

1200 1191

7C

COMSTOCK DISTRICT

ORE RESERVES AND EXPLORATION POTENTIAL

Jonathan Sprecher
Chief Mining Geologist
United Mining Corporation

February 7, 1985

United Mining Corporation considers the information contained in this report to be confidential and proprietary in nature. No outside parties will be allowed to make copies of this report. This report must be returned to United Mining Corporation when requested.

COMSTOCK DISTRICT ORE RESERVES AND EXPLORATION POTENTIAL

The purpose of this report is to inventory the present ore reserves in the Comstock District and to make recommendations on where and how to test for and delineate possible sources of ore reserves. United Mining Corporation has available three types of millfeed: old mine dumps and mill tailings, open pits, and underground reserves. For this report, millfeed will be divided out by type (dump or tailings, open pit and underground) and reserve classification (proven, probable and possible).

The reserves have been calculated by U.M.C. personnel and in some cases, by Whitney & Whitney, Inc., using a polygonal method. Densities used were 16 cubic feet per ton for rock in place and 20 cubic feet per ton for backfill and mine dumps.

The following reserve calculations are used:

Proven

Block of ore grade material generally exposed on two or more sides, by accessible workings and/or drill holes with acceptable recovery of core or cuttings. The detail of mapping, and sampling by the U.M.C. Geology Department, is such that the risk of geological projection is negligible, and that the risk of failure to maintain expected width and grade are minimized. Due to continuity of the Comstock vein deposit, both along strike, and down dip ore is projected up to 75 feet between exposed workings, and not more than 50 feet beyond exposed workings.

Probable

Ore developed by work conducted by either Comstock Merger Mines, or United Mining Corporation and for which sufficient data exists to ensure, as far as practicable, its continuance over the projected width, at the expected grade, but which, for one or more reasons cannot be considered proven.

Possible

Ore for which there is insufficient data to be considered proven or probable, but for which there is still a high degree of confidence. This class includes stope fill mapped below the Comstock Merger Mine workings, as well as a fifteen foot halo. Zones which are occasionally seen in certain Comstock Merger Mine drifts, but for which the data spacing is too sparse, are also included herein.

United Mining Corporation has assessed geologic reserves for many of the possible millfeed sources. Below is a brief discussion of each source together with reserve estimates for each. The reserves are geological reserves and do not take into account dilution and mine design.

Virginia City Dumps

Approximately one and one-half million tons of dump material presently controlled by U.M.C., and open to mining without undue interference with city activities or buildings, is available as potential millfeed. Dumps such as the Chollar-Potosi, Hale and Norcross (CPHN) dump, the Yellow Jacket, and others have been sufficiently drilled or sampled by U.M.C. to provide proven reserves. Others such as, the East Ophir and Gold Hill dumps, have a limited number of drill holes, but indications are that reserves will be developed from these dumps with additional drilling. The remainder of the U.M.C. controlled dumps have some surface sampling completed on them, and will require drilling to prove up reserves. It is anticipated that some of the dump materials will prove to be waste from shaft sinking and underground development, although much of the underground development in the Comstock mines was in halo type lower grade material that may be ore at current prices for gold and silver.

Proven

Chollar-Potosi, Hale and Norcross (CPHN) Dump

Originally U.M.C. drilled fifty-seven holes into this dump that led to a calculation (by U.M.C.) of 198,328 tons of proven ore with a grade of 0.037 ounces gold and 1.2 ounces silver per ton. Since

that time United Mining Corporation has milled 161,000 tons of dump material from the CPHN dump at an average grade of 0.039 ounces gold and 1.47 ounces silver per ton. A slight upgrading was realized by the use of a screening plant at the mill to remove low grade oversized material. The reserves remaining are as follows:

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
U.M.C.	40,000	.038	1.30	Proven

Savage Dump

Drilling on the Savage dump was sufficient to classify the dump materials into the probable category. The 154,000 tons of probable ore grading 0.032 ounces gold and 1.12 ounces silver per ton (U.M.C. calculation) was assumed to be geologically similar to the material in the CPHN dump.

Since then U.M.C. has milled 81,093 tons of dump material from the Savage Dump at an average grade of 0.032 ounces gold and 1.23 ounces silver per ton. The remaining reserves are as follows:

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
U.M.C.	5,000	.032	1.20	Proven

Yellow Jacket Dump

The Yellow Jacket Dump is located near the Gold Hill Depot area. Fifteen holes were drilled into the dump by HIMCO. Additional trench samples were taken by both HIMCO and UMC to verify the results.

The upper section of the dump was mined by U.M.C. The following reserve is ore remaining:

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
HIMCO/U.M.C.	38,000	.045	1.14	Proven

Con-Chollar Float Tails

The Con-Chollar float tails are located near the U.M.C. mill on the south side of the road from the office to the mill.

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
W & W/U.M.C.*	63,000	.024	1.35	Proven

*This estimate is based on 21 trench samples. The area of influence around each trench is assumed to be 50' or halfway to the next trench, whichever is less. A large portion of the tails have not been sampled, so this may represent a low estimate of total tonnage.

HIMCO "Green Ore" Stockpile

A stockpile of roughly 125,000 tons of "green" ore existed before May 1, 1983. Since that time, about 102,000 tons have been processed by United Mining Corporation.

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
HIMCO/U.M.C.	23,000	.019	1.20	Proven

New Savage Leach Pad

Between the CPHN and the Savage Dump there is an old leach pad that was set up by InterMountain Exploration. The pad has been sampled thoroughly and is considered proven.

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
U.M.C.	3,000	.028	1.04	Proven

Probable

Old Savage and Hale & Norcross

These dumps are located above B Street north of the Loring Pit. They have been tested by backhoe and drill holes.

Old Hale & Norcross

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
U.M.C.	1,900	.022	1.03	Probable

Old Savage

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
U.M.C.	7,600	.036	1.33	Probable

Gold Hill Dump

The area of the Gold Hill V&T Freight Depot is underlain by old mine dumps which pre-date the construction of the V&T Freight Depot.

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
U.M.C./W & W*	6,250	.069	2.06	Probable

*This estimate is based on the top 10' of four drill holes in two of the Gold Hill cross-sections. The area of influence was considered to be 100' E.W. and 50' N.S. This is probably a conservative estimate, but not much information is currently available on this area. Trench sampling is needed to determine the limits of the dump.

Belcher Dump

Part of the Belcher Dump lies under the HIMCO "Green Ore" stockpile. Certain portions of the Belcher Dump are exposed to the surface and could be recovered at any time. Ore grade material generally lies 0-30' beneath the surface.

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
UMC/ W& W*	14,000	.041	1.21	Probable

*This estimate is based on 15 drill holes in the Belcher Dump area. Area of influence was considered to be 20' on three of the cross-sections used, and 25' and 100' on the other two cross-sections. A large portion of the dump has not been sampled, so this can be considered to be a low estimate of the total tonnage in the dump.

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
East Ophir North Comstock	200,000	.040	1.50	Possible
Con-Virginia North Comstock	250,000	.040	1.50	Possible
Gould & Curry Central Comstock	80,000	.030	1.00	Possible
Chollar Dump Central Comstock	16,500	.040	1.50	Possible
Loring Lg. Stockpile Central Comstock	20,000	.030	1.52	Possible
Belcher South Comstock	100,000	.030	1.50	Possible
Overman South Comstock	200,000	.030	1.50	Possible

Mine dumps and mill tailing - held by other parties.

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
Union Dump North Comstock				
Craig	500,000	.030	1.00	Probable/ Possible
New York Dump South Comstock				
Delmar/HIMCO	150,000	.30	1.00	Possible
Lucerne Dump South Comstock				
Delamar/HIMCO	298,000	.028	.66	Probable

Open Pit

Loring Pit Central Comstock

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
U.M.C.	315,000	.051	1.95	Proven
U.M.C.	18,000	.051	1.95	Probable

The original tonnage and grade estimate done by Driesner May, 1984 had a "cut" grade of .044 opt. Au and 1.90 opt. Ag and an "uncut" grade of .059 opt. Au and 2.05 opt. Ag. In calculating the "cut" grade, gold assays above 0.10 opt. Au. were cut to 0.10 opt. Au and silver assays above 5.0 opt. Ag were cut to 5.0 opt. Ag. A geostatistical study by Sprecher showed that a population division existed at 0.15 ounces per ton gold and that a cut-off of 0.15 ounces per ton gold was realistic. A re-calculation showed the "cut" grade to be 0.051 ounces per ton gold. The silver grade was adjusted to reflect this change.

Gold Hill Pit South Comstock

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
U.M.C.	292,000	.067	2.35	Proven
U.M.C.	135,000	.073	2.34	Probable
U.M.C.	300,000	.065	2.35	Possible

The Gold Hill Pit will require drilling to finish delineating the mineralized zone to determine a mine plan. A total of 11,420' in 29 drill holes will be needed.

Overman Pit

A study done for Minerals Engineering Company delineated the following reserves on the basis of seven drill holes.

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
MECO	150,000	.080	3.50	Probable
MECO	75,000	.080	3.50	Possible

Exploration Potential

Open Pit Targets

	<u>Possible Tonnage</u>
Middle Hill Ridge South Comstock	
Host rock metavolcanics	1,000,000 tons
Windy Hill South Comstock	
Host rock metavolcanics	500,000 tons
Crown Point-Belcher South Comstock	
Host rock lode	500,000 tons
Caladonia South Comstock	
Host rock volcanics	1,000,000 tons

Underground

North end Silver City Fault, South Comstock
 Host Silver City Lode
 2,000' of strike, upper 900' 1,000,000 tons

Alteration-structural targeting
 Union shaft, North Comstock 500,000 tons
 Combination shaft, Central Comstock 250,000 tons
 Wheeler Monument, South Comstock 250,000 tons
 Ward shaft, South Comstock 500,000 tons

Underground Exploration targets held by other parties

Azgazzis-Scorpion Ridge North Comstock

Garfield Lode, Central Comstock

Fischer-Watt

New York, South Comstock 200,000 tons 266 ounces gold per ton
 Delamar

Justice, South Comstock
 D. Lester

Brunswick, Brunswick Lode

Comstock Tunnel and Drainage/Rea Gold

Open Pits held by other parties

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
Cedar Hill North Comstock				
Galactic	-	-	-	Possible
Monte Cristo Brunswick				
Fischer-Watt	228,000	.05	2.22	Probable
Flowery Lode Flowery				
Lee Mining	-	-	-	Prob/Poss
Lucerne Pit Silver City				
Donevin/Obester	100,000	.067	.67	Probable
Dayton Pit Silver City				
Delamar	500,000	.051		Prov/Prob
Haywood/Santiago South Comstock				
Nevox	475,000	.110	0.70	Prov/Prob
Oest-Vulcano South Comstock				
Minerex Exploration	-	-	-	Possible
Amazon South Comstock				
Nevox Exploration	-	-	-	Possible

Underground Reserves

New Savage Mine Central Comstock

<u>Source</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
U.M.C.	110,000	.101	3.73	Proven
U.M.C.	1,949,748	.142	3.37	Probable
U.M.C.	1,000,000	.085	3.05	Possible

Con Imperial South Comstock

HIMCO	234,875	.140	4.55	Probable
-------	---------	------	------	----------

North Comstock

Stopefill	1,000,000	.150	3.50	Possible
Halo	500,000	.100	2.50	Possible

Recommendations

A drilling program designed to test both millfeed and longer term exploration potential is recommended. The millfeed drilling will test the dump sources as well as finishing the delineation drilling of the Gold Hill Pit. The exploration drilling will test the open pit and underground potential.

The millfeed drilling will test the dumps that offer the best potential for millfeed grades. These dumps and mill tailings north to south include the East Ophir Dump, the Con-Virginia Dump, the Gould & Curry Dump, and the Crown Point-Belcher Dump. This drilling program will also test the northern and southern extent as well as the upper portion of the Gold Hill Pit.

The Exploration Drilling Program will test potential open pit and underground targets. Open pit potential exists in the Cedar-Ophir Ravine area, the Windy Hill area, in the Crown Point-Belcher area and an area west of the Caledonia Shaft. These targets will require geochemical sampling to localize the drilling target. The only underground target recommended at this time is the drilling of the northern upper portion of the Silver City Fault.

<u>Drill Holes</u>	<u>Number of Holes</u>	<u>Total Footage</u>
Dump		
East Ophir	7	100
Con-Virginia	8	100
Gould & Curry	10	50
Crown Point-Belcher	6	100
Open Pit		
Gold Hill Pit	29/22	11,420/7,100
Cedar-Ophir Ravine	3	300
Windy Hill	3	300
Crown Point-Belcher	3	500
Caledonia	3	1,500
Underground		
North Silver City Fault	6	4,500

Sources of Millfeed (held by United Mining Corporation)

<u>Name</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
<u>Dumps & Mill Tailings</u>				
CPHN Dump	40,000	.038	1.30	Proven
Savage Dump	5,000	.032	1.20	"
Yellow Jacket Dump	38,000	.045	1.14	"
Con-Chollar Trailing	63,000	.024	1.35	"
Green Stockpile	23,000	.019	1.20	"
Leach Pad	3,000	.028	1.04	"
Old H&N Dump	1,900	.022	1.03	Probable
Old Savage Dump	7,600	.036	1.33	"
Gold Hill Dump	6,250	.069	2.06	"
Belcher Dump	14,000	.041	1.21	"
East Ophir	200,000	.040	1.50	Possible
Con-Virginia	250,000	.040	1.50	"
Gould & Curry	80,000	.030	1.00	"
Chollar	16,500	.040	1.50	"
Loring Lg	20,000	.030	1.50	"
Bel	100,000	.030	1.50	"
Overman	200,000	.030	1.50	"
<u>Open Pit Reserves</u>				
Loring	315,000	.051	1.95	Proven
	18,000	.051	1.95	Probable
GHP	292,000	.067	2.35	Proven
	134,000	.073	2.34	Probable
	300,000	.065	2.35	Possible
Overman	150,000	.080	3.50	Probable
	75,000	.080	3.50	Possible
<u>Underground Reserves</u>				
New Savage Mine	110,000	.101	3.73	Proven
	1,350,000	.140	3.37	Probable
	1,000,000	.085	3.05	Possible
Con-Imperial	235,000	.140	4.55	Probable

Name Tons

Exploration Potential

Open Pit

Middle Hill Ridge 1,000,000
Windy Hill 500,000
Crown Point-Belcher 500,000
Caladonia 1,000,000

Underground

Silver City Fault 1,000,000
Union Shaft 500,000
Combination Shaft 250,000
Wheeler Mon 250,000
Ward Shaft 500,000

<u>SUMMARY</u>	<u>Tons</u>	<u>Au</u>	<u>Ag</u>	<u>Class</u>
Dumps & mill tailings	172,000	.032	1.26	Proven
	29,750	.044	1.41	Probable
	866,500	.035	1.45	Possible
Total	1,068,250	.035	1.42	
Open Pit	607,000	.059	2.14	Proven
	302,000	.075	2.89	Probable
	375,000	.068	2.50	Possible
Total	1,284,000	.065	2.42	
Underground*	110,000	.101	3.73	Proven
	2,185,000	.142	3.50	Probable
	1,000,000	.085	3.05	Possible
Total	3,295,000	.123	3.37	
Dump	1,068,250	.035	1.42	
Open Pit	1,284,000	.065	2.42	
Underground	3,295,000	.123	3.37	
Total	5,647,250	.087	2.79	

* North Comstock possible reserves are not included in calculation.