CIRRUS GOLD

# Cirrus Gold Corporation
# NI 43-101 Technical Report on the Lordsburg Project, Southwest New Mexico, USA

**Report Prepared For:** Cirrus Gold Corporation
(to be renamed American Copper Development Corporation)
200 Granville Street, Suite 2710, Vancouver, BC V6C 1S4 Canada
Tel (778) 372-9888 www.cirruscopper.com

**Report Prepared By:** Mine Mappers, LLC
9221 N. Golden Finch Avenue, Tucson, AZ 85742 USA

**Signed by Qualified Persons:** Thomas W. Bidgood, Reg. Member SME, Mine Mappers, LLC
Mark Osterberg, Ph. D., P.G., Mine Mappers, LLC

**Effective Date:** 6/30/2022
**Release Date:** 7/07/2022

# Certificates of Qualified Persons

**Certificate of Qualified Person**

*Thomas W. Bidgood, Reg. Member SME (#4054453)*
*9831 E. 84th Street*
*Tulsa, OK 74133*

I, Thomas W. Bidgood Reg. Member SME (#4054453), am employed as Principal Geologist with Mine Mappers, LLC 12460 N. Sandby Green Dr. Marana, AZ 85653

This certificate applies to the technical report titled NI 43-101 Technical Report on the Cirrus Gold Corp. Lordsburg Copper Project with an effective date of 6/30/2022 (the "Technical Report").

I am a Registered Member of Society for Mining, Metallurgy and Exploration (Reg# 4054453). I graduated from the South Dakota School of Mines and Technology in Rapid City SD with a PhD in Geology in 1978.

I have practiced my profession for 50 years. I have been directly involved in Mineral Exploration and Mining for precious and base metal deposits for 50 years.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43–101).

I visited the Lordsburg Project in Hidalgo County New Mexico from 31 January-03 February 2022.

I am responsible for all sections of the Technical Report.

I am independent of Cirrus Gold Corporation as independence is described by Section 1.5 of NI 43–101.

I have had no previous involvement with the Lordsburg Project.

I have read NI 43–101 and the Technical Report has been prepared in compliance with that Instrument. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated: 6/30, 2022

"Signed and sealed"

Thomas W. Bidgood Registered Member SME

SME
Society for Mining, Metallurgy & Exploration
Dr. Thomas W. Bidgood
SME Registered Member No. 4054453
Signature
Date Signed 06/30/2022
Expiration date 12/31/2022

**Certificate of Qualified Person**

*Mark Osterberg, Ph. D., P.G.*
*Mine Mappers, LLC*
*12460 N Sandby Green Drive*
*Marana, AZ 85653*
*USA*

I, Mark Osterberg, Ph. D., am employed as Chief Consultant with Mine Mappers, LLC.

This certificate applies to the technical report titled NI 43-101 Technical Report on the Cirrus Gold Corp. Lordsburg Copper Project with an effective date of 6/30/2022 (the "Technical Report").

I am registered as a Professional Geologist in Arizona (#37755) and a registered member of the Society for Mining, Metallurgy and Exploration (#04203552). I graduated from the University of Arizona with a Doctor of Philosophy degree in Economic Geology in 1990.

I have practiced my profession for 41 years. I have been directly involved in the evaluation of precious and base metal deposits for 41 years.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the Lordsburg Copper Project from 31 January to 2 February 2022.

I am responsible for all sections of the Technical Report.

I am independent of Cirrus Gold Corporation as independence is described by Section 1.5 of NI 43–101.

I have had no previous involvement with Cirrus Gold's Lordsburg Copper Project.

I have read NI 43–101 and the sections of the technical report for which I am responsible have been prepared in compliance with that Instrument. As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated: 6/30, 2022

"Signed and sealed"

Mark Osterberg, P.G.

SME
Society for Mining, Metallurgy & Exploration
Dr. Mark W. Osterberg
SME Registered Member No. 4203552
Signature
Date Signed 6/30/2022
Expiration date 12/31/2022

# Table of Contents

# List of Appendices

PPM Patented Mining Claims

PM Unpatented Mining Claims

PPM Leased Real Property

Mason Unpatented Claims

# List of Figures

## List of Tables

# 1 SUMMARY

Mine Mappers, LLC ("MML") has prepared this technical report on the Lordsburg property, located in SW New Mexico, for Cirrus Gold Corporation (to be renamed American Copper Development Corporation) ("Cirrus"). Cirrus' common shares are currently listed on the Canadian Securities Exchange, under the trading symbol CI. The Lordsburg property includes past producing base and precious metal vein deposits on patented and unpatented Federal lode mining claims. The purpose of the report is to provide a technical summary of the Lordsburg project in support of a fundamental change of Cirrus as required by the policies of the Canadian Securities Exchange, pursuant to which Cirrus is acquiring the Lordsburg project. This report has been prepared in accordance with disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101, Companion Policy 43-101CP and Form 43-101F1 ("NI 43-101").

## 1.1 Property Description and Ownership

The Lordsburg project is comprised of 970 contiguous Federal patented and unpatented lode mining claims, covering 7,560 hectares in area. The claims include blocks under previous control by Soloro Cobalt and Gold Corporation (Soloro claims), Hudbay Minerals Inc. (Entree claims), and Waterton Global Resource Management, Inc. (Waterton group claims). Cirrus will acquire a 100% ownership interest in the claims currently held by Hudbay and Waterton (each through wholly owned subsidiaries), and the right to earn a 100% ownership interest in the claims currently held by Soloro, all subject to certain underlying interests and obligations. A list of claims can be found in the attached Appendix .

The project is located immediately south of the town of Lordsburg (population 2,335) in southwest New Mexico, approximately 250 kilometers east of Tucson, Arizona, and 500 kilometers south of Albuquerque, New Mexico. Lordsburg is the county seat of Hidalgo County and lies on Interstate 10 and the Union Pacific railroad.

Hidalgo County is semi-arid desert characterized by hot and dry summers, and chilly and windy winters. Vegetation is sparse and varies with bedrock type and proximity to ephemeral streams, and consists of mixtures of greasewood, cat's clay, sage brush, yucca, Spanish sword, barrel and cholla cactus, mesquite, and juniper.

## 1.2 Exploration and Mining History

The northern portion of the project has a long history of underground mining for silver, gold, copper, and lead. The earliest non-native visitors to the area were survey parties of the United States military sent to scout railroad routes to the west coast by the United States government between 1854-1873. They were followed by prospectors and early miners seeking silver and gold, and later, copper and lead.

A host of small underground mines were in operation but only a handful achieved significant production of precious and base metals. The Atwood group, the Henry Clay, the Emerald, Superior, Jim Crow, Bonney, Miser's Chest, Bluebird, and Robert E. Lee mines account for most of the historic production. The last of these mines ceased operations in the 1970's.

The search for, and mining of smelter flux feed was the last active successful mining activity in the district, and ended in the 1960's. Since that time, the only mining related activity has been exploration for base and precious metal vein and porphyry copper deposits by the antecedent companies of Cirrus Gold Corporation.

The exploration work at Lordsburg in recent years was designed to discover porphyry copper deposits and includes regional geological synthesis and project scale geological mapping campaigns, geochemical sampling, geophysical surveys, and diamond drilling. These efforts have only tested a small portion of the project.

The Phelps Dodge Company drilled two deep core holes, both drilled to 2,451 feet from the 2000 level of the Bonney mine in the 1970's and encountered propylitized andesites and metasediments. Between 2008 and 2009, Entrée Gold Inc. mapped the eastern and southeastern portion of the district, collected soil and rock geochemical samples, completed magnetic, audio-frequency magnetotelluric and induced polarization surveys, and drilled 13 core holes, encountering potassic alteration on surface, and low-grade porphyry copper mineralization in eight of 13 core holes.

Santa Fe Gold Company mapped, sampled, and conducted a limited scale, controlled source, audio-frequency magnetotelluric survey in the northern part of the project area in 2011. Their work was largely focused on the search for narrow vein, underground base, and precious metal feed for their Bonney mill and for smelter flux, but they recognized the pervasive and intensive propylitic alteration of the Laramide andesites and granodiorite stock. Their drilling was not designed specifically to test for porphyry copper mineralization however, their geologists recognized metallogenic and wall rock alteration zoning patterns that indicated the possible presence of a porphyry center to the south of the historic underground mines.

Waterton Global Resource Management completed high-level desktop studies of the district between 2016 and 2020, that included a green-rock study, a review of satellite and hyperspectral data, and processing of publicly available magnetic data, concluding that porphyry copper potential in the district warranted further investigation.

## 1.3 Geology and Mineralization

The oldest rocks in the Lordsburg district are Cretaceous, pre-Laramide age metasediments and overlying basaltic-andesite and rhyolitic volcanic rocks. These sequences were intruded by a Laramide age, intermediate, porphyritic, composite stock that altered the older rocks to propylitic assemblages and generated the mineralized veins exploited by the historic underground mines. Later, post-Laramide andesites and rhyolitic pyroclastic rocks and recent alluvium partially covered the Laramide age porphyry.

The Laramide rocks of Southwestern New Mexico were emplaced during a period of regional tectonic compression and then subjected to regional extension during the middle and later Tertiary. This change resulted in post mineral rotation, segmentation, and burial of post-Laramide and older rocks under Quaternary and recent alluvial deposits. The Lordsburg district was subjected to similar tectonic stresses.

## 1.4 Conclusions and Recommendations

The wall rock alteration assemblages, the composite nature of the Lordsburg stock, the presence of breccia pipes and felsic and mafic dikes, and the geometry of vein and fault patterns point to the possible presence of an actively differentiating porphyry system that could have generated a porphyry copper deposit. The extensional tectonic regime, considered in its regional context raises the distinct possibility that a porphyry copper deposit in the Lordsburg district could be rotated, and/or structurally dismembered, and/or buried beneath later cover.

The authors recommend that additional work be designed to detect a rotated and buried porphyry copper deposit. This should include leveling and consolidation of existing geological mapping and geochemical datasets and district scale induced polarization and Controlled-Source Audio Magnetotelluric (CSAMT) surveys.

# 2 INTRODUCTION AND TERMS OF REFERENCE

Mine Mappers, LLC has prepared this technical report on the Lordsburg property, located in SW New Mexico, for Cirrus Gold Corporation, 2710-200 Granville Street, Vancouver, BC, V6C 1S4, ("Cirrus"). The Lordsburg project is comprised of 970 contiguous Federal patented and unpatented lode mining claims, covering 7,560 hectares in area. The claims include blocks under previous control by Soloro Cobalt and Gold Corporation (Soloro claims), Hudbay Minerals Inc. (Entree claims), and Waterton Global Resource Management, Inc. (Waterton group claims). Cirrus will acquire a 100% ownership interest in the claims currently held by Hudbay and Waterton (each through wholly owned subsidiaries), and the right to earn a 100% ownership interest in the claims currently held by Soloro, all subject to certain underlying interests and obligations. A list of claims can be found in the attached Appendix .

This report has been prepared in accordance with 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.

## 2.1 Project Scope and Terms of Reference

The purpose of this report is to provide a technical review and summary of the exploration completed by previous operating and exploration companies as well as an assessment of the results from the Lordsburg property. It also contains recommendations for subsequent work programs designed to advance the project towards a mineral discovery of economic value to Cirrus.

The scope of this study included a review of pertinent historical information and data obtained directly from Cirrus, public sources and directly collected and obtained by the authors. Appropriate citation is listed in Section 27 of this report. Cirrus Gold Corporation itself has not completed substantive work at the project site as of the effective date of this report.

Dr. Mark Osterberg and Dr. Thomas Bidgood, the authors, visited the Lordsburg project and surrounding, contiguous areas between 31-January and 2-February 2022. The site visited included a two-day field examination of outcrops, old mines and prospects, drill roads and drill sites. The senior author has visited and worked on the Lordsburg project numerous times prior to his 2022 site visit.

This report is primarily based on data and information provided by Cirrus which includes private records and reports from antecedent companies and organizations. The authors have reviewed much of the available data and related reports, completed site visits, and made judgements about the general reliability of the underlying data. Where deemed inadequate or unreliable, data were either eliminated from use or procedures were modified to account for lack of confidence in suspect information. The authors have made such independent investigations as deemed necessary in their professional judgements to be able to reasonably present the conclusions, interpretations, and recommendations presented herein.

The Effective Date of this technical report is 6/30/2022.

## 2.2 Frequently Used Acronyms, Abbreviations, Definitions, and Units of Measure

In this report, measurements are generally reported in metric units. In many instances where information was originally reported in English units conversions were made as shown below.

Currency, units of measure, and conversion factors used in this report include:

**Linear Measure**

| | | |
|---|---|---|
| 1 centimeter | = 0.3937 inch | |
| 1-meter | = 3.2808 feet | = 1.0936 yard |
| 1 kilometer | = 0.6214 mile | |

**Area Measure**

| | | |
|---|---|---|
| 1 hectare | = 2.471 acres | = 0.0039 square mile |

**Capacity Measure (liquid)**

| | |
|---|---|
| 1 liter | = 0.2642 US gallons |

**Weight**

| | | |
|---|---|---|
| 1 tonne | = 1.1023 short tons | = 2,205 pounds |
| 1 kilogram | = 2.205 pounds | |
| 1 ounce per ton | = 34.2857 grams per tonne | |

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

**Frequently used acronyms and abbreviations**

| | |
|---|---|
| AA | atomic absorption spectrometry |
| Ag | silver |
| Ar | Argon |
| Au | gold |
| BLM | Bureau of Land Management |
| CIM | Canadian Institute of Mining, Metallurgical, and Petroleum] |
| Cirrus | Cirrus Gold Corporation |
| Crec | Controlled recognized environmental condition |
| Crd | Carbonate replacement deposit |
| CSAMT | Controlled-source Electromagnetics Audio-frequency Magnetotellurics |
| Cu | copper |
| $^{o}$C | degrees centigrade |
| Fe | iron |
| FRC | Federal Resources Corporation |
| g/t | grams per tonne |
| hrec | Historic environmental concern |

| | |
|---|---|
| ICP | inductively coupled plasma analysis |
| ICP-AES | inductively coupled plasma atomic emission spectroscopy |
| IP | induced polarization |
| K | Potassium |
| kg | kilogram (1 kilogram = 1,000 g) |
| lb | avoirdupois pound (1 pound = 0.4536 kg) |
| LOI | Letter of Intent |
| m | meters |
| Ma | million years ago |
| Mason | Mason Resources |
| Mn | manganese |
| NSR | net smelter return |
| oz | troy ounce (12 oz to 1 pound) |
| Pb | lead |
| Phase I ESA | Phase I Environmental Site Assessment |
| Ppm | parts per million |
| QA/QC | quality assurance and quality control |
| Rec | Recognized environmental concern |
| RQD | rock-quality designation |
| Rouse | Rouse Cattle Company |
| Santa Fe | Santa Fe Minerals Corp |
| SLR | SLR International Corp |
| Soloro | Soloro Cobalt and Gold |
| t | metric tonne or tonnes |
| Th | thorium |
| ton | short ton |
| U | Uranium |
| XRF | X-ray fluorescence spectrometry (method of chemical analysis) |
| Zn | zinc |

# 3 RELIANCE ON OTHER EXPERTS

The opinions and conclusions presented in this Technical Report are based on information provided by Cirrus and reflect technical information and economic conditions at the time of report preparation. This report includes technical information, which requires subsequent calculations to derive sub-totals, totals, and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the authors do not consider them to be material.

Neither Mark Osterberg nor Thomas Bidgood are insiders, associates, or affiliates of Cirrus and neither Osterberg nor Bidgood or any affiliate has acted as advisor to Cirrus or its affiliates in connection with this project. The results of the technical review are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings.

The opinions expressed in this report have been based partially on information supplied to the authors by Cirrus and are provided in response to a specific request by Cirrus to do so. Opinions presented in this report apply to the site conditions and features as they existed at the time of the authors' site visit, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this report, about which the authors have no prior knowledge nor have had the opportunity to evaluate.

# 4 PROPERTY DESCRIPTION AND LOCATION

## 4.1 Location

The Lordsburg project is located immediately south of the town of Lordsburg (population 2,335), in Hidalgo County, New Mexico, in the southwestern corner of the state Figure 4-1. The population of Hidalgo County is less than 5,000. Most residents are engaged in government, agriculture, mining, and the transportation industries.

Lordsburg is the county seat and is located on Interstate 10 and the main southern track of the Union Pacific Railroad. It is approximately 250 kilometers east of Tucson, Arizona and 500 kilometers south of Albuquerque, New Mexico. The Lordsburg project is situated on a combination of patented mining claims and unpatented Federal mining claims administered by the U.S. Bureau of land Management (BLM). The claims are located in all or parts of Sections 1, 10-12, 17-30, and 33-36, T23S, R19W; Sections 6-8, 17-21, and 28-31, T23S, R18W; Section 6, T24S, R18W; and Sections 1-2, and 4-5, T24S, R19W. For this report, sections will refer work completed on Waterton group claims, Soloro claims, and Entrée claims as indicated in Figure 4-2.

The project is located on the United States Geological Survey's Gary and Lordsburg 1:24,000 scale quadrangle maps. The property is roughly centered on UTM coordinates 710700E and 357500N (NAD83, UTM Zone 12N).

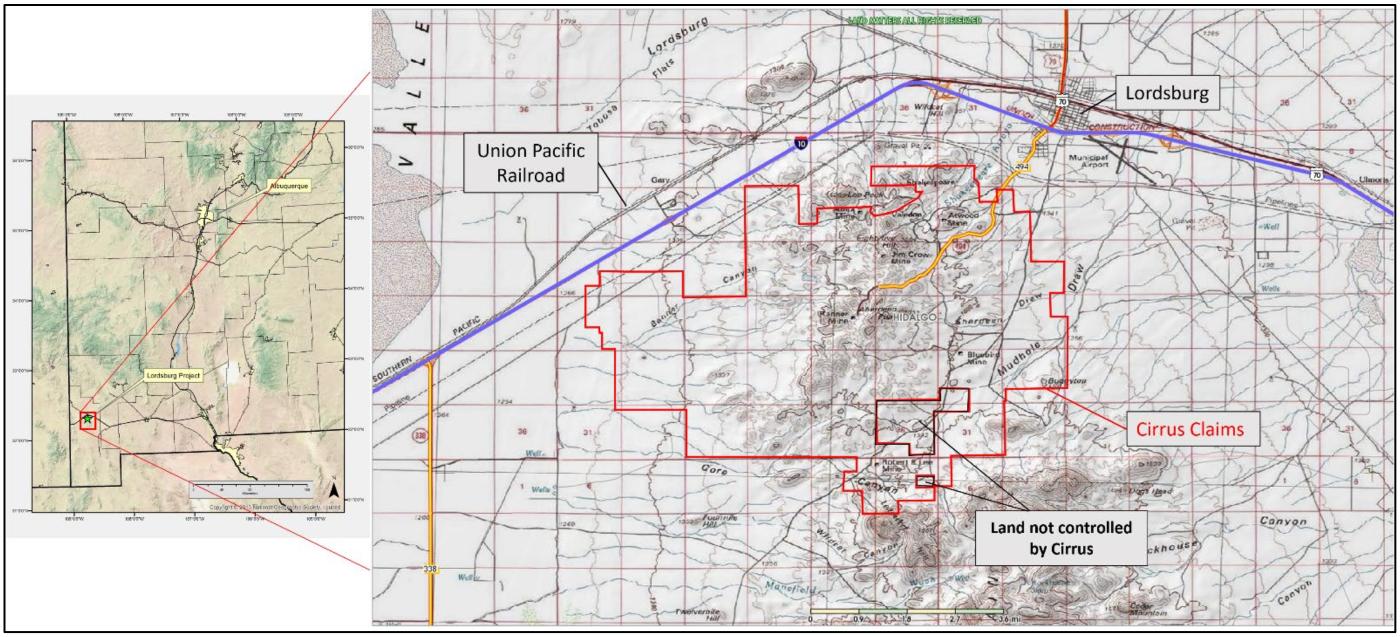


*Figure 4-1 Project access and location*

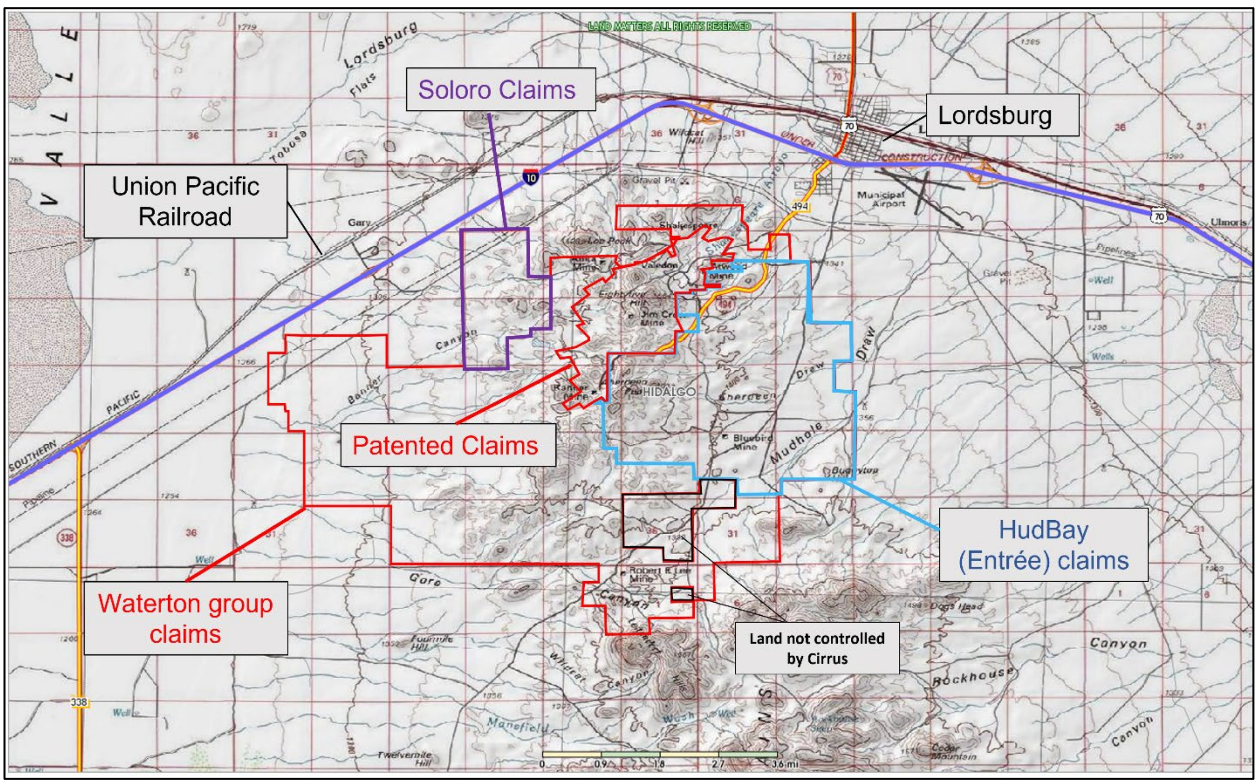


*Figure 4-2 Mineral tenure*

## 4.2 Land Area

The Lordsburg project consists of 868 unpatented Federal mining claims, and 102 patented mining claims. The property consists of 75.6 square kilometers of surface and mineral rights. These rights are granted by the United States Federal Mining law of 1872, as amended, and administered by the BLM.

Patented and unpatented mining claims are listed in the attached Appendix . Patented claims are fee simple private property and as long as property taxes are paid, may be retained in perpetuity and accessed without hindrance. Unpatented mining claims carry an annual maintenance requirement of $225 per claim that must be paid by 1 September each year to maintain rights to the claim. Unpatented claims may be held in perpetuity if the annual claim maintenance requirements are fulfilled.

The Waterton group claims shown on Figure 4-2 are comprised of 102 patented and 550 unpatented mining claims. The Entrée and Soloro claims are unpatented mining claims, comprised of 261 and 57 claims, respectively.

## 4.3 Agreements and Encumbrances

Pursuant to a binding letter of intent (the “LOI”) dated January 4, 2022, among Cirrus, Pyramid Peak Mining, LLC (“PPM”) and Mason Resources (US) Inc. (“Mason”), Cirrus agreed to purchase the Lordsburg project from PPM and Mason, in consideration for certain cash and share payments and the granting of certain royalty interests described below. PPM and Mason are subsidiaries of Waterton Global Resource Management, Inc., and Hudbay Minerals Inc., respectively. The LOI is to be superseded by a definitive Asset Purchase Agreement and certain ancillary agreements.

Following Closing of the acquisition of the Lordsburg project, Cirrus will be required to make certain milestone payments to PPM under the LOI, as follows:

1. the first Milestone Payment due 12 months from Closing ($500,000 cash and, subject to certain conditions, $500,000 in Cirrus common shares);
2. the second Milestone Payment due 24 months from Closing ($750,000 cash and subject to certain conditions, $750,000 in Cirrus common shares); and
3. the final Milestone Payment due 36 months from Closing ($1,250,000 in cash and, subject to certain conditions, $1,250,000 in Cirrus common shares).

Under the LOI, Cirrus has agreed to grant the following net smelter return (“NSR”) production royalty interests to PPM and Mason, respectively:

1. On the lands purchased from PPM (except for Soloro’s HAT claims), a 2% NSR will be payable, with PPM to receive a 1.5% NSR and Mason 0.5%. Each of these will be subject to a buyback provision whereby half of each royalty (0.75% and 0.25%respectively) can be purchased by Cirrus for $5,000,000 ($3,750,000 to PPM and $1,250,000 to Mason); and
2. On the lands purchased from Mason, a 2% NSR will be payable, with Mason to receive a 1.5% NSR and PPM 0.5%. Each of these will be subject to a buyback provision whereby half of each royalty (0.75% and 0.25% respectively) can be purchased by Cirrus for $5,000,000 ($3,750,000 to Mason and $1,250,000 to PPM).

In addition, Cirrus is assuming the following existing underlying obligations:

1. To assume PPM’s rights and obligations under an option agreement dated October 7, 2020 between Soloro Cobalt and Gold Corporation (“Soloro”) as optionor and PPM as optionee,

pursuant to which PPM was granted the option to acquire the Soloro HAT claims in consideration for:

a. an aggregate of US$2,000,000 in exploration work (or cash in lieu) being completed by the fifth anniversary date of the agreement (US$250,000 by the second anniversary and US$1,750,000 by the fifth anniversary or by the ninth anniversary if the option period is extended to 10 years);

b. the granting by PPM of a 2% NSR royalty to Soloro, subject to the right of PPM to reduce the royalty rate to 1% at any time for a payment of US$5,000,000; and

c. PPM paying to Soloro annual advance royalty payments in the aggregate amount of US$165,000 during the five-year option period, and an additional US$100,000 on or before each of the fifth to the ninth anniversary dates of the agreement if the option is extended to 10 years;

2. To pay a 2% NSR royalty to Empirical Discovery, LLC on the Entrée claims, pursuant to an underlying royalty agreement dated June 5, 2012, between Entrée Gold (US) Inc. and Empirical Discovery, LLC. Empirical Discovery is an arms-length entity with respect to all other entities with interests in the Lordsburg project;

3. To pay a 5% NSR royalty to Henry Clay Mines, Incorporated on the 20 Henry Clay claims, including advance royalty payments of US$2,500 per month and to spend not less than US$50,000 for development work on the claims, pursuant to a Mining Lease Agreement dated May 19, 2015, between Henry Clay Mines, Incorporated as Lessor, and Lordsburg Mining Company as Lessee. Henry Clay Mines, Inc. is an arms-length entity with respect to all other entities with interests in the Lordsburg project;

4. To pay annual lease payments of US$250 to Roberta Reid on the three Roberta Reid claims, pursuant to a Surface and Mineral Lease Agreement dated effective as of November 1, 2014 between The Lordsburg Mining Company as Lessee and the Kathryn Sullivan Trust, Trustee Roberta Heesen Reid as Lessor; and in addition to pay a production lease payment of US$0.50 for each ton of rock or gravel, or a 5% royalty for any mineral removed and sold from the claims subject to the least, whichever results in a higher payment to the Lessor;. The Trustee and Lessor are arms-length entities with respect to all other entities with interests in the Lordsburg project;

5. To assume PPM's rights and obligations as Lessor under a Lease Agreement dated May 19, 2021 between PPM as Lessor and Summit Gold Corporation as Lessee with respect to the Banner Mill premises. Summit Gold Corporation is an arms-length entity with respect to all other entities with interests in the Lordsburg project; and

6. To assume Mason's rights and obligations under the Surface Use Agreement dated March 28, 2018 between Mason and Rouse Cattle Company ("Rouse") relating to part of the Hudbay (Entrée) claim area, pursuant to which Mason is required to pay Rouse an annual rental of US$30 per acre, plus US$100 per acre as compensation for any disturbance of the surface. Rouse Cattle Company is an arms-length entity with respect to all other entities with interests in the Lordsburg project.

## 4.4 Environmental Liabilities

In February of 2020, SLR International Corporation (SLR) performed a Phase I Environmental Site Assessment (Phase I ESA) of the Banner Mill Site. This assessment noted one recognized environmental condition (REC) in connection with the Site, relating to a neighbouring tailings impoundment located adjacent to the north of the Banner Mill site. Based on historical topographic maps and aerial photographs, the impoundment appears to have been a former tailings-disposal facility used in connection with historical mineral operations in the area and dates to at least the mid-1900s. No information was available to the author of the assessment concerning ownership of the Neighboring Tailings Impoundment; it was not part of the larger property historically operated by Lordsburg Mining Company. The assessment revealed no evidence of historical recognized environmental conditions (HRECs) in connection with the Site. The assessment revealed evidence of one controlled recognized environmental condition (CREC) in connection with the Site relating to completed reclamation by Lordsburg Mining Company.

There are no known environmental liabilities beyond those normally found in historical mining districts. All known historic workings, waste dumps and tailings appear to be environmentally stable. It is not known if special circumstances exist that might require future environmental mitigation.

There are certain reclamation bonding obligations currently supported by collateral and/or letters of credit with respect to the Entrée/Hudbay claims. Under the LOI, Cirrus will be assuming responsibility for those arrangements. Specifically, following a joint inspection of this property by the Bureau of Land Management and the New Mexico Mining and Minerals Division ("NMMMD"), the amount of the financial assurance was reduced from US $126,100 to US $50,440 in a decision by the BLM received September 25, 2018. A new certificate of deposit in the amount of US $50,440 will need to be created and pledged to the BLM and NMMMD and, once in place, Mason's certificate of deposit in the amount of $126,100 will be released.

## 4.5 Permitting

The Bureau of Land Management is the regulating agency for mining related activities on federal lands in the Lordsburg district. Projects that disturb less than five-acres require formal acceptance of a Notice of Intent filing, but strictly speaking, do not require project approval. Projects that disturb greater than five-acres require approval of a Plan of Operations by the regulating agency. Both Notice of Intent and Plan of Operations require reclamation bonding. The State of New Mexico's Department of Energy, Minerals and Natural Resources also regulates mining related activities over both public and private lands. They require a permit application that is similar in scope and requirements to a Bureau of Land Management Plan of Operations submittal, including reclamation bonding.

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

## 5.1 Accessibility

The Lordsburg district is located approximately 3.2 kilometers south of Interstate 10 and the town of Lordsburg, New Mexico. Access to the Lordsburg district is by vehicle along the two-lane paved New Mexico State Highway 494 and Hidalgo Country Road A016, known locally as the Banner Mine Road. At the terminus of State Highway 494, a dirt road continues to the Banner Mill site located roughly in the center of the Lordsburg district Figure 4-2. Most of the property can be accessed by numerous, irregularly maintained dirt roads and/or 4-wheel trails. The Old Animas Road, a county maintained, unpaved road, cuts across the project from the northeast corner to the southwest corner.

## 5.2 Climate

Hidalgo County is characterized by a semi-arid desert environment. Summers are hot and dry until the initiation of summer thunderstorms in late June, lasting through August or September. Winters are windy, and the occasional winter storm may deposit small quantities of snow on the higher elevations but rarely does snow reach the valleys. Recorded temperatures average 13° C and 37° C between June and September, and -4° C and 32° C between October through May with the annual average low being 5° C and the average annual high being 26° C. Annual snowfall each year in Lordsburg is 10 centimeters with the annual rain per year averaging 31 centimeters. Due to the ease of accessibility and favorable climate, the operating season for the project area is year-round.

## 5.3 Physiography

The Lordsburg district is located in the Pyramid Mountains, a linear, fault-controlled north-south trending range of moderately steep to gentle hills and ridges bordered by broad alluvial-filled valleys. The terrain is largely covered by alluvial gravel, although outcrops are common in small gullies and hills. The project area is roughly square and extends south of Interstate 10 for approximately eight kilometers. The summit of 85-hill, the highest point of elevation in the district, is 1550m above sea level. The valley floor on the margin of the range is approximately 1300m above sea level. Vegetation is sparse and varies with bedrock type and proximity to ephemeral streams, and consists of a mixture of greasewood, cat’s claw, sage brush, yucca, Spanish sword, barrel and cholla cactus, and juniper.

## 5.4 Local Resources and Infrastructure

The nearest community to the Lordsburg project is the town of Lordsburg (population of 2,335; 2020 US Census Bureau), located ~3.2 kilometers north of the project area. The largest industries in Lordsburg are Accommodation & Food Services, Public Administration, and Retail Trade, with the highest paying industries being Mining, Quarrying, & Oil & Gas Extraction ($50,893 per annum), Public Administration ($39,427 per annum), and Agriculture, Forestry, Fishing & Hunting, & Mining ($34,402 per annum).

Rail lines pass north of the Lordsburg district and extend through the center of the town of Lordsburg. The Lordsburg station supports both Amtrak and Union Pacific Freight trains. Four electrical power plants are located within 30 miles of the Lordsburg district including the Lightning Dock Geothermal plant which produces 15MW power (Cyrc Energy website). The other three power plants are powered by natural gas with one of the power plants transitioning to solar electrical generation. The nearest commercial airport is the Grant County Airport located 77 km to the northeast of the town of Lordsburg.

The nearest major airports are the Tucson International Airport (TUS) located 243 km to the west of Lordsburg, and the El Paso International Airport (ELP) located 271 km southeast of Lordsburg.

Appropriate logistical support for exploration of the project is readily available within the region.

# 6 HISTORY

The Lordsburg district has undergone limited scale exploration and mining of narrow, high-angle, high-grade base and precious metal vein deposits, smelter flux and bulk tonnage Au and porphyry mineralization since the mid-1850s. The following sections describe the historic work associated with each deposit type and then a separate section on more modern exploration activities since 2000 focussed on porphyry copper exploration.

## 6.1 Lordsburg District Historic Exploration

### 6.1.1 Polymetallic Cu-Pb-Zn-Ag-Au Veins

Thomas Antisell was a geologist and botanist for the Lt. John G. Parke military expedition of 1854, organized to explore and survey potential railroad routes to the west coast for the United States government. Antisell visited and described in general terms, the geology of the Pyramid Mountains, Peloncillo Hills, and Burro Mountains. Antisell noted the occurrence of trachyte and porphyry, metamorphic sandstone grit, blue silicious chalcedonic rock, yellow sandstone shale and brown conglomerate, flinty pebbles and agatized layers without mention of gold, silver, or base metal mineralization (Antisell, 1856).

G. K. Gilbert, geologist with the 1873-Wheeler survey observed quartz veins with “argentiferous ores of lead and copper”, three years after the first mining claims in the district were filed (Lasky, 1938). Commercial development did not occur, however, until the Southern Pacific railroad reached the area in 1880. The earliest prospecting and mining period sought only silver and ended in the early 1890’s after the collapse of the silver price. The district lay dormant until the price of copper rose sufficiently to make development and operation of copper mines profitable in the early 1900’s.

Historic mines within the Lordsburg district (Figure 6-1), recovered copper, lead, silver, and gold and operated, continuously through the early 1970’s. Between 1904-1935, Lasky (1938) reported cumulative production from the district of 1.67 million short tons that yielded 190,035 ounces of gold, 4.1 million ounces of silver, 79.9 million pounds of copper, and 1.1 million pounds of lead. Flege (1959) reports an additional production of 1.45 million tons that yielded 29,560 ounces of gold, 1.67 million ounces of silver, 70.4 million pounds of copper, 3.4 million pounds of lead and 470,000 pounds of zinc for the years 1936-1951. In 1935, Banner Mining Company purchased the 85 mine, the Misers Chest mine, the Bonney and Anita mines (Huntington, 1947). The Atwood and Henry Clay mines were owned and operated by Atwood Mining Company between 1943 and 1967.

The historical Leitendorf camp lies in the southernmost portion of the project area, immediately south of the Entrée Gold project area. Flege (1959) describes it as a silver camp but notes that considerable copper and lead were present. Lasky (1938) notes the principal silver mineral of the historic production was supergene cerargyrite.

The principal mines of the Leitendorf camp are the Venus, Last Chance, Robert E. Lee, and Nellie Bly (Figure 6-1). All production came from narrow veins considered by Flege (1959) and Lasky (1938) to be genetically related to the Laramide veins of the Lordsburg camp.

A prominent linear belt of quartz-sericite alteration, centered on a “quartz latite dike” with chalcocite rimmed pyrite is present along trend of the vein worked in the Robert E. Lee and Nelly Bly mines and a patch of intrusive breccia crops out at the Venus mine.

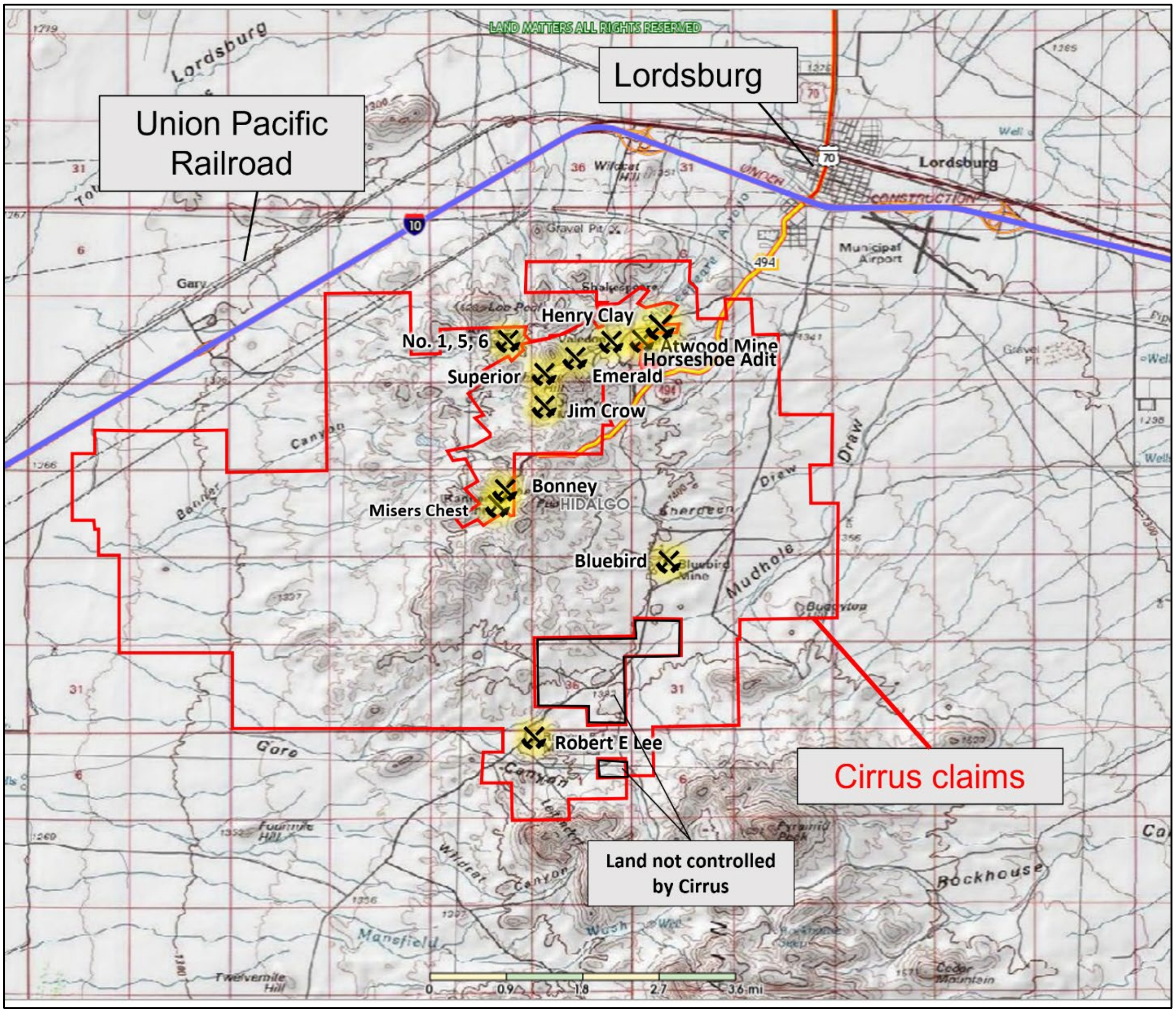


*Figure 6-1 Historic mines of the Lordsburg mining district*

Sporadic production continued in the 1960’s and 1970’s. Notably, in 1967, Federal Resources Corporation (FRC) entered into a lease-option with Banner Mining Company and explored and developed ore bodies in the Banner, Bonney, Little Annie and the 85 mines, with most of the production coming from the 85 mine between 1969 and 1975 when production ended.

The production from the Eighty-five mine from discovery to 1967 has been reported by Federal Resources (May 1970) in Table 6-1 as follows:

*Table 6-1 Production from the 85 mine from discovery through 1967*

| Years | Tons | Cu % | Au opt | Ag opt |
|---|---|---|---|---|
| 1319-1920 | 520,000 | 3 | 0.14 | 3 |
| 1920-1930 | 783,000 | 2.79 | 0.111 | 1.23 |
| 1964-1967 | 129,719 | 2.15 | 0.065 | 0.61 |
| **TOTAL** | **1,432,719** | **2.81** | **0.12** | **1.82** |

From 1967-1970, Federal Resources deepened and extended the Bonney mine from the 1600 to 2100 level, the Little Annie mine from the 1300 to 1600 level, the 85 mine from 1500 to 1950 level, and drove a 610-meter long (2,000 foot) cross-cut connecting the 1300 level of the 85 mine with the Bonney mill. On the 1800 level of the 85 mine, a 244-meter long (800 foot) long, 1.5-meter to 3-meter wide (5-10 feet) wide ore shoot, carrying 3.7% Cu was developed (Rogers, 2012).

The historical classification terminology presented herein reflects the terminology of the original historical documents. It is not known if this terminology conforms to the meanings ascribed to the Measured, Indicated, and Inferred mineral resource classifications, or the Proven and Probable reserve classifications. All of the estimates are presented in the units originally used in order to retain historical accuracy.

The May 1970 reserves at the Bonney and 85 mines were reported by Federal Resources in Table 6-2 below:

*Table 6-2 Bonney and 85 mine historic reserves. These figures are presented here for historical accuracy purposes only. There currently are no mineral resources on the Lordsburg project that comply with the CIM Standards on Mineral Resources and Reserves Definitions and Guidelines adopted by CIM Council on August 20, 2000, as amended.*

| | **Proven** | | | | **Probable** | | | | **Possible** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Levels | Tons | Cu % | Au opt | Ag opt | Tons | Cu % | Au opt | Ag opt | Tons | Cu % | Au opt | Ag opt |
| **Bonney mine** | | | | | | | | | | | | |
| 1600-2100 | 55,694 | 3.51 | 0.008 | 0.65 | 230,621 | 2.93 | 0.011 | 0.66 | 118,444 | 2.89 | 0.01 | 0.66 |
| **85 mine** | | | | | | | | | | | | |
| 1500-1950 | 23,968 | 3.74 | 0.62 | 0.59 | 61,084 | 4.22 | 0.34 | 0.66 | 57,569 | 2.34 | 0.009 | 0.31 |
| **Total** | **79,662** | **3.58** | **0.12** | **0.063** | **291,705** | **3.2** | **0.016** | **0.66** | **176,013** | **2.71** | **0.01** | **0.5** |

Mr. Osterberg has not done sufficient work to classify the historical estimates summarized in Table 6-2 as current mineral resources or mineral reserves and Cirrus Gold is not treating the historical estimates as current mineral resources or mineral reserves. The historical estimates are relevant only for historical context and are not to be relied upon.

Phelps Dodge, Federal Resources, and Westar Corporation entered a joint venture agreement in 1983 that developed a small open pit on the North Atwood to mine smelter flux and completed exploration for additional, nearby material. The joint venture partners drilled 57 holes totaling 11,476 feet on the North Atwood vein. Phelps Dodge (Kolessar, 1984) tabulated the grade and tonnage of the drilling in Table 6-3 below:

*Table 6-3 North Atwood vein reserves. These figures are presented here for historical accuracy purposes only. There currently are no mineral resources on the Lordsburg project that comply with the CIM Standards on Mineral Resources and Reserves Definitions and Guidelines adopted by CIM Council on August 20, 2000, as amended.*

| North Atwood Vein | | | | |
|---|---|---|---|---|
| **Grade Range** | **Tonnage** | **Au opt** | **Ag opt** | **$SiO_2$ %** |
| >= 0.1 opt Au | 128,348 | 0.142 | 1.39 | 79.6 |
| 0.03-0.99 opt Au | 143,650 | 0.04 | 0.9 | 86.8 |
| 0.01-0.29 opt Au | 170,171 | 0.013 | 0.84 | 75.1 |
| **Total** | **442,169** | **0.059** | **1.02** | **80.2** |

Westar gained control of the operation in the mid 1980's and constructed a cyanide heap-leach facility west of the Banner mill site to treat material from the North Atwood mine and later, the Bonnie Jean mine. The leach operation proved unsuccessful.

Santa Fe Gold Corporation (Santa Fe) purchased the Bonney mine and mill site area in 2006 and the remaining assets of the Lordsburg Mining Company in 2008 from the St. Cloud Mining Company, with plans to restart the mining of high-grade polymetallic vein orebodies. They completed comprehensive surface mapping, geochemical sampling, and drilling campaigns to support the re-opening of the underground mines. Lordsburg Mining Company, a wholly owned subsidiary of Santa Fe received permits for milling and started production in 2010. Santa Fe Gold Corporation filed for Chapter 11 bankruptcy protection in 2015 and Waterton Global Resource Management gained control of their Lordsburg district assets in a 2016 settlement.

### 6.1.2 Smelter Flux

A number of companies have explored for precious metal bearing, silica-rich smelter flux in the Lordsburg mining district. The following is a summary of these efforts as detailed in a 2012 report for the Lordsburg Mining Company (Rogers, 2012).

In the early 1980's, Santa Fe Pacific Minerals Corporation completed geologic mapping and a geochemical rock grid sampling program to identify gold-silver heap leach or smelter flux mineralization. They collected 1,020 samples and drilled targets at the North Atwood, Bonnie Jean, Dacotah-Pearl, L-6, and L-8 areas.

Lordsburg Mining Company, a subsidiary of St. Cloud Mining Company, entered into a joint venture with Federal Resources in 1990 and began silica flux operations at the Bonney Jean and North Atwood mines. On October 1, 1990, Lordsburg Mining started an underground mine on the down dip extensions of the gold reserves identified by Phelps Dodge and re-opened the Westar surface open cut and mined material suitable for heap leach processing. The underground mine closed in 1994 and surface operations closed in 1996. The Lordsburg Mining Company produced 106,618 tons of mineralized flux from underground at the North Atwood mine that averaged 0.63% Cu, 1.71 opt Ag, and 0.083 opt Au. In addition, production included approximately 102,135 tons of barren siliceous flux and approximately 139,578 tons of construction aggregate (White, 2000).

### 6.1.3 Porphyry Copper and Bulk Mineable Gold-Silver

The earliest documented porphyry exploration in the district was done by Quintana Corporation in the 1960's. They drilled eight holes north of Interstate I-10 and reportedly encountered fresh granodiorite and unaltered volcanic rocks (LaPointe, 1974).

A Phelps Dodge-Federal Resources Corporation joint venture partnership conducted mapping, surface geochemical sampling and a limited induced polarization (IP) geophysical survey in and around the Bonney mine in 1971. They ultimately drilled two diamond drill holes from the 2000 level of the Bonney mine, to target replacement bodies at the base of the Cretaceous section. These holes intersected andesites, siltstone, minor quartzites, and bottomed in granodiorite with chalcopyrite veinlets noted in the drill log.

FMC Gold Company (FMC) mapped selected areas of the district and collected geochemical samples in 1989-1990, exploring for bulk mineable, near surface gold mineralization. FMC concluded that the district did not contain potential for surface minable, bulk tonnage gold deposits of the size required by FMC (Hawksworth, 1990).

## 6.2 Lordsburg District Modern Exploration

The Lordsburg district has undergone limited scale exploration for narrow, high-angle, base and precious metal vein deposits, smelter flux and bulk tonnage Au and porphyry mineralization in the last 20 years. More modern exploration activities and techniques since 2000 have largely been focused on porphyry copper and high-grade precious metal vein deposits and have been completed by two main groups: Entrée Gold, which was subsequently purchased by Hudbay Minerals (currently held through Hudbay's subsidiary Mason); and Santa Fe Gold Corporation/Lordsburg Mining Company, the assets of which were subsequently purchased by Waterton Resource Global Management (currently held through Waterton's subsidiary PPM).

In July 2007, Entrée Gold (Entrée) entered into an agreement with Empirical Discovery LLC to explore for and develop porphyry copper targets in southeastern Arizona and adjoining southwestern New Mexico – including a portion of the Lordsburg district. During 2008 and 2009, Entrée completed geological mapping, collected geochemical samples, and completed audio-frequency magnetotelluric and complex resistivity induced polarization surveys within a large area of the eastern side of the district. Thirteen (13) core holes totaling 6,093 meters were drilled on targets identified by the exploration work with mixed, but encouraging enough, results that Entrée Gold chose to maintain the property position. In 2018 project passed into Hudbay Minerals hands with the acquisition Entrée and Mason Resources, the entity spun out by Entrée Gold in 2017 to hold the Lordsburg property.

Santa Fe Gold Corporation and their subsidiary Lordsburg Mining Company conducted a comprehensive exploration program between 2010 and 2013 that included mapping, geochemical sampling, geophysical surveys, and drilling. Eleven drill holes were completed in 2013 totaling 8,004 meters. This work was designed to identify resources to support their local milling operation and to evaluate the porphyry copper potential of their land holdings. Waterton Global Resources Management, after acquiring control of the Lordsburg assets of the Santa Fe Gold Corporation, completed a green-rock study at CODES University, an Aster satellite and hyperspectral review, and geophysical data compilation, re-processing and imaging, unconstrained 3D magnetic inversion modelling and a preliminary high-level review of the Lordsburg district.

No significant exploration work has been completed on the Soloro claim group to the authors knowledge.

### 6.2.1 Entrée Gold Corporation

#### 6.2.1.1 Geological Mapping

Lithology, structure, alteration, and vein types were mapped over the project and adjacent areas at scales of 1:3000, 1:6000 and 1:12000 as determined by abundance or paucity of outcrop (Figure 6-2 and Figure 6-3). In general, lithological and structural observations match those from Lasky (1938), Flege (1959), Thorman and Drewes (1978) and Rogers (2012). Minor discrepancies in lithological code assignments exist between all these sources, but the overall accuracy of the Entrée Gold mapping is judged to be adequate for the exploration project. The term intrusive rhyolite (Kir)) is a designation used in this report to maintain consistency with legacy reports.

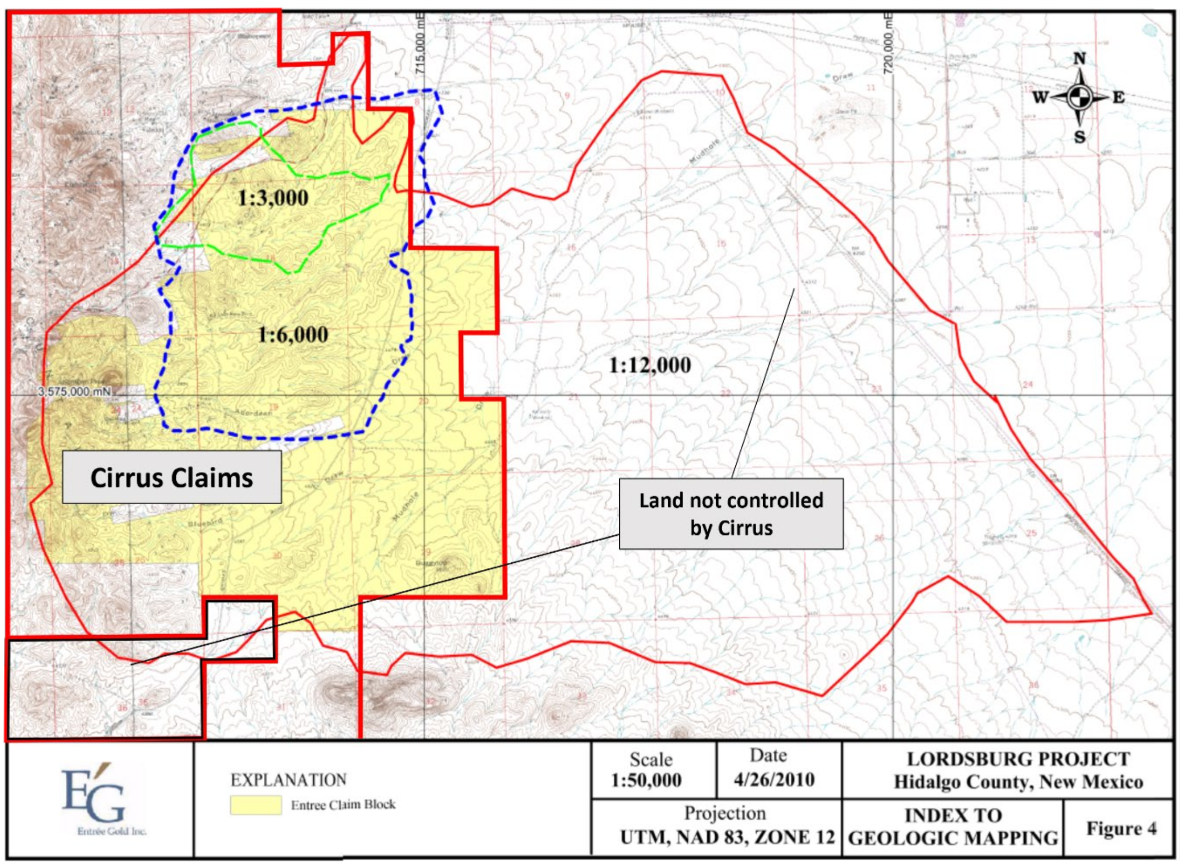


*Figure 6-2 Index to geological mapping of the Entrée claims - Lordsburg project (modified from internal Entrée Gold report)*

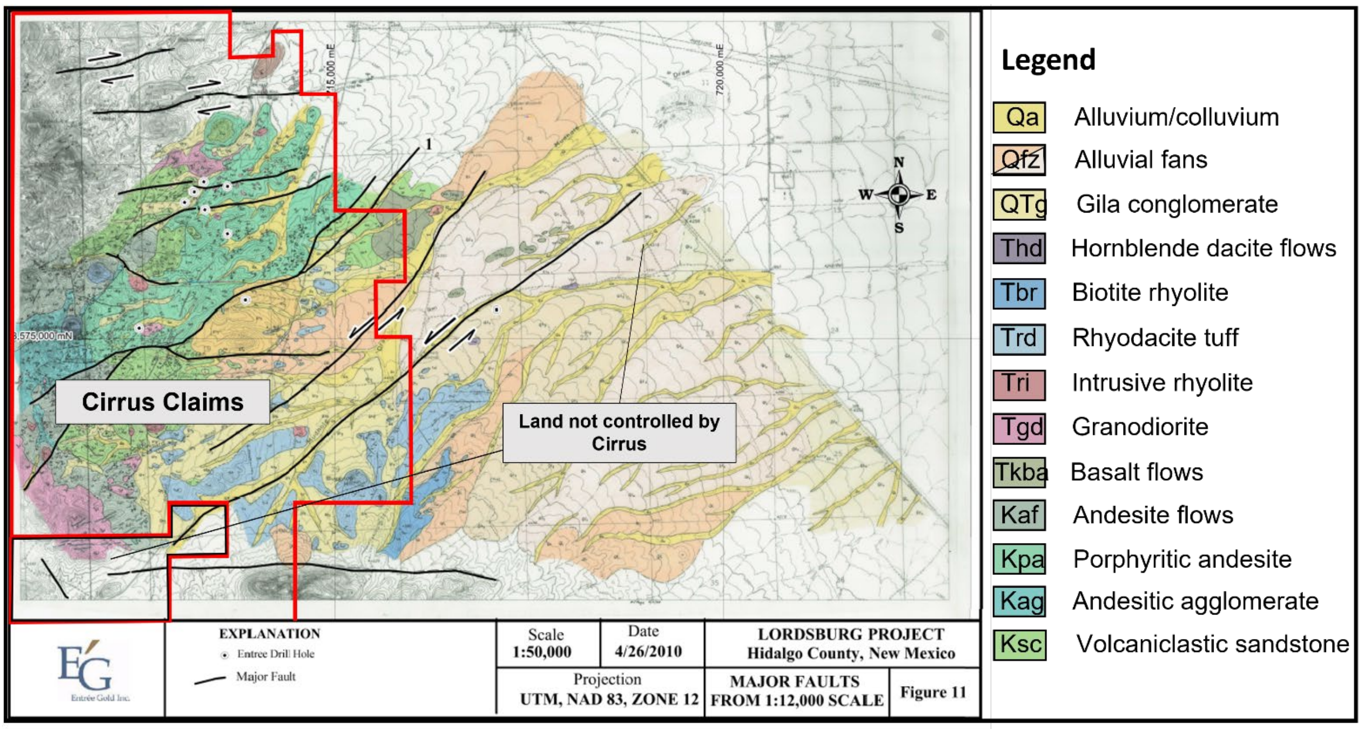


*Figure 6-3 Mapped, inferred, and covered regional faults showing inferred direction of movement, and Entrée Gold drillholes superimposed on the 1:12000 geologic map (modified from internal Entrée Gold report)*

Laramide andesite crops out over the central and northern portion of the Lordsburg district. Laramide granodiorite crops out on the eastern side of the district and intrudes the andesite and older Bisbee group metasediments (Lower Cretaceous). Oligocene and late Tertiary rhyolite ash-flow tuffs along the southeastern part of the map area and lie at dips ranging from 10° to 30° and are covered by Quaternary alluvial deposits.

The Laramide intrusive and volcanic rocks are propylitized. Primary biotite and hornblende are chloritized and plagioclase is selectively replaced by sericite. Epidote-calcite veinlets are distributed throughout the Laramide and older rocks. Veins and veinlets comprised of quartz, calcite, sericite, pyrite, magnetite, and hematite after magnetite, and base-metal sulfides are common.

One area near the northern limit of the Entrée Gold mapping contains notable concentrations of biotite, K-feldspar and magnetite bearing veinlets indicative of potassic alteration. A small area with quartz-tourmaline veinlets lies immediately west of this zone of potassic alteration. The known limits of potassic alteration and quartz-tourmaline veining are indicated by outline on Figure 6-4 in brown and black dashed lines, respectively.

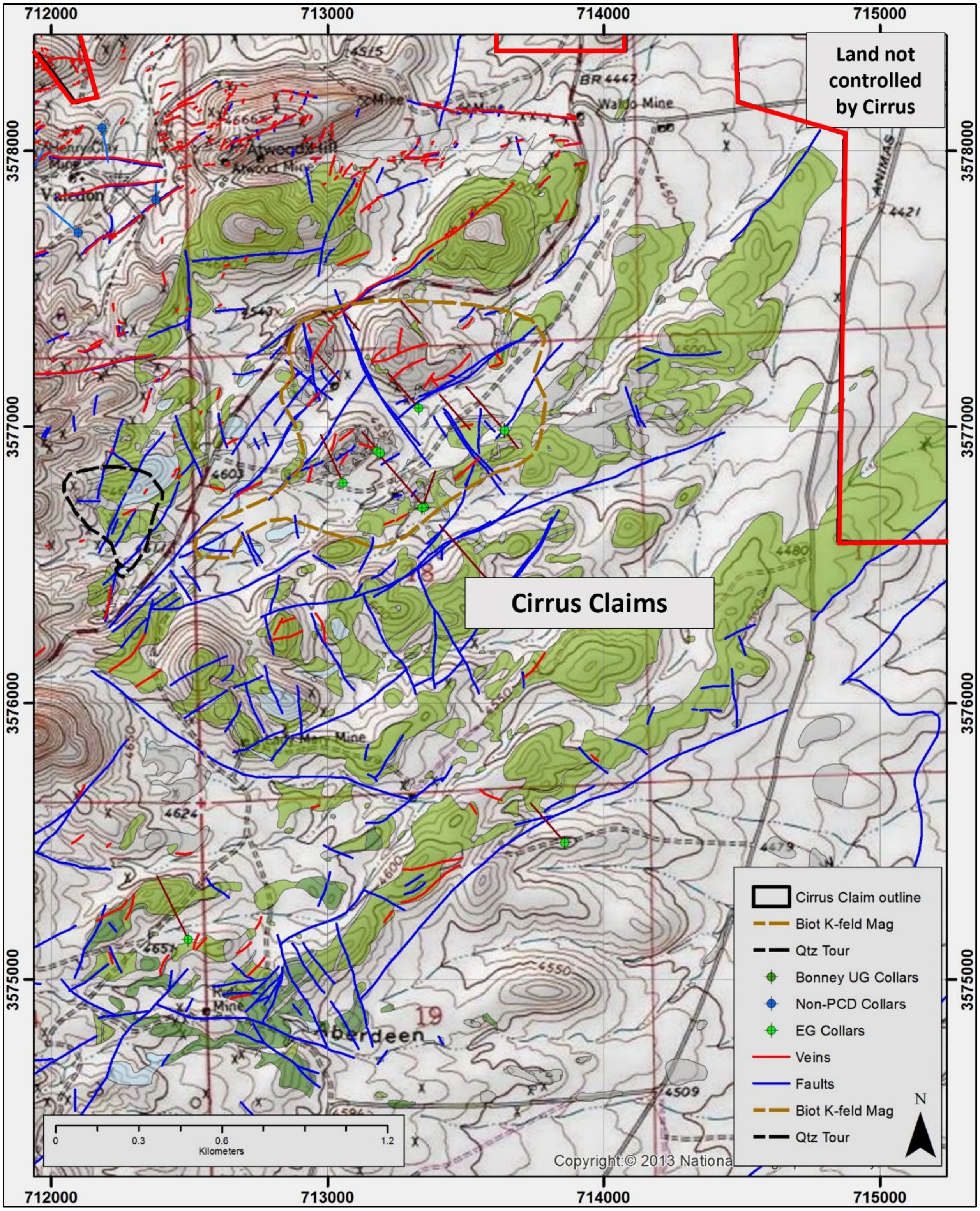


*Figure 6-4 Detailed geology of the Entrée claim - Lordsburg project (modified from internal Entrée Gold report)*

#### 6.2.1.2 Geochemistry

Entrée Gold collected and analyzed 270 rock chip samples from veins, dumps, prospects, and outcrops during the 2008 and 2009 exploration campaign. An additional 65 samples were collected by successor companies in 2018. Strong copper and molybdenum are coincident with outcrops of Laramide granodiorite, particularly near the area with biotite, K-feldspar and magnetite bearing veinlets or within the contact between Laramide granodiorite and andesite. Moderate lead and zinc anomalies lie slightly outboard of the best copper and molybdenum anomalies (Figure 6-5). Gold, lead, and zinc are particularly strong to the southwest of the K-alteration area (Figure 6-6).

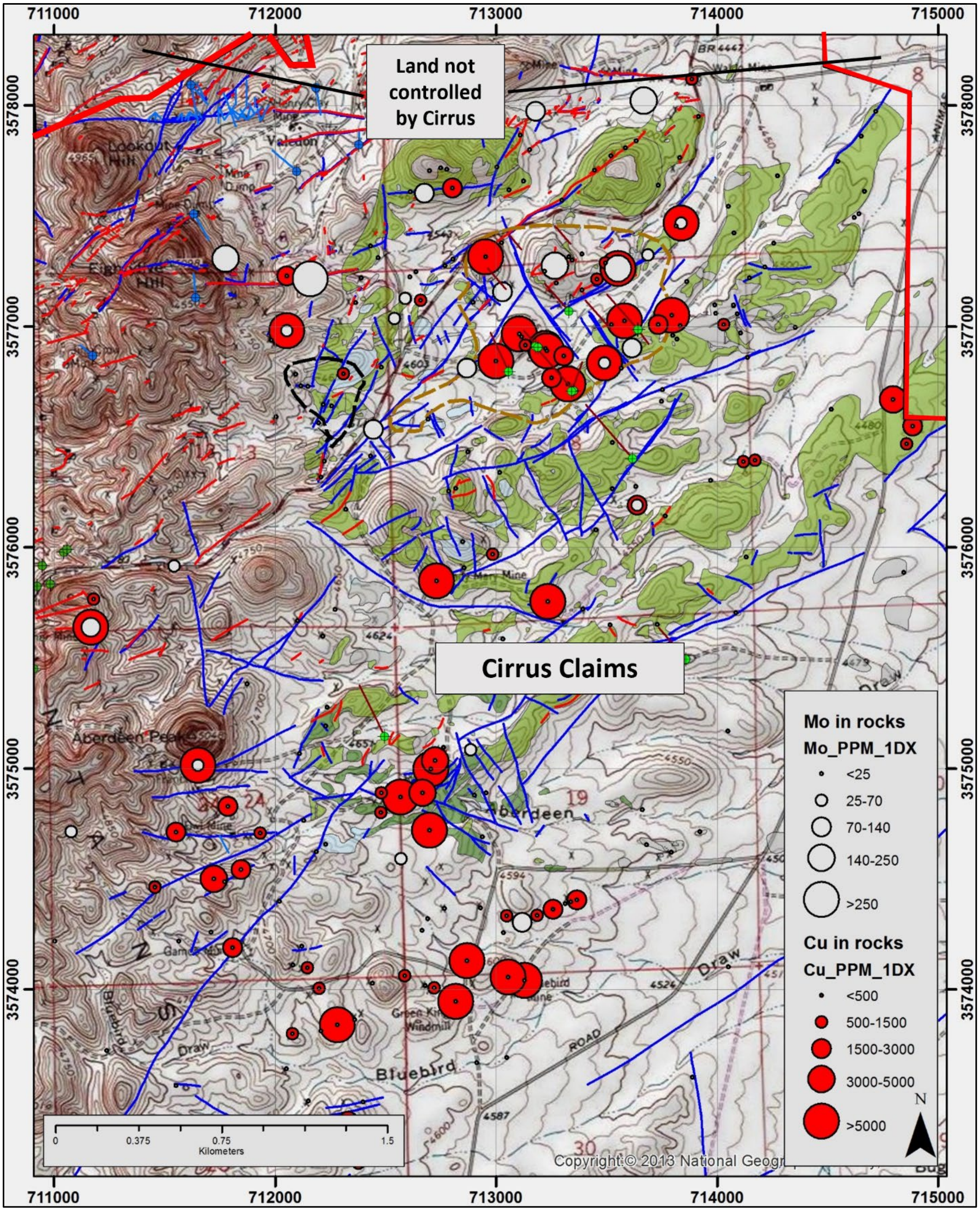


*Figure 6-5 Copper and molybdenite values in outcrop, trench, and prospect on Entrée claims – Lordsburg project (modified from internal Entrée Gold report).*

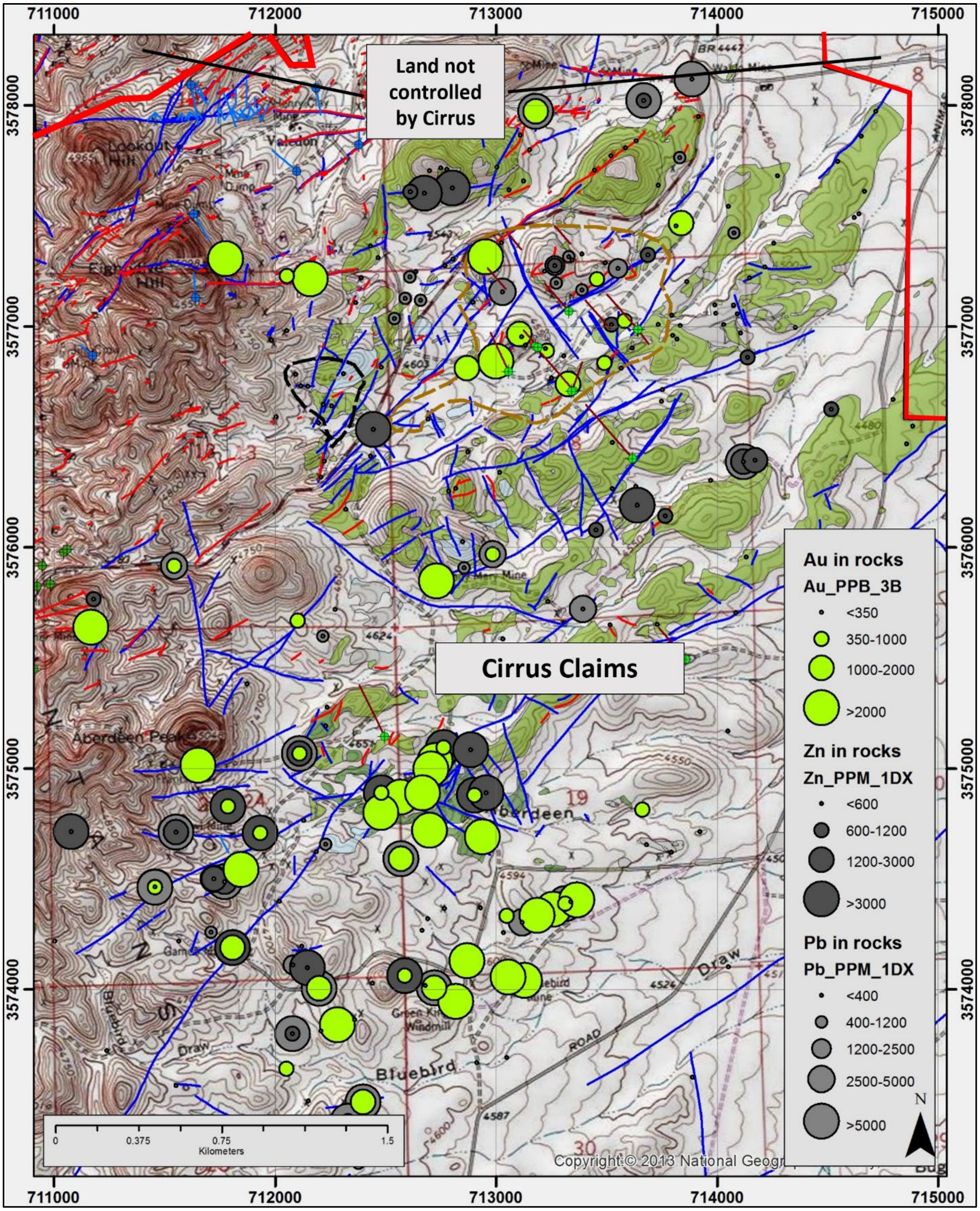


*Figure 6-6 Gold, lead and zinc in outcrop, trench, and prospect on Entrée claims – Lordsburg project (modified from internal Entrée Gold report)*

Entrée Gold covered their project area with 19 lines of soil samples, collected 803 samples and analyzed them using a multi-element ICP method with a weak acid, selective and Aqua Regia digestive leach techniques. Smee and Associates Consulting Ltd. reviewed the results and interpreted the northernmost anomaly, in the aqua regia subset, to indicate the presence of direct source related mineralization, i.e., sources near outcrop (Figure 6-7). The southern anomalies were picked up by the weak acid subset and point to possible buried sources.

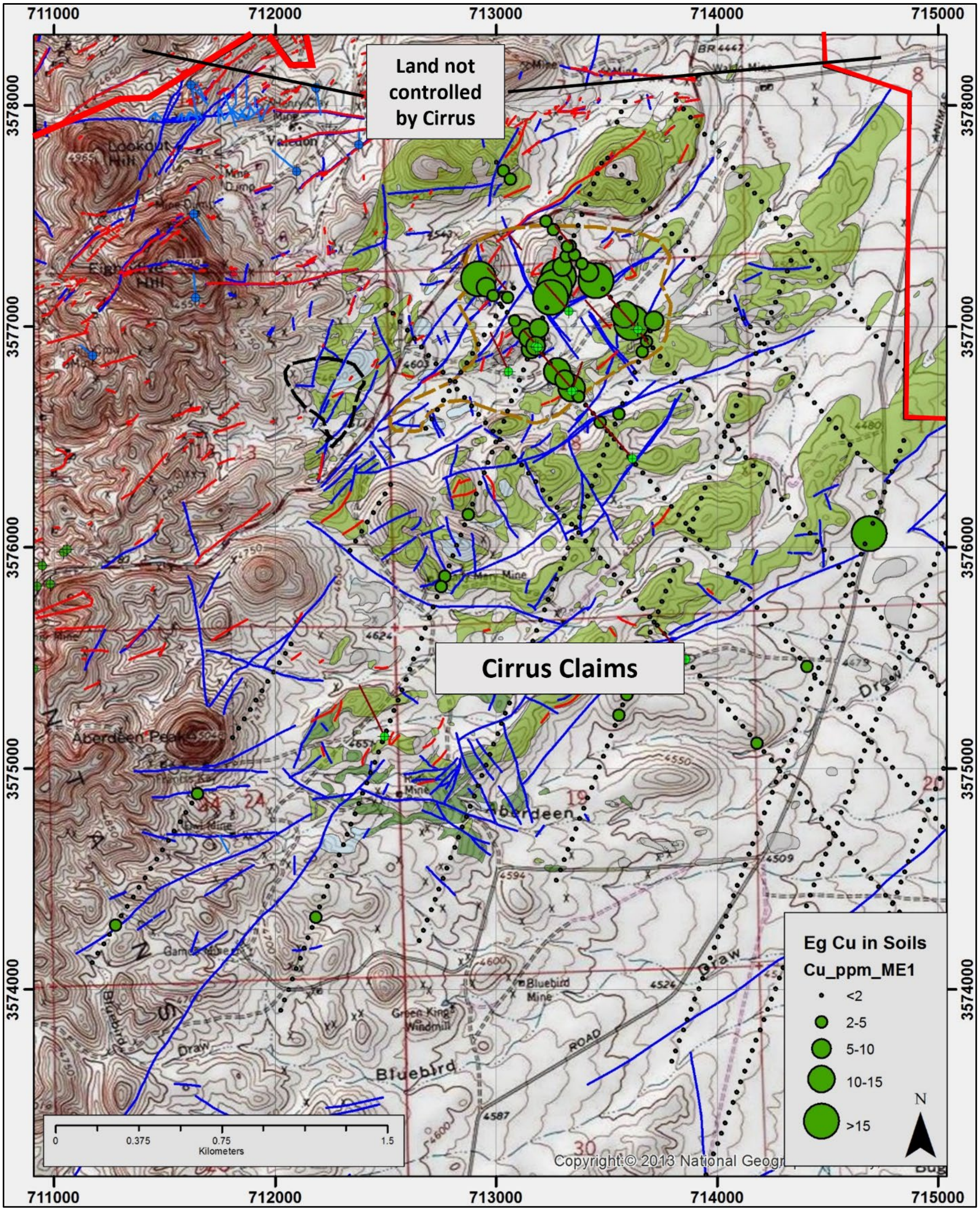


*Figure 6-7 Cu in Soils on Entrée claims - Lordsburg project (modified from internal Entrée Gold report)*

The north-western portion of Entrée's project area, coincident with the zone of K-alteration, was surveyed with a handheld, portable XRF instrument and an additional 507 in-situ soil sample analyses were collected along 15 lines (Figure 6-8). The XRF survey is coincident with anomalous copper in the ICP program.

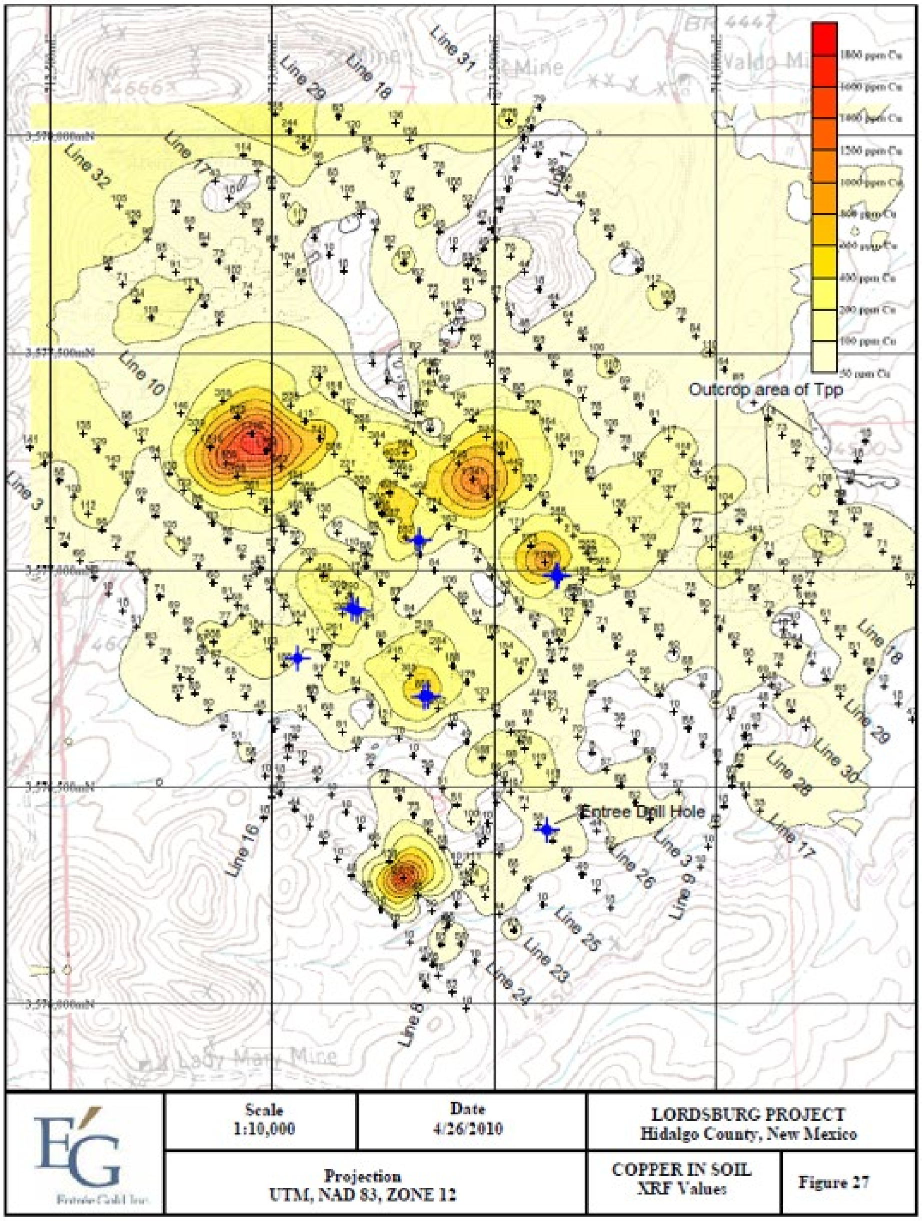


*Figure 6-8 XRF Soil anomalies on Entrée claims – Lordsburg project. Modified from Page, et al. (2010). Image is solely within Cirrus claim block*

#### 6.2.1.3 Geophysics – Magnetics

Entrée Gold evaluated the public domain magnetic data and produced reduced to pole and magnetic anomaly maps and fast mag depth slices through the project area. This work was re-evaluated and summarized by Empirical Discovery LLC for Mason Resources in 2017. They interpreted the pattern of lows and highs in a magnetic vector inversion to be compatible with that expected from a porphyry copper deposit with a magnetite-bearing potassic altered core and magnetite-destructive altered margin (Figure 6-9).

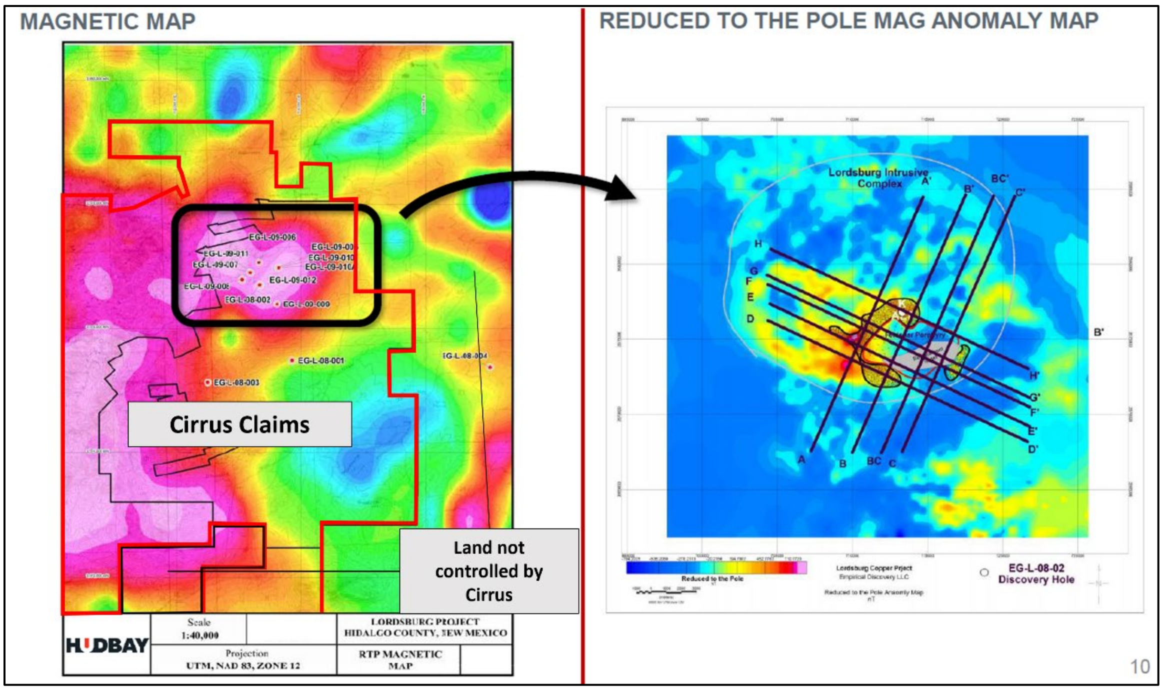


*Figure 6-9 RTP Magnetic map on Entrée claims – Lordsburg project. (Figure modified from Mason Resources Lordsburg Copper Project geophysical report, 2017)*

### 6.2.1.4 Geophysics-IP/Resistivity and Audio-frequency magnetotellurics

Seventeen lines of IP and four lines of AMT were completed on the Entrée Gold claim block in 2010 (Figure 6-10). All lines were surveyed for IP chargeability and resistivity, while lines 3,10, 15 and 17 also were surveyed for AMT response.

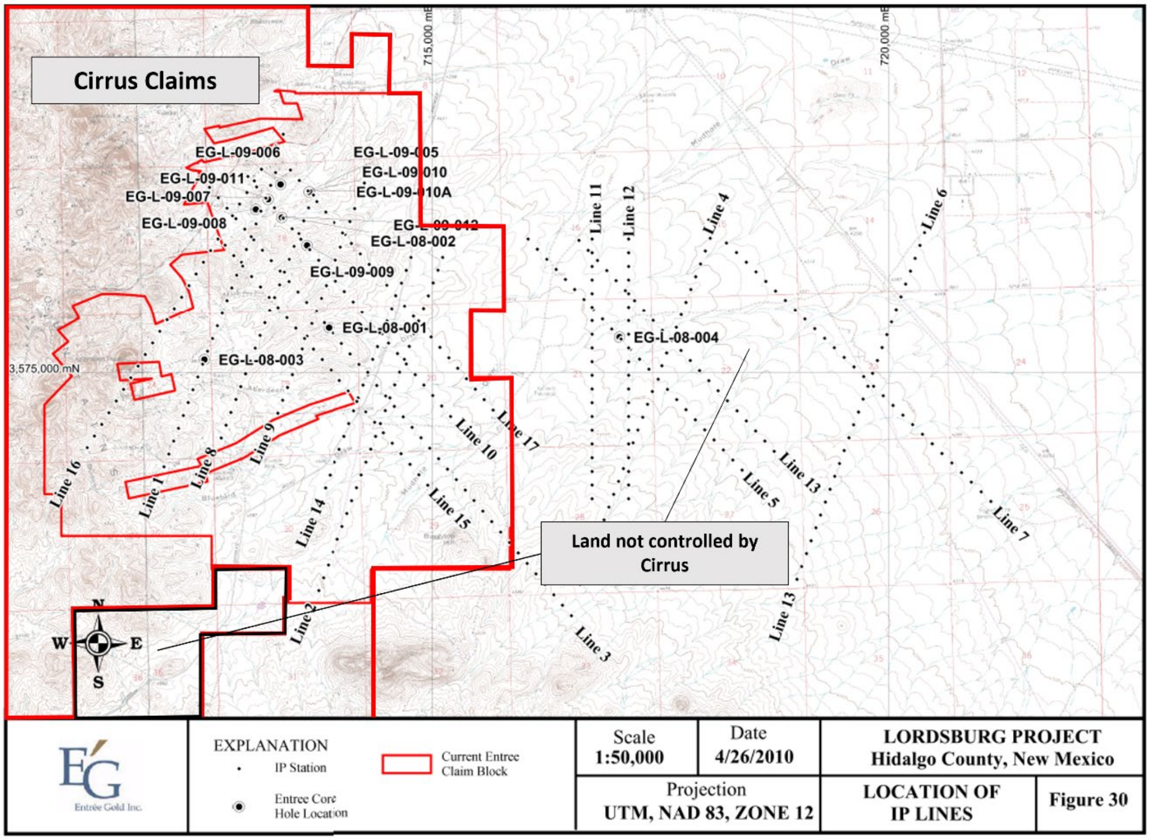


*Figure 6-10 IP and AMT surveyed lines and stations at Entrée claims – Lordsburg project (modified from internal Entrée Gold report)*

The near surface, high chargeability zone correlates with the surface exposures of potassic alteration and stockwork vein copper mineralization. The deeper high chargeability zone anomaly to the SW underlies the soil geochemical copper anomaly discussed in Section 6.2.1.2 (Figure 6-11).

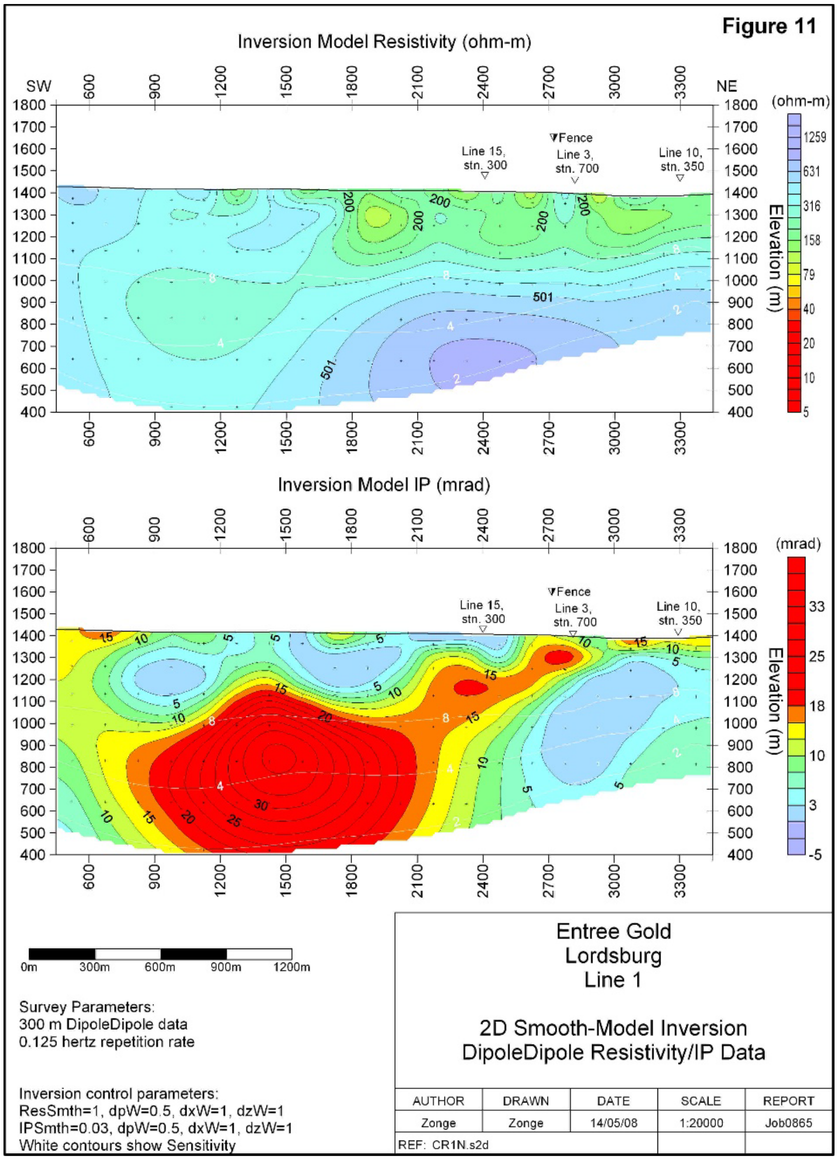


*Figure 6-11 Line 1 IP/Resistivity at Entrée claims – Lordsburg project*

## 6.2.2 Santa Fe Gold Corporation/Lordsburg Mining Company/Waterton Global Resources Management

### 6.2.2.1 Geological Mapping

Rogers (2012) mapped lithology, alteration, mineralization, and structures in the northern portion of the project area between 2010 and 2012 (Figure 6-12). The work was carried out at field scale of 1:1200 and a series of maps and overlays were produced at a scale of 1:6000. Cross-sections were drawn at different orientations to demonstrate important subsurface relationships.

Rogers (2012) described Laramide age basalt and andesite flows and tuffs and younger Laramide age intrusions of intermediate and felsic composition. They are cut by polymetallic veins mined in the historic mines of the district.

The basalts and andesites are propylitized and contain veins, pods and patches of epidote, chlorite, sericite, calcite, hematite-limonite-goethite after pyrite and base metal sulfides. Steep, subvertical veins and faults trend east-northeast, north-northeast, and north-northwest.

Rogers (2012) also mapped a three-meter to 10-meter thick, bedded, volcaniclastic tuff zone between the Laramide basalt and underlying Laramide andesite that dips 10° to 30° to east. He argued this observed evidence implies the presence of a northwest striking breakaway fault and rotation of the fault block, i.e., the Lordsburg district itself, to the northeast.

Structural and stratigraphic evidence supports a rotated Cretaceous stratigraphy with a top to the northeast rotation of 10-30 degrees resulting from a mid-Tertiary, detachment fault with the breakaway zone across the valley to the north on the south side of the Burro Mountains

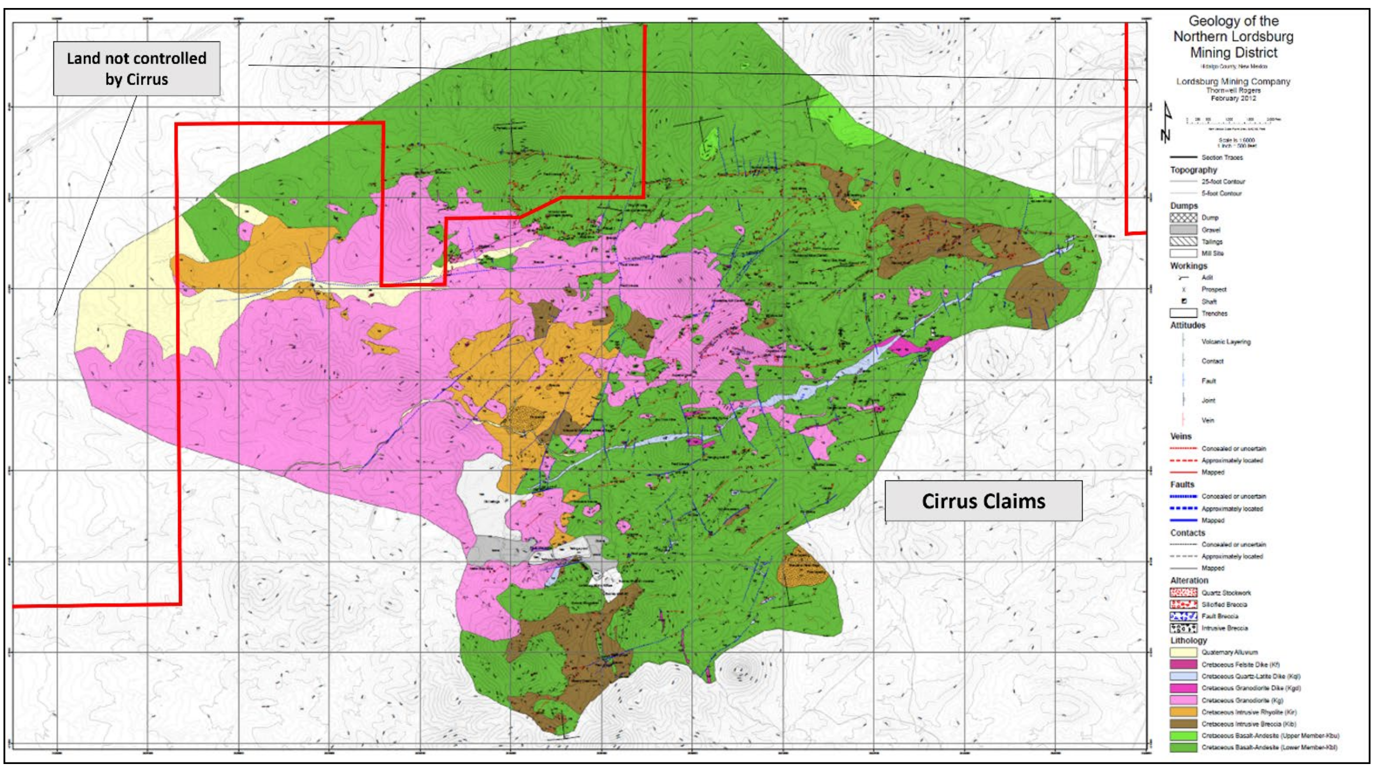


*Figure 6-12 Geologic map of the Waterton claim block (modified from Rogers, 2012)*

Level 1T ASTER satellite data were obtained from the USGS Earth Explorer website and several band ratio images were generated by Resource Potentials from the data in order to highlight potential alteration zones on the surface. The ASTER data were treated as is without any atmospheric or other data corrections. Band ratio images highlighting alteration are shown in Figure 6-13. The mapped Cretaceous intrusive rhyolite and breccia are both well correlated to anomalous ASTER responses in these images. Three additional ASTER anomalies are present in the southern portion of the claim block and outside of existing mapping coverage (Figure 6-13). A Santa Fe Mining era map indicates there are additional outcrops of intrusive rhyolite that correlate with the alteration anomaly zones in these images.

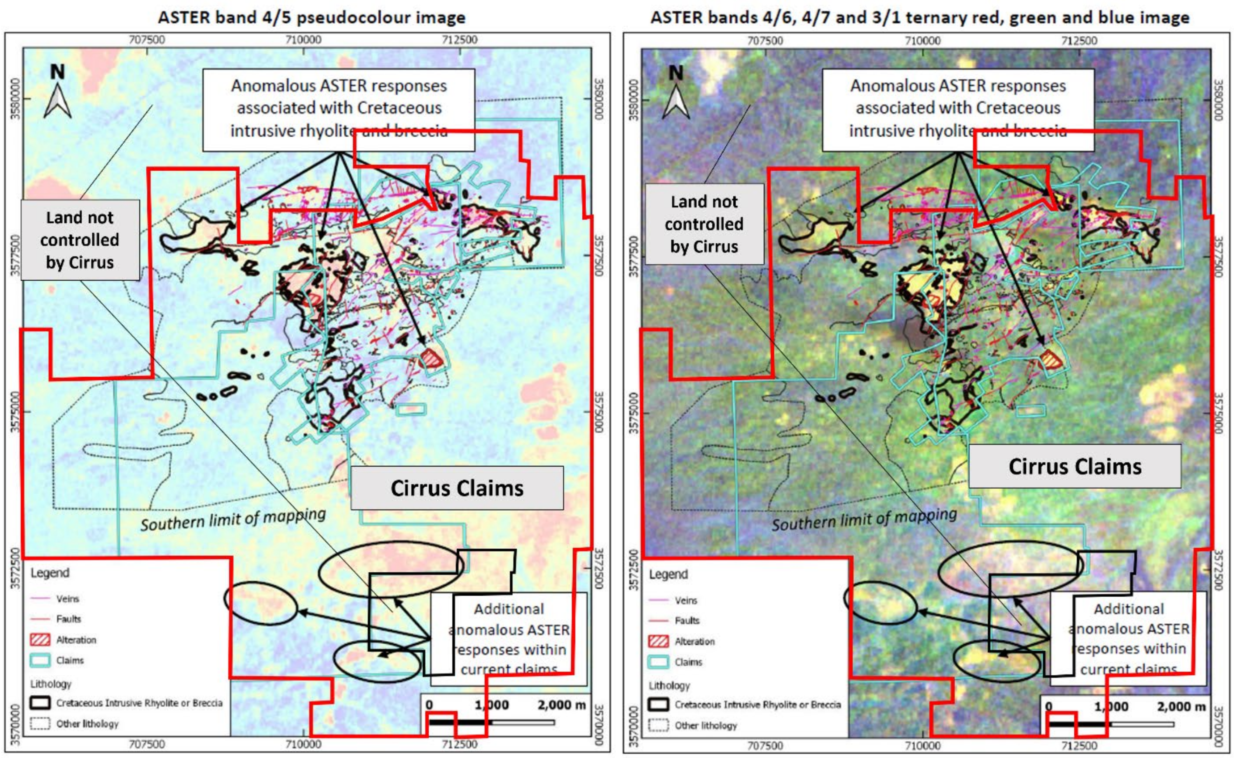


*Figure 6-13 ASTER images over Waterton claims showing anomalous ASTER responses*

Mapped and projected faults form a rough orthogonal pattern of northeast-southwest and north-northwest-south southeast orientations. The north-northeast set is offset by the northeast-southwest projected faults and mimics the general trend of Basin and Range structures through eastern Arizona and southwestern New Mexico (see Regional Geology, Section 7.1.1).

#### 6.2.2.2 Geochemistry

Rogers (2012) collected 834 rock samples from outcrops, prospect pits, dumps and workings during the field work conducted between 2010 and 2012. The samples were analyzed at the Lordsburg mill lab for fire assay Au and Ag. Pulps prepared by the Lordsburg mill lab for 817 of the samples were then sent to Skyline Labs in Tucson for fire assay Au and Ag with gravimetric finish and a multi-element ICP analysis. Certified reference standards were not included in the submitted samples at either analytical facility. Silver analyses show a good agreement between results from the two analytical facilities. Gold analyses by the two laboratories did not show acceptably comparable results and Santa Fe Gold decided to use the Lordsburg mill’s fire assay with an AA finish instead of Skyline labs fire assay with a gravimetric finish believing the AA finish generally gives a more accurate value for lower grade Au and Ag analyses (Rogers verbal communication, Jim Martin, 2012).

A centrally located, Cu-Au-Ag-Pb-Mo zone grades outward to an intermediate Ag-Pb-Au+/-Zn zone and an outermost calcite+fluorite+quartz+barite zone (Figure 6-14).

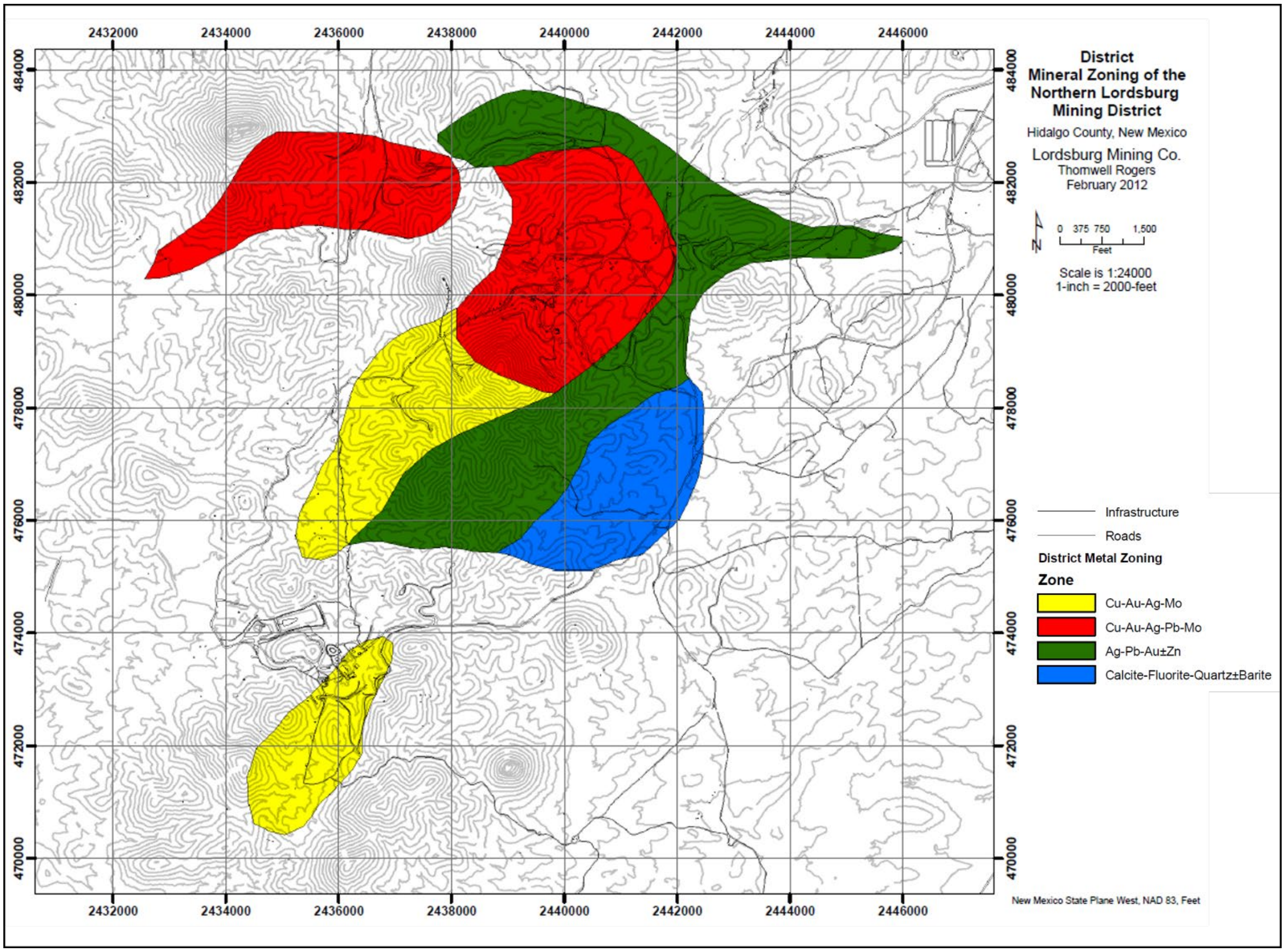


*Figure 6-14 Geochemical zoning across the northern Lordsburg district. The entire image is on Cirrus claims*

### 6.2.2.3 Geophysics – CSAMT, Magnetics, and Radiometrics

Zonge Engineering completed seven CSAMT lines in 2011 across known, mineralized vein systems to determine if the resistivity could discriminate between veins and wall rocks and determine vein widths and detest the extent of high-angle mineralization. Results were generally discouraging. One east-west, near surface vein system was detected and confirmed by follow-up trenching but could not be projected beyond shallow depth.

Resource Potentials (Respot) of Perth Australia, was retained by Waterton to complete a detailed review of existing magnetic, radiometric, and CSAMT data available for the Waterton claim block in addition to re-processing and 3D inversion modelling of all existing data. Respot also identified and obtained archival airborne magnetic and radiometric survey data acquired with 500-meter flight line-spacing, N-S flight line orientation and a mean terrain clearance of 150-meters, covering the southeast Arizona and southwest New Mexico (Figure 6-15). Respot edited, gridded and merged the Waterton data with the regional magnetic and radiometric grids and generated updated anomaly images for the regional area and for the Lordsburg project (Resource Potential, 2020).

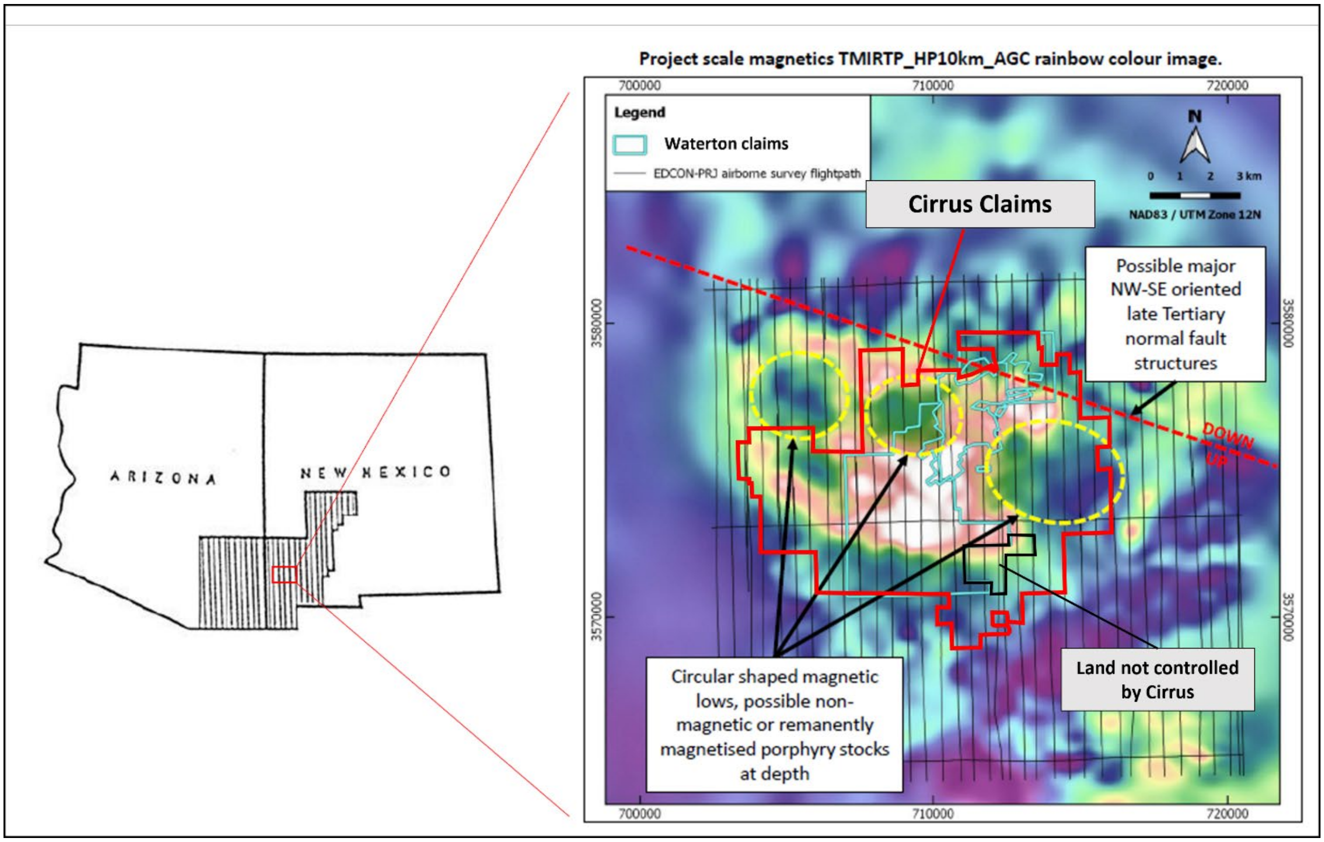


*Figure 6-15 Project scale magnetics TMIRTP_HP10km_AGC rainbow color image of the Lordsburg district.Only*

Geological mapping is shown over a magnetic TMIRTP_HP10km_AGC (total magnetic intensity reduced to pole high-pass filter at 10km) image in Figure 6-16 below. Laramide age granodiorite appears to correlate with magnetic lows, and Cretaceous basalt-andesite is partly correlated with magnetic anomaly highs. Granodiorite exposed in outcrop contains magnetite and it appears likely that the observed magnetic lows, such as the central circular magnetic lows highlighted by the dashed yellow outline may be due to the effects of hydrothermal alteration or younger intrusions at depth. Magnetic highs may also be caused by magnetite bearing skarns or replacement deposits within Paleozoic carbonate beds projected to lie under the Laramide volcanic rocks and hypabyssal intrusions at depth. Mapped faults and veins that trend northeast, east northeast, north and northwest can generally be observed in the magnetic data.

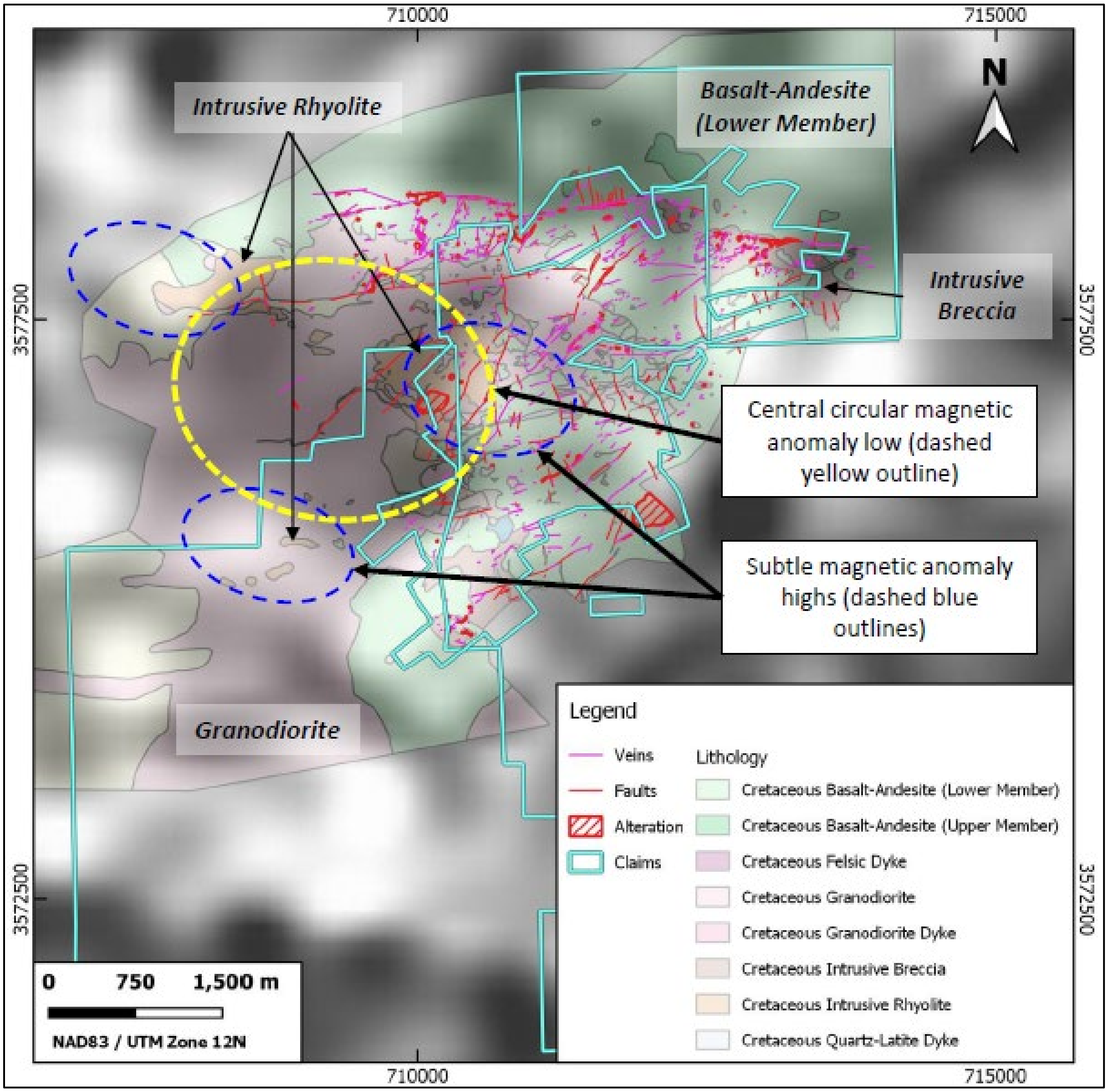


*Figure 6-16 Project scale magnetics TMIRTP_HP10km_AGC greyscale color image with geological features overlain. Geology after Thornwell (2021), geophysical interpretation from Resource Potential (2021)*

Controlled Source Audio-frequency magnetotelluric (CSAMT) and Induced Polarization (IP) survey data were acquired over the NE part of the Waterton claim group by Zonge in 2011. The CSAMT survey looks to depths of investigation of approximately 350 to 400m, and the IP is reliable to about 200m depth. The survey line locations are shown in Figure 6-17 below, along with the latest geologic mapping transparent over an elevation intensity layer. Resource Potentials detailed that shallow CSAMT conductivity anomalies appear to be correlated to known mineralized veins and altered breccia zones, but there are some additional deeper conductive and resistive responses that could be interpreted as alteration zones and pophyry stocks, respectively.

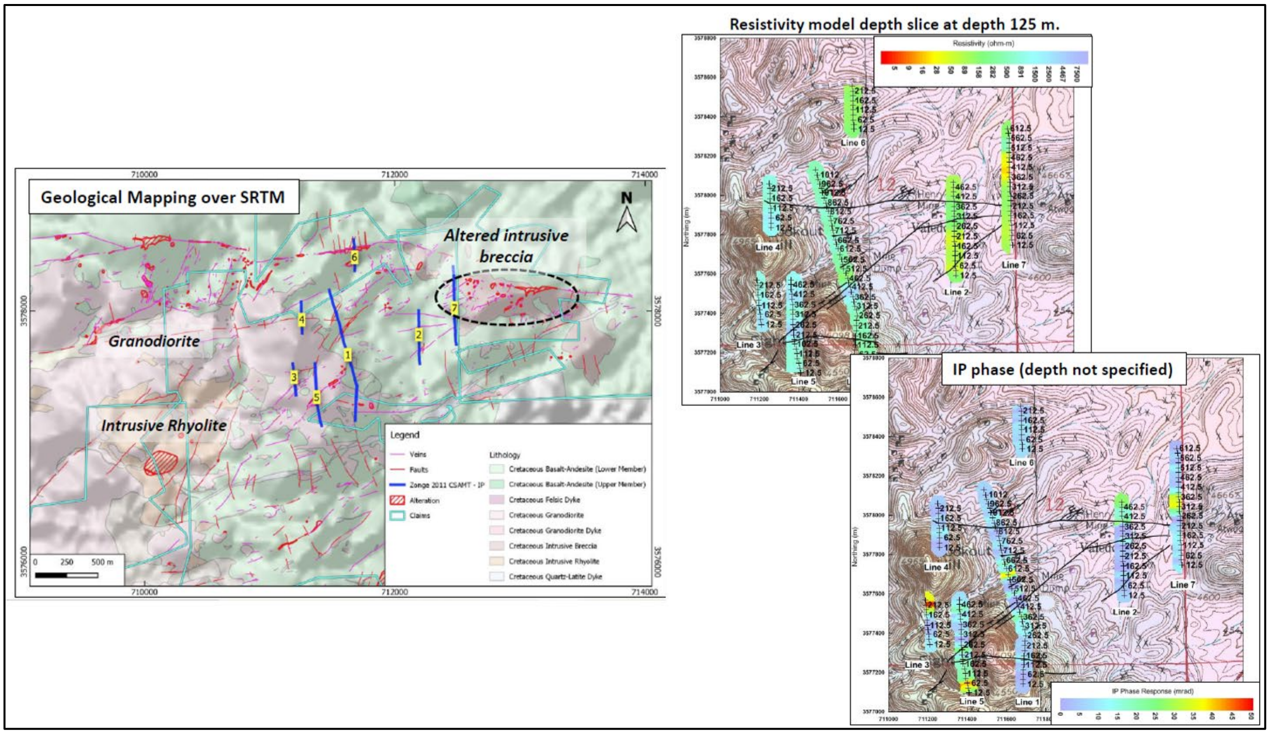


*Figure 6-17 SAMT lines over Waterton claim group completed in 2011. Area shown is solely within Cirrus claims*

Relatively conductive (<100 Ohm.m) anomalies are located along strike of mapped veins and altered intrusive breccia along CSAMT survey line 7 (Figure 6-18), which may be caused by hydrothermal alteration proximal to a porphyry stock or sulfide mineralization associated with a skarn or carbonate replacement deposit (CRD). A relatively resistive anomaly located in the center of the survey line could indicate the presence of a localized porphyry stock (right side image Figure 6-18). A high amplitude IP chargeability phase response of 30 mrad is more closely associated with a zone of mapped intrusive breccia along this survey line and may be related to disseminated sulfide mineralization.

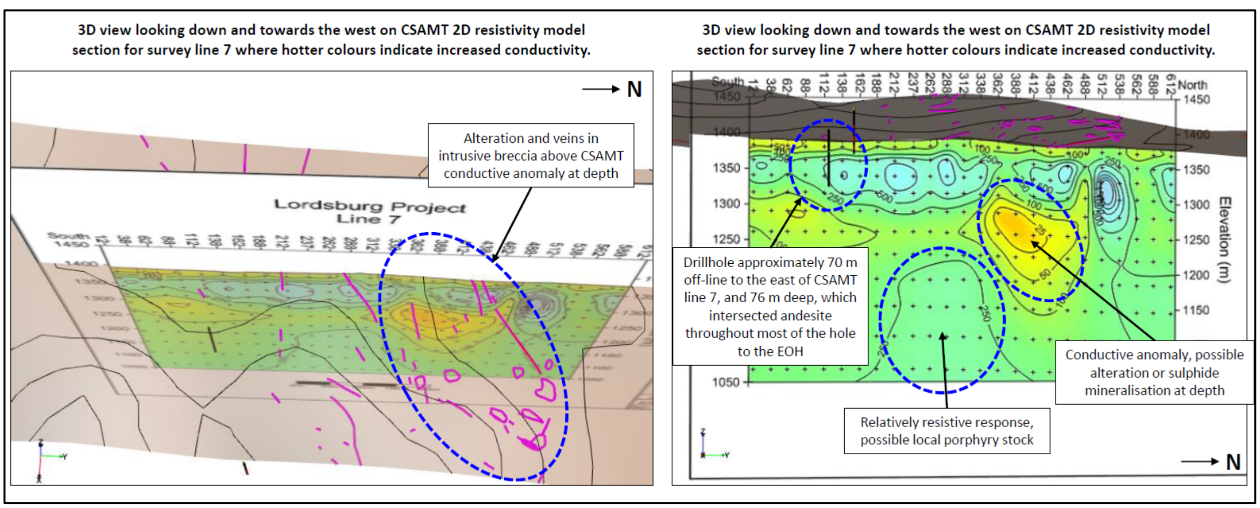


*Figure 6-18 CSAMT 2D resistivity model and line 7. Geophysical interpretation from Respot (2021)*

Relatively conductive and shallow anomalies on the CSAMT survey lines 5 and 6 appear to correlate with known veins and alteration trends. A deeper, relatively conductive anomaly along survey line 5 may indicate an extensive, porphyry related alteration zone (Figure 6-19).

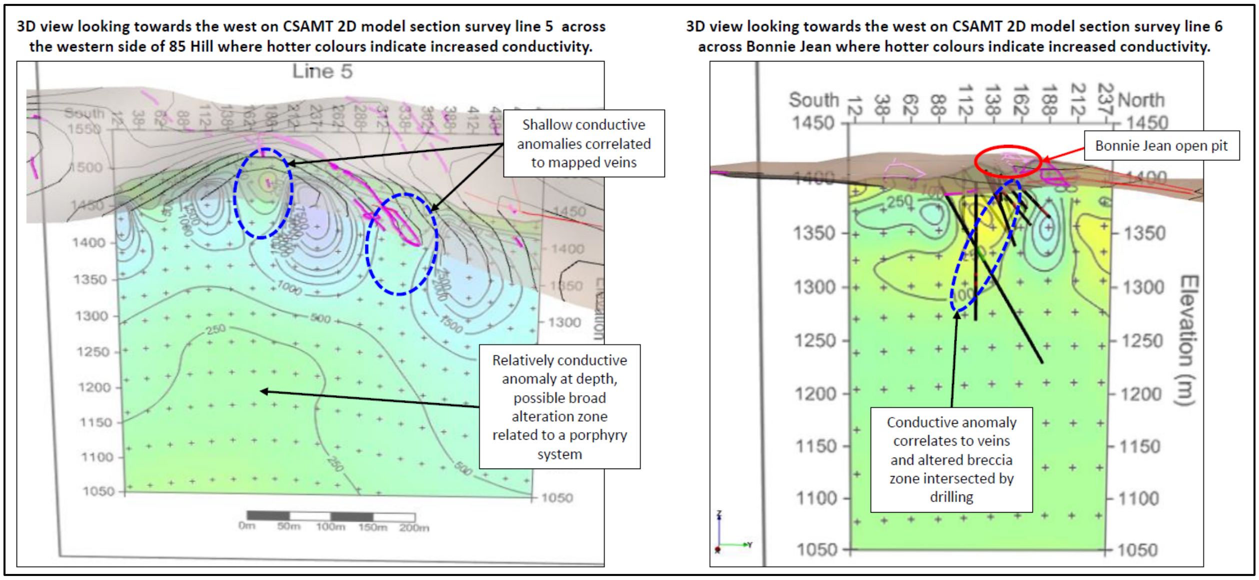


*Figure 6-19 CSAMT 2D resistivity model and line 7. Geophysical interpretation from Respot (2021)*

Airborne radiometric data reveal broad scale trends of higher K,Th and U responses and are useful for mapping outcropping felsic rocks and potassic alteration. A K/Th ratio image highlights a zone west of the granodiorite hills shown in Figure 6-20, which may represent potassic alteration related to the core of a porphyry copper deposit alteration zone (Figure 6-20).

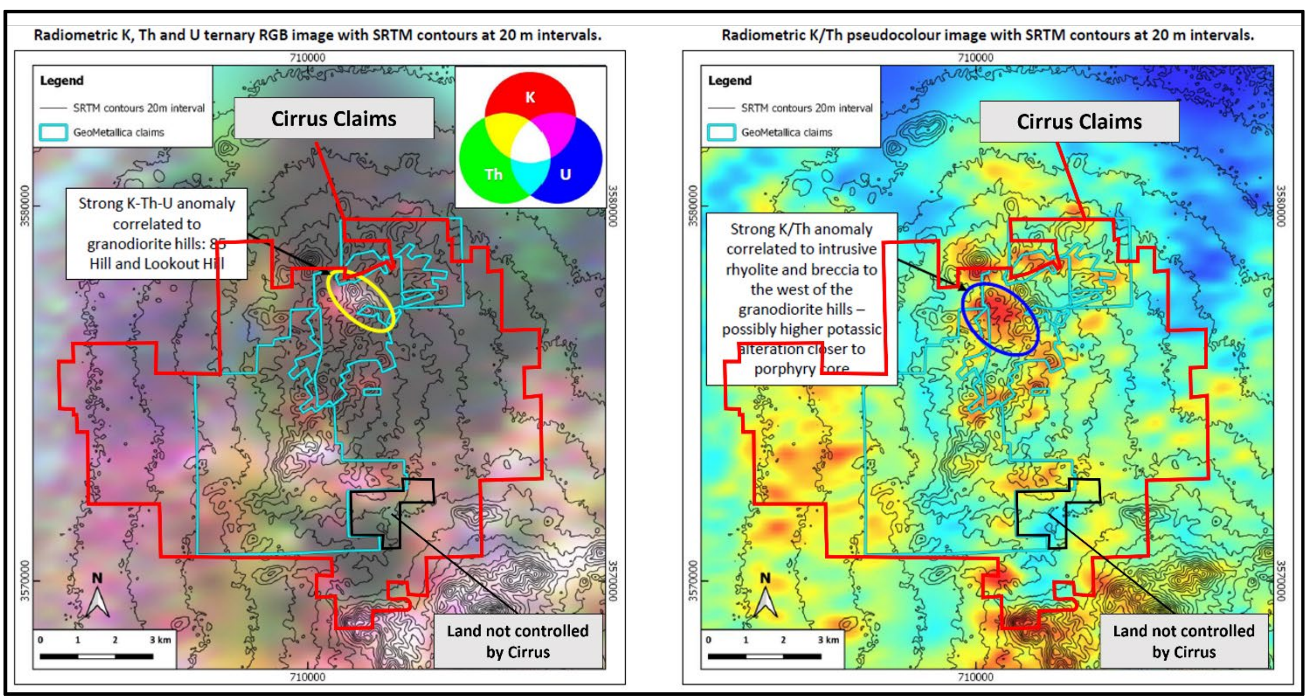


*Figure 6-20 Radiometric K, Th, U ternary image and K/Th ratios over Waterton claim block*

### 6.2.2.4 Geophysics – Magnetic 3D Inversion Modelling

Unconstrained 3D inversion modelling was carried out on the merged magnetic TMI data grid for the Waterton group claims by Resource Potentials. The merged magnetic grid referred to in Section 6.2.2.3 was inverted to produce a 3D block model of magnetic susceptibility extending to approximately 5,750m below the SRTM surface elevation model. A distinct break in 3D magnetic model features, interpreted to be a major NW-SE oriented fault is shown as a dashed black line on the right-side image in Figure 6-21. The source bodies for magnetic anomaly highs and lows are generally modelled as sub-high-angle 3D features. The reader is reminded that unconstrained inversion models such as this are insensitive to actual dip direction.

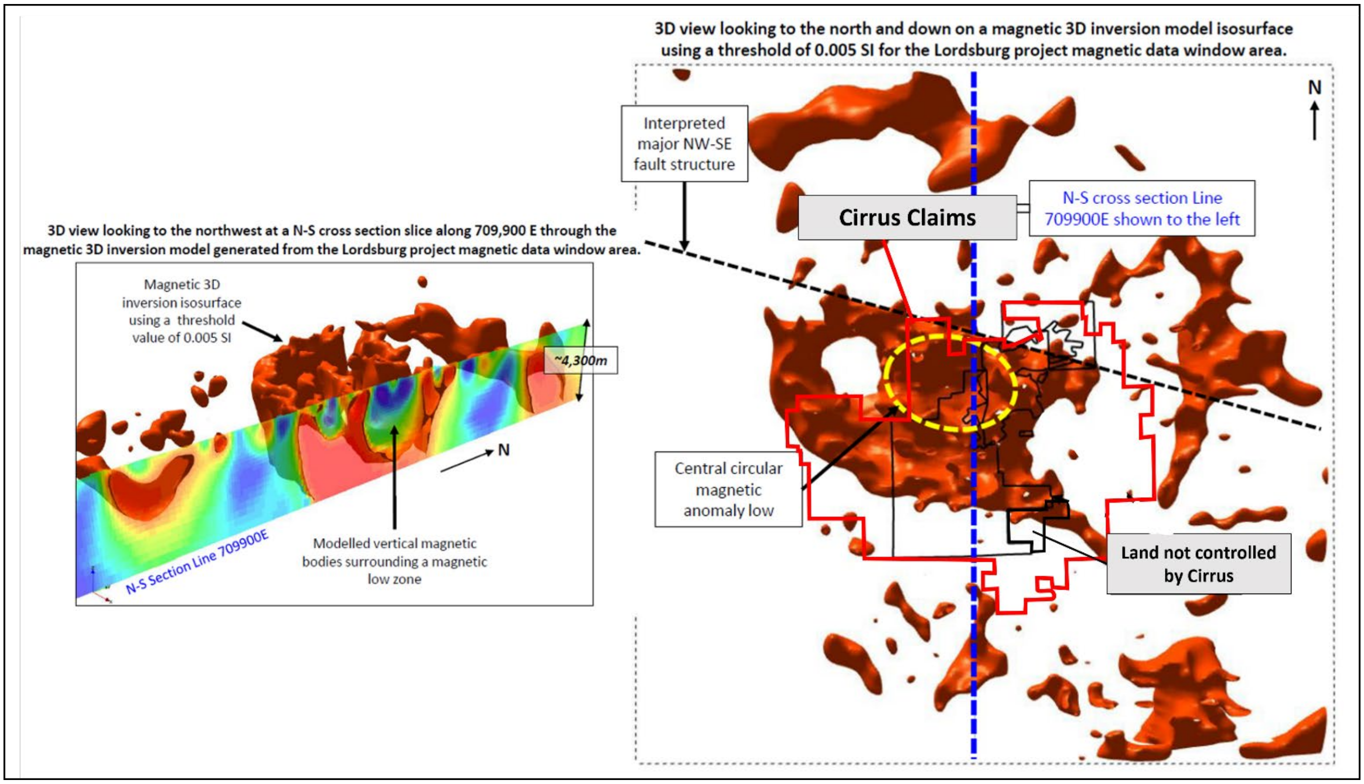


*Figure 6-21 Unconstrained 3D inversion model on merged magnetic TMI over the Waterton claims. Geophysical interpretation from Resource Potential (2021)*

The central magnetic low correlates with outcropping Cretaceous granodiorite and lends credibility to the inversion model.

# 7 GEOLOGICAL SETTING AND MINERALIZATION

## 7.1 Geologic Setting

### 7.1.1 Regional Geology, Stratigraphy and Structure

#### 7.1.1.1 Regional Geology and Stratigraphy

The sections below are largely summarized from Rogers (2012) report. The Paleozoic carbonate stratigraphic sequences in southern New Mexico do not crop out in the Lordsburg mining district but are found in all the nearby, surrounding ranges. They are likely present at depth under the Lordsburg project but have not been encountered in historic drilling or underground workings in the project area. Their importance as regional hosts for high grade skarn and CRD mineralization make their potential presence of significant interest.

Ordovician and Silurian rocks in southwestern New Mexico are predominantly dolomitic. They pass upward into late Devonian shales and Mississippian and Pennsylvanian and Permian limestones. The upper Paleozoic formations host the famous high-grade skarn and CRD deposits of the Central Mining District in Grant County, New Mexico. The lower Paleozoic dolomites are also present in the Central District, from which small magnetite bearing skarn deposits were actively mined in the early 1900’s.

The oldest sediments exposed in the Lordsburg district proper are contact metamorphosed, siliciclastic sediments of the early Cretaceous Bisbee Group (Thorman and Drewes, 1978). They are overlain by Laramide age basaltic and andesitic volcanic rocks, and intruded by Laramide rhyolitic breccias, granodiorite, quartz latite dikes, and felsite dikes. The mid-Tertiary Muir Caldera, in the southern Pyramid Mountains immediately south of the project includes rhyolite flows, tuffs, breccias and vitrophyric pyroclastic rocks. Mid-Tertiary volcanic rocks have also been identified on the Lordsburg project.

The Pyramid Mountains can be divided geologically into the northern Pyramid Mountains, which includes the northern Lordsburg mining district and the southern Pyramid Mountains. The northern Pyramid Mountains consists of basalts, andesite, intrusive breccias, granodiorite, quartz latite dikes, and felsite dikes. The southern Pyramid Mountains include the mid-Tertiary sequence of the Muir Caldera, composed of rhyolitic tuffs, breccias, vitrophyric pyroclastic rocks, andesites, basalts, granodiorite plugs, and intermediate to felsic dikes.

In the Pyramid Mountains, Laramide deformation was accompanied by basaltic and andesitic volcanism and a granodiorite intrusion. The region underwent large scale pyroclastic volcanism with numerous ash-flow tuffs and calderas later in the Oligocene. The Muir Caldera in the southern Pyramid Mountains belongs to this event. Tuffs of Woodhaul Canyon in the Muir caldera of the southern Pyramid Mountains are reported by Elston (1983) to have an age date of 35.2 Ma. Later, the region underwent post-Miocene Basin and Range faulting.

The Oligocene age ash-flow tuffs exposed in the southern Pyramid Mountains have undergone extensive post-depositional erosion. No outflow facies of these ash-flow tuffs are found in the northern Pyramid Mountains, suggesting the northern Pyramid Mountains, including the Lordsburg project) are located in a more deeply eroded post-Miocene Basin and Range fault block.

In the region, older Mesozoic and Paleozoic sediments are exposed in the Pyramid Mountains about 36 kilometers south of the project area. Twenty-two kilometers to the west, a sequence of 650 meters of Cretaceous Bisbee group rocks overly about 220 meters of Paleozoic rocks in the Peloncillo Mountains.

In the Big and Little Hatchet Mountains, 50 and 80 kilometers respectively to the south, 850 meters of Bisbee group clastics and limestones overly 850 meters of Paleozoic rocks. Paleozoic limestones have also been intersected in the geothermal wells drilled at the geothermal powerplant approximately 40km south of the project.

The Burro Mountains, 30 kilometers north of the Lordsburg area, are comprised of Precambrian basement gneisses, granites, schist, and greenstone overlain by a thin sequence of Cretaceous clastic rocks.

#### 7.1.1.2 Regional Structure

The northern Lordsburg mineral district lies at the intersection of two prominent lineaments, defined by a wide, linear zone of topographic, structural, and magmatic features including plutons, faults, and basins (Bates and Jackson, 1980). The regional scale of these lineaments strongly suggests a deep seated, reactivated zone of crustal weakness that may have been active since the Proterozoic (Heyl, 1983; Favorskaya and Vinogradov, 1991).

The Santa Rita lineament (Chapin et al., 1978) or New Mexico mineral belt (Lowell, 1974) is the first prominent lineament. This northeast trending lineament continues from Cananea, Sonora, Mexico, northeastward to Chino and Hillsboro, New Mexico. This lineament is defined by northeast faults, Laramide age intrusions, and porphyry copper, skarn and CRD deposits including those at Cananea, Bisbee, Chino, Tyrone, and Hillsboro (Figure 7-1, modified from McLemore 2016).

The second prominent lineament, lying south of the Lordsburg District, is the Texas lineament, a northwest trending shear zone of regional extent reaching from West Texas to Southern California, first proposed by Ransome (1915). Moody (1966) described the Texas lineament as a relatively broad belt of tectonism. Mayo (1958) and Wertz (1970) described the Texas lineament as a “belt of transverse structures” more than 240 kilometers wide. Trauger (1965) concludes that the Texas lineament or Deming axis as described by Turner (1962) is at the southern boundary of a 50-60 miles wide northwest trending transition zone between the Colorado Plateau and the Basin and Range. Kelley (1955) describes the Texas lineament as marking roughly the southern boundary of the Plateau along the Mogollon Rim and is one of the largest, longest, and most prominent of the transverse lineaments on the North American continent (Figure 7-1, modified from McLemore 2016).

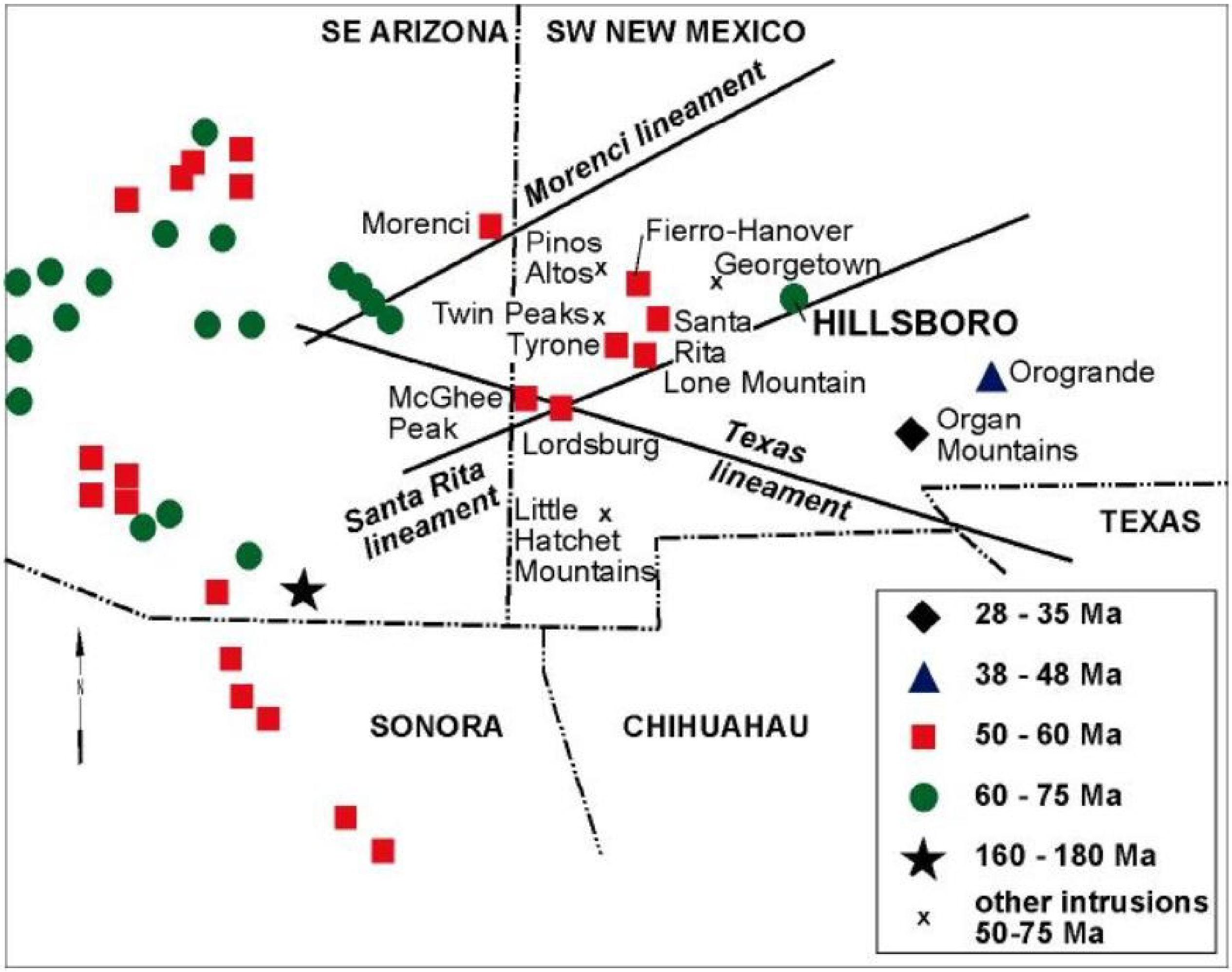


*Figure 7-1 Unconstrained 3D inversion model on merged magnetic TMI over the Waterton claims. Geophysical interpretation from Resource Potential (2021)*

Moody & Hill (1956) in their paper on wrench fault tectonics, proposed that the Texas lineament was controlled by left lateral wrench faulting. Sympathetic normal and reverse faults are common within the Texas lineament (Turner, 1962; Wertz, 1970; Muehlberger, 1980).

Researchers differ in their opinions on whether or not post-Miocene extension across this region has resulted in Basin and Range disruption of the Laramide and older structures. Hedlund's (1985) mapping at the Tyrone porphyry copper deposit suggests post-Laramide extension with a top to the northeast rotation of 20°-25°. Wilkins and Heidrick (1995) postulate that the Lordsburg district, 50 kilometers to the south of Tyrone, is basically intact and unrotated. They observed and noted relatively flat lying volcanic wall rocks and interpreted the alteration/mineralization zoning patterns to indicate a near vertical hydrothermal system. They believed the older, pre-Oligocene structures were not cut by Tertiary extensional structures.

Rogers (2012) mapped a 3-10 meter wide unconformity with volcanoclastic sediments, bedded tuffs, and breccias, dipping 10°-30° to the northeast between the overlying Cretaceous (Kbu) basalt and underlying basalts/andesite (Kbl). This requires a northwest striking, gravity fault zone that would outcrop to the northeast of Lordsburg. This flat lying detachment fault would dip shallowly to the southwest with the upper plate moving southwestward. Listric geometry commonly observed on such faults would rotate the hanging wall Lordsburg District units to the northeast. Hawley (2000) regarded the Lordsburg basin block as a complex, northeast-tilted half graben with at least one major buried fault zone between the Lordsburg District and the Burro Mountains to the northeast. Clark (1970) suggests a northeast tilting in the district as supported by rocks in the central Pyramid Mountains dipping to the northeast. Rogers (2012) mapped a major, shallow southwest dipping detachment fault, striking northwest and exposed on the southwest side of the Burro Mountains across the Lordsburg basin to the northeast of Lordsburg. This fault may be the same detachment fault or a similar, sub-parallel flat lying fault that caused the shallow northeast dip of units in the Lordsburg District.

The Lordsburg basin, lying north of the Pyramid Mountains, is a broad, elongated northwest-trending structure that separates the Gila Block transition zone (Trauger, 1965) to the north from the Basin and Range structures to the south. Records from exploration oil wells report that the basin is greater than 550 meters deep near Lordsburg (Dixon, Baltz, Stipp, and Bieberman, 1954).

A north-northwest striking, normal, Basin and Range fault down-drops the Animas valley on the west side of the Pyramid Mountains. The west side of the Animas Valley, along the eastern front of the Peloncillo Mountains has a similar north-northwest Basin and Range fault.

Elston and others (1979) propose that the inner wall of the Tertiary age, Muir Caldera encompasses the southern half of the Pyramid Mountains, just south of the northern Lordsburg district. Elston proposed that the northern limits of the outer ring fracture zone of the Muir Caldera crosses the north end of the northern Lordsburg mining district, however, no remnants of the felsic, caldera forming rock sequences are present in the northern Lordsburg district.

### 7.1.2 Rotation and tilting of the Lordsburg district.

Hedlund's (1985) mapping at the Tyrone porphyry copper deposit suggests post-Laramide extension with a top to the northeast rotation of 20° to 25°. Wilkins and Heidrick (1995) postulate that the Lordsburg district is basically intact and unrotated and is not overprinted by Tertiary extensional regimes. They note the volcanic wall rocks are relatively flat lying; and alteration/mineralization zoning patterns indicate a near high-angle hydrothermal system. Fahey (2019) mapped tilting and dismemberment of Laramide deposits along a corridor from Tyrone, New Mexico through the Lordsburg district. He found evidence for a modest, 10° to 35° north-easterly directed rotation of the Lordsburg district.

Rogers (2012 mapped an unconformity between Cretaceous basalt and underlying basaltic-andesite with a 3- to 10-meter wide zone of 10° to 30°, east dipping volcanoclastic sediments, bedded tuffs, and breccias. This observation conflicts with Wilkins and Heidrick (1995) conclusion and conforms to Hedlunds and Faheys interpretation. It requires a northwest striking, modestly dipping to the southwest, detachment fault with listric geometry to lie to the northeast of Lordsburg. This structure would provide a means to rotate the hanging wall Lordsburg units upward on the northeast.

### 7.1.3 Lordsburg District Geology, Stratigraphy, and Structure

#### 7.1.3.1 Geology and Stratigraphy

The oldest units in the northern Lordsburg mining district are the upper basalt (Kbu) and lower andesite/basalt unit (Kbl). A fission track age date on zircon from this upper unit is 54.9 ± 2.7 Ma (Thorman and Drewes, 1978). Argon-argon age dates by the New Mexico Bureau of Mines (McLemore, Peters, and Heizler, 2000) reported andesite in the district at 66.3 ± 0.4 Ma and 67.94 ± 0.57 Ma.

East of the Atwood mine and proximal to the Miser's Chest mine, basaltic breccias (Kib), interpreted as hypabyssal dikes, cut both of the basaltic units (Kbu, Kbl) as shown by irregular intrusive contacts, breccia fragment composition and blocks of andesite (Kbl) within the Kib. Hypabyssal felsic plugs and breccia pipes (Kir) intrude the basaltic/andesite units and form sparsely distributed clasts in the breccias.

A granodiorite stock (Kg) intrudes the andesitic/basaltic flows, mafic intrusions, and rhyolite as shown by irregular contacts, contact metamorphism of the volcanic wall rocks, mega-blocks of andesites (Kbl) and rhyolite (Kir) within the granodiorite stock and granodiorite dikes (Kgd) that cut the wall rocks. Argon/argon age dates by the New Mexico Bureau of Mines (McLemore, Peters, and Heizler, 2000) reported the granodiorites at 57.31 ± 0.03 Ma; 57.58 ± 0.36 Ma; and 58.81 ± 0.10 Ma. A fission track age date from Thorman and Drewes (1978) from the granodiorites is 58.5 ± 2.0 Ma. The Lordsburg Kgd is of similar age to the Grant County porphyry copper bearing intrusions at Santa Rita (58.3 Ma. Ar/Ar, unpublished data, Phelps Dodge Corp.); Lone Mountain (51.5 Ma, K/Ar, unpublished report, P.R. Hubbard, and P.G. Dunn, 1983); Tyrone (54.5 Ma. Ar/Ar, unpublished data, Phelps Dodge); and Hanover-Fierro (57.6 Ma., Ar/Ar, McLemore et al, 1996).

Similar intrusions in southwestern New Mexico have older Laramide age dates. The Pinos Altos stock is 74.4 Ma, K/Ar, (McDowell, 1971), the Twin Peaks monzonite porphyry in the Burro Mountains is 72.5 Ma, K/Ar, (Hedlund, 1980), the Georgetown dikes are 71 Ma, Ar/Ar, (McLemore, 1998) and the Hillsboro intrusive complex is 75 Ma, Ar/Ar, (McLemore, et al., 1999).

A quartz latite dike (Kql), about 750 meters south of the top of 85 Hill, cuts the granodiorite stock. About 1050 meters south of the Atwood mine, the same quartz latite dike cuts a granodiorite dike (Kgd). The following age dates from quartz latite dikes also show that these dikes are younger than the granodiorites: 52.7 ± 2.7 Ma, fission track, (Thorman and Drewes, 1978); 54.53 ± 0.56 Ma, Ar/Ar and 41.9 ± 1.1 Ma, Ar/Ar (McLemore, Peters, and Heizler, 2000). The east-northeast trending quartz latite dikes cut the polymetallic veins and are cut by the youngest, felsite dikes (Kf).

Since the polymetallic veins cut the granodiorites and are cut by the quartz latite dikes, the age of the polymetallic veins is likely 53 to 58 Ma, making them of similar age to the intrusions at Santa Rita, Lone Mountain, Tyrone, and Hanover-Fierro.

### Cretaceous lower basalt-andesite (Kbl)

The oldest Cretaceous units cropping out on the Lordsburg project are the lower basalts and andesites (Kbl). Outcrops are typically light gray, green, black, massive to blocky and with sparse indistinct layering and occasional flow breccias. The Kbl unit is at least 610 meters thick, exposed from the surface to the "2,000" level of the Bonney Mine. In 1973, Phelps Dodge drilled a 621.8 meter long vertical hole from the 2,000 level of the Bonney Mine and penetrated andesites, siltstone, minor quartzites, and bottomed in granodiorite. The unsubstantiated thickness of andesites suggests that the Kbl unit is greater than 610 meters thick.

Megascopic Kbl is generally a fine-grained, holocrystalline basalt comprised of predominantly plagioclase and augite or diopside with accessories of hematite, epidote, calcite, chlorite, magnetite, and sparse hornblende. Some of the units are crystalline with pilotaxitic textures of tabular to prismatic plagioclase and altered augite. The unit is probably intrusive in part as it varies texturally from crystal bearing andesite to porphyritic diorite with 20-30% chlorite-calcite clots after ferromagnesium minerals with interstitial quartz, and feldspar, partially replaced by sericite. Accessory minerals include magnetite, chlorite, and sericite. The propylitic alteration assemblage of epidote-chlorite-sericite-calcite ± iron oxides is nearly ubiquitous. Williams and Khin (1975) believe that the bulk of the pyrite within the volcanics is syngenetic.

The basalts and andesites are intruded by the granodiorite unit resulting in a hybrid, assimilated zone with widths of a 3 to 15 meters in width. Lasky (1935) describes this assimilation zone of granodiorite as a darker border phase of finer grained, porphyritic rock with more augite, calcic plagioclase, and magnetite than the main granodiorite mass. Rogers (2012) observed contact metamorphic changes from dark green to black, increasing hardness and conversion of augite chlorite, biotite, hornblende, and quartz. Associated minerals include plagioclase, orthoclase, and magnetite. The hybrid zone grades out into gray to green-gray, typically fine-grained basalt and andesite. Lasky (1935) suggested that the contact metamorphic effects occurred after the assimilation. Rogers (2012) was uncertain if the assimilation was simultaneous or before contact metamorphism.

Williams and Khin (1975) studied thin sections and hand samples and described the basalt units as a mixture of andesites with minor reworked volcanic and trashy pelitic sediments. These rock types showed the effects of thermal metamorphism from the intrusive, grading from mildly epizonal to occasionally mesozonal. Mafic volcanics were reported to have been metamorphosed to epidote, actinolite or hornblende, biotite, and diopside, while pelitic sediments are metamorphosed to quartz, orthoclase, sericite, and occasional andalusite.

**Cretaceous basalts/andesites (Kbu)**

A younger basaltic unit (Kbu) overlies the older andesite/basalts (Kbl) unit in the northernmost part of the northern Lordsburg district. The contact is a red to purple, volcaniclastic conglomerate along an unconformity exposed in a pit about 200 meters north of the eastern most Atwood surface workings. The matrix-supported conglomerate has a red, highly hematitic sedimentary clastic matrix with 40% poorly sorted, subangular-subrounded, light gray intermediate volcanic fragments crudely elongated parallel to bedding (Figure 7-2). Elsewhere this unconformity is displayed by bedded tuffaceous units and breccia, similarly described by Lasky, (1938) and Flege, (1959). This unconformity varies from 3 to 10 meters thick and dip from 10-30° to the east. A brown weathered surface with dark black, fine-grained, highly magnetic, basalt with disseminated red, hematitic weathered ferromagnesian minerals overlies this unit. At most locations, the upper magnetic basalt is partially eroded and the thickness is less than one hundred meters.

*Figure 7-2 Volcanoclastic conglomerate marker horizon between upper basalts and lower andesites*

**Cretaceous intrusive breccia (Kib)**

Plugs, dikes, and irregular masses of intrusive breccia intrude the basalt-andesite unit (Kbl) throughout the district but especially so at the Atwood Mine and west of the 85 Hill. The intrusive breccia was not observed intruding the upper Kbu unit within the study area. However, Lasky (1938) reports that at Aberdeen Peak, outside the southeast side of the study area, white intrusive breccias (Kib) cut the upper basalt unit (Kbu).

Kib is typically a light green to brown, matrix-supported intrusive breccia with moderately sorted, subrounded to angular, granules to pebbles up 5 centimeters in a matrix of white, fine-grained feldspar and quartz with minor fine-grained, black magnetite, biotite, and chlorite. Some of the breccias have black, fine-grained basaltic fragments compositionally similar to the Kbl basaltic-andesitic unit. Elsewhere, some breccias have both the rhyolitic and basaltic breccia fragments with a matrix composed of fine-grained comminuted rock flour of basalt and rhyolite.

**Cretaceous felsic intrusive (Kir)**

Hypabyssal felsic intrusive plugs, dikes, and breccia vents with irregular contacts, distorted flow layering, brecciated wall rock fragments within the rhyolites, and internal brecciation occur in the northern Lordsburg district (Figure 7-3). Rhyolite flows are reported to extend out from a felsic intrusive neck near North Pyramid Peak (Flege, 1959) and suggest the Kir rocks are feeders to rhyolitic volcanics in the area. Felsic intrusive plugs and dikes are buff, white, and have distorted flow layering and auto-brecciation textures, particularly near contact zones.

Felsic intrusives are white to pale gray, fine grained and massive with sparse, conchoidal fractures. Flow layering is subtle but observable in the matrix but more obvious in outcrop. The Kir contain rare, small crystals of smoky to gray, subhedral to rounded quartz and tabular sanidine. The fine-grained, hard matrix consists of quartz, sanidine, sparse plagioclase, biotite, and sparse hematite often after biotite. Some Kir exposures display micro-quartz veinlets and others have minor manganese oxide streaks and dendritic surface coatings.

*Figure 7-3 Flow layered felsic intrsuive of the Kir unit*

**Cretaceous felsic intrusive breccia (Kir bx)**

Two distinctive vents with felsic intrusive breccias lie 1200 meters west of “85” hill and another on a hill about 1200 meters east of the Lordsburg mill. The intrusive breccia west of “85” hill is a semi-circular pipe with dimensions of approximately 2300 meters in diameter. This felsic intrusive breccia has an irregular, poorly exposed contact with wall rocks of massive to flow-layered, non-brecciated, felsic intrusives. The surrounding, non-brecciated felsic intrusives have irregular flow layers, generally striking parallel to the breccia contact but dipping moderately to steeply both inward and outward in relation to the felsic intrusive breccia pipe. The kir bx unit is white, buff, and gray with small patches of weak limonitic stain. The breccia is matrix supported with poorly sorted, sub rounded, granules to pebble size clasts of chalcedonic rhyolite, flow-layered rhyolite, and fine-grained rhyolite (Figure 7-4). Larger block fragments up to 30 centimeters across occur on the ridge on the east side of the breccia vent. The breccia matrix is comprised of comminuted, rhyolitic rock flour. The internal structure of the intrusive breccia is generally chaotic with no persistent lineations or deformed flow orientations displayed around the fragments.

*Figure 7-4 Felsic intrusive breccia with granules to pebbles of chalcedonic rhyolite, flow-layered rhyolite, and fine grained rhyolite*

The felsic intrusive breccias east of the Lordsburg mill form a tabular, sheeted breccia sequence that dips shallowly from 15° to 35° to the southeast. The buff colored to weakly limonitic breccias are clast to matrix supported, with sub rounded to sub angular, pebbles to 30 centimeter boulders of vesicular rhyolite, chalcedonic to fine-grained rhyolite, and flow layered rhyolite (Figure 7-5). Interspersed within the breccia are gray to buff, 10 centimeters to one meter wide layers of lithic, crystal-rich rhyolite (Figure 7-6).

*Figure 7-5 Felsic intrusive sheeted breccias with pebbles to 1+ foot boulders of vesicular rhyolite, chalcedonic to fine-grained rhyolite, and flow layered rhyolite*

This intrusive rhyolite breccia lies upon the underlying andesite units (Tbl). From a distance the lithologic sequence capping Aberdeen Peak dips similarly to the southeast and could be an erosional remnant of the same sheet.

*Figure 7-6 Felsic intrusive sheeted breccia with layers of lithic, crystal-rich rhyolite*

**Cretaceous granodiorite (Kg)**

The granodiorite stock intrudes the felsic intrusives (Kir) and basaltic-andesite units (Kbl, Kbu) and forms a convex outcrop exposure throughout most of the western half of the mapped area. The brecciated, intrusive contact of the basalts-andesites and granodiorite often shows poorly sorted, sub angular, granule to pebbles up to 10 centimeters of basalt within a granodiorite matrix. K-argon age dates for the granodiorite are 56.5 ma (Thorman and Drewes, 1978) and 59-56 ma (Richter and Lawrence, 1983). These age dates fall within the Laramide orogeny and mineralization epoch recorded throughout the southwest United States.

The granodiorite typically weathers buff to light brown forming sub rounded boulders. In fresh exposures the rock is gray, buff, light green and pink. Megascopic examination the rock shows variations texturally from phaneritic, non-prophyritic to aphanitic prophyritic and compositionally from a granodiorite to quartz monzonite.

The phaneritic, non-porphyritic intrusive is medium to coarse-grained. Compositionally this intrusive consists of 65-70% feldspars of plagioclase and orthoclase. The pink to buff, sericite altered orthoclase have inclusions of chlorite altered biotite. The plagioclase grains are buff, tabular, and with varied degrees of calcite-epidote alteration. Chloritic altered biotite and chlorite-hematite-magnetite altered prismatic hornblende laths form about 15% of the rock mass. Anhedral quartz grains comprise about 10% of the rock.

The aphanitic porphyritic intrusive has 15-20% anhedral orthoclase phenocrysts; subhedral often twinned, tabular to blocky plagioclase phenocrysts often with quartz, epidote-bearing saussurite, and rare hornblende inclusions along with minor phenocrysts of hornblende and biotite. The matrix is comprised of orthoclase, plagioclase, biotite, and hornblende with accessories of chlorite, epidote, magnetite, apatite, sphene, and calcite. The intrusive often displays a propylitic alteration assemblage of chlorite-epidote- calcite.

Williams and Khin (1975) classified the intrusion as tonalite to quartz monzonite with a quartz-orthoclase matrix, granophyric texture with ferromagnesium minerals of biotite and hornblende. This intrusion was reported to have the deuteric alteration of chlorite and epidote replacing ferromagnesium minerals. Hydrothermally altered intrusion has an alteration assemblage of quartz-chlorite-sericite-carbonate.

**Cretaceous granodiorite dike (Kgd)**

Granodiorite dikes strike outward from the intrusion to the northwest, east, west, and northeast with widths and lengths varying up to 30 meters into adjacent country rock and as isolated dikes within the basalts. Small, short, and narrow dikes occur within granodiorite stock. Granodiorite dikes are mineralogically similar, texturally more varied, and genetically related to the granodiorite stock.

**Cretaceous quartz-latite porphyry (Kql)**

Quartz latite porphyry dikes generally strike northeast, dip steeply to the southeast, and 3 to 100 meters wide. These dikes vary in strike length. One, 10,000 meter long dike cuts nearly across the entire district.

These dikes cut the granodiorite stock and dikes and in at least one instance, cuts a mineralized vein. A fission track age date of 52.7 ± 2.7 m.y. is reported for the quartz-latite porphyry (Thorman and Drewes, 1978). The quartz latite porphyry dikes are gray in scattered fresh exposure but generally buff to yellow brown, highly leached, strongly phyllic altered with moderate jarosite-goethite ± hematite-stained fracture fillings and boxworks. The jarositic-goethitic coated cubic boxworks are after pyrite while various limontic clots are probably after ferromagnesium minerals.

Quartz latite porphyries have phenocrysts of clear to gray, anhedral, quartz (5-15%); white, tabular, strongly sericite-quartz-sparse calcite altered plagioclase (20-25%), and black, thin laths of weak chlorite-hematite altered hornblende and biotite (10%). The aphanitic matrix is comprised of quartz, plagioclase, hornblende, and accessories of orthoclase, magnetite, sericite, chlorite, and biotite.

**Cretaceous Felsite dike (Kf)**

Felsite dikes strike northeast and dips steeply to the southeast (Figure 7-7). These dikes vary in width from 1.5 to more than 30 meters and along strike lengths from 6 to 300 meters. About 675 meters south of 85 Hill, a felsite dike cuts a mineralized quartz vein. Elsewhere, the felsite dikes cut the granodiorite stock.

Felsite dikes are white to buff, porcelaneous with a matrix comprised of quartz, glass, sanidine, sparse black biotite, and sparse vesicles lined with tridymite or cristobalite. They have a few percent phenocrysts of tabular, euhedral sanidine and rounded, embayed, corroded quartz. Accessory minerals include traces of hematite, and manganese oxides.

*Figure 7-7 Felsite dike intruding andesite flows*

#### 7.1.3.2 Structure

The Lordsburg project area has at least three distinctly oriented structural fabrics evidenced from faults, joints, and vein sets observed within the district. They are an east-northeast to east-west striking set, a north-northeast striking set, and a north-northwest striking set. All have moderate to steep dips (Figure 7-8, Figure 7-9, and Figure 7-10).

The east-northeast trending structural set is Laramide in age as indicated by age dates and cross-cutting relationships and can been observed from the rose diagrams for faults and joints (Figure 7-8 and Figure 7-9). The faults are high-angle and displacement is largely left lateral, strike-slip with offsets of hundreds of meters. The Bonnie Jean, North Atwood, South Atwood, Comstock, Comstock South, Old Tailings, Tailing Pond, and Miser’s North faults belong to this structural set.

The Bonnie Jean strike slip fault zone is sinuous with an overall east-west trend for a strike length of 3200 meters. It has a strong linear zone of silicification, mineralization, lithologic offsets, slickensides and brecciation. Siliceous ribs protrude 3 meters or more above the surrounding country rock. The east tip of the sinistral strike slip zone, about 500 meters east of the Bonnie Jean pit, shows minor, discontinuous faults oriented towards the northeast. Westward, this strike-slip fault continues 1500 meters to Lee Peak and then bifurcates in a westward direction into various splits.

The eastern Bonnie Jean segment displays 200 meters of sinistral displacement with the footwall intrusive breccia (Kib) displaced against the hanging wall andesite/basalts (Klb). The fault shows two parallel, pre-, syn-, and post mineral quartz breccias with cymoidal structures over a 400-meter strike length. A northern vein dips from 65° to 86° to the south and ranges in width up to 8 meters. A southern, more intensely mineralized vein, dips from 62° to 83° to the south and splits into multiple parallel veins within a zone averaging 5 meters and up to 7 meters in width. A sheared, locally brecciated, silicified stockwork zone up to 30 meters wide occurs between these main structures.

The Lee Peak segment lies along the west end of the Bonnie Jean, sinistral strike slip fault. The west end of Lee Peak develops various splays that emanate away from the western tip of the main strike slip fault. Lee Peak is a limonitic stained, silicified andesitic, forming a distinctive conical peak. The Lee peak fault has a strike length of 220 meters and varies in width from 30 meters on the east end to 100 meters on the west end. Dip direction of the breccias on Lee Peak is uncertain. Localized veining and silicification appears predominantly post-brecciation.

The North Atwood strike slip fault strikes east-west over a length of 5500 meters and crosses the entire district from the Waldo mine on the east side to the Animas valley floor on the west side. Near the Atwood shaft on the east side of the fault, the fault splits into a westward, conjugate, east-west striking fault set with the steeply north dipping North Atwood fault, and the steeply south dipping South Atwood fault. The South Atwood fault has a strike length of only about 1100 meters from the Atwood shaft westward to about the Henry Clay Shaft where it appears to merge into the Emerald (85) vein. On the north side of Lookout Mountain, the steeply north dipping North Atwood strike slip fault displays 400 meters of sinistral displacement. The andesite-basalt unit (Kbl) is displaced westward on the hanging wall of the fault against the granodiorite (Kg) on the footwall. This fault is a distinctively strong linear zone with silicification, mineralization, lithologic offsets, topographic lineations, slickensides and brecciation.

The South Comstock South strike slip fault occurs on the southeast flank of the 85 Hill. This fault strikes east-west and dips about 56° to 75° towards the south with 200 meters of dextral displacement, placing the footwall granodiorite against the hanging wall andesites. Silicification and weak mineralization characterize this fault along a strike length of 700 meters.

The Old Tailings fault strikes about 070° and dips steeply southeast with a strike length of about 2600 meters. On the east side of the old tailing piles, this strike slip fault displays sinistral displacement of about 200 meters with the footwall andesite juxtaposed against the hanging wall felsic intrusives. The trace of the fault is marked by a felsite dike with mineralized quartz veining, fault breccia, and lithologic offsets.

The Tailings Pond fault strikes about 075° with a length of 400 meters and is partially covered on the east end by mill gravels. This strike slip fault displays 30 meters of dextral displacement of granodiorite, quartz latite porphyry, and intrusive breccia units.

The North Miser fault strikes about 072° and dips 48° to 70° to the northwest over a strike length of 1000 meters. The fault displays 60 meters of sinistral, post-mineral displacement with mineralized quartz veining, lithologic offsets, and fault gouge The North Miser fault merges into the mineralized Miser Chest vein.

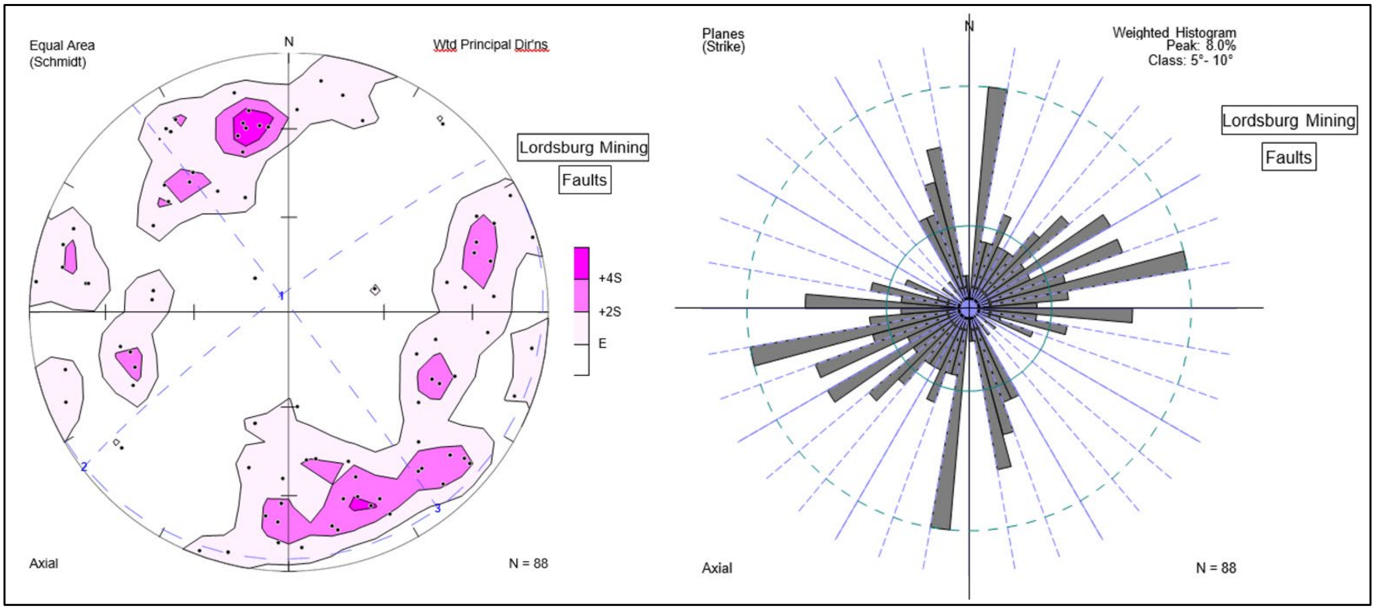


*Figure 7-8 Lower hemisphere projections of faults studied on Waterton claim group – Lordsburg project. Figure modified from Rogers (2012)*

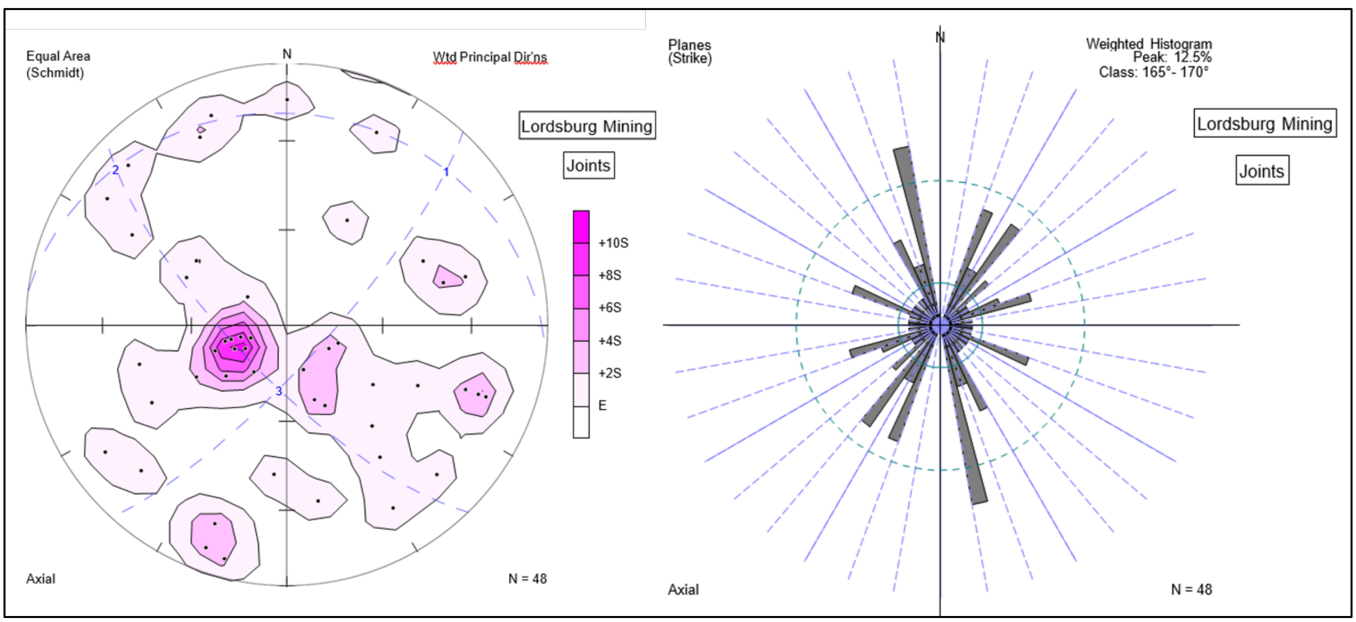


*Figure 7-9 Lower hemisphere projections of joints studied on Waterton claim group – Lordsburg project. Figure modified from Rogers (2012)*

The north-northeast set of structures on the Lordsburg project are also Laramide in age and form conjugate sets of northeast trending sinistral and dextral shear zones (Figure 7-8 and Figure 7-9). Major mineralized veins forming along these shears include the Emerald vein (85 mine), Miser Chest mine, and Bonney Mine.

The Emerald vein, near the 85 mine adit, has 60 meters of dextral displacement. It dips steeply to the southeast with footwall granodiorite juxtaposed against hanging wall andesites. A number of un-named, northeast trending faults about 300 to 1500 meters west of 85 Hill, show dextral and sinistral displacement ranging from 50 to 60 meters.

The north-northwest set are Tertiary age, Basin and Range faults that cut the Laramide structures and veins, lack mineralization and are relatively scarce compared to the other structural sets (Figure 7-10). Less commonly, these Basin and Range structures strike east-northeast. Normally these faults have moderate to steep northeast and southwest dips (Figure 7-8), but structures with flatter dips do exist. For example, the area between the Bonnie Jean and North Atwood faults has a few northwest striking structures with gently dipping, southwestward orientations. Observed displacement along these faults varies from a few to approximately 30-meters.

The mineralized Bonnie Jean vein has multiple, post-mineral faults that strike 350° to 355°, dip 65° to 70° to the west and have both dextral and sinistral displacement ranging from 1.5 meters to 7.5 meters. Other post-mineral faults at the Bonnie Jean vein strike 015°, dip 50° to the west and have sinistral displacement of 6 meters. Throughout the district, east-northeast trending quartz-latite, rarely granodiorite and felsite dikes typically are cut by northwest faults with sinistral or dextral displacement. Various diagonal slickensides were observed along fault planes within these northwest trending faults, typical of the Basin and Range province. However, the lack of stratigraphic marker horizons prevents the determination of any net slip displacement on these faults.

A sinuous, north-south trending fault follows the north-south drainage between the Bonnie Jean mine and Lee Peak. This fault has abundant fault breccias, a linear topographic signature, and about 100 meters of dextral offset of the Bonnie Jean strike-slip fault.

The Laramide age structures of the district are probably best understood as a conjugate set of east-west trending, generally left-lateral and northeast trending right-lateral Riedel shears related to the regional Texas lineament structural zone. They may well be rotated to the northeast by mid-Tertiary extensional, detachment faulting and then are displaced by late Tertiary age, high-angle Basin, and Range structures.

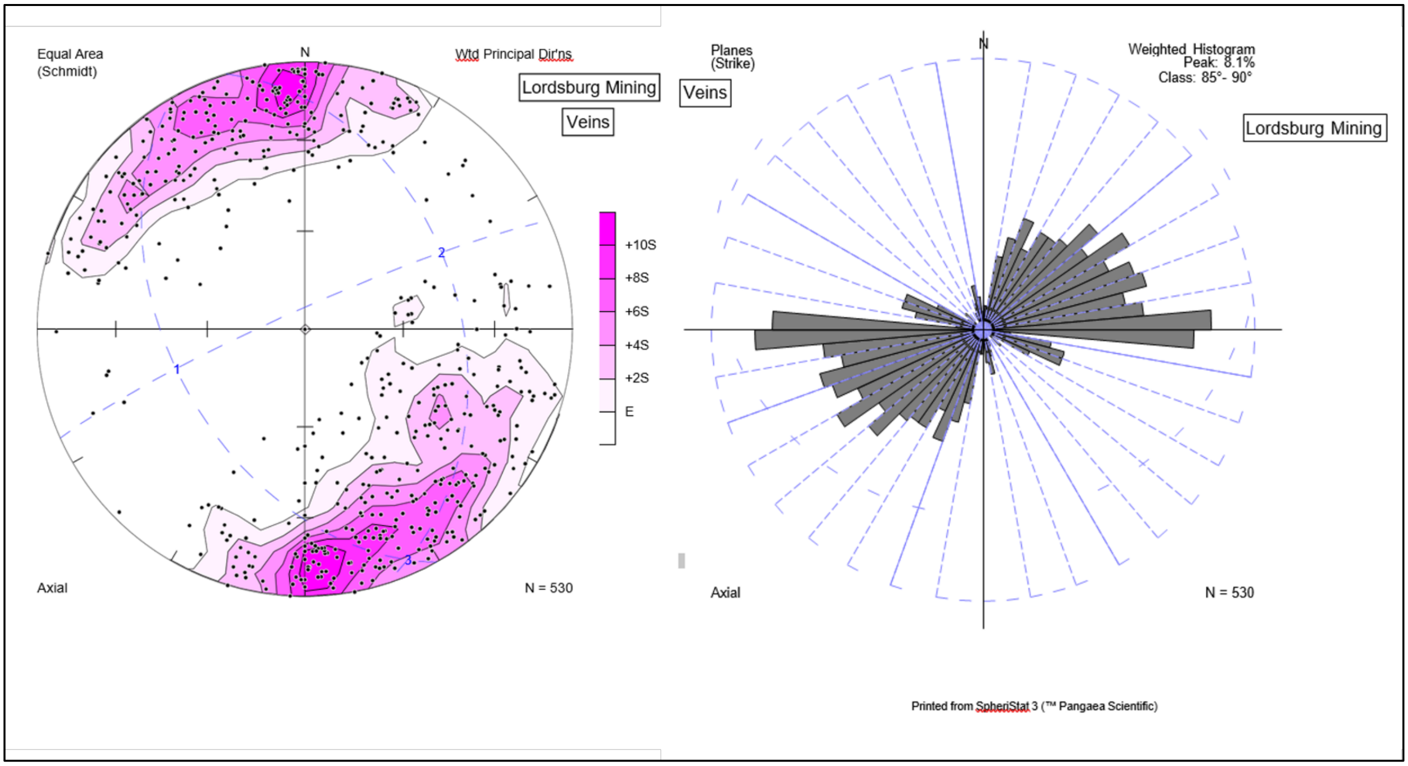


*Figure 7-10 Lower hemisphere projections of veins studied on Waterton claim group – Lordsburg project. Figure modified from Rogers (2012)*

## 7.2 Mineralization

### 7.2.1 Discussion of Regional Mineralized Trends

The porphyry copper deposits of Southern Arizona, New Mexico, and adjacent parts of northern Mexico occupy a region rich and well-endowed in porphyry copper, base and precious metal vein, CRD, and skarn deposits. All of these deposits, except for those at Bisbee, Arizona, have age dates within the range of the Laramide orogeny, 75- to 50-million years ago. They are typically calc-alkaline type deposits and are cored by intermediate composition porphyries, intruded under the effects of NE-SW directed compressional tectonics (Titley, 1983). All these deposits occur within a broad west-northwest trending belt of major structural deformation, known in earlier publications as the Texas Lineament and more recently correlated with the Arizona-Sonora mega-shear. Porphyry copper, skarn and associated vein deposits are typically located along NE trending lineaments cross cutting the Arizona-Sonora mega-shear orientation (Figure 7-11). The two northwesternmost trends, namely the Ajo-Miami trend and the Silver Bell-Morenci trend are well defined and display a subtle right lateral offset of deposits.

The Mission-Pima-Copper Flat trend also shows a right lateral displacement but has larger gaps between deposits. Also obvious is the Santa Rita Lineament along which are found the Copper Flat, Santa Rita, Chino and Tyrone deposits of New Mexico, the Red Mountain area in Arizona and the Cananea deposit across the border in Mexico.

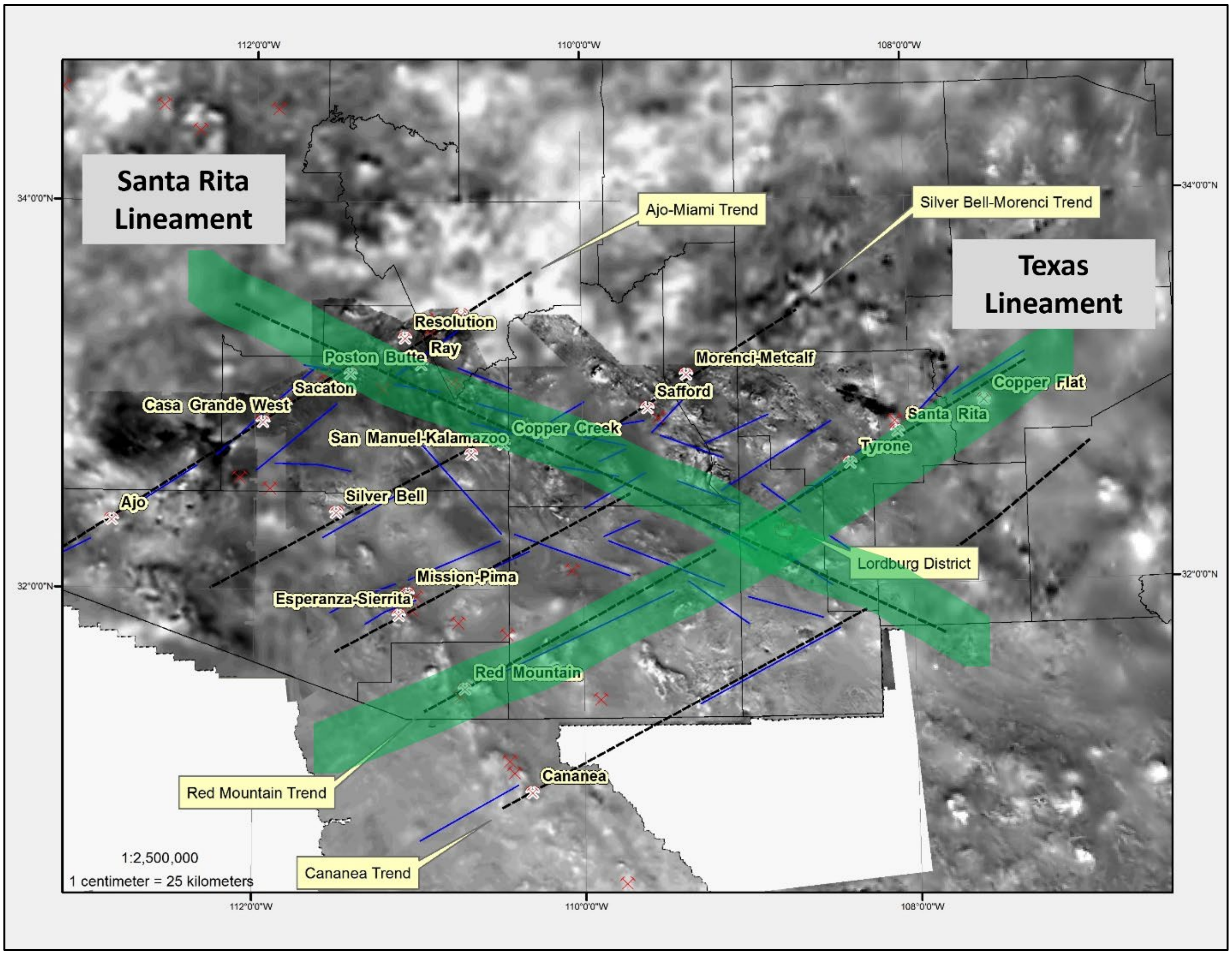


*Figure 7-11 Productive porphyry copper deposits and the regional TMI magnetic stitch with the Texas Lineament and Porphyry Copper Deposit (PCD) trends. Heavy black dashed line represents general lineaments, lighter blue lines are individual segments of the general linear trends*

Relaxation of NE-SW directed compression in the middle Tertiary resulted in large scale Basin and Range style crustal extension across the Southern Arizona/New Mexico porphyry copper province. Widespread normal faulting and listric normal fault-block rotation accommodated this NE-SW and ENE-WSE crustal extension and resulted in rotation and burial of Laramide porphyry copper deposits beneath later Tertiary and Quaternary deposits (Figure 7-12). The famous San Manuel-Kalamazoo porphyry copper deposit is the classic example of a rotated and dismembered porphyry copper deposit (Lowell and Guilbert, 1974).

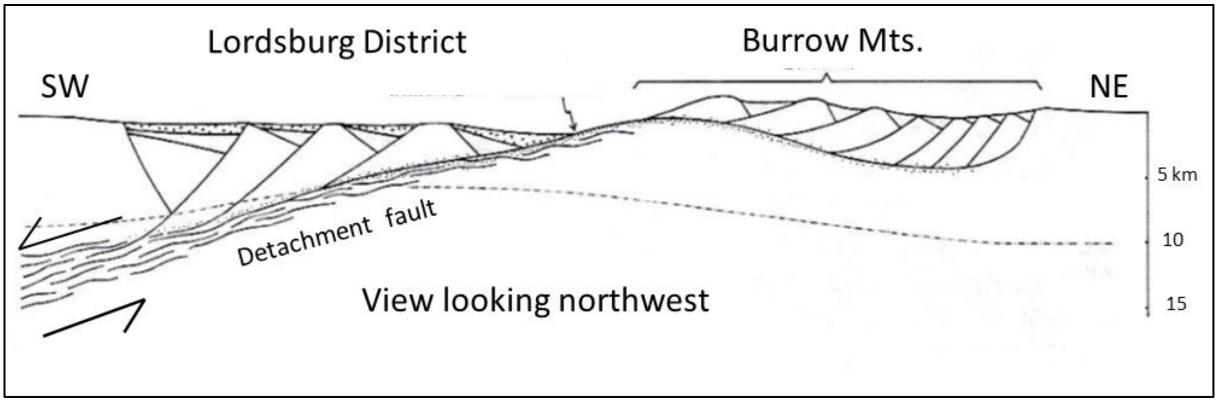


*Figure 7-12 Schematic drawing showing rotation and burial of fault blocks above a regional detachment fault developed during post-Laramide extension through the Southern Arizona/New Mexico porphyry belt. View looking northwest. (Figure modified from Spencer and Reynolds, 1989)*

The Burro Uplift, regional host to the Laramide Tyrone porphyry copper deposit, has undergone mid- to late-Tertiary extension that significantly rotated and dismembered Laramide geology and structure (Figure 7-13). This area, located to the northeast of Lordsburg, shows evidence for a ± 25° top-to-the-northeast rotation as a result of extension along the NW-striking SE-dipping Mangas and Knight Peak faults (Hedlund, 1985).

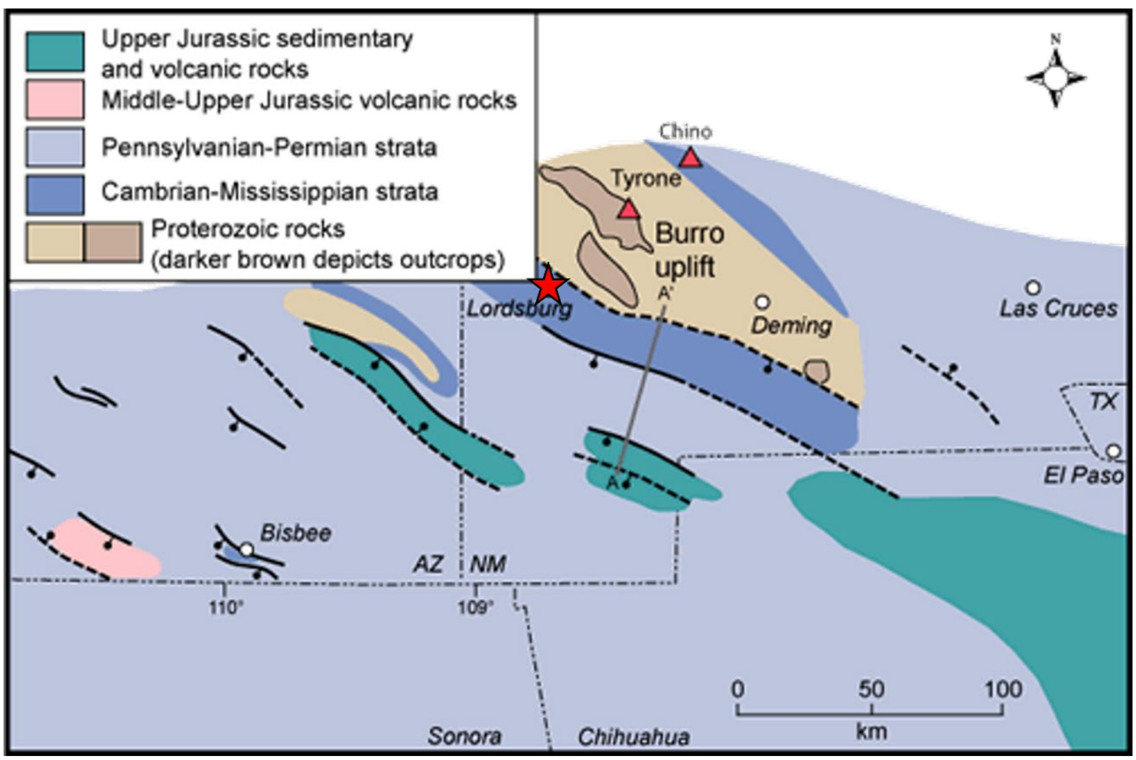


*Figure 7-13 Tyrone and Chino deposits shown with Tyrone located within the Burro uplift. Lordsburg is located on the southern block of the uplift in similar stratigraphy as Chino. (modified from Lawton, 2000)*

### 7.2.2 Vein Characteristics

Mineralization in the northern Lordsburg mining district occurs in 100's of quartz-sulfide veins with only a few dozen previously developed for mining. Vein widths vary from a few meters to hundreds of meters with the greatest width being almost 600 meters at the Emerald vein. Veins characteristically pinch and swell, often split, form wide dilatant zones, and occasionally form cymoid loops. One example of pinching and swelling is a narrow, 75-centimeter wide, high grade (0.6 opt Au) vein in the Comstock adit pinching from a few meters to only 10 centimeters in width. A more prominent example of pinching and swelling of an ore shoot is displayed at the Henry Clay mine where the vein widths average a meter from surface to 60 meters depth, 2 meters at 120 meters depth, widening to 6 meters at 225 meters, and then thinning to 2 meters at a depth of 240 meters. An example of an ore bearing dilatant zones is at the Anita mine which displays ore localized at the bend of the mineralized vein. Also, cymoid loops form wide zones of ore grade mineralization at the North Atwood and Bonnie Jean mines. Some veins, predominantly those in the east-west trending strike slip faults such as the Bonnie Jean and Lee Peak, form prominent 3- to 6-meter-high siliceous ribs protruding above the surface with widths of 6 meters to more than 100 meters at Lee Peak.

Veins typically have pre-, syn-, and post-mineral, hydrothermal brecciation. Post mineral brecciation commonly includes gouge and mineralized vein fragments. Most movement along the veins was horizontal as shown in the subsurface by Lasky (1938). Although dip slip movement is probable, the lack of stratigraphic control precludes any supportive evidence.

Veins tend to have a sharp contact between ore grade veins and barren wall rock precluding the possibility of low-grade bulk tonnage precious metal mineralization. One possible exception is an untested, small tonnage potential from a 30-meter-wide stock work zone between the main traces of the Bonnie Jean vein.

### 7.2.3 Ore Mineralogy and Paragenesis

Ore mineralogy and paragenetic studies of the district were previously completed by Lasky (1938), Clark (1962, 1970), Agezo (1995). Rogers (2012) supplemented this work with hand specimen identifications. This work involved field examinations and ore microscopy from samples of the mine dump, underground workings, and various surface workings.

The sulfide mineralogy of the North Lordsburg mining district consists of pyrite, chalcopyrite, sphalerite, and galena with minor bornite, covellite and chalcocite. Digenite has been report by previous workers but not observed by Rogers (2012). Silver occurs as argentite and cerargyrite. Agezo reports silver and gold identified in electrum. Gangue minerals include quartz, calcite, barite, rhodochrosite, fluorite, specularite, and tourmaline.

Pyrite occurs as subhedral to anhedral crystals associated with quartz, and within vugs. Pyrite is often partially to completely oxidized to goethite-hematite and in some cases forms goethite-hematite lined cubic boxworks.

Chalcopyrite, the principal copper ore in the district, is fine to coarse grained associated with quartz and intergrown with other sulfides. Chalcopyrite is often observed altering to hematite-chalcocite. Oxidized near surface veins often show no visible chalcopyrite with copper forming as chrysocolla, malachite, and tenorite/melaconite (black Cu oxides) lining fractures, boxworks, clots, vugs, and as sulfide coatings.

Sphalerite generally occurs closely associated with galena. Sphalerite grains are associated with quartz and reported by Agezo (1995) to be associated with covellite. Galena typically forms disseminated subhedral and anhedral grains.

Agezo (1995) studied 15 ore sections and concluded that gold grains are associated with masses of hematite that appear to be pseudomorphs after pyrite grains. Identified silver minerals include argentite, cerargyrite, pyrargyrite and electrum. Agezo (1995) suggests that two generations of gold and silver exist in the district. An earlier generation of gold and silver as electrum inclusions in chalcopyrite and sphalerite, and a late-stage gold as native gold and electrum in sphalerite-galena rich veins.

Lasky (1935), studying Emerald Vein occurrences, concluded that the overall Lordsburg district, including the northern Lordsburg mining district, shows six paragenetic stages for the mineralogy of the deposits. Both Clark (1962) and Agezo (1995) agree that the succession of ore and gangue minerals in each of their studied mines does fit Lasky's paragenetic sequence. Agezo's detailed paragenetic study of the North Atwood mine corresponds well with Lasky (1938) and shows only stages 1 to 4 of Lasky's generalized paragenetic sequence for the district. Clark's study does deviate from Lasky's results in that barite is locally found belonging to the third stage and quartz was probably deposited on occasion before pyrite.

Stage 1 mineralization, and the oldest stage, at the North Atwood mine is typified by deposition of specularite in wall rock and vein openings with wall rock alteration minerals of sericite (illite), chlorite, and calcite (Agezo, 1995). In addition, Lasky (1938) also observed tourmaline within this stage followed by a period of brecciation.

Stage 2 mineralization is characterized by pyrite, quartz, chalcopyrite, sphalerite, and galena with similar wall rock gangue as stage 1 characterized by specularite, sericite, chlorite, and calcite. Barite and manganosiderite are also reported by Lasky (1938). Dominant gangue mineralogy in ore-grade veins is coarse grained quartz, locally sugary and occasionally vuggy. The dominant 2nd stage of ore grade mineralization shows typically coarse-grained chalcopyrite. Transition to stage 3 is marked by a brecciation event.

Stage 3 has a simple mineralogy including abundant quartz with very little chalcopyrite, pyrite, and traces of chlorite. Transition to stage 4 is marked by further brecciation.

In stage 4, the veins are reopened and partially cemented by pink calcite accompanied by minor pyrite, chalcopyrite, and galena.

In stage 5, the veins are re-opened and filled by only white to gray calcite. Lasky (1938) notes that stage 5 is followed by injection of quartz latite dikes, mapped as the Kql unit during this study. This relationship is supported by this study with a quartz latite dike observed cutting a copper-gold-silver vein of the dominant mineralized stage 2 of Lasky's paragenetic study.

Stage 6 is characterized by calcite, sericite, pyrite, quartz, and fluorite. Lasky's supporting evidence is the field observation of stringer veins of quartz-calcite-fluorite cutting a presumably post-stage 5 quartz-latite dike.

### 7.2.4 District Zoning

The primary dispersion geochemical anomalies surrounding porphyry copper deposits are well understood (Sillitoe, 2010; Hedenquist and Arribas, 2022). Proximal and deep copper-molybdenum rich cores grade outward into lead, zinc, and silver dominant zones to the most distal gold rich zones. This is reflected in primary metal bearing mineralogy as well. There is usually considerable overlap between these general zones.

The Lordsburg mining district is zoned outward from a core to intermediate and outer peripheral zones (Clark, 1962). Tourmaline, chalcopyrite, pyrite and specularite are in the core zone, below 250m from the surface, indicating a copper rich geochemistry. The central zone, lying above 250m depth, contains both galena and sphalerite with chalcopyrite and is increasingly lead, zinc and silver rich compared to the core zone (Storm, 1949, Clark, 1962). The preponderance of galena and sphalerite over chalcopyrite characterizes the intermediate zone and is then increasingly lead, zinc and silver rich. Clark (1962) reports the outermost peripheral zone contains the gangue minerals fluorite, calcite, manganese, and barite.

Agezo (1995) characterized the district zoning patterns by examining dominant vein filling mineralogy. He showed the dominant vein mineralogy changes outwardly from chalcopyrite, pyrite, galena-sphalerite to the outer gangue mineral dominant veins.

Multi-element geochemical analyses of 834 samples collected from veins, prospects, trenches, and outcrop generally confirm and extend the mineralogical and geochemical anomaly results from the underground mines. An asymmetric pattern was identified for a central copper-gold-silver-molybdenum zone, grading out into an intermediate copper-gold-silver ± lead-molybdenum zone, into an outer silver-lead-gold ± zinc zone and with a peripheral barren calcite-fluorite-quartz ± barite zone. Anomalous manganese is structurally controlled between the Bonnie Jean and North Atwood strike slip faults.

The central copper-gold zone is localized around the eastern-northwestern side of the granodiorite. The Bonnie Jean and North Atwood strike slip faults on the north side, and the Emerald vein and secondary parallel faults control the southeast side of the anomaly.

The intermediate copper-gold-silver ± lead-molybdenum zone wraps around the eastern side of Lookout Hill between the major Bonnie Jean and North Atwood faults.

The outer silver-lead-gold ± zinc zone is characterized by higher lead-zinc values relative to copper. As is the case with the intermediate zone, the outer zone is strongly controlled on the north side by the Bonnie Jean and North Atwood fault zones and on the southeast side, this zone parallels, and is outside the central copper-gold zone. The outer barren calcite-fluorite-quartz ± barite zone is southeast of the intermediate zone.

No access is presently available to any of the shafts in the district. Agezo (1995) states that Lasky (1938) observed that in the 85 mine, galena and sphalerite increase upward from the 2000 level to the surface. Furthermore, the highest copper assays of 4+% are apparently at depths below the 900/1,000 levels of the Superior shaft in the 85 mine (Figure 7-14). Lasky (1938) and Clark (1962) report that in the 85 mine, ore shoots rake to the southwest. These geologic observations suggest that the core of the inner copper-gold-silver-molybdenum zone grades upward and outward. Clark (1962) showed that upward and lateral fluid cooling show decreasing homogenization and salinities outward from the granodiorite stock.

In the southern part of the district, the Bonney and Miser's Chest mines show copper averages 3+% from the 600 to 2100 level while gold and silver decrease respectively from about 0.1 to 0.01 opt Au, and 3.1 opt to 0.6 opt Ag. At the Misers Chest mine, ore shoots show copper of 4-6+% vertically from the 500-1200 levels.

The overall district zoning pattern is independent of stratigraphy since no particular rock type is more mineralized or more receptive than another. In general, the central mineral zone with diagnostic high temperature minerals of copper, tourmaline and sphalerite suggests that the mineralization is spatially and genetically related to the granodiorites. Fluids ascended upward and laterally along structures as lower temperature minerals were deposited distally. District zoning patterns show strong structural controls on mineralization localized along and between the major, east-west trending North Atwood and Bonnie Jean strike slip fault zones, and along the dominant northeast shear faults, especially the Emerald vein system (Figure 7-14).

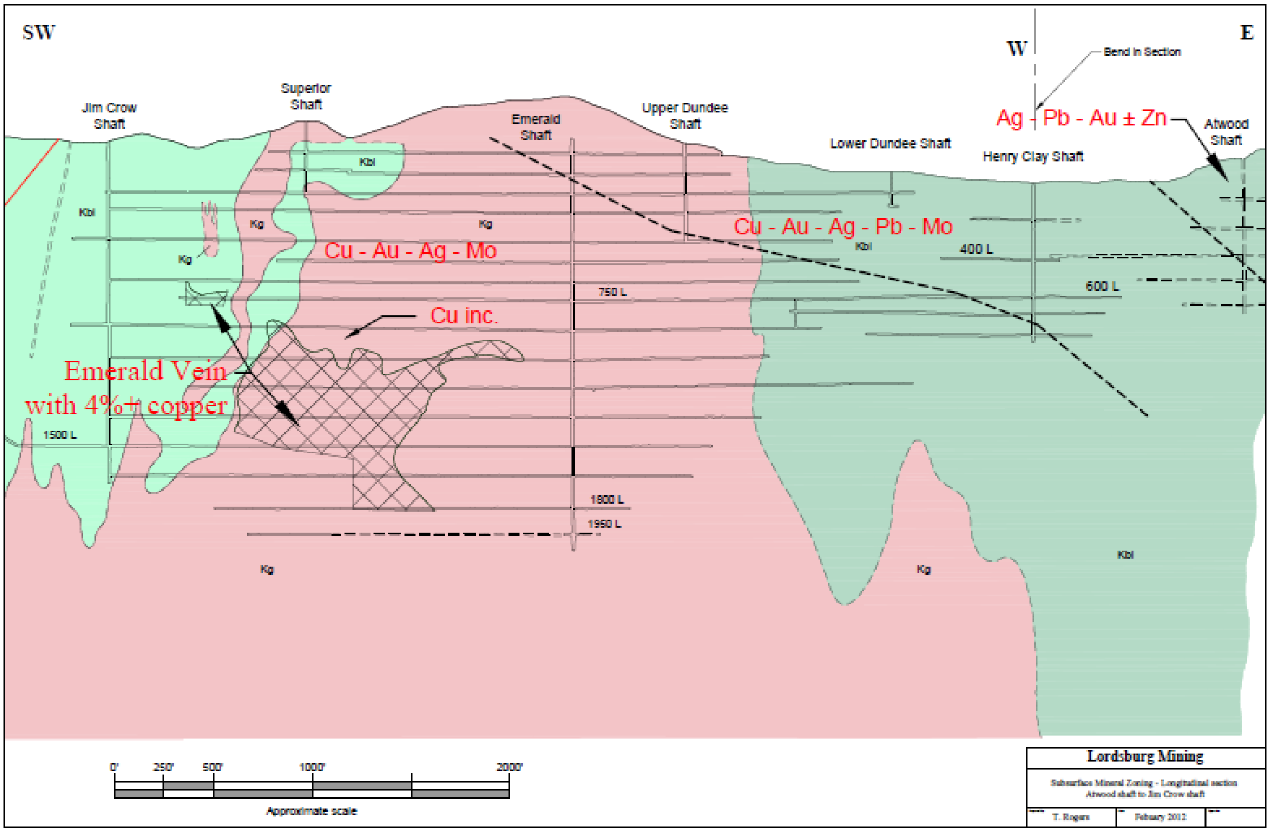


*Figure 7-14 Rogers (2012) plotted subsurface metal zoning of the veins on a NE-SW trending longitudinal section constructed along the Emerald Vein, extending from the Atwood shaft on the northeast to the Jim Crow shaft to the southwest. He showed a zonation from Ag-Pb-Au ± Zn to Cu-Au-Ag-Pb-Mo to Cu-Au-Ag-Mo with increasing copper grades from NE to SW is present along the Emerald Vein*

Agezo (1995) studied fluid inclusions on 21 ore samples from the northern Lordsburg district with results indicating that ore mineralization occurred at temperature between 128 and greater than 350° centigrade. Studies specifically in the main mineralized stage 2 showed inclusions with homogenization temperatures between 154° and 402° centigrade (Agezo, 1995).

The center to intermediate zones of mineralization displays general characteristics of mesothermal deposits with moderate temperatures (200°-300° centigrade); characteristic mineral assemblages of chalcopyrite, bornite, sphalerite, galena, and chalcocite; gangue minerals of quartz, pyrite, and carbonate; spatial and genetic relationship with igneous rocks; and typical alteration patterns including ubiquitous propylitic alteration.

### 7.2.5 Oxidation and Enrichment

Since none of the main workings are presently open for examination, all comments on oxidation and supergene enrichment from Rogers (2012) are limited to surface exposures and dump samples. All other subsurface comments on oxidation and supergene enrichment are principally from Lasky (1938).

Mineralized quartz veins on the surface show a continuum from highly leached and totally oxidized to occasionally sulfide bearing, highly siliceous veins. One explanation for this difference is varied pyrite and silica content. Often the pyrite content is too low to create sufficient sulfuric acid to effectively leach chalcopyrite and thoroughly mobilize the copper. Hence, highly leached, mineralized copper veins show hematite + goethite associated with nondescript black or brown oxidized copper coated fractures, boxworks and clots comprised of neotocite and tenorite. Other common copper oxides are chrysocolla and occasionally malachite. Chalcocite has been observed coating altered chalcopyrite grains, on fractures, and as clots. Highly siliceous, pyrite-poor, copper mineralized quartz veins on the surface often show disseminated, poorly to unaltered chalcopyrite grains locally with minor galena and sphalerite. Anomalous manganese is structurally controlled between the Bonnie Jean and North Atwood strike slip faults.

The depth of oxidation and supergene enrichment is highly erratic, ranging from the surface to reported depths of 500 meters (Lasky, 1938). Youtz (1931) reports erratic gold values within stopes averaging 0.5 to 0.75 opt Au were mined directly under others averaging 0.08 to 0.10 opt Au. Limited copper enrichment occurs since zones rich in chalcocite and covellite are reported to be only 0.3% higher in copper than that of the average hypogene copper ore. The exception to enrichment is silver, reported to be almost triple with average Ag grades increasing upward of more than 2+opt.

The district geochemical and mineralogical zoning pattern appears to be independent of stratigraphy and controlled by proximity to the granodiorite stock and structural pathways through country rock.

The mineralogical-geochemical zonation at Lordsburg is compatible with those of known porphyry copper deposits elsewhere in the Arizona-New Mexico-Sonora porphyry copper province.

### 7.2.6 Alteration

Propylitic alteration assemblages, for the most part, accompany base metal mineralization within the veins. The alteration mineralogy changes from illite-chlorite in the interior of the veins, to chlorite-smectite mixed layer clays to chlorite-albite-calcite at the margins of the veins and within wall rock alteration selvages (Rogers, 2012).

The primary alteration mineralogy of veins in andesite and granodiorite wall rock is illite-quartz-chlorite. Illite partially replaces feldspars, quartz forms thin, irregular, and discontinuous veinlets and chlorite partially replaces ferro-magnesium minerals. The combined width of alteration selvages around the veins ranges from centimeters to 50m or more.

Pervasive and moderately intense propylitic alteration occurs throughout the Lordsburg district and extends well beyond the mineralized veins and their immediate selvages. Rock forming feldspars and ferro-magnesium minerals are partially replaced by the assemblage calcite, albite, chlorite, epidote, and pyrite.

The inner illitic zone tends to be light gray, buff, and occasionally red, goethitic-hematic stained.

In the andesite and granodiorite, the primary alteration mineralogy of this zone is illite-quartz-chlorite. Quartz forms phenocrysts in the granodiorites and illite-chlorite partially, and completely in certain cases, replaces plagioclase, and often occurs as veinlets. Illite alteration is most visible as the alteration product within feldspars, and also in fractures and the groundmass. Chlorite totally replaces ferrromagnesium minerals and elsewhere is associated with illite. Drill core from two holes (GH-1&2) showed that the illitic zone varied from 1.5 to 6 meters in width and has minor disseminated pyrite (Agezo, 1995). The width of the illitic zone is crudely proportionate to the intensity and width of the vein, as shown by some of the narrower veins with illitic zones of 50 to 100 centimeters in width. Agezo (1995) collected numerous sample lines across the major Emerald and Bonney veins that showed the combined illite and chlorite zones ranged in width from 60 cm to 50 meters in width.

The chloritic alteration zone is characterized by the absence of quartz veinlets, with green chlorite predominant as clots replacing ferromagnesium minerals. Illite is secondary with sparse calcite and K-feldspar.

Agezo (1995) x-rayed clay separates and studied them under the microscope and identified a chlorite-smectite mixed-layer alteration zone outside the chloritic zone. This chlorite-clay (smectite) mixed-layer alteration zone was not confirmed by Rogers (2012), however the outer propylitic zone, identified at a chloritic-albite-calcite zone was identified and is ubiquitous throughout the study area. The propylitic alteration assemblage readily identifiable in the field is chlorite-calcite-quartz-epidote. Plagioclase is partially to highly altered to calcite-albite-chlorite- epidote. Hornblende and biotite are highly altered to chlorite. The groundmass is altered to chlorite, calcite, clay, local sparse pyrite, and occasional sericite.

### 7.2.7 Mineralogic Evidence for Porphyry Copper Potential

Various lines of evidence suggests that a deep porphyry copper-gold system could be spatially related, coexist with, and underlie the copper dominant veins systems within the copper-gold- molybdenum-silver central zoning area in the vicinity of 85 Hill. Bartos (1989) concluded that a prograding evolution and copper predominance both displayed within the Northern Lordsburg mining district, are considered the principal criteria in determining whether a pre-existing porphyry copper deposit underlies a given base metal lode. Prograding is referred to by Bartos (1989) as the paragenetic sequence of vein-filling minerals indicating a temporal increase in sulfidation state and hydrogen ion activity. Several precious-base metal lode deposits that spatially exist with and have genetic relations to large, disseminated porphyry copper mineralization include Butte, Morococha, Collahuasi, Bisbee, and Magma (Resolution). Other favorable criteria include that the Lordsburg granodiorite is Laramide in age and lies within the northeast trending Santa Rita lineament between the porphyry copper deposits at Tyrone-Chino and Bisbee-Cananea.

On 85 Hill, the granodiorite shows propylitic, local sericitic (illitic) alteration but no potassic alteration typically proximal to porphyry copper mineralization. However, potassic (orthoclase-biotite- sericite-magnetite) altered granodiorite dump material originating from within the caved Horseshoe adit, shows chalcopyrite and bornite partially altered to chrysocolla-tenorite-melaconite as disseminations and with quartz veinlets-stockworks often with manganese oxides. This mineral alteration association justifies reopening the Horseshoe portal to examine the porphyry copper potential in the adit.

Copper-gold mineral zoning grades eastward from the 85 Hill to silver-lead-zinc mineral zoning near the Lordsburg mill road. Here, potassic alteration has been observed in granodiorites exposed in road cuts and thought to be related to and proximal to a sub-economic, porphyry copper-gold system drilled by Entrée Gold. Here, the change in zoning patterns and similar copper-gold mineralization suggests two separate mineralizing centers exist, one near 85 Hill and the other in the area drilled by Entrée Gold. Both mineralizing centers are probably comagmatic, with coeval mineralizing events.

A few IP survey lines by Phelps Dodge over the potential copper-gold zone proximal to 85 Hill were inconclusive regarding deep porphyry copper potential. In 1984, Phelps Dodge completed five orientation IP survey lines in the district to prospect for polymetallic-precious metal veins associated with silica veins to depths of 150 to 250 meters (Hauck, 1984). Results from the orientation survey lines showed that high resistivity zones can be attributed to silicification within the veins and that disseminated sulfides within the silicified zones can produced significant induced polarization responses (Hauck, 1984). Dipole spacings of 150 meters were needed to prospect to depths of 150 to 250 meters. In regard to deep porphyry potential under the copper-gold zone, results showed deep but poorly defined anomalies under the North Atwood- Hobson area and under the northeast side of 85 Hill.

In 1973-1974 Phelps Dodge completed IP and resistivity survey IP lines over the covered areas to the east and west of the northern Lordsburg mining district to search for buried porphyry copper targets (Gaytan, 1975, and Hauck, 1975). The results detected a weak anomaly near the Atwood mine but no lines were conducted over the copper-gold zone proximal to 85 Hill.

# 8 DEPOSIT TYPES

Porphyry copper deposits are large, commonly hundreds to thousands of million tonnes, and low to medium grade, typically carrying 0.3- to 1.5% copper. Porphyry copper deposits are formed in intermediate composition, porphyritic stocks and surrounding wall rock and are characterized by stockwork veinlets composed of quartz, K-feldspar, sericite, clay, and copper and iron sulfide minerals distributed throughout large volumes of rock.

There is a close spatial and temporal link between the intrusion and crystallization of a porphyritic intrusion and the broadly dispersed magmatic-hydrothermal alteration and mineralization envelopes that produce a porphyry copper deposit (Figure 8-1). Breccia pipes, aplite dikes, nested stockwork zones composed of small, irregular, and discontinuous veins, veinlets and very complex contact relationships between intrusion and wall rock are commonly present. The character of mineralization and alteration, and the composition of the crystallizing intrusion evolve as the hydrothermal-alteration system cools.

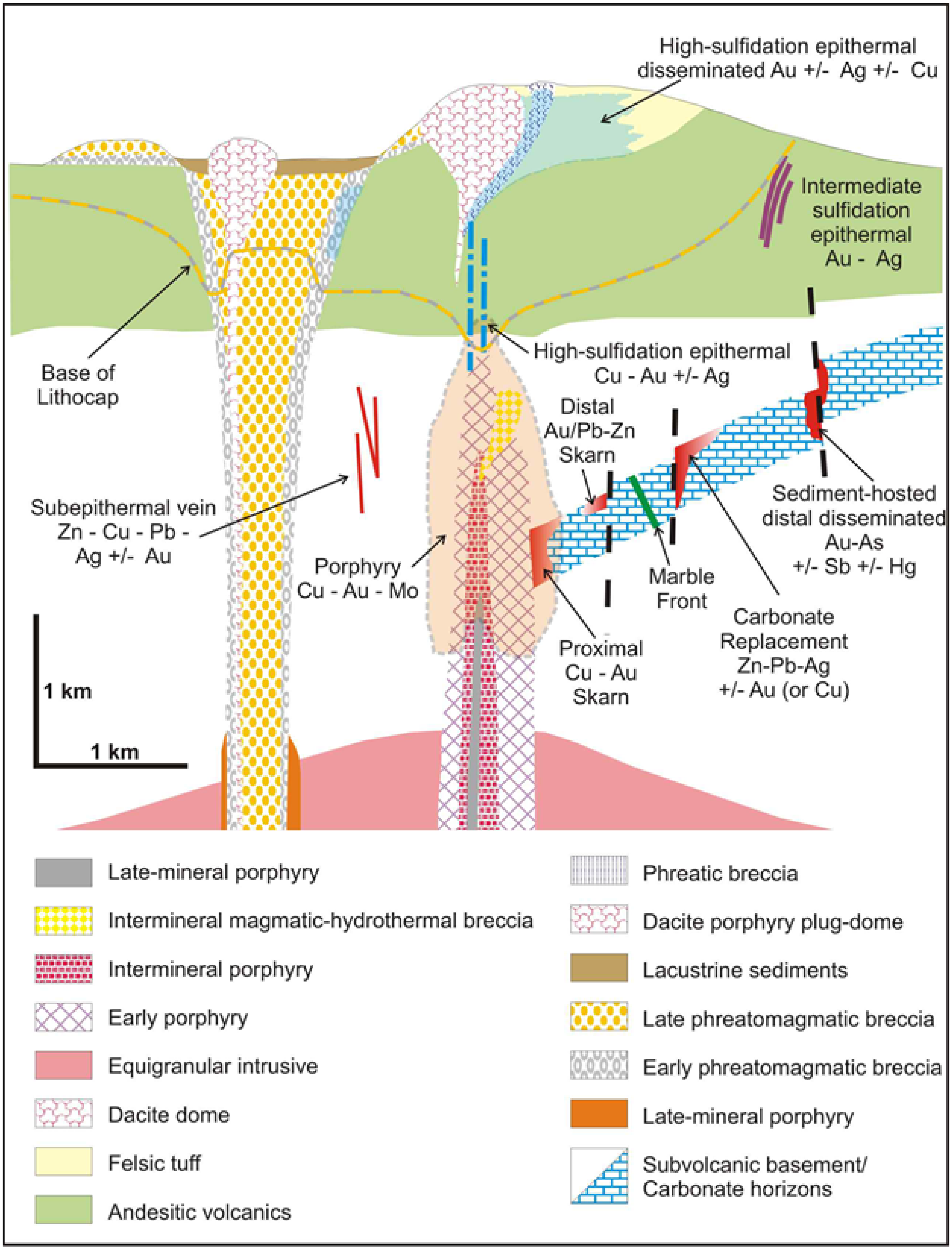


*Figure 8-1 Schematic cross-section of a porphyry copper deposit (Modified from Sillitoe, 2010)*

Mineralization and alteration assemblages are grouped into distinct, mutually overlapping zones. Early formed, primary, proximal potassic and peripheral propylitic alteration zones with chalcopyrite-bornite and pyrite are overlapped and replaced by later stage phyllic and argillic alteration assemblages (Figure 8-2). Where the effects of near surface oxidation take place, supergene copper sulfides may form higher grade secondary enrichment blankets.

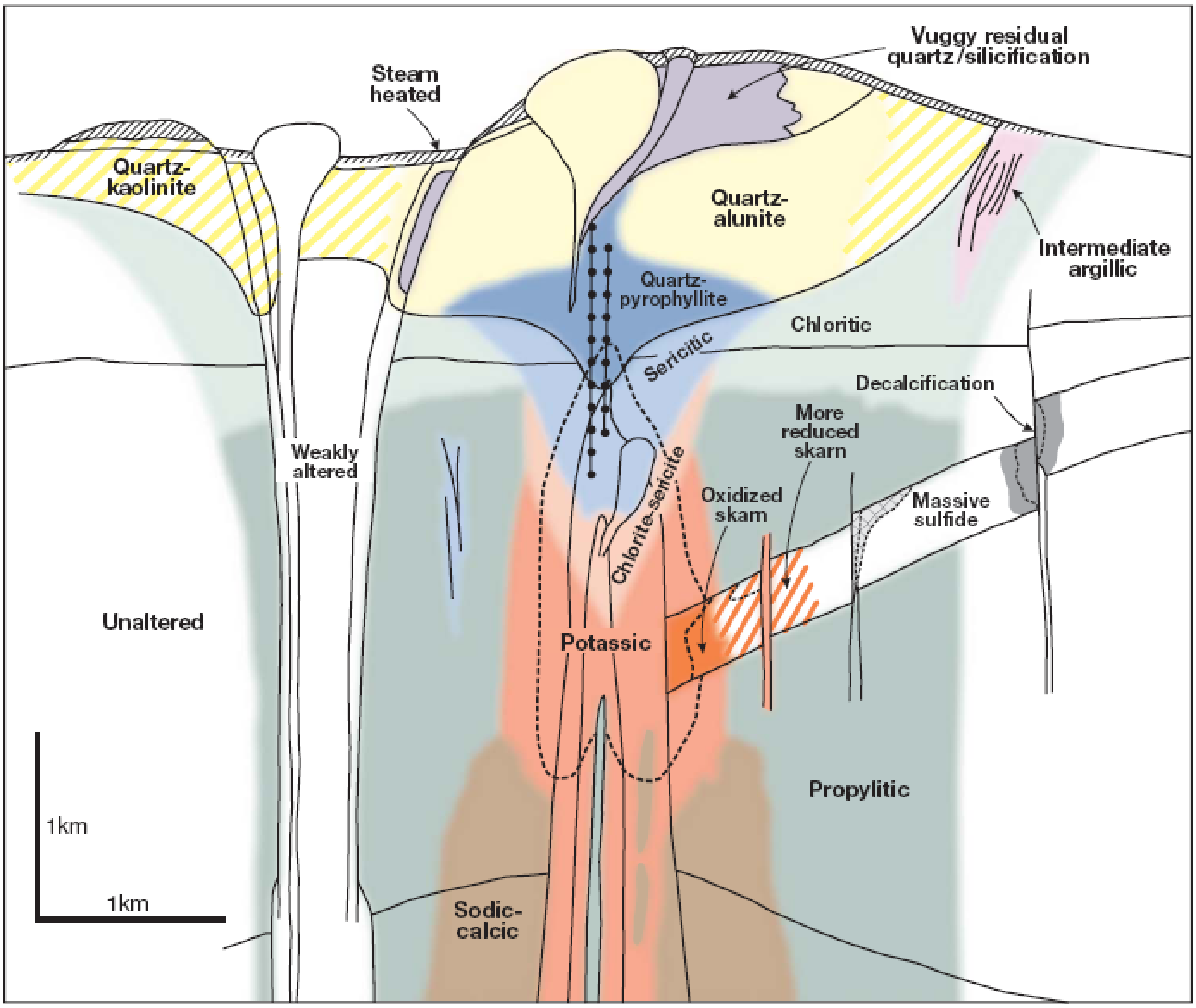


*Figure 8-2* *Schematic diagram of alteration associated with porphyry copper deposits. Figure modified from Sillitoe (2010)*

<u>Characteristics of porphyry copper deposits include:</u>

- Associated with multiple intrusions and dikes of intermediate to felsic compositions (diorite to quartz monzonite) with porphyritic textures. Feldspar, quartz, and mafic phenocrysts are contained in a fine-grained to aplitic groundmass,
- Shallow levels of emplacement (typically 1-4 km beneath the paleosurface),
- Multiple phases of intrusions to include pre-, syn-, late- and post-ore igneous activity,
- Extensive development of stockwork fracture and vein-controlled alteration and mineralization as well as pervasive texture destroying alteration and mineralization in both porphyritic

intrusions and adjacent wall-rock. Fractures are often filled or coated by sulfides, or quartz veins with sulfides. Closely spaced fractures and veins of several orientations (stockwork) are usually associated with the high-grade ore.

- Sulfide and oxide minerals include magnetite, bornite, chalcopyrite, pyrite, hematite, enargite, and covellite,
- Several stages of hydrothermal alteration associated with each mineralizing intrusion represented by 1. an outer epidote - chlorite mineral alteration zone 2. a quartz-sericite (phyllic) alteration zone typically occurs closer to the center, and 3. a central potassic alteration zone of secondary biotite and orthoclase alteration. Overlap and telescoping of these alteration envelopes are common,
- Phyllic and advanced argillic alteration zones derived from the near surface oxidation of pyrite, releasing sulfur to the formation of sulfuric acid as part of the processes of secondary enrichment.
- Productive porphyry copper centers often occur coincident with their co-magmatic and slightly older lithocaps, where low, intermediate, and high-sulfidation veins, and stockwork system can form.

# 9 EXPLORATION

No exploration activities had been conducted at the Lordsburg project by Cirrus as of the Effective Date of this report.

# 10 DRILLING

The Lordsburg district contains 148 drill holes with known collar coordinates, azimuth, inclination, and length data (Figure 10-1). The 13 holes drilled by Entrée Gold in 2008 and 2009 were drilled purposely to test porphyry copper targets. The two underground drill holes collared in the 2000 level of the Bonney mine by Phelps Dodge in 1973 were also intended to test the potential for a porphyry copper deposit. The remaining holes, including those completed by Santa Fe Gold, the last operator in the district, were drilled to test either vein or smelter flux feed targets.

An additional eight holes, drilled by Quintana Corporation in the 1960-1970's north of Interstate 10, are referenced in a Phelps Dodge report (Phelps Dodge internal report, 1984). They reported drilled fresh granodiorite and volcanic rocks. No further information is available concerning these drill holes. Similarly, a brief reference to three holes completed by Noranda north of Interstate 10 is also referenced in an executive summary report by IBK Capital Corp. for Camex Mines Corp. No further information is available concerning these holes.

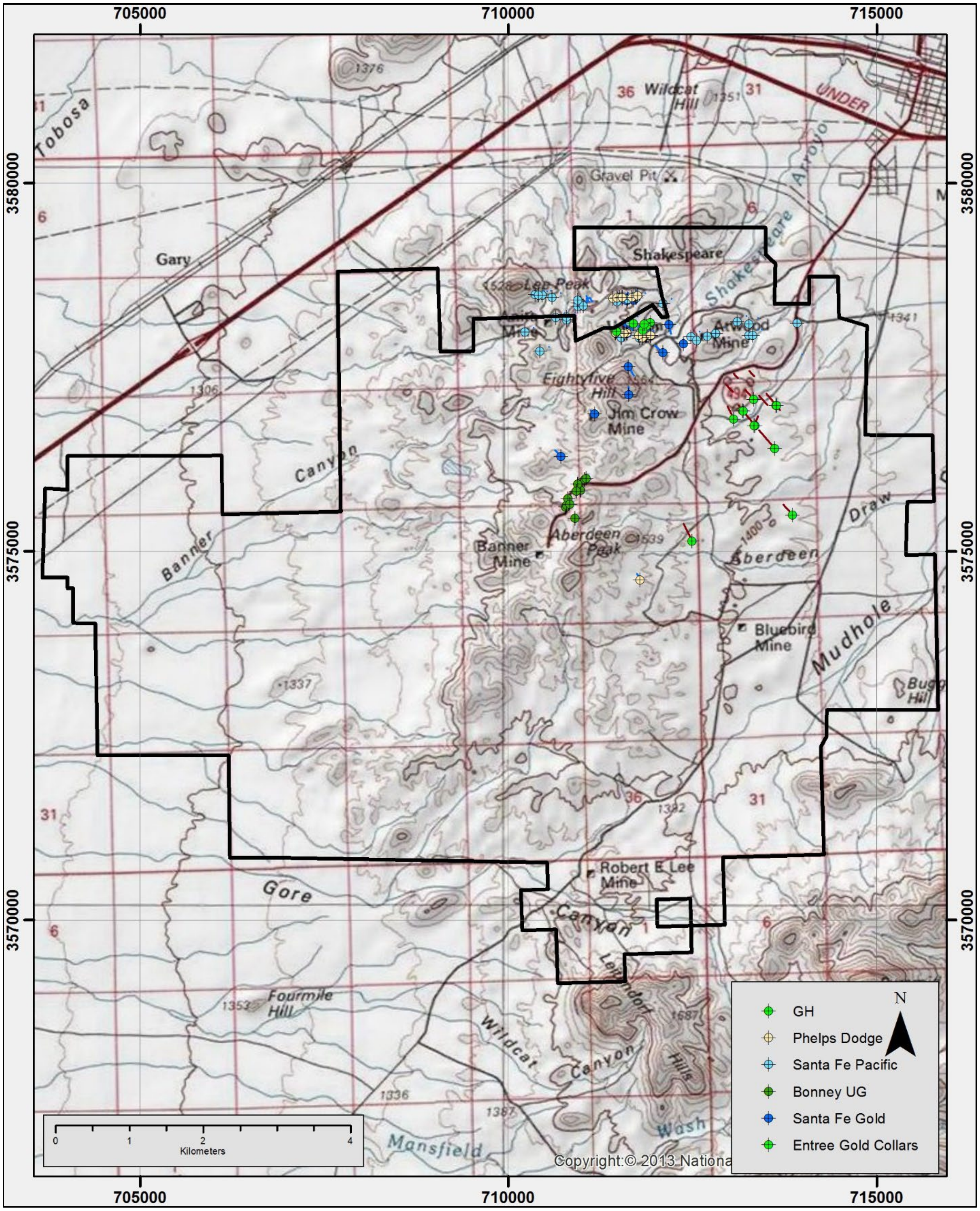


*Figure 10-1 Core drill holes in the Lordsburg district*

Phelps Dodge drilled two holes from the 2000 level of the Bonney mine in 1973. Drill hole BU-1, a 2000-foot long, high-angle oriented hole, penetrated andesites, siltstones, quartzites and bottomed in "deuterically" altered granodiorite. BU-2 was oriented to the northwest and inclined at 70°. It cut andesites and thin intervals of metasediment but did not cut granodiorite.

## 10.1 Entrée Gold

The thirteen drill holes completed by Entrée Gold in 2008 and 2009 (Figure 10-2) are the only porphyry copper target specific holes completed to date with data that can be traced to primary source documents. Collar information is listed in Table 10-1. Downhole deviation was measured, and magnetic susceptibility was recorded for each drill hole. Lithology, mineralization, including vein characteristics and frequency distribution and structure were logged as well. Assays were not obtained for the holes over their total length, but all mineralized intervals were analysed, and 87-percent of all sample intervals were assayed using modern, multi-element ICP and AAS methods.

*Table 10-1 Entrée Gold drill hole collar data. XYZ and length are in-meters. Datum and projection is NAD 83, UTM Zone 12.*

| Hole | x | y | z | Azimuth | Inclination | Length |
|---|---|---|---|---|---|---|
| EG-L-08-001 | 713860 | 3575495 | 1387.0 | 319 | -75 | 728.4 |
| EG-L-08-002 | 713351 | 3576710 | 1387.2 | 319 | -65 | 557.0 |
| EG-L-08-003 | 712495 | 3575145 | 1417.0 | 334 | -65 | 608.8 |
| EG-L-09-005 | 713640 | 3576987 | 1378.1 | 319 | -65 | 496.0 |
| EG-L-09-006 | 713330 | 3577069 | 1378.3 | 319 | -65 | 398.0 |
| EG-L-09-007 | 713180 | 3576912 | 1390.5 | 360 | -90 | 319.5 |
| EG-L-09-008 | 713057 | 3576797 | 1389.6 | 335 | -65 | 459.5 |
| EG-L-09-009 | 713618 | 3576402 | 1387.1 | 319 | -65 | 767.7 |
| EG-L-09-010 | 713640 | 3576987 | 1387.1 | 142 | -70 | 238.4 |
| EG-L-09-010A | 713643 | 3576987 | 1378.1 | 360 | -90 | 279.6 |
| EG-L-09-011 | 713191 | 3576906 | 1390.5 | 319 | -65 | 240.2 |
| EG-L-09-012 | 713342 | 3576708 | 1387.2 | 20 | -65 | 331.3 |

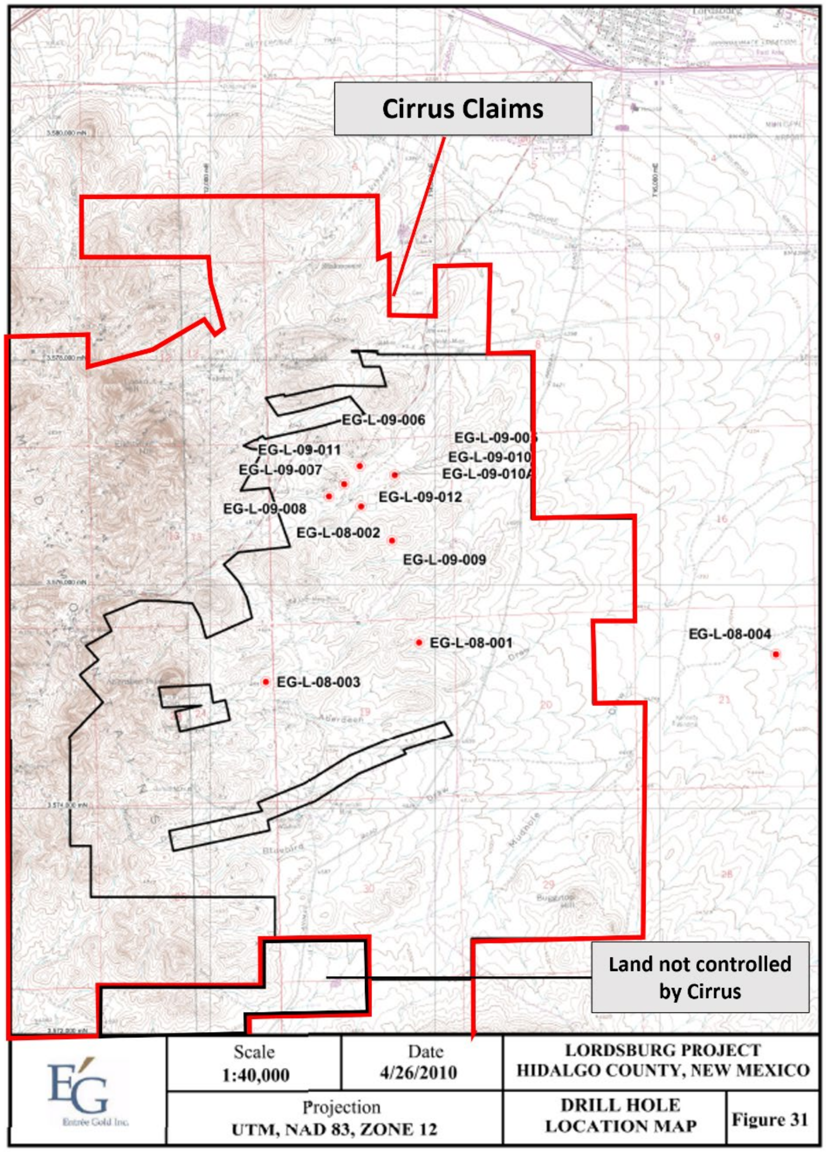


*Figure 10-2 Entrée Gold drill hole collars. Date from Entrée Gold, 2010*

The drill holes are all steeply inclined and thickness of any encountered mineralization will for all intents and purposes be a true thickness. Significant geochemical analyses are listed in Table 10-2.

*Table 10-2 Significant geochemical analyses. From, To and Interval are in-meters (Entrée Gold internal report).*

| Hole | From | To | Interval | % Cu |
|---|---|---|---|---|
| EG-L-08-002 | 156 | 211.25 | 55.25 | 0.19 |
| EG-L-08-002 | 232 | 254 | 22 | 0.19 |
| EG-L-08-002 | 280 | 344 | 64 | 0.15 |
| EG-L-08-002 | 358 | 414 | 56 | 0.16 |
| EG-L-09-005 | 0 | 113 | 113 | 0.15 |
| EG-L-09-006 | 11.2 | 130 | 118.8 | 0.20 |
| EG-L-09-006 | 260 | 336 | 76 | 0.10 |
| EG-L-09-007 | 6 | 164 | 158 | 0.13 |
| EG-L-09-008 | 280 | 332 | 52 | 0.18 |
| EG-L-09-010A | 34 | 84 | 50 | 0.18 |
| EG-L-09-010A | 198 | 256 | 58 | 0.13 |
| EG-L-09-011 | 14 | 78 | 64 | 0.12 |
| EG-L-09-012 | 110 | 222 | 112 | 0.23 |

The Entrée Gold drill hole results are summarized as follows.

**EG-L-08-001** was drilled to test a magnetic low, an IP anomaly and stratigraphic succession. It was collared in Quaternary gravels and passed through intervals of post-Laramide felsic volcanics and bottomed in propylitized Laramide andesites. No significant mineralized intervals were encountered.

**EG-L-08-002** was drilled to test a magnetic high and subsurface extent of nearby surface exposures of potassic alteration. This hole was likely drilled along the contact between Laramide andesite wall rocks and Laramide granodiorite porphyry. A chaotic mixed interval of granodiorite porphyry, potassic altered andesites, and intrusive breccia comprises the upper half of the drill hole, passing into granodiorite porphyry with finer-grained, quartz diorite dikes in the bottom half. Both andesites and porphyry contain potassic alteration assemblages and long intervals of anomalous copper mineralization (Table 10-2). Stockwork veinlets containing quartz, biotite, K-feldspar, chalcopyrite, bornite and magnetite are present. Four intervals exceeding 20m in length with grades greater than 0.1% copper are present in EG-L-08-002. This hole was deemed to be a discovery hole by Entrée Gold.

**EG-L-08-003** was drilled to test geophysical anomalies and propylitic alteration. The hole was drilled from collar to the end in propylitized Laramide andesites. No significant mineralized intervals were encountered.

**EG-L-08-004** was drilled to test geophysical anomalies. No significant mineralized intervals were encountered.

**EG-L-09-005**. EG-L-09-005, EG-L-09-010 and EG-L-09-101A, collared on the same drill pad, were drilled to offset mineralization encountered in EG-L-08-002 to the northeast. EG-L-09-005 was collared in Laramide andesite and at shallow depth, passed into Laramide porphyry where it encountered potassic alteration assemblages. EG-L-09-010 was in Laramide andesite for its total length and is characterized by propylitic assemblages. EG-L-09-010A, drilled between the other two holes in the immediate contact between Laramide andesite and porphyry. This hole is predominately potassic in the upper half of the hole with patchy propylitic alteration assemblages overprinting earlier potassic alteration.

EG-L-09-005 contained stockwork veinlets containing quartz, biotite, K-feldspar, chalcopyrite, bornite and magnetite. EG-L-09-005 contained a 113m interval grading 0.15% copper and EG-L-09-101A contained a 50m and a 58m interval grading greater than 0.1% copper.

**EG-L-09-006** was drilled to offset mineralization encountered in EG-L-08-002 to the northeast. It was collared in Laramide andesites and passed into Laramide porphyry at approximately half-way to total length. It contains potassic alteration assemblages that are partially overprinted by selective propylitic alteration assemblages. Stockwork veinlets containing quartz, biotite, K-feldspar, chalcopyrite, bornite and magnetite are present. EG-L-09-006 has a 119m and a 76m long interval grading greater than 0.1% copper.

**EG-L-09-007** was drilled to offset mineralization encountered in EL-09-002 to the northwest. The upper third of EG-L-09-007 cut the contact zone between Laramide andesite and porphyry. The bottom two-thirds cut Laramide porphyry. It contains potassic assemblages that are partially overprinted by selective propylitic alteration assemblages. Stockwork veinlets containing chalcopyrite, bornite and covellite with pyrite are present. One 158m long interval grading greater than 0.1% copper is present in EG-L-09-007.

**EG-L-09-008** was drilled to test for mineralization in the subsurface below Tourmaline Hill. The hole was collared in Laramide andesite and passed, approximately two-thirds of the way to total length, into the contact zone between Laramide andesite and porphyry. It contains patchy, selective potassic and propylitic alteration assemblages. Chalcopyrite, bornite and covellite bearing stockwork veinlets are present. One 52m long interval of greater than 0.1% copper is present in EG-L-09-008.

**EG-L-09-009** was drilled to offset mineralization in EG-L-058-002 to the south. EG-L-09-009 penetrated Laramide andesite from the collar to approximately 300m depth and then passed into a contact zone between Laramide andesite and porphyry to the end of the hole. The entire length of the hole is propylitized. Below 300m depth, the hole contains chalcopyrite-bornite veinlets, but they rarely occur in concentrations where assays reach 0.1% copper or greater. There are not significant assays in EG-L-09-009.

**EG-L-09-011** was drilled to test for mineralization northwest of EG-L-09-007. EG-L-09-011 penetrated the contact zone between Laramide porphyry and Laramide andesite. Breccias with andesite clasts and porphyry dikes cutting andesite occur from collar to bottom of the drill hole. Patchy potassic and propylitic alteration assemblages are present. Chalcocite and native copper are present in select veins. Chalcopyrite, bornite and covellite are present in other vein types. EG-L-09-001 contained a 64m long interval with a copper grade greater than 0.1% copper.

**EG-L-09-012** was a near, northeast offset of EG-L-08-002. It was collared in Laramide porphyry and passed into Laramide andesite about halfway to the bottom of the hole. Patchy potassic alteration with less abundant, propylitic overprint is present from collar to bottom. Chalcopyrite, bornite, covellite and native copper are present in select veins. EG-L-09-012 contained a 112m long interval of greater than 0.1% copper.

## 10.2 Santa Fe Gold/Lordsburg Mining Company

Eleven core holes were completed by Lordsburg Mining Company in 2013. The collar information is listed in Table 10-3. Significant assays are shown on Table 10-4.

*Table 10-3 Drill hole collars*

| Hole | x | y | z | Azimuth | Inclination | Length m |
|---|---|---|---|---|---|---|
| L-1 | 712378.3 | 3577822.9 | 1392.9 | 0 | -70 | 166.48 |
| L-2 | 712184.4 | 3578082.9 | 1393.5 | 170 | -50 | 197.21 |
| L-3 | 711618.9 | 3578095.4 | 1420.4 | 170 | -45 | 257.86 |
| L-4 | 711631.2 | 3577511.0 | 1450.8 | 150 | -45 | 193.85 |
| L-5 | 712098.2 | 3577703.9 | 1394.5 | 310 | -70 | 427.02 |
| L-6 | 711173.6 | 3576869.1 | 1450.8 | 310 | -60 | 146.61 |
| L-7 | 710714.6 | 3576292.6 | 1432.6 | 315 | -60 | 227.99 |
| L-8 | 711618.9 | 3578095.4 | 1420.4 | 140 | -60 | 236.83 |
| L-9 | 711706.4 | 3578413.4 | 1392.9 | 0 | -60 | 183.49 |
| L-10 | 711612.4 | 3578405.9 | 1392.9 | 0 | -60 | 184.40 |
| L-11 | 711639.2 | 3577130.7 | 1505.7 | 355 | -60 | 217.93 |

*Table 10-4 Significant assays in Santa Fe Gold L-series drill holes.*

| Hole | From | To | Cu_ppm | Pb_ppm | Zn_ppm | Ag_ppm | Au_ppm |
|---|---|---|---|---|---|---|---|
| L-2 | 125.7 | 128.8 | 3573 | 447 | 940 | 10.279 | 0.102 |
| L-2 | 151.3 | 167.7 | 1194 | 1055 | 727 | 40.855 | 0.429 |
| L-3 | 23.2 | 26.5 | 2209 | 2362 | 1918 | 31.646 | 1.249 |
| L-3 | 68.2 | 75.4 | 1693 | 4993 | 3084 | 27.705 | 0.502 |
| L-3 | 171.5 | 178.6 | 392 | 1106 | 1562 | 20.231 | 0.138 |
| L-3 | 232.7 | 232.8 | 4500 | 18500 | 15000 | 62.194 | 0.377 |
| L-3 | 235.3 | 235.9 | 1000 | 1900 | 1100 | 34.114 | 0.926 |
| L-4 | 27.4 | 28.7 | 7770 | 11043 | 2948 | 92.561 | 2.022 |
| L-4 | 36.9 | 37.0 | 9300 | 900 | 600 | 28.217 | 0.309 |
| L-4 | 88.2 | 90.8 | 2545 | 3656 | 321 | 27.619 | 3.621 |
| L-5 | 198.0 | 201.1 | 709 | 5707 | 2315 | 10.260 | 0.228 |
| L-5 | 408.9 | 412.8 | 5189 | 433 | 624 | 6.249 | 0.083 |
| L-6 | 117.0 | 125.8 | 9338 | 2823 | 3974 | 21.049 | 1.124 |
| L-7 | 82.6 | 84.4 | 1349 | 650 | 258 | 10.267 | 0.263 |
| L-8 | 25.1 | 25.9 | 8400 | 29000 | 1300 | 165.221 | 1.989 |
| L-8 | 57.5 | 60.5 | 620 | 4837 | 1559 | 30.501 | 0.959 |

| Hole | From | To | Cu_ppm | Pb_ppm | Zn_ppm | Ag_ppm | Au_ppm |
|---|---|---|---|---|---|---|---|
| L-8 | 66.9 | 78.3 | 1217 | 2426 | 2236 | 16.008 | 0.626 |
| L-8 | 207.1 | 217.8 | 1860 | 2608 | 1725 | 12.036 | 1.149 |
| L-9 | 37.6 | 37.8 | 1000 | 900 | 1200 | 39.462 | 0.274 |
| L-9 | 49.1 | 51.2 | 1489 | 1905 | 1665 | 11.015 | 0.148 |
| L-9 | 64.3 | 66.1 | 2009 | 2385 | 2988 | 12.267 | 1.137 |
| L-10 | 61.7 | 64.8 | 1752 | 100 | 1254 | 26.878 | 0.271 |
| L-10 | 72.9 | 77.9 | 3047 | 856 | 1368 | 18.832 | 0.280 |
| L-10 | 115.3 | 128.3 | 757 | 980 | 1319 | 16.712 | 0.433 |
| L-10 | 145.4 | 148.2 | 2954 | 100 | 1365 | 14.719 | 0.034 |
| L-11 | 63.9 | 64.3 | 600 | 100 | 300 | 10.937 | 0.240 |
| L-11 | 169.8 | 184.1 | 2218 | 646 | 545 | 17.738 | 0.325 |
| L-11 | 197.1 | 200.3 | 2631 | 329 | 460 | 16.876 | 0.454 |

The Lordsburg Mining Company drilling results are summarized below. These holes were drilled to test high grade targets on known veins in and around the historic underground mines.

**L-1** was drilled to test the steeply south dipping, South Atwood vein about 30m above the ore shoot reported to exist on the 600 foot level of the South Atwood Mine and cut host andesite from collar to final depth. L-1 was also oriented to test the brecciated, sheared South Atwood fault zone between the Atwood mine to the east and Henry Clay shaft to the west. The target vein was cut between 123.7m and 124.7m. It was intensely and pervasively silicified and brecciated and contained sparse chrysocolla and malachite.

**L-2** was drilled to test the steeply north dipping North Atwood vein system and cut andesite from collar to final depth. The target vein was cut between 151.3m and 159.1-meters. A true width of four meters, between 151.3m and 159.1m downhole, of composite siliceous andesite breccia was cut.

**L-3** was drilled to test the east-west trending structural zone mined by Westar in the small open cut west of the Henry Clay mine. The hole cut andesite from collar to final depth and included silicified brecciated veins between 23.2m and 24.6-meters, and between 68.2m and 72.1m.

**L-4** was drilled to test mineralized veins on the hanging wall side of the Emerald Vein. It was collared in granodiorite, cut both andesite and granodiorite to its final depth.

**L-5** was drilled to test the downward projection of the Henry Clay ore shoot and cut andesite from collar to final depth.

**L-6** was drilled to test the extreme southern limit of the Emerald vein near the Jim Crow shaft. The hole was collared in granodiorite and bottomed in andesite. Silicified breccias were cut at the granodiorite-andesite contact and within andesite near the granodiorite contact.

**L-7** was drilled to test the down dip projection of the Emerald Vein near the historic Jim Crow mine. The hole cut andesite with several-meter wide granodiorite intervals from collar to final depth.

**L-8** was drilled to test the east-west trending structural zone mined by Westar in the small open cut west of the Henry Clay mine. It cut andesite with several silicified breccia zones and composite veins from collar to final depth.

**L-9** was drilled to test the downward projection of the southernmost composite veins segment in the Bonnie Jean vein. It cut andesite and several, narrow composite veins from collar to final depth.

**L-10** was drilled to test the downward projection of the southernmost composite vein segment in the Bonnie Jean vein and was collared approximately 30m west of L-9. It cut andesite and several narrow, composite veins from collar to final depth.

**L-11** was drilled to test the downward projection of the Comstock vein. It was collared in andesite and cut both andesite and granodiorite and several, narrow, composite, silicified veins to the final depth.

# 11 SAMPLE PREPARATION, ANALYSES AND SECURITY

Details of the sample preparation, analytical laboratories and procedures, sample-security protocols, and quality-assurance/quality-control ("QA/QC") measures employed during the drilling programs performed by Phelps Dodge, Federal Resources, SFP Minerals Corp, St Cloud/Goldfields, Westar Corporation, Lordsburg Mining Company, and Entrée Gold are not available.

## 11.1 Pre-Lordsburg Mining Co/Entrée Gold Sample Preparation, Analysis, and Security

Little to no information is available regarding the laboratory used or the method of analysis for gold, silver, copper, and other elements for the holes drilled by Phelps Dodge, Federal Resources, SFP Minerals Corp, St. Cloud/Goldfields, and Westar Corporation. For example, Phelps Dodge reports in 1984 that "Fire assaying and chemical analysis of all reported constituents was performed at the analytical laboratory of the Tyrone Branch, Phelps Dodge Corporation, located at the plant site in Tyrone, Grant County, New Mexico."

## 11.2 Lordsburg Mining Co/Entrée Gold Sample Preparation and Analysis

Details are not available for QA/QC procedures used by for the Entrée Gold or Lordsburg Mining Company portion of the claims however, a quality assurance and control statement was issued by Entrée Gold in a 15 January 2009 press release. This statement, prepared under the supervision of Robert Cann, P. Geo, is reproduced, in full, as follows (italics added):

> ***QUALITY ASSURANCE AND CONTROL***
>
> *Robert Cann, P.Geo., Entrée's Vice-President, Exploration, a qualified person as defined by NI 43-101, supervised the preparation of the technical information in this news release.*
>
> *Split core samples were prepared and analyzed at Skyline Assayers & Laboratories in Tucson, Arizona and at Acme Analytical Laboratories in Vancouver, Canada. Prepared standards, blanks and duplicates are inserted at the project site to monitor the quality control of the assay data. Drill intersections described in this news release are based on core lengths and may not reflect the true width of mineralization.*

This statement is similar to those commonly issued for the release of assay information by publicly listed companies. Both laboratories listed in the statement were certified to industry standards at the time of the press release.

All 834 surface samples collected by Lordsburg Mining Co in 2010-2012 were analyzed at the Lordsburg mill lab for fire assay Au and Ag with results reported in ounces per ton. Pulps (L1-817) were then sent for check assays to Skyline Lab in Tucson for fire assay Au and Ag with gravimetric finish and a 33 element ICP suite. All the geochemical contour maps used Skyline assays for element. All the sample values in Thornwell's report are from Lordsburg mill lab results (Rogers, 2012).

All the gold and silver assays results were statistically compared between the Lordsburg mill and

Skyline laboratories. Results showed a good statistical comparison between laboratory results for silver and a poor statistical comparison between gold values. The Lordsburg mill subsequently ceased using Skyline labs for gold and silver fire assay checks due to assay differences with the Lordsburg mill as well as samples assayed by Asarco and Freeport (Rogers verbal communication, Curtis Floyd, 2012). Both the mill and Skyline laboratories use the same pulp samples prepared by the Lordsburg mill laboratory for gold fire assays. However, the Lordsburg mill lab does a fire assay with an AA finish while Skyline lab does a fire assay with a gravimetric finish. An AA finish generally gives a more accurate value for low precious metal samples while a gravimetric finish on a fire assay gives more accurate assay results on higher grade precious metal samples (Rogers verbal communication, Jim Martin, 2012). Furthermore, Jim Martin states that a nugget effect in the pulp is possible especially in the higher grade samples (Rogers, 2012).

It is the author's opinion that the quality assurance and control utilized by Entrée Gold for the 2008-2009 drilling campaign met the standards of common industry practice at the time.

# 12 DATA VERIFICATION

The data that supports the analyses and conclusions in the sections of this report that do not directly concern the Entrée Gold portion were derived from historical reports, including drill logs, assay certificates, maps, sections, and project reports located in company files as well as published reports available to the general public. Digital copies of the historical reports were made during a prior visit to the Banner company office at the Bonney Mine site.

The data that supports the sections of this report directly concerned with the Entrée Gold project were derived from the project report produced at the end of the drilling campaign. This report includes digital maps, and source files that were used to produce the maps, digital drilling records from the original database and final reports from geophysical contractors.

The authors conducted a two-day field examination of outcrops, old mines and prospects, drill roads and drill sites in preparation for this report.

It is the authors' opinion that these data sources are adequate for the purposes used in this technical report.

# 13 MINERAL PROCESSING AND METALLURGICAL TESTING

No data from the historical Lordsburg mill operations relating to mineral processing or metallurgical testing was available to the authors.

# 14 MINERAL RESOURCE ESTIMATES

There currently are no mineral resources on the Lordsburg project that comply with the "CIM Definition Standards - For Mineral Resources and Mineral Reserves" (2014).

# 15 MINERAL RESERVE ESTIMATES

There currently are no mineral reserves on the Lordsburg project that comply with the "CIM Definition Standards - For Mineral Resources and Mineral Reserves" (2014).

# 16 MINING METHODS

Not applicable.

# 17 RECOVERY METHODS

Not applicable.

# 18 PROJECT INFRASTRUCTURE

Not applicable.

# 19 MARKET STUDIES AND CONTRACTS

Not applicable.

# 20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

Not applicable.

# 21 CAPITAL AND OPERATING COSTS

Not applicable.

# 22 ECONOMIC ANALYSIS

Not applicable.

# 23 ADJACENT PROPERTIES

There are no relevant adjacent properties.

# 24 OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data available to the authors on the Lordsburg project.

# 25 INTERPRETATION AND CONCLUSIONS

The work completed at the historic mines and vein systems was not designed to detect, nor intended to lead to the discovery of a porphyry copper deposit. The results from this historic work are nonetheless useful, in that the structural, mineralogical, alteration and metal zoning characteristics of the veins, whilst incompletely known and understood, are compatible with established proximal to distal mineralogical, alteration and geochemical vectoring characteristics of porphyry copper deposits. For example, the southward progression in the Emerald vein from distal Pb-Zn-Ag dominant to Cu-Mo dominant may be a vector pointing to a deeper porphyry copper center to the south (Figure 7-14).

The faults and veins at Lordsburg appear to be similar to those formed in the lithocap of PCD magmatic hydrothermal systems (Figure 8-1 and Figure 8-2). PCD fault and vein systems often display en-echelon offset patterns, are sub-vertical in orientation and characterized by intense and pervasive propylitic alteration assemblages, epithermal textures and strong metal zoning from proximal copper biased to distal lead-zinc biased. The 3-D distribution of the historical underground mine workings, and production records from them, may provide useful metallogenic zoning pattern information.

The presence of intensely silicified, discrete breccia bodies, identified by previous workers as rhyolitic breccias and silicified breccias, and the presence of finer-grained dikes and sills of felsic composition are indicative of active magmatic differentiation in a cooling and evolving porphyry copper magma body.

The rock chip geochemical anomalies in the Entrée Gold project area correlate well with outcropping potassic alteration and mineralization. The best soil anomaly lies immediately above an IP chargeability anomaly. Both geochemistry and geophysics point to porphyry style mineralization.

The drilling campaign completed by Entrée Gold in 2009 demonstrated that a low grade, copper-bearing, porphyry copper deposit is present on the eastern side of the Lordsburg mining district. Porphyry copper alteration is primarily potassic and propylitic assemblages but the presence of secondary enrichment mineralogy, namely, chalcocite and native copper, strongly suggests the presence of supergene alteration and the potential for development of enrichment blankets.

The historic Leitendorf camp has a metallogenic signature of silver and lead with minor copper. The dominant silver mineralization is associated with secondary quartz-sericite-pyrite alteration and described as supergene in origin. Breccia bodies, porphyry dikes and veins characteristic of porphyry copper deposits are present.

It is permissive and likely that two porphyry centers are present south of the Bonney and Jim Crow mines and within the Entrée Gold project area to the east. A third center may be present in the Leitendorf camp.

Late Tertiary rhyolitic volcanic sequences that crop out in the southern portion of the project area are inclined from 10° to 30° and suggest active Basin and Range extension and rotation tectonics. It is possible that the postulated Laramide porphyry centers in the Lordsburg district were disrupted, extended, rotated, and buried like other deposits in the Arizona-New Mexico-Sonora porphyry copper province.

# 26 RECOMMENDATIONS

While extensive work has been completed at the Lordsburg district to date, the majority has been focussed on precious and base metal vein exploration. The intent of the recommended work detailed below is to explore for and develop porphyry copper and skarn-related targets. Table 26-1 summarizes the work and anticipated costs associated with each phase.

Develop a true relational database to hold observational data from the project, old historic data as well as newly acquired data. Establish collection procedures to ensure continuity between data sets from previous and current campaigns and newly acquired data.

Incorporate the available, modern geochemical data from Santa Fe Gold's work in 2006-2012 with geochemical data from the Entrée Gold 2008-2012 exploration effort. Both data sets include original assay certificates and documentary notation concerning collection and analytical procedures. Combination of the two data sets effectively covers the entire district.

It is unlikely that original assay certificates from grade control and underground exploration are available for the historic records kept in the Bonney mine office but a number of drift maps with recorded assays are available for examination. General smelter receipts may also be found in these old records. This information may be useful for construction of a 3D district scale metallogenic zoning model. In essence, this work would expand that completed by Rogers (2012) for the Emerald Vein (Figure 7-14) to the other vein sets of the district.

Produce alteration gradient maps to identify vectors to potassic and phyllic alteration within the broad propylitic alteration zone. Propylitic alteration is widely distributed across the Lordsburg project area with smaller, isolated zones of potassic and phyllic alteration present as well. Detailed alteration mapping in other districts has revealed mineralogical gradients within the broader zones that are useful for target definition (Reed, et al, 2013).

Examine the pervasively and intensely silicified rhyolite breccias to determine their age and relationship to the Laramide alteration and mineralization.

Complete, evaluate, and model drone-based aerial magnetic, controlled source audiomagneto telluric surveys, and a district scale, deep-looking, induced polarization survey. The objective is a three-dimensional geologic model of Lordsburg that combines surface geology, alteration, vein, assay, geophysical, and structural data collected from field mapping and drill core logging, geochemistry, and geophysics.

Rotated, dismembered, and buried porphyry copper deposits are very attractive exploration targets. The AZ-NM-Sonora porphyry copper province boasts secondary enrichment blankets that exceeded two-percent copper grades. Both Laramide and Basin and Range structures across the Lordsburg district should be carefully examined for evidence of extensional deformation**.** Basin and Range structural events suggests that the Lordsburg district has been modified by northeast-southwest post-mineral extension, which rotated and displaced the typical upright geometry of porphyry copper mineralization. Restoration of modeled Cu ± base metal grade contours along identified faults may identify a single ore shell with an inverted cup-shaped geometry typical of many porphyry copper deposits.

*Table 26-1 Recommended work program.*

| Task | Cost |
|---|---|
| Database development | $25,000 |
| Geochemistry leveling and consolidation | $25,000 |
| 3D metal zoning | $25,000 |
| Alteration and Structural mapping | $125,000 |
| District Geophysics | $250,000 |
| **Total** | $450,000 |

# 27 REFERENCES


Agezo, F.L., 1995, Mineralogy, alteration and fluid inclusion study of the Lordsburg mining district, Hidalgo County, New Mexico (M.S. thesis): Socorro, New Mexico Institute of Mining and Technology, 146 p.

Antisell, Thomas, 1856. Geological report: explorations and surveys for a railroad route from the Mississippi River to the Pacific Ocean, U.S. War Department, v. 7, p. 152-154.

Bartos, P.J.1989, Prograde and retrograde base metal lode deposits and their relationship to underlying porphyry copper deposits: Econ. Geology, v. 84, p. 1671-1683.

Bates, R.L. and Jackson, J.A., eds., 1980, Glossary of geology: American Geological Institute, Virginia 751 p.

Burnham, C. W., 1981. Magmas and Hydrothermal Fluids, in Barnes, H. L., 1981. Geochemistry of Hydrothermal Ore Deposits, John Wiley & Sons, p. 71-136.

Chapin, C.E., Chamberlin, R.M., and Hawley, J.W., 1978, Socorro to Rio Salado, in Hawley, J.W., ed., Guidebook to the Rio Grande rift in New Mexico and Colorado: New Mexico Bureau of Mines and Mineral Resources, Circular 163, p. 121-137.

Clark, K.F. 1970, Zoning paragenesis, temperature formation in the Lordsburg District: New Mexico Geological Society Guidebook, 21st Field Conference, p. 107-113.

Clark, K.F., 1962, Hypogene zoning in the Lordsburg mining district, Hidalgo County, New Mexico: Master's thesis, Univ. New Mexico, p. 136.

Dixon, G.H., Baltz, E.H., Stipp, T.P., and Bieberman, R.A., 1954, Records of well drilled for oil and gas in New Mexico: U.S. Geol. Survey Circ. 333, 79 p. 1 pl.

Elston, W.E., 1965, Mining districts of Hidalgo County, New Mexico in New Mex. Geol. Soc. Guidebook of southwestern New Mexico 11: 16th Field Conf., 1965, p. 210-214.

Elston, W.E., Deal, E.G. and Logsdon, M.J., 1983, Geology and geothermal waters of Lightning Dock region, Animas Valley and Pyramid Mountains, Hidalgo County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Circular 177, 44 p.

Elston, W.E., Erb, E.E., and Deal, E.G., 1979, Tertiary geology of Hidalgo County, New Mexico: Guide to metals, industrial minerals, petroleum and geothermal resources: New Mexico Geology, v. 1, p 1-6.

Entrée Gold, 2007-2009, various new releases on drilling project at Lordsburg, New Mexico.

Fahey, P. L., 2019. Large Scale Cenozoic Extension, SW New Mexico. GSA Poster.

Favorskaya, M.A. and Vinogradov, N.V., 1991, Geological evolution of ore-concentrating lineaments: Global Tectonics and Metallogeny, v.4, p. 75-84.

Federal Resources Corporation, 1970, Ore Reserve and General Progress Report of Lordsburg Properties. Internal report for Federal Resources Corporation.

Federal Resources Corporation, 1973, Comstock vein assay data.

Flege, R. F., 1959. Geology of Lordsburg Quadrangle, Hidalgo County, New Mexico, New Mexico Bureau of Mines and Mineral Resources, Bulletin 62.

Gaytan, S.I., 1975, Geophysical Report Phelps Dodge-Federal Resources Joint Venture, T23S, R18-19W, Hidalgo County, New Mexico. Internal report for Phelps Dodge

Gilbert, G.K. 1875, The geology of portions of Arizona and New Mexico. U.S. Geog. and Geol. Surveys. W. 100th Mer. Rept, vol. 3. Pp. 503-567.

Gilbert, G.K. 1875, The geology of portions of Arizona and New Mexico. U.S. Geog. and Geol. Surveys. W. 100th Mer. Rept, vol. 3. Pp. 503-567.

Hauck, A.M., 1984, Report on the IPV-2 Survey in the Lordsburg District, Hidalgo County, New Mexico. Internal Report for Phelps Dodge.

Hauck, A.M. III, 1975. Geophysical Report, Phelps Dodge-Federal Resources Joint Venture. Interoffice Phelps Dodge memo to R.W. Ludden

Hawksworth, M.A. 1990, Letter to Robert Lowry, Federal Resources Corp. from FMC Gold Corporation.

Hawley, J.W., Hibbs, B., Kennedy, J.F., Creel, B.J., Remenga, M., Johnson, M., Lee, M. and Dinterman, P., 2000, Trans-international boundary aquifers in southwestern New Mexico: New Mexico: New Mexico Water Resources Institute, Technical Completion Report, Environmental Protection Agency, Region 6, 126 p.

Hawley, J.W., Hibbs, B., Kennedy, J.F., Creel, B.J., Remenga, M., Johnson, M., Lee, M. and Dinterman, P., 2000, Trans-international boundary aquifers in southwestern New Mexico: New Mexico: New Mexico Water Resources Institute, Technical Completion Report, Environmental Protection Agency, Region 6, 126 p.

Hedenquist, J.W. and Arribas, A., 2022, Exploration Implications of Multiple Formation Environments of Advanced Argillic Minerals: Econ. Geol., pre-print, 36p.

Hedlund, D.C., 1980, Geologic map of the Redrock NE quadrangle, Grant County, New Mexico: U.S. Geological Survey, Miscellaneous Field Studies Map MF-1264, scale 1:24,000.

Hedlund, D.C., 1985, Geology, mines, and prospects of the Tyrone stock and vicinity, Grant County, New Mexico: U.S. Geological Survey Open-File Report 85-0232, 31p.

Hedlund, D.C., 1985, Geology, mines, and prospects of the Tyrone stock and vicinity, Grant County, New Mexico: U.S. Geological Survey Open-File Report 85-0232, 31p.

Heyl, A.V., 1983, Some major lineaments reflecting deep-seated fracture zones in the central United States, and mineral districts related to the zones: Global Tectonics and Metallogeny, v.2. p. 75-77.

https://cyrqenergy.com/energy-plant-locations/#animas-nm

https://datausa.io/profile/geo/lordsburg-nm/

Hubbard, P.R., and Dunn, P.G., 1983, Lone Mountain report, unpublished.

Huntington, M. G., 1947. Atwood copper group, Lordsburg district, Hidalgo County, New Mexico, U.S. Bureau of Mines Report of Investigations 4029.

Huntington, M.G., 1947, Atwood copper group, Lordsburg District, Hidalgo County, New Mexico: U.S. Bureau of Mines, Report of Investigations 4029, p.9.

Kelley, Vincent C., 1955, Regional tectonics of the Colorado Plateau and relationship to the origin and distribution of uranium: Univ. of New Mex. Press, pub. In Geol. No. 5, 120 p. 8 pls. 17 figs.

Kolessar, J., 1984, Final Report-Drilling Results-Joint Venture Lordsburg Mining District. Internal report for Phelps Dodge.

LaPointe, R.S., 1974, Annual Progress Report Phelps Dodge-Federal Resources Joint Venture, T23S, R 18-19W, Hidalgo County, New Mexico. Internal report for Phelps Dodge.

Lasky, S. G., 1938. Geology and Ore Deposits of the Lordsburg mining district, Hidalgo County, New Mexico, U.S.G.S. Survey Bulletin 885.

Lasky, S.G. 1935, Igneous assimilation and associated contact metamorphism in the Virginia mining district, New Mexico: Am. Mineralogist, vol. 20, pp. 552-561.

Lasky, S.G., 1938, Geology and ore deposits of the Lordsburg mining district, Hidalgo County, New Mexico: U.S. Geological Survey, Bulletin 885, p. 62.Lowell, J.D., 1974, Regional characteristics of porphyry copper deposits of the southwest: Economic Geology, v. 69, p. 601-617.

Lowell, J. D. and J. M. Guilbert, 1970. Lateral and vertical alteration zoning in porphyry ore deposits: Economic Geology, v. 65, pgs. 373-408.

Mayo, E.B., 1958, Lineament tectonics and some ore districts of the southwest: Mining Engineering, v.10, p. 1169-1175.

McDowell, F.W.,1971, K-Ar ages of igneous rocks from the western United States: Isochron/West, n.2. p.1-16

McLemore, V., 2016, Geology and Evolution of the Copper Flat Porphyry System, Sierra County, New Mexico Bureau of Geology and Mineral Resources website: https://geoinfo.nmt.edu/staff/mclemore/home.html.

McLemore, V.T., 1998, Insights into origin of carbonate-hosted Ag and Pb-Zn replacement deposits in the Black Range, Sierra and Grant Counties, New Mexico (abs.): New Mexico Geology, v.20, p. 49.

McLemore, V.T., McIntosh, W.C. and Pease, T.C. 1996, Ar/Ar age determinations of four plutons associated with mineral deposits in southwestern New Mexico: New Mexico Bureau of Mines and Mineral Resource, Open-file Report OF-410, 36 p.

McLemore, V.T., Munroe, E.A., Heizler, M.T. and McKee, C., 1999, Geochemistry of the Copper Flat porphyry and associated deposits in the Hillsboro mining district, Sierra County, New Mexico, USA: Journal of Geochemical Exploration, v. 66. p. 167-189.

McLemore, V.T., Peters, L., and Heizler, M.T., 2000, Ar/Ar Geochronology of igneous rocks in the Lordsburg district, Northern Pyramid mountains, Hidalgo County, New Mexico: New Mexico Geol.Society Handbook.

McLemore, V.T., Peters, L., and Heizler, M.T., 2000, Ar/Ar Geochronology of igneous rocks in the Lordsburg district, Northern Pyramid mountains, Hidalgo County, New Mexico: New Mexico Geol.Society Handbook.

Moody, J.D., 1966, Crustal shear patterns and orogenesis, Tectonophysics, v. 3, no. 6, p. 479-522.

Moody, J.D., and Hill, M.J., 1956, Wrench-fault tectonics: Bull. Geol. Soc. America, v. 67, p.1207-1248.

Muehlberger, W.R., 1980, Texas lineament revisited: New Mexico Geological Society Guidebook 31, p.113-121.

Phelps Dodge, various unpublished data sources.

Ransome, F.L., 1915; The Tertiary orogeny of the North American cordillera and its problems, in Problems of American Geology, Yale University Press, New Haven, Conn.

Reed, M., Rusk, and J. Palandri, 2013. The Butte Magmatic-Hydrothermal System: One Fluid Yields All Alteration and Veins, Economic Geology, v. 108, pp. 1379-1396.

Reinhart, J.W., 1956, Atwood and Henry Clay Mines, Virginia Mining District, Hidalgo County, New Mexico. Private Report.

Richter, D.H. and Lawrence, V.A., 1983, Mineral deposit map of the Silver City 1X2 degree quadrangle, New Mexico and Arizona: U.S. Geological survey Misc. Investigations Series Map I- 1310B, scale1:250,000.

Rogers, T., 2012. Lordsburg District Final Report, internal report for Santa Fe Gold/Lordsburg Mining Company.

Sillitoe, R.H., 2010, Porphyry copper systems: Econ. Geol. Vol 105, pp 3-41

Spencer, J. E. and S. J. Reynolds, 1989. Middle Tertiary tectonics of Arizona and adjacent areas, in Jenney, J. P., and Reynolds, S. J., 1989, Geological evolution of Arizona, Tucson, Arizona Geological Society Digest 17, p. 539-574.

Storms, W.R., 1949, Mining methods and costs at the Atwood copper mine, Lordsburg mining district, Hidalgo County, New Mexico: U.S. Bur. Mines Inf. Circ. 7502, p. 11.

Thorman, C. H. and H Drewes, 1978. Geologic Map of the Gary and Lordsburg Quadrangles, Hidalgo County, New Mexico, U.S.G.S. Miscellaneous Investigations Series Map I-1151.

Titley, S. R, 1983. Geologic Setting of Porphyry Copper Deposits, Southeastern Arizona. in Titley, S. R., Advances in Geology of the Porphyry Copper Deposits, Southwestern North America, The University of Arizona Press, p. 37-58

Trauger, F.D., 1965, Geologic Structure Pattern of Grant County, New Mexico, p. 184-187, in Guidebook New Mexico Geological Society, Sixteenth Field Conference.

Turner, G.L., 1962, The Deming axis. Southeastern Arizona, New Mexico, and Trans-Pecos, Texas, p.59-71, in Guidebook of the Mogollon Rim Region east-central Arizona: New Mexico Geological Society.

Wertz, J.B., 1970, The Texas lineament and its economic significance in southeastern Arizona, Economic Geology, April 1970, v 65. P. 166-181.

Westar Corporation, 1987, Bonnie Jean Exploration Program Drilling Report. Private Report. White, J.L., 1991-1993, various Lordsburg Project reports, St. Cloud Mining Company.

White, J.L, 2000, The Lordsburg Mining District, Hidalgo County, New Mexico, in Southwest Passage, A Trip Through the Phanerozoic, New Mexico Geological Society, Guidebook 2000.

Wilkins, J. Jr. and Heidrick, T.L. 1995, Post Laramide Extension and Rotational of Porphyry Copper Deposits, Southwestern United States, in Porphyry Copper Deposits of the American Cordillera; Arizona Geological Society Digest 20, p. 109-127.

Williams S.A. and Khin B, 1975, Alteration and Mineralization, in Phelps Dodge summary report to Federal Resources, 1975, Geer, R.E.

Wilson, K.S., 1987, Geochemical assays, assay location maps, and various letters from K.S. Wilson, Noranda Exploration to Westar Corporation.

WorldClimate.com: http://www.worldclimate.com/climate/us/new-mexico/lordsburg

Youtz, R.B., 1931, Mining methods at the Eighty-Five mine, Calumet and Arizona Mining Co., Valedon, N. Mex: U.S. Bureau of Mines, Inf. Circ. 6413.

Zonge, 2011, CSAMT Survey of the Lordsburg Project, Lines 1-7, for Santa Fe Gold.

# APPENDIX – LIST OF CLAIMS

**PPM Patented Mining Claims**

The following patented mining claims located within Sections 5 and 7 of T23S, R18W, and Sections 11, 12, 13, 14, 23 and 24, T23S, R19W, NMPM, Hidalgo County, New Mexico:

| Claim Name | Patent Number | Lot or Mineral Survey No. |
|---|---|---|
| Mulberry | 1113546 | 2075 |
| Copper Dick | 1113546 | 2075 |
| Happy Hooligan | 1113546 | 2075 |
| Red Copper | 1113546 | 2075 |
| Green Copper | 1113546 | 2075 |
| Blue Copper | 1113546 | 2075 |
| Manilla* | 1113546 | 2075 |
| Bonney Extension* | 1113546 | 2075 |
| Copper Regent | 434450 | 1462 |
| S.W.B. | 434450 | 1462 |
| Columbia | 434450 | 1462 |
| Misers Chest | 434450 | 1462 |
| Fort Savage | 434450 | 1462 |
| Virginia | 434450 | 1462 |
| Little Annie | 434450 | 1462 |
| Silverdale | 1113729 | 2074 |
| Oro Alto | 1113729 | 2074 |
| Independence | 1113729 | 2074 |
| White Lime | 1113729 | 2074 |
| Sunrise | 1113729 | 2074 |
| Oro Alto No. 2 | 1113729 | 2074 |
| Oro Alto No. 3* | 1113729 | 2074 |
| Oro Fino | 1113729 | 2074 |
| Eldorado | 1113729 | 2074 |
| Look-Out | 552995 | 1599 |
| Johnson | 631762 | 1677 |
| Duchess | 556189 | 1609 |
| Rockford | 537036 | 1595 |
| Sacramento | 552994 | 1598 |
| Oakland | 552993 | 1597 |
| Monteray | 555880 | 1602 |
| Winchester | 555133 | 1604 |
| Princess | 552991 | 1607 |
| Royal | 578680 | 1608 |
| Monrovia | 556188 | 1600 |
| White Cloud | 535550 | 1613 |
| Beloit | 562260 | 1601 |

| Claim Name | Patent Number | Lot or Mineral Survey No. |
|---|---|---|
| Playmate | 552992 | 1596 |
| Cafe | 555134 | 1605 |
| Reckhart | 556187 | 1606 |
| Excelsior | 578681 | 1612 |
| Dundee | 46747 | 1284 |
| Schley | 537834 | 1618 |
| Hobson | 537833 | 1616 |
| Carrie | 725066 | 1766 |
| Eighty Five | 517827 | 1430 |
| Eighty-Six | 517827 | 1430 |
| Ninety-Nine | 517827 | 1430 |
| Emerald | 517827 | 1430 |
| Mohak | 517827 | 1430 |
| Carlos | 609730 | 1690 |
| Nevada | 289655 | 1431 |
| Superior Copper | 2868 | 37 |
| Okley | 609729 | 1620 |
| Dewey | 611954 | 1617 |
| Venice | 773110 | 1610 |
| Pasadena | 767403 | 1611 |
| Remington | 773109 | 1603 |
| Bisbee | 1008048 | 1934 |
| Dry Town | 1008047 | 1936 |
| Cobra Negra | 431004 | 1504 |
| Tom Cat | 431004 | 1504 |
| Black Copper | 431004 | 1504 |
| Black Sam | 431004 | 1504 |
| Old Town | 1008049 | 1937 |
| Jim Crow | 855894 | 1619 |
| Tioga | 1007870 | 1935 |
| Western Extension of the 85 No. 1 | 1008046 | 1933 |
| Western Extension of the 85 No. 2 | 1008046 | 1933 |
| Western Extension of the 85 No. 3 | 1008046 | 1933 |
| Western Extension of the 85 No. 4 | 1008046 | 1933 |
| Western Extension of the 85 No. 5 | 1008046 | 1933 |
| 85 W. Extension #6 | 1008046 | 1933 |
| Sunrise* | 567465 | 1591 |
| Shoo Fly* | 567465 | 1591 |
| Lone Claim* | 567465 | 1591 |
| Teddy* | 567465 | 1591 |
| Cochise* | 567465 | 1591 |
| August* | 968385 | 1914 |
| August No. 2* | 973416 | 1917 |
| Chance Mine* | 985750 | 1945 |

| Claim Name | Patent Number | Lot or Mineral Survey No. |
|---|---|---|
| Nellie Gray* | 884351 | 1870 |
| Congress* | 884351 | 1870 |
| March No. 1* | 884351 | 1870 |
| March No. 2* | 884351 | 1870 |
| Johannesburg* | 904000 | 1871 |
| Battle Ship (portion of surface) | 494193 | 1592 |

*These 16 claims are subject to the Banner Lease.

**PPM Unpatented Mining Claims**

The following unpatented mining claims located within Sections 5, 6, 7 and 8 of T23S, R18W, Sections 10, 11, 14, 15, 17, 18, 19, 20, 21, 22, 23, 23, 25, 26, 27, 28, 29, 30, 33, 34, 35 and 36, T23S, R19W, Section 6 of T24S, R18W, and Sections 1, 2, 4, 11 and 12, T24S, R19W, NMPM, Hidalgo County, New Mexico:

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | LM 1 | NMMC193798 |
| | LM 2 | NMMC193799 |
| | LM 3 | NMMC193800 |
| | LM 4 | NMMC193801 |
| | LM 5 | NMMC193802 |
| | LM 6 | NMMC193803 |
| | LM 7 | NMMC193804 |
| | LM 8 | NMMC193805 |
| | LM 9 | NMMC193806 |
| | LM 10 | NMMC193807 |
| | LM 11 | NMMC193808 |
| | LM 12 | NMMC193809 |
| | LM 13 | NMMC193810 |
| | LM 14 | NMMC193811 |
| | PY#1 | NMMC196135 |
| | PY#2 | NMMC196136 |
| | PY#3 | NMMC196137 |
| | PY#4 | NMMC196138 |
| | PY#5 | NMMC196139 |
| | PY#6 | NMMC196140 |
| | PY#7 | NMMC196141 |
| | PY#8 | NMMC196142 |
| | PY#9 | NMMC196143 |
| | PY#10 | NMMC196144 |
| | PY#11 | NMMC196145 |
| | PY#12 | NMMC196146 |
| | PY#13 | NMMC196147 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | PY#14 | NMMC196148 |
| | PY#15 | NMMC196149 |
| | PY#16 | NMMC196150 |
| | PY#17 | NMMC196151 |
| | PY#18 | NMMC196152 |
| | PY#19 | NMMC196153 |
| | PY#20 | NMMC196154 |
| | PY#21 | NMMC196155 |
| | PY#22 | NMMC196156 |
| | PY#23 | NMMC196157 |
| | PY#24 | NMMC196158 |
| | PY#25 | NMMC196159 |
| | PY#26 | NMMC196160 |
| | PY#27 | NMMC196161 |
| | PY#28 | NMMC196162 |
| | PY#29 | NMMC196163 |
| | PY#30 | NMMC196164 |
| | PY#31 | NMMC196165 |
| | PY#32 | NMMC196166 |
| | PY#33 | NMMC196167 |
| | PY#34 | NMMC196168 |
| | PY#35 | NMMC196169 |
| | PY#36 | NMMC196170 |
| | PY#37 | NMMC196171 |
| | PY#38 | NMMC196172 |
| | PY#39 | NMMC196173 |
| | PY#40 | NMMC196174 |
| | PY#41 | NMMC196175 |
| | PY#42 | NMMC196176 |
| | PY#43 | NMMC196177 |
| | PY#44 | NMMC196178 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | PY#45 | NMMC196179 |
| | PY#46 | NMMC196180 |
| | PY#47 | NMMC196181 |
| | PY#48 | NMMC196182 |
| | PY#49 | NMMC196183 |
| | PY#50 | NMMC196184 |
| | PY#51 | NMMC196185 |
| | PY#52 | NMMC196186 |
| | PY#53 | NMMC196187 |
| | PY#54 | NMMC196188 |
| | PY#55 | NMMC196189 |
| | PY#56 | NMMC196190 |
| | PY#57 | NMMC196191 |
| | PY#58 | NMMC196192 |
| | PY#59 | NMMC196193 |
| | PY#60 | NMMC196194 |
| | PY#61 | NMMC196195 |
| | PY#62 | NMMC196196 |
| | PY#63 | NMMC196197 |
| | PY#64 | NMMC196198 |
| | PY#65 | NMMC196199 |
| | PY#66 | NMMC196200 |
| | PY#67 | NMMC196201 |
| | PY#68 | NMMC196202 |
| | PY#69 | NMMC196203 |
| | PY#70 | NMMC196204 |
| | PY#71 | NMMC196205 |
| | PY#72 | NMMC196206 |
| | PY#73 | NMMC196207 |
| | PY#74 | NMMC196208 |
| | PY#75 | NMMC196209 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | PY#76 | NMMC196210 |
| | PY#77 | NMMC196211 |
| | PY#78 | NMMC196212 |
| | PY#79 | NMMC196213 |
| | PY#80 | NMMC196214 |
| | PY#81 | NMMC196215 |
| | PY#82 | NMMC196216 |
| | PY#83 | NMMC196217 |
| | PY#84 | NMMC196218 |
| 1. | PY#85 | NMMC196219 |
| | PY#86 | NMMC196220 |
| | PY#87 | NMMC196221 |
| | PY#88 | NMMC196222 |
| | PY#89 | NMMC196223 |
| | PY#90 | NMMC196224 |
| | PY#91 | NMMC196225 |
| | PY#92 | NMMC196226 |
| | PY#93 | NMMC196227 |
| | PY#94 | NMMC196228 |
| | PY#95 | NMMC196229 |
| | PY#96 | NMMC196230 |
| | PY#97 | NMMC196231 |
| | PY#98 | NMMC196232 |
| | PY#99 | NMMC196233 |
| | PY#100 | NMMC196234 |
| | PY#101 | NMMC196235 |
| | PY#102 | NMMC196236 |
| | PY#103 | NMMC196237 |
| | PY#104 | NMMC196238 |
| | PY#105 | NMMC196239 |
| | PY#106 | NMMC196240 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | PY#107 | NMMC196241 |
| | PY#108 | NMMC196242 |
| | PY#109 | NMMC196243 |
| | PY#110 | NMMC196244 |
| | PY#111 | NMMC196245 |
| | PY#112 | NMMC196246 |
| | PY#113 | NMMC196247 |
| | PY#114 | NMMC196248 |
| | PY#115 | NMMC196249 |
| | PY#116 | NMMC196250 |
| | PY#117 | NMMC196251 |
| | PY#118 | NMMC196252 |
| | PY#119 | NMMC196253 |
| | PY#120 | NMMC196254 |
| | PY#121 | NMMC196255 |
| | PY#122 | NMMC196256 |
| | PY#123 | NMMC196257 |
| | PY#124 | NMMC196258 |
| | PY#125 | NMMC196259 |
| | PY#126 | NMMC196260 |
| | PY#127 | NMMC196261 |
| | PY#128 | NMMC196262 |
| | PY#129 | NMMC196263 |
| | PY#130 | NMMC196264 |
| | PY#131 | NMMC196265 |
| | PY#132 | NMMC196266 |
| | PY#133 | NMMC196267 |
| | PY#134 | NMMC196268 |
| | PY#135 | NMMC196269 |
| | PY#136 | NMMC196270 |
| | PY#137 | NMMC196271 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | PY#138 | NMMC196272 |
| | PY#139 | NMMC196273 |
| | PY#140 | NMMC196274 |
| | PY#141 | NMMC196275 |
| | PY#142 | NMMC196276 |
| | PY#143 | NMMC196277 |
| | PY#144 | NMMC196278 |
| | PY#145 | NMMC196279 |
| | PY#146 | NMMC196280 |
| | PY#147 | NMMC196281 |
| | PY#148 | NMMC196282 |
| | PY#149 | NMMC196283 |
| | PY#150 | NMMC196284 |
| | PY#151 | NMMC196285 |
| | PY#152 | NMMC196286 |
| | PY#153 | NMMC196287 |
| | PY#154 | NMMC196288 |
| | PY#155 | NMMC196289 |
| | PY#156 | NMMC196290 |
| | PY#157 | NMMC196291 |
| | PY#158 | NMMC196292 |
| | PY#159 | NMMC196293 |
| | PY#160 | NMMC196294 |
| | PY#161 | NMMC196295 |
| | PY#162 | NMMC196296 |
| | PY#163 | NMMC196297 |
| | PY#164 | NMMC196298 |
| | PY#165 | NMMC196299 |
| | PY#166 | NMMC196300 |
| | PY#167 | NMMC196301 |
| | PY#168 | NMMC196302 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | PY#169 | NMMC196303 |
| | PY#170 | NMMC196304 |
| | PY#171 | NMMC196305 |
| | PY#172 | NMMC196306 |
| | PY#173 | NMMC196307 |
| | PY#174 | NMMC196308 |
| | PY#175 | NMMC196309 |
| | PY#176 | NMMC196310 |
| | PY#177 | NMMC196311 |
| | PY#178 | NMMC196312 |
| | PY#179 | NMMC196313 |
| | PY#180 | NMMC196314 |
| | PY#181 | NMMC196315 |
| | PY#182 | NMMC196316 |
| | PY#183 | NMMC196317 |
| | PY#184 | NMMC196318 |
| | PY#185 | NMMC196319 |
| | PY#186 | NMMC196320 |
| | PY#187 | NMMC196321 |
| | PY#188 | NMMC196322 |
| | PY#189 | NMMC196323 |
| | PY#190 | NMMC196324 |
| | PY#191 | NMMC196325 |
| | PY#192 | NMMC196326 |
| | PY#193 | NMMC196327 |
| | PY#194 | NMMC196328 |
| | PY#195 | NMMC196329 |
| | PY#196 | NMMC196330 |
| | PY#197 | NMMC196331 |
| | PY#198 | NMMC196332 |
| | PY#199 | NMMC196333 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | PY#200 | NMMC196334 |
| | PY#201 | NMMC196335 |
| | PY#202 | NMMC196336 |
| | PY#203 | NMMC196337 |
| | PY#204 | NMMC196338 |
| | PY#205 | NMMC196339 |
| | PY#206 | NMMC196340 |
| | PY#207 | NMMC196341 |
| | PY#208 | NMMC196342 |
| | PY#209 | NMMC196343 |
| | PY#210 | NMMC196344 |
| | PY#211 | NMMC196345 |
| | PY#212 | NMMC196346 |
| | PY#213 | NMMC196347 |
| | PY#214 | NMMC196348 |
| | PY#215 | NMMC196349 |
| | PY#216 | NMMC196350 |
| | PY#217 | NMMC196351 |
| | PY#218 | NMMC196352 |
| | PY#219 | NMMC196353 |
| | PY#220 | NMMC196354 |
| | PY#221 | NMMC196355 |
| | PY#222 | NMMC196356 |
| | PY#223 | NMMC196357 |
| | PY#224 | NMMC196358 |
| | PY#225 | NMMC196359 |
| | PY#226 | NMMC196360 |
| | PY#227 | NMMC196361 |
| | PY#228 | NMMC196362 |
| | PY#229 | NMMC196363 |
| | PY#230 | NMMC196364 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | PY#231 | NMMC196365 |
| | PY#232 | NMMC196366 |
| | PY#233 | NMMC196367 |
| | PY#234 | NMMC196368 |
| | PY#235 | NMMC196369 |
| | PY#236 | NMMC196370 |
| | PY#237 | NMMC196371 |
| | PY#238 | NMMC196372 |
| | PY#239 | NMMC196373 |
| | PY#240 | NMMC196374 |
| | PY#241 | NMMC196375 |
| | PY#242 | NMMC196376 |
| | PY#243 | NMMC196377 |
| | PY#244 | NMMC196378 |
| | PY#245 | NMMC196379 |
| | PY#246 | NMMC196380 |
| | PY#247 | NMMC196381 |
| | PY#248 | NMMC196382 |
| | PY#262 | NMMC196383 |
| | PY#263 | NMMC196384 |
| | PY#264 | NMMC196385 |
| | PY#265 | NMMC196386 |
| | PY#266 | NMMC196387 |
| | PY#267 | NMMC196388 |
| | PY#268 | NMMC196389 |
| | PY#269 | NMMC196390 |
| | PY#270 | NMMC196391 |
| | PY#271 | NMMC196392 |
| | PY#272 | NMMC196393 |
| | PY#273 | NMMC196394 |
| | PY#274 | NMMC196395 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | PY#275 | NMMC196396 |
| | PY#276 | NMMC196397 |
| | PY#277 | NMMC196398 |
| | PY#278 | NMMC196399 |
| | PY#279 | NMMC196400 |
| | PY#280 | NMMC196401 |
| | PY#281 | NMMC196402 |
| | PY#282 | NMMC196403 |
| | PY#283 | NMMC196404 |
| | PY#284 | NMMC196405 |
| | PY#285 | NMMC196406 |
| | PY#286 | NMMC196407 |
| | PY#287 | NMMC196408 |
| | PY#288 | NMMC196409 |
| | PY#289 | NMMC196410 |
| | PY#290 | NMMC196411 |
| | PY#291 | NMMC196412 |
| | PY#292 | NMMC196413 |
| | PY#296 | NMMC196414 |
| | PY#297 | NMMC196415 |
| | PY#298 | NMMC196416 |
| | PY#299 | NMMC196417 |
| | PY#300 | NMMC196418 |
| | PY#301 | NMMC196419 |
| | PY#303 | NMMC196421 |
| | PY#304 | NMMC196422 |
| | PY#305 | NMMC196423 |
| | JC#1 | NMMC197469 |
| | JC#2 | NMMC197470 |
| | JC#3 | NMMC197471 |
| | JC#4 | NMMC197472 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | JC#5 | NMMC197473 |
| | JC#6 | NMMC197474 |
| | JC#7 | NMMC197475 |
| | JC#8 | NMMC197476 |
| | JC#9 | NMMC197477 |
| | JC#10 | NMMC197478 |
| | JC#11 | NMMC197479 |
| | JC#12 | NMMC197480 |
| | JC#13 | NMMC197481 |
| | JC#14 | NMMC197482 |
| | JC#15 | NMMC197483 |
| | JC#16 | NMMC197484 |
| | JC#17 | NMMC197485 |
| | JC#18 | NMMC197486 |
| | JC#19 | NMMC197487 |
| | JC#20 | NMMC197488 |
| | JC#21 | NMMC197489 |
| | JC#22 | NMMC197490 |
| | JC#23 | NMMC197491 |
| | JC#24 | NMMC197492 |
| | JC#26 | NMMC197494 |
| | JC#27 | NMMC197495 |
| | JC#28 | NMMC197496 |
| | JC#29 | NMMC197497 |
| | JC#30 | NMMC197498 |
| | JC#31 | NMMC197499 |
| | JC#32 | NMMC197500 |
| | JC#33 | NMMC197501 |
| | JC#34 | NMMC197502 |
| | JC#35 | NMMC197503 |
| | JC#36 | NMMC197504 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | JC#37 | NMMC197505 |
| | JC#38 | NMMC197506 |
| | JC#39 | NMMC197507 |
| | JC#40 | NMMC197508 |
| | JC#41 | NMMC197509 |
| | JC#42 | NMMC197510 |
| | JC#43 | NMMC197511 |
| | JC#44 | NMMC197512 |
| | JC#45 | NMMC197513 |
| | JC#46 | NMMC197514 |
| | JC#47 | NMMC197515 |
| | JC#48 | NMMC197516 |
| | JC#49 | NMMC197517 |
| | JC#50 | NMMC197518 |
| | JC#51 | NMMC197519 |
| | JC#52 | NMMC197520 |
| | JC#53 | NMMC197521 |
| | JC#54 | NMMC197522 |
| | JC#55 | NMMC197523 |
| | JC#56 | NMMC197524 |
| | JC#57 | NMMC197525 |
| | JC#58 | NMMC197526 |
| | JC#59 | NMMC197527 |
| | JC#60 | NMMC197528 |
| | JC#61 | NMMC197529 |
| | JC#62 | NMMC197530 |
| | JC#63 | NMMC197531 |
| | JC#64 | NMMC197532 |
| | JC#65 | NMMC197533 |
| | JC#66 | NMMC197534 |
| | JC#67 | NMMC197535 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | JC#68 | NMMC197536 |
| | JC#69 | NMMC197537 |
| | JC#70 | NMMC197538 |
| | JC#71 | NMMC197539 |
| | JC#100 | NMMC197540 |
| | JC#101 | NMMC197541 |
| | JC#102 | NMMC197542 |
| | JC#103 | NMMC197543 |
| | JC#104 | NMMC197544 |
| | JC#105 | NMMC197545 |
| | JC#106 | NMMC197546 |
| | JC#107 | NMMC197547 |
| | JC#108 | NMMC197548 |
| | JC#109 | NMMC197549 |
| | JC#110 | NMMC197550 |
| | JC#111 | NMMC197551 |
| | JC#112 | NMMC197552 |
| | JC#113 | NMMC197553 |
| | JC#114 | NMMC197554 |
| | JC#115 | NMMC197555 |
| | JC#116 | NMMC197556 |
| | BANNER-112 | NM101612972 |
| | BANNER-113 | NM101612973 |
| | BANNER-114 | NM101612974 |
| | BANNER-115 | NM101612975 |
| | BANNER-116 | NM101612976 |
| | BANNER-117 | NM101612977 |
| | BANNER-118 | NM101612978 |
| | BANNER-119 | NM101612979 |
| | BANNER-120 | NM101612980 |
| | BANNER-121 | NM101612981 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | BANNER-122 | NM101612982 |
| | BANNER-123 | NM101612983 |
| | BANNER-124 | NM101612984 |
| | BANNER-125 | NM101612985 |
| | BANNER-126 | NM101612986 |
| | BANNER-127 | NM101613801 |
| | BANNER-128 | NM101613802 |
| | BANNER-129 | NM101613803 |
| | BANNER-130 | NM101613804 |
| | BANNER-131 | NM101613805 |
| | BANNER-132 | NM101613806 |
| | BANNER-133 | NM101613807 |
| | BANNER-134 | NM101613808 |
| | BANNER-135 | NM101613809 |
| | BANNER-136 | NM101613810 |
| | BANNER-137 | NM101613811 |
| | BANNER-138 | NM101613812 |
| | BANNER-139 | NM101613813 |
| | BANNER-140 | NM101613814 |
| | BANNER-141 | NM101613815 |
| | BANNER-142 | NM101613816 |
| | BANNER-143 | NM101613817 |
| | BANNER-144 | NM101613818 |
| | BANNER-145 | NM101613819 |
| | BANNER-146 | NM101613820 |
| | BANNER-147 | NM101613821 |
| | BANNER-148 | NM101614634 |
| | BANNER-149 | NM101614635 |
| | BANNER-150 | NM101614636 |
| | BANNER-151 | NM101614637 |
| | BANNER-152 | NM101614638 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | BANNER-153 | NM101614639 |
| | BANNER-154 | NM101614640 |
| | BANNER-155 | NM101614641 |
| | BANNER-156 | NM101614642 |
| | BANNER-157 | NM101614643 |
| | BANNER-1 | NM101614644 |
| | BANNER-2 | NM101614645 |
| | BANNER-3 | NM101614646 |
| | BANNER-4 | NM101614647 |
| | BANNER-5 | NM101614648 |
| | BANNER-6 | NM101614649 |
| | BANNER-7 | NM101614650 |
| | BANNER-8 | NM101615441 |
| | BANNER-9 | NM101615442 |
| | BANNER-10 | NM101615443 |
| | BANNER-11 | NM101615444 |
| | BANNER-12 | NM101615445 |
| | BANNER-13 | NM101615446 |
| | BANNER-14 | NM101615447 |
| | BANNER-111 | NM101616918 |
| | BANNER-15 | NM101617699 |
| | BANNER-16 | NM101617700 |
| | BANNER-17 | NM101617701 |
| | BANNER-18 | NM101617702 |
| | BANNER-19 | NM101617703 |
| | BANNER-20 | NM101617704 |
| | BANNER-21 | NM101617705 |
| | BANNER-22 | NM101618496 |
| | BANNER-23 | NM101618497 |
| | BANNER-24 | NM101618498 |
| | BANNER-43 | NM101618499 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | BANNER-44 | NM101618500 |
| | BANNER-45 | NM101618501 |
| | BANNER-46 | NM101618502 |
| | BANNER-47 | NM101618503 |
| | BANNER-48 | NM101618504 |
| | BANNER-49 | NM101618505 |
| | BANNER-50 | NM101618506 |
| | BANNER-51 | NM101618507 |
| | BANNER-52 | NM101618508 |
| | BANNER-53 | NM101618509 |
| | BANNER-54 | NM101618510 |
| | BANNER-55 | NM101618511 |
| | BANNER-56 | NM101618512 |
| | BANNER-57 | NM101618513 |
| | BANNER-58 | NM101618514 |
| | BANNER-59 | NM101618515 |
| | BANNER-60 | NM101618516 |
| | BANNER-62 | NM101619307 |
| | BANNER-63 | NM101619308 |
| | BANNER-64 | NM101619309 |
| | BANNER-75 | NM101619310 |
| | BANNER-76 | NM101619311 |
| | BANNER-77 | NM101619312 |
| | BANNER-78 | NM101619313 |
| | BANNER-79 | NM101619314 |
| | BANNER-80 | NM101619315 |
| | BANNER-81 | NM101619316 |
| | BANNER-82 | NM101619317 |
| | BANNER-83 | NM101619318 |
| | BANNER-84 | NM101619319 |
| | BANNER-85 | NM101619320 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | BANNER-86 | NM101619321 |
| | BANNER-87 | NM101619322 |
| | BANNER-88 | NM101619323 |
| | BANNER-89 | NM101619324 |
| | BANNER-90 | NM101619325 |
| | BANNER-91 | NM101619326 |
| | BANNER-92 | NM101620110 |
| | BANNER-93 | NM101620111 |
| | BANNER-94 | NM101620112 |
| | BANNER-95 | NM101620113 |
| | BANNER-96 | NM101620114 |
| | BANNER-97 | NM101620115 |
| | BANNER-98 | NM101620116 |
| | BANNER-99 | NM101620117 |
| | BANNER-100 | NM101620118 |
| | BANNER-101 | NM101620119 |
| | BANNER-102 | NM101620120 |
| | BANNER-103 | NM101620121 |
| | BANNER-104 | NM101620122 |
| | BANNER-105 | NM101620123 |
| | BANNER-106 | NM101620124 |
| | BANNER-107 | NM101620125 |
| | BANNER-108 | NM101620126 |
| | BANNER-109 | NM101620127 |
| | BANNER-110 | NM101620128 |
| | BANNER-25 | NM105217465 |
| | BANNER-26 | NM105217466 |
| | BANNER-27 | NM105217467 |
| | BANNER-28 | NM105217468 |
| | BANNER-29 | NM105217469 |
| | BANNER-30 | NM105217470 |

| Claim Count | Claim Name | BLM Serial Number |
|---|---|---|
| | BANNER-31 | NM105217471 |
| | BANNER-32 | NM105217472 |
| | BANNER-33 | NM105217473 |
| | BANNER-34 | NM105217474 |
| | BANNER-35 | NM105217475 |
| | BANNER-36 | NM105217476 |
| | BANNER-37 | NM105217477 |
| | BANNER-38 | NM105217478 |
| | BANNER-39 | NM105217479 |
| | BANNER-40 | NM105217480 |
| | BANNER-41 | NM105217481 |
| | BANNER-42 | NM105217482 |
| | BANNER-65 | NM105217483 |
| | BANNER-66 | NM105217484 |
| | BANNER-67 | NM105217677 |
| | BANNER-68 | NM105217678 |
| | BANNER-69 | NM105217679 |
| | BANNER-70 | NM105217680 |
| | BANNER-71 | NM105217681 |
| | BANNER-72 | NM105217682 |
| | BANNER-73 | NM105217683 |
| | BANNER-74 | NM105217684 |

**PPM Leased Real Property**

**1) Henry Clay Lease**

The following 14 patented mining claims located within Section 7 of T23S, R18W, and Sections 11 and 12 of T23S, R19W, NMPM, Hidalgo County, New Mexico:

| Claim Name | Patent Number | Lot or Mineral Survey Number |
|---|---|---|
| Atwood | 10537 | 68 |
| Henry Clay | 10536 | 70 |
| Yellow Jacket | 10535 | 66 |
| Florence | 339583 | 1484 |
| Bessie | 331237 | 1483 |
| Southern | 959920 | 1768 |
| Road | 959920 | 1768 |
| Plumbo | 959920 | 1768 |
| New Year No. 1 | 959920 | 1768 |
| New Year No. 2 | 959920 | 1768 |
| Valedon No. 1 | 959920 | 1768 |
| Valedon No. 2 | 959920 | 1768 |
| General Jerry Boyle | 24132 | 935 |
| Triangle | 592382 | 1679 |

and the following unpatented mining claims located in Section 7, T23S, R18W, and Section 12, T23S, R19W, NMPM, Hidalgo County, New Mexico:

| Claim Count | Claim Name | BLM Legacy Serial Number |
|---|---|---|
| 1 | WILSON AMENDED | NMMC163674 |
| 2 | WEDGE AMENDED | NMMC163675 |
| 3 | LIEUTENANT AMENDED | NMMC163676 |
| 4 | SADDLE HORSE AMENDED | NMMC163677 |
| 5 | EXTENSION AMENDED | NMMC163678 |
| 6 | BARBARA AMENDED | NMMC163679 |

all of which are subject to that certain Mining Lease dated March 19, 2015 by and between Henry Clay Mines, Incorporated, as lessor, and Lordsburg Mining Company, as lessee (the "Henry Clay Lease").

**2) Reid Lease**

The following three patented mining claims located within Sections 11 and 12 of T23S, R19W, NMPM, Hidalgo County, New Mexico, which are subject to that certain Surface and Mineral Lease Agreement dated November 1, 2014 by and between Kathryn Sullivan Trust, Trustee Roberta Heesen Reid, as lessor, and The Lordsburg Mining Company, as lessee (the "Reid Lease"):

| Claim Name | Patent Number | Mineral Survey Number |
|---|---|---|
| Lookout | 494193 | 1592 |
| Battle Ship | 494193 | 1592 |
| Gila Monster | 494193 | 1592 |

**3) Soloro Agreement**

The following unpatented mining claims located within Sections 3, 10, 11, 14, 15 and 22 of T23S, R19W, NMPM, Hidalgo County, New Mexico, which are subject to that certain Option Agreement dated October 7, 2020 by and between Soloro Cobalt and Gold Corporation, as optionor, and PPM as optionee (the "Soloro Agreement"):

| Claim Count | Claim Name | BLM Legacy Serial Number |
|---|---|---|
| 1 | Hat 1 | NMMC194586 |
| 2 | Hat 2 | NMMC194587 |
| 3 | Hat 3 | NMMC194588 |
| 4 | Hat 4 | NMMC194589 |
| 5 | Hat 5 | NMMC194590 |
| 6 | Hat 6 | NMMC194591 |
| 7 | Hat 7 | NMMC194592 |
| 8 | Hat 8 | NMMC194593 |
| 9 | Hat 9 | NMMC194594 |
| 10 | Hat 10 | NMMC194595 |
| 11 | Hat 11 | NMMC194596 |
| 12 | Hat 12 | NMMC194597 |
| 13 | Hat 13 | NMMC194598 |
| 14 | Hat 14 | NMMC194599 |
| 15 | Hat 15 | NMMC194600 |
| 16 | Hat 16 | NMMC194601 |
| 17 | Hat 17 | NMMC194602 |
| 18 | Hat 18 | NMMC194603 |
| 19 | Hat 19 | NMMC194604 |
| 20 | Hat 20 | NMMC194605 |
| 21 | Hat 21 | NMMC194606 |
| 22 | Hat 22 | NMMC194607 |
| 23 | Hat 23 | NMMC194608 |

| Claim Count | Claim Name | BLM Legacy Serial Number |
|---|---|---|
| 24 | Hat 24 | NMMC194609 |
| 25 | Hat 25 | NMMC194610 |
| 26 | Hat 26 | NMMC194611 |
| 27 | Hat 27 | NMMC194612 |
| 28 | Hat 28 | NMMC194613 |
| 29 | Hat 29 | NMMC194614 |
| 30 | Hat 30 | NMMC194615 |
| 31 | Hat 31 | NMMC194616 |
| 32 | Hat 32 | NMMC194617 |
| 33 | Hat 33 | NMMC194618 |
| 34 | Hat 34 | NMMC194619 |
| 35 | Hat 35 | NMMC194620 |
| 36 | Hat 36 | NMMC194621 |
| 37 | Hat 37 | NMMC194622 |
| 38 | Hat 38 | NMMC194623 |
| 39 | Hat 39 | NMMC194624 |
| 40 | Hat 40 | NMMC194625 |
| 41 | Hat 41 | NMMC194626 |
| 42 | Hat 42 | NMMC194627 |
| 43 | Hat 43 | NMMC194628 |
| 44 | Hat 44 | NMMC194629 |
| 45 | Hat 45 | NMMC194630 |
| 46 | Hat 46 | NMMC194631 |
| 47 | Hat 47 | NMMC194632 |
| 48 | Hat 48 | NMMC194633 |
| 49 | Hat 49 | NMMC194634 |
| 50 | Hat 50 | NMMC194635 |
| 51 | Hat 51 | NMMC194636 |
| 52 | Hat 52 | NMMC194637 |
| 53 | Hat 53 | NMMC194638 |
| 54 | Hat 54 | NMMC194639 |
| 55 | Hat 55 | NMMC194640 |

| Claim Count | Claim Name | BLM Legacy Serial Number |
|---|---|---|
| 56 | Hat 56 | NMMC194641 |
| 57 | Hat 57 | NMMC194642 |

**Mason Unpatented Claims**

Mason Resources (US) Inc. Claims (Lordsburg, Hidalgo County, New Mexico Lode Claims) (261 Claims):

| No. | Name of Claim | Hidalgo County Reception No. | Hidalgo County Amended Reception No. | BLM Serial No. |
|---|---|---|---|---|
| 1 | BB 2 | 20080000470 | | NMMC184789 |
| 2 | BB 3 | 20080000471 | | NMMC184790 |
| 3 | BB 4 | 20080000674 | | NMMC184791 |
| 4 | BB 5 | 20080000472 | | NMMC184792 |
| 5 | BB 6 | 20080000473 | | NMMC184793 |
| 6 | BB 7 | 20080000474 | | NMMC184794 |
| 7 | BB 8 | 20080000475 | | NMMC184795 |
| 8 | BB 9 | 20080000476 | | NMMC184796 |
| 9 | BB 10 | 20080000477 | | NMMC184797 |
| 10 | BB 11 | 20080000478 | | NMMC184798 |
| 11 | BB 12 | 20080000479 | | NMMC184799 |
| 12 | BB 13 | 20080000480 | | NMMC184800 |
| 13 | BB 14 | 20080000481 | | NMMC184801 |
| 14 | BB 15 | 20080000482 | | NMMC184802 |
| 15 | BB 16 | 20080000483 | | NMMC184803 |
| 16 | BB 17 | 20080000484 | | NMMC184804 |
| 17 | BB 18 | 20080000485 | | NMMC184805 |
| 18 | BB 19 | 20080000486 | | NMMC184806 |
| 19 | BB 20 | 20080000487 | | NMMC184807 |
| 20 | BB 21 | 20080000488 | | NMMC184808 |
| 21 | BB 22 | 20080000489 | | NMMC184809 |
| 22 | BB 23 | 20080000490 | | NMMC184810 |
| 23 | BB 24 | 20080000491 | | NMMC184811 |
| 24 | BB 25 | 20080000492 | | NMMC184812 |
| 25 | BB 26 | 20080000493 | | NMMC184813 |
| 26 | BB 27 | 20080000494 | | NMMC184814 |
| 27 | BB 28 | 20080000495 | | NMMC184815 |
| 28 | BB 29 | 20080000496 | | NMMC184816 |
| 29 | BB 30 | 20080000497 | | NMMC184817 |
| 30 | BB 31 | 20080000498 | 20080001280 | NMMC184818 |
| 31 | BB 32 | 20080000499 | | NMMC184819 |
| 32 | BB 33 | 20080000500 | | NMMC184820 |
| 33 | BB 34 | 20080000501 | | NMMC184821 |
| 34 | BB 36 | 20080000502 | | NMMC184822 |
| 35 | BB 37 | 20080000503 | | NMMC184823 |
| 36 | BB 38 | 20080000504 | | NMMC184824 |
| 37 | BB 39 | 20080000505 | | NMMC184825 |
| 38 | BB 40 | 20080000506 | | NMMC184826 |
| 39 | BB 41 | 20080000507 | | NMMC184827 |
| 40 | BB 42 | 20080000508 | | NMMC184828 |
| 41 | BB 43 | 20080000509 | | NMMC184829 |

| No. | Name of Claim | Hidalgo County Reception No. | Hidalgo County Amended Reception No. | BLM Serial No. |
|---|---|---|---|---|
| 42 | BB 44 | 20080000510 | | NMMC184830 |
| 43 | BB 45 | 20080000511 | | NMMC184831 |
| 44 | BB 46 | 20080000512 | | NMMC184832 |
| 45 | BB 47A | 20110000386 | | NMMC190988 |
| 46 | BB 48A | 20110000387 | | NMMC190989 |
| 47 | BB 49 | 20080000515 | | NMMC184835 |
| 48 | BB 50 | 20080000516 | | NMMC184836 |
| 49 | BB 51 | 20080000517 | | NMMC184837 |
| 50 | BB 52 | 20080000518 | | NMMC184838 |
| 51 | BB 53 | 20080000519 | | NMMC184839 |
| 52 | BB 54 | 20080000520 | | NMMC184840 |
| 53 | BB 55 | 20080000521 | | NMMC184841 |
| 54 | BB 56 | 20080000522 | | NMMC184842 |
| 55 | BB 57 | 20080000523 | | NMMC184843 |
| 56 | BB 58 | 20080000524 | | NMMC184844 |
| 57 | BB 58B | 20080000525 | | NMMC184845 |
| 58 | BB 59A | 20080000526 | | NMMC184846 |
| 59 | BB 59B | 20080000527 | | NMMC184847 |
| 60 | BB 60 | 20080000528 | | NMMC184848 |
| 61 | BB 61 | 20080000529 | | NMMC184849 |
| 62 | BB 62 | 20080000530 | 20080001282 | NMMC184850 |
| 63 | BB 63 | 20080000531 | | NMMC184851 |
| 64 | BB 64 | 20080000532 | | NMMC184852 |
| 65 | BB 65 | 20080000533 | | NMMC184853 |
| 66 | BB 66 | 20080000534 | | NMMC184854 |
| 67 | BB 67 | 20080000535 | | NMMC184855 |
| 68 | BB 68 | 20080000536 | | NMMC184856 |
| 69 | BB 69 | 20080000537 | | NMMC184857 |
| 70 | BB 70 | 20080000538 | | NMMC184858 |
| 71 | BB 71 | 20080000539 | | NMMC184859 |
| 72 | BB 72 | 20080000540 | | NMMC184860 |
| 73 | BB 73 | 20080000541 | | NMMC184861 |
| 74 | BB 74 | 20080000542 | | NMMC184862 |
| 75 | BB 75 | 20080000543 | | NMMC184863 |
| 76 | BB 76 | 20080000544 | | NMMC184864 |
| 77 | BB 77 | 20080000545 | | NMMC184865 |
| 78 | BB 78 | 20080000546 | | NMMC184866 |
| 79 | BB 79 | 20080000547 | | NMMC184867 |
| 80 | BB 80 | 20080000548 | | NMMC184868 |
| 81 | BB 81 | 20080000549 | | NMMC184869 |
| 82 | BB 82 | 20080000550 | | NMMC184870 |
| 83 | BB 83 | 20080000551 | | NMMC184871 |
| 84 | BB 84 | 20080000552 | | NMMC184872 |
| 85 | BB 85 | 20080000553 | | NMMC184873 |
| 86 | BB 86 | 20080000554 | | NMMC184874 |
| 87 | BB 87 | 20080000555 | | NMMC184875 |

| No. | Name of Claim | Hidalgo County Reception No. | Hidalgo County Amended Reception No. | BLM Serial No. |
|---|---|---|---|---|
| 88 | BB 88 | 20080000556 | | NMMC184876 |
| 89 | BB 89 | 20080000557 | | NMMC184877 |
| 90 | BB 90 | 20080000558 | | NMMC184878 |
| 91 | BB 91 | 20080000559 | | NMMC184879 |
| 92 | BB 92 | 20080000560 | | NMMC184880 |
| 93 | BB 93 | 20080000561 | | NMMC184881 |
| 94 | BB 94 | 20080000562 | | NMMC184882 |
| 95 | BB 95 | 20080000563 | | NMMC184883 |
| 96 | BB 96 | 20080000564 | | NMMC184884 |
| 97 | BB 97 | 20080000565 | | NMMC184885 |
| 98 | BB 98 | 20080000566 | | NMMC184886 |
| 99 | BB 98A | 20080000567 | | NMMC184887 |
| 100 | BB 99A | 20080000568 | | NMMC184888 |
| 101 | BB 99B | 20080000569 | | NMMC184889 |
| 102 | BB 100 | 20080000570 | | NMMC184890 |
| 103 | BB 101 | 20080000571 | 20080001283 | NMMC184891 |
| 104 | BB 102 | 20080000572 | | NMMC184892 |
| 105 | BB 103 | 20080000573 | | NMMC184893 |
| 106 | BB 104 | 20080000574 | | NMMC184894 |
| 107 | BB 105 | 20080000575 | | NMMC184895 |
| 108 | BB 106 | 20080000576 | | NMMC184896 |
| 109 | BB 107 | 20080000577 | | NMMC184897 |
| 110 | BB 108 | 20080000578 | | NMMC184898 |
| 111 | BB 109 | 20080000579 | | NMMC184899 |
| 112 | BB 110 | 20080000580 | | NMMC184900 |
| 113 | BB 111 | 20080000581 | | NMMC184901 |
| 114 | BB 112 | 20080000582 | | NMMC184902 |
| 115 | BB 113 | 20080000583 | | NMMC184903 |
| 116 | BB 114 | 20080000584 | | NMMC184904 |
| 117 | BB 117 | 20080000585 | | NMMC184905 |
| 118 | BB 118 | 20080000586 | | NMMC184906 |
| 119 | BB 119 | 20080000587 | | NMMC184907 |
| 120 | BB 120 | 20080000588 | | NMMC184908 |
| 121 | BB 121 | 20080000589 | | NMMC184909 |
| 122 | BB 122 | 20080000590 | | NMMC184910 |
| 123 | BB 123 | 20080000591 | | NMMC184911 |
| 124 | BB 124 | 20080000592 | | NMMC184912 |
| 125 | BB 125 | 20080000593 | | NMMC184913 |
| 126 | BB 126 | 20080000594 | | NMMC184914 |
| 127 | BB 127 | 20080000595 | | NMMC184915 |
| 128 | BB 128 | 20080000596 | | NMMC184916 |
| 129 | BB 129 | 20080000597 | | NMMC184917 |
| 130 | BB 130 | 20080000598 | | NMMC184918 |
| 131 | BB 131 | 20080000599 | | NMMC184919 |
| 132 | BB 132 | 20080000600 | | NMMC184920 |
| 133 | BB 133 | 20080000601 | | NMMC184921 |

| No. | Name of Claim | Hidalgo County Reception No. | Hidalgo County Amended Reception No. | BLM Serial No. |
|---|---|---|---|---|
| 134 | BB 134 | 20080000602 | 20080001284 | NMMC184922 |
| 135 | BB 135 | 20080000603 | | NMMC184923 |
| 136 | BB 136 | 20080000604 | | NMMC184924 |
| 137 | BB 137 | 20080000605 | | NMMC184925 |
| 138 | BB 138 | 20080000606 | | NMMC184926 |
| 139 | BB 139 | 20080000607 | | NMMC184927 |
| 140 | BB 140 | 20080000608 | | NMMC184928 |
| 141 | BB 141 | 20080000609 | | NMMC184929 |
| 142 | BB 142 | 20080000610 | | NMMC184930 |
| 143 | BB 143 | 20080000611 | 20080001285 | NMMC184931 |
| 144 | BB 144 | 20080000612 | | NMMC184932 |
| 145 | BB 145 | 20080000613 | | NMMC184933 |
| 146 | BB 145B | 20080000614 | | NMMC184934 |
| 147 | BB 146 | 20080000615 | | NMMC184935 |
| 148 | BB 146B | 20080000616 | | NMMC184936 |
| 149 | BB 147 | 20080000617 | | NMMC184937 |
| 150 | BB 148 | 20080000618 | | NMMC184938 |
| 151 | BB 149 | 20080000619 | | NMMC184939 |
| 152 | BB 150 | 20080000620 | | NMMC184940 |
| 153 | BB 151 | 20080000621 | | NMMC184941 |
| 154 | BB 152 | 20080000622 | | NMMC184942 |
| 155 | BB 153 | 20080000623 | | NMMC184943 |
| 156 | BB 154 | 20080000624 | | NMMC184944 |
| 157 | BB 155 | 20080000625 | | NMMC184945 |
| 158 | BB 157 | 20080000627 | | NMMC184947 |
| 159 | BB 159 | 20080000629 | | NMMC184949 |
| 160 | BB 161 | 20080000631 | | NMMC184951 |
| 161 | BB 163 | 20080000633 | | NMMC184953 |
| 162 | BB 165 | 20080000635 | | NMMC184955 |
| 163 | BB 166 | 20080000636 | | NMMC184956 |
| 164 | BB 167 | 20080000637 | | NMMC184957 |
| 165 | BB 168 | 20080000638 | | NMMC184958 |
| 166 | BB 171 | 20080000640 | | NMMC184960 |
| 167 | BB 172 | 20080000641 | | NMMC184961 |
| 168 | BB 173 | 20080000642 | | NMMC184962 |
| 169 | BB 174 | 20080000643 | | NMMC184963 |
| 170 | BB 175 | 20080000644 | | NMMC184964 |
| 171 | BB 176 | 20080000645 | | NMMC184965 |
| 172 | BB 177 | 20080000646 | | NMMC184966 |
| 173 | BB 178 | 20080000647 | | NMMC184967 |
| 174 | BB 179 | 20080000648 | | NMMC184968 |
| 175 | BB 180 | 20080000649 | | NMMC184969 |
| 176 | BB 181 | 20080000650 | | NMMC184970 |
| 177 | BB 182 | 20080000651 | | NMMC184971 |
| 178 | BB 183 | 20080000652 | | NMMC184972 |
| 179 | BB 184 | 20080000653 | | NMMC184973 |

| No. | Name of Claim | Hidalgo County Reception No. | Hidalgo County Amended Reception No. | BLM Serial No. |
|---|---|---|---|---|
| 180 | BB 185 | 20080000654 | | NMMC184974 |
| 181 | BB 186 | 20080000655 | | NMMC184975 |
| 182 | BB 187 | 20080000656 | | NMMC184976 |
| 183 | BB 188 | 20080000657 | | NMMC184977 |
| 184 | BB 189 | 20080000658 | | NMMC184978 |
| 185 | BB 191 | 20080000660 | | NMMC184980 |
| 186 | BB 211 | 20080000667 | | NMMC184987 |
| 187 | BB 212 | 20080000668 | | NMMC184988 |
| 188 | BB 213 | 20080000669 | | NMMC184989 |
| 189 | BB 214 | 20080000670 | | NMMC184990 |
| 190 | BB 215 | 20080000671 | | NMMC184991 |
| 191 | BB 216 | 20080000672 | | NMMC184992 |
| 192 | BB 217 | 20080000673 | | NMMC184993 |
| 193 | BB 156 | 20080000935 | | NMMC185722 |
| 194 | BB 158 | 20080000936 | | NMMC185723 |
| 195 | BB 160 | 20080000937 | | NMMC185724 |
| 196 | BB 162 | 20080000938 | | NMMC185725 |
| 197 | BB 164 | 20080000939 | | NMMC185726 |
| 198 | BB 169 | 20080000940 | | NMMC185727 |
| 199 | BB 190 | 20080000941 | | NMMC185728 |
| 200 | BB 192 | 20080000942 | | NMMC185729 |
| 201 | BB 193 | 20080000943 | | NMMC185730 |
| 202 | BB 194 | 20080000944 | | NMMC185731 |
| 203 | BB 195 | 20080000945 | | NMMC185732 |
| 204 | BB 196 | 20080000946 | | NMMC185733 |
| 205 | BB 197 | 20080000947 | | NMMC185734 |
| 206 | BB 198 | 20080000948 | | NMMC185735 |
| 207 | BB 199 | 20080000949 | | NMMC185736 |
| 208 | BB 200 | 20080000950 | | NMMC185737 |
| 209 | BB 201 | 20080000951 | | NMMC185738 |
| 210 | BB 202 | 20080000952 | | NMMC185739 |
| 211 | BB 203 | 20080000953 | | NMMC185740 |
| 212 | BB 204 | 20080000954 | | NMMC185741 |
| 213 | BB 205 | 20080000955 | | NMMC185742 |
| 214 | BB 206 | 20080000956 | | NMMC185743 |
| 215 | BB 207 | 20080000957 | | NMMC185744 |
| 216 | BB 208 | 20080000958 | | NMMC185745 |
| 217 | BB 209 | 20080000959 | | NMMC185746 |
| 218 | BB 210 | 20080000960 | | NMMC185747 |
| 219 | BB 218 | 20080000961 | | NMMC185748 |
| 220 | BB 219 | 20080000962 | | NMMC185749 |
| 221 | BB 220 | 20080000963 | | NMMC185750 |
| 222 | BB 221 | 20080000964 | | NMMC185751 |
| 223 | BB 222 | 20080000965 | | NMMC185752 |
| 224 | BB 223 | 20080000966 | | NMMC185753 |
| 225 | BB 224 | 20080000967 | | NMMC185754 |

| No. | Name of Claim | Hidalgo County Reception No. | Hidalgo County Amended Reception No. | BLM Serial No. |
|---|---|---|---|---|
| 226 | BB 225 | 20080000968 | | NMMC185755 |
| 227 | BB 226 | 20080000969 | | NMMC185756 |
| 228 | BB 227 | 20080000970 | | NMMC185757 |
| 229 | BB 228 | 20080000971 | | NMMC185758 |
| 230 | BB 229 | 20080000972 | | NMMC185759 |
| 231 | BB 230 | 20080000973 | | NMMC185760 |
| 232 | BB 231 | 20080000974 | | NMMC185761 |
| 233 | BB 232 | 20080000975 | | NMMC185762 |
| 234 | BB 233 | 20080000976 | | NMMC185763 |
| 235 | BB 234 | 20080000977 | | NMMC185764 |
| 236 | BB 235 | 20080000978 | | NMMC185765 |
| 237 | CC 01 | 20090000407 | | NMMC188087 |
| 238 | CC 02 | 20090000408 | | NMMC188088 |
| 239 | CC 03 | 20090000409 | | NMMC188089 |
| 240 | CC 04 | 20090000410 | | NMMC188090 |
| 241 | CC 05 | 20090000411 | | NMMC188091 |
| 242 | CC 06 | 20090000412 | | NMMC188092 |
| 243 | CC 07 | 20090000413 | | NMMC188093 |
| 244 | CC 08 | 20090000414 | | NMMC188094 |
| 245 | CC 09 | 20090000415 | | NMMC188095 |
| 246 | CC 10 | 20090000416 | | NMMC188096 |
| 247 | CC 11 | 20090000417 | | NMMC188097 |
| 248 | CC 12 | 20090000418 | | NMMC188098 |
| 249 | CC 13 | 20090000419 | | NMMC188099 |
| 250 | CC 14 | 20090000420 | | NMMC188100 |
| 251 | CC 15 | 20090000421 | | NMMC188101 |
| 252 | CC 16 | 20090000422 | | NMMC188102 |
| 253 | CC 17 | 20090000423 | | NMMC188103 |
| 254 | CC 18 | 20090000424 | | NMMC188104 |
| 255 | CC 19 | 20100000917 | | NMMC189673 |
| 256 | CC 20 | 20090000426 | | NMMC188106 |
| 257 | CC 21 | 20090000427 | | NMMC188107 |
| 258 | CC 22 | 20090000428 | | NMMC188108 |
| 259 | CC 23 | 20090000429 | | NMMC188109 |
| 260 | CC 24 | 20090000430 | | NMMC188110 |
| 261 | CC 25 | 20090000431 | | NMMC188111 |