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ITEM 70

WHITNEY & WHITNEY, INC.

MINING AND MATERIALS SPECIALISTS

TELEPHONE (702) 323-3050

35 N. EDISON WAY, #6
P.O. BOX 11647
RENO, NEVADA 89510

October 7, 1987

Mr. Mark E. Emerson, President
Resource Exchange Corporation
131 West 69th Street
New York, NY 10023

Dear Mark:

This is a summary of my conclusions and recommendations for your property in the Pyramid district, Washoe County, Nevada. The conclusions are a result of a one day field examination and sampling trip accompanied by you and your wife, Mary Ellen, and of a study of available reports, as well as a discussion with Hal Bonham.

<u>My major conclusion is that there are viable exploration targets for gold-silver in the area of your claims</u>. My sampling results (Figure 1) are clearly positive for a first round of basically reconnaissance sampling. I believe that the district is underrated and very much under-explored by modern techniques and drilling.

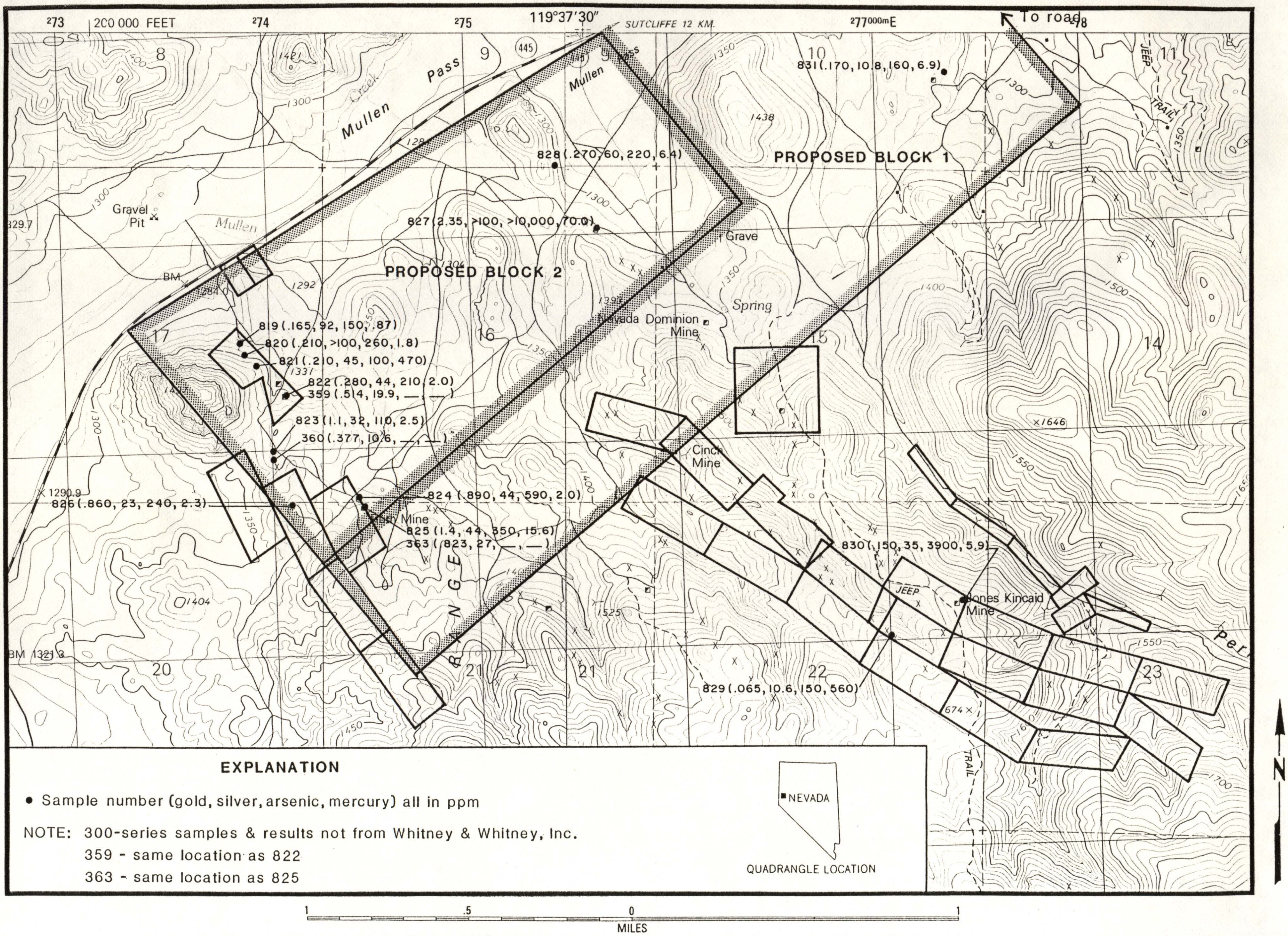
I am absolutely convinced that this district is part of the upper and laterally adjacent areas of a deeply buried porphyry copper system. The evidence for this is as follows:

1. The district zonation (central enargite-pyrite, intermediate tetrahedrite-sphalerite-galena-chalcopyrite-bornite-pyrite, and outer galena-pyrite) as defined by Wallace (1975) is virtually identical to that at Butte.

2. Reports by Nielsen on exploration in Perry Canyon strongly make the case (based on alteration, geochemistry, intrusives, breccia zones, etc.) that the Perry Canyon area is immediately above a buried porphyry copper deposit within the pyritic shell zone.

3. The strong district vein system continues from the northwest into the Perry Canyon altered zone and swings from southeasterly to easterly. Projecting

FIGURE 1. LOCATION MAP SHOWING SAMPLE RESULTS, PATENTED CLAIMS, AND PROPOSED CLAIM BLOCKS. (Patented claim locations are approximate.)



this through post-mineral cover, one finds that the vein system projects directly into the Guanomi mine area near Pyramid Lake. At Guanomi, American Selco, Inc. drilled an extensive area of clearly porphyry copper-style, but low-grade, copper-molybdenum mineralization. Although older in age (23.4 ± 0.6 m.y.), the ages are not far apart.

4. There is evidence that the Pyramid district is near a volcanic vent, as are many porphyry copper deposits.

5. As is discussed below, the Pyramid district mineralization is of the acid-sulfate variety. This type of epithermal mineralization tends to be associated with porphyry copper systems.

Establishing that your claims are in a porphyry system is important. These are large systems which cannot be dismissed by a cursory examination. Gold-silver deposits associated with porphyry copper deposits are currently subject to intense exploration throughout the western U.S. Discovery of the large Fortitude gold deposit at Battle Mountain, Nevada, is largely responsible for the renewed interest in porphyry systems. Numerous good precious metal deposits in Peru are also related to porphyry systems.

Exploration for gold-silver deposits in a porphyry system is not straightforward because the gold is erratically distributed in these systems and because two genetic ore models must be taken into account, namely the porphyry model with its shell-alteration-mineralization concept and the epithermal model (in this case the acid-sulfate model). Turning first to the porphyry concept, gold deposits more commonly occur in the vicinity of copper porphyries with an intrinsically high copper content (but still by-product grade). Hence the porphyry copper deposits in the South Pacific, which often have gold of 0.02-0.025 ounces per ton in the copper zone, have excellent peripheral gold deposits (e.g. Ok Tedi, Papua-New Guinea). In Arizona the copper deposits have low by-product gold, and peripheral gold deposits are not impressive. Bingham, Utah, and Battle Mountain, Nevada, have relatively high gold in the copper zones (still generally 0.01 ounces per ton or less) and both have very good peripheral gold deposits. Nielsen's reports (1981 and 1982) indicate that his drilling was not even close to being deep enough to hit the porphyry copper, although he was probably directly above it. However, his surface sampling shows some anomalous gold (up to 0.6 ppm) and occasional anomalous gold in certain drill intervals (up to 0.3 ppm gold). Also, limited data from copper production in the enargite-pyrite zone of the district (northwest of Nielsen's drilling) shows that gold is generally present in the 0.0x ounces per ton range. It seems likely from this scanty data that the Pyramid porphyry copper system is intrinsically one of the high gold systems.

Determining the likely location of gold deposits in a porphyry copper system is more difficult. About the only firm generalization one can make is that gold zones will likely be outside of the central zone of disseminated copper. The Star Pointer gold deposit is on the edge of the Ruth pit at Ely, Nevada. The Star Pointer contains several million tons grading 0.09 ounces gold per ton. The oxide copper mined from Ruth was itself at a high level in the porphyry system (L. James, 1987, personal communication), and, although sitting on the edge of the original pit, the Star Pointer is in what was copper waste rock very much peripheral to the copper. At Bingham much gold was produced in the lead-zinc zones of the U.S. and Lark mines, peripheral to, but not far from the large open pit. At Battle Mountain there are multiple peripheral gold zones (Fortitude, Minnie, Tomboy, Surprise) around the copper center some in skarn and some not.

Perhaps most significant is a comparison with Butte, where the parallels to Pyramid are most striking, although Pyramid does not have the enormous intensity of mineralization of Butte. Figure 2 shows the zonation at Pyramid while Figure 3 is the zonation found at Butte. Central, Intermediate and Outer or Peripheral zones are evident in both systems and the similarity (details not given here) is amazing, although significant differences in detail do exist. Excellent gold (>0.1 ounces per ton) is found in the intermediate and peripheral zones and at the extreme edge of the Butte district. The gold mineralization on the extreme edges of Butte is only now being fully appreciated in currently on-going exploration projects. Butte shows well the multiple target areas for gold which exist in a porphyry system.

Another parallel with Butte is the importance of silver. Butte was a tremendous silver producer. Silver was produced from the upper vein levels long before anyone realized that Butte was a copper district. Pyramid is likely to be similar in that silver is very important. It should be noted that at Butte, although veins were found that topped out below the surface, no vein was found that bottomed out, even down 5000 feet (some were faulted off at the bottom). Such vertical continuity would be important if found in the Pyramid district. At the very lowest levels of central Butte disseminated and veinlet copper-molybdenum mineralization was encountered. Above that the system is vein-dominated.

I am impressed by the lack of drilling in the central part of the district. The deepest workings are at the Jones Kincaid, but they only go down 500 feet. All of the other

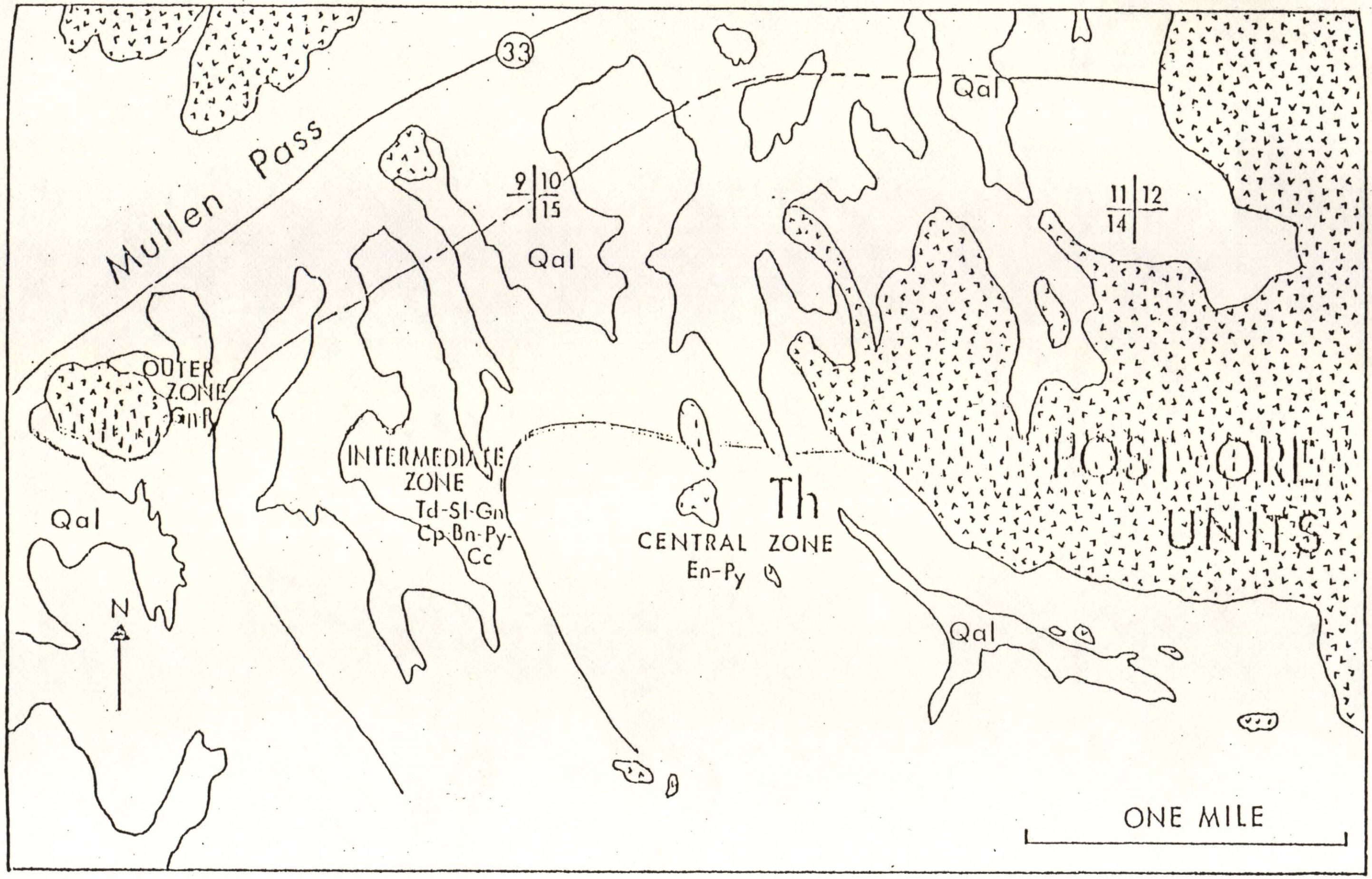


Figure 2. Map showing the distribution of hypogene sulfide and sulfosalt minerals in Pyramid district veins. Veins in the central zone bear enargite, luzonite, and pyrite. Veins in the intermediate zone bear tetrahedrite, galena, sphalerite, chalcopyrite, bornite, chalcocite, and pyrite. Sulfides in the outer zone veins are mostly galena and pyrite.

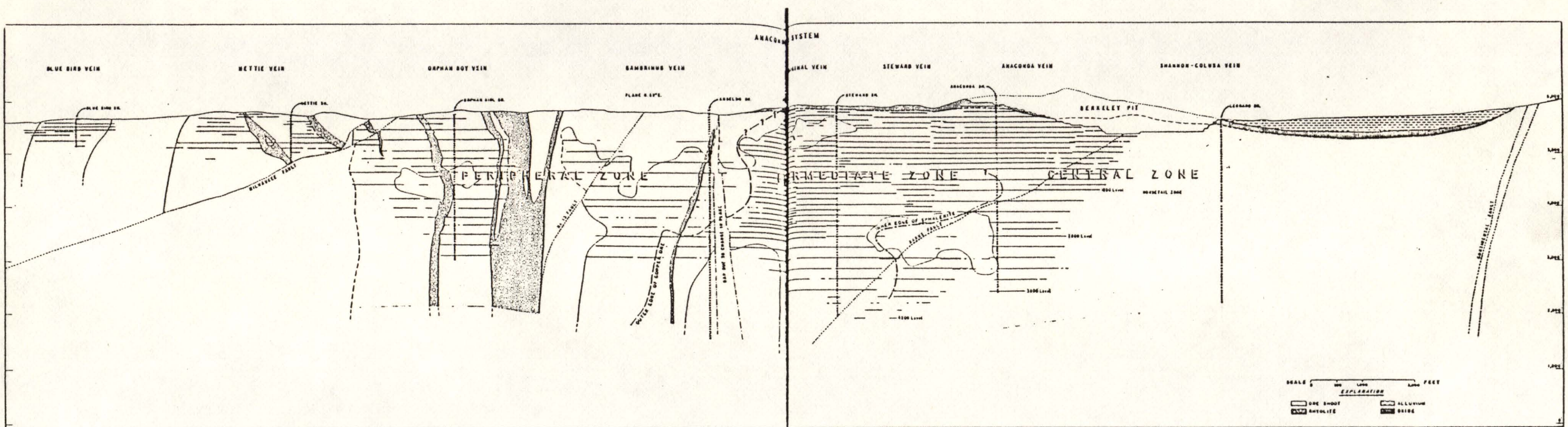


FIG. 3 *Longitudinal Section of the Anaconda vein, showing oreshoots and approximate positions of mineral zones.*

workings in the district go down less than 200 feet. The district, outside of Perry Canyon, has never benefitted from a concerted drill program. Its potential is really an unknown. Given the shell concept of the porphyry model, if the porphyry is deeply buried there could theoretically be gold deposits in the central part of the district also, if one is at a high level in the system.

Turning away from the porphyry concept, I will now discuss the epithermal model which I believe relates to the Pyramid district. Although there are numerous classifications of epithermal deposits, I believe that the two types distinguished by Heald, Foley, and Hayba (1987) are genetically fundamental. These authors distinguish an acid-sulfate type and an adularia-sericite type. Table 2 from the article in Economic Geology gives the characteristics of the two deposit types.

TABLE 2. Mineralogical Characteristics Distinguishing the Acid-Sulfate-Type and Adularia-Sericite-Type Deposits

Acid-sulfate type	Adularia-sericite type
Enargite + pyrite ± covellite	*No enargite*
Extensive hypogene alunite	*Sericitic alteration dominant*
Major hypogene kaolinite	Sometimes kaolinite[1]
No adularia	*Adularia*
No selenides	Often selenides
Mn minerals rare	Mn gangue present
Chlorite rare	Often chlorite
Sometimes bismuthinite	No bismuthinite

Italicized words denote key distinguishing characteristics
[1] Could be supergene in some districts

The mineralization at Pyramid, its advanced argillic alteration, enargite-pyrite zone, and lack of adularia, clearly fits the acid-sulfate model. Other examples of the acid-sulfate type are Red Mountain, Colorado, Julcani, Peru, Summitville, Colorado, and Goldfield, Nevada. No alunite is reported at Pyramid, but there is pyrophyllite and diaspore. Wallace (1975) points out that diaspore can form from alunite upon increasing acidity. Further X-ray work may yet identify alunite. The acid-sulfate model has numerous implications relevant to exploration, but discussion of these is outside the scope of this report.

There are a number of other miscellaneous observations I would make. In most epithermal districts, where a zonation of gold with respect to silver is observed, gold is observed peripheral to, or outward from, the silver zone. However, this is not always the case. At Julcani, Peru and Tonopah, Nevada, gold-rich centers are found.

At face value, on the basis of district production, we can expect any gold deposit found at Pyramid to be silver-rich. Other reasons to expect that it would be silver-rich are:

1. Rhyolite-related, volcanic-hosted gold deposits tend to be rich in silver
2. Pyramid is like Butte, which is silver-rich
3. Most of the gold deposits along the Walker Lane (as Pyramid is) are silver-rich

It is important to note that surface leaching of gold is characteristic of volcanic-hosted precious metal deposits. Examples of this are found at Borealis, Tuscarora, Round Mountain, and Delamar. Hence, low but anomalous gold in samples taken from the surface can directly overlie ore.

An important positive feature at Pyramid is the strong lateral continuity of the veins, some of which can be traced for over two miles. Widths of over 10 feet are attained. This is a high-sulfide system; mineralization tends to be sulfide and base metal-rich. Although mineralization is confined to veins in most of the district, in the vicinity of the porphyry, breccia zones and an implied structural intersection (E-NE-trending alteration zone is traversed by E-SE-trending veins) has led to a wide zone of disseminated pyrite mineralization. This phenomenon could occur elsewhere in the district, giving rise to disseminated or bulk mineable precious metal deposits. I would also look for alluvial-covered argillic alteration-controlled erosion areas in the northwest portion of the district. Some of the argillic alteration veins northwest of the Ruth mine form an impressively wide zone (50-100? feet).

The results of my rock sampling (as well as the results from three samples collected by another geologist) are given on Figure 1 and in the Appendix. In order to analyze the geochemical gold, silver, arsenic, and mercury data, I plotted value-coded maps for each element. These are not included with this report because the data are sparse enough that I believe you can see the trends without them. Most impressive is silver throughout the area sampled. Out of 13 total samples, 77% are >30 ppm silver, and 23% are >90 ppm silver. Two samples are >100 ppm silver. Gold is also very interesting with 38% of the samples exceeding 0.8 ppm (0.023 ounces gold per ton). In many areas of Nevada gold values of >100 ppb (parts per billion gold) are considered anomalous. Values of >200 ppb gold are certainly anomalous; 69% of the samples taken by us are >200 ppm gold. Highest values from my sampling are in the northwest portion of the property. Sampling is also heaviest in the northwest, so that this is only partially indicative. In this area, the following values are notable: 2.35 ppm (0.069 oz Au/ton) from a shaft in the northwest corner of section 16, 1.40 ppm

(0.041 oz Au/ton) at the Ruth mine, and 1.10 ppm (0.032 oz Au/ton) northwest of the Ruth mine. The areas immediately west and northwest of the Ruth mine, and the entire area up to one mile north and one mile northeast of the Ruth mine are particularly attractive for gold exploration.

Mercury >1 ppm is generally anomalous in Nevada epithermal systems. Of the 13 samples taken, 77% are >1 ppm mercury. Notable results are 70.0 ppm mercury from a shaft in the northeast corner of section 16 and 15.6 ppm mercury at the Ruth mine. Arsenic is often considered anomalous at 100 ppm, but it is certainly anomalous at 200 ppm. Of the 13 samples taken, 61.5% are >200 ppm arsenic. Notable results are >10,000 ppm arsenic from the shaft in the northeast corner of section 16 and 3900 ppm arsenic at the Jones Kincaid mine. The sample from the Jones Kincaid mine would be expected to be high in arsenic because of the mineral enargite which is common there. The major importance of the generally anomalous arsenic-mercury values is that these are part of the expected trace element signature in the vicinity of producing epithermal deposits. They are also considered an important prospecting guide because arsenic and mercury form halos that extend beyond the limits of gold-silver mineralization.

Recommendations

1. Begin a title search on your patented claims immediately.

2. Stake a block of claims (Block 1) as indicated on Figure 1. I recommend staking the larger area indicated in the figure (Block 1 is inclusive of Block 2), about 119 claims if staked north-south, east-west (actual area if staked this way is somewhat different than drawn). If finances do not permit this, the smaller indicated block (Block 2) will cover the most important areas (about 54 claims if staked north-south, east-west). The objective here is to cover a gold-silver play in the Outer Zone (as drawn by Wallace, 1975) and the outer portion of the Intermediate Zone in the case of Block 2. Block 1 would basically get the rest of the Intermediate Zone in addition to the ground covered by Block 2, as well as some more of the Outer Zone.

3. You clearly have the central part of the Central Zone covered with patented claims. Anybody seriously wanting to work in this part of the district will have to deal with you. Rather than stake more claims in this area you should just insist upon an area of influence agreement which gives you a royalty on anything found within a half mile perimeter on all sides of your

patented claims. You may want to stake about five claims to cover obvious fractions in the patented claim block.

4. More rock sampling is warranted and a better topographic base map should be prepared.

5. If your budget permits it, IP and resistivity surveys should work well in the Outer Zone because of the high sulfide content of ore in this district. The power line will limit the areas that can be geophysically surveyed somewhat.

6. After a sales package is assembled, mining companies can be approached. If you will make the initial contacts, I would be happy to show interested parties the property and explain the exploration scenario as I see it.

This is definitely a property of merit and I wish you luck in your endeavors.

Sincerely,

William A. Fuchs
Manager, Minerals Consulting Division

WAF:lc
Enclosures

References

Bonham, H.F., and Papke, K.G., 1969, Geology and mineral deposits of Washoe and Storey Counties, Nevada, Bull. 70, Nevada Bureau of Mines, 140 p.

Heald, P., Foley, N.K., and Hayba, D.O., ~~1978~~ 1987, Comparative anatomy of volcanic-hosted epithermal deposits: acid-sulfate and adularia-sericite types, Economic Geology, v. 82, no. 1, p. 1-26.

Ivosevic, S.W., 1970, Copper-silver-gold deposits of the Burrs-Campbell mines, Pyramid mining district, Washoe County, Nevada, private report, 59 p.

Nielsen, R.L., 1981, Porphyry copper-molybdenum ore target, Perry Canyon area, Pyramid mining district, Washoe County, Nevada, private report, 12 p.

Nielsen, R.L., 1981, Summary of drilling results, Perry Canyon claim block, Pyramid district, Washoe County, Nevada, private report, 4 p.

Nielsen, R.L., 1982 Drill hole PC-4, Perry Canyon claim block, Pyramid district, Washoe County, Nevada, private report, 3 p.

Wallace, A.B., 1975, Geology and mineral deposits of the Pyramid district, southern Washoe County, Nevada, Ph.D. dissertation, University of Nevada-Reno, 162 p.

Appendix

Sample Descriptions and Assay Certificates

Sample Descriptions - Emerson Pyramid Property

819 Grab sample from dump, felsic volcanic with moderate argillic alteration; moderate iron oxide; adit, section 17, T23N, R21E

820 Grab sample from upper dump of inclined shaft; oxidized felsic volcanic; argillic alteration, inclined shaft; section 17, T23N, R21E

821 Grab sample; silicified replacement vein from one foot thick highly silicified portion of six-foot moderately silicified zone; some iron oxide including hematite; section 17, T23N, R21E

822 Grab sample; pyritic quartz vein material from moderate-sized dump; abundant fines plus some coarse material sampled; section 16, T23N, R21E

823 Grab sample; silicified, oxidized vein, 2.5 feet thick; moderate hematite; vein partly silicified - partly not; sections 16-17 boundary, T23N, R21E

824 Grab sample from dump; yellowish, pyritic quartz vein; abundant fines plus some coarse material sampled; Ruth mine, lower shaft; section 16, T23N, R21E

825 Grab sample from dump; exactly like sample 824; Ruth mine, upper shaft, section 17, T23N, R21E

826 Grab sample; silicified-hematitic vein, 8(?)-feet wide; section, T23N, R21E

827 Grab sample of dump; oxidized, siliceous argillic volcanic; moderate to slight iron oxides; both fines and coarse material sampled; shaft; section 16, T23N, R21E

828 Grab sample from dump; brecciated quartz-chalcedony vein; one foot wide, from 2-3-foot wide shear zone; minor hematite and limonite; small pit, section 9, T23N, R21E

829 Chip-grab sample; brecciated, silicified outcropping ribs with minor iron oxide; 10 feet of total silicification in 3 ribs over a horizontal distance of 40 feet; also sampled was a small amount of highly argillic material on the east side from the dump of a small shaft; section 22, T23N, R21E

830 Best of dump sample; pyritic siliceous volcanic, including fines; Jones Kincaid mine; section 22, T23N, R21E

831 Grab sample; 8-inch replacement quartz vein in volcanics; section 10, T23N, R21E

Chemex Labs Inc.
Analytical Chemists * Geochemists * Registered Assayers
994 WEST GLENDALE AVE., SUITE 7, SPARKS, NEVADA, U.S.A. 89431
PHONE (702) 356-5395

To: WHITNEY & WHITNEY, INC.
P.O. BOX 11647
RENO, NEVADA
89510

A8722123

Comments: ATTN: WILLIAM A. FUCHS CC: MARK E. EMERSON

CERTIFICATE A8722123

WHITNEY & WHITNEY, INC.
PROJECT :
P.O.# :

Samples submitted to our lab in Sparks, NV.
This report was printed on 29-SEP-87.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	13	Rock & core: Ring

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
6	13	Ag ppm: HNO3-aqua regia digest	AAS-BKGD CORR	0.1	200
13	13	As ppm: HNO3-aqua regia digest	AAS-HYDRIDE/EDL	1	10000
20	13	Hg ppb: HNO3-HCl digestion	AAS-FLAMELESS	5	100
100	13	Au ppb: Fuse 10 g sample	FA-AAS	5	10000

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PHONE (702) 356-5395

To : WHITNEY & WHITNEY, INC.
P.O. BOX 11647
RENO, NEVADA
89510
Project :
Comments: ATTN: WILLIAM A. FUCHS CC: MARK E. EMERSON

Date : 29-SEP-87
Invoice # : I-8722123
P.O. # :

CERTIFICATE OF ANALYSIS A8722123

SAMPLE DESCRIPTION	PREP CODE		Ag ppm Aqua R	As ppm	Hg ppb	Au ppb FA+AA						
819	205	--	92.0	150	870	165						
820	205	--	>100.0	260	1800	210						
821	205	--	45.0	100	470	210						
822	205	--	44.0	210	2000	280						
823	205	--	32.0	110	2500	1100						
824	205	--	44.0	590	2000	890						
825	205	--	44.0	350	15600	1400						
826	205	--	23.0	240	2300	860						
827	205	--	>100.0	>10000	70000	2350						
828	205	--	60.0	220	6400	270						
829	205	--	10.6	150	560	65						
830	205	--	35.0	3900	5900	150						
831	205	--	10.8	160	6900	170						

CERTIFICATION : Hart Bichler