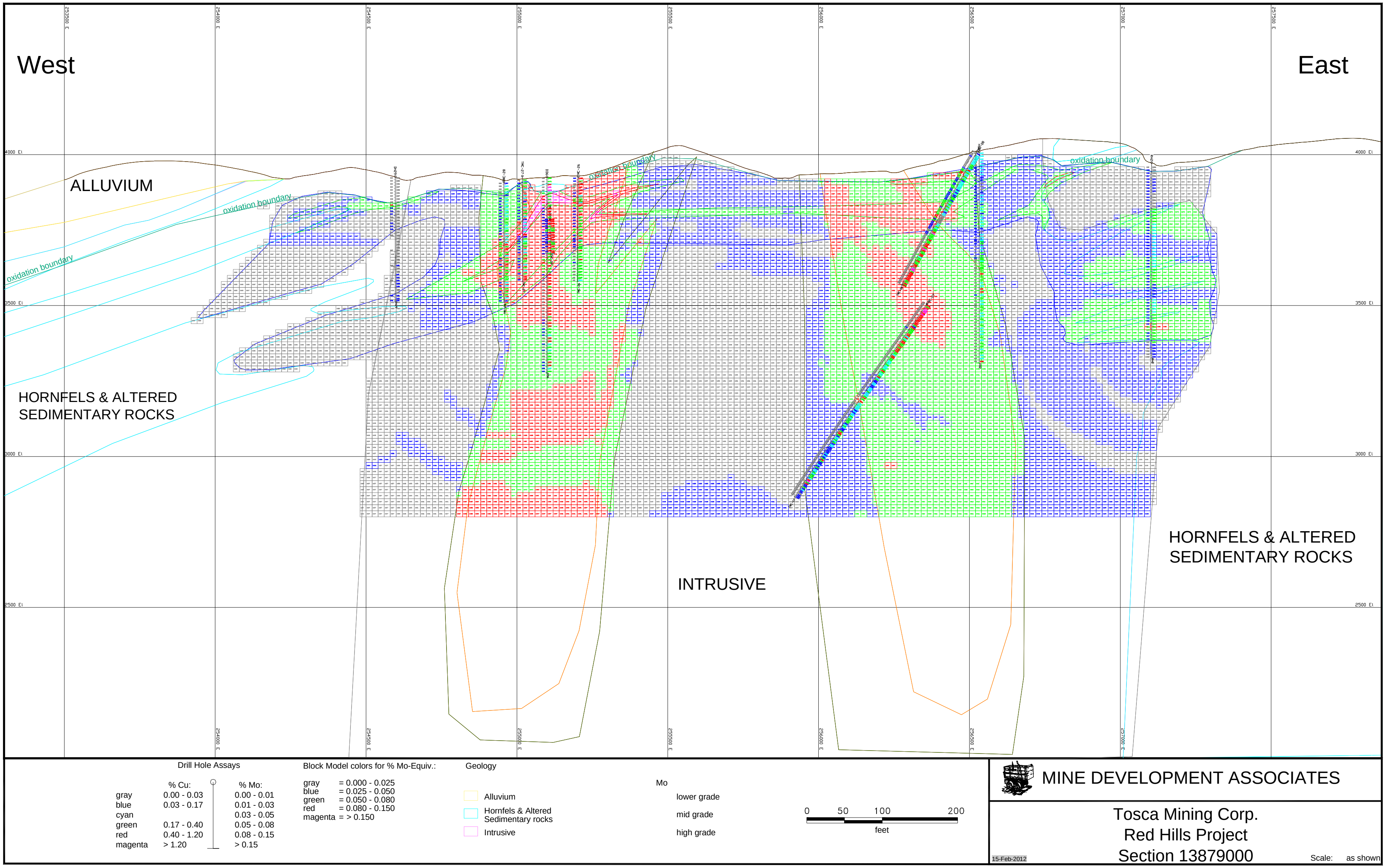


Figure 14.5 Section 13879000N Red Hills Block Model: MoEq Block Grades



Checks were made on the Red Hills resource model in the following manner:

- Cross sections with the mineral domains, drill-hole assays and geology, topography, sample coding, and block grades with classification were plotted and reviewed for reasonableness;
- Block-model information, such as coding, number of samples, and classification were checked visually on the computer by domain and lithology on sections and long-sections;
- Cross-section volumes to long-section volumes to block-model volumes were checked;
- Nearest-neighbor and ordinary Krig models were made for comparison;
- A simple polygonal model was made with the original modeled section domains; and
- Quantile-quantile plots of assays, composites, and block-model grades were made to evaluate differences in distributions of metals.

It is deemed that the resource estimate is reasonable, honors the geology, and is supported by the geologic model**.**

14.10 Discussion, Qualifications, Risk, Upside, and Recommendations

The Red Hills contains a porphyry molybdenum deposit overprinted with a near-surface zone of copper enrichment. Molybdenum grades of greater than 0.05% Mo occur over a vertical thickness of over 2,000ft in the core of the porphyry deposit. Copper grades are more variable within the enrichment blanket, though a consistent horizon of 0.15% Cu to 0.05% Cu occurs over a significant portion of the deposit.

There are no classified resources outside of the current land boundary. In consideration of the depth limits to any potential open-pit mining, the Red Hills resource was constrained by a bottom elevation of 2,800ft, approximately 1,200ft below the surface. All material below this elevation was not classified and is therefore not included within the current resource.

The current resource includes material that is in close proximity to the current land boundary. Recent agreements between Tosca, Red Hills Copper, Inc., and the adjoining property owner indicate that there is a reasonable expectation that Tosca will be able to secure surface rights to the adjoining property. Accordingly, MDA allowed the inclusion into the current classified resource of all material within their current land boundary.

Indicated resources are limited to elevations above 3,600ft elevation due to the sparse drilling at greater depths. As a result of this elevation limit, a large majority of the molybdenum resource is classified as Inferred, and there is some risk associated with the large estimation distances needed to fill the grade model. Indicated resources are also constrained to resource blocks associated with the 2011 Tosca drill holes and the surveyed historic drill holes. The uncertain location for the un-surveyed historic drill holes creates risk within the model, although with a large porphyry system such as at Red Hills, the risk is not considered to be significant.

The molybdenum and copper mineralization is open to the south under post-mineral cover, and it is expected that additional drilling will increase the size of the resource. Additional infill drilling is recommended to bring greater confidence to the interpretation of the molybdenum mineralization and increase the resource classification. Additional specific gravity measurements are recommended to better define the modeled density and provide increased confidence in the tonnage estimates.

15.0 MINERAL RESERVE ESTIMATE

No mineral reserve estimates have been prepared for this report. MDA is unaware of any NI 43-101-compliant reserve estimates for the Red Hills project.

16.0 ADJACENT PROPERTIES

As previously described, the Red Hills property is part of the Shafter mining district, although the only copper and molybdenum mineralization identified in the district has come from Red Hills.

17.0 OTHER RELEVANT DATA AND INFORMATION

MDA is not aware of any other relevant information regarding the Red Hills project.

18.0 INTERPRETATION AND CONCLUSIONS

This report provides a first-time NI 43-101-compliant resource for the Red Hills copper-molybdenum project. MDA has reviewed the project data and the drill-hole database and has visited the project site. MDA believes that the data provided by Tosca, as well as the geological interpretations Tosca and MDA have derived from the data, are generally an accurate and reasonable representation of the Red Hills deposit.

Copper-molybdenum mineralization at Tosca's Red Hills project is associated with the easternmost Laramide porphyry system in the Laramide porphyry copper province of southern Arizona, southern New Mexico, and northern Mexico. Exploration by ASARCO, Phelps Dodge, Amax, and Duval between 1955 and 1983 – particularly Duval's 70-hole drill program in 1971 and 1972 – identified porphyry copper and molybdenum mineralization with an overlying chalcocite enrichment blanket in the Red Hills. Tosca confirmed the presence of this mineralization with their drilling in 2011.

The porphyry molybdenum and near-surface copper mineralization at Red Hills covers an area about 4,000ft long (east-west) by 3,000ft wide (north-south), though the southern limit of mineralization for both metals is not well-defined and is considered to be open in this direction under post-mineral cover.

Molybdenum mineralization, occurring as quartz-sulfide stockwork veins, is centered on the Red Hills intrusion but also extends up into the sedimentary roof pendants. The center core of higher-grade (>0.05% Mo) molybdenum mineralization forms a horseshoe-shaped zone, about 2,000ft in diameter and open to the south, although this shape might be a reflection of incomplete drill coverage.

Current drilling has encountered significant molybdenum mineralization to depths of over 2,000ft. Most of the historic holes drilled at Red Hills were stopped at an average depth of about 430ft while still in molybdenum mineralization. Five of Duval's holes were drilled past 1,000ft in depth, all of them intersecting molybdenum mineralization from top to bottom. Duval's hole DD7 was drilled to a vertical depth of 2,106ft and averaged 0.076% Mo throughout. Eight of Tosca's drill holes targeted the molybdenum mineralization to depths of up to 1,300ft, and all eight encountered significant thicknesses of greater than 0.03% Mo mineralization. Tosca hole TMC-18 was drilled to a vertical depth of 1,199ft and averaged 0.084% Mo.

Copper mineralization occurs primarily as an enriched chalcocite blanket that developed below the oxide-sulfide boundary at depths ranging from the outcrop surface to 300ft. The chalcocite blanket represents a zone of supergene copper enrichment that overprints the upper portion of the porphyry molybdenum system and also extends laterally to the east and west into the sedimentary wallrock. Copper grades of 0.1% Cu to 0.5% Cu, with localized mineralization at over 1% Cu, characterize the chalcocite blanket, while the hypogene copper mineralization beneath the zone of enrichment averages less than 0.03% Cu. Structurally(?)-controlled copper grades of up to 20% Cu occur within a complex mix of altered sedimentary rocks and intrusive dikes/sills located 300ft northeast of the intrusive stock. Drilling has indicated that the very high-grade samples are of limited volumetric extent.

The Red Hills copper-molybdenum mineral resource is based on an assay database containing 121 drill holes, which includes 98 core holes, and a total of 5,713 molybdenum assays and 6,297 copper assays. All of the drill data were used in the creation of the geologic model, though one pre-Tosca drill hole is located immediately outside the current land boundary. The estimated resource lies within Tosca's property.

The Red Hills molybdenum and copper resource is fully diluted to 20ft by 20ft by 20ft blocks and tabulated on molybdenum-equivalent ("MoEq") grade cutoffs of 0.25% MoEq. At the reported cutoffs, the Red Hills Indicated resource totals 26,740,000 tons averaging 0.054% Mo (28,700,000 pounds molybdenum) and 0.14% Cu (77,398,000 pounds copper). The Inferred resource totals 263,840,000 tons averaging 0.051% Mo (268,450,000 pounds molybdenum) and 0.03% Cu (151,349,000 pounds copper). MDA classified the Red Hills resources by a combination of distance to the nearest sample and the number of samples, while at the same time taking into account reliability of underlying data, and understanding and use of the geology. There are only Inferred resources below an elevation of 3,600ft (an approximate depth of 500ft) due to the limited amount of drilling below this elevation.

The extent of the Red Hills molybdenum and copper resource to be included in any potential open-pit, flotation mining/milling scenario is controlled by the oxidation boundary and the depth limits to any potential open-pit mining. Accordingly, the classified resource is limited to a) material below the oxidation boundary, due to metallurgical and processing uncertainties, and b) constrained to a bottom elevation of 2,800ft. Existing agreements indicate that Tosca has a reasonable expectation of acquiring the adjacent property, so Tosca should have the ability to fully access the current resource.

19.0 RECOMMENDATIONS

Additional drilling is recommended to upgrade the copper and molybdenum mineralization and to explore for additional porphyry molybdenum mineralization at depth and along the southern extension of the deposit. Drilling targeting the porphyry molybdenum mineralization should be primarily angle holes to aid in modeling the apparent near-vertical orientation of the mineralized stockwork/veining and also better determine the mineral system boundaries. Additional density measurements are recommended focusing on the copper and molybdenum mineralization and including measurements from both the intrusive and the sedimentary wallrock.

Thirty holes for a total of about 60,000ft are planned to upgrade the deeper zone of molybdenum mineralization and to investigate extensions of the molybdenum zone. It is expected that the proposed drill program will allow for a resource classification of Indicated for a significant portion of the deep porphyry molybdenum mineralization. The upper portions of many of these holes will also serve to upgrade and potentially expand the copper enrichment blanket.

A preliminary economic assessment is currently underway and will be completed in early 2012. Upon positive results, Tosca should proceed to feasibility-level studies that can be undertaken concurrently with the proposed 2012 drill program

Table 19.1 shows the proposed 2012 work and the estimated cost. Completion of this phase of work will cost approximately $5.5million.

Table 19.1 Recommended 2012 Work Program for the Red Hills Copper-Molybdenum Project

Item	Estimated Cost
30 drill holes (~60,000 feet) to upgrade molybdenum mineralization	$3,200,000
Metallurgical test work	$100,000
M3 engineering to proceed from PEA to Feasibility Study	$1,000,000
Legal and water rights	$300,000
Project management	$1,000,000
Total Cost	$5,500,000

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21.0 DATE AND SIGNATURE PAGE

Effective Date of report: February 15, 2012
The resource estimate was current as of the Effective Date.

Completion Date of report: February 17, 2012

"Paul G. Tietz" February 17, 2012

Paul G. Tietz, C. P. G. Date Signed

"Rodrigo R. Carneiro" February 17, 2012

Rodrigo R. Carneiro, QP Date Signed

22.0 CERTIFICATE OF AUTHORS

PAUL TIETZ, C.P.G.

I, Paul Tietz,C.P.G., do hereby certify that I am currently employed as Senior Geologist for Mine Development Associates, Inc. located at 210 South Rock Blvd., Reno, Nevada 89502 and:

1. I graduated with a Bachelor of Science degree in Biology/Geology from the University of Rochester in 1977, a Master of Science degree in Geology from the University of North Carolina, Chapel Hill in 1981, and a Master of Science degree in Geological Engineering from the University of Nevada, Reno in 2004.

2. I am a Certified Professional Geologist (#11004) with the American Institute of Professional Geologists.

3. 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. I am independent of Tosca Mining Corp., Red Hills Copper, Inc., and Mr. Wyck Livingston, applying all of the tests in section 1.5 of National Instrument 43-101.

4. I take responsibility for all sections of this report entitled *Updated Technical Report on the Red Hills Project, Presidio County, Texas* prepared for Tosca Mining Corporation and dated February 17, 2012, except for Section 13.2 and those issues discussed in Section 3.0.

5. I have not had prior involvement with the porphyry mineralization that is the subject of this Technical Report. I visited the Red Hills project site on April 7 and 8, 2011 and on August 30 and September 1, 2011. During the early 1980s, I worked for Gold Fields Mining Corporation while that company was engaged in a joint venture with Duval Corporation exploring sections adjacent to but not including the section containing the porphyry mineralization that is the subject of this report.

6. As of the date of the certificate, to the best of my knowledge, information and belief, the Technical Report contains the necessary technical information to make the Technical Report not misleading.

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

8. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated February 17, 2012.

"Paul G. Tietz"

Paul G. Tietz, C.P.G.

CERTIFICATE OF AUTHOR

RODRIGO R. CARNEIRO, MSC.

I, Rodrigo R. Carneiro., do hereby certify that I am currently employed as Director of METCON and Process Engineering for METCON Research, located at:

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1. I graduated with a Bachelor of Science degree in Metallurgical Engineering from the University of Arizona in 1978. I obtained a Master of Science degree in Mining Engineering from the University of Arizona, in 1998.

2. I am a member of the Society for Mining, Metallurgy, and Exploration, Inc. (SME #4028876) and I am a registered professional metallurgical engineer in Venezuela (Venezuelan College of Engineers, Registration #71096).

3. I am a Qualified Professional (QP) with special expertise in Metallurgy and Processing. Mining and Metallurgical Society of America (Member # 01381QP).

4. I have worked as a Metallurgical Engineer for a total of 33 years since my graduation from university.

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. I am independent of Tosca Mining Corp., Red Hills Copper, Inc.

6. I take responsibility for the metallurgical Section 13.2 of this report entitled Updated Technical Report on the Red Hills Project, Presidio County, Texas prepared for Tosca Mining Corporation and dated 17 February 2012.

7. I have not had prior involvement with the porphyry mineralization that is the subject of this Technical Report. I have not visited the Red Hills.

8. As of the date of the certificate, to the best of my knowledge, information and belief, the Technical Report contains the necessary technical information to make the technical report not misleading.

9. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 17 Day of February 2012.

Rodrigo R. Carneiro, MSC.