Constellation Copper Corporation

Resource Estimate Centennial Deposit

Lisbon Valley, Utah

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Executive Summary

SRK Consulting (US), Inc. ("SRK") has been retained by Constellation Copper Corporation ("CCC") to complete a resource estimation of the Centennial copper deposit, one of three deposits that comprise the Lisbon Valley Mine in San Juan County, Utah. The Lisbon Valley Mine is 100% owned by CCC, through its subsidiary Lisbon Valley Mining Company LLC ("LVMC"). In June 2002, CCC changed its name from Summo Minerals Corporation.

This report contains information that is current through the end of 2005.

Geology

Copper mineralization at the Centennial deposit is hosted by permeable sandstone units within the Cretaceous Dakota Sandstone and Burro Canyon Formation. Copper carbonate and oxide minerals are found generally within 150 feet of the surface and sulfide minerals below that depth. Oxidation minerals may be found at greater depths near fault structures.

The Centennial deposit is located in the Lisbon Valley anticline, a salt anticlinal structure. The Lisbon Valley Fault is parallel to the anticlinal axis and was a conduit for mineralizing fluids. The deposit is bounded on the west by the Lisbon Valley Fault.

Resources

The drillhole database was received from CCC in four files: collar locations; downhole surveys; assays; and lithology. SRK also received files containing acid soluble copper assays and a file containing codes for oxide/reduced properties from the geologic logging of drillhole chips. There are 609 holes that fall within the block model limits.

The mineral resource for the Centennial deposit was estimated with a computer generated block model using Maptek's Vulcan software. The total measured and indicated resource at a cutoff of 0.100% copper are 37,871,000 tons at 0.440% copper, with an additional inferred resource of 3,932,000 tons at 0.309% copper.

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1 Introduction & Terms of Reference

SRK Consulting ("SRK") has been retained by Constellation Copper Corporation ("CCC") to complete a resource estimate on the Centennial Copper Deposit, one of three deposits at the Lisbon Valley Mine, located in San Juan County, Utah. In addition, SRK has been requested to produce a geologic block model using the drillhole database and cross-sections furnished by CCC.

1.1 Scope of Work

The scope of work undertaken by SRK involved the following aspects of the project:

- Review and statistical analysis of drillhole data;
- Geologic interpretation of the database;
- Development of fault surfaces and wireframe solids of lithologic units and incorporation in a block model;
- Development of block codes for oxidation state;
- Variography;
- Resource Estimation and verification of estimation methodology;
- Classification of resources according to CIM standards; and
- Volume and tonnage estimates.

SRK has not independently verified the underlying data, including sampling procedures, laboratory Quality Assurance/Quality Control ("QA/QC"), assay data, assignment of oxide/sulfide codes and topographic data.

1.2 Sources of Information

This report has been based on:

- Site visit to the Lisbon Valley site and Centennial Pit;
- Drillhole database furnished by CCC, including collar locations, downhole surveys, total copper ("TCu") assays, acid soluble copper assays, two variables (Kmin and Tmin), oxidation codes based on drillhole chips and lithologic information;
- Oxide/sulfide codes from CCC's block model;
- Drillhole cross-sections furnished by CCC;
- Topographic data in digital format from CCC;
- Statistical and geostatistical analysis of the data;
- Construction of a grade model by SRK from composited assays; and
- Classification of mineral resources.

1.3 Effective Date

Assay data and topographic data are current as of December 31, 2005.

2 Property Description & Location

2.1 Property Location

The Centennial deposit is one of three pits at the Lisbon Valley Mine located in San Juan County, Utah approximately 40 miles south of Moab. Figure 2-1 is a map showing the location of the property.

3 Historic Mineral Resource Estimates

3.1 Historic Mineral Resource Estimates

Western Services Engineering, Inc. ("WSE") produced an ore reserve evaluation and initial pit design for the Lisbon Valley deposits in December 1994. The report was intended to bring the property to feasibility study status.

Kelsey Engineering, Inc. ("KE") produced a geologic resource in 1995, incorporating new drillhole data and using the same estimation parameters developed by WSE. KE used grade envelopes based on 0.100% copper that had been updated by WSE and CCC, (then Summo) geologists since the last estimation. In 1996, KE updated their resource with new drilling and updated grade outlines. The 20 foot bench composites were examined by Summo personnel and a consulting geologist to code the composites as inside or outside the mineralized zones, and as oxidized or reduced if inside. Estimation parameters were not modified from the earlier work.

The Winters Company ("TWC") performed a due diligence technical audit of the Lisbon Valley Project in 1997 and suggested that a new study be done to improve local grade estimates. In 2000 Winters, Dorsey & Company, LLC ("WDC") undertook a new resource estimation for the Lisbon Valley Deposits. The grade envelopes were adjusted by WDC in the following iterative process. WDC coded the original drillhole assay intervals as being inside or outside the 0.100 grade envelope. The intervals were then examined on a hole-by-hole basis and the codes adjusted for assay intervals adjacent to the boundaries that were less than 0.100% copper. The assay database was then composited on 20 foot lengths downhole, with breaks at the grade envelope. The grade envelopes were then checked against the new composites and the boundaries were adjusted to conform to the composites. Table 3.1.1 summarizes the resource estimates from the various companies.

Pincock, Allen & Holt ("PAH") completed a technical report in September 2005 based on the WDC work. In their audit of the resource they found that the composite database did not include dilution and therefore adjusted the mineable reserve by adding 10% more tons at 0.00% grade.

Table 3.1.1: Geologic Resources

M&I: Measured and Indicated

P&P: Proven and Probable

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4 Geologic Setting

4.1 Regional Geology

The Lisbon Valley project is located in the Paradox Basin, a northwest-trending sequence of sedimentary rocks and evaporite deposits. Thick evaporite deposits of salt, potash and gypsum were deposited in the basin during Pennsylvanian time. The evaporites were deformed during regional compression and formed "salt" anticlines. The Lisbon Valley Anticline is one of these structures.

4.2 Local Geology

4.2.1 Local Stratigraphy

The Lisbon Valley copper deposits are hosted by the Cretaceous age Burro Canyon and Dakota Formations. The underlying Jurassic age Morrison Formation and the overlying Cretaceous Mancos shale contain minor amounts of copper. The lithologies consist of interbedded sandstone, siltstone, shale, and coal. The stratigraphy of the Lisbon Valley area is summarized in Figure 4-1. The lithologies have been divided and numerically coded into 17 definable units for the purposes of mapping and logging. The units are summarized in Table 4.2.1.1.

Copper mineralization in the Centennial deposit occurs predominately in the Dakota Sandstone (units 11 and 13) and in the Burro Canyon sandstone (unit 15) with lesser amounts in units 5, 6 and 12 of the Dakota sandstone.

4.2.2 Local Structure

The Lisbon Valley deposits are located in the Lisbon Valley anticline east of the Lisbon Valley Fault. The Lisbon Valley Fault is a northwest-trending fault parallel to the axis of the anticline and forms the footwall to the mineralization of the Centennial deposit. The fault dips about 55° to the northeast and has normal displacement of more than 2,000 feet. In addition to the main fault there are a series of parallel en echelon faults that show lesser displacement. The Centennial deposit is located in the hanging wall of the Lisbon Valley Fault.

5 Mineralization

The Lisbon Valley deposits are sandstone-hosted copper deposits. Low temperature copper-bearing solutions ascended along the Lisbon Valley Fault and other fractures (Hahn and Thorson, 2003). The copper minerals were deposited in the favorable permeable beds of the Dakota and Burro Canyon sandstones.

The copper minerals are generally found as disseminations between the grains of the favorable sandstone units of the Dakota and Burro Canyon Formations. Lesser amounts can occur as coatings on fractures and around carbonaceous material in the sandstone units. Copper grades tend to be higher near the Lisbon Valley Fault and its splays, indicating that they were conduits for the copper-bearing solutions.

Copper mineralization occurs in oxide and sulfide mineralogic zones. The sulfide minerals are mainly chalcocite, with minor chalcopyrite and bornite. The sulfide zone lies predominately below the water table, approximately 150 to 250 feet below the surface, but sulfide material also extends into the oxide zone. The oxide minerals are malachite, azurite, tenorite and cuprite.

6 Drilling

The Lisbon Valley project has been drilled by several companies since 1960. Drilling methods include conventional rotary, airtrack, reverse circulation ("RC") and diamond core. CCC furnished SRK with four ASCII drillhole data files: collars: downhole surveys: assays: and lithologies. The files contain data for the three deposit areas at Lisbon Valley. The database for the Centennial deposit is defined by collar location within the block model limits. Figure 6-1 is a drillhole location map of the Centennial deposit. The drillhole database for the Centennial deposit is summarized in Table 6.1 based on information supplied by CCC, except where noted.

					Drill		Assay
Hole Prefix	Year	No.	Footage	Company	Type	Logs	Certificates
$1,2,3,9-$							
13, 15, 17, 18		11	700	Unknown	Unknown	N _o	N _o
55,115			350	Unknown	Unknown	N _o	N _o
A,AA,B,C,		22		Cleveland			
D,E	$\overline{}$		4,225	Cliffs*	Rotary*	N _o	No
M,MM	$\overline{}$	128	16,865	Keystone*	Rotary*	N _o	N _o
RC	\overline{a}		1,220	Unknown	Unknown	No	N _o
SIN	$\qquad \qquad \blacksquare$		175	Sindor*	Rotary*	No	$\rm No$
$\overline{\text{SS}}$	٠		260	Unknown	Unknown	No	$\rm No$
SUL	$\qquad \qquad \blacksquare$		270	Unknown	Unknown	N _o	N _o
Z			285	Unknown	Airtrack*	N _o	N _o
\overline{CD}	1973	228	57,407	Centennial Dev.	Rotary	Chipboards	Yes
\overline{LV}	1975	63	17,099	Noranda	Rotary	Yes	Yes
KLVR	1992		700	Kennecott	Rotary	Yes	Yes
93C	1993		570	Constellation	Core	Yes	Yes
93R	1993	29	9,685	Constellation	RC	Yes	Yes
94R	1994	14	4,795	Constellation	RC	Yes	Yes
95R	1995	13	4,370	Constellation	RC	Yes	Yes
00R	2000	63	22,185	Constellation	RC	Yes	Yes
$\overline{4R}$	2004	13	6,605	Constellation	RC	Yes	Yes
5R	2005	1	550	Constellation	RC	Yes	Yes
Total		609	148,316				
Airtrack		$\overline{4}$	285				
Rotary		443	96,471				
Average			218				
RC		133	48,190				
Average			362				
Core		$\overline{3}$	570				
Unknown		26	2,800				
Minimum			20				
Maximum			700				
Average			244				

Table 6.1: Constellation Copper Corporation, Lisbon Valley Copper Mine, Centennial Drilling Programs

*from WDC Technical Study Update

All the holes are vertical except for three in the extreme southeast. None of the holes were surveyed for downhole deviation, but given the shortness of the holes, the deviation should be insignificant. The drilling done prior to Centennial Development's operation has little documentation. Drill logs are available for CCC's drilling and chip boards are still existent for some of the earlier drilling.

7 Mineral Resource Estimate

The mineral resource for the Centennial deposit was estimated using Maptek's Vulcan software. The model limits are those currently in use at the mine and are:

The blocks are 20 x 20 feet in plan and 20 feet high. Figure 7-1 shows the model limit with the Centennial drillholes.

7.1 Topographic Data

The topographic data used in this report were furnished by CCC as a Vulcan surface and as a digital file. In addition, SRK received a Vulcan solid of the designed pit and an updated end of 2005 topographic surface.

7.2 Drillhole Database

The drillhole database was furnished to SRK in four ASCII files that include collars, downhole surveys, assays and rock and structure intercepts. The database includes all the holes at the Lisbon Valley Mine, but only that subset located within the block model limits were used in statistics and modeling for Centennial. The holes are all vertical, except for three in the southeast. The holes were not surveyed for downhole deviation, but given the average depth of 245 feet, there should be very little deviation. The assay file contains copper grades labeled TCu, total copper. The assay intervals are almost uniformly 5 feet. Although the block model used at the mine contains values for oxide/sulfide, the database does not contain a specific variable for that property. There are two codes in the database, Tmin and Kmin, that appear to be related to oxidation state, but there is no documentation on the values for the codes. SRK was given two files that contain information on the oxidation state of the drillhole samples. One file contains oxidation state based on geologic logging of chips and the other contains acid soluble copper assays. Appendix A is a listing of the drillholes.

The database contains all historic drilling by previous operators as well as drilling by CCC. CCC drilling makes up approximately 33% of the footage in the database. All the RC drilling was done by CCC, with the remainder of the drilling a mixture of drill techniques, including rotary and airtrack. Statistics for the drillholes are given in Table 7.2.1.

Drillhole Statistics	
Number of Holes	609
Minimum Depth	20
Maximum Depth	700
Average Depth	243
Median Depth	245
Total Footage	148,316
Footage Sampled	138,531
Sampled Intervals	27.595

Table 7.2.1: Centennial Drillhole Statistics

7.3 Drillhole Sample Statistics

The drillhole database consists of 27,595 assay intervals with a grade of 0.0% or more copper; the maximum sample is 11.4% copper. Sample statistics are shown in Table 7.3.1.

7.4 Geological Model

As part of the scope of work, SRK was asked to produce a geologic model with corresponding block model codes. SRK was furnished with a set of east-west crosssections that had been developed by CCC geologists. Copper composites were plotted on the cross-sections, as were digitized lithologic contacts and faults. There were no lithologic codes displayed for the drillholes. The east-west sections are not orthogonal to the main structural trends which are about north 50° west. SRK was also given a digital file containing the drillhole depths corresponding to the lithologic contacts and fault intercepts as measured on the cross-sections. Some of the units had been combined into a single unit in the digital data, as shown in Table 7.4.1.

File Code	Formation	Model Code
QAL	Quaternary	1
Km	Mancos	2
3 to 5	Dakota	3
6 to 8	Dakota	6
9 to 11	Dakota	9
12	Dakota	12
13	Dakota	13
14	Burro Canyon	14
15	Burro Canyon	15
Jmb	Morrison	17
Je	Entrada	30
Js	Summerville	32
Trw	Wingate	44
Trc1	Chinle	41
Trc2	Chinle	42
Trcs	Chinle	43
P_{C}	Cutler	35

Table 7.4.1: Lithologic Codes

A new set of sections was defined perpendicular to the main structural trend at Lisbon Valley (Figure 7-2). Faults and contacts were interpreted in conjunction with the eastwest sections and then digitized on the new sections. The drillholes were also viewed perpendicular to the sections and in plan view and contacts were digitized for problem areas. Vulcan surfaces were produced for the faults and solids were produced for the lithologies. The surfaces and solids were then used to load rock codes into the block model. A typical section is shown in Figure 7-3.

7.5 Oxidation Model

Oxidation codes had been assigned to the drillholes in the past and used for assigning codes to the mineralized zones in the earlier block models. The codes were not available in digital format for the drillhole database, but it was possible to obtain the codes from the WDC model which is currently in use at the mine. These codes were directly imported into the SRK model, however, there were areas in the SRK grade shells that were not coded. CCC then looked at the Tmin and Kmin variables in the drillhole database and compared them to the mineralized zones and oxidation state on crosssections drawn by previous owners. It was not possible to establish a definitive meaning to the codes and it was decided to use the available acid soluble copper assays and the codes from the geologic logs to build an oxide/reduced model.

The database of acid soluble copper assays ("ASCu") consists of 1,034 samples in an Excel spreadsheet. The ratio of ASCu to TCu was calculated, graphed, and statistics run (Appendix B). A low ratio indicates a reduced state and a high ratio an oxide state. The intervals were then assigned an oxide code from the geologic picks. In comparing the geologic picks with the ratios, it appeared that at a ratio of ASCu to TCu of less than 0.25 that the geologic picks were fairly consistently reduced and that over 0.50 the picks were fairly consistently oxide. Between 0.25 and 0.50 there appeared to be a mixed zone. It was decided that rather than use a mixed zone in the model, that the oxide/reduced boundary would be set at a ratio of 0.50. The TCu grades also show a difference in the oxide/reduced sets. Table 7.5.1 shows statistics for the database containing ASCu assays.

The spreadsheet consisting of the ASCu/TCu ratios was merged with the spreadsheet containing the geologic picks, with the intervals containing ASCu assays taking precedence over the geologic picks. The resulting database was composited and codes were assigned to the block model using a nearest neighbor estimation run. Approximately 10% of the blocks within the SRK grade shells were not assigned an oxide code. The unassigned blocks are predominately in the southeast where the reduced rock is at a higher elevation than in the northwest. Therefore, unassigned blocks were given an oxide code if above 6,340 elevation and a reduced code if below. Figure 7-4 is a cross-section illustrating the oxide/reduced blocks resulting from the nearest neighbor assignment before assignment based on elevation.

7.6 Structural Model

The deposit was divided into four structural zones defined by through-going northwest trending faults. Figure 7-5 illustrates these zones. Zone 1 is bounded by the Lisbon Valley Fault to the West and a fault designated F1 on the east. Zone 4 is in the footwall of the Lisbon Valley Fault. Zone 2 is to the east of Zone 1 and is bounded on the east by fault F2. Zone 3 is to the east of Zone 2. The beds in Zone 1 dip 30 to 40° to the southwest, whereas the beds in Zones 2 and 3 dip more shallowly to the southwest at 10 to 20°. Although there is offset on fault F2, for the purposes of variography and modeling, Zones 2 and 3 were considered as a single unit. Zone 4 contains only minor mineralization along the Lisbon Valley Fault. When viewed in long-section, the stratigraphy and mineralization show a doming feature, plunging to the northwest and southeast. Zones 1 and 2 were subdivided into two subdomains reflecting this structure. Figure 7-6 is a plan view showing the structural subdomains used in grade estimation.

7.7 Unassayed Intervals

The database contains 144 questionable holes which contain more than three consecutive assays of zero grade. In most cases there are long intervals of 5 foot assays with a grade of zero followed by assays of over 1%. The assay certificates are unavailable for these holes, so it is unknown if the zero grade is below detection limit, missing or not sampled. TWC (2000) conducted a study to see the impact of eliminating questionable holes by making two grade estimates, one with all the holes and one leaving the questionable holes out. TWC concluded that there was about 1% difference in the two models and elected to use all the data. The holes are from the early drill campaigns and are mainly quite short and in the area of the first phase of mining. These holes are listed in Appendix C along with a typical example. All holes in the database were used for grade estimation in the SRK model.

7.8 Compositing

The mine plan for the Centennial deposit is on 20 foot benches. The assay database was therefore composited with 20 foot lengths. Two files were created, one with fixed 20 foot lengths downhole and the other with 20 foot lengths based on the bench elevations. The statistics of both composite files are quite similar; at a 0.100% cutoff the average grade of the fixed length composites is 0.530 and the average grade of the bench composites is 0.522. The composites were compared to the mineralized intervals as defined by the assays and the fixed length composites appear to match the mineralized intervals more closely. The fixed length composites were used to define the grade shells in the block model and for grade estimation. Table 7..8.1 summarizes statistics for the 20 foot downhole composites.

Cutoff (%) Copper	Number Above Cutoff	Grade (%) Copper	$(\%)$ Above Cutoff
0.000	7,137	0.177	100
0.050	2,733	0.448	38
0.100	2,246	0.530	31
0.200	1,723	0.646	24
0.300	1,346	0.758	19
0.400	1,023	0.887	14
0.500	792	1.014	

Table 7.8.1: Statistics for the 20 foot Fixed Length Composites

7.9 Specific Gravity

A tonnage factor of 14.0 cubic feet per ton for all rock types is used at the mine and that number was used in tonnage calculations.

7.10 Resource Estimation Strategy

The mineralization of the Centennial deposit lies within distinct zones that are primarily stratabound, but which may also cut across lithologic boundaries. Mineralization also tends to be localized inside the lithologic units. Copper grades are higher near the Lisbon Valley Fault and its splays. For those reasons it was decided that lithology would not serve as an adequate control in grade modeling.

In the past, grade shells at a copper cutoff grade of 0.100% were used to define the mineralization. Grade shells were drawn on cross-sections and then digitized. The

resulting shapes were used as hard boundaries to limit the composites used in the grade estimation. For this study a grade indicator at 0.100% copper was used to define the grade shells. Copper estimation for blocks within the resulting shapes would be estimated with composites in the shape and blocks outside the shapes would be estimated with composites outside the shape.

Additionally, because the oxide/reduced samples appear to be a different population, based on grade, (Appendix 5 and Table 7.5.1), copper estimation in oxide blocks would be done with oxide composites and reduced blocks with reduced composites.

7.11 Variography

Indicator variograms at 0.100% copper were calculated in 18 horizontal and 9 vertical directions. Variograms were calculated separately for structural Zones 1 and 2 to refine the search. The oxide and sulfide composites were not separated in order to keep the number of data pairs high enough for a good interpretation. The variograms showed anisotropy with the major axis aligned with the strike of the beds and the semi-major axis defined in the down-dip direction. The major axis also showed a domal feature, plunging to the northwest and to the southeast. Variography was also calculated for copper grades. Appendix D contains the variography.

7.12 Copper Grade Shell

The indicator for the 0.100% copper cutoff was kriged using a minimum of three and a maximum of eight composites per block, and a maximum of three per drillhole. The search ellipsoid parameters are given in Table 7.12.1.

The search distance was shorter for Zone 4 in the footwall of the Lisbon Valley Fault because mineralization is limited to the fault contact zone. All composites could be used for the indicator estimation. Once the indicator had been kriged, the blocks with indicator values of 0.4, 0.45, 0.5, 0.55 and 0.6 were visually compared to the drillhole

assay cross-sections to determine which cutoff most closely matched the assay intervals at the cutoff grade. The 0.45 cutoff appears to have the best fit with the cross-sections and was used to define the grade shell. That is, all blocks with an indicator of 0.45 or greater are in the grade shell. Those blocks with an indicator of less than 0.45 are outside the grade shell.

7.13 Grade Estimation

The blocks were subdivided into domains dependent on structural zone and oxidation properties, as shown in Table 7.13.1 and Figure 7-6. The four structural zones exhibit different variography and should be estimated separately. The oxide and reduced composites have distributions that indicate two different populations (Appendix B and Table 7.5.1). Zone 4 was combined with Zone 1 for copper grade estimation.

Table 7.13.1: Block Domains per Structural Zone and Oxidation Properties

The composites were flagged with these domain codes for use in block grade estimation. Each of the domains was interpolated separately because of the different variography; however, all the oxide composites could be used in the oxide blocks and all the sulfide composites could be used in the sulfide blocks.

Inverse Distance Estimation Inside the Grade Shell

Table 7.13.2 lists the parameters for the inverse distance interpolations. The estimation uses a minimum of one composite and a maximum of three composites, with a limit of one per drillhole per block. A second estimation run was made in order to fill in all the blocks in the grade shell. The same parameters were used, except the ranges were 270 feet (major axis), 225 feet (semi-major range), and 50 feet (minor axis) to correspond to the ranges used in the grade shell estimation.

Structural Zone	Mineralized Area	Composites Used in Estimation	Range (feet)		Direction			
			Major	Semi- Major	Minor	Major	Dip	Plunge
Zone 1 South	10	10,20,30,40	200	150	25	130	-30	-10
Zone 1 South	11	11,21,31,41	200	150	25	130	-30	-10
Zone 2 South	20	10,20,30,40	200	150	25	130	-10	-10
Zone 2 South	21	11,21,31,41	200	150	25	130	-10	-10
Zone 1 North	30	10,20,30,40	200	150	25	320	-30	-10
Zone 1 North	31	11,21,31,41	200	150	25	320	-30	-10
Zone 2 North	40	10,20,30,40	200	150	25	320	-10	-10
Zone 2 North	41	11,21,31,41	200	150	25	320	-10	-10

Table 7.13.2: Parameters for Copper Estimation with Inverse Distance Cubed

Kriging Estimation inside the Grade Shell

The kriging estimation inside the grade shell used a minimum of one composite and a maximum of eight composites, with a maximum of three composites per drill hole. Table 7.13.3 lists the parameters for the kriging estimation, which are only slightly different than those for inverse distance cubed.

Structural Zone	Mineralized Area	Composites Used in Estimation	Range (feet)			Direction		
			Major	Semi- Major	Minor	Major	Dip	Plunge
Zone 1 South	10	10,20,30,40	200	150	25	120	-30	-10
Zone 1 South	11	11,21,31,41	200	150	25	120	-30	-10
Zone 2 South	20	10,20,30,40	200	150	25	140	-20	-10
Zone 2 South	21	11,21,31,41	200	150	25	140	-20	-10
Zone 1 North	30	10,20,30,40	200	150	25	340	-30	-10
Zone 1 North	31	11,21,31,41	200	150	25	340	-30	-10
Zone 2 North	40	10,20,30,40	200	150	25	310	-20	-10
Zone 2 North	41	11,21,31,41	200	150	25	310	-20	-10

Table 7.13.3: Parameters for Copper Estimation with Kriging

The block grades from the two estimations were visually compared to the assay and composite cross-sections. Kriging appeared to smooth grade more than the inverse distance approach and it was decided to use the inverse distance technique for the estimation.

Estimation Outside the Grade Shell

A second inverse distance cubed grade estimation was run for the blocks outside the grade shell, using a search of 150, 100, 25 feet and the directions appropriate to the zones shown in Table 7.13.2. Blocks outside the grade shell in Zone 4, the Lisbon Valley Fault footwall, were not estimated in this run. Figure 7-7 is a cross-section showing copper grades through a typical cross-section.

7.14 Model Verification

As a verification of the model, the block grades were visually compared to the composite grades. There was generally good correlation. A second check was to run a nearest neighbor grade estimation. The grade of the nearest neighbor model at a cutoff of 0.05% copper is 0.446 % copper and the grade of the IDW model is 0.440% copper.

7.15 Resource Classification

The blocks were classified as measured, indicated, or inferred based on the distance to the closest drillhole and the number of drillholes used in the block estimation, as follows:

Within the grade shell:

Inferred: 1 drillhole minimum, closest composite greater than 100 feet.

7.16 Mineral Resource Statement

The total measured and indicated resource of the Centennial deposit at a 0.1% copper cutoff is 37,871,000 tons at a grade of 0.440% copper. There is an additional inferred resource of 3,932,000 tons at 0.309% copper. The total resources and the resources inside and outside the grade shell are summarized in Table 7.16.1.

Table 7.16.1: Measured, Indicated and Inferred Resources for the Centennial Deposit

Within the original pit outline the measured and indicated resource at a 0.100% copper cutoff is 27,467,000 tons at 0.471% copper and within the pit updated with the end of 2005 topography, the measured and indicated resource is 26,687,000 tons at a grade of 0.474% copper. Table 7.16.2 summarizes the resources found within the current pit outlines.

	Original Pit Design Measured and Indicated			End of 2005 Pit Measured and Indicated			
Cutoff	Tons	Grade	Lbs Cu	Tons	Grade	Lbs Cu	
$\frac{0}{2}$		$%$ Cu	(000)		$%$ Cu	(000)	
0.050	30,773,882	0.428	263,574	29,809,323	0.432	257,510	
0.100	27,467,243	0.471	258,979	26,686,928	0.474	253,165	
0.200	22,877,242	0.535	244,913	22,283,498	0.538	239,665	
0.300	17,580,929	0.622	218,568	17,164,061	0.624	214,203	
0.400	12,368,564	0.737	182,380	12,097,373	0.740	179,017	
0.500	8,706,214	0.859	149,524	8,529,555	0.862	147,021	

Table 7.16.2: Measured and Indicated Resources within the Current Pit Outline and at End of 2005

Table 7.16.3 contains the measured and indicated sulfide and oxide resources and Table 7.16.4 contains the measured and indicated sulfide and oxide resources contained within the end of year 2005 pit.

0.500 2,749,757 0.821 45,147 7,895,698 0.850 134,236

Table 7.16.3: Measured and Indicated Resources Classified by Oxidation State.

	Oxide			Reduced			
	Measured and Indicated			Measured and Indicated			
Cutoff	Tons	Grade	Lbs Cu	Tons	Grade	Lbs Cu	
$\frac{0}{0}$	(000)	$%$ Cu	(000)	(000)	$%$ Cu	(000)	
0.050	12,462,060	0.343	85,481	17,347,263	0.496	172,029	
0.100	10,340,510	0.399	82,557	16,346,418	0.522	170,608	
0.200	7,891,579	0.476	75,117	14,391,919	0.572	164,549	
0.300	5,485,032	0.576	63,205	11,679,029	0.646	150,998	
0.400	3,557,222	0.699	49,762	8,540,152	0.757	129,255	
0.500	2,362,539	0.827	39,073	6,167,016	0.875	107,948	

Table 7.16.4: Measured and Indicated Resources within the End of 2005 Pit Outline Classified by Oxidation State.

Table 7.16.5 lists the measured and indicated resources by rock type and Table 7.16.6 lists the measured and indicated resource by rock type within the end of year 2005 pit, both at 0.100% copper cutoff.

Table 7.16.6: Measured and Indicated Resource by Rock Type at 0.100% Copper Cutoff within the End of 2005 pit.

8 Recommendations

The copper grade from this study differs from that of the WDC block model in use at the mine. The WDC resource model grade at a 0.100% copper cutoff is 0.515, while the SRK model grade is 0.440%. Because the modeling parameters used by SRK are very similar to those used by WDC, the difference probably lies in the composite database used by WDC. PAH noted that the compositing method used by WDC eliminated dilution and added 10% more tons at zero grade to the mineable reserve to compensate. It is recommended that the two composite databases be compared to see where the differences lie.

A mine to model reconciliation as mining progresses would be helpful in refining the model.

The model has room for an increase in tonnage at the southeast end of the deposit where drilling is on a 200 foot spacing. Selected infill drilling between the sections could add to the total resource.

The oxide/reduced model could be further refined with additional information from the drillhole chips and core. Although the mineralized rock has a good definition currently, it may be important to characterize waste from an environmental standpoint.

9 References

- Western Services Engineering, Inc. (December 1994) *SUMMO USA Corporation, Lisbon Valley Copper Project San Juan County, Utah, Ore Reserve Evaluation*
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- Kelsey Associates, LTD (May 6, 1996) *Lisbon Valley 1996 Mineable Reserve Update*
- The Winters Company (February 1997) *Review of Lisbon Valley Copper Project San Juan County, Utah, SUMMO Minerals Corporation*
- Winters, Dorsey & Company, LLC (November 2003) *Lisbon Valley Copper Project San Juan County, Utah Technical Update Study to the October 2000 Feasibility Study, Prepared by the Winters Company*
- Hahn, G.A., and Thorson, J.P. (2005) *Geology of the Lisbon Valley Sandstone-hosted Disseminated Copper Deposits, San Juan County, Utah [Reprint],* 42 pages

10 Glossary

Abbreviations

The Imperial system has been used throughout this report, unless otherwise stated. A ton is equal to 2,000 pounds.

Appendix A

Listing of Drillholes

Appendix B

Oxidation Data

0.445

0.024

0.313
0.005

2.714

4.180

484

 $\frac{2.33\%}{2.33\%}$

51.53%

67.14%

76.84%

90.13%

 1.25 15 91.89% 1.3 21 92.80% 1.35 12 93.32% 1.4 11 93.79% 1.45 13 94.35% 1.5 8 94.70% 1.55 6 94.95% 1.6 5 95.17% 1.65 5 95.39%1.7 9 95.77% 1.75 8 96.12% 1.8 10 96.55% 1.85 6 96.81% 1.9 8 97.15%1.95 8 97.50% 2 4 97.67%More 54 100.00%

2.26% 8.04%

13.28%

23.40%

33.51%

42.19%

50.41%

26.16%
33.83%

39.36%

Appendix C

Drillholes with Questionable Intervals

Drillholes with Questionable Intervals

Typical Drillhole with Questionable Intervals

Appendix D

Variography

Zone 2: Indicator Variography

Zone 2, South, Major Axis

Zone 2, North, Major Axis

Zone 2, South and North, Semi-Major Axis

Zone 1: Indicator Variography

Zone 1, South, Major Axis

Zone 1, North, Major Axis

Zone 1, South and North, Semi-Major Axis

Zone 1: Copper Kriging Variography

Zone 1, South, Major Axis

Zone 1, North, Major Axis

Zone 1, South and North, Semi-Major Axis

Zone 2: Copper Kriging Variography

Zone 2, South, Major Axis

Zone 2, North, Major Axis

Zone 2, North and South, Semi-Major Axis

