

# **NI 43-101 Technical Report Mineral Resource Update Yerington Copper Project Lyon County, Nevada**

*Prepared for:*



**Singatse Peak Services, LLC**

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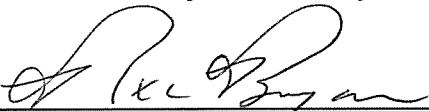
To accompany the Report Entitled: "NI 43-101 Technical Report, Mineral Resource Update" (Technical Report), effective November 20, 2013, issued January 6, 2014.

I, Rex Clair Bryan, PhD, do hereby certify that:

- 1) I am a Senior Geostatistician with Tetra Tech, Inc. with a business address at 350 Indiana Street, Suite 500, Golden, Colorado 80401, USA.
- 2) I graduated with a degree in Engineering (BS with honors) in 1971 and a MBA degree in 1973 from the Michigan State University, East Lansing. In addition, I graduated from Brown University, Providence, Rhode Island with a MS degree in Geology in 1977, and The Colorado School of Mines, Golden, Colorado, with a graduate degree in Mineral Economics (Ph.D.) in 1980. I have worked as a resource estimator and geostatistician for a total of thirty-one years since my graduation from university; as an employee of a leading geostatistical consulting company (Geostat Systems, Inc. USA), with large engineering companies such as Dames and Moore, URS, and Tetra Tech and as a consultant for more than 30 years. I am a Registered Member (#411340) of the Society for Mining, Metallurgy, and Exploration, Inc.
- 3) I have read the definition of "qualified person" set out in National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- 4) I have visited and inspected the subject property from September 9 to September 10, 2011.
- 5) I am responsible for Sections 1 through 27 of the Technical Report.
- 6) I satisfy the requirements of independence according to Section 1.5 of NI 43-101.

- 7) I have had prior involvement with Singatse Peak Services LLC on the property that is the subject of this Technical Report. My involvement has consisted of acting as an expert who was relied upon for previous Technical, Preliminary Economic Assessment, and Prefeasibility Reports.
- 8) I have read National Instrument 43-101, Form 43-101F1, and 43-101CP, and the Technical Report has been prepared in compliance with that instrument, form, and companion policy.
- 9) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions 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.
- 10) I consent to the filing of the Technical Report with any securities regulatory authority, stock exchange and other regulatory authority and any publications by them, including electronic publication in the public company files on their websites accessible by the public.

**Dated this 6<sup>th</sup> day of January 2014.**

  
\_\_\_\_\_  
Signature of Qualified Person

Rex Clair Bryan, PhD  
\_\_\_\_\_  
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## 1.0 EXECUTIVE SUMMARY

Singatse Peak Services, LLC (SPS), a wholly owned subsidiary of Quaterra Resources, Inc. (Quaterra), commissioned Tetra Tech, Inc. (Tetra Tech) to prepare an updated Canadian National Instrument 43-101 (NI 43-101) compliant resource estimate for the Yerington Mine portion of their Yerington Copper Project in Lyon County, Nevada.

The results of this resource estimate for the Yerington Mine were announced on November 20, 2013 and are an update to the resources previously reported in "NI43-101 Technical Report, Mineral Resource, Yerington Copper Project, Lyon County, Nevada," published Feb 17, 2012. The current estimate has been completed to include newly digitized historic data from 232 drill holes not included in the 2012 estimate. The 232 additional holes were well distributed throughout the deposit and provided useful infill and extensional information to the previously used data, allowing upgrades in classification, improved grade estimation and a new resource definition. The current resource estimate now includes data from 833 drill holes.

At a copper cutoff grade of 0.12%, measured and indicated oxide resources increased 28% in tons, 37% in pounds of contained copper and 9% in grade. At a copper cutoff grade of 0.15%, sulfide measured and indicated resources increased 12% in tons, 25% in pounds of contained copper and 12% in grade. Inferred oxide and sulfide resources combined reflect similar increases (4% in tons, 10% in grade and 14% in pounds of contained copper) as shown in the Table 1-1 below:

**Table 1-1 Executive Summary - Yerington Copper Project Resources  
Using Selective Cutoff for Oxide and Sulfide**

	Cutoff	2013 Estimate			% Change from 2012 Estimate		
MEASURED	%Cu	Tonsx1000	Grade	Lbsx1000	Tonsx1000	Grade	Lbsx1000
Oxide and Chalcocite	0.12	6,500	0.25	33,000	8%	10%	17%
Sulfide (Primary Material)	0.15	31,000	0.33	205,000	-3%	10%	8%
<b>Combined</b>	<b>0.12,0.15</b>	<b>37,500</b>	<b>0.32</b>	<b>238,000</b>	<b>-1%</b>	<b>10%</b>	<b>9%</b>
INDICATED							
Oxide and Chalcocite	0.12	17,000	0.25	85,000	37%	9%	47%
Sulfide (Primary Material)	0.15	74,000	0.30	428,000	19%	15%	35%
<b>Combined</b>	<b>0.12,0.15</b>	<b>90,000</b>	<b>0.29</b>	<b>513,000</b>	<b>22%</b>	<b>12%</b>	<b>37%</b>
MEASURED + INDICATED							
Oxide and Chalcocite	0.12	23,500	0.25	118,000	28%	9%	37%
Sulfide (Primary Material)	0.15	105,000	0.30	633,000	12%	12%	25%
<b>Combined</b>	<b>0.12,0.15</b>	<b>128,500</b>	<b>0.29</b>	<b>751,000</b>	<b>14%</b>	<b>11%</b>	<b>26%</b>

	Cutoff	2013 Estimate			% Change from 2012 Estimate		
INFERRED	%Cu	Tonsx1000	Grade	Lbsx1000	Tonsx1000	Grade	Lbsx1000
Oxide and Chalcocite	0.12	26,000	0.23	118,000	5%	14%	21%
Sulfide (Primary Material)	0.15	128,000	0.23	600,000	4%	11%	13%
<b>Combined</b>	<b>0.12,0.15</b>	<b>154,000</b>	<b>0.23</b>	<b>718,000</b>	<b>4%</b>	<b>10%</b>	<b>14%</b>

<sup>1</sup>Independent qualified person, Dr. Rex Bryan, prepared and supervised the preparation of these mineral resources.

<sup>2</sup>All estimated resources are shown using a 0.12% and 0.15% copper cutoff for oxide and sulfide respectively

<sup>3</sup>Minor rounding errors may occur

<sup>4</sup> NI 43-101 Technical Report, Feb. 17, 2012

As a point of reference, the terms in this report for “mineral resource”, “inferred mineral resource”, “indicated mineral resource”, “measured mineral resource” and “mineral reserve”, “probable mineral reserve” and “proven mineral reserve” have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Definition Standards on Mineral Resources and Mineral Reserves adopted by CIM Council, as amended.

The Qualified Person for this report is Dr. Rex Bryan, Senior Geostatistician for Tetra Tech, Golden, Colorado.

Neither Tetra Tech nor any of its employees and associates employed in the preparation of this report has any beneficial interest in SPS or in the assets of any affiliated company. Tetra Tech will be paid a fee for this work in accordance with normal professional consulting practices.

## 1.1 Location, Property Description and Ownership

The Yerington Copper Project is located near the geographic center of Lyon County, Nevada, US, along the eastern flank of the Singatse Range. The property centers on the historical Yerington open pit mine (Yerington Mine), flanked on the west by Weed Heights, Nevada (a small private community, the original company town of The Anaconda Company), and on the east by the town of Yerington, Nevada. The property is easily accessible from Yerington by a network of paved roads that were used as principal transportation and access routes during the former operating period of the Yerington Mine.

The SPS property currently consists of 2,768 acres (4.3 square miles) of fee mineral properties and patented mining claims as well as 125 unpatented lode claims totaling approximately 2,583 acres (8.4 square miles) on lands administered by the US Department of Interior, Bureau of Land Management (BLM). Additionally, 76 placer claims have been located atop lode claims underlying Anaconda residuals to ensure extraction rights to the contained copper. The private land, patented claims, and 32 unpatented mining claims were acquired on April 27, 2011 when SPS closed a transaction under which all property and water rights of Arimetco, Inc. (Arimetco), a Nevada corporation, were acquired. The additional 93 unpatented claims were been staked by SPS.

The current property status reflects the transfer of 332 lode claims from SPS to Quaterra Resources. This transfer was completed in 2012 to facilitate permitting for exploration drilling near to, but separate from the drilling conducted on properties now held by SPS.

## 1.2 History

The current Yerington Copper Project includes the Yerington Mine which was operated by the Anaconda Company from 1952 until 1979, producing approximately 1.744 billion pounds of copper from a body of mineralized material that contained 162 million tons averaging 0.54% Cu. Approximately 104 million tons of this total were oxidized copper material that was “vat-leached” with sulfuric acid in 13,000-ton cement vats on a 96-hour leach, seven to eight day cycle. The sulfide concentrator on site was dismantled and sold after the 1979 termination of mining. In 1976, all assets of The Anaconda Company, including the Yerington Mine, were purchased by the Atlantic Richfield Company (ARCO), which closed the Yerington Mine in 1979 due to low copper prices, selling the property to Mr. Don Tibbals.

In 1989, Arimetco acquired the property and produced some 95 million pounds of copper from the Yerington property and the nearby MacArthur Mine from 1989 to 1999 before declaring bankruptcy and abandoning the property.

The figures quoted above and throughout this report are reported as historic figures and should not be construed to reflect a calculated resource (inferred, indicated or measured) under current standards of NI 43-101 or definition of a NI 43-101 compliant resource.

In early 2000 the Nevada Division of Environmental Protection (NDEP) assumed operation of the site on a care and maintenance basis, primarily to ensure that heap leach drawdown solutions would continue to be maintained. The property remained in bankruptcy until purchased by SPS in April of 2011. Because soil and groundwater contamination from the former mining operation have been identified on the property, the property is under the jurisdiction of the US Environmental Protection Agency (USEPA). The environmental liabilities from former mining operations are the responsibility of ARC and the USEPA.

Prior to the acquisition by SPS of the Arimetco properties, SPS performed a series of rigorous environmental, legal, and technical due diligence studies. In 2008, Chambers Group, Inc. and Golder Associates Inc. conducted a Phase I Environmental Site Assessment (Phase I ESA) for the Yerington Mine site. A Phase I ESA is intended to serve as an appropriate, commercially prudent, and reasonable inquiry regarding the potential for recognized environmental conditions in connection with the subject property. The 2008 Phase 1 ESA was updated by SRK Consulting (U.S.) Inc. (SRK) in 2010 and again in 2011. These were completed to allow SPS to establish liability protection as a bona fide prospective purchaser (BFPP). Prior to closing on the property, SPS received letters from the Nevada Department of Environmental Protection (NDEP), US Bureau of Land Management (BLM) and the USEPA indicating the post-closing requirements then applicable to the site for SPS to maintain its defence to liability as a BFPP as regards the activities of the former mine owners and operators.

To further protect SPS from liability associated existing environmental issues at the site, in September 2012, SPS entered into a voluntary agreement with the USEPA to participate in upgrading the system which manages fluids from the historic Arimetco operations at the Yerington Mine site. In exchange for SPS's participation in this work, SPS obtained a site-wide 'Covenant Not to Sue' for the contamination left at the site by former owners and operators of the historic mine operations. The work required of SPS under the Agreement has been completed.

### 1.3 Geological Setting and Mineralization

The Yerington property includes both the Yerington Deposit (Yerington Mine) and a portion of the Bear Deposit, which represent two of three known porphyry copper deposits in the Yerington copper district. The porphyry systems are hosted in middle Jurassic intrusive rocks of the Yerington Batholith. Unless noted otherwise, the following discussions refer to the Yerington Deposit.

Mineralized porphyry dikes associated with three phases of intrusive activity related to the Yerington Batholith form an elongate body of mineralization that extends 6,600 feet along a strike of S62°E. The mineralization has an average width of 2,000 feet and has been defined by drilling to an average depth of 250 feet below the Yerington Mine pit bottom at the 3,800-foot elevation. Because of the economic constraints of low copper prices at the time, many of the 558 historic Anaconda drill holes used in the SPS study were stopped in mineralization and very few were drilled below the 3,400-foot level where the porphyry system remains nearly unexplored.

Only four historic holes have actually explored the deeper vertical projection of copper mineralization in the pit. Three of the holes were drilled along a single N-S oriented section through the center of the pit. According to M. T. Einaudi in a 1970 report to Anaconda, the deep drilling program defined a series of nested, concave upward, grade shells that are elongated down the N 70° dip of the dikes with the 0.2% Cu zone extending to approximately the 2,600-foot level; an overall dip distance of 2,200 feet. Although the program encountered an increasing ratio of pyrite to chalcopyrite, there was no indication of a "barren core", the porphyry dikes showed a "remarkable continuity" down dip and host a zone of molybdenite mineralization of indeterminate size and grade.

The orientation of the Yerington Deposit is due to mid-Tertiary down and east extensional faulting that rotated the near vertically-emplaced batholith 60° to 90° westerly. The west to east dilation-displacement positioned the porphyry copper deposit on its side, resulting in a cross section of the of the porphyry system visible in the pit with its top toward the west end. Mining has revealed an alteration geometry displaying the original pyrite-rich cap (present-day leached sericite-limonite on the west end of the Yerington pit) grading downward easterly to quartz-sericite-pyrite alteration and to potassic alteration in the central portion of the pit, and then continuing to a soda-flooded root zone at the eastern end.

Secondary oxide copper formed much of the upper Yerington Deposit. Chrysocolla was the dominant copper oxide mineral, occurring as fracture coatings and fillings to a depth of

approximately 400 feet below the surface. Below the 4,100-foot level, chalcopyrite is the dominant copper sulfide mineral with minor bornite primarily hosted in A-type quartz veins in the older porphyry dikes. The unmined mineralized material below the current pit bottom is primarily of chalcopyrite mineralization.

The Bear Deposit was discovered in 1961 by Anaconda during condemnation drilling in the sulfide tailings disposal area. The drilling program by Anaconda and later by Phelps Dodge identified chalcopyrite mineralization hosted in a porphyry system below 500 to 1,000 feet of alluvium and unmineralized bedrock. The primary copper mineralization of the Bear Deposit, located partially in the northeast corner of the Yerington property is related to micaceous veining rather than A-type quartz veining common in the Yerington Mine porphyry system.

Dilles (1995) estimated that the drilling program defined more than 500 million tons of mineralized material averaging 0.4% copper. The deposit is known to extend beyond the boundaries of SPS properties. The Bear Deposit figures quoted above are reported as historic figures and should not be construed to reflect a calculated resource (inferred, indicated or measured) under current standards of NI 43-101 or definition of a NI 43-101 compliant resource.

## **1.4 SPS Program and the Addition of 232 Anaconda Drill Holes**

During the course of the data validation in 2011, composites posted on the 1978 Anaconda cross sections were the basis for confirming assay results found in the historic records. However, assay records were not available for all holes shown on the cross sections, resulting in data gaps. In an effort to provide even better control for the resource estimate, assay composites for an additional 232 historic drill holes have now been digitized directly from the 57 Anaconda cross sections, and have been added to the database for this current resource estimate.

Previously in July 2011, SPS commenced a drilling and re-assaying program to convert and expand the historic non-compliant resources of the Yerington Mine into NI 43-101 compliant resources through:

- compilation and verification of historic archived data
- twin drilling of selected, accessible Anaconda drill holes
- the re-assay of representative samples selected from Anaconda core preserved on site
- exploration drilling (largely as reverse circulation drilling) as offsets, extensions, or in-fill along and below pit walls

The drilling program tested or twinned both extensions and zones of oxide copper, chalcocite enrichment, and primary sulfide mineralization. SPS drilled 18 twin holes and 24 exploration holes and successfully verified assay data for 558 (previously reported as 565) historic holes for inclusion in the current database through records research, data capture, and the re-assay of selected remaining core from 45 Anaconda drill holes. Results of the 2011 program allowed

SPS to establish a drill hole database suitable for converting and expanding the historic estimates into NI 43-101 compliant resources.

Numerous historic holes drilled by Anaconda bottom in strong mineralization, and SPS drilling along the western edge of the pit confirmed that mineralization. For example, twin hole SP-04 at the northwest end of the pit intercepted 524.5 feet averaging 0.35% total copper (designated as % TCu or % Cu) at a depth of 228 feet, including 88 feet of 0.69% TCu at a depth of 265 feet. In addition to the 8,797 feet drilled in the 18 twin holes, the SPS 2011 drilling campaign completed 15,016 feet of exploration drilling in 24 holes near the Yerington pit to target possible extensions to the mineralization. Hole SP-36, located along the south central margin of the pit, intercepted 95 feet averaging 0.28% TCu at a depth of 230 feet. Highlights from SPS's 2011 twin hole and exploration drilling program are shown below in Table 1-2:

**Table 1-2 2011 Singatse Peak Drilling Highlights**

Drill Hole	From ft	To ft	Thickness ft	Total Cu ft
<b>Core Twin Holes</b>				
SP-004	228	752.5	524.5	0.35
<i>including</i>	265	353	88	0.69
SP-006	204	408	204	0.53
	430.5	770	339.5	0.38
SP-010	258	369	111	0.71
	429	634	205	0.35
<b>RC Twin Holes</b>				
SP-023	10	600	590	0.21
<i>including</i>	425	490	65	0.37
<b>RC Exploration Holes</b>				
SP-035	0	190	190	0.23
<i>including</i>	75	90	15	0.73
SP-036	230	325	95	0.28
SP-039	0	45	45	0.25
	135	215	80	0.3
SP-040	0	200	200	0.24
<i>including</i>	170	200	30	0.49

**Note:** All intervals calculated using 0.1% total copper cutoff.

The samples from the Yerington drilling program were prepared and assayed by Skyline Assayers & Laboratories in Tucson, Arizona, which is accredited by the American Association for Laboratory Accreditation (A2LA - certificate no. 2953.01) and by ISO17025 compliant ALS Chemex Laboratories in Sparks, Nevada.

## 1.5 Resource Estimation

Tetra Tech, Inc. of Golden, Colorado, has completed an NI 43-101 compliant independent resource estimate for mineralization in and around the historic Yerington Mine previously owned and operated by Anaconda.

Based on benchmarking of the Yerington Deposit to similar deposits, Tetra Tech has determined that reasonable base case cutoff grades for the leachable (oxide/chalcocite) SX/EW recoverable copper and for flotation recoverable primary sulfide resources are 0.12% and 0.15% TCu, respectively. Resource results at these cutoffs are highlighted in the Table 1-1. The detailed mineral resource data are shown in Tables 1-3 through 1-6.

The data clearly show that the possibility exists to expand the resource as mineralization extends beyond the limit of current drilling, particularly below the existing pit and on its western end.

The results of the 2013 NI 43-101-compliant resource estimate compare favorably to the estimates of copper remaining in and around the Yerington pit after the mine shut down (K. L. Howard, Jr., Anaconda Internal Memo, 1979). The 1979 estimate contained no classification for measured, indicated, or inferred, so direct comparison can only be made when considering all classes of the current estimate, but was reported at 121 million tons with an average grade of 0.34% total copper.

The 1979 estimate cited approximately 84% of the total contained copper (696 million pounds of copper in 97.8 million tons with an average grade of 0.356% Cu) as being within the original Anaconda pit design, suggesting that a significant portion of the Yerington resource may be mined without a pushback or major changes to the upper walls of the Anaconda pit.

The current Tetra Tech resource estimate is based upon SPS's 2011 drilling as well as 792 historic drill holes taken from approximately 10,000 scanned pages of assay and/or geologic data which were reviewed and digitally recorded by SPS personnel, and from 57 Anaconda cross sections in use at the time of mine closure. The digital data entry was validated by Tetra Tech against the historic sections and was considered to be compliant, based upon results of 18 twin holes and 5,446 feet of core from 45 Anaconda holes which were assayed by SPS. The twinned drill intercepts statistically confirmed that the new compliant data support use of the historical data, as did the new core assays which were well within the expected norms for corroborating the old with new SPS drilling results.

### 1.5.1 Details of Resource Estimate

**Table 1-3 Measured Copper Resources – November 2013\*\***

	Cutoff Grade	Tons	Average Grade	Contained Copper
	%TCu	(x1000)	% TCu	(lbs x 1000)
Oxide and Chalcocite Material Zone 30*	0.50	220	0.68	2,900
	0.40	550	0.53	5,800
	0.30	1,600	0.41	13,000
	0.25	2,500	0.36	18,000
	0.20	4,100	0.30	25,000
	0.15	5,900	0.27	31,000
	<b>0.12</b>	<b>6,500</b>	<b>0.25</b>	<b>33,000</b>
Sulfide or Primary Material Zone 40*	0.50	2,400	0.62	30,000
	0.40	7,200	0.50	72,000
	0.30	17,000	0.41	140,000
	0.25	22,000	0.38	170,000
	0.20	27,000	0.35	190,000
	<b>0.15</b>	<b>31,000</b>	<b>0.33</b>	<b>205,000</b>
	0.12	32,000	0.33	210,000

**Table 1-4 Indicated Copper Resources – November 2013\*\***

	Cutoff Grade	Tons	Average Grade	Contained Copper
	% TCu	(x1000)	% TCu	(lbs x 1000)
Oxide and Chalcocite Material Zone 30*	0.50	550	0.66	7,300
	0.40	1,200	0.54	13,000
	0.30	3,700	0.41	30,000
	0.25	6,300	0.35	44,000
	0.20	10,000	0.30	61,000
	0.15	14,000	0.27	76,000
	<b>0.12</b>	<b>17,000</b>	<b>0.25</b>	<b>85,000</b>
Sulfide or Primary Material Zone 40*	0.50	1,700	0.59	20,000
	0.40	7,800	0.47	73,000
	0.30	29,000	0.38	220,000
	0.25	45,000	0.34	310,000
	0.20	62,000	0.31	390,000
	<b>0.15</b>	<b>74,000</b>	<b>0.30</b>	<b>428,000</b>
	0.12	76,000	0.28	430,000



**Table 1-5 Measured + Indicated Copper Resources – November 2013\*\***

	Cutoff Grade	Tons	Average Grade	Contained Copper
	% TCu	(x1000)	% TCu	(lbs x 1000)
Oxide and Chalcocite Material Zone 30*	0.50	810	0.66	10,800
	0.40	1,880	0.54	20,100
	0.30	5,550	0.41	45,200
	0.25	9,130	0.35	64,700
	0.20	14,600	0.31	89,100
	0.15	20,600	0.27	110,000
	<b>0.12</b>	<b>23,500</b>	<b>0.25</b>	<b>118,000</b>
Sulfide or Primary Material Zone 40*	0.50	4,190	0.60	50,600
	0.40	15,300	0.48	148,000
	0.30	46,400	0.39	362,000
	0.25	68,600	0.35	484,000
	0.20	90,600	0.32	583,000
	<b>0.15</b>	<b>105,000</b>	<b>0.30</b>	<b>633,000</b>
	0.12	108,000	0.30	643,000

**Table 1-6 Inferred Copper Resources – November 2013\*\***

	Cutoff Grade	Tons	Average Grade	Contained Copper
	% TCu	(x1000)	% TCu	(lbs x 1000)
Oxide and Chalcocite Material Zone 30*	0.50	680	0.57	7,800
	0.40	1,700	0.49	17,000
	0.30	4,300	0.40	35,000
	0.25	7,500	0.35	52,000
	0.20	13,000	0.29	77,000
	0.15	21,000	0.25	110,000
	<b>0.12</b>	<b>25,900</b>	<b>0.23</b>	<b>118,000</b>
Sulfide or Primary Material Zone 40*	0.50	220	0.57	2,600
	0.40	1,900	0.45	18,000
	0.30	17,000	0.34	120,000
	0.25	43,000	0.30	260,000
	0.20	87,000	0.26	450,000
	<b>0.15</b>	<b>128,000</b>	<b>0.23</b>	<b>600,000</b>
	0.12	150,000	0.22	650,000

\*Note that the oxide and chalcocite material (Zone 30) has a highlighted cutoff grade of 0.12. The sulfide or primary material (Zone 40) has a highlighted cutoff grade of 0.15.

\*\*Additional notes to Tables 1-3 through 1-6:

- 1) No reserves have been estimated within this report.
- 2) Inferred mineral resources have a great amount of uncertainty as to existence and as to whether they can be mined economically. It cannot be assumed that all or any part of the inferred mineral resources will ever be upgraded to a higher category.
- 3) Mineral resources that are not mineral reserves do not have demonstrated economic viability.
- 4) Totals may not add up due to rounding.
- 5) Mineral resources classifications are based on CIM definitions.

## 1.6 Other Relevant Information

Tetra Tech is not aware of any potential limitations to the project that would materially change any of the data, resource estimates, environmental considerations, socio-economic factors, or conclusions presented within this report that are outside of normal factors that may impact mining projects, such as price variability, exchange rates, permitting time, etc. With respect to the Yerington Copper Project, historic production of copper took place from 1953 to 1978. Taking into account information gathered to date, the environmental liabilities resulting from the former mining activity do not include any fatal flaws that would impede further exploration and development of this project.

## 1.7 Recommendations and Proposed Work Plan

There is obvious potential for a significant addition to the resources of the Yerington Copper Project.

Results from the current resource model and drilling indicate that the horizontal and vertical limits to mineralization at the Yerington Mine have not yet been found. Additional exploration and in-fill drilling are warranted, and are expected to further expand and upgrade the NI 43-101 compliant Yerington Mine resources.

The copper mineralization remaining in the material left from the Airmetco heaps and mining operations (residuals) is part of the Yerington Copper Project and reflect a notable potential which should be more fully evaluated in order to bring those resources into NI 43-101 compliant standards.

The Bear porphyry deposit remains unconstrained by drilling. Although it contains no NI 43-101 compliant resources, historical drilling on the property has indicated a large footprint for copper mineralization that requires further delineation by additional drilling.

In order to further develop the resources at the Yerington Mine, the following work program is recommended:

- IP geophysics in the pit area to target deep holes to explore the keel of the Yerington porphyry system.

- Core drilling below the Yerington Mine both to upgrade the classification of the inferred resources and to test the deeper extension of mineralization that remains mostly unexplored below the 3,300-foot level.
- A review of historic information and preliminary metallurgical testing are recommended to support a preliminary economic assessment of the property.

To further evaluate the residuals from historic mining activities on the property, additional sampling and metallurgical testing is recommended to characterize the heap leach pads, tailings, and low grade mineralized material stock piles on site.

## **2.0 INTRODUCTION**

### **2.1 Terms of Reference**

SPS commissioned Tetra Tech, Inc. to prepare a Canadian National Instrument 43-101 (NI 43-101) compliant technical resource estimate for the Yerington Mine portion of its Yerington Copper Project in Lyon County, Nevada, approximately 80 miles southeast of Reno. The property, with historical resources and water rights, was purchased by SPS in April 2011. Data for the resource work was derived from previous operators and the 2011 work completed by SPS.

The Yerington Copper Project is a mid-stage exploration project. Sections for advanced stage properties have not been addressed in this report.

### **2.2 Sources of Information**

This report is based on data supplied by SPS, as well as previous historic reports by third parties also provided by SPS. Tetra Tech has prepared this report exclusively for SPS. The information presented, opinions and conclusions stated, and estimates made are based on the following information:

- Source documents used for this report as summarized in Section 27 of this report
- Assumptions, conditions, and qualifications as set forth in the report
- Data, reports, and opinions from prior owners and third-party entities
- Personal inspection and review
- Tetra Tech has not independently conducted any title or other searches but has relied upon SPS for information on the status of the claims, property title, agreements, permit status, and other pertinent conditions. In addition, Tetra Tech has not independently conducted any sampling, mining, processing, economic studies, permitting, or environmental studies on the property.

Information provided by SPS includes:

- Assumptions, conditions, and qualifications as set forth in the report
- Land status
- Drill hole records
- Property history details
- Sampling protocol details
- Geological and mineralization setting
- Data, reports, and opinions from prior owners and third-party entities

- Copper and other assays from original assay records and reports
- Composite copper data for 232 holes taken directly from Anaconda sections

The primary individuals who have provided input to this technical report are listed in Table 2-1.

**Table 2-1 Key Project Personnel**

Company	Name	Title
Singatse Peak Services, LLC	Steve Dischler	President and CEO, Director
Singatse Peak Services, LLC	George Eliopoulos	Project Manager, Consulting Geologist
Singatse Peak Services, LLC	David Heatwole	Exploration Consultant
Singatse Peak Services, LLC	Judy Pratt	Technical Services
Tetra Tech, Inc.	Rex Bryan	Sr. Geostatistician

## 2.3 Property Inspection by Qualified Person

The site visit by Dr. Rex Bryan in September of 2011 included a physical review of sample preparation and security procedures, as well as discussions with geologists and individuals regarding data handling and project geology. It is Dr. Bryan's opinion that there were no deficiencies in SPS's protocols or procedures.

## 2.4 Units and Abbreviations

Unless explicitly stated otherwise, all units presented in this report are in US customary units (*i.e.*, short tons, miles [mi], feet [ft], inches [in], percent [%], grams per metric ton, and parts per million [ppm]).

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

### *Linear Measure:*

1 inch =	2.54 centimeters
1 foot =	0.3048 meter
1 yard =	0.9144 meter
1 mile =	1.6 kilometers

### *Area Measure:*

1 acre =	0.4047 hectare
1 square mile =	640 acres = 259 hectares

### *Capacity Measure (liquid):*

1 US gallon =	4 quarts = 3.785 liter
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1 cubic meter per hour = 4.403 US gpm

*Weight:*

1 short ton = 2,000 pounds = 0.907 tonne

1 pound = 16 oz = 0.454 kg

*Frequently used acronyms and abbreviations:*

AA = atomic absorption spectrometry

amsl = above mean sea level

°C = degrees Centigrade

CIM = Canadian Institute of Mining, Metallurgical, and Petroleum

% TCu = Total copper percent equivalent

EUR = Euro – European Monetary Unit

°F = degrees Fahrenheit

ft = foot or feet

g = gram(s)

g/kWh = grams per kilowatt hour

g/t = grams per tonne

h = hour

HQ = 2.75 in. diameter core size

ICP = Inductively Coupled Plasma Atomic Emission Spectroscopy

km = kilometer

kV = kilovolts

kWh = Kilowatt hour

kWh/t = Kilowatt hours per tonne

l = liter(s)

m = meter(s)

ml = milliliter

m<sup>2</sup> = square meter(s)

m<sup>2</sup>/t/d = square meters per tonne per day

m<sup>3</sup> = cubic meter(s)

m<sup>3</sup>/h = cubic meter(s) per hour

mm = millimeter

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% Mo	=	percent molybdenum
Mtpd	=	metric tonnes per day
MW	=	megawatts
NSR	=	net smelter return
ppm	=	parts per million
ppb	=	parts per billion
RC	=	reverse circulation drilling method
sq m	=	square meters
sq km	=	square kilometers
T	=	total
ton	=	short ton
tonne	=	metric tonne
t/m <sup>3</sup>	=	tonne per cubic meter
% Cu	=	percent copper (total copper)
µm	=	micron(s)
%	=	percent

### 3.0 RELIANCE ON OTHER EXPERTS

The Yerington Mine, having been an operating mine for many years, has been the subject of numerous written reports. Many of these reports and other documents were prepared by mining consulting firms on behalf of the operators of the mine/property at the time.

Specific experts, both internal to Tetra Tech and external, who had an important role in the preparation of this report include:

*Dr. Rex C. Bryan*

*Dr. Bryan graduated with a Mineral Economics doctorate degree from the Colorado School of Mines, Golden, Colorado, in 1980. He graduated in 1976 from Brown University in Providence, Rhode Island, with a master of science degree in Geology, and also graduated from Michigan State University with an MBA (1973) and a BS in Engineering (1971). Dr. Bryan is a member of the Society for Mining, Metallurgy, and Exploration (SME).*

*Dr. Bryan has worked as a geostatistical reserve analyst and mineral industry consultant for a total of 26 years since graduating from the Colorado School of Mines. He is an expert witness to industry and for the U.S. Department of Justice on ore-grade control, reserves, and mine contamination issues. He is currently a consultant to the industry in mine valuation, mineralized material reserve estimation, and environmental compliance, and is the Qualified Person representing Tetra Tech for this report.*

*Mr. Steve Dischler*

*Mr. Dischler has a B.S. degree in mining engineering from the University of Wisconsin and M.S. degree in mining engineering from the University of Arizona. He is a registered professional engineer in eight states and has been a member of the Society of Mining Engineers since 1979.*

*Mr. Dischler has 32 years of experience in mining and other natural resources. Prior to joining Quaterra Resources he managed a portfolio of historic mines associated with the former Anaconda Mining Company assets in the U.S., including Yerington. Mr. Dischler has held a variety of leadership positions in consulting and industry with expertise in managing and permitting major capital projects. He has been involved with the permitting and development of several major mining projects across the U.S., including the underground sulfide Crandon Mine in Wisconsin, the underground nickel copper Eagle Mine in Michigan and the open pit copper Flambeau Mine in Wisconsin.*

*Mr. George Eliopoulos*

*Mr. Eliopoulos graduated with a Geological Engineering MS degree from the University of Arizona in 1974. He also graduated in 1972 with a Geological*



*Engineering B.S. degree from the Colorado School of Mines, Golden, Colorado. He is a member of the Society of Economic Geologists (SEG), the Geological Society of Nevada (GSN), and is a Certified Professional Geologist (CPG-11010).*

*Mr. Eliopulos has worked as a mine geologist in an operating gold mine and has been engaged in mineral exploration for precious and base metals and for heavy mineral sands in the US since graduation from the University of Arizona. He currently provides consulting services to SPS and to Quaterra Resources, Inc. as Project Manager and Chief Geologist of the Yerington district properties.*

*Mr. David Heatwole*

*Mr. Heatwole graduated from the University of Arizona in 1966 with an MS degree in Geology and in 1964 with a B.S. degree in Geological Engineering. The University of Arizona awarded him the honorary PE degree of Geological Engineer in 1970.*

*Mr. Heatwole worked for the Anaconda Company for 20 years as a geological engineer in exploration, development, and production on assignments in the southwest US, Mexico, Chile, and Alaska, spending three and a half years in the Yerington district. After the acquisition of Anaconda by Atlantic Richfield, he worked seven years in executive positions involving oil production on Alaska's North Slope and petroleum exploration in the Soviet Far East.*

*In 1992, Mr. Heatwole formed the Alaska Russia Investment Company and engaged in consulting activities for natural resource development and the sale of mining equipment to the Russian Far East. He currently provides consultation services to SPS and to Quaterra Resources, Inc. as Exploration Manager of the Yerington district properties.*

*Ms. Judy Pratt*

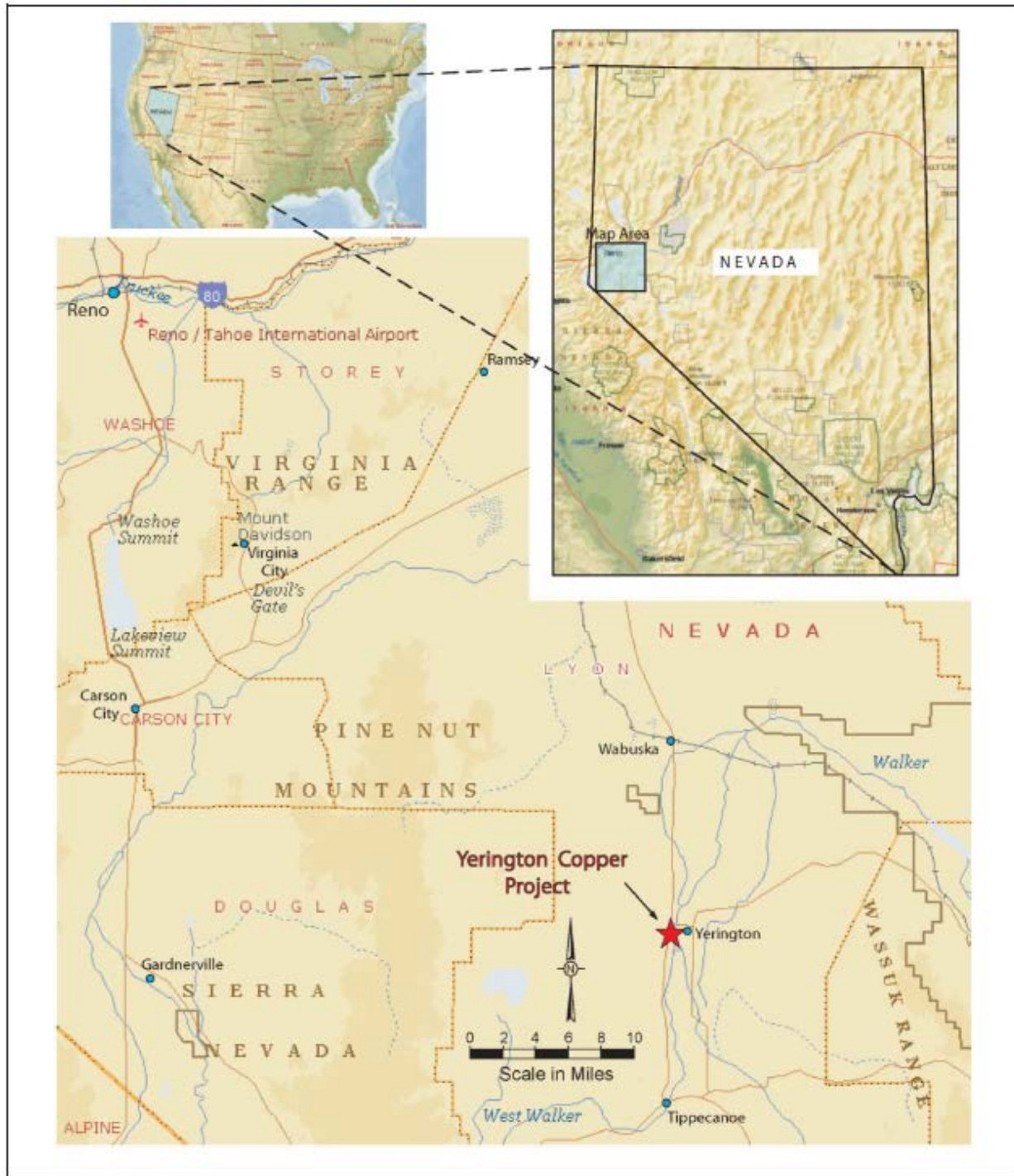
*Ms. Pratt graduated with a B.S. degree in Engineering Science, with a minor in Geology in 1975 from Colorado State University, Fort Collins, Colorado and is a member of the Society for Mining, Metallurgy, and Exploration (SME).*

*Ms. Pratt has worked in mineral exploration for precious metals and uranium since 1968 in the southwest US and has spent more than 12 years working on projects in Spain. Since 1994 she has primarily worked in developing three-dimensional models of mineral deposits, resource evaluations, and reserve estimates for open pit operations. She is currently a full time employee of Quaterra Resources, Inc.*

## **4.0 PROPERTY DESCRIPTION AND LOCATION**

### **4.1 Location**

The Yerington Copper Property is located near the geographic center of Lyon County, Nevada, US, along the eastern flank of the Singatse Range (Figures 4-1 and 4-2). The property centers on the historical Yerington open pit mine, flanked on the west by Weed Heights, Nevada (a small private community, the original company town of The Anaconda Company) and on the east by the town of Yerington, Nevada. The property is easily accessed from Yerington by a network of paved roads that were used as principal transportation and access routes during the former operating period of the Yerington Mine. Topographic coverage is on US Geological Survey “Yerington” and “Mason Butte” 7.5’ topographic quadrangles. The nearest major city is Reno, Nevada, approximately 80 miles to the northwest.



**Figure 4-1** Yerington Project Location

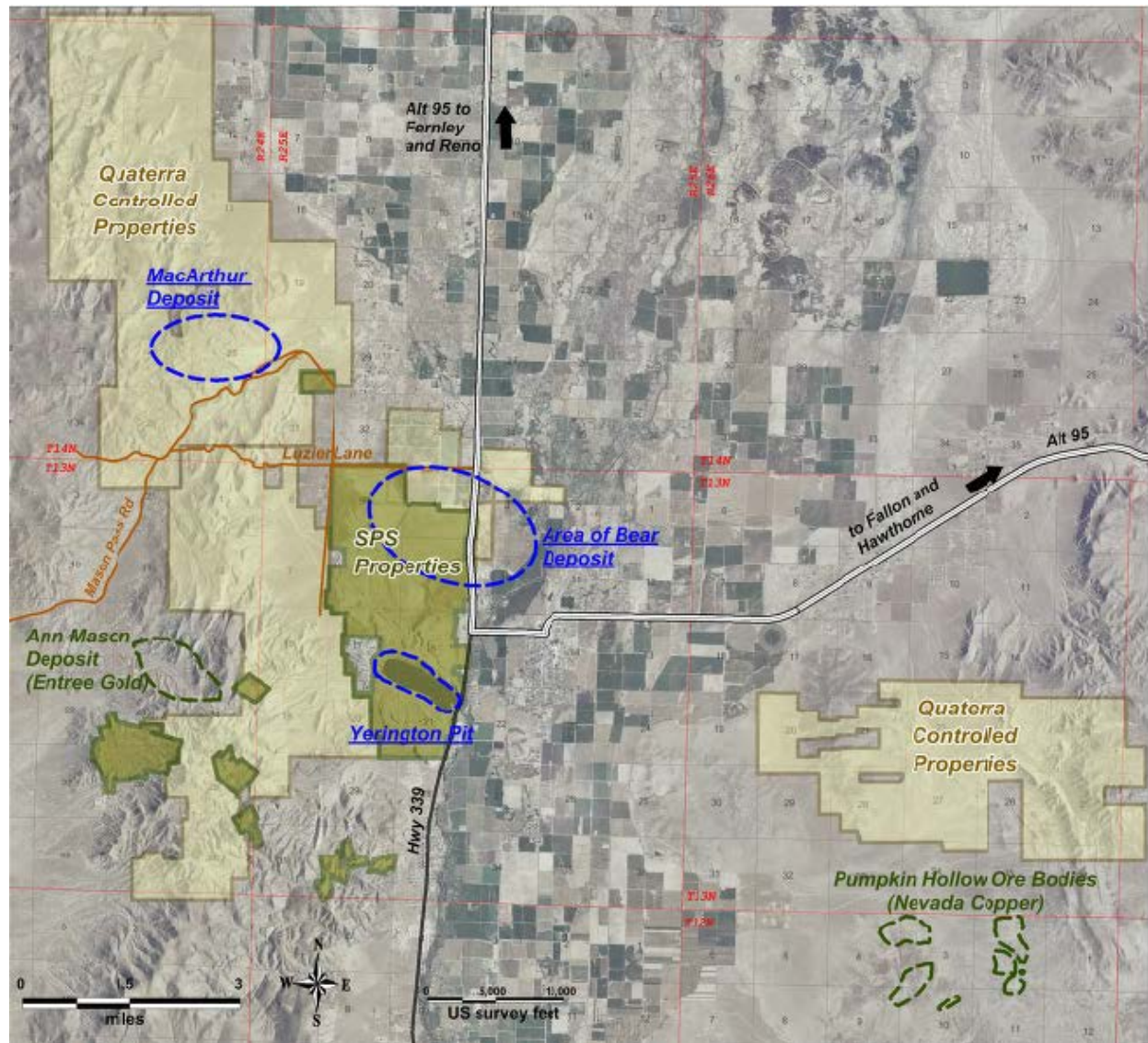


Figure 4-2 Regional Layout Map

## 4.2 Property Ownership

### 4.2.1 Yerington Pit Deposit

#### 4.2.1.1 Land

The property currently consists of 2,768 acres (4.3 square miles) of fee mineral properties and patented mining claims as well as 125 unpatented lode claims totaling approximately 2,583 acres on lands administered by the US Department of Interior, Bureau of Land Management (BLM) (Figure 4-3). Additionally, 76 placer claims have been located atop lode claims underlying Anaconda residuals to ensure extraction rights to the contained copper. The private land, patented claims, and 32 unpatented mining claims were acquired on April 27, 2011 when SPS closed a transaction under which all property and water rights of Arimetco, Inc. (Arimetco), a Nevada corporation, were acquired. The water rights include approximately 8,628 ac-ft per year of primary ground water rights, specifically permitted for mining and milling. The additional 93 unpatented claims have also been staked by SPS.

The current property status reflects the transfer of 332 lode claims from SPS to Quaterra Alaska, Inc. (Quaterra Alaska). Both Quaterra Alaska and SPS are subsidiaries or affiliated companies to Quaterra Resources, Inc. (Quaterra). This transfer, completed in 2012, was completed to facilitate permitting for exploration drilling near to, but separate from the properties now held by SPS.

SPS's property is located in Sections 22-27, 35, and 36, Township 13 North, Range 24 East and in Sections 4-9, 16-17, 20-21, and 30-32, Township 13 North, Range 25 East, Mount Diablo Base & Meridian and are contiguous with other property held by Quaterra.

#### 4.2.1.2 Resource

See Table 1-1 for the Yerington pit resource estimates and further detail in Section 14. The MacArthur and Bear Deposits discussed below are within a few miles of the Yerington pit. These estimates have mineralization that is similar in nature to the Yerington Mine.

The Yerington pit resource is currently being explored as a stand-alone project. Future studies are required to evaluate the potential for combining the Yerington pit project with Quaterra Alaska's MacArthur project. It is possible that integration of the oxide/chalcocite and sulfide resource at Quaterra Alaska's MacArthur Deposit could provide a positive impact on the resource of the Yerington Copper Project, and or vice versa. The MacArthur resource is provided in Table 4-1 below. Additional drilling is necessary to investigate the underlying primary copper resource at MacArthur which could expand the MacArthur mine plan and allow the primary copper resource to be integrated into the Yerington Mine resource as well. Future studies are required to evaluate the potential for combining the Yerington pit project with Quaterra Alaska's MacArthur project. Until these studies are completed, the projects are being treated separately.



The Bear Deposit is an early stage exploration project. No 43-101 resource estimate has been done. Previous estimates for the deposit are based on the 1995 Dilles and Proffett study.

## 4.2.2 MacArthur Deposit

### 4.2.2.1 Land

The MacArthur Copper Property is located near the geographic center of Lyon County, Nevada, USA along the northeastern flank of the Singatse Range approximately seven miles northwest of the town of Yerington, Nevada. The property is accessible from Yerington by approximately five miles of paved roads and two miles of maintained gravel road. Topographic coverage is on US Geological Survey "Mason Butte" and "Lincoln Flat" 7.5' topographic quadrangles. The nearest major city is Reno, Nevada approximately 75 miles to the northwest. The property consists of 897 unpatented lode claims totalling approximately 18,533 acres on lands administered by the US Department of Interior – Bureau of Land Management (BLM).

### 4.2.2.2 Resource

The MacArthur Deposit estimates in Table 4-1 are based upon a May 23, 2012 PEA Technical Report.

**Table 4-1 MacArthur Deposit Property  
MacArthur Copper Project May 23, 2012\***

	Cutoff Grade (%TCu)	Tons (x1000)	Average Grade (%TCu)	Contained Copper (lbs x 1000)
<b>MEASURED</b>				
Oxide and Chalcocite	0.12	71,839	0.218	313,174
Primary Material	0.15	n/a	n/a	n/a
<b>INDICATED</b>				
Oxide and Chalcocite	0.12	87,264	0.208	362,320
Primary Material	0.15	1,098	0.292	6,408
<b>MEASURED + INDICATED</b>				
Oxide and Chalcocite	0.12	159,094	0.212	675,513
Primary Material	0.15	1,098	0.292	6,408
	Cutoff Grade (%TCu)	Tons (x1000)	Average Grade (%TCu)	Contained Copper (lbs x 1000)
<b>INFERRED</b>				
	%Cu	Tonsx1000	Grade	lbsx1000
Oxide and Chalcocite	0.12	243,417	0.201	979,510
Primary Material	0.15	134,900	0.283	764,074

\*NI 43-101 Technical Report Preliminary Economic Assessment, May 23, 2012, by M3 Engineering & Technology Corp. (M3) of Tucson, Tetra Tech, Inc. of Golden, Colorado, completed an updated National Instrument (NI) 43-101 compliant independent resource estimate for the MacArthur PEA.

Note: A preliminary economic assessment (PEA) should not be considered to be a pre-feasibility (PFS) or feasibility study (FS), as the economics and technical viability of the MacArthur Copper Project have not been demonstrated at this time. A PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too geologically speculative at this time to have the economic considerations applied to them to be categorized as Mineral Reserves. Thus, there is no certainty that the production profile concluded in the PEA will be realized. Actual results may vary, perhaps materially.

### **4.2.3 Bear Deposit**

#### **4.2.3.1 Land**

An unknown portion of the Bear Deposit resource is located on Quaterra properties. Based on historical drilling by Anaconda and Phelps Dodge during the 1960's and 1970's, the Bear Deposit (also referred to as the Bear-Lagomarsino) has mineralization that is similar in nature to the Yerington pit. Quaterra has four land option agreements in place covering 1,305 acres (2.04 square miles) of private land north and east of the Yerington Mine site that includes part of the Bear Deposit. Under the terms of the agreements, Quaterra has exclusive rights to explore these parcels with an option to purchase. The agreements also provide Quaterra an exclusive option to purchase surface water rights and supplemental storage water rights. These recently optioned water rights are in addition to the 8,628 acre-ft/year (5,350 gal/min) of primary ground water rights owned by Quaterra at the Yerington Mine.

#### **4.2.3.2 Historical Resource**

The Bear Deposit is a large porphyry copper system that was discovered and partially delineated by Anaconda in the 1960s and by Phelps Dodge in the 1960's and 1970's. The deposit is open in several directions and has never been consolidated under a single owner. Quaterra has compiled data from 49 drill holes totalling 126,400 feet (23.9 miles) that defines a mineralized system covering an area of at least 2 square miles. Dilles and Proffett, (1995) estimated the amount of mineralized material defined by the Anaconda program to total more than 500MT at 0.40% copper grade. These figures are reported as historic figures and should not be construed to reflect a calculated resource (inferred, indicated or measured) under current standards of NI 43-101 or definition of a NI 43-101 compliant resource.

The Bear project is a high priority exploration target because of its very large size, historic drilling and potential for higher grades than district averages (e.g., 10 holes have continuous intervals of at least 150 feet grading 0.8% copper or more). Previous drilling suggests the deposit remains open in several directions. Molybdenum, although analysed on only about 20% of core samples, is potentially a significant by-product credit.

The Bear tonnage and grade estimates are historic in nature. A qualified person has not done sufficient work to classify these historic estimates as a current mineral resource and Quaterra does not treat them as such. In order to do so, they will have to be confirmed by additional drilling. Estimates shown in Table 4-2 for the Bear Deposit are based on data and reports that

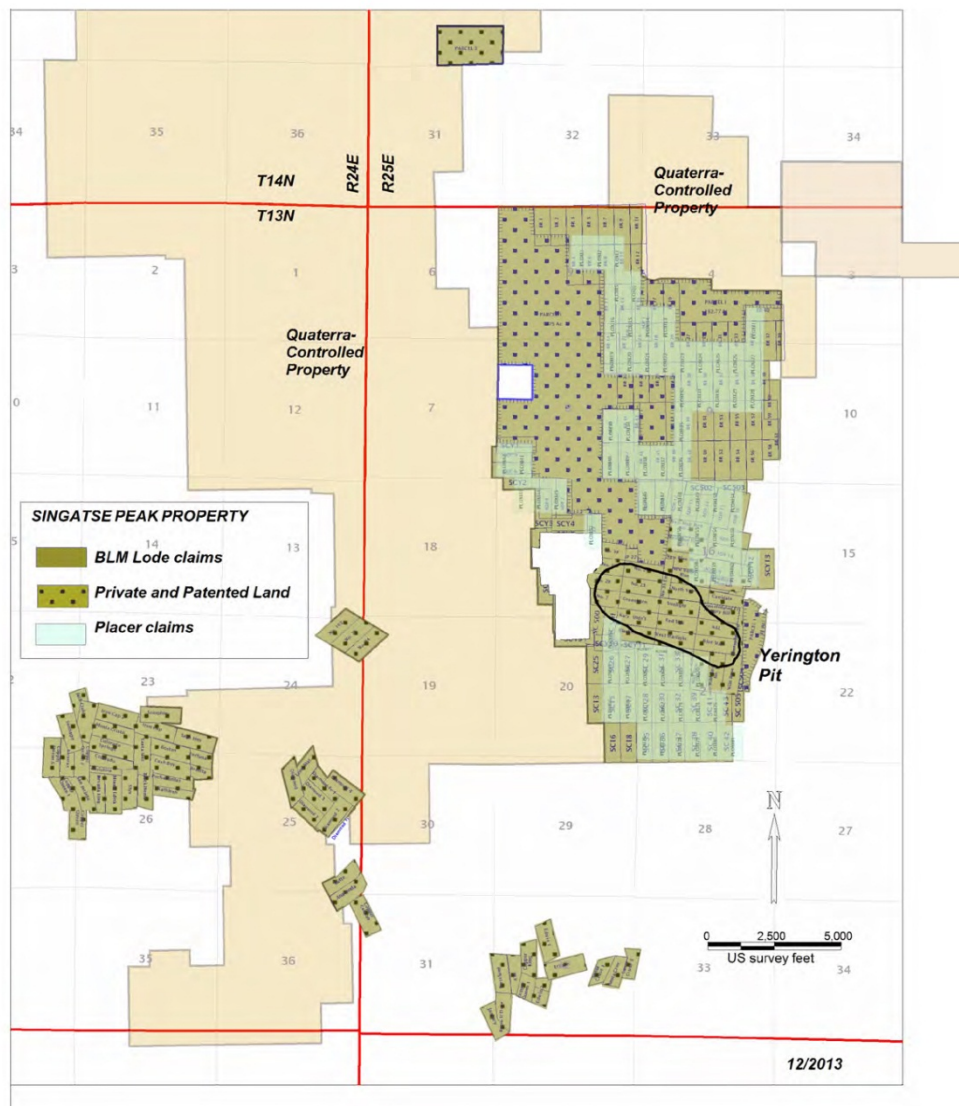
predate NI 43-101 definitions of mineral resources and reserves and are presented as an indication of the types and magnitude of similar deposits, but do not meet current CIM standards.

**Table 4-2 Bear Deposit Property**

<b>Property Name</b>	<b>Cutoff</b>	<b>Tons (000s)</b>	<b>Average Grade (% TCu)</b>	<b>Contained Cu (000s Tons)</b>	<b>Contained Cu (000s lbs)</b>
<b><i>Historic Estimates</i></b>					
Bear-Lagomarsino Deposit <sup>1</sup>	unk	500,000*	0.4	2,000	4,000,000

\*An unknown percentage of the Bear-Lagomarsino historic resource estimate is on the Yerington Mine properties controlled by SPS.





**Figure 4-3 SPS Property Map**

### 4.3 Mineral Tenure and Title

The purchase of the Arimetco assets was accomplished through a US\$500,000 cash payment, 250,000 shares of Quaterra common stock, and a 2% net smelter return royalty capped at \$7.5 million on production from any claims owned by Quaterra Alaska, Inc. (including Quaterra's MacArthur Copper Property) in the Yerington mining district.

Ownership of the patented claims and private land is held through payment of county assessed taxes, while unpatented lode claims staked in the United States require a federal annual maintenance fee of \$140 each, due by 12:00 pm (noon) on September 1 of each year. Further, each lode claim staked in Nevada requires an Intent to Hold fee of \$10.50, plus a \$4.00 filing fee, due 60 days after September 1 of each year payable to the County Recorder of the appropriate Nevada county. All SPS claims are current.

Unpatented lode claims have been staked by placing a location monument (two- by two-in by four foot high wood post) along the center line of each claim and two- by two-inch by four-foot high wood posts at all four corners, with all posts properly identified in accordance with the rules and regulations of the BLM and the State of Nevada. Maximum dimensions of unpatented lode claims are 600 feet x 1,500 feet.

Placer claims have been staked by placing a location monument on the north boundary at either the northwest or northeast corner and placing posts at all four corners. All SPS placer claims are 660 feet x 1320 feet, unless noted otherwise.

### 4.4 Relevant Information

Copper mining was first recorded at the Yerington Mine site from 1918-1920 at the Empire Mine, and later, beginning in 1953 by Anaconda. From that time forward, the mine operated under different companies until 1999 when Arimetco, the last operator, closed the operation. However, soil and groundwater contamination, alleged to stem from the former mining operation, have been identified on the property.

As a result, a portion of the property acquired by SPS in 2011 is now under the jurisdiction of the US Environmental Protection Agency (USEPA). EPA has divided the site into various 'Operable Units' that are based on historic mining operations at the site by Anaconda and Arimetco (Figure 4-4). Liability for the contamination on site is the responsibility of a third party which is actively engaged in remedial investigation and remediation activities under the supervision of the USEPA. Liability for a portion of the site was the responsibility of a now bankrupt entity and the unfunded liability is the responsibility of the USEPA. As part of a 2013 voluntary agreement between SPS and EPA, SPS has protection from existing contamination at the site under a covenant not to sue.

In order to establish SPS's position and rights, the acquisition by SPS of the Arimetco properties required a series of rigorous environmental, legal, and technical due diligence studies. In 2008, Chambers Group, Inc. and Golder Associates Inc. conducted a *Phase I Environmental Site Assessment (Phase I ESA) for the Yerington Mine Site*. A Phase I ESA is intended to serve as

an appropriate, commercially prudent, and reasonable inquiry regarding the potential for recognized environmental conditions in connection with the subject property. The 2008 Phase 1 ESA was updated by SRK Consulting (U.S.) Inc. (SRK) in 2010 and again in 2011. These were completed to allow SPS to establish liability protection as a bona fide prospective purchaser (BFPP). Prior to closing on the property, SPS received letters from the Nevada Department of Environmental Protection (NDEP), US Bureau of Land Management (BLM) and the USEPA indicating the post-closing requirements then applicable to the site for SPS to maintain its defense to liability as a BFPP regarding the activities of the former mine owners and operators.

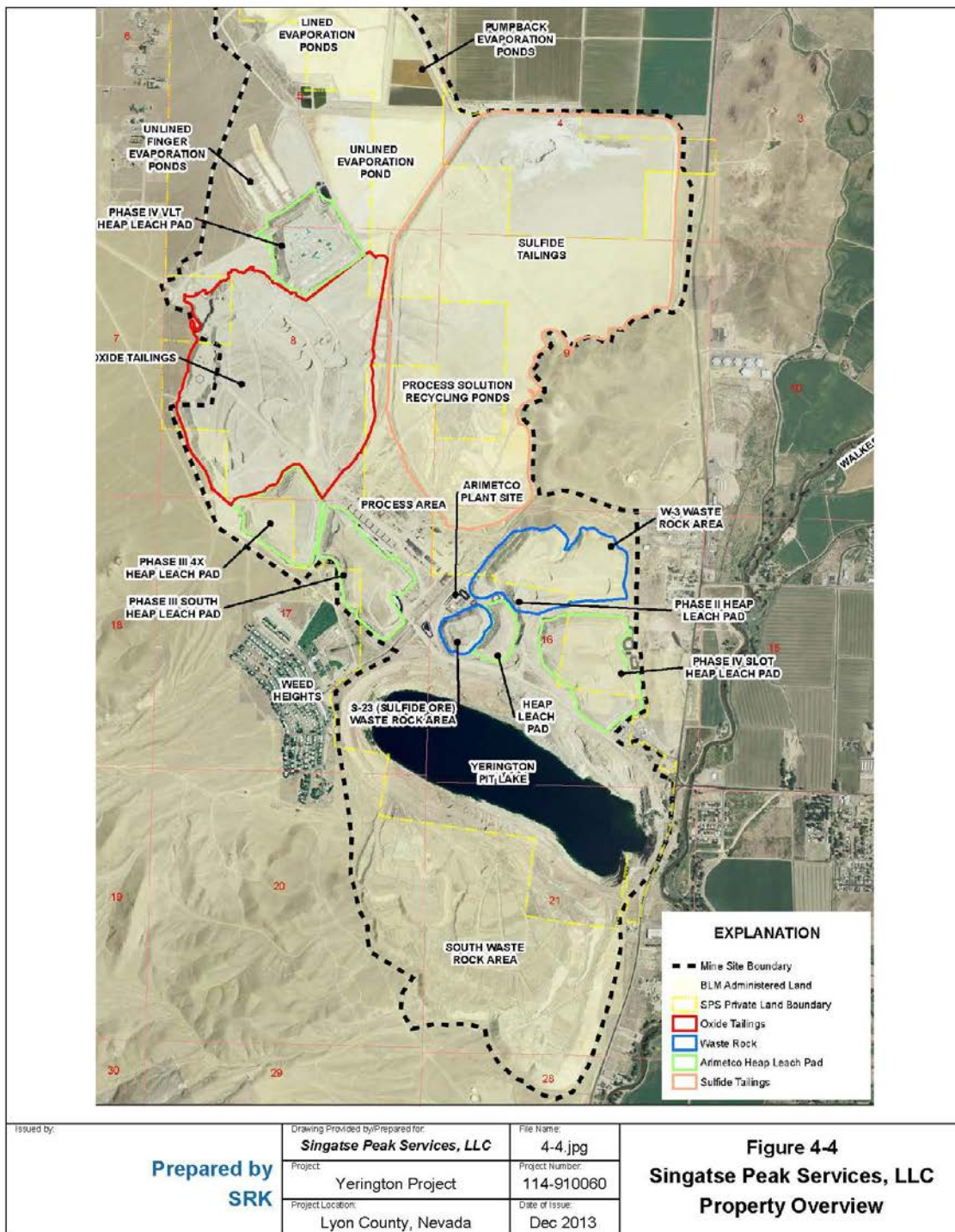
Legal due diligence included a legal description of the property, a chain of title report, and an assignment of water rights. BFPP letters have been received from the NDEP, BLM and USEPA which indicate the basic requirements known as “reasonable steps” SPS must take to retain its BFPP defense from existing liabilities on the property.

Technical due diligence included the review and compilation of extensive historical data in the Anaconda Collection, American Heritage Center, University of Wyoming, in Laramie. Numerous reports, maps, and historical drilling data have been scanned and entered into an internal database, allowing an initial review of both past production and remaining mineralization in and around the Yerington pit.

SPS owns approximately 8,628 acre feet of primary groundwater rights at the site that are designated for mining and milling use. The Yerington pit also has a pit lake present estimated to contain approximately 37,000 acre-feet of water which will require dewatering as part of future mining activities. The pit lake water could have a variety of beneficial uses, but this determination will require further evaluation and regulatory approval by the Nevada State Water Engineer’s office.

SPS’s 2011 drilling program was restricted to fee mineral properties or patented mining claims in or near the Yerington pit, and approved by the State of Nevada Bureau of Mining Regulation and Reclamation of the Nevada Division of Environmental Protection (NDEP), as an Interim Exploration Permit “BMRR Reclamation Permit #0321”, supported by posting a \$70,363 reclamation bond. The interim permit was approved as a final permit on November 7, 2011, by the NDEP.

If SPS elects to conduct exploration on unpatented lode mining claims on public lands administered by the Bureau of Land Management, a Notice of Intent may be required if the proposed disturbance is less than five acres. The Notice of Intent includes a description and map of proposed work, supported by a reclamation bond. Proposed disturbance exceeding five acres requires a Plan of Operation, a more comprehensive evaluation of cultural features, vegetation, wildlife, water, and other items, supported by a reclamation bond.



**Figure 4-4 EPA Operable Units**

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

### **5.1 Accessibility**

Access to the property from the town of Yerington follows US Highway ALT 95 north about one mile to the Burch Street turnoff, a paved road that leads west into the Yerington Mine area. Access into the mine area is fenced and restricted. Inside the fenced area a series of roads provide access to all of the property in Township 13 North, Range 25 East. Claims in Township 13 North, Range 24 East are accessed by a number of existing dirt roads leading west from US Highway ALT 95, from one to three miles south of the town of Yerington.

### **5.2 Climate**

The climate is temperate and is characterized by cool winters with temperatures between zero and 50 degrees Fahrenheit and warm to hot summers with temperatures between 50 and 100 degrees Fahrenheit. Average annual precipitation is estimated at three to eight inches per year, with a significant part of this total precipitation falling as snow and increasing with elevation. Work can be conducted throughout the year with only minor delays during winter months due to heavy snowfall or unsafe travel conditions when roads are particularly muddy.

Elevations on the property range from approximately 3,700 feet at the bottom of the Yerington pit to 4,600 feet in the Yerington Mine area and approximately 4,600 feet to 5,800 feet in the uplands to the west. The Yerington pit contains approximately 37,000 acre-feet of water, based upon the January 2012 water elevation at 4,227 feet. The pit lake is currently actively fed from the Walker River, the result of a trench cut from the river to the pit during a flood in the late 1990s diverting water into the pit to prevent flooding of the Yerington town site, and from a seep in the west wall of the Yerington pit approximately 100 feet above water level. It is a ground water sink and water levels are shown to be increasing at a decreasing rate, with a 4-foot increase measured in 2011 and a projected equilibrium elevation at approximately 4,240 feet, to be achieved around the year 2025. Yerington pit dimensions are approximately 6,000 feet long ESE to WNW, 2,500 feet wide and 800 feet deep.

There are no active streams or springs on the remainder of the SPS property. The terrain is moderately steep and sparsely covered by sagebrush and interspersed low profile desert shrubs. All gulches that traverse the property are normally dry.

### **5.3 Local Resources and Infrastructure**

The nearest population center is the agricultural community of Yerington one mile east of the Yerington pit. Formerly an active mining center from 1953 to 1978 and from 1989 to 1997, Yerington now serves as a base for three active exploration companies: Quaterra Alaska Inc. (MacArthur property) and its subsidiary SPS; Entrée Gold Inc. (Ann Mason copper-molybdenum property); and Nevada Copper Corporation (Pumpkin Hollow Copper Project). Yerington hosts a work force active in, qualified for, and familiar with mining operations within a one-hour drive.

Yerington offers most necessities and amenities including police, hospital, groceries, fuel, regional airport, hardware, and other necessary infrastructure. One core drilling contractor is based in Yerington. Drilling supplies and assay laboratories can be found in Reno, a 1.5-hour drive. Reverse circulation drilling contractors are found in Silver Springs, Nevada, 33 miles north, as well as in the Winnemucca and Elko, Nevada areas, within a three- to five-hour drive from the site.

Power is available on site at the Yerington Mine area. Nevada Energy owns a 225 Megawatt capacity, natural gas-fired, electrical generating power plant within ten miles of the site. The electrical power infrastructure at the Yerington Mine site is expected to be available for a future mining operation due to the historical mine operations at the site.

SPS controls approximately 8,600 acre-feet of groundwater rights and the Yerington pit contains an estimated 37,000 acre-feet of water.

## 6.0 HISTORY

### 6.1 Ownership/Property History

Recorded production in the Yerington mining district dates back to 1883 (Moore, 1969) as prospectors were attracted to and investigated colorful oxidized copper staining throughout the Singatse Range. Knopf (1918) reported that oxidized copper cropped out at the historic Nevada-Empire mine located above the south center of the present-day Yerington open pit. Knopf does not show or reference other mines or prospects that are underlain by the Yerington open pit footprint, as gravel and alluvial cover obscure bedrock over an approximate 0.75-mile radius around the Nevada-Empire Mine.

Information is sparse for the period from Knopf's reporting in 1918 until World War II, although it is likely that lessees worked the Nevada-Empire during spikes in the copper price. Private reports (Hart, 1915 and Sales, 1915) describe ore shipments and planned underground exploration from a northwest striking, southwest dipping structure at the historic Montana-Yerington Mine area located approximately one mile west of the present-day Yerington pit.

During the 1940s, The Anaconda Company (Anaconda), at that time one of world's major copper producers, sent geologists to the Yerington district whose exploration outlined a 60-million-ton resource over the Yerington pit. During the early 1950s, the US government, citing the need for domestic copper production, offered "start-up" subsidies to Anaconda to open a copper mine in the Yerington district. Anaconda sank two approximately 400-foot-deep shafts in the present-day open pit and drove cross cuts to obtain bulk samples of oxidized rock for metallurgical study. Anaconda began operating the Yerington Mine in 1952 and mined continually through 1979, producing approximately 1.744 billion pounds of copper from a body of mineralized material that contained 162 million tons averaging 0.54% Cu. Approximately 104 million tons of this total was oxidized copper ore that was "vat-leached" with sulfuric acid in 13,000-ton cement vats on a seven day leach cycle. Sulfide ores were concentrated on site in a facility that was dismantled and sold following termination of mining in 1979.

In 1976, all assets of The Anaconda Company, including the Yerington Mine, were purchased by the Atlantic Richfield Company (ARCO), which shut down dewatering pumps in the pit and closed the Yerington Mine in 1979. The mine was shut down due to low copper prices not due to running out of mineral resources. In 1982, ARCO sold the Yerington Mine complex and Weed Heights town site to Mr. Don Tibbals of Yerington, Nevada, who scrapped the plant and equipment. At closure, before dewatering pumps were shut off, the Yerington Mine plan hosted a pre-stripped, non NI 43-101 compliant reserve of 98 million tons averaging 0.36% Cu (Howard, 1979) within their ultimate pit design. The figures quoted above are reported as historic figures and should not be construed to reflect a calculated resource (inferred, indicated or measured) under current standards of NI 43-101 or definition of a NI 43-101 compliant resource.

In 1989, Arimetco Inc. (Arimetco) purchased the mine property from Tibbals, commissioned a 50,000-pound-per-day solvent extraction/electrowinning plant, and began heap leaching "sub-



grade” dump rock stripped from the Yerington pit by Anaconda. Arimetco also added an unknown tonnage of “vat leach tailings” (minus 3/8 inch oxidized tailings leached during Anaconda’s operation) to some heap leach pads (HLP’s) as well as trucking acid soluble mineralized material from the MacArthur property located approximately five miles north of the Yerington Mine site. Arimetco produced some 95 million pounds of copper from 1989 to 1999 before declaring bankruptcy due to low copper prices and abandoning the property. The figures quoted above are reported as historic figures and should not be construed to reflect a calculated resource (inferred, indicated or measured) under current standards of NI 43-101 or definition of a NI 43-101 compliant resource.

In early 2000 the Nevada Division of Environmental Protection (NDEP) assumed operation of the site on a care and maintenance basis, primarily to ensure that HLP draindown solutions would continue to be maintained. In 2004, the Site came under the jurisdiction of the USEPA.

Following four years of due-diligence studies and negotiations with state and federal agencies, the property was acquired by SPS from the Arimetco bankruptcy court in April, 2011, after receiving BFPP letters from the USEPA, NDEP and BLM to protect SPS from liability emanating from activities of the former mine owners and operations.

In September 2012, SPS entered into a voluntary agreement with the U.S. Environmental Protection Agency (EPA) to participate in upgrading the system which manages fluids from the historic Arimetco operations at the Yerington Mine site. In exchange for SPS’s participation in this work, SPS obtained a site-wide ‘Covenant Not to Sue’ for the contamination left at the site by former owners and operators of the historic mine operations. The work required of SPS under the Agreement has been completed.

## 6.2 Historical Resources

At the time the property was acquired by SPS in 2011, the historical resources at the Yerington Mine itself were reported to be over 120 million tons in the ground at a grade of 0.34% Cu, representing material both within their ultimate pit design (98 million tons of 0.36% Cu) and material outside their design. That historical resource has now been replaced with the current updated NI 43-101 estimate as summarized in Section 14 of this report.

The figures quoted above are reported as historic figures and should not be construed to reflect a calculated resource (inferred, indicated or measured) under current standards of NI 43-101 or definition of a NI 43-101 compliant resource.

No copper extraction from the Arimetco heaps or mining has occurred since the Arimetco closure in 1999, but residuals from leaching and processing operations conducted by Anaconda and Arimetco (see Figure 4-4) are reported to contain additional, non-compliant resources including:

- Vat leach tailings (VLT) from the former Anaconda processing of oxide mineralized material



- Low grade oxide mineralized material stockpile from the Yerington pit that was below Anaconda's cut-off grade for oxide mineralized material
- Low grade sulfide stockpile from the Yerington pit that was below Anaconda's cut-off grade for sulfide mineralized material
- Arimetco's heap leach operations for Anaconda oxide tailings, low grade oxide mineralized material from Anaconda's operations, and copper oxide mineralized material mined from the MacArthur Mine located five miles north of the Yerington site

Table 6-1 summarizes a non-compliant estimate of the volume and grade of the residual sources on site. References 2 through 4 shown on the table refer to documents published by the USEPA, as listed in Section 27, References. The estimated tons and grade of the VLT's have been modified (lowered) from the 2012 NI 43-101 report. The change in estimated tons and grade are based upon a 2005 scoping study of the VLT performed by SRK, and two subsequent drill programs performed by SPS in 2013 consisting of 31 drill holes totaling 3801.5 feet on the VLT.

**Table 6-1 Yerington Mine –Residuals Based Upon Historic Data and Current Volume and Density Estimates**

Residual Source	Volume Cu Ft (000's)	Est tons (000's)	Assumed TCu Grade, %	Contained Cu, lbs (000's)	Particle Size	Assumed Recovery %	Recoverable Cu lbs (000's)
Anaconda Oxide Tails (VLT) <sup>1,3,5</sup>	959,717	76,777	0.10	153,555 math	<0.5 inch	70	107,488
Anaconda Oxide Waste Rock W- 3 <sup>1,4</sup>	327,450	19,643	0.226	88,787	ROM	50	44,393
Anaconda Sulfide Low Grade S-23 <sup>4</sup>	38,615	2,316	0.226	10,470	ROM	85	8,900
<i>Arimetco Phase 3 HLP 4<sup>1,2</sup></i>	138,980	7,951	<i>0.120</i>	<i>19,082</i>	<i>ROM &lt;6 inch</i>	<i>50</i>	<i>9,541</i>
<i>Arimetco Phase 3 HLP S<sup>1,2</sup></i>	157,595	10,115	<i>0.083</i>	<i>16,710</i>	<i>ROM &lt;6 inch</i>	<i>50</i>	<i>8,355</i>
<i>Arimetco Phase 1/2 HLP<sup>1,2</sup></i>	36,793	2,263	<i>0.099</i>	<i>4,471</i>	<i>ROM &lt;6 inch</i>	<i>50</i>	<i>2,236</i>
<i>Arimetco Phase 4 Slot HLP<sup>1,2</sup></i>	237,426	12,925	<i>0.091</i>	<i>23,394</i>	<i>ROM &lt;6 inch</i>	<i>50</i>	<i>11,697</i>
<i>Arimetco Phase 4 VLT HLP<sup>1,2</sup></i>	176,563	11,555	<i>0.075</i>	<i>17,240</i>	<i>ROM &lt;6 inch</i>	<i>50</i>	<i>8,620</i>
Subtotal Arimetco HLPs	747,357	44,809	-	80,897	-	-	40,449
<b>Grand Total</b>	<b>2,073,139</b>	<b>143,545</b>	<b>-</b>	<b>333,709</b>	<b>-</b>	<b>-</b>	<b>201,230</b>
<p><b>Notes:</b></p> <p>1 Volume based on SRK 2010 Digitization and Volume calculations using MineSight 3D Software and density based on: Draft Supplemental RI Report_OCT_2010 Page 47.</p> <p>2 Grade based on: AnacondaArimetco_RI_Report.pdf - Page 170-172.</p> <p>3 Grade based on: VLT XRF DSR July 2010 - Page 99.</p> <p>4 Grade based on: HistoricalSummaryReport-YeringtonMine-2010-10.pdf - Page 19.</p> <p>5 Additional VLT identified as cap on Sulfide Tails, but not quantified.</p>							

## 7.0 GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 Regional Geology

The Yerington Copper Project property is located in western Nevada near the western boundary of the Basin and Range Province, a land mass of internal drainage encompassing most of the state of Nevada. Basin and Range physiography consists of a series of nearly north-trending ranges separated by alluvial-filled, normal fault-bounded basins. The valley infill may range from tens to thousands of feet of alluvium.

In western Nevada, overprinted on the Basin and Range but not altering its physiographic character, is a major right lateral, northwest trending structural zone called the “Walker Lane” approximately 60 miles wide and generally parallel to the Nevada-California border, between Reno to the northwest and Las Vegas to the southeast. Major mineralized material deposits, principally precious metals, occur in the Walker Lane as does the Yerington copper mining district.

Within Lyon County, Nevada, the Yerington Project area occupies the alluvial-covered eastern flank and bedrock uplands of the central Singatse Range, a modest sized, north trending mountain range.

Regional geology of the Singatse Range, including the Yerington mining district is displayed in Figure 7-1 (Proffett and Dilles, 1984) from which the following text has been adapted.

The oldest rocks of the Singatse Range are an approximate 4,000-foot section of Late Triassic, intermediate and felsic metavolcanics, and sedimentary rocks forming the McConnell Canyon Formation, associated with volcanic arc development along the North American Continent during the Mesozoic Period.

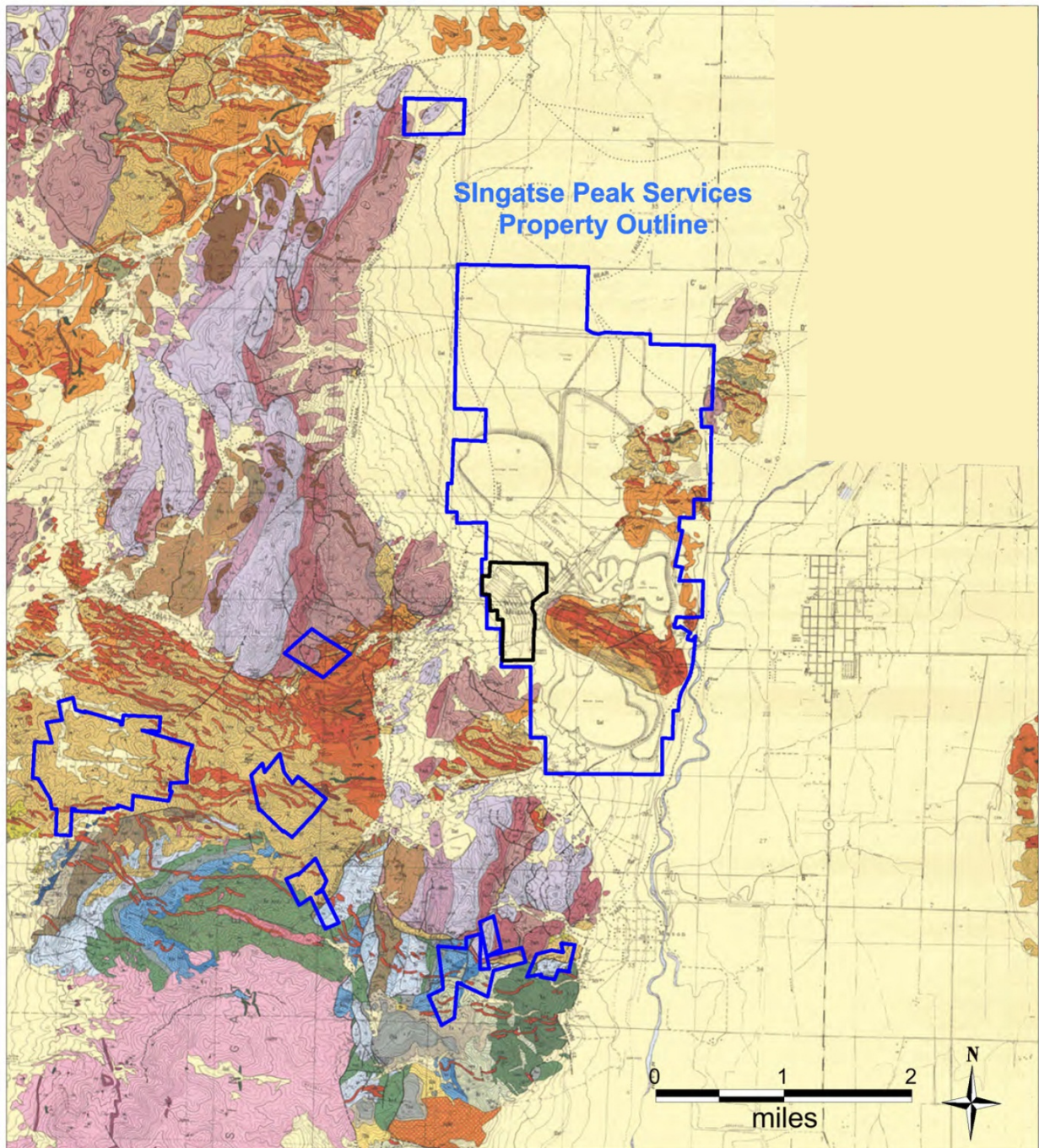
This sequence is disconformably overlain by a series of Upper Triassic carbonates, meta-sediments, and volcanoclastics that are, in turn, overlain by Upper Triassic limestone, siltstone, and tuffs, and by argillite thought to span the Triassic-Jurassic boundary. Jurassic limestone is succeeded by gypsum and sandstone, and by andesitic volcanics that may signal the beginning pulse of middle Jurassic plutonism.

Middle Jurassic plutonism, possibly related to the igneous activity that formed the Sierra Nevada Mountains to the west, resulted in emplacement of two batholiths comprising the Singatse Range, including the Yerington Batholith extending across 40 miles from the Wassuk Range on the east to the Pine Nut Range on the west. East-west striking structural zones mark the contacts between igneous rock and older, outlying Mesozoic basement at the north and south ends of the Singatse Range; the structures can be projected through the adjoining basins.

The Yerington Batholith comprises three intrusive phases emplaced between 169 Ma to 168 Ma (Proffett and Dilles, 1984): an early granodiorite pluton; a second phase of medium-grained quartz monzonite, creating a finer-grained “border phase quartz monzonite” where in contact with granodiorite; and, finally, a medium-grained porphyritic quartz monzonite emplaced as a

stock with cupolas developed over its top. Porphyry dike swarms sourced from the youngest phase, the porphyritic quartz monzonite, cut the cupolas. Copper mineralization formed contemporaneously with the dike swarms. Andesite and rhyolite dikes represent the final phase of Mesozoic igneous activity.

Mesozoic rocks were deeply eroded and then covered by Mid-Tertiary tuffs and lesser sedimentary rocks. The entire package was subsequently faulted along north-trending, downward and east dipping faults that resulted in extension and major westerly tilting.



**Figure 7-1 Regional Geology Map**

## 7.2 Local Geology

The Yerington Copper Property includes both the Yerington Deposit and a portion of the Bear Deposit which represent two of three known porphyry copper deposits in the Yerington district. The third known porphyry deposit is the Ann Mason deposit located approximately 2.5 miles west of the Yerington Deposit. Like the Ann Mason copper, the Yerington and Bear Deposits are hosted in Middle Jurassic intrusive rocks of the Yerington Batholith.

Copper mineralization on the property occurs in all three phases of the Yerington Batholith. Intrusive phases, from oldest to youngest, are known as the McLeod Hill Quartz Monzodiorite (field name granodiorite), the Bear Quartz Monzonite, and the Luhr Hill Granite, the source of quartz monzonitic (*i.e.* granite) porphyry dikes related to copper mineralization.

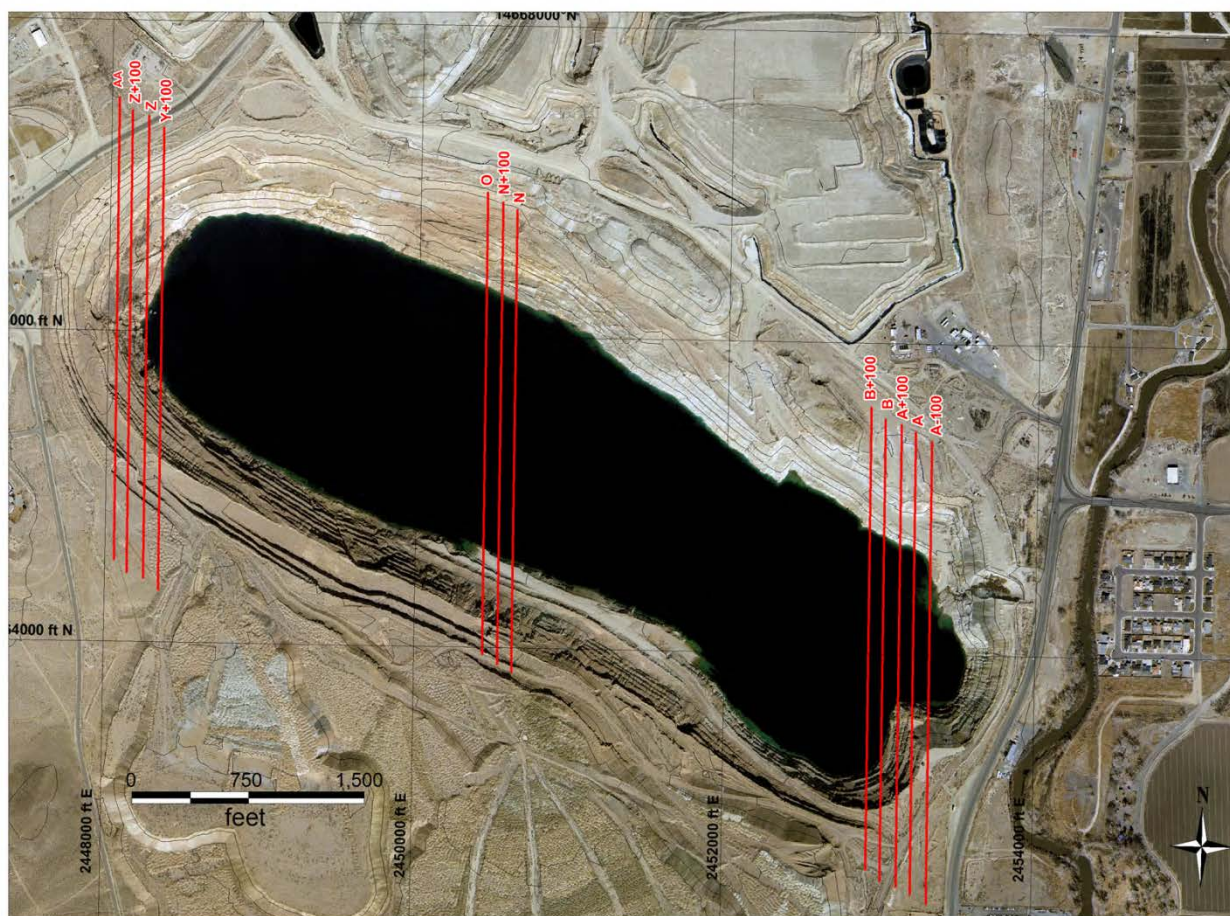
Following uplift and erosion, a thick Tertiary volcanic section was deposited, circa 18-17 Ma. This entire rock sequence was then extended along northerly striking, down-to-the-east normal faults that flatten at depth, creating an estimated 2.5 miles of west to east dilation-displacement (Proffett and Dilles, 1984). The extension rotated the section such that the near vertically-emplaced batholiths were tilted 60° to 90° westerly. Pre-tilt, flat-lying Tertiary volcanics now crop out as steeply west dipping units in the Singatse Range west of the Yerington Mine copper property. The easterly extension thus created a present-day surface such that a plan map view actually represents a cross-section of the geology.

## 7.3 Property Geology

Current knowledge of Yerington Mine geology benefits from detailed geologic mapping by Anaconda geologists on various pit benches during mining operations from the 1950s to the 1970s. SPS gained access to this data through membership in the Anaconda Collection – American Heritage Center housed on the campus of the University of Wyoming, Laramie, Wyoming. Further, of the approximately 700 exploration core holes drilled by Anaconda to define the Yerington Mine body of mineralized material, one-half splits of approximately 20 per cent of the core were stored in a recoverable manner on the mine site. SPS moved the core to a dry location for relogging and reassay to understand Anaconda geology as it relates to copper mineralization.

Anaconda referenced Yerington pit geology and drill hole locations alphabetically, on a 100-foot by 100-foot north-south/east-west grid, beginning at the east end of the pit with cross section “A minus 100”, “A”, “A+100”, “B”, “B+100”, etc. progressing westerly to “Z+100”, ending westerly with “AA”, as illustrated in Figure 7-2.





**Figure 7-2 Anaconda Section Lines**

The three intrusive phases of the middle Jurassic Yerington Batholith, exposed in the Yerington pit, have been intruded by at least six porphyry dikes originating from the youngest batholithic phase, the Porphyritic Quartz Monzonite (PQM). Anaconda geologists identified petrographically similar porphyry dikes by number, e.g. QMP1, QMP1.5, QMP2, QMP2.5, QMP2.7, QMP3, with the lowest numbers representing the earliest and strongest copper mineralized dike activity. Younger Jurassic rhyolite and andesite dikes followed. Cross-cutting relationships in pit walls allowed Anaconda geologists to determine age relationships of the dikes. A determination in core is more difficult. The oldest dikes are the best mineralized, especially QMP which averaged 0.80% to 2.0% TCu (J. Proffett, 2010, personal communication).

Yerington Mine rock descriptions used by SPS to log 2011 drill holes and to re-log historic Anaconda core follow, with reference to Anaconda cross section nomenclature.

### **7.3.1 Porphyritic Quartz Monzonite (PQM)**

Medium-grained equigranular to porphyritic quartz monzonite with large (1-2 cm) K-feldspar phenocrysts, 5-10% hornblende, 5-10% biotite, 10-20% anhedral quartz and plagioclase more abundant than K-feldspar. The large K-feldspar phenocrysts are pink and constitute 5-10% of the rock; however, K-feldspar also occurs as 1-4 mm anhedral grains intergrown with plagioclase and quartz. The rock is differentiated from the quartz monzonite porphyries by the lack of an aplitic groundmass (PQM has a more intergrown texture). Also, feldspar phenocrysts are commonly in contact.

PQM represents the cupola of porphyry copper deposits throughout the Yerington district and is the source for the porphyry dikes. It most commonly occurs on the northeastern and southeastern portions of the pit.

### **7.3.2 Granodiorite (GD)**

An olive green fine-grained rock with 5-15% hornblende, 2-10% biotite, 20% quartz, and a one-third K-feldspar/plagioclase ratio. Minor magnetite and other opaques are common. GD is the finest-grained and most mafic-rich of the equigranular rocks. It is not commonly mapped in the Yerington pit but, when present, it most commonly occurs on the western portion of the pit.

### **7.3.3 Quartz Monzonite (QM)**

Medium-grained equigranular whitish rock with 5-10% hornblende, 1-2% biotite, 10-15% quartz, 1-3% sphene, and nearly equal amounts of plagioclase and K-feldspar. It is usually coarser-grained than the border phase quartz monzonite and granodiorite. QM is most commonly observed on the eastern and east-central portion of the pit.

### **7.3.4 Border Phase Quartz Monzonite (BQM)**

BQM represents the contact 'rind' between the quartz monzonite and granodiorite. The rock is the most common equigranular rock mapped in the pit and finer-grained than the quartz monzonite. It is characteristically fine- to medium-grained but locally subequigranular to subporphyritic BQM. It has a pinkish hue and contains 5-10% hornblende, 2-5% biotite, 15-20% quartz and nearly equal amounts of plagioclase and K-feldspar. It most commonly occurs in the east-central to western portions of the pit.

### **7.3.5 Equigranular Quartz Monzonite (QME)**

Found in the east-central to western portions of the pit, QME is described as an 'igneous breccia' related to the Quartz monzonite porphyries at Yerington. The rock is difficult to distinguish from the border phase quartz monzonite as it differs only in age relationships and in the presence of quartz vein fragments. QME was the first equigranular rock mapped in the pit, later removed, and then reinstated as a valid rock type. The rock is differentiated by age relationships as it contains fragments of the QMP2 dike and granodiorite within it.



### **7.3.6 Porphyry Dikes**

Porphyry dikes are almost impossible to differentiate without cross-cutting relationships observed on pit benches by Anaconda geologists.

### **7.3.7 QMP1**

QMP1 is the main mineralized host in the Yerington pit. It contains 70-95% fine-grained groundmass with granular quartz and K-spar with minor biotite (aplitic). The phenocrysts consist of 2-10% hornblende, 2-10% biotite, 1-10% quartz eyes, 2-10% K-spar, and 35-40% 2-4mm plagioclase. Phenocrysts are commonly not in contact or are in point contact.

QMP1 almost always grades better than 1% Cu and commonly grades higher than 2% Cu. It contains at least 10% quartz (A-type) veinlets, but locally contains 30-40% quartz veinlets. The veining commonly obscures the porphyritic texture. Bornite and chalcopyrite are present as well as secondary magnetite occurring in distinct veinlets or with quartz (A-type) veins.

Primary potassium feldspar crystals turn a purple-gray color upon altering to plagioclase. Fine, shreddy biotite is also observed due to the potassic alteration. The lens-shaped dike has been mapped as far west as the N and N+100 section lines. The eastern extension in the pit is unclear.

### **7.3.8 QMP1.5**

QMP1.5 is commonly chilled and is differentiated from the QMP1 and QMP2 as it cuts the QME. The rock has abundant A-veins with bornite, chalcopyrite, and secondary magnetite. The percent of sulfide and veining is less than that of the QMP1. QMP1.5 commonly runs 0.8-1% Cu but mineralogically it is the same as the QMP1.

QMP1.5 has been mapped from at least the N+100 to the V+100-section line; the eastern extension is unknown. The thickest development is from the T+100 section line to the V-section line (on the 4,000-foot bench elevation).

### **7.3.9 QMPc**

Any of the porphyry dikes can have a chilled margin at the contact with another rock type causing a dark green to gray fine-grained groundmass with 2-4 mm white feldspar phenocrysts. However, there seems to be a QMPc dike that is separate from this contact phase; it may be the same dike as QMP1.5. It is possible that its occurrence is coeval with QMP1. It is described as having 70-95% fine-grained groundmass containing granular quartz and K-feldspar as well as biotite and muscovite (which make up 30% of groundmass). This dike has chalcopyrite and bornite as well as secondary magnetite occurring in abundant A-veins.

### **7.3.10 QMP2**

QMP2 is mineralogically similar to the QMP1 and QMP1.5 dikes, but does have a few slight differences. It contains 50-80% fine-grained groundmass with granular quartz and K-feldspar

(aplitic, but without biotite). Mafic phenocrysts are hornblende and biotite, but hornblende is more abundant than in the QMP1 and QMP1.5 (causing a higher hornblende:biotite ratio). K-feldspar phenocrysts are also generally larger than that of the QMP1 and QMP1.5.

Proffett (J. Proffett, verbal communication) describes it as a “run of the mill porphyry”. Mineralization consists mainly as chalcopyrite with some bornite. The grade varies from 0.2 to 0.8% Cu. Distinct A-veinlets are rare (1-2%) with more common B-type veinlets. B-type veinlets are quartz veinlets with coarse-grained inward growing quartz crystals. Magnetite is usually absent or sparsely present. Its groundmass is usually lighter in color than that of the QMP1 and QMP1.5.

USTs (unidirectional solidification textures) are commonly associated with the QMP-2 which represents the apex of the porphyry. These are identified by quartz crystals growing in a distinct direction (downward on the porphyry). It is sometimes described as ‘brain-rock’. This porphyry has been identified from at least the N section line to the U-section line, but is cut off in spots due to the QMP2.5.

### **7.3.11 QMP2.5**

Porphyry dikes mapped as QMP2.5 are mineralogically similar to QMP2, but have a higher hornblende:biotite ratio. They are characteristically low in grade (0.1-0.2% Cu), but do “get good in spots” (J. Proffett, personal communication). Mafics are weakly biotized to unbiotized. QMP 2.5 has little to no quartz veining and a high pyrite to chalcopyrite ratio.

East of the O-section line there are areas where the dike has 2-10% quartz veining with a grade of 0.4% Cu and even as high as 0.6% Cu with chalcopyrite and bornite. In this zone, the dike contains rectangular mafics that were hornblende, but are now chlorite. It is believed the dike “changes character”. It cuts off the QMP2 and exists from at least the N-section line to the S+100-section line.

### **7.3.12 QMP3**

QMP3 is probably the most easily recognized porphyry at the Yerington pit. The dike contains 60-80% fine-grained groundmass with angular K-feldspar and quartz and subhedral plagioclase laths. The groundmass can contain fine shreds of chlorite and muscovite. Mafic phenocrysts are mostly hornblende with minor biotite. Mafic phenocrysts are fresh to chloritized with little to no biotization. The rock has very few quartz veins ( $\leq 1\%$ ) and pyrite is the most abundant sulfide mineral. The grade ranges from  $<0.1$  to 0.1% Cu.

### **7.3.13 Rhyolite**

White to gray siliceous dikes occur sporadically throughout the Yerington pit. These dikes are 60-70% fine-grained quartz, 20-25% white feldspar phenocrysts, and 5-10% hornblende and biotite (usually hornblende>biotite). These dikes have little to no mineralization.

### **7.3.14 Andesite**

A fine-grained dark gray to green rock with a commonly chloritized groundmass is mapped as andesite. The groundmass is composed mainly of hornblende and biotite. The rock contains 10-15% plagioclase phenocrysts, 2-4 mm in length, that may be epidotized. The andesite is not mineralized but may contain up to 2% pyrite with only trace amounts of chalcopyrite. These dikes range from 1-10 foot in thickness and occur sporadically throughout the pit.

### **7.3.15 Alteration**

Alteration types recognized in drill core at the Yerington Mine copper property are common to those found in many mineralized porphyry copper systems. Mid-Tertiary downward and eastward extensional faulting exposes a porphyry copper deposit in cross section lying on its side with its top toward the west end of the Yerington pit. Limonite brownish sericite alteration (the pre-tilt upper, original pyrite-rich phyllic shell) is exposed at the west end of the pit. Potassically altered secondary biotite and magnetite dominant alteration in the center of the pit grades easterly into off-white sodic-rich rock (sodic-calcic alteration), the pre-tilt base near the eastern pit boundary. A thin slice of Tertiary volcanics underlying the alluvial gravels is exposed in pit benches at the west end of the pit.

#### **7.3.15.1 Propylitic**

Propylitic alteration is common throughout the Yerington Mine property in all rock types. This alteration type occurs as chlorite replacing hornblende, and especially epidotization as veining, coatings, and/or flooding on the granodiorite. Calcite veining is present but not commonly observed in core or drill cuttings. Feldspars are commonly unaltered. Propylitic alteration frequently overprints or occurs with the alteration types described below.

#### **7.3.15.2 Quartz-Sericite-Pyrite (QSP)**

Phyllic alteration is most frequently characterized by tan to light green sericite partially or completely replacing hornblende and/or biotite sites. When phyllic alteration becomes more intense, plagioclase and/or K-feldspar sites are also replaced by sericite. The altered mafics and feldspars are accompanied by a significant addition of pyrite, locally up to 10%. However, these minerals do not replace mafic or felsic sites. Sericitic altered zones are often quite siliceous; however, it is unclear if this is due to quartz addition or just the destruction of other primary minerals.

Phyllic alteration is most pervasive and intense near the west-central Yerington pit. The alteration type does not show preference with rock type and has been described in the granodiorite, quartz monzonite, and the porphyries.

#### **7.3.15.3 Potassic Alteration**

Potassic alteration occurs as shreddy, fine-grained biotite replacing hornblende along with secondary disseminated magnetite. To a lesser extent, there is potassium feldspar replacing plagioclase within the rock as well as in vein halos. Potassic alteration occurs in the central part

of the Yerington pit coinciding with the most intense and extensive quartz veining, and highest grade copper mineralization.

Potassic alteration is best observed in oldest (highest grade) porphyry dikes as well as the granodiorite and quartz monzonite hosts.

#### *7.3.15.4 Sodic-Calcic Alteration*

Pervasive sodic-calcic alteration, described by Anaconda geologists as sodic flooding, occurs at the east end (pre-tilt base) of the Yerington pit, creating off-white, hard altered rock. This type of alteration most frequently occurs as albite replacing K-feldspar and as chlorite, epidote, or actinolite replacing hornblende and/or biotite. In the most intense zones of sodic alteration, the mafics are completely destroyed.

#### *7.3.15.5 Silicification*

Silicification occurs as a wholesale replacement of the rock, more common in mineralized porphyry dikes.

#### *7.3.15.6 Supergene alteration*

Supergene, or secondary enriched copper minerals, made only a minor contribution to Yerington Mine production due to insufficient pyrite available for oxidation and creation of sulfuric acid. Chalcocite, the primary result of secondary enrichment, occurs randomly toward the west end (pre-tilt top) of the Yerington pit. Chalcocite is rarely mentioned in review of historic Anaconda drill logs.

SPS's drill holes collared on the west-northwest side of the pit intersected narrow, isolated chalcocite mineralization typically 0.1x% Cu over 10 to 20 feet thickness. The thickest chalcocite intercept measured 0.15% Cu over 95 feet in drill hole SP-014A (180/-70°/1000') from 435 feet to 540 feet. The transition from oxide (green and/or black) copper to primary sulfide copper mineralization is sharp and consistently chalcocite-absent throughout the pit excepting the west pit area noted above.

The oxide – sulfide surface across the Yerington pit generally occupies the 4,100 foot elevation as a rather smooth, undulating surface with local “divots” down to 3900 feet in places, ostensibly where oxidation followed fracturing downward. Base of oxidation in limited SPS drilling confirmed the general 4,100 foot elevation.

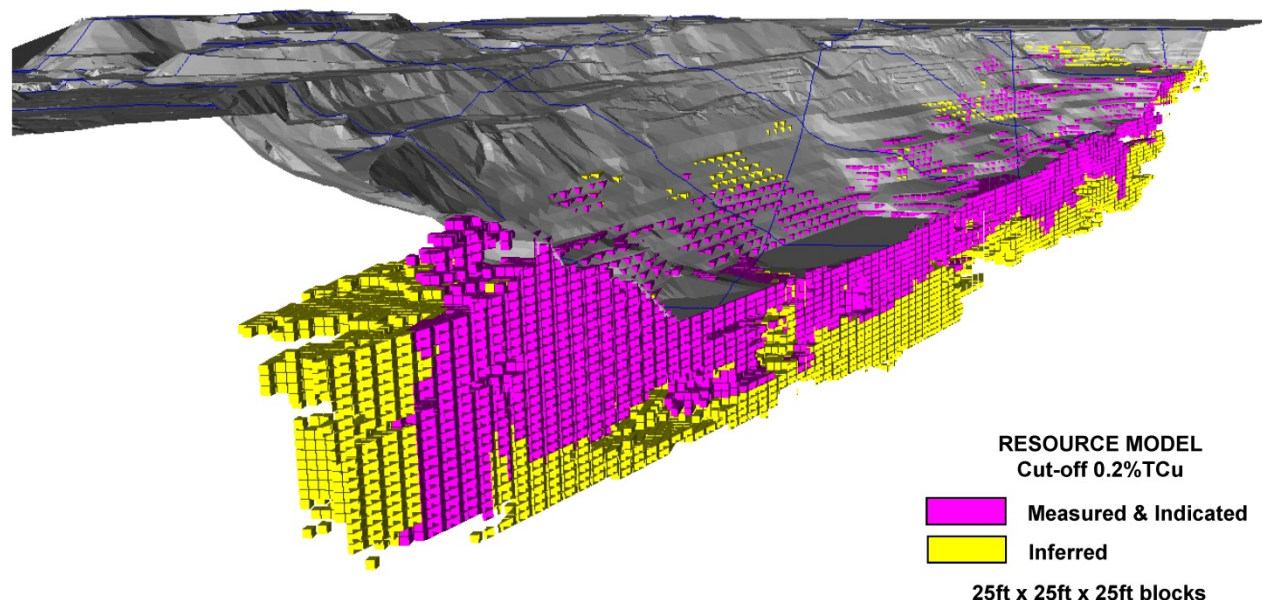
## **7.4 Mineralization**

### ***7.4.1 Yerington Mine Porphyry Copper Deposit***

The Yerington Mine produced approximately 162 million tons of mineralized material grading 0.54% Cu, of which oxide copper mineralized materials amenable to leaching accounted for approximately 104 million tons. A 1971 snapshot of head grades shows oxide mill head grades

averaging 0.53% Cu and sulfide grades ranging from 0.45% to 0.75% Cu (D. Heatwole, personal communication).

The general geometry of copper mineralization below the Yerington pit is shown by the DataMine<sup>®</sup> view of the resource model (Figure 7-3). The elongate body extends 6,600 feet along a strike of S62°E. The modeled mineralization has an average width of 2,000 feet and has been defined by drilling to an average depth of 250 feet below the pit bottom at the 3,800-foot elevation.



**Figure 7-3 DataMine<sup>®</sup> View through Half of Model Looking Easterly through the Yerington Pit**

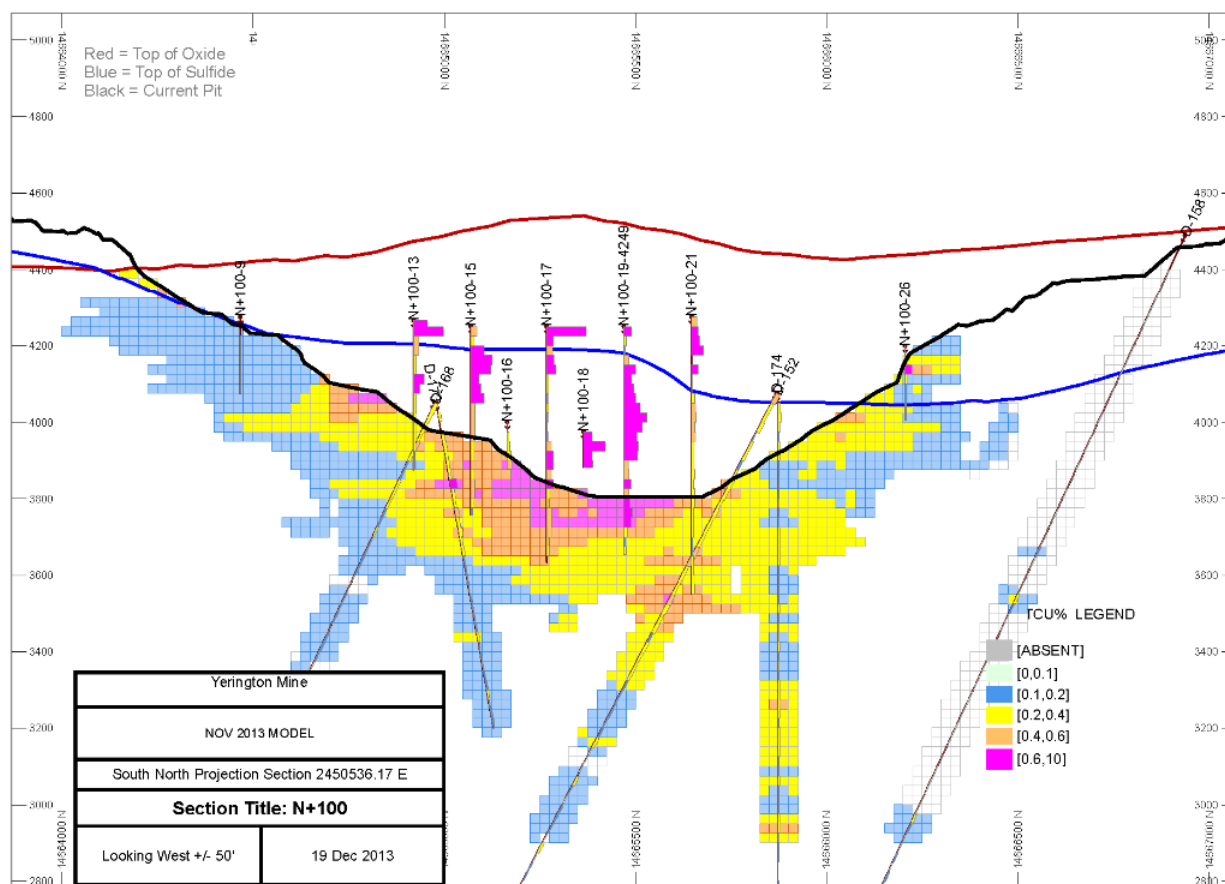
Most Anaconda holes were aborted when still in mineralization and very few were drilled below the 3,400 level where the porphyry system remains nearly unexplored. Only six deep holes drilled by Anaconda tested the pit area below the 3,000 level; only four of which (Anaconda Holes D158, D152, D174, and V2-28-33) actually explored the deep vertical projection of mineralization in the pit.

Holes D158, D152, and D174 were three of five holes drilled along a N-S oriented section through the pit during the period of 1969 -1970 (Figure 7-4). M.T. Einaudi (1970) summarized the results of the deep drilling program as defining a series of nested, concave upward, grade shells that are elongated down the N 70° dip of the dikes with the 0.2% Cu zone extending to approximately the 2,600 level; an overall dip distance of 2,200 feet. Although the program

encountered an increasing ratio of pyrite to chalcopyrite, there was no indication of a “barren core”, and the porphyry dikes showed a “remarkable continuity” down dip.

The 1970 study also established a 250 to 500 foot thick zone of fracture hosted and disseminated molybdenite mineralization that wraps around the sulfide zone near the chalcopyrite / chalcopyrite-pyrite transition. The outer limit of the molybdenite matches “in detail” the outer limit of the +0.1% Cu zone. The report concluded that the drill program had “demonstrated the existence of considerable reserves of +0.2% Cu”.

Figure 7-4 displays the location of Anaconda's deep holes in section N+100 (looking west) showing deep +0.2%TCu (yellow) and 0.1%TCu (blue) intervals.



**Figure 7-4 Resource Model at Anaconda Section N+100 (2,436,536N)**

The copper mineralization and alteration throughout the Yerington district and at the Yerington Mine are unusual for porphyry copper camps in that the mineralization is “stripey”, occurring in WNW striking bands or stripes between materials of lesser grade. Clearly, much of this geometry is influenced by the strong, district-wide WNW structural grain observed in fault, fracture and, especially, porphyry dike orientations. Altered, mineralized bands range in width from tens of feet to 200-foot-wide mineralized porphyry dikes mined in the Yerington pit by Anaconda.

Oxide copper occurred throughout the extent of the Yerington pit, attracting the early prospectors who sank the Nevada-Empire shaft on copper showings located over the present-day south central portion of the pit. To extract the copper oxides, Anaconda produced sulfuric acid on site; utilizing native sulfur mined and trucked from Anaconda's Leviathan Mine located approximately 70 miles west of Yerington.

Greenish, greenish-blue chrysocolla ( $\text{CuSiO}_3 \cdot 2\text{H}_2\text{O}$ ) was the dominant copper oxide mineral, occurring as fracture coatings and fillings, easily amenable to an acid leach solution. Historic Anaconda drill logs note lesser neotocite, *aka* black copper wad ( $\text{Cu}$ ,  $\text{Fe}$ ,  $\text{Mn}$ ),  $\text{SiO}_2$  and rare tenorite ( $\text{CuO}$ ) and cuprite ( $\text{Cu}_2\text{O}$ ). Oxide copper also occurs in iron oxide/limonite fracture coatings and selvages.

Chalcopyrite ( $\text{CuFeS}_2$ ) was the dominant copper sulfide mineral occurring with minor bornite ( $\text{Cu}_5\text{FeS}_4$ ) primarily hosted in A-type quartz veins in the older porphyry dikes and in quartz monzonite and granodiorite, as well as disseminated between veins in host rock at lesser grade. The unmined mineralized material below the current pit bottom is primarily of chalcopyrite mineralization.

#### **7.4.2 Bear Porphyry Copper Deposit**

The mineralization of the Bear copper deposit, located northeast of the Yerington Mine property partially underlies the sulfide tailings area of the Yerington Site. Copper mineralization is related to micaceous veining rather than A-type quartz veining common in the Yerington Mine porphyry system.

The Bear Deposit was discovered in 1961 by Anaconda through condemnation drilling. A subsequent drilling program identified chalcopyrite and bornite mineralization hosted in Jurassic rocks 500-1000 feet below valley fill and unmineralized rock. The Bear Deposit is a large porphyry system, partially delineated through drilling by both Anaconda in the 1960's and Phelps Dodge in the 1960's and 1970's. Quaterra has data from 49 drill holes totalling 126,400 feet that define a system covering an area of 2 square miles. Estimates of mineralized material by The Anaconda Company are reportedly more than 500 million tons averaging 0.4% copper (Diles and Proffett, 1995); there are no known resource estimates by Phelps Dodge. The deposit is known to extend beyond the boundaries of SPS property onto land controlled by Quaterra and other private landowners. The percentage of the resource estimate controlled by SPS properties is unknown. The Bear Deposit requires further drilling to fully delineate the areas of mineralization.

Estimates of mineralized material in the Bear Deposit are not NI 43-101 compliant and should not be relied upon. A qualified person has not done sufficient work to classify this material as a mineral resource and SPS does not treat them as such. In order to do so, they will have to be confirmed by additional drilling. These historic figures and should not be construed to reflect a calculated resource (inferred, indicated or measured) under current standards of NI 43-101 or definition of a NI 43-101 compliant resource.

## **8.0 DEPOSIT TYPES**

The Yerington Mine represents a partially mined porphyry copper deposit hosted in porphyry dikes that formed in stocks of the upper Yerington Batholith. The Yerington porphyry system has been tilted westerly so that the plan view of the deposit is a cross sectional exposure. Mining has revealed an alteration geometry displaying the original pyrite-rich cap (present-day leached sericite-limonite on the west end of the Yerington pit) grading downward easterly to quartz-sericite-pyrite alteration and to potassic alteration in the central portion of the pit, and then continuing to a soda-flooded root zone at the eastern end.



## 9.0 EXPLORATION

Exploration at the Yerington Mine Copper Property by SPS was confined to drilling from accessible pit ramps and access roads along the sides of the Yerington pit in 2011. No additional exploration drilling has been completed since this program.

The results of this resource estimate for the Yerington Mine are to update to the resources previously reported in "NI43-101 Technical Report, Mineral Resource, Yerington Copper Project, Lyon County, Nevada," published Feb 17, 2012. The current estimate includes newly digitized historic data from 232 drill holes that were not included in the 2012 estimate. The 232 additional holes were well distributed throughout the deposit and provided useful infill and extensional information to the previously used data, allowing upgrades in classification, improved grade estimation and a new resource definition. The current resource estimate now includes data from 833 drill holes.

Historically, the property in the area of the Yerington pit was drilled extensively by Anaconda and ultimately resulted in the extraction of over 1.7 billion pounds of copper.

Historic drilling of 49 drill holes (approximately 125,000 ft) has been conducted on the Bear Deposit by Anaconda and Phelps Dodge, resulting in an estimate of more than 500 million tons at an average grade of 0.4% Cu.

The figures quoted above for the Bear Deposit are reported as historic figures and should not be construed to reflect a calculated resource (inferred, indicated or measured) under current standards of NI 43-101 or definition of a NI 43-101 compliant resource.

## 9.1 Geophysics

During the 1952 to 1979 period of mine operation at the Yerington Mine, Anaconda completed a number of geophysical surveys, including an aeromagnetic survey, a ground magnetic survey, and an induced polarization-resistivity survey. Published gravity data were examined to estimate alluvial thicknesses in Mason Valley east of the Yerington Mine. These surveys covered much more additional ground than SPS's Yerington Mine property.

One of the more successful geophysical techniques was an in-situ induced polarization-resistivity and magnetic susceptibility survey taken over the pit floor during mining advance. This technology and innovation, developed by Anaconda geophysicist G.H. Ware, was able to define mineralization by tracking secondary magnetite alteration associated with the mineralized material-bearing QMP1 dike within the Yerington pit (Ware, 1979).

SPS has not yet commissioned additional geophysical surveys over the Yerington Mine property. However, going forward, SPS will review historic geophysical data to determine where follow-up surveys are necessary and target those potential sites.

## 10.0 DRILLING

### 10.1 Historical Drilling

Considerable exploration drilling was conducted by Anaconda during its long tenancy of the project which resulted in the current day Yerington pit. Although the actual number of exploration drill holes and footages is unknown, historic records indicate that well over a thousand holes, including both core and rotary, were drilled in exploration and development at the Yerington pit alone.

At the Anaconda Collection – American Heritage Center, University of Wyoming at Laramie, a huge inventory of Anaconda data is available for review. In an effort to obtain drill hole information on the Yerington Project, approximately 10,000 pages of scanned drill hole records from the library were reviewed and drill hole lithology, assays, and/or survey coordinates were initially recorded on almost 800 drill holes by SPS personnel. While some holes contained only lithologic or assay summary information, after final verification (discussed further in Section 12), 558 of those contained detailed assay (generally 5 foot intervals), hole location and orientation information to be used in the resource estimation completed in 2012. Once the composites of the 558 holes were validated against composites posted on 57 Anaconda cross sections, the digitized data was considered acceptable.

The validation completed for the 2012 resources work also confirmed that the cross sections were correctly reflecting the data found in the records. With this in mind, composites for those holes for which detailed assay data had not been found were taken directly from the cross sections, and have now been added to the database for the current resource update. These newly added holes are referred to as "Section" data in the current SPS database.

Of additional benefit to the SPS program, core left on site by Anaconda was available for assay by SPS. As part of the validation of the Anaconda data, selected intervals from 45 Anaconda core holes were shipped to Skyline Labs for assay to compare with assays recorded from the historic documents. A further discussion is found in the Section 12 of this report.

Although historic drilling included intervals which were subsequently mined by Anaconda, they remained in the database for statistical and interpolation purposes. Anaconda drill hole locations incorporated into the SPS database are shown in Figure 10-1 along with SPS drill hole locations and sites of re-assayed core.

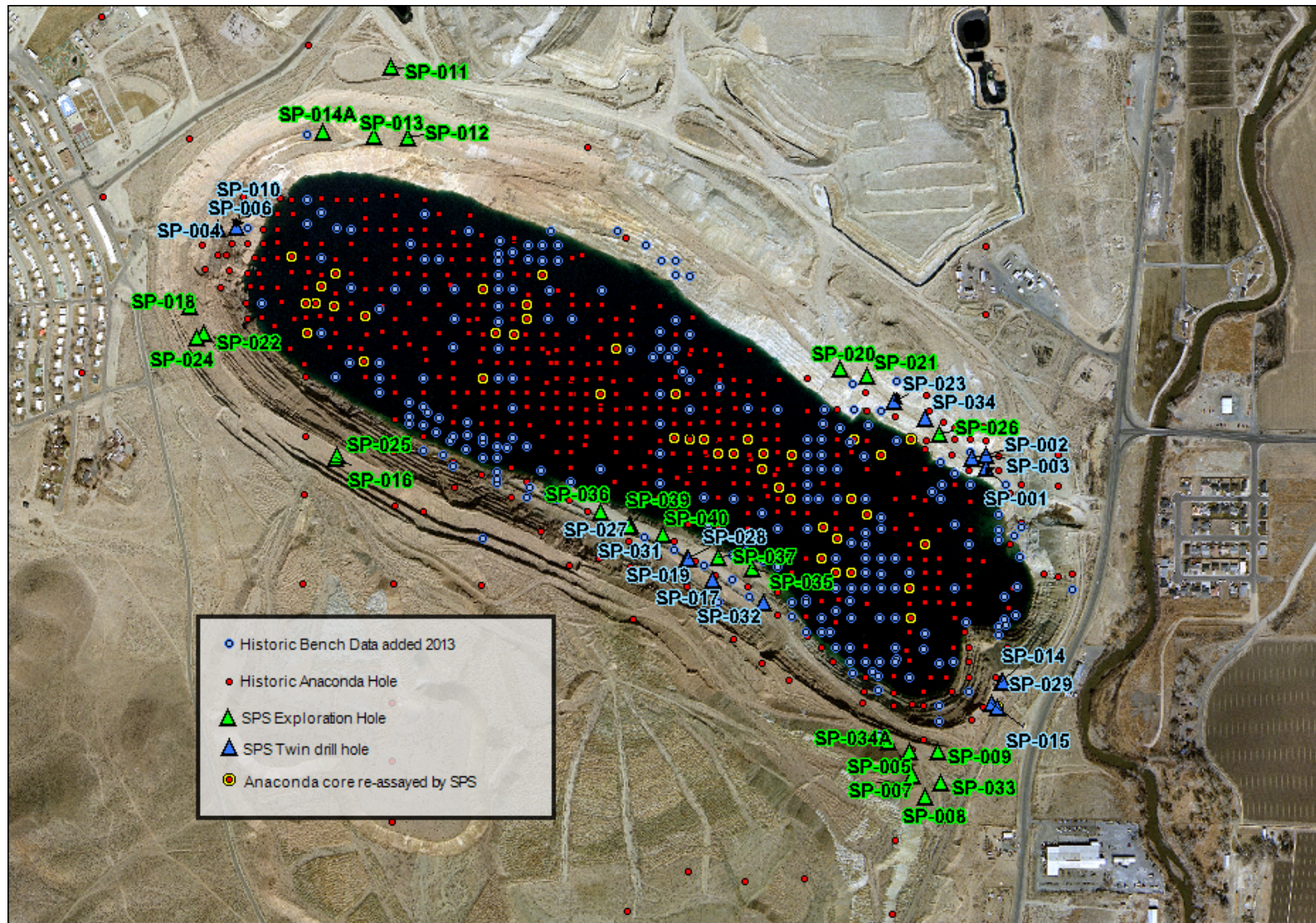


Figure 10-1 Yerington Pit Showing Historic and Current Drilling

## 10.2 SPS Drilling

SPS's 2011 drilling program totalled 21,887 feet in 41 holes including 6,871 feet of core in 14 core holes and 15,016 feet of reverse circulation (RC) in 28 RC holes (Figure 10-1). The core holes and four RC holes were drilled to twin Anaconda core holes, while the remaining RC holes were targeted for expansion of mineralization laterally and below historic Anaconda drill intercepts along the perimeter of the Yerington pit.

Hole siting was seriously hampered by pit wall geometry and by the presence of the pit lake, and was confined to selected benches within the Yerington pit in order to maintain safe access around the existing pit lake. One hole, SP-038, collared approximately 5,000 feet northwest of the Yerington pit, is an 830 foot RC precollar hole scheduled for core finish during 2012.

The total area covered by the drilling resembles an elliptical doughnut (the accessible ramps and roads along perimeter within the Yerington pit) measuring approximately 6,500 feet long by 2,500 feet wide. Drill hole spacing is irregular due to access limitations around the pit. Two RC holes were drilled outside of pit benches, one along the northwest pit rim, and one approximately 5,000 feet northwest of the pit. Two core holes, twinned by two RC holes, were drilled on the eastern pit rim.

SPS's drill holes, as well as other necessary survey control, have been surveyed by SPS staff using a Trimble XHT unit with horizontal accuracy to within one-half meter and vertical accuracy from one-half to one meter.

Eleven drill holes were downhole surveyed. The downhole survey work, using a surface recording gyro system, was contracted to International Directional Services LLC based in Elko, Nevada.

Table 10-1 provides basic information for drilling by SPS. Table 10-2 provides a listing of significant intercepts.

**Table 10-1 2011 Drilling Yerington Copper Project**

Drill Hole	Azimuth	Dip	Total Depth (ft)	Purpose	Type
SP-001	0	-90	207.5	Twin	Core
SP-002	0	-90	259	Twin	Core
SP-003	0	-90	405	Twin	Core
SP-004	0	-90	803.5	Twin	Core
SP-005	0	-90	390	Expl	RC
SP-006	0	-90	791	Twin	Core
SP-007	0	-90	340	Expl	RC
SP-008	0	-90	435	Expl	RC
SP-009	0	-90	355	Expl	RC
SP-010	90	-70	741	Twin	Core
SP-011	180	-60	500	Expl	RC
SP-012	180	-60	1000	Expl	RC
SP-013	180	-70	1000	Expl	RC
SP-014	0	-90	341.5	Twin	Core
SP-014A	180	-90	1000	Expl	RC
SP-015	0	-90	438	Twin	Core
SP-016	180	-70	780	Expl	RC
SP-017	0	-90	216.5	Twin	Core
SP-018	90	-70	530	Expl	RC
SP-019	0	-90	300	Twin	Core
SP-020	180	-80	265	Expl	RC
SP-021	180	-60	720	Expl	RC
SP-022	180	-60	940	Expl	RC
SP-023	180	-60	596	Twin	RC
SP-024	0	-90	780	Expl	RC
SP-025	0	-90	610	Expl	RC
SP-026	180	-60	655	Expl	RC
SP-027	0	-90	797	Twin	Core
SP-028	0	-90	300	Twin	RC
SP-029	0	-90	560	Twin	RC
SP-030	0	-90	460	Twin	RC
SP-031	0	-90	162	Twin	Core
SP-032	0	-90	506	Twin	Core
SP-033	0	-90	190	Expl	RC
SP-034	180	-60	903	Twin	Core
SP-034A	0	-90	365	Expl	RC
SP-035	0	-60	190	Expl	RC
SP-036	0	-60	550	Expl	RC
SP-037	180	-60	180	Expl	RC
SP-038	90	-60	830	Expl	RC
SP-039	0	-60	295	Expl	RC
SP-040	0	-55	200	Expl	RC



**Table 10-2 Significant Intercepts Yerington Copper Project - 2011 Listing**

<b>Drill Hole ID</b>	<b>From</b>	<b>To</b>	<b>Thickness (ft)</b>	<b>TCu %</b>
SP-004	228	752.5	524.5	0.35
<i>Including</i>	265	353	88	0.69
SP-006	204	408	204	0.53
	430.5	770	339.5	0.38
SP-010	258	369	111	0.71
	429	634	205	0.35
SP-023	10	600	590	0.21
<i>Including</i>	425	490	65	0.37
SP-035	0	190	190	0.23
<i>Including</i>	75	90	15	0.73
SP-036	230	325	95	0.28
SP-039	0	45	45	0.25
	135	215	80	0.3
SP-040	0	200	200	0.24
<i>Including</i>	170	200	30	0.49

## **11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY**

Tetra Tech has reviewed all of the Quaterra sample preparation, handling, analyses, and security procedures. It is Tetra Tech's opinion that the current practices meet NI 43-101 and CIM defined requirements.

It is the opinion of Tetra Tech that during the period from 1952 to 1979 when Anaconda operated the Yerington Mine, the drill samples taken by Anaconda were representative of the deposit and the methodologies commonly used by the industry at that time. This statement applies to samples used for the determination and publication of operating costs and profit by The Anaconda Company, a US publicly traded company, as well as for mine head grades, lithology, densities, and metallurgical performance.

While no details are available regarding Anaconda's exact assaying protocol and quality control during the period the Yerington copper mine was operating, public records of profit and cost confirmed that the techniques and procedures implemented conformed to industry standards for that era.

### **11.1 SPS Drilling Methods and Details**

SPS explored the Yerington Mine Copper Property with both RC and diamond core drilling methods. Paramount concern for safety restricted SPS drill sites to selected ramps and access along sides of the Yerington pit.

Core drilling was contracted to Ruen Drilling, Inc., Clark Fork, Idaho, who operated a track-mounted rig. Two RC drill contractors were engaged: George DeLong Construction, Inc., Winnemucca, Nevada, operating a truck-mounted rig, and Diversified Drilling LLC, Missoula, Montana, operating a track-mounted rig. Ruen operated round-the-clock, while the RC crews ran one 12-hour shift. Down-hole surveys were completed on nine drill holes.

Drill footage during by SPS amounted to 21,887 feet in 41 holes including 6,871 feet of core in 14 holes and 15,016 feet of RC drilling in 28 holes. Approximately 4,300 samples were collected and shipped for sample analyses. Samples were analyzed for total copper (TCu), gold, and a 47 element trace element package. Samples representing oxide mineralization and acid soluble sulfide copper were also analyzed for acid soluble copper and for ferric sulfate soluble copper. Rock quality designations (RQD) and magnetic susceptibility measurements were taken on all core which was photographed following geologic logging. Selected core was used to provide 23 bulk density measurements.

### **11.2 Reverse Circulation Drilling Sampling Method**

All RC drilling is conducted with water added to eliminate dust. Diversified Drilling LLC uses a percussion hammer with interchange sampling system. Samples are collected in a conventional manner via a cyclone and standard wet splitter. Samples are collected in 17-in by 26-in cloth bags placed in five-gallon buckets to avoid spillage of material. Sample bags are pre-marked by SPS personnel at five-foot intervals and also include a numbered tag inserted into a plastic bag

bearing the hole number and footage interval. Collected samples, weighing approximately 15 to 20 pounds each, are wire tied and then loaded onto a ten-foot trailer with wood bed allowing initial draining and drying. Each day SPS personnel or the drillers at the end of their shift, haul the sample trailer from the drill site to SPS's secure sample preparation warehouse in Yerington, Nevada. Samples for geologic logging are collected at the drill site in a mesh strainer, washed, and placed in standard plastic chip trays collected daily by SPS personnel.

### **11.3 Core Drilling Sampling Method**

Core diameter was HQ (approximately 2.75-inch diameter). Following convention, the drill crew at the drill site placed core samples in wax-impregnated, ten-foot capacity cardboard boxes. Sample boxes were delivered to SPS's secure sample warehouse in Yerington, Nevada by the drill crew following each 12-hour shift.

### **11.4 Sample Quality**

It is Tetra Tech's opinion that SPS's samples of the Yerington Copper Project are of high quality and are representative of the property. This statement applies to samples used for the determination of grades, lithologies, and densities.

### **11.5 RC Sample Preparation and Security**

RC sample bags, having been transported on a ten-foot trailer by drill crews or by SPS personnel from the drill site to the secure sample warehouse, are unloaded onto suspended wire mesh frames for further drying. Diesel-charged space heaters assist in drying during winter months. Once dry, four to five samples are combined in a 24- by 36-inch woven polypropylene transport ("rice") bag, wire tied, and carefully loaded on plastic lined pallets. Each pallet, holding approximately 13 to 15 rice bags, is shrink-wrapped and further secured with wire bands. Each pallet is weighed. Pallets are picked up and trucked by Skyline Assayers & Laboratories (Skyline) personnel who operate a sample preparation facility in Battle Mountain, Nevada. A chain of custody form accompanies all shipments from Yerington to Battle Mountain. Once Skyline preps each sample in its Battle Mountain facility, approximately 50 gram sample pulps are air-freighted to Skyline's analytical laboratory in Tucson, Arizona for analyses and assay.

### **11.6 Core Sample Preparation and Security**

Drill core, having been transported at end of each shift by the drill crew to SPS's secure sample warehouse, is logged by a SPS geologist who marks appropriate sample intervals (one to nominal five feet) with colored flagging tape. Lines are marked along the length of core with red wax crayons to indicate where the core piece should be sawed. Each core box, bearing a label tag showing drill hole number, box number, and box footage interval, is then photographed. Rock quality designations (RQD), magnetic susceptibility, and recovery measurements are taken. Core is then loaded on a pallet, shrink wrapped, and secured with wire bands for trucking by Skyline personnel to Skyline's sample preparation facility in Battle Mountain, Nevada. The core is sawed in half by Skyline personnel, one half designated for sample preparation/assay,



the second half placed in its core box for return to SPS. Chain of custody procedures for core shipments picked up by Skyline at the SPS core shed follow the format for RC samples.

## 11.7 Sample Analysis

All drilling samples from the Yerington Copper Project were analyzed by Skyline in Tucson, Arizona, which is accredited by the American Association for Laboratory Accreditation (A2LA - certificate no. 2953.01) and by ISO17025-compliant ALS Minerals Laboratories in Sparks, Nevada. Sample preparation (crush-split-pulverize) was completed at Skyline's Battle Mountain, Nevada, facility to prepare an approximate 50 gram pulp for shipment to Skyline's Tucson facility.

SPS implements a quality assurance and quality control assay protocol whereby either one blank or one standard is inserted with every ten samples into the assay stream.

The Skyline assay procedures are as follows:

- For Total Copper: A 0.2000 to 0.2300 gram (g) sample is weighed into a 200-milliliter (ml) flask in batches of 20 samples plus two checks (duplicates) and two standards per rack. A three-acid mix, 14.5 ml in total, is added and heated to about 250°C for digestion. The sample is made to volume and read on an ICP/AAS using standards and blanks for calibration.
- For Acid Soluble Copper: A 1.00 to 1.05 g sample is weighed into a 200 ml flask in batches of 20 samples plus two checks (duplicates) and two standards per rack. Sulfuric acid (2.174 l) in water and sodium sulfite in water are mixed and added to the flask and allowed to leach for an hour. The sample is made to volume and read on an ICP/AAS using standards and blanks for calibration.
- For Ferric Soluble Copper (QLT): This uses an assay pulp sample contacted with a strong sulfuric acid-ferric sulfate solution. The sample is shaken with the solution for 30 minutes at 75°C, and then filtered. The filtrate is cooled, made up to a standard volume, and the copper determined by AA with appropriate standards and blanks for calibration.
- For Gold: Fire assay fusion with atomic absorption finish to determine elemental concentration. Lower detection limit of five parts per billion (ppb).
- For Four Acid Digestion Trace Element Geochemistry: Ultra trace analyses by ICP/MS four acid digestion.

## 11.8 Quality Control

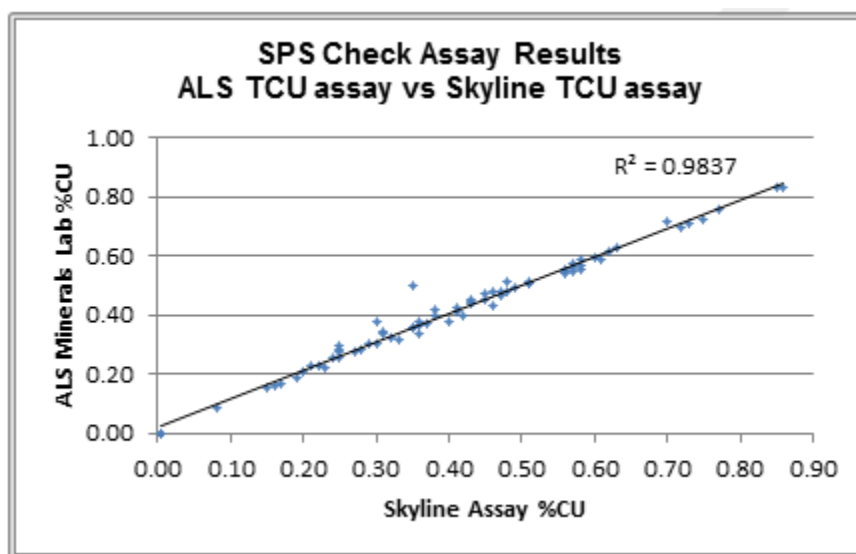
As part of the SPS quality control program, 220 standards and 222 blanks were submitted (Table 11-1) along with 5,557 individual drill hole samples to Skyline Laboratories. Additionally, 68 check assays plus seven quality control samples were submitted to ALS Mineral Labs, Reno, and 137 samples plus seven quality control samples were submitted for reassay to Skyline. No quality control failures were found during the reassaying.

Lot failure criteria were established as any standard assaying beyond two standard deviations of the expected value, or any blank assay greater than 0.015 percent TCu.

**Table 11-1 SPS 2011 QA/QC Program Results**

	Skyline Labs	ALS Mineral Labs
Total Drill Hole Samples	5694	68
Submitted Standards	220	3
Failed Standards	8	0
<b>% Standards Failure</b>	3.6%	0
Submitted Blanks	222	4
Failed Blanks	4	0
<b>% Blank Failure</b>	1.8%	0

Check assays from ALS Mineral Labs compared well with Skyline assays, providing additional confidence in the assay database, as shown in Figure 11-1.



**Figure 11-1 SPS Check Assay Results**

## 11.9 Review of Adequacy of Sample Preparation, Analyses, and Security

Tetra Tech's designated Qualified Person visited the site per NI 43-101 requirements in September 9-10, 2011. Both historic and SPS generated core were available for inspection and independent verification, and therefore, the NI 43-101 requirements for QA/QC with regard to the drill hole data in Tetra Tech's opinion can be met.

During Dr. Bryan's visit, George Eliopoulos (Yerington Project Manager and Chief Geologist), Judy Pratt, and other Singatse staff discussed with Dr. Bryan the history of the project (Figure 11-2) and observed ongoing drilling (Figure 11-3).

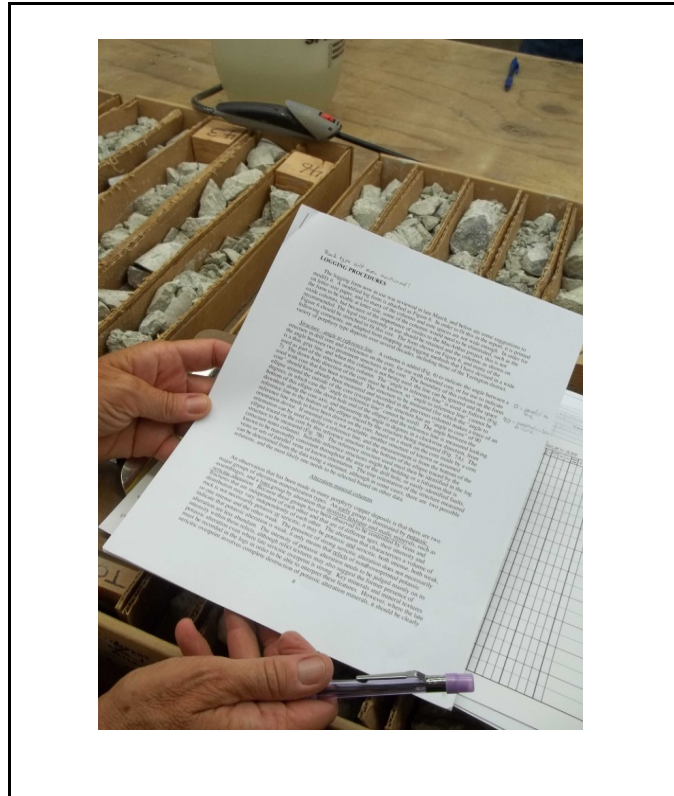


**Figure 11-2 Discussing the History of the Project**

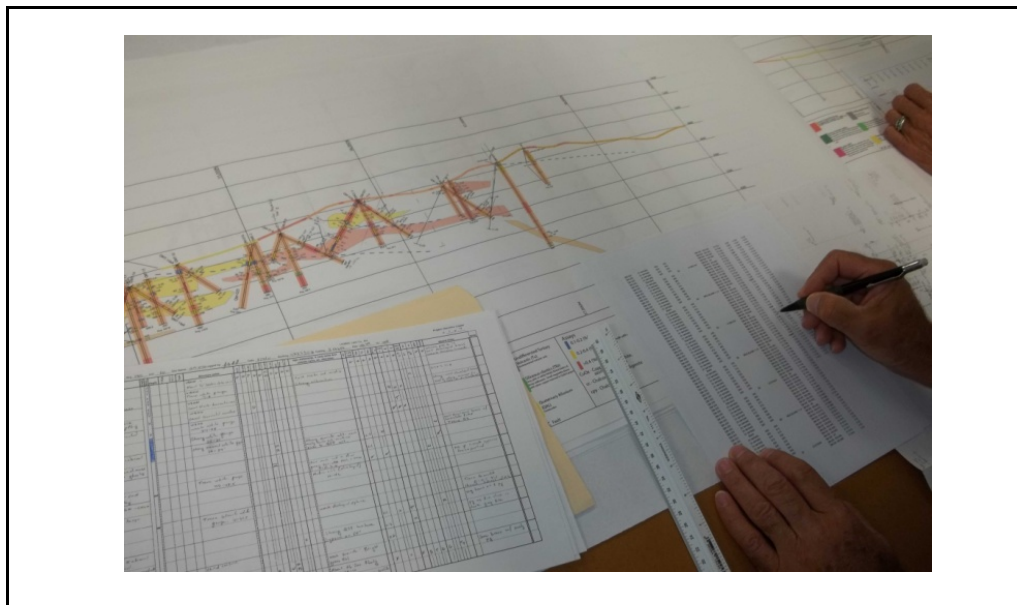


**Figure 11-3 Ongoing Drilling Observed During Site Visit**

Also observed were geologic logging and data entry of drill data following an established protocol (Figure 11-4), and procedures for manually creating geologic sections from the drill data (Figure 11-5).



**Figure 11-4 Reviewing Established Protocol for Data Entry**



**Figure 11-5 Manually Creating Geologic Sections from the Drill Data**

Finally, the use of double bagging (Figure 11-6), chain of custody procedures, standards storage, and sample security were reviewed.





**Figure 11-6 Double Bagging of Samples Prior to Shipment**

## **12.0 DATA VERIFICATION**

### **12.1 Data Verification Procedures**

SPS carried out detailed data capturing and verification processes in 2011 from Anaconda archives available through the Anaconda Collection – American Heritage Center, University of Wyoming at Laramie. In order to verify and validate this data, four programs were completed:

- Cross sections with composites of captured data were generated to compare against Anaconda archived cross sections with posted composites for 560 historic holes
- Eighteen twin holes were drilled to confirm historic data
- Utilizing Anaconda core remaining on site, selected intervals from 45 holes were sent for assay to compare against historic results
- Subsequent data for 232 additional holes was captured directly from historic cross sections after the 2011 validation program established that the sections were accurately reflecting data found in the records.

### **12.2 Results of Verification Programs**

#### **12.2.1 Cross Section Verification**

Some type of data for almost 800 drill holes was initially captured from over 10,000 pages of scanned records from the Anaconda archives. Values were recorded for collar coordinates, assay intervals, core recovery (where applicable), total copper grade (TCu), oxidized copper grade (ASCu), and, when present, grades for sludge collected during core drilling. These sludge grades were used by Anaconda in conjunction with core assays through zones of poor core recovery as a way to compensate for lost material. Although attempts were made to recreate their methodology, the lack of details and supplemental data ultimately restricted our use of the information to the original assays.

In addition to the assay information, cross sections showing bench composites were available from the Anaconda archives. By bench compositing the captured data and comparing to the bench composite values posted on the cross sections, Tetra Tech was able to identify and isolate bench differences and determine the cause. When incorporation of the sludge factors by Anaconda in its bench composites was identified as the cause but the data capture from the scanned sheets was correct, the data were deemed acceptable.

Drill holes not retained in the data set were those which contained only summary data of the assays, often reporting intervals several times larger than bench height. Only those holes which reported grades for the normal sampling intervals (generally 5 feet) were utilized for the 2012 resource work.

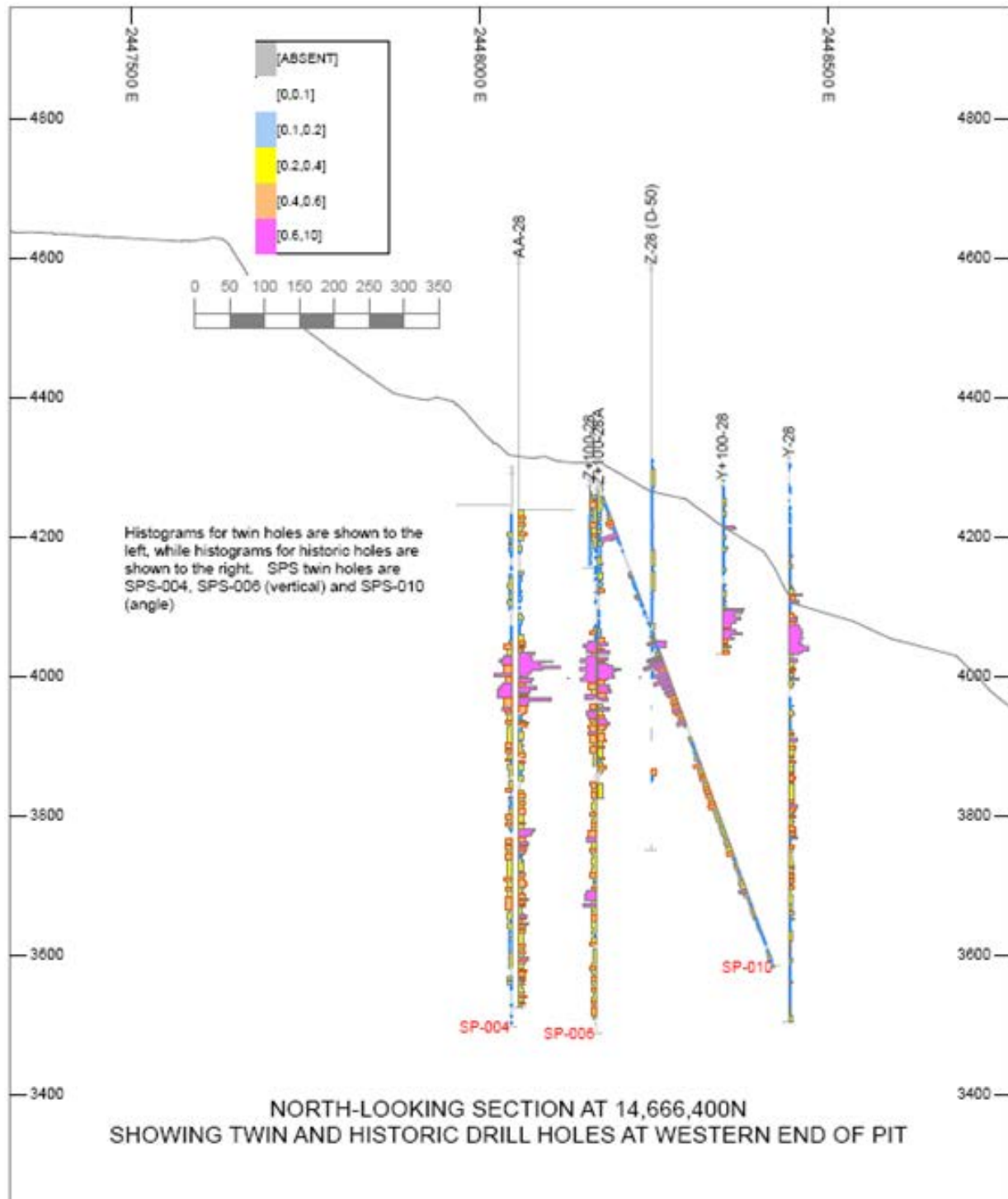
The cross section validation performed for the 2012 resource also confirmed that the bench composites posted correctly provided a cross check that section data was the same as that which was being found in the records. Subsequently, a program to capture available data

for drill holes found only on the cross sections was undertaken, and 232 additional drill holes were added to the database. Ultimately, Information from 558 historic holes with detail assay data and 232 holes with composite assay data was ultimately used for this current NI-43-101 resource estimation.

### ***12.2.2 Drill Hole Twinning***

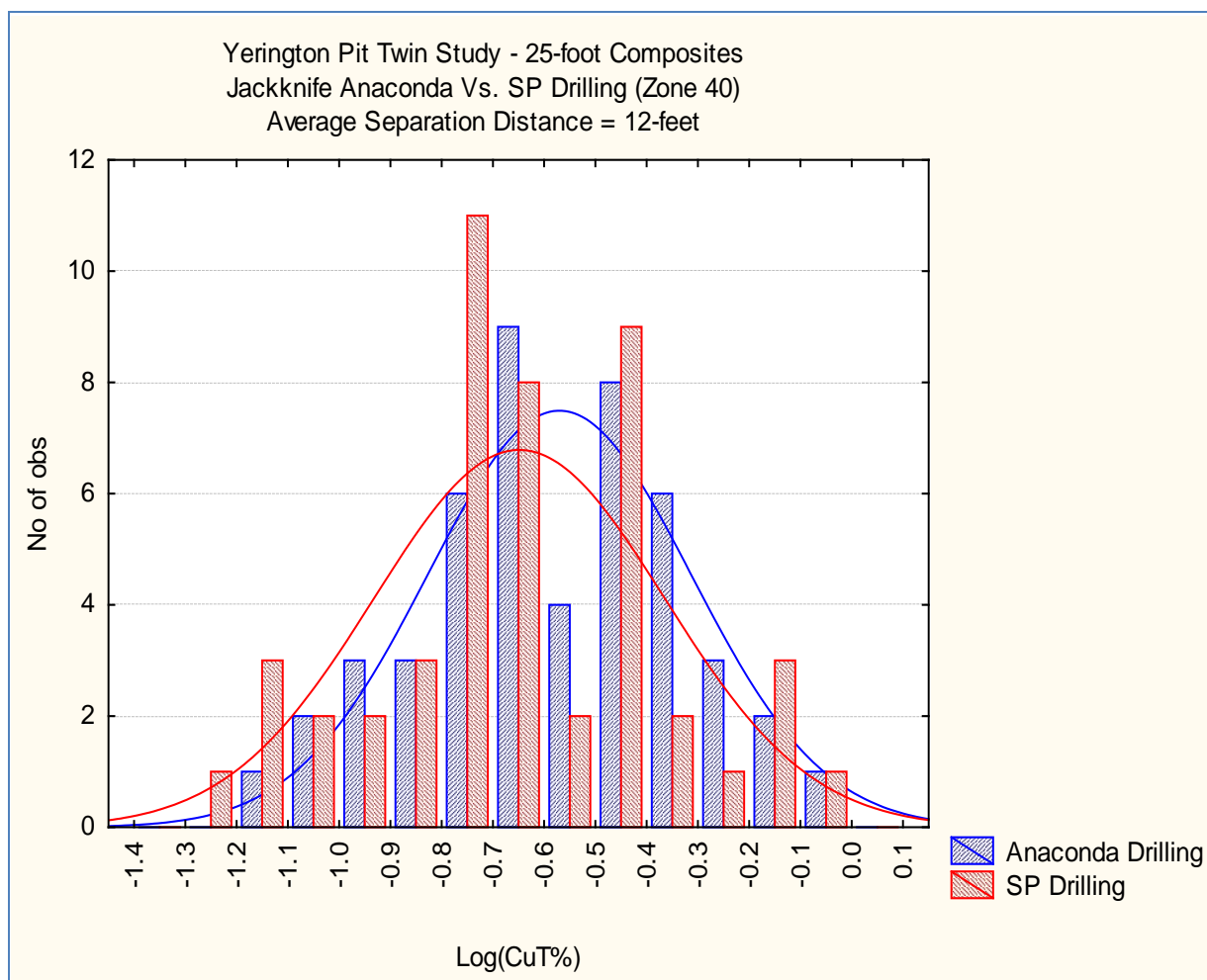
Fourteen core and two RC holes were drilled by SPS in an effort to twin Anaconda holes to confirm mineralization, and two RC holes were drilled to twin two of the SPS core holes.

Figure 12-1 shows a portion of the “twin” drilling study performed to determine if the historical data from Anaconda can be used in a 43-101 resource estimation. The newer SPS data have the appropriate chain-of-custody along with modern analytical assay. Of interest is the comparison of the new data to the historical data. The original Anaconda data were documented in hard copy sections that were rekeyed into a computer database. The position of SPS drill holes was compared to Anaconda data by both visual inspection of plotted sections and by the application of a strategy of using jackknife estimates of proximal data. The latter method produced 48 pairs of Anaconda and SPS data that were, on the average, 12 feet apart. Figure 12-2 shows the side-by-side histograms of the 48 pairs. Visually, the Anaconda drilling data are slightly higher in grade than the SPS twins. No statistical difference can be shown. More formally stated, a T-test of the twins shows that the null hypothesis of the two populations being the same cannot be rejected at a 95% confidence level (alpha of 0.05).



**Figure 12-1 Section Showing Twin Data**

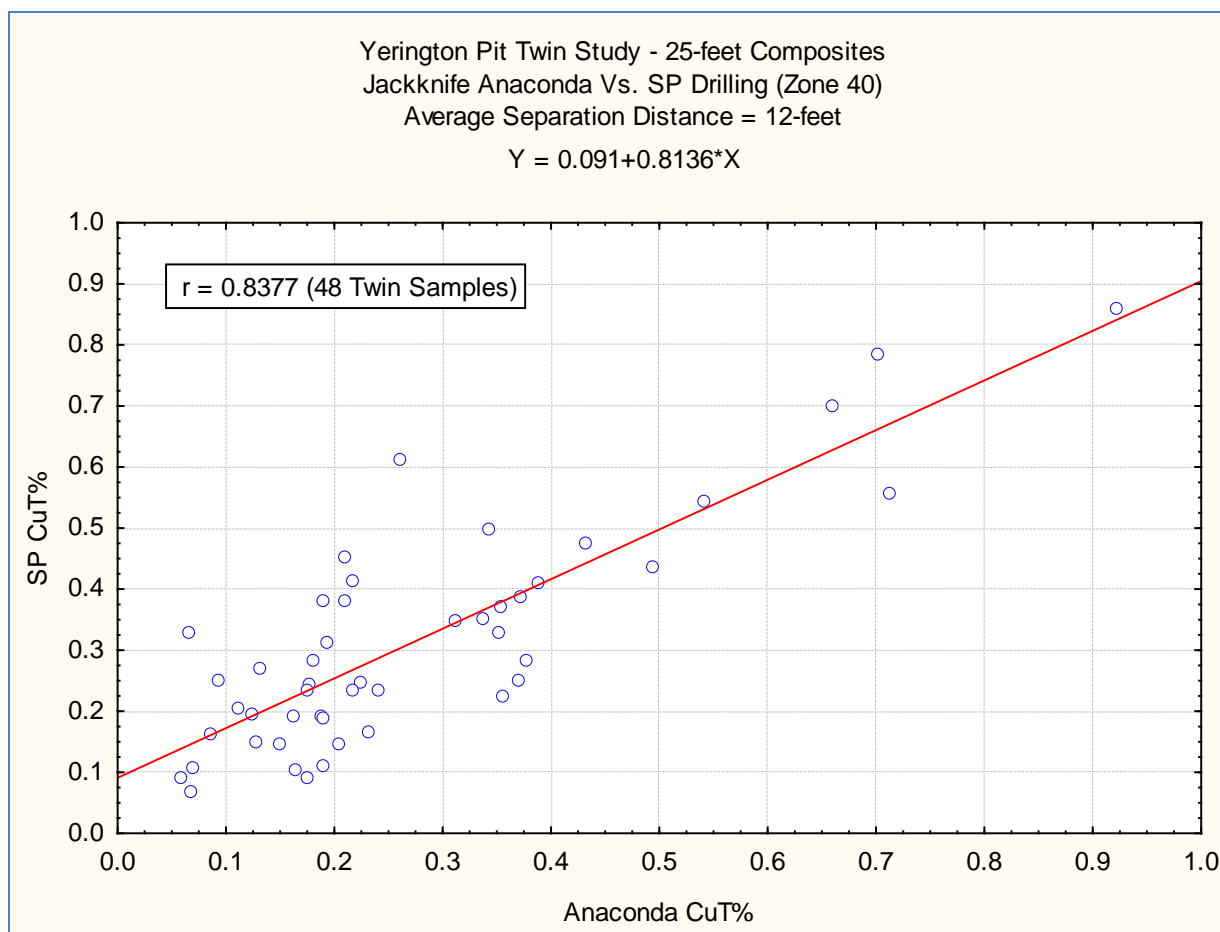




T-test for Independent Samples (SP vs ANACONDA - ZONE 40 TWIN STUDY USING JACKKNIFING)											
Note: Variables were treated as independent samples											
ANA vs. SP	Mean ANA	Mean SP	t-value	df	p	Valid N Group 1	Valid N Group 2	Std.Dev. Group 1	Std.Dev. Group 2	F-ratio Variances	p Variances
VALUE vs. ESTIMATION	0.313019	0.272892	1.070872	94	0.286969	48	48	0.180866	0.186235	1.060253	0.841890

**Figure 12-2 Histogram and T-Test Comparison of Anaconda and SPS Drilling**

Figure 12-3 shows that the 48 twin samples have a correlation of 84%, with a regression equation showing an equivalent grade at 0.5% copper.



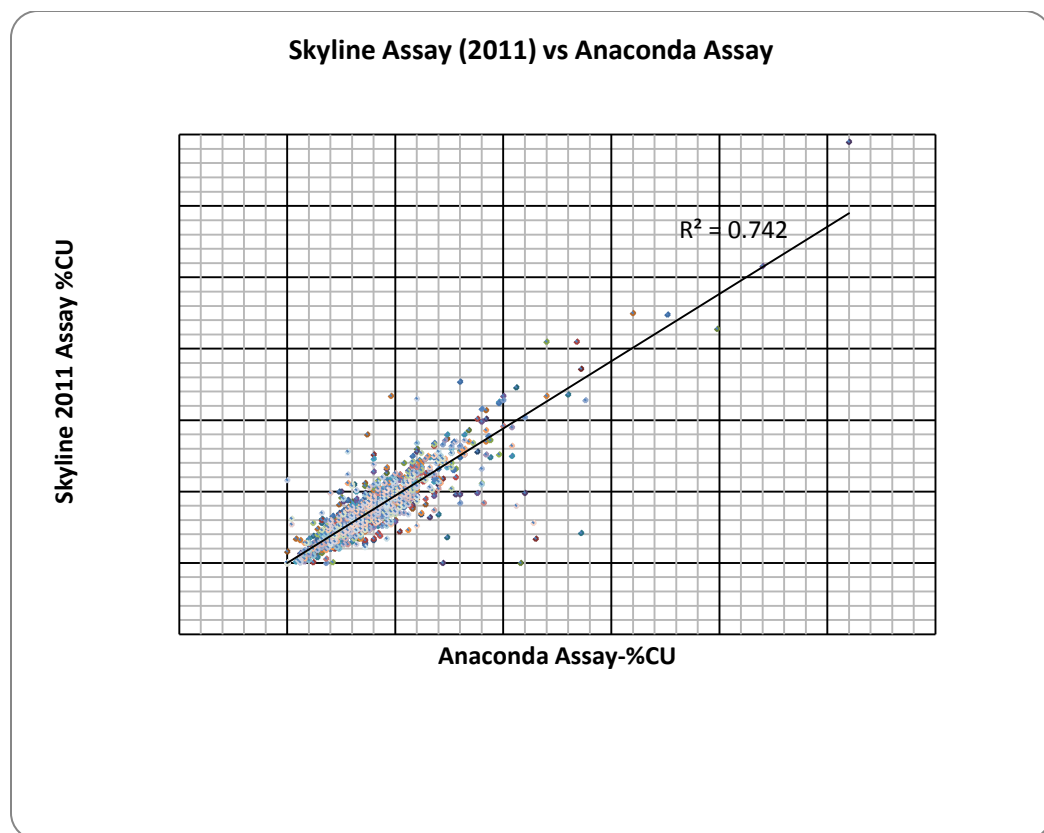
**Figure 12-3 Scatterplot Showing Anaconda and SPS Twin Data**

### 12.2.3 Re-assay of Anaconda Core

In addition to the twin study, selected intervals from archived Anaconda core were re-assayed following chain-of-custody procedures and utilizing modern analytical techniques.

Core intervals from 45 holes, well distributed across the pit, were relogged and photographed prior to being sent to Skyline Labs for re-assaying, and represented 5,446 feet of drilling. A total of 1,396 TCu assays were completed by Skyline.

In comparing the Skyline and Anaconda Assay data, Figure 12-4 shows a good correlation between the historic assays and reassayed intervals. The coefficient of determination,  $R^2$ , with a value of 0.742, shows that the two data sets are well correlated further validating the historic data.



**Figure 12-4 Skyline Assay (2011) vs Anaconda Assay**

### 12.3 Current Data Check

Tetra Tech has made several data checks and verifications of Singatse work that has been performed for the Yerington Project. These checks include validation of assays from Skyline and comparing geologic field logs with drill hole data. No discrepancies have been found.

### 12.4 Adequacy of Data

It is Tetra Tech's opinion that the data collection of both historic and modern data by SPS is adequate for the use of a 43-101 resource for the following reasons:

- The sampling is representative of the deposit in both survey and geological context
- The drill hole cores have been archived and are available for further checking

## **13.0 MINERAL PROCESSING AND METALLURGICAL TESTING**

The production history of the Yerington Mine, leaching of over 100 million tons of oxide copper mineralized material and approximately 58 million tons of sulfide mineralized material, demonstrates the amenability for successful copper recovery accomplished by Anaconda, averaging in the 70% range for oxide ore and in the high 90% for sulfide ore (Nesbitt, M., 1971). Oxide ores were treated with a 96 hour leach time in eight 13,000 ton cement vats. These large cement vats remain standing in the process area of the property. The concentrate from sulfide ore was rail shipped to the Anaconda smelter in Anaconda, Montana. The concentrator and ancillary tanks and equipment were dismantled and removed from the property following Anaconda's property closure.

As the project advances, detailed investigations into the historical metallurgy will be undertaken and new studies will be conducted.

## 14.0 MINERAL RESOURCE ESTIMATES

### 14.1 Introduction

This study has been completed to update the NI 43-101 compliant resources at the Yerington Mine to include additional historic drill hole data. It has been completed using validated historic data generated by Anaconda and modern drilling results generated by SPS.

The mineral resource estimate has been generated from assay analyses and the interpretation of a geologic model which relates to the spatial distribution of copper in the Yerington Deposit. Interpolation characteristics have been defined based on the geology, drill hole spacing, and geostatistical analysis of the data. The mineral resources have been classified by their proximity to the sample locations and are reported, as required by NI 43-101 and CIM standards on mineral resources and mineral reserves.

### 14.2 Resource Estimation

This section describes the methodology used in developing the mineral resource estimate for contained copper resources in the Yerington Mine deposit.

The mineral resource estimate was prepared in the following manner:

- The drill hole database of 833 holes containing historical and recent drilling was provided by SPS. This is an increase over the previous 43-101 report that used 600 holes. The breakdown of the current holes used are: 560 historic Anaconda drill holes captured from drilling logs, 41 recent Singatse Peak Services (SPS) drill holes and 232 historic Anaconda holes taken from detailed sectional drawings.
- The resource area is considered a single deposit, with no sub-regions requiring local interpolation adjustments.
- MicroModel® and DataMine® mining software were used for this analysis.
- Based upon geologic notations by the Anaconda geologists and input from SPS geologists, surfaces defining the boundaries between alluvium (Zone Code 20) and oxide (Zone Code 30), and oxide and sulfide (Zone Code 40) mineralization were established to allow independent grade interpolations.
- A present day topography which incorporates the historical mined pit is used to segregate the resource that still exists from what was mined
- The assay intervals were composited to a 25-foot bench height taking into account sample recovery. Statistics for the composites were analyzed for each of the rock codes. As with the five-foot interval data, analyses were done separately on the Anaconda and SPS data.
- No capping on copper grades was done on samples or composites.
- An analysis of twinned drill hole data was done as part of the data verification. It confirmed that the Anaconda drill hole data were statistically comparable to the SPS drill hole data. An additional study that re-assayed Anaconda core using modern analytical methods produced comparable results with the historical Anaconda assays. The positive

outcome of these two studies has allowed Tetra Tech to conclude that the Anaconda data are of sufficient quality to be used for NI\_43-101 resource estimation.

- Geostatistical analysis was done on the 25-foot, recovery weighted composite data. Unitized general relative variograms (UGR variograms) were generated for oxide and sulfide ores. The directional variograms were modeled with the spherical function using a nugget and up to three nested structures.
- The quality of the variogram models was checked using a model-validation technique called “jackknifing”. The method helps determine the best variogram parameters to be used for the theoretical model, and the best kriging parameters (range, direction, and search) to use.
- A resource model was done in English units: feet distances, pounds of copper, blocks as 2000 pounds per ton and density of rock expressed as a tonnage factor (12.62 cu-ft per ton).
- The resource model used multiple pass ordinary kriging (OK) to estimate percent total copper adjusted for recovery (%TCu\*) within each of the oxide and sulfide mineral zones. The kriged grades were checked by comparing block, composite, and assay histograms.
- The block model values were visually inspected in multiple sections and plan maps. These values were compared to the drill hole traces containing both interval assay data and composite data.
- A resource classification of measured, indicated, and inferred was developed using three ordinary kriging passes with differing search parameters. These parameters were chosen using jackknifing. The resource classification is based on an adjustment using kriging error.
- The Yerington total copper resource was tabulated for volume, tonnage, and contained metal for the measured, indicated, and inferred classes, excluding material within the current pit.
- The resource was verified with statistical and visual methods.

Figure 14-1 shows the general location of drill holes. The black dots represent the previously used Anaconda data and the SPS data, and the red dots represent the newly gathered sectional data.

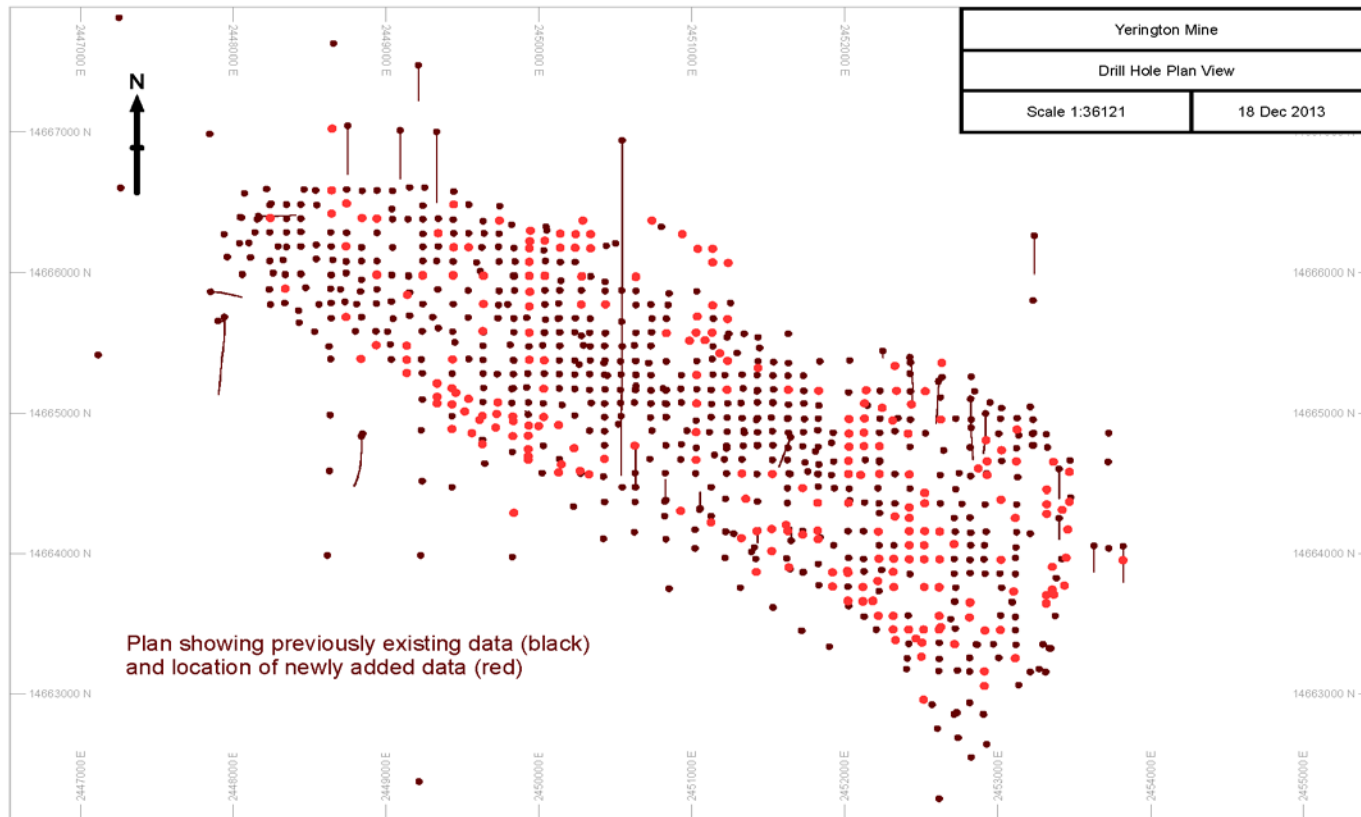


Figure 14-1 General Location of Drill Holes

### 14.3 Yerington Block Model

Block model parameters for Yerington were defined to best reflect both the drill spacing and current geologic interpretations. Table 14-1 shows the Yerington block model parameters.

**Table 14-1 Yerington Model Parameters**

<b>Yerington Model Parameters</b>	<b>X (Columns)</b>	<b>Y (Rows)</b>	<b>Z (Levels)</b>
Origin (lower left corner):	2,446,400	14,661,000	2,900
Block size (feet)	25	25	25
Number of Blocks	360	320	100
Rotation	0 degrees azimuth from North to left boundary		
Composite Length	25 feet (Bench)		

The Excel database provided by SPS contains the pertinent drill hole and assay information for 833 drill holes on the Yerington Deposit. Of the holes used, 560 are historic Anaconda holes, 41 are 2011 SPS holes and 232 are from recently digitized from historic sections. With the inclusion of the 2013 data (63,770 feet), Anaconda totals now represent 304,494 feet of drilling. SPS drilling represents 21,696 feet of drilling. Although historic data include material which has since been mined, inclusion of that data was critical in establishing statistical parameters for grade interpolation into unmined blocks.

The variables in the database are total copper (TCu) and acid-soluble copper (ASCu) from both Anaconda and SPS holes, and ferric sulfate copper (QLT) assays when available from SPS. The lack of ASCu and QLT data precluded further study. Core recovery for core holes and lithology as recorded from Anaconda archives or by SPS geologists were also included in the database (Table 14-2). When lithology was not available, the intervals were recorded as "UNK.". Full descriptions of the lithologies listed are available in Section 7.3, Property Geology. An examination of the relationship of grade to the various lithologies shows low variability in the average grade of all samples and even less variability for those greater than 0.1% Cu, indicating that the bulk of the mineralization is generally independent of lithology (Figure 14-2).

The original TCu grades were set to a null value when recovery was below 40%. For example a 5-foot interval with a TCu grade of 0.6% was redefined as missing when the recovery of that interval was less than 0.40. Further, the issue of metallurgical recovery is more a function of the mineralogical species of copper. With this in mind, the SPS geologists, incorporating their data and data from the Anaconda archives, interpreted two mineral zones, representing oxide and sulfide mineralization for grade interpolation.



**Table 14-2 Lithology Codes**

<b>Lithology Code (RX)</b>	<b>Description</b>
<b>NS</b>	No sample
<b>AND</b>	andesite
<b>APL</b>	aplite
<b>BQM</b>	border quartz monzonite
<b>BX</b>	breccia
<b>GD</b>	granodiorite
<b>PBX</b>	pebble breccia
<b>QAL</b>	alluvium
<b>QM</b>	quartz monzonite
<b>QME</b>	equigranular quartz monzonite
<b>QMP1</b>	quartz monzonite porphyry dike 1
<b>QMP1.5</b>	quartz monzonite porphyry dike 1.5
<b>QMP2</b>	quartz monzonite porphyry dike 2
<b>QMP2.5</b>	quartz monzonite porphyry dike 2.5
<b>QMP3</b>	quartz monzonite porphyry dike 3
<b>QMPa</b>	unidentified code found hist records
<b>QMPc</b>	fine grained qtz monzonite por dike
<b>QMPu</b>	undifferentiated qtz monzonite por dike
<b>QTZ</b>	quartz
<b>RHY</b>	rhyolitic porphyry
<b>TU</b>	Tertiary undefined
<b>TV</b>	Tertiary volcanics
<b>UNK</b>	unknown

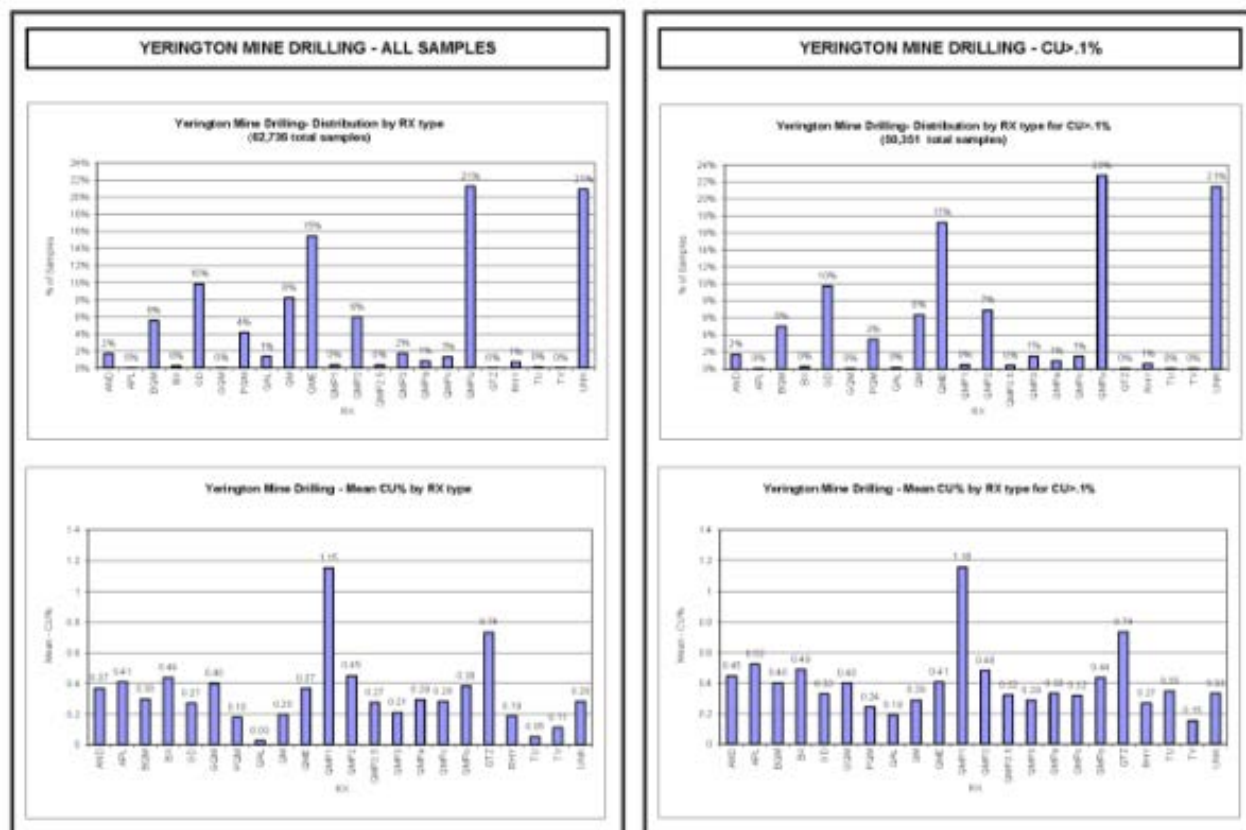


Figure 14-2 Rock Type and Mineral Distribution

## 14.4 Bulk Density Measurements (Specific Gravity)

Table 14-3 shows the results of 23 density tests which were completed in November, 2011 by Kappes, Cassiday & Associates in Reno, Nevada on samples from the current SPS drilling, resulting in an average bulk density tonnage factor of 12.62 cubic feet per ton for oxide material and 12.61 for sulfide. A final value 12.6 cubic feet per ton was used for the resource model and compares to 12.5 historically used by Anaconda.

**Table 14-3 Yerington Mine Specific Gravity Tests**

Table 14.3: YERINGTON MINE SPECIFIC GRAVITY TESTS									
Testwork by: Kappes, Cassiday & Associates. Nov 2011									
Rock Type	KCA Sample No.	SP- Hole Number	To	From	Received Weight, grams	Density, grams /cm <sup>3</sup>	Tonnage factor ft <sup>3</sup> /ton	Mineral Species	Mineral zone
Granodiorite	62005 A	006	39	39.8	819.57	2.5	12.87	cuprite	Oxide
Granodiorite	62005 B	004	426.2	426.9	558.06	2.2	14.31	py	Sulfide
Granodiorite	62005 C	010	465	465.8	546.5	2.6	12.57	cpy	Sulfide
Granodiorite	62053B	004	313	313.3	327.99	2.5	12.77	cpy	Oxide
Granodiorite	62053D	027	640.5	641.5	865.08	2.7	11.82	cpy	Sulfide
Porphyritic Quartz Monzonite	62005 D	002 (1)	37.1	37.8	289.67	2.4	13.19	gm,blk Cu	Oxide
Porphyritic Quartz Monzonite	62005 D	002 (1)	37.1	37.8	334.97	2.5	12.87	gm,blk Cu	Oxide
Porphyritic Quartz Monzonite	62005 E	001	2.5	3	609.69	2.6	12.42	gm Cu	Oxide
Porphyritic Quartz Monzonite	62005 F	015	201.5	202.1	629.87	2.6	12.14	gm,blk Cu	Oxide
Porphyritic Quartz Monzonite	62053E	034	421	421.7	949.47	2.6	12.28	cpy	Sulfide
Quartz Monzonite Porphyry-2	62005 G	006	602	602.2	274.87	2.5	12.62	cpy	Sulfide
Quartz Monzonite Porphyry-2	62005 H	006	602.2	602.5	277.88	2.6	12.52	cpy	Sulfide
Border Quartz Monzonite	62005 I	006	556	556.5	544.15	2.5	12.77	py	Sulfide
Border Quartz Monzonite	62005 J	010	705	705.5	738.33	2.6	12.23	cpy	Sulfide
Border Quartz Monzonite	62053C	010	710	710.5	454.63	2.6	12.42	cpy	Sulfide
Quartz Monzonite	62005 K	001	116	116.5	604.81	2.6	12.47	gm Cu	Oxide
Quartz Monzonite	62005 L	034	30.2	30.5	443.02	2.6	12.37	ox	Oxide
Quartz Monzonite	62005 M	001	104.5	105	620.8	2.7	11.74	gm,blk Cu	Oxide
Quartz Monzonite Porphyry-u	62005 N	004	261.6	262	386.93	2.5	12.67	lim	Oxide
Quartz Monzonite Porphyry-u	62005 O	002	122	122.5	564.6	2.6	12.23	gm Cu	Oxide
Quartz Monzonite Porphyry-u	62005 P	006	167	167.3	220.69	2.5	13.03	cuprite	Oxide
Quartz Monzonite Porphyry-u	62005 Q	006	166.1	166.3	239.09	2.4	13.24	cuprite	Oxide
Quartz Monzonite Porphyry-u	62053A*	003	310	310.4	302.41	1.7	19.42	cpy	Sulfide
Average Oxide						2.5	12.62		
Average Sulfide						2.5	12.61	(excluding 62053A)	
Average						2.5	12.61	(excluding 62053A)	

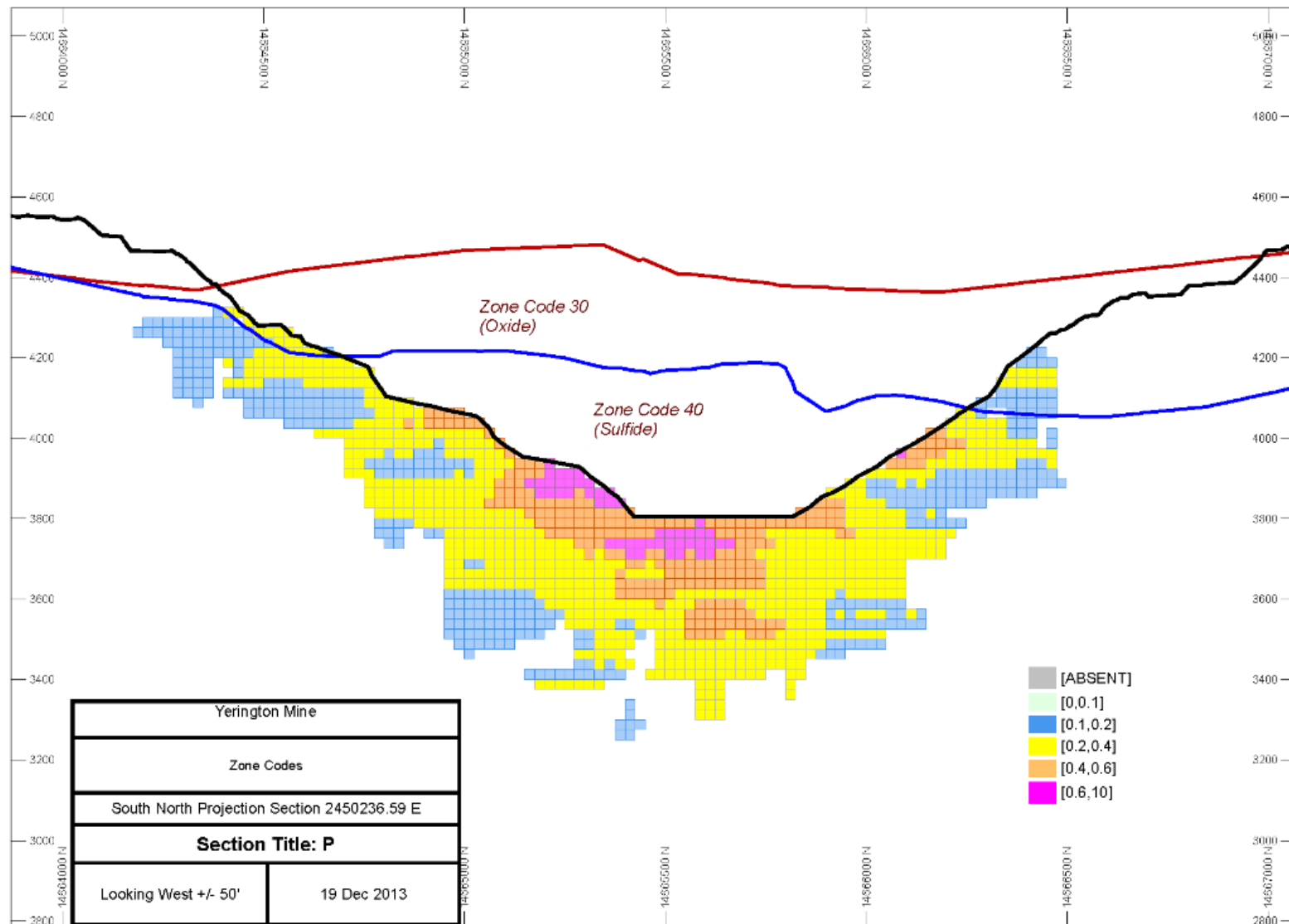
Table 14-4 shows the statistics regarding the maximum and minimum for location coordinates, depth, and dip for drill holes at Yerington. Table 14-5 shows the statistics for the interval assay and composite data for the Anaconda, Section and SPS drill holes. Figure 14-3 is a section showing the surfaces for historical topo (pseudo-topo at base of Qal), current topography, and the oxide/sulfide boundary surface. These surfaces have been used to code the assay and composite data in zones as 20 for alluvium, 30 for oxide and 40 for sulfide. Any code that is above the current topography is recoded by adding a one. For example, an oxide block of 30, assay or composite is coded as 31. Table 14-6 gives a count of the zone codes for samples, composites, and blocks. Included are two additional codes of 0 for data above the original historical surface and 9999 for undefined material. The blocks have a dimension of 25 x 25 x 25 feet which equates to an individual block measuring 15,625 cubic feet and having 1,240 tons.

**Table 14-4 Drill Hole Geometry Statistics**

DH CLASS LIMITED BY: All ( Anaconda-1, SP-3, Section-5 )						
	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	DEPTH
MINIMUM	2445479.0	14658974.0	3825.8	0.0	50.0	48.0
MAXIMUM	2453821.8	14670504.0	4668.4	358.2	90.0	2533.6
AVERAGE	2450950.5	14664974.1	4280.9	5.9	89.1	382.8
RANGE	8342.8	11530.0	842.6	358.2	40.0	2485.6
TOTAL COUNT	833					
TOTAL LENGTH	318856.6					
=====						
DH CLASS LIMITED BY Anaconda-1						
	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	DEPTH
MINIMUM	2447941.0	14658974.0	3825.8	0.0	50.0	60.0
MAXIMUM	2453821.5	14668796.0	4668.4	320.0	90.0	2533.6
AVERAGE	2450811.5	14665050.8	4265.4	3.2	89.5	416.8
RANGE	5880.5	9822.0	842.6	320.0	40.0	2473.6
TOTAL COUNT	560					
TOTAL LENGTH	233390.4					
=====						
DH CLASS LIMITED BY: Section-5						
	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	DEPTH
MINIMUM	2448341.8	14662955.0	3903.4	0.0	90.0	48.0
MAXIMUM	2453821.8	14667021.0	4608.4	0.0	90.0	830.0
AVERAGE	2451280.0	14664811.1	4306.9	0.0	90.0	274.9
RANGE	5480.0	4066.0	705.0	0.0	0.0	782.0
TOTAL COUNT	232					
TOTAL LENGTH	63770.2					
=====						
DH CLASS LIMITED BY: SP-3						
	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP	DEPTH
MINIMUM	2445479.0	14662544.0	4224.2	0.0	55.0	162.0
MAXIMUM	2453349.0	14670504.0	4549.7	358.2	90.0	1000.0
AVERAGE	2450985.6	14664849.1	4345.0	76.1	77.3	529.2
RANGE	7870.0	7960.0	325.5	358.2	35.0	838.0
TOTAL COUNT	41					
TOTAL LENGTH	21696.0					

**Table 14-5 Drill Hole Sample Interval Statistics**

STATS ARE FOR THE FOLLOWING CLASSES: Anaconda-1, SP-3, Section-5						
Samples						
*****						
* TOTAL DRILLHOLES = 833 *						
* AVERAGE VALUES OF SELECTED DATA *						
* LABEL	NUMBER	AVERAGE	STD DEVIATION	MIN. VALUE	MAX. VALUE	# MISS. *
* FROM-TO	63846	4.94130	14.80244	0.00000	655.00000	0 *
* TCu	61280	0.31204	0.43030	0.00000	18.40000	2566 *
* TCuAdj	63846	0.70503	0.28376	0.00000	1.00000	0 *
* TCu*	52650	0.30974	0.42031	0.00000	17.32000	11196 *
*****						
Composites						
*****						
* TOTAL DRILLHOLES = 833 *						
* AVERAGE VALUES OF SELECTED DATA *						
* LABEL	NUMBER	AVERAGE	STD DEVIATION	MIN. VALUE	MAX. VALUE	# MISS. *
* FROM-TO	13550	23.53198	5.25372	0.03000	32.63519	0 *
* cTCu	10254	0.31383	0.33243	0.00000	7.62394	3296 *
* cTCu*	9010	0.31295	0.33386	0.00000	9.98127	4540 *
*****						
STATS ARE FOR THE FOLLOWING CLASSES: Anaconda-1						
Samples						
*****						
* TOTAL DRILLHOLES = 560 *						
* AVERAGE VALUES OF SELECTED DATA *						
* LABEL	NUMBER	AVERAGE	STD DEVIATION	MIN. VALUE	MAX. VALUE	# MISS. *
* FROM-TO	58125	3.97947	7.50464	0.09998	433.89999	0 *
* TCu	55759	0.32706	0.44446	0.00000	18.40000	2366 *
* TCu*	47212	0.32682	0.43605	0.00000	17.32000	10913 *
*****						
Composites						
*****						
* TOTAL DRILLHOLES = 560 *						
* AVERAGE VALUES OF SELECTED DATA *						
* LABEL	NUMBER	AVERAGE	STD DEVIATION	MIN. VALUE	MAX. VALUE	# MISS. *
* FROM-TO	9906	23.56052	5.06909	0.03000	32.63519	0 *
* cTCu	8177	0.33189	0.35734	0.00000	7.62394	1729 *
* cTCu*	6944	0.33353	0.36317	0.00000	9.98127	2962 *
*****						
DRILLHOLE CLASS LIMITS ARE IN FORCE						
STATS ARE FOR THE FOLLOWING CLASSES: Section-5						
Samples						
*****						
* TOTAL DRILLHOLES = 232 *						
* AVERAGE VALUES OF SELECTED DATA *						
* LABEL	NUMBER	AVERAGE	STD DEVIATION	MIN. VALUE	MAX. VALUE	# MISS. *
* FROM-TO	1499	42.37906	75.59350	1.00000	655.00000	0 *
* TCu	1332	0.31543	0.18424	0.00000	1.30000	167 *
* TCu*	1331	0.31545	0.18431	0.00000	1.30000	168 *
*****						
composites						
*****						
* TOTAL DRILLHOLES = 232 *						
* AVERAGE VALUES OF SELECTED DATA *						
* LABEL	NUMBER	AVERAGE	STD DEVIATION	MIN. VALUE	MAX. VALUE	# MISS. *
* FROM-TO	2793	22.83216	5.88681	0.07001	25.00003	0 *
* cTCu	1302	0.32063	0.17814	0.00703	1.30000	1491 *
* cTCu*	1302	0.32063	0.17814	0.00703	1.30000	1491 *
*****						
STATS ARE FOR THE FOLLOWING CLASSES: SP-3						
Samples						
*****						
* TOTAL DRILLHOLES = 41 *						
* AVERAGE VALUES OF SELECTED DATA *						
* LABEL	NUMBER	AVERAGE	STD DEVIATION	MIN. VALUE	MAX. VALUE	# MISS. *
* FROM-TO	4222	4.89093	0.69423	0.00000	18.00000	0 *
* TCu	4189	0.11112	0.15818	0.00500	3.01000	33 *
* TCuAdj	4222	0.94229	0.16227	0.00000	1.00000	0 *
* TCu*	4107	0.11165	0.15930	0.00500	3.01000	115 *
*****						
Composites						
*****						
* TOTAL DRILLHOLES = 41 *						
* AVERAGE VALUES OF SELECTED DATA *						
* LABEL	NUMBER	AVERAGE	STD DEVIATION	MIN. VALUE	MAX. VALUE	# MISS. *
* FROM-TO	851	25.49472	4.61182	0.56158	31.96429	0 *
* cTCu	775	0.11187	0.13159	0.00500	0.95871	76 *
* cTCu*	764	0.11280	0.13306	0.00500	0.95871	87 *
*****						



**Figure 14-3 Zone Codes in Section P**

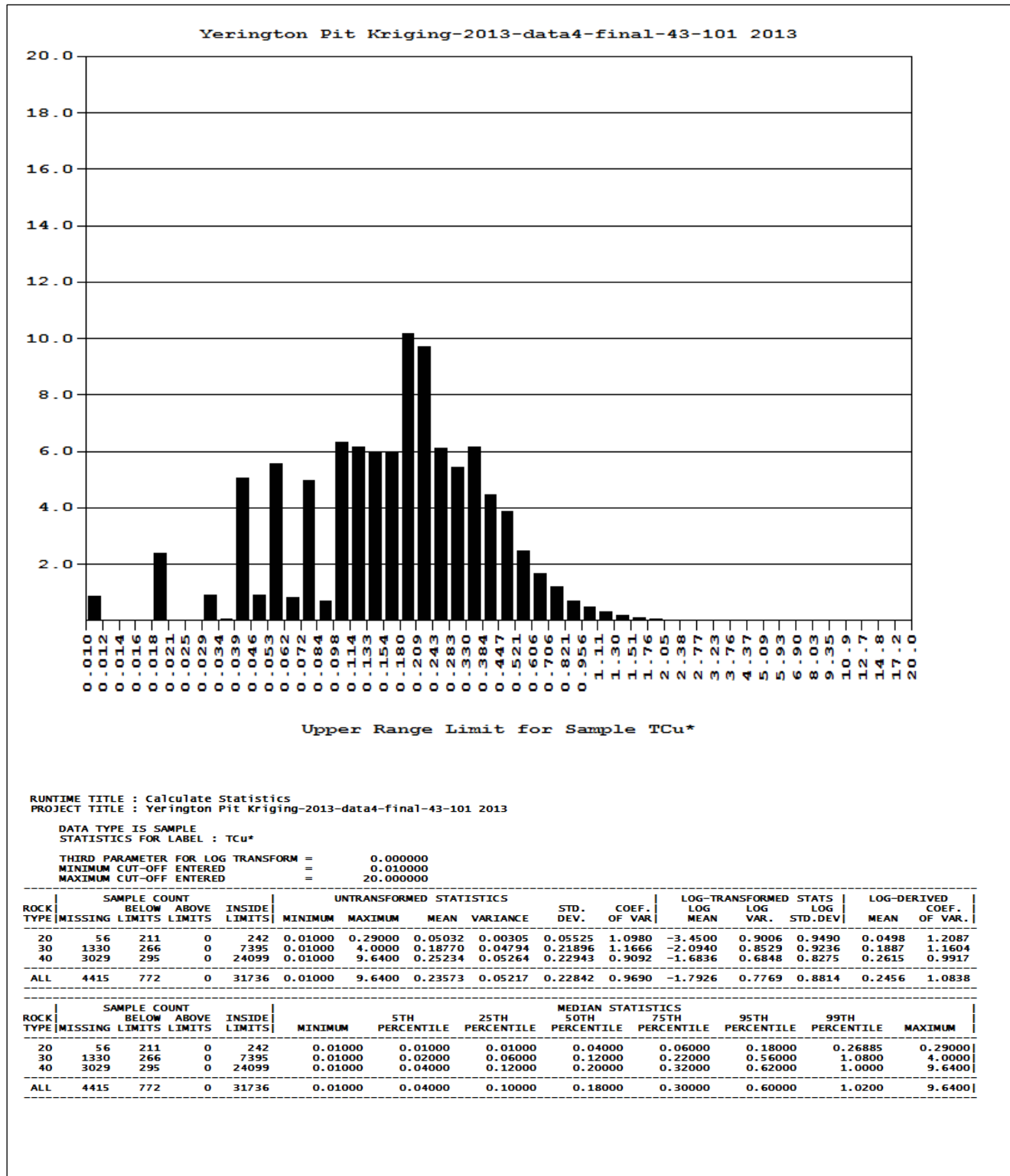
**Table 14-6 Zone (Rock) Code Counts for Assays, Composites, Blocks**

ROCK COUNT FOR SAMPLES							
CODE	COUNT	MINCOL	MAXCOL	MINROW	MAXROW	MINLEV	MAXLEV
0	610	59	284	30	241	53	67
20	509	59	278	31	211	39	65
21	187	66	294	83	224	52	64
30	8986	59	297	30	312	1	64
31	13610	68	284	87	242	41	64
40	27423	59	297	62	260	1	59
41	10727	90	257	103	225	37	55
9999	1789	1	284	1	320	1	66
TOTAL	63841						
ROCK COUNT FOR COMPOSITES							
CODE	COUNT	MINCOL	MAXCOL	MINROW	MAXROW	MINLEV	MAXLEV
0	1081	59	294	30	260	48	71
20	155	59	294	31	211	39	65
21	132	62	294	83	241	52	64
30	1595	59	297	30	312	1	64
31	3396	67	284	87	242	41	64
40	4680	59	297	62	260	1	59
41	2193	90	257	103	225	37	55
9999	318	1	284	1	320	1	66
TOTAL	13550						
ROCK COUNT FOR BLOCK MODEL (R200)							
CODE	COUNT	MINCOL	MAXCOL	MINROW	MAXROW	MINLEV	MAXLEV
0	4418717	1	360	1	320	48	100
20	426480	1	347	1	320	31	72
21	9078	62	299	82	250	52	65
30	2987806	1	360	1	320	1	69
31	153298	64	351	84	271	41	66
40	3362632	22	322	22	298	1	66
41	56774	82	260	102	227	37	59
9999	105215	69	360	1	320	55	74
TOTAL	11520000						

Table 14-7 has the copper grade statistics for the original sample data broken out by zone. Zone code is called "ROCK TYPE" in the table. Note that there are data shown in Zones 20, 30, and 40. The table lists both central tendency (mean) and count (median) statistics. A histogram of the logarithm transformed copper grade is shown as part of the statistical table. Table 14-8 shows the same type of statistics for composites. Note that the 5-foot sample histograms become more lognormal when composited to 25-feet.

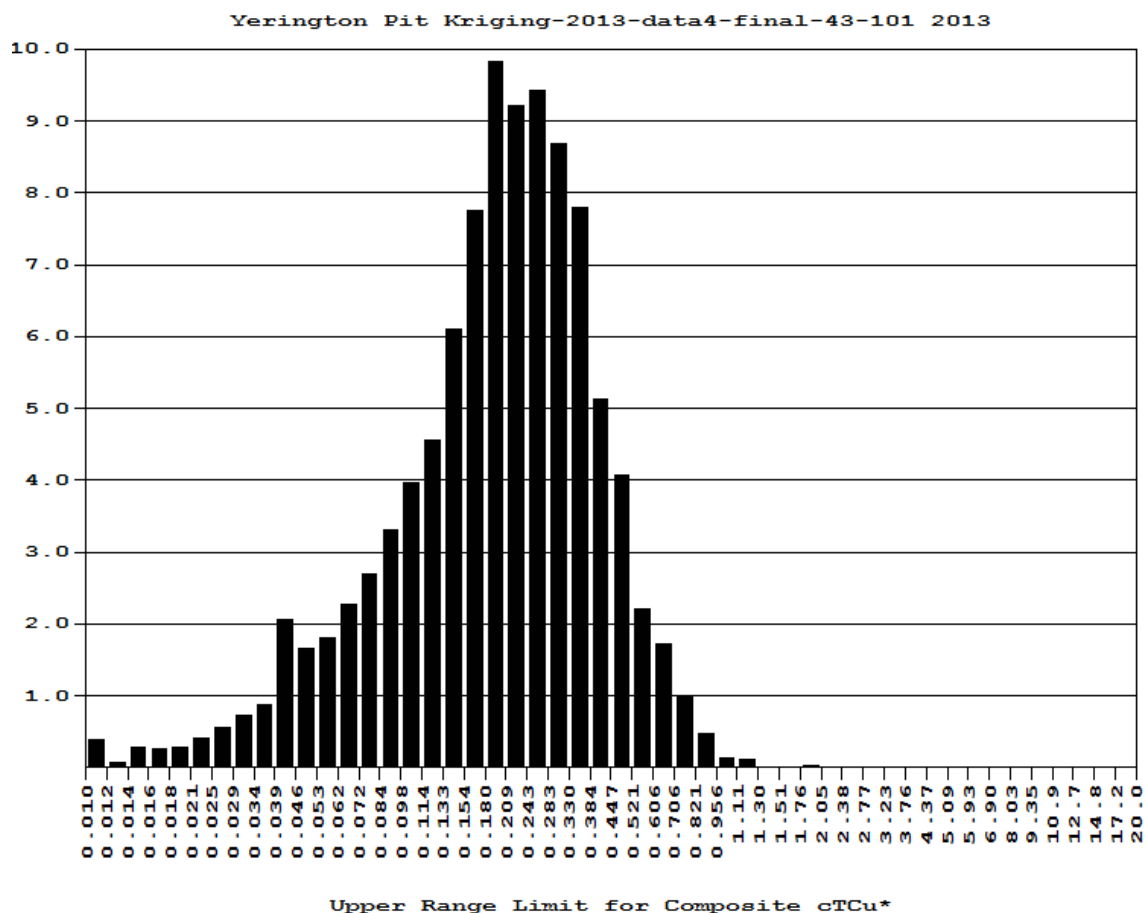
Figure 14-4 shows the log-probability plots for Zone codes 30 and 40 of the composite data. The log probability plots show a slight break in the linear trend for the grades above one percent copper. This observable "break" was considered as insufficiently important to warrant the use of a grade cap. Hence, composite values are used without further modification for the resource estimation. Figure 14-5 is a representative sectional view of the composites.

**Table 14-7 Sample Statistics within Zones**





**Table 14-8 Composite Statistics within Zone**



RUNTIME TITLE : Calculate Statistics cTCu\* (corrected for recovery)  
PROJECT TITLE : Yerington Pit Kriging-2013-data4-final-43-101 2013

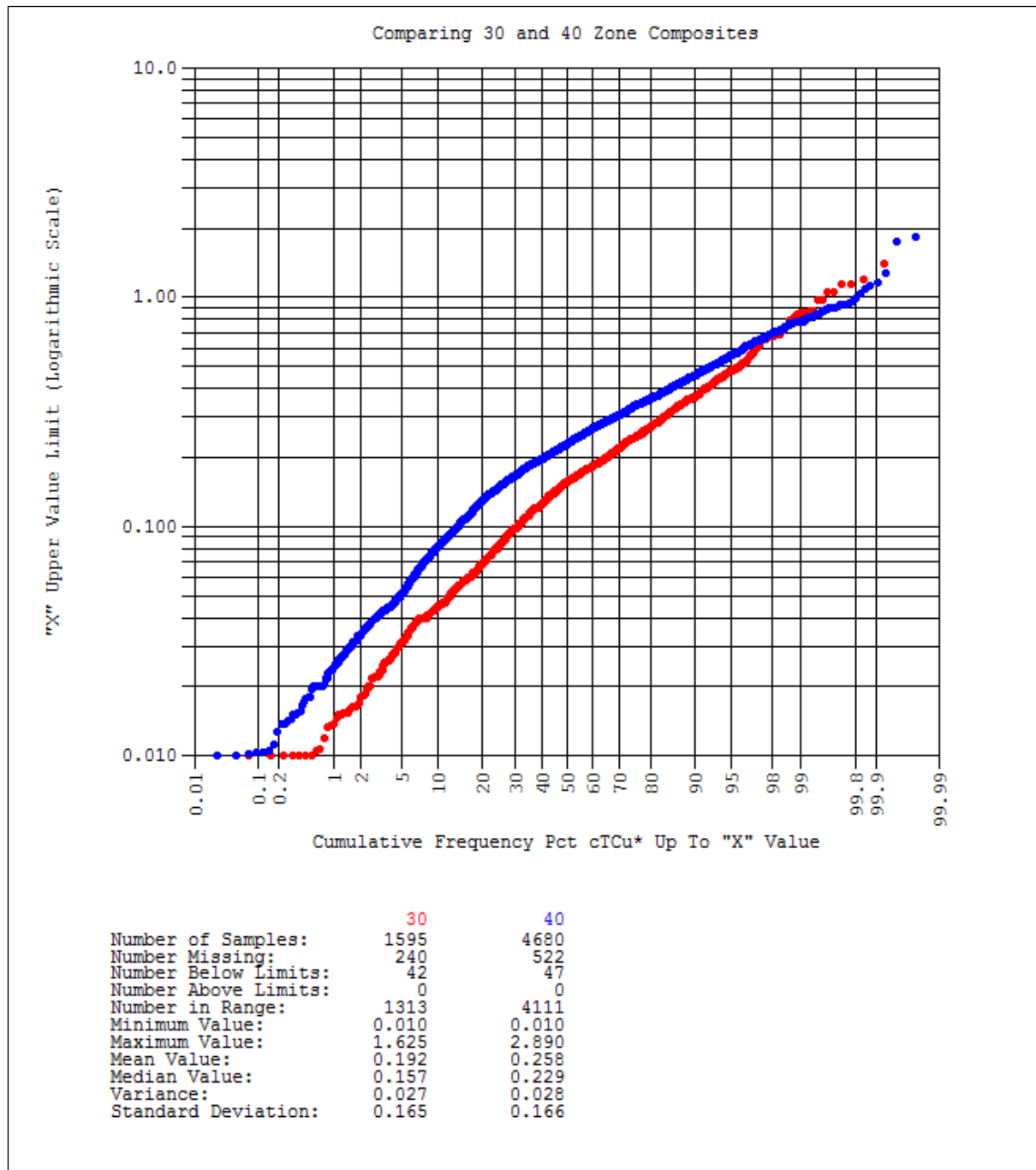
DATA TYPE IS COMPOSITE  
STATISTICS FOR LABEL : cTCu\*

THIRD PARAMETER FOR LOG TRANSFORM = 0.000000  
MINIMUM CUT-OFF ENTERED = 0.010000  
MAXIMUM CUT-OFF ENTERED = 20.000000

ROCK TYPE	COMPOSITE COUNT				UNTRANSFORMED STATISTICS				STD. DEV.	COEF. OF VAR.	LOG-TRANSFORMED STATS			LOG-DERIVED	
	MISSING	BELOW LIMITS	ABOVE LIMITS	INSIDE LIMITS	MINIMUM	MAXIMUM	MEAN	VARIANCE			LOG MEAN	LOG VAR.	LOG STD.DEV	MEAN	COEF. OF VAR.
20	79	46	0	30	0.01000	0.23562	0.05945	0.00317	0.05626	0.9464	-3.1848	0.7364	0.8581	0.0598	1.0432
30	240	42	0	1313	0.01000	1.6247	0.19203	0.02707	0.16454	0.8569	-1.9675	0.7066	0.8406	0.1991	1.0135
40	522	47	0	4111	0.01000	2.8895	0.25840	0.02764	0.16626	0.6434	-1.5644	0.4987	0.7062	0.2685	0.8041
ALL	841	135	0	5454	0.01000	2.8895	0.24133	0.02835	0.16838	0.6977	-1.6703	0.5924	0.7697	0.2531	0.8990

ROCK TYPE	COMPOSITE COUNT				MEDIAN STATISTICS										
	MISSING	BELOW LIMITS	ABOVE LIMITS	INSIDE LIMITS	MINIMUM	5TH PERCENTILE	25TH PERCENTILE	50TH PERCENTILE	75TH PERCENTILE	95TH PERCENTILE	99TH PERCENTILE	MAXIMUM			
20	79	46	0	30	0.01000	0.01000	0.02866	0.04000	0.06000	0.17690	0.23011	0.23562			
30	240	42	0	1313	0.01000	0.03129	0.08286	0.15698	0.24487	0.47835	0.85751	1.6247			
40	522	47	0	4111	0.01000	0.05127	0.14885	0.22893	0.33554	0.56021	0.78510	2.8895			
ALL	841	135	0	5454	0.01000	0.04295	0.12810	0.20933	0.31449	0.54568	0.78914	2.8895			



**Figure 14-4 Log-Probability Plots of Composites Data**

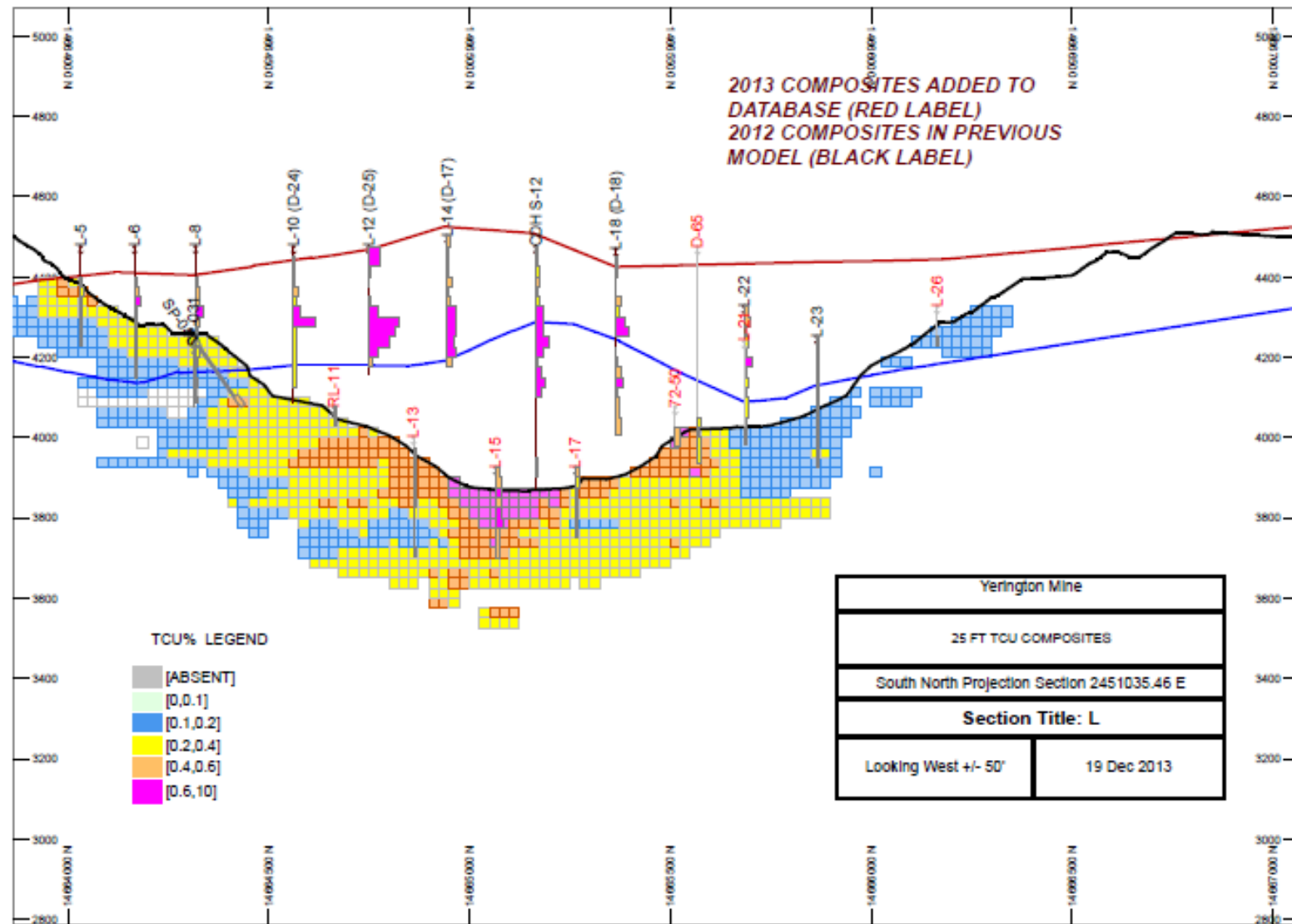
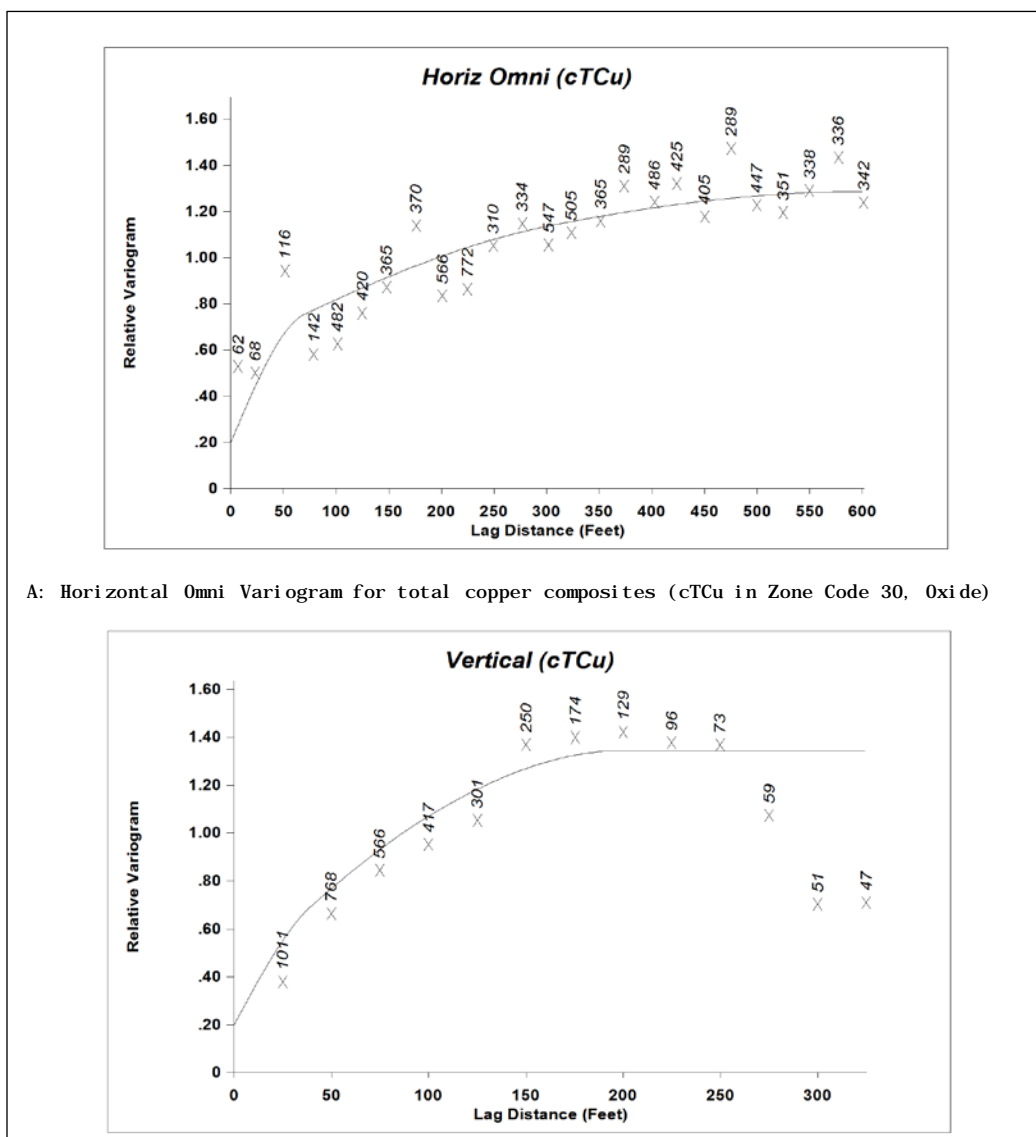


Figure 14-5 Sectional View of the Composites

## 14.5 Grade Estimation and Resource Classification

Figure 14-6 shows two of the numerous experimental variograms analyzed in this study. The top graph shows the horizontal omni variogram for total copper composites within Zone 30. The bottom graph shows the vertical variogram. These variograms plots the relative variance (y-axis) between composite samples at increasing separation distance (x-axis). These variograms are modelled with three nested spherical models. At zero separation, the intercept on the y-axis is called the nugget effect. The plotted top variogram is modelled with a nugget of 0.20 with set of three nested spherical models with ranges/(sill) of 0.75/(0.4), 300/(0.2), and 600/(0.4) respectively.

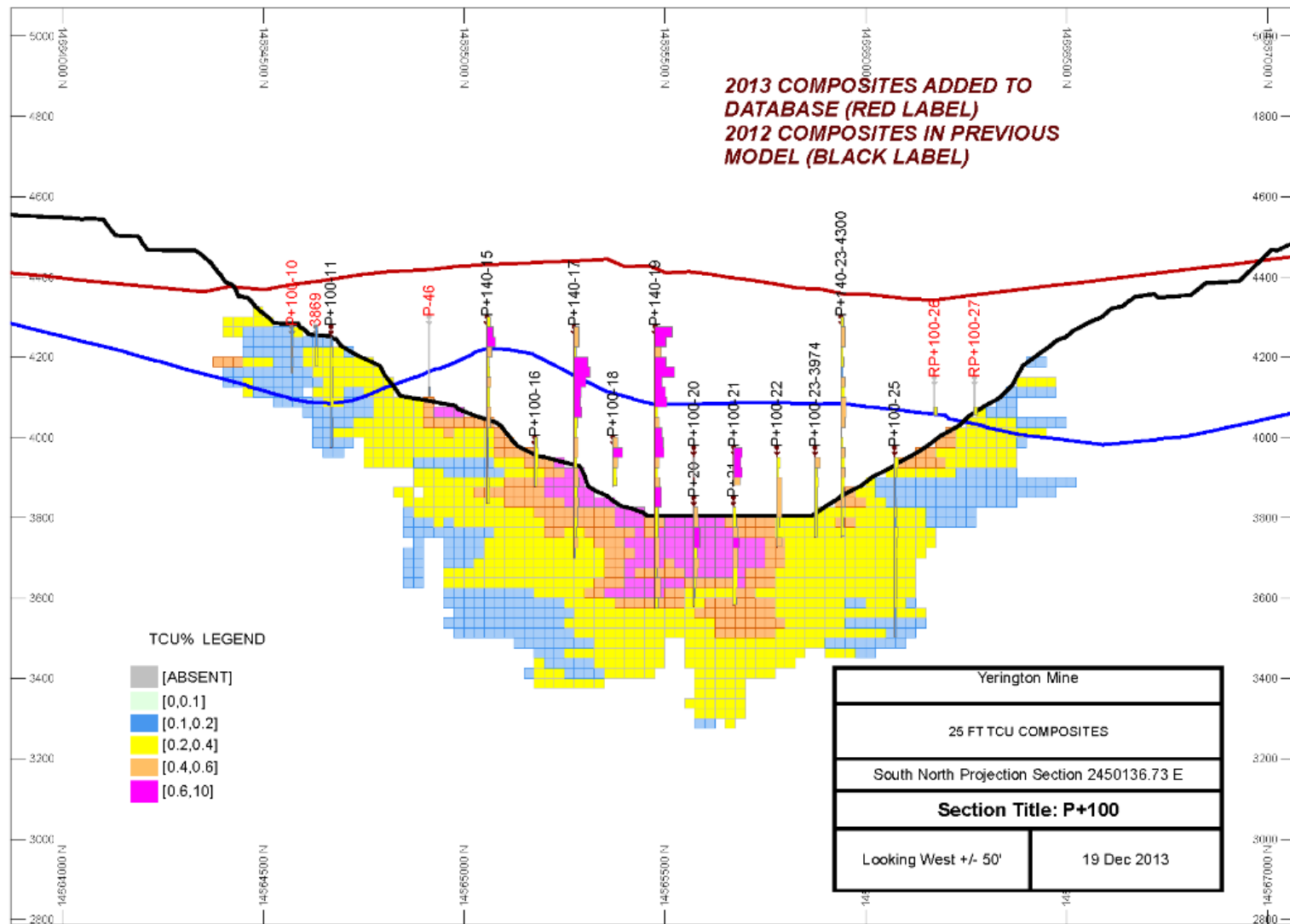


was used to estimate Zone 40 blocks, and composite data from Zone 30 was used to estimate blocks with Zone 30. No estimate of Zone 20 was done. Three passes with increasing search ranges were used in the block model estimation to help establish blocks to be classified as measured, indicated, and inferred. For example, the table shows that an indicated Zone 30 block used an ellipsoidal search pattern with a maximum search radius of 230 feet. In addition, a minimum of five samples were required to estimate a block. These samples were selected by a sector search allowing for a maximum of two samples per sector and two samples from each drill hole. All parameters being the same, the measured class has a maximum search radius of 140 feet. The inferred class has a maximum search radius of 450 feet.

**Table 14-9 Variogram and Search Parameters**

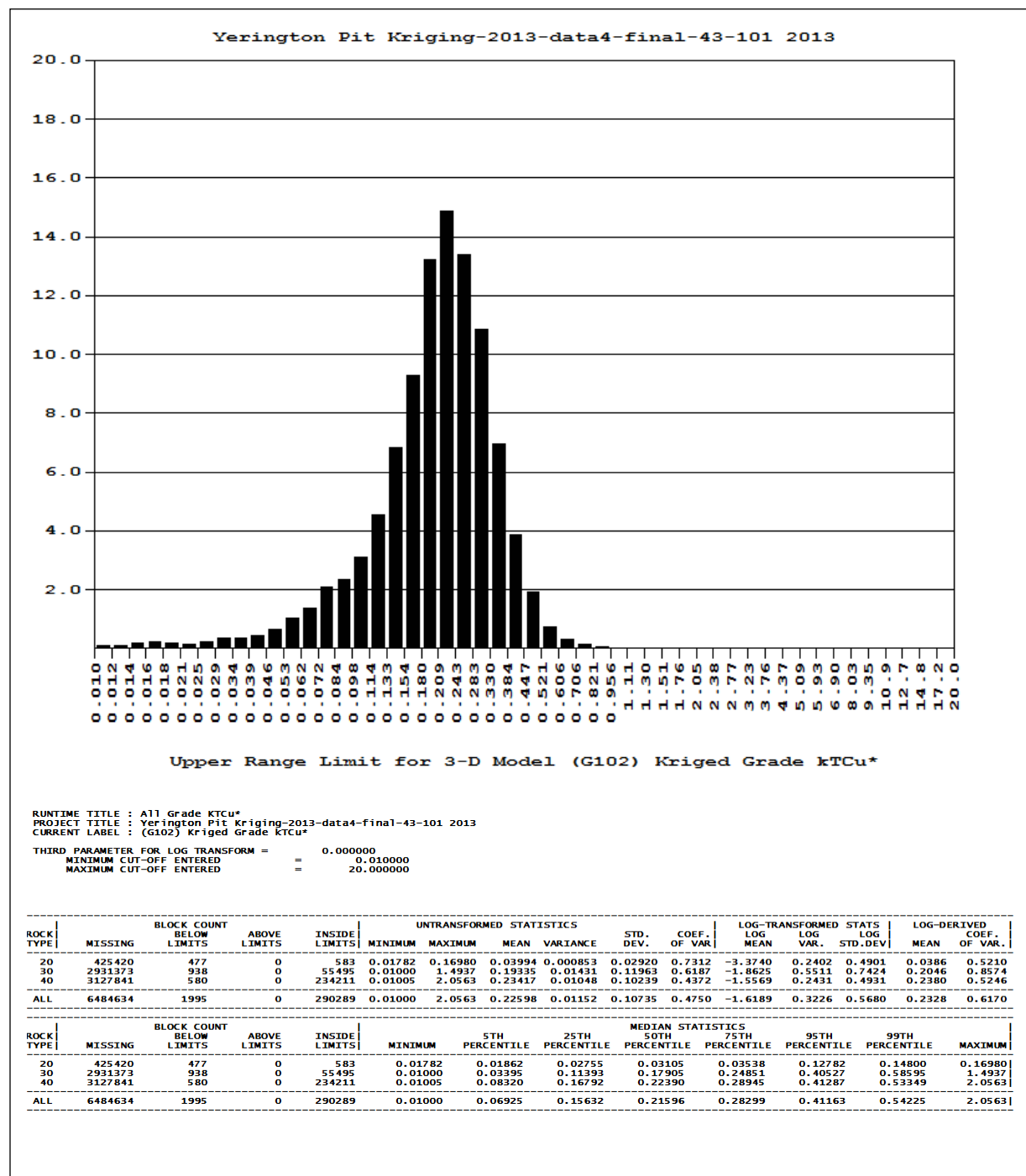
Matching Codes			Anisotropy			MIF Search Ranges						Variogram Parameters						
Composite Code	Block Codes	Zone Name	Axis	Anisotropy Axis Length (m)	Anisotropy Rotation	Type <sup>3</sup>	Resource Class <sup>5</sup>	Resource Code <sup>2</sup>	Maximum Search Range	MaxPts / Sector / Pts Single Drillhole	Min Pts Required to Estimate	Rotation	Anisotropy	Nugget <sup>1</sup>	Nested	Model Type <sup>4</sup>	Sill <sup>1</sup>	Range (ft)
30 31	30	30: Oxide	Primary	400	300	Az	M	1	140	2/2	5	300	100	0.20	1	Sph	0.4	75
			Second	200	0	Dip	I	2	230	2/2	5	0	60		2	Sph	0.2	300
			Tertiary	60	0	Tilt	F	3	450	2/2	5	0	20		3	Sph	0.4	600
40 41	40	40: Sulfide	Primary	400	300	Az	M	1	150	2/2	5	300	100	0.10	1	Sph	0.2	75
			Second	200	0	Dip	I	2	240	2/2	5	0	60		2	Sph	0.1	300
			Tertiary	60	0	Tilt	F	3	500	2/2	5	0	20		3	Sph	0.1	600
All measurements in feet, all directions in degrees azimuth																		
Cu estimate is done in three passes																		
Notes    1 Relative Variogram Nugget and Sills Used 2 Kriging Error is used to shift initial 1,2,3 resource classes to a new set by adding 1 when a kriged block exceeds 0.82 KE 3 Az=Azimuth is clockwise (CW) from North, Dip is positive when downward, Tilt rotates CW around primary axis. 4 Sph=Spherical, Lin=Linear, Exp=Exponential, Gau=Gaussian 5 M=Measured, I=Indicated, F=Inferred																		

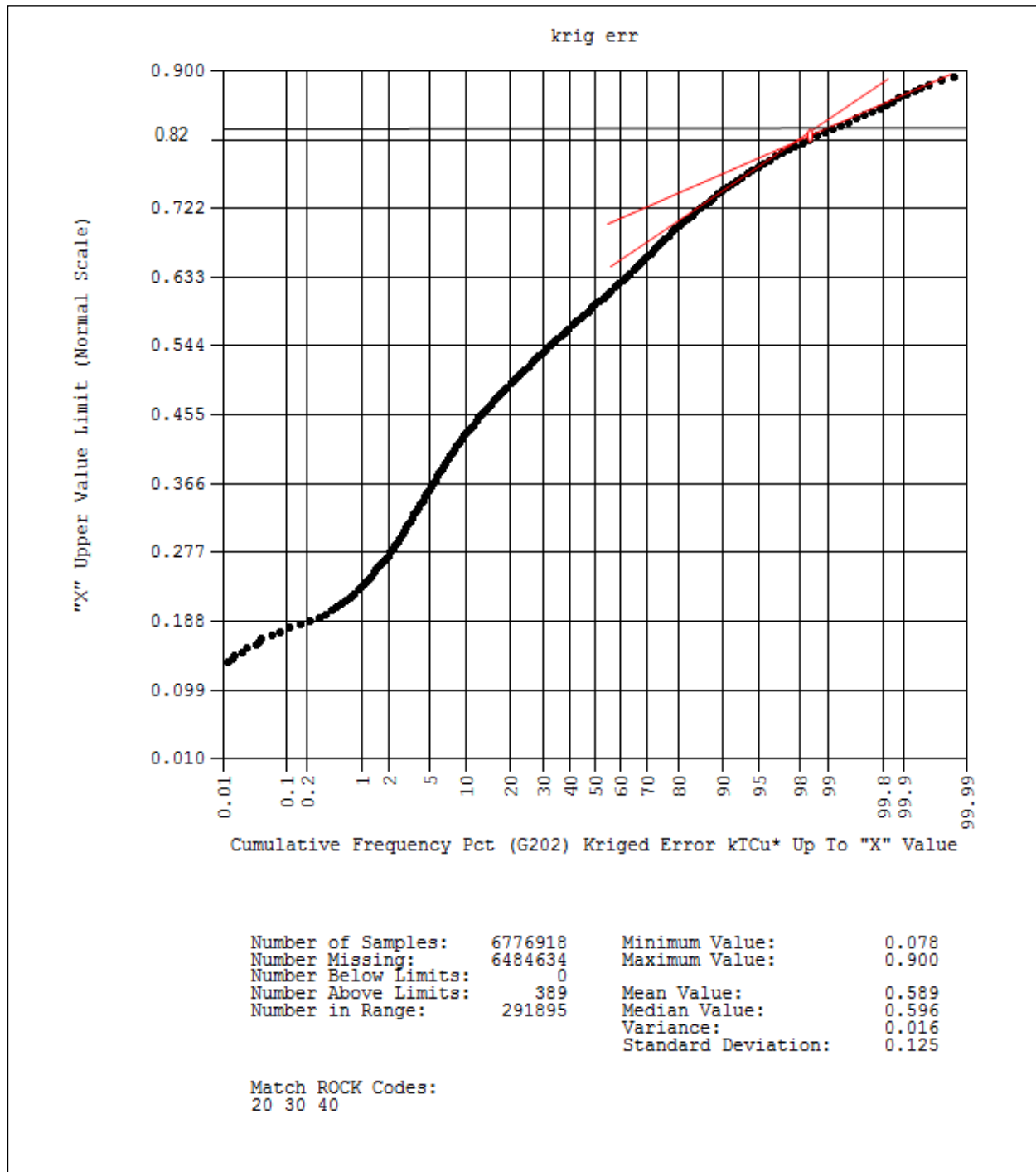
Figure 14-7 shows block values from an example section. Table 14-10 shows the histogram and statistics for estimated blocks. This histogram can be considered as log-normal. Figure 14-8 shows the log-probability plot of the kriging error. A subtle change in slope at a kriging error of 0.82 has been modeled. Kriging errors above 0.82 are considered to indicate an estimation of poor quality. Hence, blocks classified by the three-pass method are reduced in classification quality when this value is exceeded. For example, blocks initially classified as indicated with a kriging error above 0.82 will be classified as inferred. Blocks originally classified as inferred with kriging errors above this value will be removed from the resource.



**Figure 14-7 Block Values for Total Copper in Section P+100**

**Table 14-10 Kriged Block Statistics**

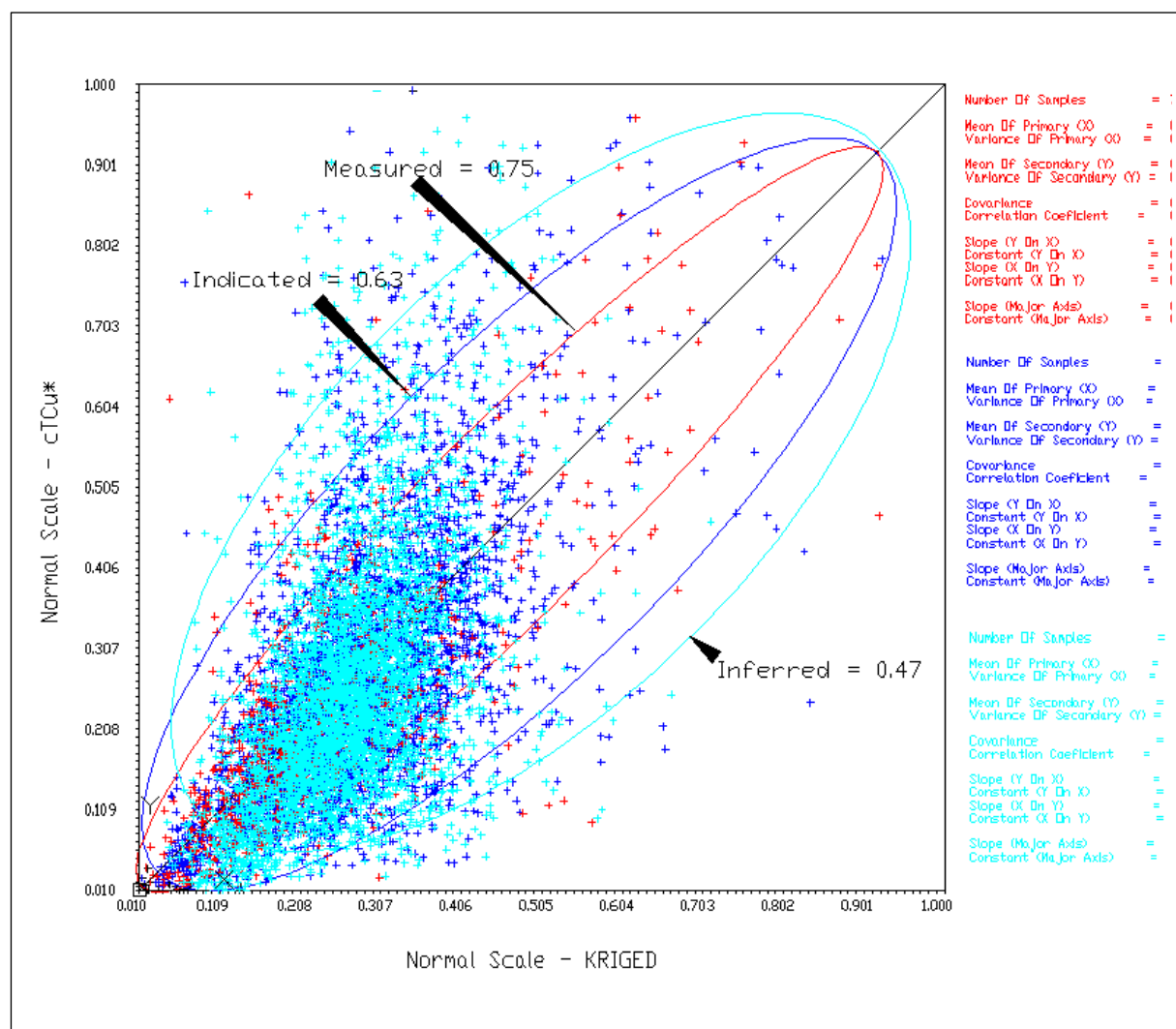




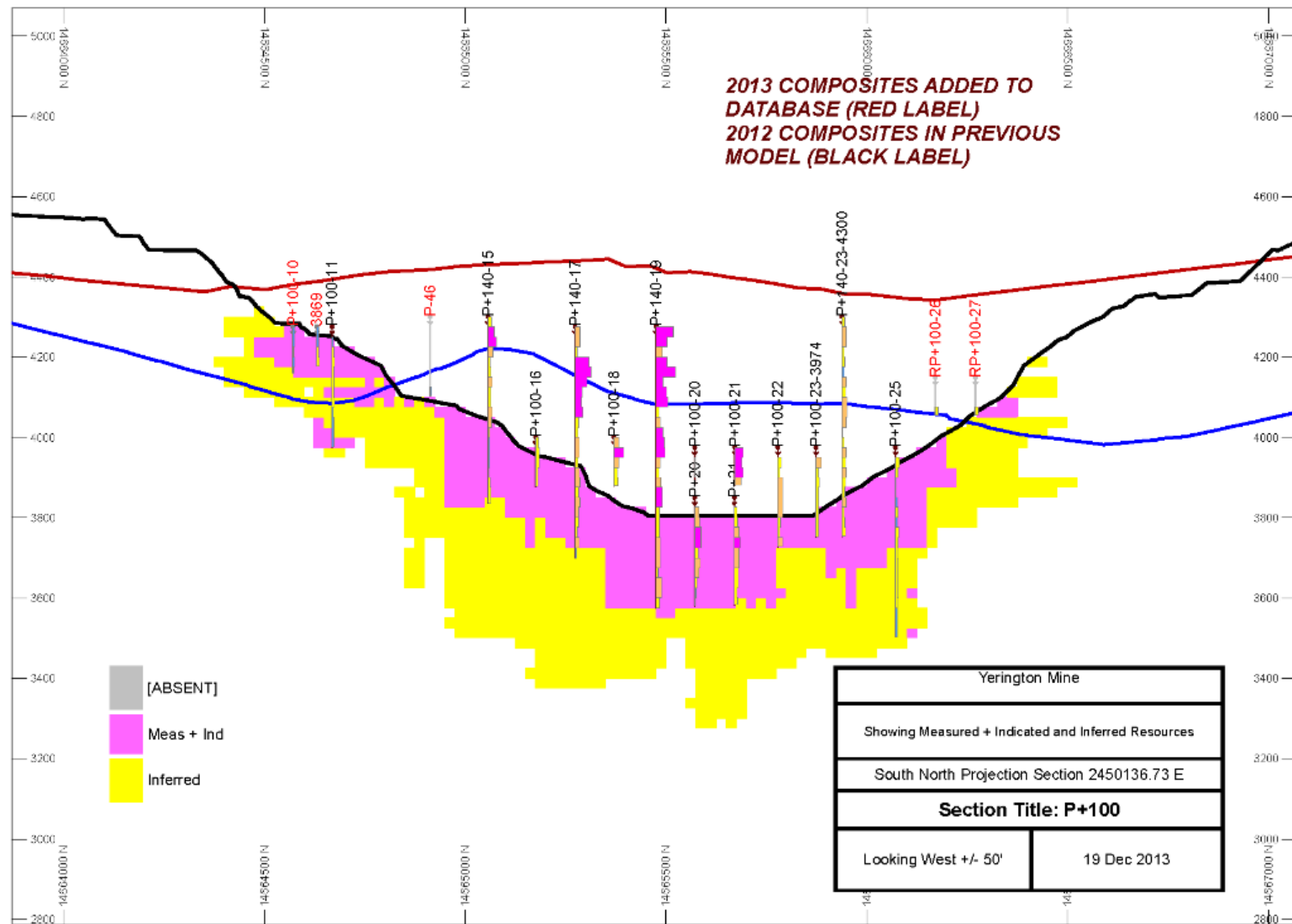
**Figure 14-8 Probability Plot of the Kriging Error**



Figure 14-9 shows the results of the jackknife study that resulted in the selection of the search parameters for measured, indicated, and inferred. The jackknife method sequentially removes sample values (“the target”) and uses the remaining data along with prospective search parameters to kriging its value (“the estimate”). The x-axis maps the estimate while the y-axis the target. If all estimates were perfect, each plotted point would lie on the 45-degree line. A measure of the quality of the jackknife as the search parameters are changed is shown with a correlation. For the search parameters selected for measured, the jackknife estimates are plotted in red; produce a correlation of 0.75. Indicated jackknife estimates are plotted in blue, producing a correlation of 0.63. Inferred are plotted in cyan and have a correlation of 0.47. A series of nested ellipses containing approximately 80% of each of the measured, indicated, and inferred class points. Figure 14-10 shows measured, indicated and inferred blocks in section.

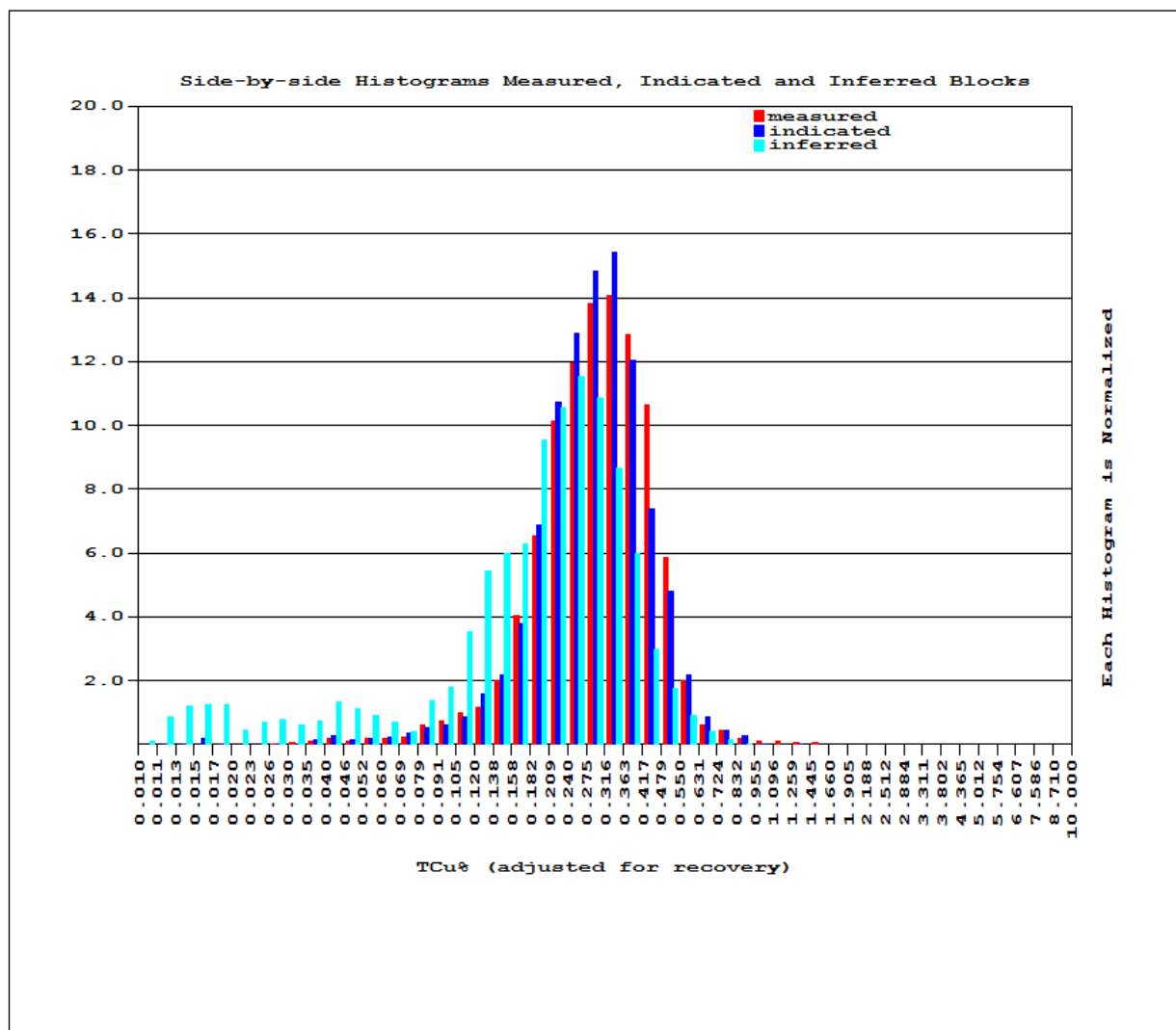


**Figure 14-9 Jackknife Study of Measured, Indicated and Inferred (‘MIF’) Blocks**



**Figure 14-10 Measured, Indicated and Inferred Classified Blocks in Section P+100**

Figure 14-11 shows the side-by-side histograms of the block grades for measured, indicated, and inferred. Note that the block count for each is radically different in quantity. In this plot, each class has been normalized to 100%, allowing for comparison of distribution. Note that the average grade shifts higher as the classification goes from inferred to measured.

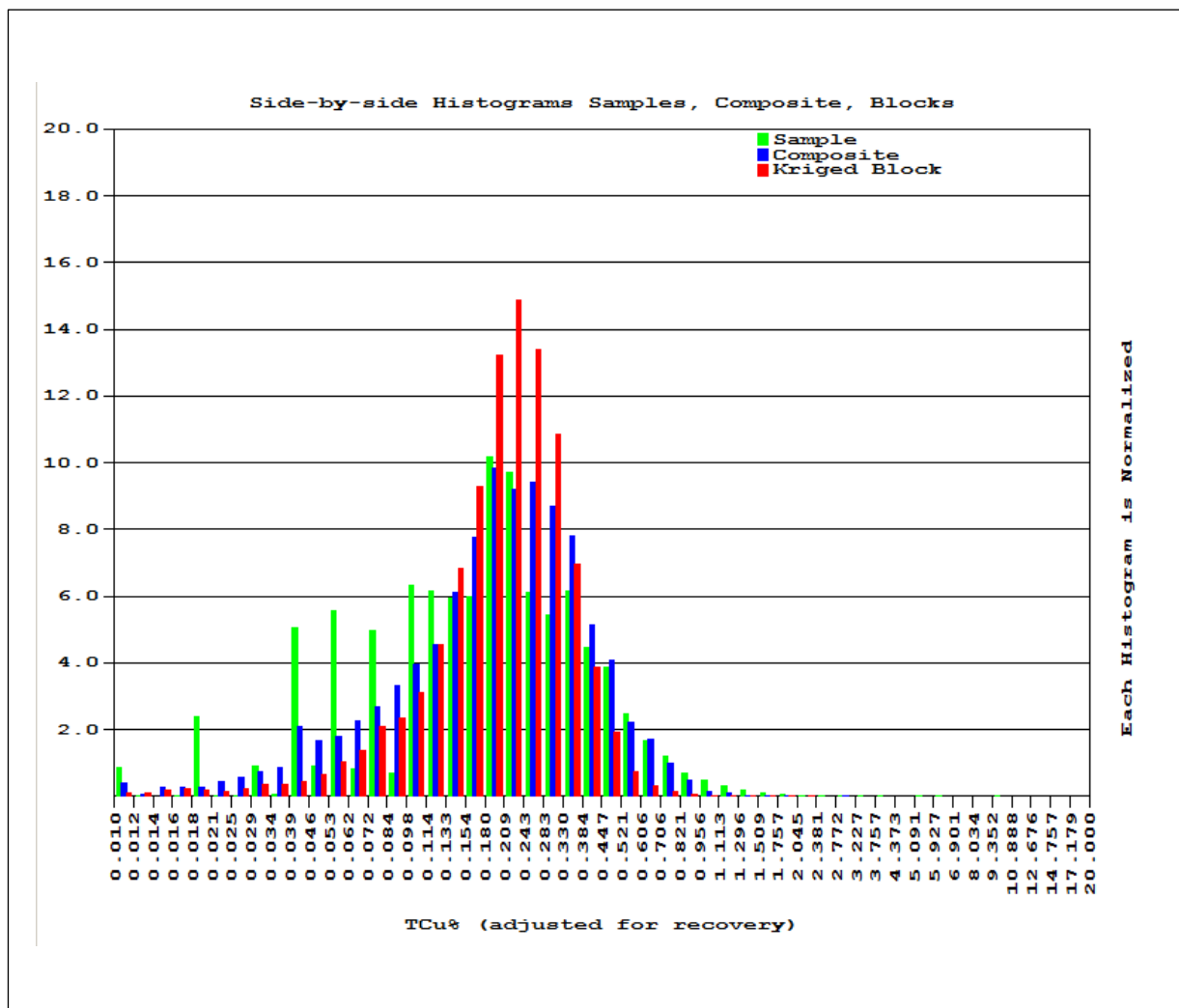


**Figure 14-11 Side-by-Side Histograms of Measured, Indicated and Inferred Blocks**

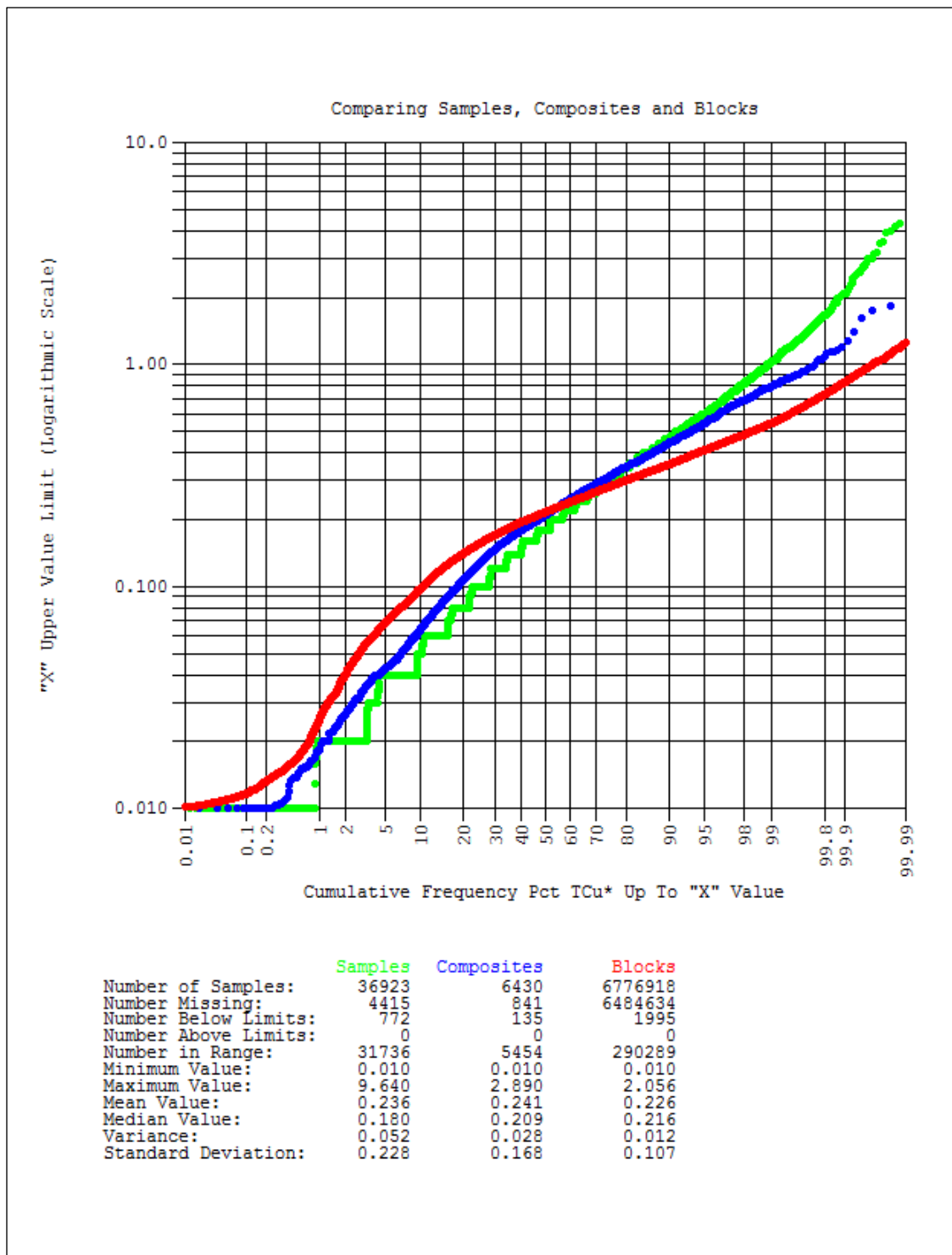
## 14.6 Resource Model Verification

The resource model was verified for quality using several methods. The first was the visual comparison in section of the samples, composites, and blocks. High grade areas shown by drilling were shown as block high grade areas. The statistical relationship of going from assay to composite and then to block was checked for theoretical correctness. Figure 14-12 shows the side-by-side grade histograms of assay, composite, and blocks. Figure 14-13 compares the

three using log-probability plots. An expected reduction in variability in the progression of assay to block is seen. These statistics and along with visual inspection of drill hole composites, block grades and resource classifications was used to verify the resource model.



**Figure 14-12 Side-by-Side Histograms Comparing Assay, Composites, and Blocks**



**Figure 14-13 Log-Probability Plots of Samples, Composites and Blocks**

## 14.7 Mineral Resource Statement

Results of the resource estimation are summarized in Tables 14-11 through 14-14.

**Table 14-11 Measured Copper Resources – November 2013\*\***

	Cutoff Grade	Tons	Average Grade	Contained Copper
	%TCu	(x1000)	% TCu	(lbs x 1000)
Oxide and Chalcocite Material Zone 30*	0.50	220	0.68	2,900
	0.40	550	0.53	5,800
	0.30	1,600	0.41	13,000
	0.25	2,500	0.36	18,000
	0.20	4,100	0.30	25,000
	0.15	5,900	0.27	31,000
	<b>0.12</b>	<b>6,500</b>	<b>0.25</b>	<b>33,000</b>
Sulfide or Primary Material Zone 40*	0.50	2,400	0.62	30,000
	0.40	7,200	0.50	72,000
	0.30	17,000	0.41	140,000
	0.25	22,000	0.38	170,000
	0.20	27,000	0.35	190,000
	<b>0.15</b>	<b>31,000</b>	<b>0.33</b>	<b>205,000</b>
	0.12	32,000	0.33	210,000

**Table 14-12 Indicated Copper Resources – November 2013\*\***

	Cutoff Grade	Tons	Average Grade	Contained Copper
	% TCu	(x1000)	% TCu	(lbs x 1000)
Oxide and Chalcocite Material Zone 30*	0.50	550	0.66	7,300
	0.40	1,200	0.54	13,000
	0.30	3,700	0.41	30,000
	0.25	6,300	0.35	44,000
	0.20	10,000	0.30	61,000
	0.15	14,000	0.27	76,000
	<b>0.12</b>	<b>17,000</b>	<b>0.25</b>	<b>85,000</b>
Sulfide or Primary Material Zone 40*	0.50	1,700	0.59	20,000
	0.40	7,800	0.47	73,000
	0.30	29,000	0.38	220,000
	0.25	45,000	0.34	310,000
	0.20	62,000	0.31	390,000
	<b>0.15</b>	<b>74,000</b>	<b>0.30</b>	<b>428,000</b>
	0.12	76,000	0.28	430,000

**Table 14-13 Measured + Indicated Copper Resources – November 2013\*\***

	Cutoff Grade	Tons	Average Grade	Contained Copper
	% TCu	(x1000)	% TCu	(lbs x 1000)
Oxide and Chalcocite Material Zone 30*	0.50	810	0.66	10,800
	0.40	1,880	0.54	20,100
	0.30	5,550	0.41	45,200
	0.25	9,130	0.35	64,700
	0.20	14,600	0.31	89,100
	0.15	20,600	0.27	110,000
	<b>0.12</b>	<b>23,500</b>	<b>0.25</b>	<b>118,000</b>
Sulfide or Primary Material Zone 40*	0.50	4,190	0.60	50,600
	0.40	15,300	0.48	148,000
	0.30	46,400	0.39	362,000
	0.25	68,600	0.35	484,000
	0.20	90,600	0.32	583,000
	<b>0.15</b>	<b>105,000</b>	<b>0.30</b>	<b>633,000</b>
	0.12	108,000	0.30	643,000

**Table 14-14 Inferred Copper Resources – November 2013\*\***

	Cutoff Grade	Tons	Average Grade	Contained Copper
	% TCu	(x1000)	% TCu	(lbs x 1000)
Oxide and Chalcocite Material Zone 30*	0.50	680	0.57	7,800
	0.40	1,700	0.49	17,000
	0.30	4,300	0.40	35,000
	0.25	7,500	0.35	52,000
	0.20	13,000	0.29	77,000
	0.15	21,000	0.25	110,000
	<b>0.12</b>	<b>26,000</b>	<b>0.23</b>	<b>118,000</b>
Sulfide or Primary Material Zone 40*	0.50	220	0.57	2,600
	0.40	1,900	0.45	18,000
	0.30	17,000	0.34	120,000
	0.25	43,000	0.30	260,000
	0.20	87,000	0.26	450,000
	<b>0.15</b>	<b>128,000</b>	<b>0.23</b>	<b>600,000</b>
	0.12	150,000	0.22	650,000

\*Note that the oxide and chalcocite material (Zone 30) has a highlighted cutoff grade of 0.12. The sulfide or primary material (Zone 40) has a highlighted cutoff grade of 0.15.

**\*\*Additional notes to Tables 14-11 through 14-14:**

- 1) No reserves have been estimated within this report.
- 2) Inferred mineral resources have a great amount of uncertainty as to existence and as to whether they can be mined economically. It cannot be assumed that all or any part of the inferred mineral resources will ever be upgraded to a higher category.
- 3) Mineral resources that are not mineral reserves do not have demonstrated economic viability.
- 4) Totals may not add up due to rounding.
- 5) Mineral resources classifications are based on CIM definitions.



## **15.0 MINERAL RESERVE ESTIMATES**

Section 15 applies to advanced stage properties and as of the date of this report, the Yerington Copper Project does not have any CIM definable mineral reserves.

## **16.0 MINING METHODS**

Section 16.0 applies to advanced stage properties only. As of the date of this report, the Yerington Copper Project is considered an exploration project, based on reasonable assumptions made from compiled data, for which no mine criteria, design parameters, equipment selection, and production schedule have been estimated.

## **17.0 RECOVERY METHODS**

Section 17.0 applies to advanced stage properties only. As of the date of this report, the Yerington Copper Project is considered an exploration project, based on reasonable assumptions made from compiled data, for which no engineering work has been performed to define the recovery methods, plant layout, flow sheet, or material balance.

## **18.0 INFRASTRUCTURE**

Section 18.0 applies to advanced stage properties only. As of the date of this report, the Yerington Copper Project is considered an exploration project, based on reasonable assumptions made from compiled data, for which no infrastructure items have been designed or procured.

## **19.0 MARKET STUDIES**

Section 19.0 applies only to advanced stage properties. No market studies have been performed for this project.

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## **20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT**

Section 20.0 applies only to advanced stage properties.

## **21.0 CAPITAL AND OPERATING COSTS**

Section 21.0 applies only to advanced stage properties. As of the date of this report, the Yerington Copper Project is considered an exploration project, based on reasonable assumptions made from compiled data. It is uncertain if additional exploration will result in discovery of an economic mineral resource on the property.

## **22.0 ECONOMIC ANALYSIS**

Section 22.0 applies only to advanced stage properties. As of the date of this report, the Yerington Copper Project is considered an exploration project, based on reasonable assumptions made from compiled data. It is uncertain if additional exploration will result in discovery of an economic mineral resource on the property. No economic analyses have prepared.



## 23.0 ADJACENT PROPERTIES

The Ann Mason Deposit (owned by Entrée Gold) presented in Table 23-1 is located within a few miles of the Yerington pit, and has mineralization that is similar in nature to the Yerington Mine. Resource figures listed for the Ann Mason Deposit are based upon Entrée Gold's August 2012 PEA Technical Report.

**Table 23-1 Adjacent Property Resource Estimates**

Adjacent Property Name	Cutoff (% TCu)	Tons (000s)	Average Grade (% TCu)	Contained Cu (000s Tons)	Contained Cu (000s lbs)
<b><i>NI-43-101 Compliant Estimates</i></b>					
Ann Mason Deposit Sulfide – PEA	0.20				
Indicated		1,137,000	0.33	375,210	8,150,000
Inferred		873,000	0.29	253,170	5,590,000

## **24.0 OTHER RELEVANT DATA AND INFORMATION**

Tetra Tech is not aware of any potential limitations to the project that would materially change any of the data, resource estimates, environmental considerations, socio-economic factors, or conclusions presented within this report or that are outside of normal factors impacting mining projects, such as price variability, exchange rates, or permitting time. Prior production of copper took place at the Yerington Copper Project and liabilities resulting from this activity do not include any environmental fatal flaws that could impede the progress of this project, taking into account information gathered to date. Potential environmental issues, not considered as part of this report, will be investigated more completely in future advanced studies, and are not anticipated to materially impact the project going forward.

## **25.0 INTERPRETATIONS AND CONCLUSIONS**

There is an obvious potential for a significant increase to the resources of the Yerington Copper Project. Historic and current drilling indicate that limits to the mineralization at the Yerington Mine have not yet been found, both horizontally and vertically, and additional exploration and in-fill drilling are warranted, and are expected to both expand and upgrade the current NI 43-101 compliant copper resources.

Historic resources in the residuals which are part of the Yerington Copper Project reflect a potential increase in the Yerington resource which should be further evaluated in order to bring those resources into NI 43-101 compliant standards. These historic resources should not be construed to reflect a calculated resource (inferred, indicated or measured) under current standards of NI 43-101 or definition of a NI 43-101 compliant resource.

The Bear porphyry deposit remains unconstrained by existing drilling. Anaconda and Phelps Dodge drilled 49 holes (approximately 125,000 ft of drilling) in the Bear Deposit. Although it contains no NI 43-101 compliant resources, historical drilling has indicated a large footprint for copper mineralization that needs further delineation by additional drilling. The Bear Deposit should not be construed to reflect a calculated resource (inferred, indicated or measured) under current standards of NI 43-101 or definition of a NI 43-101 compliant resource.

## 26.0 RECOMMENDATIONS

### 26.1 Recommended Work Programs

In order to further develop the resources at the Yerington Mine, the following are recommended:

- IP geophysics in the pit area to target deep holes to explore the keel of the Yerington porphyry system.
- Core drilling below the Yerington Mine both to test the deeper extension of mineralization that remains almost unexplored below the 3,300-foot level and to further upgrade the classification of the inferred resources.
- To further evaluate residuals on the property, additional sampling is recommended to characterize the heap leach pads, tailings, and low grade stockpiles on site.
- a review of historic information and a program of preliminary metallurgical testing are recommended to support a preliminary economic assessment of the property.

### 26.2 Work Program Budget

Table 26-1 outlines the proposed budget for the work programs outlined above.

**Table 26-1 Proposed Budget for Plan of Work, December 2013**

Task	Est. Completion Date*	Estimated Cost to Complete*	Notes
<b>Infill and exploratory drilling below Yerington Pit</b>	2014/2015	\$4,000,000	20,000 ft
<b>Residual characterization, drilling &amp; sampling</b>	Q1 2015	\$200,000	3,000 ft
<b>Geophysics</b>	2015	\$100,000	IP-Yerington Pit
<b>Assays</b>	Q4 2014/2015	\$300,000	Includes sample prep & handling
<b>Metallurgical studies</b>	2015	\$300,000	Residuals and Yerington Pit
<b>Technical studies to support PEA</b>	2015	\$500,000	Yerington Pit Project
<b>Personnel &amp; infrastructure</b>	2014/2015	\$5,000,000	24 months
<b>Total – Overall Budget</b>		<b>\$10,400,000</b>	<b>24 months</b>
* Completion dates and expenditures represent programs based on current market conditions and are subject to the availability of funding and program results.			

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