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FINAL REPORT

ON EXPLORATION

OF THE

MOSS PROPERTY

SAN FRANCISCO MINING DISTRICT
MOHAVE COUNTY, ARIZONA

for

MAGMA COPPER COMPANY
7400 North Oracle Road, Suite 200
Tucson, Arizona 85704

by
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February, 1992

EXECUTIVE SUMMARY

The exploration program consisting of geologic and alteration mapping, surface sampling and drilling of the Moss Project has been completed. A total of 10,207 feet in 22 holes was drilled to evaluate potential gold and silver mineralization along 3500 feet of strike length of the mineralized Moss vein.

A drill indicated resource estimate of 89,117 ounces gold at a grade of 0.053 opt was compiled for a 600 foot segment of this vein from data generated by Billiton Minerals USA. Extrapolation of tonnage and grade in this segment onto an undrilled, adjacent claim indicated potential for 213,000 to 382,000 contained ounces gold. Anomalous gold mineralization in surface samples suggested additional potential may exist below a large area of strong silicification at the west end of the Moss vein.

An exploration drilling program consisting of two parallel lines of 17 holes, designed to penetrate the vein at depths of 200-300 feet and 400-500 feet, was conducted on the (ONE) previously undrilled claim. Phase - II of this program consisted af a horizontal fan of three shallow-angle holes, 700 to 1040 feet in depth, which tested an 800 foot segment of the vein in the silicified area. A fourth hole in this phase was lost at 317 feet and a fifth tested an area of strong acid leaching on Billiton's unpatented lode claims.

Computer-generated resource estimates based on Phase - I drilling data yield a geologic resource of 7.414 million tons at 0.038 opt, or 281,732 contained ounces gold and a pit resource of 2.996 million tons at 0.044 opt, or 131,824 mineable ounces gold.

Phase - II drilling in the silicified area unexpectedly encountered mineralized intervals only in the upper 400 ft of the three holes and not adjacent to the Moss vein as anticipated. Average grade of these intervals is 0.015 opt gold. The maximum probable resource in this area is abut 64,000 ounces gold, but the low grade and unfavorable topography make economically profitable recovery unlikely.

The mineable resource estimate of 131,824 ounces is well below the 250,000 to 300,000 ounce range necessary for Magma to profitably develop and exploit this deposit. Targets which may have contributed to this resource have been tested unsuccessfully and no additional targets are recognized at this time. Based on the results of this evaluation it is recommended that Magma Copper Company terminate the Moss Project .

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INTRODUCTION

The Moss property is located in the San Francisco Mining District, near Oatman in Mohave County, Arizona (Figure 1). The property was leased by Magma Copper Company from Billiton Minerals USA in 1991, however, final agreement on the sublease of some patented claims was not finalized with the owners until the Fall of 1991. Preliminary evaluation, including mapping and surface sampling had begun prior to the final agreement and drilling commenced subsequent to it.

EXPLORATION PROGRAM

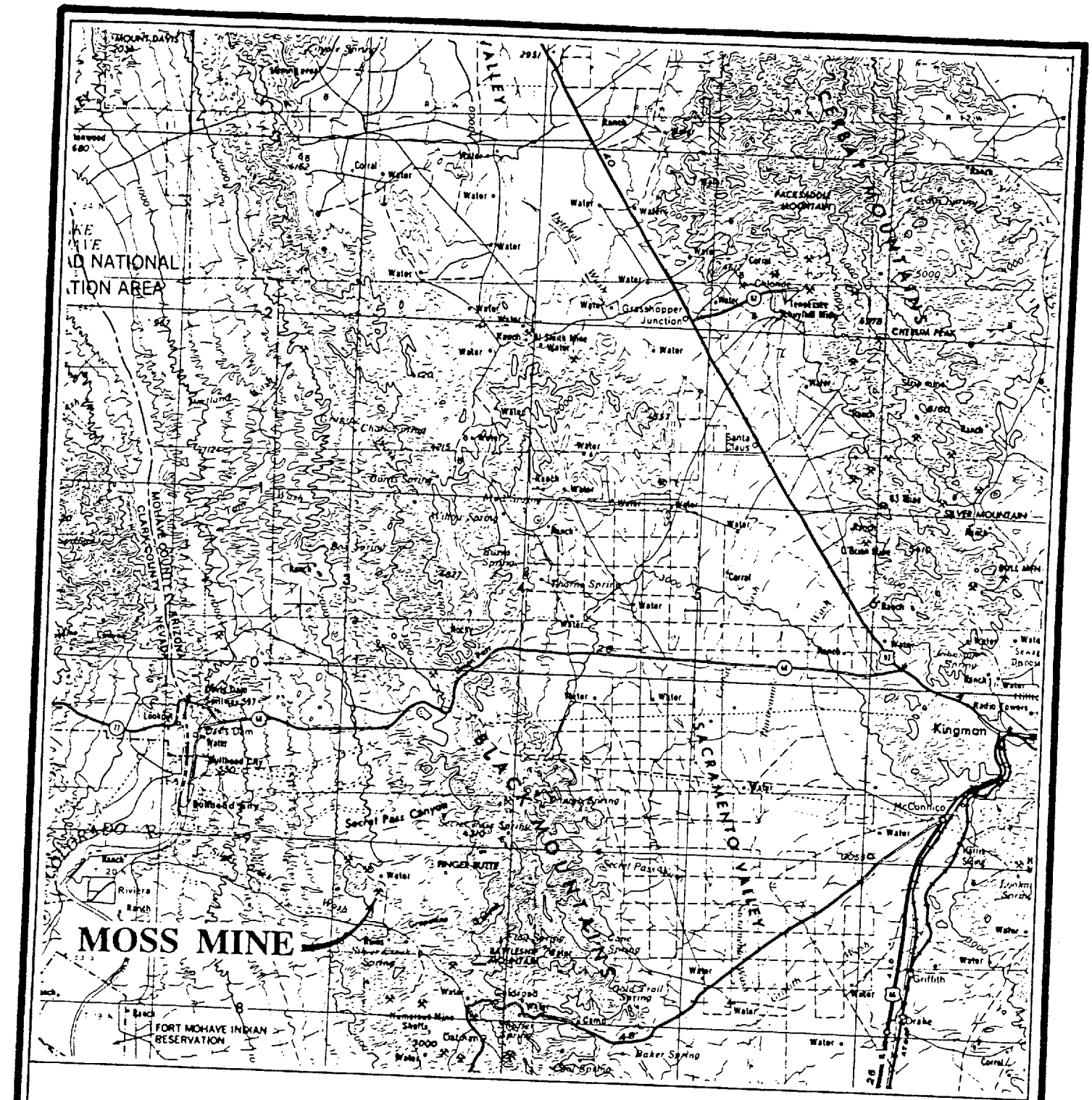
A preliminary data review and sampling program was conducted in April 1991 (Jeanne, 1991) prior to acquisition of the property by Magma Copper Co. As an agreement with Billiton was being negotiated, a more detailed program including mapping and additional sampling was begun.

Geologic mapping was conducted at a scale of 1" = 400' on a portion of the topographic base prepared by IntraSearch for Billiton Minerals. The area mapped in detail comprises about 2.4 square miles in the immediate vicinity of the Moss vein (Plate I).

Outside the area mapped in detail but overlapping the southeastern corner of Billiton's unpatented BMX claims, are widespread exposures of strongly acid-leached Moss Porphyry. I felt this area worthy of some attention, and conducted some cursory limonite and alteration mapping and sampling. No formal maps were prepared pending the outcome of a drill hole planned at the site of a multiple trace element anomaly and exceptionally strong alteration.

Based on data from Billiton and the initial exploration, a drilling program was planned and conducted for portions of the Moss vein on the Key No. 1 and California Moss claims (Plate 4). A second phase of drilling was conducted on the silicified peaks at the west end of the Moss vein and for the strongly altered area in Mossback wash on Billiton's unpatented BMX claims. A total of 10,207 feet was drilled in 22 holes. All holes were drilled at angles of -65° to -30° except the one hole in Mossback wash which was vertical.

Surface samples from the vein on the California Moss claim indicate potential for mineralization similar to that on the Key No. 1 claim. Three parallel lines of drill sites were prepared on the California Moss to test the continuity of mineralization eastward from the Key No. 1 at deep, shallow and intermediate depths. The intermediate depth holes extended the line of Billiton's holes MM-1, 2, 4, 7 and 8 targeting the vein at depths of 250 to 350 ft. The deeper holes, targeting the vein at depths of 400 to 500 ft, were located along a line 100 feet south. Pads for the shallow holes, intended for air track drilling at depths 100 to 200 ft, were located 100 feet north of the intermediate holes along an extension of the line of air track holes drilled by BF Minerals, but were not drilled.



MAGMA COPPER COMPANY

MOSS MINE

MOHAVE COUNTY, ARIZONA

Location Map

COMPILED BY: RICHARD A. JEANNE

DATE: February 1992

Figure 1.

Drilling was initiated on the deeper line at every other site to obtain a broad view of continuity of mineralization with the intent of infill drilling if continuity was established. This program was modified in the vicinity of the adit on the California Moss claim by drilling three adjacent holes to determine if a theorized ore shoot existed there. Intermediate depth holes were drilled adjacent to the deep holes to provide data with which to develop cross sections.

Drilling in the silicified peaks area consisted of a horizontal fan of three angle holes which penetrated the Moss vein over a strike length of about 800 ft. A detailed discussion of this phase of work is contained in my interim report (Jeanne, 1992).

GEOLOGY

EXTRUSIVE ROCKS

Alcyone Formation

The oldest rocks exposed in the district are tuffs, flows, volcaniclastic sediments, sedimentary tuff breccias, welded tuffs and landslide breccias and basalt flows of the Alcyone Formation, exposed in the eastern and western portions of the mapped area (Plate I). The most common representative of this unit is a siliceous, fine-grained, granular-looking, locally porphyritic, rhyolitic flow rock. It is locally present throughout the mapped area and forms much of the higher elevations of the silicified peaks at the west end of the Moss vein.

In the southwest area lenses of black, silty, hornfelsed sediments can be traced for several hundreds of feet. South-southeast of hill 2056, these sediments are exposed in the access road to the property, and carbonized plant fragments were noted in them on the southeast flank of hill 2144. Also near hill 2144 are exposures of welded tuff containing pumice fiamme typically 2-3 inches and up to 9 inches in length with aspect ratios of about 8:1; a gneissic-appearing welded tuff or flow banded rhyolite containing pinkish K-spar; a breccia consisting of a mosaic of welded clasts of flow banded rhyolite; and amygdaloidal basalt. Rocks of basaltic composition are atypical of the Alcyone, and this small exposure may be a block of older, unnamed flows and volcaniclastic rocks which underlie the Alcyone. DeWitt, et al (1991) included older basalts with the Alcyone because of their limited exposure in the Oatman District.

No attempt was made to compile a stratigraphy of the Alcyone due to the complexity of exposures of the various lithologies which commonly can be traced for no more than a few outcrops before changing. Compounding the difficulty in correlating these subunits is the fact that practically all exposures of the Alcyone could be identified as roof pendants suspended in the intrusive Moss Porphyry. At many localities in the southwest area, Moss porphyry is exposed, and can be traced to gradational contacts in which blocks of Moss appear to be enclosed within the Alcyone. The boundaries of these blocks are themselves

gradational and at such exposures, the intrusive relationship is brought into question. At other localities the contrary is evident. For example, just north of hill 2009 on the north side of the wash, a small apophysis of the Moss Porphyry; extremely rich in phenocrysts up to 1 inch in length; has been injected between layers of the carbonaceous sediments in a manner more typical of highly fluid basalts. The intruded body is no more than 8 feet in length and 3 feet in thickness, narrowing to a knife edge at the extremities.

To map each exposure of Moss and Alcyone in the west area would be unproductive. The Alcyone-Moss contact in the western portion of the map therefore, is a boundary, west of which exposures of the Alcyone are commonplace, but Moss may also be exposed. East of this boundary, only Moss is exposed except for isolated scab-like pendants which are mapped.

Other Extrusive Rocks

Two series of extrusive rocks unconformably overlie the Alcyone Formation in the region (Figure 2), but are not exposed in the mapped area. The oldest, the "middle volcanics" consists, from bottom to top, of the Esperanza Quartz Latite, the Oatman Andesite and the Gold Road Latite (DeWitt, et al, 1991). Unconformably overlying the "middle volcanics" are the "upper volcanics" which consist from oldest to youngest of the Antelope Rhyolite, Cottonwood Formation, Flag Spring Quartz Latite and the Meadow Creek Quartz Latite. The volcaniclastic Sitgreaves Tuff is temporally equivalent to all the upper volcanic units (DeWitt, et al, 1991).

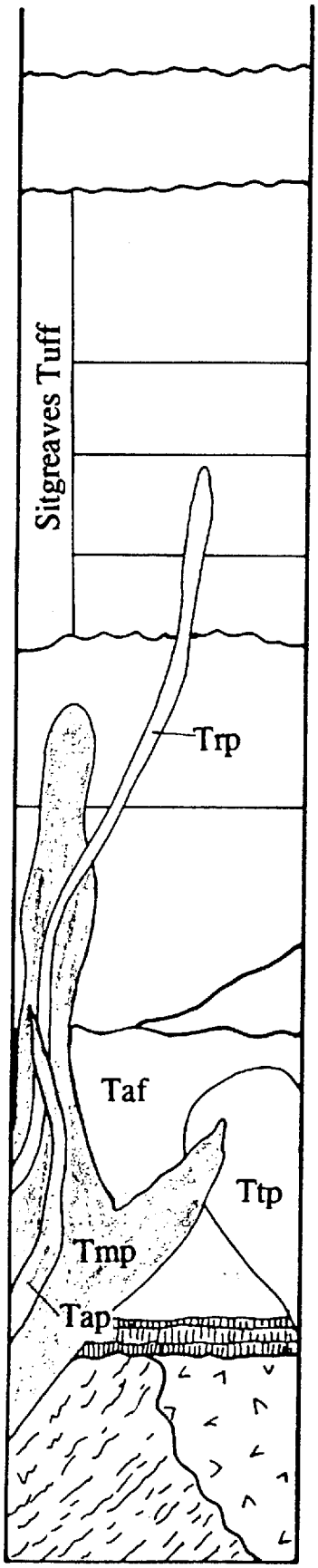
INTRUSIVE ROCKS

Times Porphyry

The Times Porphyry is the oldest of two small stocks which intrude the stratified rocks in the district. It intrudes the Alcyone Formation and is exposed south of Silver Creek Wash, outside the mapped area. DeWitt and others (1991) classify the Times as a syenogranite and have determined its major and minor element chemistry most closely resembles that of the Cottonwood Formation.

Moss Porphyry

The Moss Porphyry intrudes the Alcyone Formation in the mapped area, and the Times Porphyry, the Oatman Andesite and the Gold Road Quartz Latite at other localities in the region. It is concentrically zoned, consisting of a granodiorite core enclosed by an inner quartz monzonite and an outer monzodiorite contact margin (DeWitt, et al, 1991). They consider the Moss most closely equivalent to the Gold Road Latite, based on its composition and similar ages of 18.5 ± 2.5 Ma and 18.6 ± 0.9 Ma, respectively. Large (≤1.2 cm) anhedral to subhedral phenocrysts of medium gray plagioclase are commonly intergrown with clots of biotite and are enclosed in a finer grained matrix of salmon pink potassium feldspar, quartz, biotite and minor pyroxene. Where altered or weathered, the plagioclase is typically chalky white, imparting a distinctly porphyritic texture to the Moss.



Basalt flows & interbedded conglomerate & rhyolite ash
300 m

Meadow Creek Quartz Latite

Flag Spring Quartz Latite

Cottonwood Formation

Antelope Rhyolite

Gold Road Latite
≤ 240 m

Rhyolite porphyry (Trp)

Oatman Andesite
≤ 300 m

Esperanza Quartz Latite
60 - 300 m

Moss Porphyry (Tmp)

Alcyone Formation (Taf)
450 - 730 m

Times Porphyry (Ttp)

Andesite porphyry (Tap)

Basalt flows

Precambrian X or Y Katherine Granite

Precambrian X
Unnamed gneiss

REGIONAL COMPOSITE STRATIGRAPHY

Figure 2.

Younger Intrusives

A series of north to northeast trending dikes of rhyolite porphyry intrude the Alcyone Fm. and Moss Porphyry. The dikes contain subhedral to well rounded phenocrysts of potassium feldspar which locally impart a characteristic "birdseye" texture to the rock. The phenocrysts are supported by a fine-grained groundmass of potassium and plagioclase feldspar, quartz and minor biotite.

Minor dikes and small pods of andesite and andesite porphyry intrude the Moss. One such dike averages about 1 foot in width but is traceable over a distance of 2,800 feet (Plate I). This particular dike, on the Gold Hill claims, occupies a structure which, in places, was previously invaded by a quartz-carbonate-pyrite vein.

ALTERATION

Few localities on the property afford the opportunity to examine unaltered Moss porphyry. One such locality is north of the Moss vein on the northeast slope of hill 2371, where salmon-pink K-spar is visible in outcrop. The muck piles around the headframe also contain unaltered K-spar and it is common in drill hole cuttings from the footwall of the Moss vein.

The porphyry generally is characterized by varying degrees of chloritic alteration which imparts a pale- to dark-green color to outcrops. In the southeast part of the mapped area, limonite development and bleaching predominate, respectively producing light to medium brownish and pale yellow to white colors. In the silicified peaks, pervasive silicification is dominant and along the Moss vein, stockwork quartz veins and weak pervasive silicification are present (Plate II).

For mapping purposes, two degrees of chloritic alteration were noted. The weakest produces a bronzy to green color in biotite with minor chlorite development in the groundmass immediately adjacent to the phenocryst. Other mafic minerals typically are found in clots and irregular masses which are completely chloritized. K-feldspars have lost their salmon-pink color. Plagioclase phenocrysts, which may be up to half an inch in length, typically are cloudy to white, imparting a distinctly porphyritic texture to the rock. Although incipiently altered, the feldspars typically are still quite hard and cleavable with twinning evident. The groundmass typically is light to medium gray and in outcrop, the rock is pale to medium gray green. Limonite is common on fracture surfaces, particularly in areas of silicification. Weak to moderate pervasive silicification may be present with this grade of chloritization as in the stockwork zones in the hanging wall of the Moss vein.

The second type of chloritic alteration is stronger than that described above. The groundmass, in addition to biotite and other mafics, is completely chloritized giving outcrops a dark green color. Clay alteration of plagioclase is more intense and phenocrysts can be gouged with a pin. On weathered surfaces they commonly have been completely

removed, leaving large casts. Greenish grus is a characteristic weathering product of this alteration type.

The second type is more abundant on the hanging wall side of the vein, and the first on the footwall side, however, both are gradational and may be intermixed.

In the southeast part of the mapped area, the influence of a large area of acid leaching becomes apparent. This area contains abundant pyrite and in the more strongly pyritized areas, weathering has produced enough acid to mobilize the iron and bleach and leach the rock to white or pale-yellow hues. Peripheral to these areas, the iron has undergone little or no transport and from a distance, soil and outcrops have a brownish color as opposed to the pale to dark green of the chloritized areas. In hand specimen biotite and other mafic minerals, as well as much of the groundmass, are replaced by limonite. Plagioclase phenocrysts are commonly altered to white clay. Some can be scratched only with a pin and others can be gouged out with a fingernail. Limonite development overlaps areas of chloritic alteration and patches of chloritized rock among the limonitic can be seen locally. Hand specimens from these areas are greenish-brown on freshly broken surfaces. Weathering of limonite flooded rock typically produces a blockier form of grus that that of the chloritized rock.

The leached and bleached areas typically have fewer outcrops owing to the abundance of clay. Locally, silicification is present and freshly broken surfaces reveal a thoroughly bleached interior in which biotite and other mafic minerals are clay altered and at some localities, sericitized. Feldspars commonly are bleached but only weakly altered; taking metal from the scratch of a pin and showing cleavage and twinning. Hematite and limonite are common on fracture surfaces and more abundant in silicified rock. Weathering generally produces a light to medium brown grus.

Strong pervasive silicification has invaded the Moss Porphyry and the Alcyone Formation forming the peaks at the west end of the Moss vein. Less intense silicification is locally present in the hanging wall for several thousand feet east of the headframe. In both areas, stockworks of white, clear and/or drusy quartz veinlets are common. The pervasive silicification carries anomalous but not typically ore grade gold mineralization. The stockworks are also auriferous and commonly higher in grade. At the east end of the Moss vein and at scattered localities in the mapped area, gray to reddish-brown jasperoid-like silicification is present. It is very dissimilar to the quartz of the main part of the vein and is barren of mineralization.

MINERALIZATION

Throughout the district, numerous quartz and quartz-carbonate-pyrite veins occur which have been the focus of attention since the discovery of gold there by John Moss in 1863. The Moss vein is the most significant and is traceable for about 3500 feet. The vein is hosted primarily by the Moss Porphyry, but it is also present in the overlying Alcyone

Formation. Development of other, similar veins on the Ruth, Gold Hill, New York and Rattan claims has also been undertaken.

The Moss vein consists, in places, of two parallel veins. A quartz vein up to 15 feet in thickness typically occupies the footwall contact and locally a carbonate vein of similar dimensions may be present at the hanging wall contact of the quartz vein or as a separate vein several feet into the hanging wall. Typically the quartz is white, locally drusy or sugary, but may be fine grained and appear merely to be silicified gouge. In places, carbonate minerals have intergrown with the quartz and where exposed to weathering, the carbonate has been removed leaving a vuggy latticework of silica. In numerous veins varying from fractions of an inch to several inches in thickness, vein filling consists of an outer envelope of quartz, or bands of quartz, enclosing a carbonate core. The carbonate/quartz relationship seen in these and in the Moss vein indicates the carbonate was a later phase in the mineralizing event. Widely disseminated blebs of pyrite are associated with both phases and veins of this association are identified as quartz-carbonate-pyrite or q-c-p veins. Fluorite has been noted at a number of localities in the Moss vein; it was mentioned by Godbe (1982) in his report on the property and was noted among cuttings in several of the Magma drill holes. No clear relationship of fluorite to higher or lower grades of precious metal mineralization is evident, however.

Surface samples of silica-rich portions were collected separately from carbonate-rich portions of the Moss vein. Select samples were also taken of stockwork zones, hanging wall and footwall rock, and from exposures where particular features are evident which may assist in understanding the deposit. Highest grades of gold mineralization are associated with the carbonate phase of vein growth. Stockwork zones commonly contain ore grade gold as well. Most of these zones, although appearing to consist mainly of small quartz veinlets, also contain significant amounts of carbonate.

Quartz veins without a noticeable carbonate content are present at numerous localities on the property, however, primary carbonate veins are always associated with quartz veins. A few isolated veins of gray calcite do occur, but they are not significantly mineralized and are thought to be secondary fracture fillings of transported material.

In the drilling, the intervals containing the highest grades of gold also contain varying proportions of q-c-p veins. None of the Magma holes, however, encountered the abundance of these veins as was encountered by the Billiton drilling on the Key #1 claim.

METALLURGY

Two groups of metallurgical tests were completed. The first, on cuttings from Billiton's drill holes and bulk ore samples collected from the adit on the California Moss No. 1 claim was discussed in more detail in my earlier report. The second group consisted of bottle roll tests of sulfide ore from Magma's drill holes. Lab reports from both groups of tests are included in Appendix F.

Gold recoveries in bottle roll tests of -1" mesh bulk ore materials were 42% after 96 hours. Recoveries from cuttings from Billiton's drill holes ranged from 53 to 78% and on those from Magma's holes 78 to 88%.

RESOURCE ESTIMATES

After the initial phase of drilling a hand calculated drill-indicated resource was completed based on data from the California Moss claim (Table I). This estimate yielded a resource of 100,409 ounces gold at a grade of about 0.024 opt Au. A similar estimate for the area drilled by Billiton had been prepared in an earlier report (Jeanne, 1991) which yielded an estimate of 89,117 ounces at a grade of 0.053 opt Au, for a total of about 190,000 ounces.

Mintec Inc. prepared two resource estimates using all available drilling data. An in situ or geologic resource estimate using an 0.02 opt cutoff and a 300 ft search radius yielded 7,414,000 tons at 0.038 opt or a total contained resource of 281,732 ounces gold. An estimated pit resource using a 0.02 opt cutoff and a 100 ft search radius yielded 2,996,000 tons at 0.044 opt and a 1.96:1 strip ratio or 131,824 mineable ounces. Both Mintec's and my estimates assumed continuity of mineralization through those drill sites which had been skipped in Magma's program by projecting average grades from adjacent drill holes. Since none of the data suggested otherwise, it was assumed that infill drilling on these skipped sites would not encounter any significantly higher grades nor longer intervals of mineralization and therefore could not improve the resource estimate. Copies of data printouts, cross sections, plan maps and pit plans prepared by Mintec have been provided to Magma and are not included in this report.

After the second phase of drilling, a very rough estimate of the potential resource of the silicified peaks area was prepared (Jeanne, 1992) yielding an absolute maximum potential of 185,000 contained ounces and a more probable 48,000 contained ounces gold. The grade on which this estimate is based, however, is very low; 0.012 ounces per ton, which is the average grade of the upper 300 to 400 ft. of the three drill holes. The average grade of the mineralized intervals in these three holes is 0.016 opt Au. Applying this grade to to the calculations yields only 64,000 ounces.

In addition to the disappointing tonnage and grade figures from the silicified peaks, stripping ratios are likely to be high. Topography is steep in the area and continues to climb on the footwall side of the Moss vein. A 45° pit slope superimposed on cross sections of the two westerly holes shows significant footwall material would have to be removed before the pit would reach the levels of the longer mineralized intercepts. It does not appear that this area could contribute to the economics of a mining operation at Moss.

TABLE 1. DRILL INDICATED RESOURCE - MAGMA HOLES

CROSS SECTION	HOLE	DIP LENGTH	STRIKE LENGTH	TRUE WIDTH	VOLUME (cu. ft.)	TONS @ 12.5 cu. ft/t	GRADE (opt Au)	CONTAINED OUNCES
292180 E	MC-7	145	100	7	98890	7911	0.018	142
292180 E	MC-7	145	100	10	148335	11867	0.012	142
292180 E	MC-7	145	100	7	98890	7911	0.011	87
292180 E	MC-7	145	100	7	98890	7911	0.011	87
292180 E	MC-7	145	100	7	98890	7911	0.010	79
292180 E	MC-7	145	100	38	543895	43512	0.018	783
292180 E	MC-7	145	100	44	642785	51423	0.021	1080
292180 E	MC-11	170	100	10	173910	13913	0.013	181
292180 E	MC-11	285	100	51	1457775	116622	0.037	4315
292180 E	MC-11	325	100	10	332475	26598	0.019	505
	Extrapolation of one half sum of sections 292180 E and 292360 E into undrilled gap							9124
292360 E	MC-6	145	100	27	395560	31645	0.017	538
292360 E	MC-6	145	100	27	395560	31645	0.018	570
292360 E	MC-6	145	100	7	98890	7911	0.010	79
292360 E	MC-6	145	100	20	296670	23734	0.019	451
292360 E	MC-6	145	100	68	988900	79112	0.028	2215
292360 E	MC-12	125	100	10	127875	10230	0.013	133
292360 E	MC-12	180	100	7	122760	9821	0.026	255
292360 E	MC-12	280	100	10	286440	22915	0.012	275
292360 E	MC-12	370	100	38	1387870	111030	0.057	6329
	Extrapolation of one half sum of sections 292360 E and 292590 E into undrilled gap							12470
292590 E	MC-5	135	100	14	184140	14731	0.020	295
292590 E	MC-5	135	100	65	874665	69973	0.044	3079
292590 E	MC14	375	100	27	1023000	81840	0.053	4338
292590 E	MC14	200	100	102	2046000	163680	0.039	6384
292680 E	MC-3	140	100	55	763840	61107	0.020	1222
292680 E	MC-15	230	100	7	156860	12549	0.014	176
292680 E	MC-15	260	100	10	265980	21278	0.023	489
292680 E	MC-15	410	100	34	1398100	111848	0.060	6711
292775 E	MC-4	145	100	24	346115	27689	0.067	1855
292775 E	MC-4	145	100	7	98890	7911	0.014	111
292775 E	MC-4	145	100	7	98890	7911	0.022	174
292775 E	MC-13	145	100	7	98890	7911	0.010	79
292775 E	MC-13	200	100	17	341000	27280	0.018	491
292775 E	MC-13	260	100	24	620620	49650	0.018	894
292775 E	MC-13	330	100	14	450120	36010	0.015	540
292775 E	MC-13	395	100	20	808170	64654	0.036	2328
	Extrapolation of one half sum of sections 292775 E and 292940 E into undrilled gap							5800
292940 E	MC-8	115	100	7	78430	6274	0.034	213
292940 E	MC-16	315	100	7	214830	17186	0.011	189
292940 E	MC-16	380	100	41	1554960	124397	0.038	4727
	Extrapolation of one half sum of sections 292940 E and 293130 E into undrilled gap							4380
293130 E	MC-9	285	100	7	194370	15550	0.018	280
293130 E	MC-9	335	100	38	1256585	100527	0.019	1910
293130 E	MC-9	550	100	14	750200	60016	0.024	1440
	Extrapolation of one half sum of sections 293130 E and 293350 E into undrilled gap							5365
293350 E	MC-10	75	100	20	153450	12276	0.023	282
293350 E	MC-10	115	100	10	117645	9412	0.019	179
293350 E	MC-10	410	100	20	838860	67109	0.031	2080
293350 E	MC-10	470	100	7	320540	25643	0.011	282
293350 E	MC-10	550	100	51	2813250	225060	0.019	4276
					TOTALS	**2,053,093**	**0.0237**	**100,409**

SUMMARY AND RECOMMENDATIONS

Results of Magma Copper Company's exploration program on the Moss property indicate an estimated total geologic resource of 7,414,000 tons at a grade of 0.038 opt or 281,732 contained ounces gold. An estimate of the pit resource yields 131,824 mineable ounces contained in 2,996,000 tons ore at a grade of 0.044 opt gold. All areas with potential for mineralization have been drill tested without additional success, and no other targets are evident at this time.

The mineable resource estimated from data available to date is well below the 250,000 to 300,000 ounces deemed necessary for Magma to profitably exploit this deposit. It is, therefore, recommended that Magma Copper Company terminate the project.

REFERENCES

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Godbe, M. C., 1982, Interim Report and Proposed Development Drilling Program, Moss Mine Project, Oatman-Goldroad Mining District, Mohave County, Arizona, unpublished company report, 18 p

Jeanne, Richard A., 1991, A preliminary evaluation of the Moss Property, San Francisco Mining District, Mohave County, Arizona, unpublished Magma Copper Company report,15 p.

Jeanne, Richard A., 1992, Interim Drilling Report for the Silicified Peaks and Acid Leached portions of the Moss Project, unpublished Magma Copper Company report, 6 p.

APPENDIX A

SURFACE SAMPLE DESCRIPTIONS

SAMPLE DESCRIPTIONS

Abbreviations: alt=alteration, arg=argillized, bx=Breccia, ch=chlorit(e) (ic) (ized), cc=continuous chip, ct=calcite, dissem=disseminated, d.h.=drill hole, flt= fault, ftwl= footwall, frac=fracture, hngwl=hanging wall, hem=hematite, lim=limonite, lt=light, min=mineralization, mvt= movement, oc=outcrop, prop=propylitic, pp=prospect pit, qtz=quartz, q-c=quartz-carbonate, rc=rock chip, silic=silic(a)(ified)(ification), stn=stain(ed), stkwk=stockwork, subsc=subcrop, vn(s)=vein(s), vnlt(s)=veinlet(s), w/=with, w/o=without, xtal=crystal.

NOTE: Samples MP-1 through MP-52 are described in May 1991 report. MP-53 in that report was used for bottle roll tests and is not the same as MP-53 listed below.

Sample Number	ppm Au	Description
MP-53	<.005	Rc, oc, Tmp, highly frac, arg, weak-mod silic, jarositic lim on frac surfaces but not abundant.
MP-54	<.005	Rc, oc, Tmp, strongly arg, weak-mod silic, lim along vns.
MP-55	<.005	Rc, oc, alunite(?) vns in Tmp, hardness ≈ 5.5, white to jarosite yellow, some thicker veins have fibrous texture perpendicular to walls.
MP-56	<.005	Rc, oc, Tmp, dark silic patch w/dissem sulfides.
MP-57	.051	Rc, dump, silic sponge,minor qtz from q-c-p vn.
MP-58	.006	Rc, oc, Tmp, silic structure w/dissem sulfides (?), same as OA9/2-7.
MP-60	<.005	Rc, oc, Tmp, pyritic silic vn, 1/4 to 1/2" thick.
MP-61	.890	Tailings from remains of settling tank at roadside.
MP-62	.006	Rc, pp, Tmp(?), q-p vnlt 1" thick.
MP-63	.018	Rc, pp, Tmp(?), crushed qtz vn & gouge ≈ 10' wide, no sulfides noted except as limonite in gouge.
MP-64	<.005	Rc, oc, Tmp, silic gray sugary, vuggy appearance due to leached phenocrysts of biotite, plag, etc, lim residue in casts on fresh surfaces, only minor lim on frac surfaces.
MP-65	.008	Rc, oc, Tmp, weak to mod silic w/dissem sulfides.
MP-66	.006	Rc, oc, Tmp, silic, gray, sugary, vuggy, lt yellow to orange crusty coatings; may be alunite.
MP-67	<.005	Rc, oc, Tmp, silic, dissem & frac coatings of specular hem, some hexagonal spec hem pseudomorphs, some white zeolites(?) over hem on fracs.
MP-68	.007	Rc, oc, Tmp, weak silic, strong arg, lim on frac surfaces.
MP-69	<.005	Rc, oc, Tmp, weak silic, strong arg, lim/hem on frac surfaces.
MP-70	<.005	Rc, oc, Tmp, weak silic, strong arg, lim/hem on frac surfaces.
MP-71	<.005	Rc, pp, Tmp, weak silic, strong arg, lim/hem on frac surfaces.
MP-72	<.005	Rc, oc, possible Taf, silic & arg on ridge leading to hill 2379.
MP-73	<.005	Rc, oc, lithic tuff which forms silic cap on ridge due west of entrance to small valley of scrub oaks.
MP-74	<.005	Rc, oc, Tmp(?), sericitized biotite, weak silic - on south pointing ridge below saddle.

MP-75	<.005	Rc, oc, Tmp, jarosite coatings on fracs.
MP-76	<.005	Rc, oc, silic structure in Tmp, crosses wash.
MP-77	<.005	Rc, oc, jarositic, strongly frac Tmp.
MP-78	<.005	Rc, oc, Tmp, weakly silic & less arg than MP-77.
MP-79	<.005	Rc, oc, Tmp(?), weakly silic, strongly kaolinized.
MP-80	<.005	Rc, pp, Taf(?) may be Tmp, weak-mod silic - most likely Tmp.
MP-81	<.005	Rc, oc, Tmp, mod silic.
MP-82	<.005	Rc, oc, Tmp, mod silic.
MP-83	.006	Rc, oc, Tmp, mod silic, bleached.
MP-84	<.005	Rc, oc, Tmp, ch near flt contact w/strongly alt area.
MP-85	<.005	Rc, oc, Tmp, ch on south side of wash.
MP-86	<.005	Rc, oc, Tmp.
MP-87	<.005	Rc, oc, Tmp, variable alt, med-dk gray to bleached, locally silic, lim on fracs.
MP-88	<.005	Rc, oc, Tmp, bleached, weakly silic, lim.
MP-89	<.005	Rc, oc, Tmp, silic (mod-strong), sulfide rich subcrop.
MP-90	<.005	Rc, oc, Tmp, more goethitic than typical.
MP-91	<.005	Rc, oc, Tmp, weak to no silic, strong arg, alunite stkwk, minor lim.
MP-92	.089	Rc, oc, Tmp, mixed ch to acid leached, no significant silic.
MP-93	<.005	Rc, oc, Tmp, jarositic, local MnOx, minor lim.
MP-94	<.005	Rc, oc, Tmp, gypsiferous, turgite.
MP-95	<.005	Rc, oc, Tmp, strong jarosite.
MP-96	.010	Rc, oc, Tmp, local MnOx stn.

APPENDIX B

DRILL HOLE STATISTICS

MOSS PROJECT
DRILL HOLE COORDINATES

Billiton Minerals Drill Holes

Drill hole	Northing	Easting	Elevation	Azimuth	Inclination	Depth in feet
MM - 1	1 492 083	291 910	2135	0	-70	360
MM - 2	1 492 083	291 910	2135	0	-45	240
MM - 3	1 492 060	291 998	2128	0	-65	300
MM - 4	1 492 049	292 091	2123	15	-65	310
MM - 5	1 492 228	291 558	2160	320	-45	250
MM - 6	1 492 148	291 570	2160	320	-60	210
MM - 7	1 492 114	291 808	2140	12	-65	330
MM - 8	1 492 138	291 716	2140	12	-65	300
MM - 9	1 492 122	291 034	2258	345	-60	450
MM-10	1 492 178	291 092	2244	10	-60	445
MM-11	1 492 244	291 247	2214	5	-65	220
MM-12	1 492 269	291 370	2187	5	-65	200
MM-13	1 491 957	291 820	2098	0	-90	505
MM-14	1 491 957	291 820	2098	15	-65	360
MM-15	1 491 710	293 560	2120	15	-60	385
MM-16	1 491 530	293 540	2130	160	-50	300
MM-17	1 491 602	293 793	2130	15	-60	355
MM-18	1 491 745	294 085	2140	0	-55	340
MM-19	1 491 600	294 510	2140	10	-60	355
MM-20	1 491 405	294 958	2150	15	-60	325
MM-21	1 490 610	296 765	2220	10	-45	350

BF Minerals Drill Holes

Drill Hole	Northing	Easting	Elevation	Azimuth	Inclination	TD
M - 1 - 30	1 492 242	291 900	2197	349	-30	90
M - 1 - 60	1 492 242	291 900	2198	349	-60	110
M - 2 - 30	1 492 248	291 962	2205	346	-30	80
M - 2 - 60	1 492 248	291 962	2194	346	-60	80
M - 3 - 30	1 492 255	292 080	2202	334	-30	70
M - 3 - 60	1 492 255	292 080	2202	334	-60	90
M - 4 - 30	1 492 152	292 211	2144	344	-30	90
M - 4 - 60	1 492 152	292 211	2144	344	-60	90
M - 5 - 30	1 492 278	291 767	2204	332	-30	70
M - 5 - 60	1 492 278	291 767	2204	332	-60	80
M - 6 - 30	1 492 282	291 705	2178	4	-30	60
M - 6 - 60	1 492 282	291 705	2178	4	-60	75
M - 7 - 70	1 492 321	291 568	2160	4	-70	100

MOSS PROJECT
DRILL HOLE COORDINATES

BF Minerals Drill Holes (continued)

Drill Hole	Northing	Easting	Elevation	Azimuth	Inclination	TD
M - 8 - 30	1 492 393	290 938	2349	350	-30	80
M - 8 - 45	1 492 393	290 938	2348	350	-45	90
M - 8 - 60	1 492 393	290 938	2348	350	-60	100
M - 9 - 30	1 492 418	290 980	2346	343	-30	70
M - 9 - 45	1 492 418	290 980	2345	343	-45	80
M - 9 - 60	1 492 418	290 980	2345	343	-60	90
M-10 - 30	1 492 427	291 014	2335	0	-30	70
M-10 - 45	1 492 427	291 014	2334	0	-45	60
M-10 - 60	1 492 427	291 014	2334	0	-60	70
M-11 - 30	1 492 423	291 068	2325	355	-30	70
M-11 - 45	1 492 423	291 068	2324	355	-45	75
M-11 - 60	1 492 423	291 068	2324	355	-60	80
M-12 - 30	1 492 411	291 123	2307	358	-30	90
M-12 - 45	1 492 411	291 123	2307	358	-45	100
M-12 - 60	1 492 411	291 123	2306	358	-60	110
M-13 - 30	1 492 413	291 188	2286	16	-30	70
M-13 - 45	1 492 413	291 188	2286	16	-45	65
M-13 - 60	1 492 413	291 188	2286	16	-60	80
M-14 - 30	1 492 350	291 216	2246	25	-30	40
M-14 - 45	1 492 350	291 216	2246	25	-45	30
M-14 - 60	1 492 350	291 216	2246	25	-60	110
M-15 - 30	1 492 363	290 996	2315	342	-30	95
M-15 - 45	1 492 363	290 996	2315	342	-45	90
M-15 - 60	1 492 363	290 996	2315	342	-60	100
M-16 - 30	1 492 372	291 024	2315	349	-30	100
M-16 - 45	1 492 372	291 024	2314	349	-45	110
M-16 - 60	1 492 372	291 024	2314	349	-60	120
M-17 - 45	1 492 387	291 039	2312	351	-45	110
M-17 - 60	1 492 387	291 039	2311	351	-60	120
M-18 - 45	1 492 328	291 033	2294	350	-45	120
M-19 - 45	1 492 315	291 011	2296	356	-45	120
M-20 - 45	1 492 342	291 056	2292	350	-45	120
M-21 - 30	1 492 355	291 262	2237	16	-30	70
M-21 - 45	1 492 355	291 262	2236	16	-45	60
M-21 - 60A	1 492 355	291 262	2236	16	-60	70
M-21 - 60B	1 492 346	291 256	2236	16	-60	100

MOSS PROJECT
DRILL HOLE COORDINATES

BF Minerals Drill Holes (continued)

Drill Hole	Northing	Easting	Elevation	Azimuth	Inclination	TD
M-22 - 45	1 492 332	291 310	2214	193	-45	70
M-23 - 45	1 492 347	291 314	2214	13	-45	120
M-24 - 70	1 492 346	291 397	2186	176	-70	120
M-25 - 30	1 492 257	291 824	2202	358	-30	90
M-25 - 60	1 492 257	291 824	2202	358	-60	100
M-26 - 63	1 492 083	292 012	2130	331	-63	300
M-27 - 68	1 492 082	291 993	2129	309	-68	400
M-28 - 78	1 492 013	292 088	2124	0	-78	520
M-29 - 60	1 492 152	291 057	2254	5	-60	360

Magma Copper Company Drill Holes

Drill Hole	Northing	Easting	Elevation	Azimuth	Inclination	TD
MC-1	1 491 935	292 045	2132	12	-65	460
MC-2	1 491 975	291 810	2108	2	-65	520
MC-3	1 491 780	292 648	2096	22	-65	500
MC-4	1 491 753	292 749	2087	12	-65	480
MC-5	1 491 813	292 553	2102	10	-65	455
MC-6	1 491 846	292 343	2106	10	-66	500
MC-7	1 491 918	292 156	2122	10	-65	470
MC-8	1 491 709	292 910	2083	12	-65	445
MC-9	1 491 651	293 129	2095	12	-65	480
MC-10	1 491 601	293 325	2154	12	-65	560
MC-11	1 492 040	292 163	2124	12	-65	300
MC-12	1 491 970	292 354	2122	12	-65	300
MC-13	1 491 873	292 774	2099	12	-65	280
MC-14	1 491 950	292 590	2120	12	-65	300
MC-15	1 491 902	292 677	2114	12	-65	300
MC-16	1 491 822	292 937	2089	12	-65	360
MC-17	1 492 117	291 856	2145	12	-65	180
MC-18	1 492 170	290 242	2190	3	-45	317
MC-18A	1 492 160	290 242	2190	2	-46.5	760
MC-19	1 492 170	290 255	2190	37	-37	700
MC-20	1 492 171	290 263	2190	67	-30	1040
MC-21	1 488 010	295 225	2072	N/A	-90	500

TOTAL FOOTAGE - MAGMA DRILLING 10207

DRILL HOLE MC-21
ASSESSMENT INFORMATION

Mobilization/demobilization		$ 52
Drilling - 500ft @ $6.40/ft		3200
Hole Plugging - 1.5 hrs @ 170/hr		255
Assays - Au & Ag,100 @ $9.00 ea		900
Assays - Cu & Mo, 20 @ $6.00 ea		120
	Total	**$4527**

APPENDIX C

DRILL HOLE LOGS

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 11/18/91 3:40 PM
COMPLETED 11/20/91
NORTHING 1491935
EASTING 292045
ELEVATION 2132

HOLE No. MC-1
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 460'
LOGGED BY R. JEANNE
Pg 1 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm Au opt	ppm opt Ag	COMMENTS
05	FILL							3		
10	TMP	SILICIFIED					BRN-GRN	Tr		
15	"	" 10% ox					"	Tr		
20	"	"					"	Tr		
25	"	"					"	Tr		
30	"	"					GRN-BRN	Tr		
35	"	"						Tr		
40	"	"						Tr		
45	"	" V						Tr		
50	"	" 5%	Py	Tr				Tr		
55	"	" 100% ox						1		SILICA VNLTS
60	"	" "						Tr		
65	"	" 90% ox	Py	Tr				Tr		SILICA-Fe VNLTS
70	"	" 60% ox						Tr		
75	"	10% ox						Tr		
80	"	1% ox						Tr		QUIT DRLG @ 7:30 AM
85		40% ox						Tr		STARTED 7:30 AM
90		60% ox						Tr		
95		60% ox						Tr		
100		CHLORITE 20% ox	Py	Tr	QTZ	.05		Tr		HAIRLINE SILICA VNLTS
105		" "			"			5		
110		" 10% ox			"			2		
115		" 40% ox					PALE PINKISH GRNDMASS	31		PALE PINKISH GROUNDMASS
120		CHLORITIC	Py	Tr				4		
125		"						Tr		
130		"						Tr		
135		"	Py	.5	QTZ-CARB	.05		Tr		
140		"	Py	1.0	QTZ	.05		2		HAIRLINE SILICA VNLTS
145		"	Py	1.0				Tr		" " "
150		"	"	"				Tr		" " "
155		"	"	"				Tr		HAIRLINE SILICA-Py VNLTS
160		"	"	Tr				Tr		" SILICA VNLTS
165		"	"	.5				Tr		HAIRLINE SILICA VNLTS
170		"	"	"	QTZ	.05		Tr		" " "
175		"	"	"				Tr		" " "
180		"	"	"	CHALCEDONIC QTZ	Tr		5		" " " CRACKLE BX
185		"	"	Tr				2		" " "
190		"	"	.5				5		" " "
195		"	"	.5				2		" " "
200	↓	" Tr ox	"	Tr				3		Fe O: on FRAC SURF - HEM. IN SOME BIOTITE SITES

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 11/18/91
COMPLETED 11/20/91
NORTHING 1491935
EASTING 292045
ELEVATION 2132

HOLE No. MC-1
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 460'
LOGGED BY R. JEANNE
Pg 2 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm Au opt	ppm opt Ag	COMMENTS
205	Tmp	CHLORITE Tr ox	Py	Tr	Q-C	Tr		4		LIM ON FRAC SURF
210		" "	"	"	Q-C-Py	10		7		LIM ON FRAC SURF
215		" "	"	"	Q-C	Tr		6		" " " " DAMP
220		"	"	.5				11		" " " " HAIRLINE SILICA VNLTS
225		" Tr ox	"	Tr	Q-C	Tr		3		" " " " " DAMP
230		" "	Py		Q-C	Tr		6		" " " " HAIRLINE SILICA VNLTS
235		" "	Py	.5	Ct	Tr		4		MINOR LIM " " "
240		"	Py	Tr	Ct	Tr		2		" " "
245		" Tr ox	Py	Tr	Ct	Tr		7		" " "
250		" "	Py	Tr	ORNGY MTZ	Tr		17		LIM ON FRACS " " "
255		"	Py	"				5		ENCOUNTERED WATER
260		"	Py	Tr	Q-P	Tr		5		DRY HAIRLINE S.-Py VNLTS
265		"	Py	.5				4		DAMP " " "
270		" Tr ox	Py	Tr				5		LIM ON FRACS DRY " " "
275		"	Py	.5	Q-C-P	Tr2		6		" " " "
280		" Tr ox	Py	.5				7		" " " "
285		"	Py	.5	Q-C-P	Tr		15		" " " "
290		" Tr ox	Py	.5	Q-P	2		8		DISSEM HEM VNLTS " " Py & Q-Py "
295		" Tr ox	Py	.5	Q-C-P	Tr		8		" " " "
300		"	Py	.5			PALE GRY/GRN	6		
305		"			"	"		10		S-P VNLTS. LOST 2 OF SAMPLE
310		"	Py	Tr				12		DISSEM HEM IN SILICA VNLTS S-P VNLTS
315		"			Q-C-P	Tr		14		
320		Tr ox	Py	0-5	"	10		24		S-P VNLTS HITWARD INCREASE
325			Py	1.0	"	5		10		S-P VNLTS
330		Tr ox	Py	0.5				6		" "
335		" "	"	Tr	Q-C-P	Tr		6		" " DRILLING RATE SLOWED
340			"	"	"	1.0		10		" "
345		Tr ox	"	"	"	5.0		15		" "
350		" "	"	"	"	0.5		12		
355		Tr ox	Py	Tr	Q-C-P	50		12		
360			Py	Tr	ORNGY MTZ "	25		9		
365			Py	Tr	"	25		9		
370			Py	Tr	"	30		7		
375			Py	.5	Q-C-P	15		8		WATER HAS BEEN CONSISTENT 5-10 GPM
380			Py	.5	Q-C-P	10		9		
385			Py	.5	"	10		17		
390			Py	.5	"	15	↓	9		S-P VNLTS
395		5% ox	"	Tr	"	30	BROWN	9		
400		50% ox			"	20	"	7		

2.5 HP BRAKE

OUT FOR DAY

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 11/18/91
COMPLETED 11/20/91
NORTHING 1491935
EASTING 292045
ELEVATION 2132

HOLE No. MC-1
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 460'
LOGGED BY R. JEANNE
Pg 3 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm m/opt Au	ppm opt Ag	COMMENTS
405		Tr Fe-ox	Py	Tr	Q-C-Py	95	WHITE	12		
410	TMF	SILICIFIED Tr HEM 100% ox	Py	Tr	QCPy	40	GRY-BRN	33		
415					"	10		13		
420					"	"		8		
425		MINOR CHLORITE	Py	Tr	"	25		11		* SEE BELOW
430		CHLORITE Tr ox	"	"	"	15		4		
435		"	Py	0.5	"	Tr	GRY-GRN	6		
440			"	1.0				1		S-P VNLTS
445							STRONG PINK K-SPAR	Tr		
450			Py	Tr				Tr		
455								Tr		
460	TD							Tr		T.D. 12:45pm
65										
70										
75										
80										
85										
90										
95										
00										
05										
10										
15	*425'-	ONE CHIP OF VN QTZ CONTAINING DISSEM. PY IS CUT BY 0.5mm Q-PY VNLT WHICH IS CUT BY HAIRLINE								
20		HEMATITIC VNLT AND BOTH ARE CUT BY A THIRD PY BEARING SILICA VNLT. CHIP IS WRAPPED IN FOIL								
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 11/20/91
COMPLETED 11/21/91
NORTHING 1491975
EASTING 291810
ELEVATION 2108

HOLE No. MC-2
BEARING N2E
INCLINATION -65°
TOTAL DEPTH 520'
LOGGED BY R. JEANNE
Pg 1 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	Qal				Q-C-P	Tr		8		
10	"							16		
15	TMP	CHLORITIC OX 100%						6		
20		"			Q-C-P	Tr		7		5-PVNLTS
25		"			"	"		4		"
30		MINOR HEM "			"	"		8		"
35		SILICIFIED "						7		"
40		"			Q-C-P	Tr		8		
45		"			"	"		5		"
50		"						6		
55			Py	Tr				4		
60		30% OX	"	"	Q-C-P	0.5		7		5-P-VNLTS
65		"	"	"	"	Tr		7		"
70			"	"				5		" CLEAR FLUORITE
75					Q-C-P	Tr		4		PURPLE FLUORITE
80			Py	Tr	"	"		5	CLAY	CLEAR FLUORITE QUIT FOR IN CS, PURPLE AND OKAY
85								7	CLAY	START 7:45
90		Tr OX	Py	"				9		
95		"	"	"	Q-C-P	Tr		4		PURPLE FLUORITE
100								9		SOME CLAY
105					"	"		5		
110								5		
115			Py	Tr	"	"		6		SILICA VNLTS
120			"	"	"	"		5		PURPLE FLUORITE
125			"	"	"	"		5		" "
130			"	"	"	2		8		
135					"	2		7		5-P VNLTS
140			Py	Tr	"	0.5		4		
145			"	"	"	2		3		" "
150			"	"	"	0.5		5		" "
155			"	0.5	"	2		14		
160		Tr OX	"	"	"	"		7		5P VNLTS
165		" "			"	0.5		37		
170		" "	"	"				8		" "
175		Tr HEM " "			"	0.5		6		" "
180		" "	"	0.5	"	0.5		2		" "
185		Tr HEM " "	"	1.0	"	2		4		" "
190		100% OX			"	90		3		
195		"			"	100		5		
200		"			"	100		3		1/2 SAMPLE WET

9:30

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 11/20/91
COMPLETED 11/21/91
NORTHING 1491975
EASTING 291810
ELEVATION 2108

HOLE No. MC-2
BEARING N2E
INCLINATION -65
TOTAL DEPTH 520'
LOGGED BY R. JEANNE
Pg 2 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205		CHLORITE 90% OX			Q-C-P	50	MOTTLED WHITE GRN-BRN	8		S-P VNLTS WENT WET ≈ 1 GPM - 300'
210		10% OX	Py	Tr	"	30		—		
215		10% OX	"	"	"	20		—		
220		10% OX	"	"	"	10	BRN-GRN	4		
225		80% OX			"	40	GRN-BRN	9		
230		"	Py	Tr	"	10		7		S-P VNLTS
235		"			"	40		9		
240		10% OX	Py	1.0	"	Tr	GRN	8		SP VNLTS
245		Tr OX	"	Tr	"	"		5		" "
250			"	"	"	"		5		
255		Tr OX	"	0.5	"	"		6		" "
260		" "	"	Tr	"	"		8		" "
265			"	0.5	"	"		9		" "
270					"	"		8		" "
275			"	Tr	"	"		20		
280			"	"	"	"		7		" "
285			"	"	"	"		8		
290		Tr OX	"	0.5	"	"		9		" "
295			"	0.5	"	"		2		
300			"	Tr	"	80		14		
305		Tr OX	"	"	"	50	WHITE/GRN	9		
310		Tr OX	"	"	"	60	WHITE/BRN	7		SP VNLTS
315			"	"	"	5	GRN	12		
320			"	"	"	Tr		5		" "
325			"	"	"	"		2		" "
330			"	"	"	"		6		
335			"	"	"	"		14		
340			"	"	"	"		5		
345			"	"				13		
350								—		
355			Py	Tr				4		
360							PINKISH GRN	4		MNR K-SPARS
365			"	"				—		
370			"	"				4		
375								2		
380								3		
385								—		
390								4		
395			Py	TR				5		
400								4		

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 11/20/91
COMPLETED 11/21/91
NORTHING 1 419 975
EASTING 291 810
ELEVATION 2 108'

HOLE No. MC-2
BEARING N2E
INCLINATION -65°
TOTAL DEPTH 520
LOGGED BY R. JEANNE
Pg 3 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	TMP	CHLORITIC	Py	Tr			PINKISH GRAY	3		S P VNLTS
410			"	"	Q-C-P	Tr		2		
415			"	"	"	"		-		
420			"	"	"	"		3		
425		NEARLY CHLORITIC					PINKISH	4		
430								4		
435								2		
440								-		
445					Q-C-P	Tr	GRN-PINK	-		
450								1		S-P VNLTS
455			Py	Tr				-		
460					Q-C-P	Tr	PINKISH	-		
465								-		
470								-		
475								-		
480								2		S P VNLTS
485								-		" "
490			Py	Tr				-		
495								3		
500								-		
505								4		
510								3		S P VNLTS
515								-		
520		INCREASED CHLORITE	Py	Tr				-		TD 5:30 PM
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 11/22/91
COMPLETED 11/23/91
NORTHING 1491780
EASTING 292648
ELEVATION 2096

HOLE No. MC-3
BEARING N32E
INCLINATION -65°
TOTAL DEPTH 500'
LOGGED BY R. JEANNE
Pg 1 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	TMP	CHLORITE 100% OX					GRN-BRN	—		
10		OX						2		
15								1		
20								2		
25								—		
30								—		
35								—		
40								—		
45								—		
50								—		
55		99% OX	Py	Tr			MED GRY	—		
60		70% OX	Py	0.5	CLEAR TO WHITE DRUSSY Q	Tr		—		
65		50% OX	Py	1.0				—		SILICA-Py VNLTS
70		10% OX	Py	5.0	Q	Tr		—		
75		<5% OX	Py	5.0				4		HAIRLINE SILICA VNLTS
80		CHLORITE	Py	5.0				—		" " Py "
85			Py	3.0				2		
90			Py	1.0				1		SILICA VNLTS
95			Py	5.0	Q-P	Tr		4		
100			Py	2.0				—		
105			"	3.0				1		
110			"	1.0				2		
115			"	1.0	Q-P	1		2		
120			"	3.0				1		
125			"	Tr				1		
130			"	1.0				3		
135			"	3.0	"	"		4		HAIRLINE SILICA VNLTS
140		Tr OX	"	1.0	Q-C-P	5	BRN-GRY	8		
145		" "	"	5.0	" " "	5		6		HAIRLINE SILICA-Py VNLTS WENT U/G — 2.1 GPM
150			"	1.0			MOTTLED PNK & GRN	—		M.S. Py VNLTS
155			"	1.0	Q-C-P	Tr		—		" " "
160		Tr OX	"	Tr				—		" " "
165			"	Tr				—		" " "
170			"	3.0				4		" " "
175			"	Tr	Q-C-P	Tr		5		" " "
180			"	"				7		" " "
185			"	0.5	Q-C-P	TR		9		" " "
190			"	Tr				4		" " "
195			"	0.5	Q-C-P	Tr		6		" " "
200			"	1.0				7		" " "

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER SIERRA DRILLING

DATE:
COLLARED 11/22/91
COMPLETED 11/23/91
NORTHING 1491 780
EASTING 292 648
ELEVATION 2096

HOLE No. MC-3
BEARING N22E
INCLINATION -45
TOTAL DEPTH 500'
LOGGED BY R. JEANNE
Pg 2 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	TMP	CHL. SILIC	Py	2	DRUSY QTZ Q-C-P?	Tr		-		
210			"	1	Q-C-P	Tr		-		
215			"	0.5				2		HAIRLINE SILICA-PY VNLTS
220			"	0.5				5		
225			"	0.5				3		
230		Tr ox	"	0.5	Q-C-P	Tr		-		
235		STRONG SILICIFICATION	"	Tr				5		ABUNDANT S.P VNLTS
240		" "	"	Tr	Q-C-P	Tr		1		" "
245			"	0.5	Q-C-P	Tr		4		S.P. VNLTS
250			"	10	Q-C-P	Tr		3		" "
255			"	Tr				6		" "
260			"	"				3		" "
265			"	"	Q-C-P	Tr		2		" "
270			"	0.5	"	Tr		4		" "
275			"	Tr	"	"		4		" "
280			"	"	"	"		3		" "
285			"	"	"	0.5		2		" "
290			"	"				4		
295			"	"				2		S.P. VNLTS
300		"	"	"	Q-C-P	Tr	PALE PINKISH GROUNDMASS	6		SUIT FOR DIA
305			"	"				3		S.P VNLTS
310			"	"	Q-C-P	Tr		-		" "
315			"	"	Q-C-P	Tr		-		
320			"	"				-		
325			"	"				-		S.P. VNLTS
330			"	"	Q-C-P	Tr		-		" "
335			"	"				5		" "
340			"	0.5	DRUSY QTZ Q-C-P	"		7		
345		Tr ox	"	Tr	Q-C-P	"		10		
350			Py	0.5	Q-C-P	1		13		DISSEM HEM IN S.P. UNITS
355			"	1.0	Q-C-P	1		12		
360		Tr ox	"	0.5	Q-C-P	30	STOCK?	54		
365			"	1	Q-C-P	30		141		
370			"	0.5	"	1		13		
375			"	0.5	"	1		10		
380			"	0.5	DRUSY " QTZ	Tr		9		
385			"	"	"	10		5		S.P. VNLTS
390			"	"	"	20		16		"
395		Tr ox	"	Tr	Q-C-P	100	JUNISE	412		
400		Tr ox	"	Tr	Q-C-P	100	"	23		

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSINO DRILLING

DATE:
COLLARED 11/22/91
COMPLETED 11/23/91
NORTHING 1491780
EASTING 292648
ELEVATION 2096

HOLE No. MC-3
BEARING N22E
INCLINATION -65°
TOTAL DEPTH 500'
LOGGED BY R. JEANNE
Pg 3 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	TmP	CHLORITIC Tr OX	Py	Tr	Q-C-P	80		27		
410		" "	"	"	"	20		13		
415		" "	"	"	"	60		19		
420		" "	"	"	"	90		41		
425			"	"	"	10		5		
430			"	"	"	Tr	PINKISH-GRN	11		
435			"	"	"	1		6		HAIRLINE SILICA VNLTS
440			"	0.5	"	Tr		2		" " "
445			"	Tr	"	5		2		
450			"	"	"	Tr		—		
455								—		
460			Py	Tr				2		
465			"	"	Q-C-P	0.5		2		HAIRLINE SILICA VNLTS
470			"	"	"	Tr		1		" " "
475					"	"		3		
480			Py	Tr	"	"		—		" " "
485			"	"	"	"		2		
490			"	"				—		
495			"	"				—		
500	T.D.							—		HAIRLINE SILICA VNLTS <5% H2O THROUGHOUT WET INTERVAL
05										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 11/24 10:40
COMPLETED 10/25 4:15
NORTHING 1491753
EASTING 292749
ELEVATION 2087

HOLE No. MC-4
BEARING N12E
INCLINATION -68°
TOTAL DEPTH 480
LOGGED BY R. JEANNE
Pg 1 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm A/opt Au	ppm opt Ag	COMMENTS
05	Qal							5		
10	Tmp							3		SHORT SAMPLE - BENTONITE IN HOLE
15		CHLORITIC 100% OX			Q-C-P	Tr		Tr		
20					"	"		Tr		
25								Tr		
30								1		
35					Q-C-P	Tr		Tr		
40					"	"		Tr		
45								5		
50		70% OX	Py	0.5	Q-C-P	"		3		S-P VNETS
55		10 % OX	"	1.0				2		
60			"	Tr				3		
65		* OX	"	"				Tr		S-P VNLTS *OX CLASTS PROBABLY CONTAMINATION BY CHIPS CAUGHT IN MUD IN CYCLONE →
70				0.5	Q-C-P	"		Tr		S-P VNLTS
75		Tr OX	"	0.5	"	"		5		S-P VNLTS
80		" "	"	3.0				4		" "
85		" "	"	1.0				Tr		" "
90		" "	"	0.5	Q-C-P	"		Tr		" "
95		Tr OX	"	Tr	"	"		6		" "
100		" "	"	"				4		
105			"	0.5	"	0.5		3		
110			"	Tr				2		
115			"	"				1		
120			"	0.5				2		S-P VNLETS
125			"	Tr				1		
130			"	"	Q-C-P	Tr		2		SP VNLTS
135			"	"	"	"		4		
140			"	"	"	"		6		SP VNLTS
145			"	"				5		" "
150			"	"				2		" "
155		Tr OX	"	0.5	Q-C-P	Tr		8		" "
160		" "	"	"				8		" "
165		" "	"	Tr	"	"		6		" "
170		" "	"	0.5	"	"		—		
175			"	Tr				—		" "
180			"	"				—		" "
185			"	"				1		
190			"	"	Q-C-P	Tr		—		" "
195			"	"				—		" "
200	Vr		"	"	"	1.0		3		" "

SYSTEM W NOW 88 FT FOLLOWING HOLE FLUSH

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 11/24/91
COMPLETED 11/25/91
NORTHING 1491753
EASTING 292749
ELEVATION 2087

HOLE No. MC-4
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 480
LOGGED BY R. JEANNE
Pg 2 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	TmP	CHLORITIC	Py	Tr				1		S-P VNLTS
210			"	"	Q-C-?	Tr		3		" " ABUNDANT
215			"	0.5				10		" "
220			"	Tr				5		
225			"	0.5	Q-C-?	Tr		7		" " POSSIBLE DISSEM. HEM
230			"	"				3		" "
235		Tr ox	"	Tr	Q-C-?	Tr		2		" "
240		" "	"	0.5	"	"		3		" " Tr of HEM. AFTER Py
245		" "	"	Tr	"	"		2		" "
250		" "	"	"	"	"		2		" " Tr DISSEM. HEM.
255			"	"	"	"		2		
260			"	"	"	"		3		S-P-VNLTS
265		2% ox	"	"	"	"		8		BLOW-BY PLUGGING UP - MVE DRILL
270		Tr ox	"	"				4		S-P VNLTS
275		" "	"	"	"	"		-		
280			"	0.5	"	"		-		S-P VNLTS
285			"	Tr				-		S-P VNLTS
290			"	"	"	"		-		" "
295			"	"				2		" " OVER GR DRY
300			"	"				-		SP VNLTS HOLE HARDWATER, LIGHT MUD 7:30
305			"	"	Q-C-?	Tr	GRN	1		(REDX IS FROM BIT & TRAM) S-P VNLTS IRON
310			"	"	"	"		-		" "
315			"	"				3		
320			"	0.5	"	"		2		
325			"	Tr	"	"		5		S-P VNLTS
330			"	"	"			2		" " ABUNDANT
335		30% ox	"	"	"	10	BRN-GRN	6		PURPLE FLUORITE
340			"	"	"	20	GRN	18		ROTATION BINDING TRIPPED OUT - BIT LOST MOST BUTTONS - NEW BIT, HAD TO REAM BOTTOM 100'
345			"	"	"	5		8		
350			"	0.5				5		S-P VNLTS
355			"	1.0	Q-CP	2	MOTTLED GRN-WHITE	6		
360			"	0.5	Q-C-?	80	"	38		
365			"	Tr	"	90	"	36		
370			"	"	"	80	"	30		
375			"	"	"	95	"	53		
380		Tr ox	"	"	"	"	"	141		HIT ABUNDANT H2O @ 15 GPM
385		" "	"	"	"	"	"	140		
390		" "	"	"	"	"	BEIGE	30		
395		" "	"	"	"	70	GRN-WHITE	8		
400		" "	"	"	"	10	GRN	7		

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 11/24/91
COMPLETED 11/25/91
NORTHING 1491753
EASTING 292749
ELEVATION 2087

HOLE No. MC-4
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 480
LOGGED BY R. JEANNE
Pg 3 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	Tmp	CHLORITIC	Py	Tr	Q-C-P	5	PINKISH-GRN	6		PINKISH K-SPAR
410			"	"	"	3		11		SP VNLTS
415			"	"	"	20		16		
420			"	"	"	15		9		SP VNLTS CLEAR FLUORITE
425		Tr ox	"	"	"	5		2		SP VNLTS
430			"	"	"	"		14		
435			"	0.5	"	10		29		S-P VNLTS
440			"	Tr	"	10		1		S-P VNLTS LARGE OPEN SPACE FRACTURE IN Q-C-P VN FLUORITE INTERGROWN TO MIN.
445			"	"	"	Tr		2		
450			"	"	"	"		2		
455			"	"	"	"		2		
460			"	"	"	"		1		SP VNLTS
465								—		
470			"	"	Q-C-P	"		—		PURPLE FLUORITE
475			"	"				—		
480	↓ TD	↓			Q-C-P	"	↓	21		
85										
90										
95										
00										
05										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER Lloyd Hayden

DATE: December 3, 1991
COLLARED 12-3-91
COMPLETED 12-4-91
NORTHING 1491813
EASTING 292553
ELEVATION 2102

HOLE No. MC-5
BEARING N10°E
INCLINATION -65°
TOTAL DEPTH 455'
LOGGED BY ~~R. JEANNE~~ E. Hanley
Pg 1 of 3

Helper: Craig Sampler: Jim (Ebsing Drilling) IR TH-100A truck-mounted rig

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	Trap	mod. ox.		—		—	lt. gn-gy/or	—		10:03 a.m. start drilling
10	"	tr. ox. <5%		—	qtz	<5	lt gn-gy	2		
15	"	ox. <5%		-		-	lt gn-gy	3		
20	"	ox 50%		-	q-p	5-10	" /or	2		
25	"	ox 40%		-		-	"	—		
30	"	ox 20%		-		-	"	1		10:45
35	"	ox on frc's 10%		-		-	lt gn gy	6		
40	"	ox 75%		-		-	lt gn gy/or	4		10:53
45	"	ox 90%		-		-	lt gy/or	—		10:59
50	"	ox on frc's 75%		-		-	lt gn-gy/or	41		
55	"	ox 5%		-		-	lt gn gy	5		
60	"	ox 50%		-		-	" / or	5		
65	"	ox 75%		-		-	"	5		clay
70	"	ox 10%; mod chl		-		-	lt gn-gy	2		
75	"	ox 20%		-		-	"	1		11:21
80	"	ox on frc's 35%		-		-	" / or	8		11:58
85	"	10% ox on frc's.		-	white	tr	lt gn-gy	2		
90	"	5% " " "		—		—	"	1		
95	"	tr. ox. on frc's.		—		-	"	—		clay
100	"	" " " "		-		-	"	2		12:12
105	"	" " " "		—		—	"	1		12:19
110	"	—		-		—	"	3		
115	"	—		-		—	"	4		12:27
120	"	tr. ox.		—	q-c	5-10	"	14		12:30 clay
125	"	tr. ox		-	q-c	10	"	2		clay
130	"	—		-	q-c	tr	"	4		"
135	"	tr. ox.		-	q-c	tr	"	2		
140	"	" "		—		—	"	3		slightly damp
145	"	" "		—		—	"	4		slightly damp; clay
150	"	tr tr		—	q-c	5%	"	7		12:57 damp
155	"	" "		-	q-c	tr	"	6		"
160	"	" "		—	q-c	10	"	6		"
165	"	" "		-	q-c	tr	gn-gy/pink	—		1:10 "
170	"	—		—	q-c	tr	" "	6		"
175	"	tr ox	py	tr	q-c	tr	gn-gy	6		"
180	"	ox on frc's. 5%	py	tr	q-p q-c	tr tr	" /or	5		1:24 "
185	"	" " - tr	py	tr	q-c	10	lt gn-gy	5		1:30 "
190	"	" " - 5%	py	tr		—	"	5		"
195	"	—				—	"	9		"
200	"	ox - tr		—	q-c	tr	"	31		1:47 "

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER Elsing

DATE: 12-3-91
COLLARED 12-3-91
COMPLETED 12-4-91
NORTHING 1491813
EASTING 292553
ELEVATION 2102

HOLE No. MC-5
BEARING N10°E
INCLINATION -65°
TOTAL DEPTH 455'
LOGGED BY ~~R. JEANNE~~ E. Hanley
Pg 2 of 3

Driller: Cloyd H. Helper: Craig Sampler: Jim

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	TMP	ox 5%	py	1	q-c	tr	lt gy-gy	9		slightly damp
210	"	ox tr		-	q-c	2	"	8		" "
215	"	ox tr	py	tr		-	ltgy-gy/pink	6		" "
220	"	-	py	tr	q-c	2	"	441		" " 2:10
225	"	ox w/clay 5%	py	tr		-	gn-gy	16		thin frac's filled w/ hem. clay
230	"	ox 2%	py	1	q-c	tr	"	39		slightly damp
235	"	ox 5%			q-c	tr	"	10		207 very damp
240	"	ox 3%			q-c	tr	"	9		vy. damp
245	"	ox 5-7%			q-p	5-10		8		2:42 " "
250	"	ox on frac's 2%	py	tr	q-c	tr		6		2:49 vy. damp
255	"	ox tr				-		6		med. damp
260	"	tr ox	py	tr?	q-p	2		2		slightly damp
265	"	tr ox	py	tr	q-c	5		5		(START DRILLING WET)
270	"	tr ox			q-c	5		3		
275	"	tr. ox			q-c	3		2		3:55
280	"	tr. ox			q-c	tr		3		4:04
285	"	-	py	tr	q-p, qc	1		2		4:20
290	"	tr. ox	py	tr	q-p-c	tr		3		
295	"	ox on frac's 20%	py	tr	q-p-c	5		11		4:34
300	"	" " 10			q-p-c	25		49		
305	"	ox 25%			q-c	70	wht, pink-grn, gy	244		
310	"	ox 5	py	1	q-c	15	gn-gy	23		4:58
315	"	tr ox	py	1	q-c	20	"	23		
320	"	tr ox	py	1	q-c	5		9		(steep to the day @ 320')
325	"	-	py	1	q-c	15	gn-gy/wht	23		(resume drilling 7:57a 12/4)
330	"	ox 1%	py	1%	q-c q-p	2 5	med gn-gy	7		8:20
335	"	ox 3%	py	1	q-c q-r	50	gn-gy/wht	40		~332 vein starts (wht water) ~2' wide q-c vn
340	"	ox 25%	py	1%	q-r q-c	3 20	" "	11		8:33
345	"	tr ox	py	1%	q-r q-c	3 30	" "	18		
350	"	ox 80%	py	½	q-c	50	or/wht/gy	26		
355	VEIN	ox 15%	py	½	q-c	80	wht/or/gy	27		tr. vuggy qtz
360	VEIN	ox 5%	py	tr	q-c	95	wht	140		
365	VEIN	ox 10%			q-c	80	wht/gy	18		tr vuggy qtz
370	VEIN	ox 20%			q-c	85	wht/or-gy	28		
375	VEIN	ox 20%			q-c	95	wht/or/gy	62		tr vuggy qtz
380	VEIN	ox 15%			q-c	75	wht/gy	60		
385	MP	ox 5			q-c	5-10	gy-grn	11		9:45
390	"	-	py	tr	q-c	3	"	8		9:52
395	"	-		-	q-c	tr	gn-gy/pink	3		
400			py	½	q-c	10	" "/wht	7		10:05

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE: 12-4-91
COLLARED 12-3-91
COMPLETED 12-4-91
NORTHING 1491813
EASTING 292553
ELEVATION 2102

HOLE No. MC-5
BEARING N10°E
INCLINATION -65°
TOTAL DEPTH 455'
LOGGED BY ~~R. JEANNE~~ E. HANLEY
Pg 3 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	Tmp	–	py	tr	q-c	10	gy-sy, pk, wh	2		
410	"	–	py	tr	q-p	tr	gy-sy, pk	3		
415	"	–	py	tr	q-p	tr	"	4		
420	"	–		–		–	"	3		10:38
425	"	–	py	tr	q-c	tr	"	2		10:51
430	"	–	py	tr	q-p	tr	"	5		11:01
435	"	–		–		–	"	3		
440	"	–	py	tr	–	–	"	3		11:19
445	"	–	–	–	q-c	10	"	2		tr. vuggy qtz.
450	"	–	–	–	q-c	tr	gy-sy	9		
455	"	–	–	–	–	–	gy-sy	2		11:49a T.D.
60										
65										
70										
75										
80										
85										
90										
95										
00										
05										
10										
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75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER Elsing Drilling

DATE: 12-4-91
COLLARED 12-4-91 3:20 p.m.
COMPLETED 12-6-91 10:00 a.m.
NORTHING 14918416
EASTING 2923413
ELEVATION 2106

HOLE No. mc-6
BEARING N10°E
INCLINATION -66°
TOTAL DEPTH 500'
LOGGED BY ~~Re JEANNE~~ E. HANLEY
Pg 1 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	Tmp	Fe ox 100%		-		-	or	6		
10	"	" "		-	q-c	tr	or	5		
15	"	" 90%		-		-	"	7		
20	"	" 80%		-		-	"	Tr		
25	"	" 80%		-		-	or/gn-gy	5		
30	"	" 75%		-		-	"	18		
35	"	" 70%		-		-	"	2		4:00 pm
40	"	" 60%		-		-	"	1		
45	"	" 90%		-		-	or	2		
50	"	" 50%		-		-	or/gn-gy	4		
55	"	ox on frs 15%		-		-	gn-gy/or	Tr		4:16
60	"	" " " 20%		-		-	"	6		
65	"	" " " 25%	py	tr		-	gn-gy/or	3		4:23
70	"	" " " 40%		-		-	"	9		
75	"	" " " 40%		-		-	"	3		
80	"	" " " 50%		-	q-c	tr	"	Tr		4:29
85	"	" " " 30%		-		-	"	Tr		
90	"	" " " 10%	py	tr	q-c	tr	gn-gy	13		
95	"	" " " tr		-		-	"	2		
100	"	" " " tr	py	tr		-	"	4		4:48
105	"	Fe ox tr	py	tr		-	"	6		
110	"	—	py	tr		-	"	2		5:00
115	"	—	py	½%		-	"	Tr		
120	"	Fe ox tr	py	tr		-	"	3		5:09 (stop for day; rig maintenance)
125	"	—				-	"	Tr		
130	"	—					"	Tr		
135	"	—					"	1		
140	"	—			q-c	tr	"	6		7:28 a.m.
145	"	—					"	Tr		
150	"	—					"	1		8:02
155	"	—			q-c	tr	"	Tr		
160	"	—			—	-	"	4		
165	"	—			—	-	"	1		
170	"	—			—	-	"	Tr		
175	"	—	py	tr	—	-	"	2		8:31
180	"	—			—	-	"	Tr		
185	"	ox on frs 2%	py	tr	—	-	"	Tr		8:43
190	"	Fe ox - tr	py	tr	—	-	"	4		
195	"	ox on frs 15%	py	½%	—	-	"	3		slightly damp
200		" " 5-10%	py	tr	q-c	tr	"	5		quite damp

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER LELSINA DRILLING

DATE:
COLLARED 12/4/91
COMPLETED 12/6/91
NORTHING 1419846
EASTING 292343
ELEVATION 2106

HOLE No. MC-6
BEARING N10E
INCLINATION -66°
TOTAL DEPTH 500'
LOGGED BY ~~B. JEANNE~~ E. Hanley
Pg 2 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	Tmp	ox on frcs - tr	py	1/2%	-	-	gy-sy	6		slightly damp
210	"	tr ox	py	tr	-	-	"	1		not as damp
215	"	" "	py	tr	q-c	tr	"	4		slightly damp
220	"	" "	py	tr	-	-	"	2		not as damp
225	"	-	py	1%	-	-	"	4		9:34 fairly dry
230	"	-	py	1/2%	q-c	3	"	5		
235	"	-	py	1%	q-c	tr	"	15		
240	"	tr ox	py	1/2%	q-c	15-20	"/wht	21		
245	"	tr ox	py	tr	q-c	25	"/wht	16		10:00
250	"	-	py	1/2%	q-c	25	"	21		
255	"	tr ox	py	tr	q-p, q-c	tr, 5	gy-sy	14		
260	"	-	py	tr	q-c	2	"	9		
265	"	tr ox	py	tr	q-c	5	"/wht	15		10:47 tr vuggy qtz
270	"	-	py	tr	q-c	tr	gy-gy	23		10:51
275	"	-	py	1/2	q-c	5	"	5		10:59
280	"	-	py	tr	q-p	tr	"	20		11:12
285	"	-	py	tr	q-p, q-c	tr, tr	"	9		11:26
290	"	ox on frcs 5%	py	tr	q-p, q-c	tr, tr	"	30		
295	"	-			q-c	5	"	25		11:44 (stop to change bit.)
300	"	ox on frcs tr	py	tr	q-p, q-c	tr, tr	"	13		1:00
305	"	-	py	tr	q-c	tr, tr	"	26		1:11
310	"	-	py	tr	q-c	tr	"	9		
315	"	tr ox	py	tr	q-c	tr, 5%	"	13		
320	"	tr ox	py	tr	q-p	tr, 5	"	5		1:40
325	"	-	py	tr	-	-	"	10		
330	"	-	py	tr	q-c	20	"/wht	11		1:57
335	"	-	py	1/2	q-p, q-c	1, 20	"/"	6		2:04
340	"	-	py	tr	q-c	15	"/"	6		
345	"	tr ox on frcs	py	tr	q-p, q-c	tr, 2%	gy-gy	7		tr vuggy qtz
350	"	-	py	1/2	q-c	tr	"	7		
355	"	-	py	tr	q-p, q-c	tr, tr	"	5		
360	"	ox on frcs 2%	py	1/2	q-p, q-c	5	"	Tr		
365	"	Fe ox 10%	py	tr	q-c	30	"/wht	14		
370	Tmp/VEIN	ox on frcs 15%	py	tr	q-c	50	gy/wht/gy	22		abn pale grn. qtz.
375	VEIN	ox on frcs 15%	-	-	q-c	80	" " "	26		some vuggy qtz; abn pale grn qtz
380	VEIN/Tmp	ox on frcs 5%	py	1/2	q-c	20	gy-gy/wht	24		(hole not making very much H2O)
385	Tmp/VEIN	" " " 10%	py	tr	q-c	15	" "	13		
390	Tmp/VEIN	" " " 2%	py	tr	q-c	5	gy-gy	12		
395	TMP	" " " tr	py	tr	q-c	5	"	6		
400	Tmp/vein	" " " 40	py	tr	q-c	15	" /wht	71		

start drilling w/water

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS — DATE: — HOLE No. MC-6

STATE ARIZONA — COLLARED 12/4/91 — BEARING N10E

COUNTY MOHAVE — COMPLETED 12-6-91 10:00 a.m. — INCLINATION -66°

SEC. 19 T. 20N R. 20W G&SRB&M — NORTHING 1491846 — TOTAL DEPTH 500'

QUAD. OATMAN, AZ — EASTING 292343 — LOGGED BY ~~R. JEANNE~~ E. Hawley

DRILLER ELSING DRILLING — ELEVATION 2106 — Pg 3 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	TMP	Fe ox on frs 15%	py	tr	q-c	10	gy-gy	16		
410	"	" " " 2%	-	-	q-c	10	"	17		4:17
415	TMP/VEIN	" " " 20%	py	tr	q-c	50	gy-gy/whi	31		4:22
420	TMP/VEIN	" " " 15%	py	tr	q-c q-p	tr 40	" "	25		Hole starting to make significant H2O ~420'
425	VEIN	" " " 40%			q-c	90	whi/gy	70		
430	VEIN	" " " 5%			q-c	95	whi/gy	61		4:50
435	VEIN/TMP	" " " 20%			q-c	50	gy-gy/whi	26		4:57
440	TMP/VEIN	" " " 40%			q-c	30	" "	25		5:05 (stop for day)
445	TMP/VEIN	" " " 15%	py	tr	q-p q-c	1 40	gy/whi	38		8:09 a.m. 12/6/91
450	VEIN	—			q-c	95	whi	17		8:19
455	VEIN	tr ox			q-c	95	whi	26		8:33
460	VEIN/TMP	Fe ox 35%	py	tr	q-c	60	whi/gy	20		8:46
465	TMP/VEIN	tr ox	py	tr	q-p q-c	2 5	vggy/whi	25		
470	TMP/VEIN	Fe ox 10%			q-c	5	gy-gy/whi	9		tr vggy qtz
475	TMP/VEIN	" " tr	py	tr	q-c	8	"	31		
480	"	—	py	1/2%	q-c	8	"	10		9:27
485	"	Fe ox 3%	py	tr	q-c	5	"	9		9:40
490	"	—	py	tr	q-c	5	"	20		
495	TMP	—	py	-	q-c	3	"	10		9:51
500	"	Fe ox tr	py	tr	q-c	2	"	7		9:58 T.D.
05										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER Elsing Drilling

DATE: 12-6-91
COLLARED 12-6-91 1:52 p.m.
COMPLETED 12-7-91 2:31 p.m.
NORTHING 1491918
EASTING 292156
ELEVATION 2122

HOLE No. MC-7
BEARING N10°E
INCLINATION -65°
TOTAL DEPTH 470'
LOGGED BY ~~B.~~ ~~JEANNE~~ E. HANLEY
Pg 1 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	Tmp	Fe Ox 100%		-		-	or-gy	11		
10	"	" " 100%		-		-	"	7		
15	"	" " 100%		-	q-c	tr	"	22		
20	"	" " 100%		-	q-c	tr	"	2		2:04
25	"	" " 100%		-		-	"	3		2:26
30	"	" " 100%		-		-	"	11		2:29
35	"	" " 100%		-		-	"	1		2:32
40	"	" " 100%		-		-	"	6		2:34
45	"	Fe Ox 90%		-		-	or-gy/lt gy	4		2:41
50	"	" " 90%		-		-	" "	5		2:44
55	"	ox, ox on frcs 60%				-	" "	4		2:47
60	"	" " " 60%				-	" "	6		2:51
65	"	" " " 60%				-	" "	4		2:58
70	"	" " " 75%				-	" "	4		3:01
75	"	Fe ox on frcs 20%				-	gn-gy/or	10		3:04
80	"	" " " " 40%				-	" "	7		3:07
85	"	" " " " 60%			q-c	tr	" "	18		3:16
90	"	Fe ox 95%			q-c	tr	or	18		3:19
95	"	Fe ox on frcs 70%					or/gn-gy	4		3:22
100	"	Fe ox 95%			q-c	5%	or/gy	12		3:31
105	"	Fe ox 95%				-	or-gy	6		3:40
110	"	" " 60%				-	or/gn-gy	5		3:42
115	"	" " 40%				-	gn-gy/or	22		3:45
120	"	" " on frcs 15%	py	tr		-	" "	4		3:48
125	"	" " " 5%	py	tr		-	gn-gy	5		3:57
130	"	Fe ox on frcs tr	py	1/2	q-p	2%	"	2		4:00
135	"	" " " tr	py	tr	q-p	tr	"	10		4:03
140	"	" " " tr	py	tr	q-c	3	"	6		4:07
145	"	" " " tr	py	tr	q-p	tr	"	12		4:15
150	"	" " " tr	py	tr	-	-	"	4		4:19
155	"	-	py	1/2	q-p	tr	"	3		4:25
160	"	-	py	1/2	q-p	2	"	-		4:28
165	"	-	py	1/2	q-p	1	"	15		4:41
170	"	-	py	tr	q-p	tr	"	9		4:45
175	"	-	py	1	q-p	1	"	12		4:49
180	"	Fe ox tr	py	tr	q-p q-c	tr 2	"	9		4:52
185	"	" " tr	py	tr	q-c	tr	"	8		5:01
190	"	Fe ox on frcs 30%	py	tr	q-c	tr	"/or	13		5:04 slightly damp
195	"	" " " 40%	py	tr	q-p-c	tr	"/"	3		5:07 " "
200	"	" " " 35%	py	tr	q-p-c	tr	"/"	6		5:09 mod. damp

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER Elsing Drilling

DATE:
COLLARED 12-6-91
COMPLETED 12-7-91
NORTHING 1491918
EASTING 292156
ELEVATION 2122

HOLE No. MC-7
BEARING N10E
INCLINATION -66°
TOTAL DEPTH 470'
LOGGED BY ~~R. JEANNE~~ E. Hanley
Pg 2 of 3

1141' @ 10° from MC-1

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	Au ppb ppm opt	Ag ppm opt	COMMENTS
205	Tmp	Fe ox on frx's 20%	py	tr	q-c	tr	gn-gy	11		5:16
210	"	" " " " 5%	"	"	q-c	2	"	8		5:18
215	"	" " " " 2%	"	"	q-c	5	"	11		5:21
220	"	" " " " 5%	"	"	q-c	10	"/whi	7		5:23 (stop for day)
225	"	" " " " 15%	py	tr	q-c	2	gn-gy	4		8:07 a.m. (start drilling w/ water)
230	"	" " " " tr	"	"	q-c	tr	"	8		8:12
235	"	" " " tr	"	"	q-c	tr	"	14		8:18
240	"	—	"	"	q-c	8	"	7		8:24
245	"	Fe ox on frx's tr	"	"	q-c	tr	"	5		8:33
250	"	—			q-c	tr	"	10		8:40
255	"	Fe ox on frx's tr	"	"	q-c	2	"	12		8:44
260	"	" " " " 15%	"	"	q-c	9	"	6		8:49
265	"	" " " " tr	"	"	q-c	5	"	11		8:55
270	"	" " " " 25%	"	"	q-c	5	"	11		9:06
275	"	Fe ox 80%	"	"	q-c	15	or/gn-gy/whi	7		9:18, 271' (→273') started making strong H2O; fractured ex
280	"	" " 25%	"	"	q-c	10	" " "	6		9:24 ~275-271 open frac. zone (1"-2" chunks of
285	"	" " 20%	"	"	q-c	5	" " "	6		9:38
290	"	" " 80%	"	"	q-c	30	" " "	11		9:46
295	"	ox on frx's 15%	"	"	q-c	tr	" "	10		9:53
300	"	" " " 5%	"	"	q-c	tr	gn-gy	5		10:01
305	"	" " " 40%	"	"	q-c	15%	or/gy/whi	13		10:10
310	VEIN	Fe ox 80%			q-c	75	or/whi/gy	21		10:15
315	VEIN/Tmp	" " 20%			q-c	45	whi/gy/or	9		10:19
320	VEIN/Tmp	" " 30%			q-c	45	" " "	17		10:24
325	VEIN/Tmp	" " 60%			q-c	40	" " "	16		mostly q-c vein last ~2' (whi water) 10:36
330	VEIN/Tmp	" " 2%			q-c	15	gn-gy/whi	20		mostly q-c vein top 1' " " 10:45
335	Tmp/vein	—			q-c	8	gn-gy/whi	21		10:52
340	Tmp/vein	—			q-c	15	" "	13		11:03 vein ~ 337-38'
345	Tmp/vein	Fe ox tr			q-c	15	" "	15		11:08
350	Tmp/vein	" " 20%			q-c	10	" "	24		11:14
355	Tmp/vein	" " tr			q-c	20	" "	34		11:18
360	Tmp/vein	" " 60%			q-c	30	gy/or/whi	1		11:28
365	Tmp/vein	" " 45%			q-c	60	" " "	10		11:35
370	Tmp/vein	" " 75%			q-c	35	" " "	13		11:41
375	" "	" " tr	py	tr	q-c	20	gn-gy/whi	23		11:47
380								11		11:51
385								30		11:56
390	VEIN	—			q-c	95		23		12:01
395	VEIN	—			q-c	100		15		12:05
400	VEIN	—			q-c	98		23		12:11

MAGMA COPPER COMPANY.

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER

DATE:
COLLARED 12-6-91
COMPLETED 12-7-91
NORTHING 1491918
EASTING 292156
ELEVATION 2122

HOLE No. MC-7
BEARING N10E
INCLINATION -65°
TOTAL DEPTH 470'
LOGGED BY ~~R. HEANEY~~ E. Hanley
Pg 3 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	VEIN	Fe ox tr			q-c	99	whi	35		11:22
410	VEIN	" " "			q-c	99	whi	28		11:23
415	VEIN/TmP	" " 20%			q-c	50	whi/dkgy	42		11:41
420	TmP/VEIN	" " 15%	py	tr	q-p-c	30	gn-gy/dkgy	7		11:48
425	TmP	" " 10%	"	"	q-c	<5	gn-gy	15		11:58
430	"	—	"	"	q-c	5	gn-gy/pink	41		1:08 42' - thin q-c vein
435	"	—	py	tr	q-c	8	" "	4		
440	"	—	"	"	q-c	10	" "	5		
445	"	Fe ox 5%	py	tr	—	-	" "	6		
450	"	—	"	"	q-c	tr	" "	7		
455	"	Fe ox tr	"	"	—	-	" "	5		
460	"	—	"	tr	—	-	" "	5		
465	"	Fe ox 10%	py	tr	—	-	" "	4		2:21
470	"	—	py	tr	—	-	" "	11		2:31 T.D.
475										
480										
485										
490										
495										
500										
05										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER Elsing Drilling

DATE:
COLLARED 12-8-91 8:49 a.m.
COMPLETED 12-9-91 10:05 a.m.
NORTHING 1 491 709
EASTING 292 910
ELEVATION 2083

HOLE No. MC-8
BEARING N12°E *
INCLINATION -65°
TOTAL DEPTH 445'
LOGGED BY ~~B. IRVINE~~ E. Hanley
Pg 1 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	TMP	Fe ox 10%	—	—	—	—	or	5		9:52
10	"	" "	"	"	"	"	"	10		
15	"	" "	"	"	"	"	"	4		9:17
20	"	" "	"	"	"	"	"	2		9:20
25	"	" "		"		"	"	5		
30	"	" "		"		"	"	5		
35	"	" "		"		"	"	4		
40	"	" "		"		"	"	—		9:32
45	"	" 90%		"		"	"	7		
50	"	Fe ox 80%		"		"	gy/or	6		
55	"	Fe ox 50%		"		"	or/pale gy	—		
60	"	Fe ox 30%		"		"	or/pale gy	7		9:45
65	"	Fe ox on frac's 30%		"		"	pale gy/or	6		
70	"	" " " 30%		"		"	" "	29		9:53
75	"	" " " 20%		"		"	gn-gy/or	5		
80	"	" " " 2%		"		"	gn-gy	—		9:57
85	"	" " " tr		"		"	"	3		
90	"	—		"		"	"	4		10:04
95	"	Fe ox tr		"		"	"	—		10:10
100		—	py	tr		"	"	6		
105		—	"	"		"	"	4		
110		—	"	"		"	"	—		
115	"	—	py	tr		"	"	8		10:21
120	"	Fe ox on frac's 2%	"	"		"	"	4		10:24
125	"	" " " tr	"	"		"	"	—		
130	"	—	py	1/2	q-p	tr	"	—		
135	"	—	"	"	"	"	"	—		
140	"	—	"	"	"	"	"	4		10:37
145	"	—	py	tr	"	"	"	3		
150	"	—	"	"	"	"	"	—		10:46
155	"	—	"	"	"	"	"	2		(10:48, 153'-hammer broke) start up again 11:30
160	"	—	"	"	"	"	"	—		11:35
165	"	—	"	"	"	"	"	5		11:40
170	"	—	"	"	"	"	"	2		11:42
175	"	—	"	"	q-p q-c	tr tr	"	3		11:45
180	"	—	"	"	q-p q-c	tr tr	"	2		11:48
185	"	—	"	"	q-p	tr	"	19		
190	"	—	"	"	"	"	"	2		
195	"	—	"	"	"	"	"	—		12:00
200	"	—	"	"	"	"	"	—		12:03

*magnetic declination 14°E.

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOS[illegible] DATE: [illegible] HOLE No. MC-8

STATE ARIZONA COLLARED 12-8-91 BEARING N 12°E

COUNTY MOHAVE COMPLETED 12-9-91 INCLINATION -65°

SEC. 30 T. 20N R. 20W G&SRB&M NORTHING 1 491 709 TOTAL DEPTH 445'

QUAD. OATMAN, AZ EASTING 292 910 LOGGED BY ~~R. JEANNE~~ E. Hanley

DRILLER Elsing Drilling ELEVATION 2083 Pg 2 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	Tmp	—	py	tr		—	gn-gy/pink	—		
210	"	—	"	"		—	" "	—		
215	"	Fe ox on fac's tr	"	"		—	gn-gy	3		
220	"	" " " 5%	"	"		—	"	2		12:18
225	"	" " " 20%	"	"			"	6		slightly damp
230	"	" " " 20%	py	1		—	"	2		" "
235	"	" " " 2%	py	tr		—	"	2		12:31 " "
240	"	" " " 10%	"	"		—	"	—		12:35
245	"	" tr	"	"			"	—		
250	"	" tr	"	"			"	—		
255	"	" tr	"	"			"	—		
260	"	" tr	"	"			"	—		
265	"	" tr	"	"			"	15		
270	"	" 5	"	"			"	—		1:13 quite damp
275	"	" 2	"	"	q-c	tr	"	—		
280	"	—	"	"		—	"	—		
285	"	—	"	"		—	"	—		
290	"	—	"	"		—	"	—		
295	"	—	"	"		—	"	—		1:44
300	"	—	"	"		—	"	14		1:50
305	"	—	"	"		—	"	—		
310	"	Fe ox on fac's 2%	"	"	q-c	3	"	—		2:03
315	"	Fe ox on fac's 40%	"	"		—	"	2		214' hit lots of water
320	"	" " " 30%	"	"		—	"	—		2:15
325	"	" " " tr	"	"		—	"	1		
330	"	" " " 10%	"	"		—	"	2		
335	"	" " " 20%	"	"		—	"	—		
340	"	" " " 60%	"	"	q-c	tr	gn-gy/or	—		2:40
345	"	" " " 75%			q-c	20	gn-gy/or/whi	—		vuggy qtz/making a great deal of H_2O!
350	"	" " " 75%			q-c	30	" " "	2		2:54 vuggy qtz
355	"	" " " 85%			q-c	10	" " "	1		3:00 " " H_2O temp, 80°+
360	"	" " " 75%			q-c	tr	gn-gy/or	—		3:06
365	"	" " " 75%			q-c	5	" "	—		
370	"	" " " 90%			q-c	15	or/gn-gy/whi	4		3:30 strong ox. fnd. w/H_2O, 369-370
375	"	" " " 95%			q-c	20	" " "	5		Hacking off; much H_2O
380	"	" " " 80%			q-c	10	or/gy	4		4:05 making ~100 gpm / vuggy qtz in thin veins
385	TMP/VEIN	" " " 85%			q-c	50	or/whi/gy	12		382' start getting 50% qtz
390	TMP/VEIN	" " " 85%			q-c	50	" " "	6		4:22 large 1"-2" chunks last 20'.
395	TMP/VEIN	" " " 85%			q-c	50	" " "	5		
400	TMP/VEIN	" " " 60%			q-c	40	dk gy/whi/or	6		4:37

start drilling wet

not perfectly representable sampling; mixed bton. oc. other due

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12-8-91
COMPLETED 12-9-91
NORTHING 1 491 709
EASTING 292 910
ELEVATION 2083

HOLE No. MC-8
BEARING N12°E
INCLINATION -65°
TOTAL DEPTH 445'
LOGGED BY ~~R. JEANNE~~ E. Hanley
Pg 3 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	TMP/vein	Fe ox 15%			q-c	5	qu-gy/or	11		
410	TMP/vein	" " 10%			q-c	20	" / " / whi	3		
415	TMP/vein	" " 15%			q-c	50	qu-gy/whi/or	26		
420	vein/TMP	" " 75%			q-c	60	whi/gy/or	43		5:21 (Stop for the day)
425	" / "	" " 50%			q-c	40	" " "	5		
430	" / "	" " 30%			q-c	25	" " "	6		8:30
435	TMP	" " 20%			q-c	8	qu-gy	5		8:49
440	"	" " 2%			q-c	2	"	2		9:15
445	"	" " 5%			q-c	5-10	"	4		10:05 (watered out hammer)
450										T.D.
455										
460										
465										
470										
475										
480										
485										
490										
495										
500										
05										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER Elsing Drilling

DATE:
COLLARED 12-9-91
COMPLETED 12-11/91
NORTHING 1 491 651
EASTING 293 129
ELEVATION 2095

HOLE No. MC-9
BEARING N12°E
INCLINATION -65°
TOTAL DEPTH 480
LOGGED BY ~~B. JEANNE E. HANLEY~~
Pg 1 of 5

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm Au	ppm opt Ag	COMMENTS
05										0-16½" casing thru fill.
10										NO SAMPLES, 0-16½'.
15										Casing set & start drilling ~4:05 pm
20	Tmp	Fe ox 100%		—		—	OY	Tr		4:11.
25	"	" " 75%					"	4		
30	"	" " 30%	Py	0.5			gy-gy/or	22		
35	"	" " 30%	"	"			" "	Tr		
40	"	" " 40%	"	Tr			" "	Tr		4:51 SP VALLEY
45	"	" " 30%	"	"			" "	2		STOP for day, Welding casing, etc.
50	"	" " 20%	"	0.5			" "	Tr		
55	"	" " 15%	"	Tr			" "	15		SP. VALLEY FeOx ON FRACS
60	"	" " 5%	"	"			" "	Tr		" "
65	"	" " 65%	"	"				2		" "
70	"	40%	"	"				2		
75	"	10%	"	0.5				Tr		
80	"		"	0.5				Tr		SP. VALLEY
85	"		"	Tr				Tr		CLAY ZONE PROBABLE FAULT
90	"		"	"				2		" " " "
95	"		"	"				Tr		" " " "
100	"		"	0.5				1		MINOR CLAY
105	"	CHLORITE	"	1.0		—		1		
110	"		"	0.5		—		1		SP VALLEY
115	"		"	0.5		—		Tr		
120	"		"	"		—		Tr		
125	"		"	Tr		—		Tr		
130	"		"	"		—		Tr		
135	"		"	"		—		5		
140	"		"	0.5		—		3		
145	"		"	Tr		—		2		SP. VALLEY
150	"		"	"		—		16		
155	"		"	1.0		—		2		SP VALLEY
160	"		"	Tr		—		5		
165	"	Fe oxide tr	"	"		—		1		
170	"	" " tr	"	"		—		3		
175	"		"	"		—		3		SP VALLEY
180			"	"				4		
185			"	"				2		
190			"	"				5		
195			"	"				20		
200			"	"				15		

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12-9-91
COMPLETED 12-11-91
NORTHING 7 491 651
EASTING 293 129
ELEVATION 2095

HOLE No. MC-9
BEARING N 12E
INCLINATION -65°
TOTAL DEPTH 480'
LOGGED BY ~~R. JEANNE~~ E. HANLEY
Pg 2 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	Tmp	CHLORITIC	Py	Tr		—		2		
210			"	as	q-c	tr		14		
215			"	Tr		"		7		SP VNLTS
220			"	"		"		8		
225			"	"		"		Tr		GRAY SILICA
230			"	"		"		5		" "
235			"	"		"		32		
240			"	"				21		
245			"	"				15		
250			"	"				6		
255			"	"				13		
260			"	"				23		
265			"	"				23		MINOR CLAY
270			"	"				4		
275			"	"	Q-P-C	2		43		SP VNLTS
280			"	"	"	2		7		damp Pery qtz
285			"	"	"	2		25		
290			"	"	"	Tr		3		
295			"	0.5	"	10		Tr		
300			"	Tr	"	10		7		
305			"	"				8		
310			"	"				Tr		
315			"	"				3		SP VNLTS
320			"	"				1		
325			"	"				Tr		SP VNLTS
330			"	"	Q-P-C	Tr		Tr		
335			"	"	"	Tr		Tr		
340			"	"				Tr		
345			"	"				Tr		
350			"	"				Tr		
355			"	"	Q.P.C	Tr		9		
360			"	"	Q-P-C	1		Tr		
365			"	"	"	Tr		Tr		
370			"	"				2		
375	↓		"	"				Tr		
380	Trp		"	Tr						
385	"		"	"						
390	Tmp		"	"	J-P-C	5				
395			"	"						
400	↓	↓	"	"	"	2		↓		

Start drilling w/water

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSINA DRILLING

DATE:
COLLARED 12-9-91
COMPLETED 12-11-91
NORTHING 1 491 651
EASTING 293 129
ELEVATION 2095

HOLE No. MC-9
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 480'
LOGGED BY ~~B. JEANNE~~ E. HANLEY
Pg 3 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	TMP/VEIN	CHLORITIC	Py	TR	q-c	30		TR		
410	"			"	q-c	50		34		(start using splitter to collect sample)
415	"			"	q-c	45		2		
420	"			"	q-c	50		2		
425	VEIN				q-c	100		1		Vein making a great deal of
430	VEIN				q-c	100		TR		water, same as hole MC-8.
435	VEIN				q-c	100		2		
440	VEIN				q-c	100		1		(quit for the day)
445	VEIN				q-c	100		3		7:35 a.m., 12-11-91
450	VEIN	CHLORITIC			q-c	95		TR		PINK K-SPAR
455	VEIN/TMP		Py	TR	q-c	50		9		
460	TMP/VEIN		"	"	q-c	20		8		
465	TMP/VEIN		"	"	q-c	15		17		
470	TMP				q-c	5		20		
475	TMP				q-c	3		20		
480	TMP	TID	Py	TR	q-c	8		39		9:24 a.m. Stopped hole - hammer
85										watered-out.
90										
95										
00										
05										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12-11-91 2:22pm
COMPLETED 12-13-91
NORTHING 1 491 601
EASTING 293 325
ELEVATION 2154

HOLE No. MC-10
BEARING N 12° E
INCLINATION -65°
TOTAL DEPTH 560'
LOGGED BY ~~R. JEANNE~~ E. HANLEY
Pg 1 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	—	—	—			—	—	—		2:22-Start setting casing thru 10' fill.
6 - 10	mP	hydrothermal 100%		—		—	red/yell/whi	7		casing @ -6' 3:25-start drilling
15	"	" 100%		—		—	" " "	5		
20	"	" 100%		—		—	" " "	2		
25	"	" 100%		—		—	" " "	11		
30	"	" 100%		—		—	" " "	34		
35	"	" 100%		—		—	" " "	3		
40	"	" 100%		—		—	" " "	44		
45	"	" 100%		—		—	" " "	8		3:55
50	"	" 60%		—		—	red/yel/whi + lt gy	39		
55	"	" 45%		—		—	"	8		
60	"	" 30%		—		—	mostly lt gy	9		
65	"	" 20%		—		—	lt gy	4		
70	"	" tr		—		—	"	3		
75	"	" tr		—		—	"	5		
80	"	" tr		—		—	"	12		
85	"	" tr				—	lt gy/dk gn-gy	33		
90	"	" 5%				—	" "	12		
95	"	" 5%				—	lt gy	7		
100	"	" tr				—	"	6		4:29
105	"	—				—	lt gy	37		
110	"	—				—	"	2		
115	"	—				—	"	2		
120	"	Fe ox tr			g-c	tr	"	1		
125	"	—				—	lt gy/dk gn-gy	2		
130	"	—				—	gn-gy	1		
135	"	—				—	"	1		
140	"	—		—		—	"	2		
145	"	—				—	"	2		
150	"	—				—	"	1		
155	"	—				—	"	3		
160	"	—				—	"	3		
165	"	—				—	"	3		
170	"	Fe ox tr				—	"	3		Fe ox in a thin, open frc. (watercourse?)
175	"	—				—	"	3		
180	"	—				—	"	—		sample "soapy" wet.
185	"	—					"	3		
190	"	—					"	4		
195	"	—					"	4		
200	"	—					"	5		

start drilling wet

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12-11-91
COMPLETED 12-13-91
NORTHING 1 491 601
EASTING 293 325
ELEVATION 2154

HOLE No. MC-10
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 540'
LOGGED BY ~~R. JEANNE~~ E. Hanley
Pg 2 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	mp	-				-	gn-gy	1		hole making only a little water.
210	"	-				-	"	3		
215	"	-				-	"	3		
220	"	-				-	"	3		
225	"	-				-	"	10		
230	"	-				-	"	-		
235	"	-				-	"	5		
240	"	-				-	"	2		
245	"	-				-	"	3		
250	"	-				-	"	-		
255	"	-				-	"	4		
260	"	-				-	"	4		
265	"	-				-	"	-		
270	"	-				-	"	-		
275	"	-				-	"	-		
280	"	-				-	"	17		
285	"	-				-	"	5		
290	"	-				-	"	2		
295	"	-				-	"	2		
300	"	-				-	"	2		
305	"	-				-	"	2		
310	"	-				-	"	3		
315	"	-				-	"	-		
320	"	-				-	"	-		
325	"	Fe ox tr			q-c	tr	"	-		
330	"	-			q-c	tr	"	31		
335	"	-			-	-	"	9		
340	"	-			-	-	"	4		
345	"	Fe ox tr			q-c	50	gn-gy/wht	17		ry coarse chips of wht. qtz
350	"	-			q-c	30	" "	6		" " " "
355	"	-			q-c	60	" "	17		
360	"	-			q-c	75	" "	40		
365	"	-	py	tr	q-c	30	" "	219		
370	-	Fe ox tr			q-c	3	" "	417		out of vein by 373'.
375	"	" tr			q-c	3	gn-gy	8		
380	"	-			q-c	50	gn-gy/wht	23		
385	"	-			q-c	40	" "	3		
390					q-c	40	"	1		
395					q-c	30	"	9		
400					q-c	15	"	2		

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 30 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12-11-91
COMPLETED 12-13-91 10:00 a.m.
NORTHING 1491 601
EASTING 293 325
ELEVATION 2154

HOLE No. ME-10
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 560'
LOGGED BY ~~R. JEANNE~~ E. Hanley
Pg 3 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	MP	–			q-c	15	gn-gy	3		
410	"	–			q-c	10	"	12		
415	"	–			q-c	15	"	10		
420	"	–			q-c	45	"	6		
425	"	–			q-c	2	"	6		
430	"	–			q-c	5	"	2		
435	"	–			q-c	3	"	2		
440	"	–			q-c	5	"	3		
445	"	–			q-c	5	"	16		
450	"	–			q-c	10	"	5		
455	"	–			q-c	15	"	5		
460	"	Fe ox tr			q-c	50	gngy/whi	24		last 2' mostly q-c vein
465	"	" " 2%			q-c	50	"	23		
470		" " tr			q-c	20	"	13		
475	vein/mp	–			q-c	75	"	27		
480	"	–			q-c	80	whi/gy	14		
485	"	–			q-c	80	ngy/whi/gy	12		
490	"	–			q-c	95	" " "	26		
495	"	–			q-c	65	" " "	24		vuggy qtz
500	"	–			q-c	80	" " "	12		5:12 pm
505	"	–			q-c	45	gn-gy/whi	6		5:30 quit for day, vuggy qtz
510	"	–			q-c	20	" "	11		7:46 (water temp. 80°, 1st lift this a.m.
515	"	–			q-c	50	" "	27		vuggy qtz
520	"	–			q-c	50	" "	24		
525	"	–			q-c	20	" "	21		
530	"	–			q-c	15	" "	20		
535	MP	–			q-c	<5	gn-gy	2		
540	"	–			q-c	tr		1		
545	"	–			q-c	tr		2		
550	"	–			q-c	tr		5		
555	"	–			q-c	tr		8		
T.D. 560	"	–			q-c	tr		13		T.D. 560' 9:50 a.m.
65										
70										
75										
80										
85										
90										
95										
00										

MC-11 is 126' N 11°E from MC-1

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER Elsing

DATE:
COLLARED 12-13-91 3:48 p.m.
COMPLETED 12-14-91
NORTHING 14192 040
EASTING 292 163
ELEVATION 2124

HOLE No. MC-11
BEARING N11°E
INCLINATION -65°
TOTAL DEPTH 300'
LOGGED BY R. JEANNE E. Hanley
Pg 1 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	mp	Fe ox 100%			q-c	10	or/wht/gy	20		
10	"	" " 100%	—		—		or/gy	3		4:32
15	"	" " 100%	—		—		"	9		
20	"	" " 100%	—		—		"	3		
25	"	" " 100%	—		—		"	1		
30	"	" " 100%	—		q-c	tr	"	—		
35	"	" " 100%	—		q-c	tr	"	3		
40	"	" " 100%	—		q-c	tr	"	29		
45	"	" " 100%	—		q-c	20%	"	9		
50	"	" " 50%	—		—		lt gy/or	6		
55	"	" " 65%	—		q-c	2%	" "	7		
60	"	" " 80%	—		q-c	20%	or/gy/wht	11		
65	"	" " 90%	—		q-c	15	" " "	9		
70	"	" " 50%	—		q-c	40	gy/wht/or	12		q-c vein is "BFE"
75	"	" " 50%	—		q-c	15	" " "	16		
80	"	" " 80%	—		q-c	20	" " "	10		
85	"	" " 60%			q-c	tr	gy-gy/or	3		
90	"	" " 60%	—		—		~~gy-gy/or~~	2		
95	"	" " 60%			—		" "	6		
100	"	" " 60%	—		q-c	10	" "	22		5:25 (quit for the day.)
105	"	" " 75%						5		
110	"	" " 75%						2		
115	"	" " 75%				tr		32		
120	"	" " 75%						1		
125	"	" " 75%						—		
130	"	" " 50%						5		
135	"	" " 20%						10		
140	"	" " 10%						5		
145	"	" " 10%						6		
150	"	" " 10%						5		
155	"	" " 30%						5		
160	"	" " 20%						22		
165	"	" " 30%						7		
170	"	" " 30%						12		
175	VEIN	" " 10%			q-c	80		52		
180	VEIN	" " 5%			q-c	100		36		wet sample, hole making water
185	VEIN	" " 5%			q-c	100		34		
190	VEIN	" " 5%			q-c	100		26		
195	VEIN	" " 5%			q-c	100		48		
200	VEIN	" " 5%			q-c	85		22		

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12-13-91
COMPLETED 12-14-91 11:55 a.m.
NORTHING 1492040
EASTING 292163
ELEVATION 2124

HOLE No. MC-11
BEARING N 12 E
INCLINATION ~ 65°
TOTAL DEPTH 300'
LOGGED BY ~~R. BRANDE~~ E. Henley
Pg 2 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	VEIN/mp	Fe ox 5			q-c	70%	wht/gn-gy	15		start drilling last 0.2oz'
210	VEIN	" " 2			q-c	95	wht	66		
215	VEIN	" " tr			q-c	100	"	60		
220	VEIN/mp	" " tr	py	tr	q-c	50	wht/gn-gy	41		
225	mp	—			q-c	tr	gn-gy	3		
230	mp	Fe ox 20%			q-c	5	"	25		
235	mp	Fe ox 15%			q-c	15	"/wht/gn	12		
240	mp/VEINS	Fe ox 15%			q-c	20	"/"/"	21		
245	mp/VEINS	Fe ox 15%			q-c	10	"/"/"	4		
250	mp	—			q-c	5	gn-gy	3		
255	"	Fe ox tr			q-c	tr	"	7		
260	"	Fe ox tr			q-c	tr	"	1		
265	"	" " tr			q-c	tr	"	3		
270	"	" " tr	py	tr	q-c	8	"	5		
275	"	" " tr			q-c	tr	"	3		
280	"	—			—		"	4		
285	"	Fe ox tr			q-c	10	"	1		
290	"	—			q-c	15	"	2		
295	"	—			q-c	tr	"	3		
300	"	—			q-c	tr	"	9		11:53 a.m. TD
305										
310										
315										
320										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

MC-12 is 127' N120E from MC-6.
q/c of vein is 165' upslope from MC

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12-14-91 2:12 pm
COMPLETED 12-15-91 11:37 a.m.
NORTHING 1491970
EASTING 292354
ELEVATION 2122

HOLE No. MC-12
BEARING N120E
INCLINATION -65°
TOTAL DEPTH 300'
LOGGED BY ~~R. JEANNE~~ E. Henley
Pg 1 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	WP	Fe ox 100%	-		q-c	tr	or	41		
10	"	" " 100%	-		q-c	5	or	13		
15	"	" " 100%	-		q-c	2	or	9		
20	"	" " 100%	-		q-c	tr	or	6		
25	"	" " 100%	-		q-c	tr	or	12		
30	"	" " 80%	-		q-c	40	or/wh	13		
35	"	" " 100%	-		-		or	13		
40	"	" " 100%	-		q-c	tr	or	3		
45	"	" " 100%	-		q-c	tr	or	9		
50	"	" " 60%	-		-		or/gn-gy	1		
55	"	" " 30%	-		-		gn-gy/or	2		
60	"	" " 40%	-		-		" "	2		
65	"	" " 10%			-		gn-gy	2		
70	"	" " 15%			-		"	12		
75	"	" " 5%			-		"	39		
80	"	" " tr			-		"	3		
85	"	" " 5%			-		"	2		
90	"	" " tr			-		"	7		
95	"	" " 60%			-		or/gn-gy	2		
100	"	" " 99%			-		or	2		4:01
105	"	" " 95%			q-c	5	"	9		tr vuggy q-c
110	"	" " 95%			q-c	tr	"	4/6		" " "
115	"	" " 100%			q-c	5	"	5		
120	"	" " 85%			q-c	5	"	5		
125	"	" " 5%			-		gn-gy	1		
130	"	—			-		"	2		
135	"	Fe ox 2%			-		"	2		(stop for the day)
140	"	" " tr			-		"	2		(at 140', 5:00 p.m.)
145	"	" " tr					"	2		
150	"	" " tr			q-c	tr	"	—		
155	"	" " 100%			q-c	tr	or	8		
160	"	" " 100%			-		"	15		
165	"	" " 100%			-		"	10		
170	"	" " 98%			q-c	tr	"	12		
175		" " 95%			-		"/ltgy	—		
180	"	Fe ox 95%			-		" "	—		
185	"	" " 95%			-		" "	3		
190	"	" " 80%			-		" "	—		
195	"	" " 50%			q-c	5	" "	—		vy. dampo sample
200	"	" " tr			q-c	tr	ltgy	—		" " "

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12-14-91
COMPLETED 12-15-91
NORTHING 1 491 970
EASTING 292 354
ELEVATION 2122

HOLE No. MC-12
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 300'
LOGGED BY ~~R. JEANNE~~ E. Hanley
Pg 2 of 2

start drilling wet

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	mP	Fe ox 80%			q-c	5	or / gy	17		
210	"	" " 50%			q-c	5	" "	9		
215	"	" " 50%			q-c	5	" "	—		
220	"	" " 80%			q-c	5	" "	20		
225	VEIN	" " 5%			q-c	95	whi	58		
230	VEIN	" " 5%			q-c	95	whi	57		
235	VEIN	" " 5%			q-c	95	"	58		
240	VEIN/mP	" " tr			q-c	60	whi/gy	57		
245	VEIN	" " tr			q-c	95	whi/gy	6		
250	VEIN	" " 5%			q-c	85	"	71		
255	VEIN	" " tr			q-c	100	"	199		
260	VEIN	" " 15%			q-c	95	"	66		
265	VEIN/mP	" " 25%			q-c	30	gray/whi/or	14		
270	mP	" " tr			q-c	3	gy-gy/	16		
275	"	" " tr			q-c	tr	"	41		
280	"	" " tr			q-c	tr	"	12		
285	"	" " tr			q-c	tr	"	2		
290	"	—			q-c	tr	"	2		
295	"				q-c	tr	"	2		
300	"	Fe ox tr			q-c	tr	"	25		HOLE TD @300'
05										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MC-13 is 123' N12°E from MC-4; ... toward the East 5' from that line.
964 vein is 188' upslope N12°E from ... dipping -70°.

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS	DATE:	HOLE No. MC-13
STATE ARIZONA	COLLARED 12-15-91 2:03 pm	BEARING N 12 E
COUNTY MOHAVE	COMPLETED 12/16/91 12:00 PM	INCLINATION -65°
SEC. 19 T. 20N R. 20W G&SRB&M	NORTHING 1491 873	TOTAL DEPTH 280'
QUAD. OATMAN, AZ	EASTING 292 774	LOGGED BY ~~R. JEANNE~~ E Hanley
DRILLER ELSING DRILLING	ELEVATION 2099	Pg 1 of 2

FEET	ROCK TYPE	% OXIDATION AND ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	Tmp	Fe ox 100%	–		q-c	tr	or-gy	8		
10	"	" 100%	–		–		or-gy	2		2:20
15	"	" 100%	–		–		or-gy	3		
20	"	" 100%	–		–		or-gy	2		
25	"	" 100%	–		–		or	7		
30	"	" 100%			–		"	2		
35	"	100%			–		"	–		
40	"	CHLORITIC 50%	Py	1	–		or/gn-gy	2		SP UNITS
45	"	" 2%	"	4	–		gn-gy	10		"
50	"	" 3%	"	0.5	–		"	10		2:55 "
55	"	" tr	"	Tr	–		"	5		
60	"	" tr		Tr	–		"	5		
65	"	" 5		Tr	–		"	4		SP UNITS
70	"	" tr		Tr	–		"	4		"
75	"	" tr		Tr	–		"	3		"
80	"	" tr		Tr	–		"	7		
85	"	" 10%		0.5	–		"	13		
90	"	" 20%		0.5	q-c	tr	"	12		
95	"	" 40%		Tr	q-c	15	gn-gy/wht	10		SP UNITS
100	"	" tr		Tr	–		gn-gy	35		
105	"	" tr			–		"	22		
110	"	" tr			q-c	tr	"	4		
115	"	" 5%			–			6		
120	"	" 10%			–			8		
125	"	" 30%			–			10		
130	"	" 80%			q-c	5	or-gy	12		
135		" 5%			–			21		
140	"	" tr			q-c	tr	gn-gy/pink	10		
145	"	" tr			q-c	tr	"	F		
150	"	" 40%			q-c	5	"/or/whi	40		sample slightly wet
155	"	" 5			q-c	10	gn-gy/gy	24		(4:35 stop for day @ 160')
160	"	" 30%	Py	Tr	q-c	tr	" "	4		← Hole full of H₂O - went wet
165	"	" 30%	"	Tr	Q-c-?	60		18		
170	"	" 30	"	Tr	Q-c-?	40		18		
175	"	" 30	"	"	Q-c-?	80		15		
180	"	"	"	"	"	Tr		10		Pinkish K-spar
185	"	"	"	"				8		|
190	"	"	"	"				4		|
195	"	"	"	"	"	Tr		4		|
200	"	" Tr	"	"	"	Tr		13		↓

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12/15/91
COMPLETED 12/16/91
NORTHING 1491 873
EASTING 292 774
ELEVATION 2099

HOLE No. MC-13
BEARING N12E
INCLINATION -45°
TOTAL DEPTH 280'
LOGGED BY R. JEANNE
Pg 2 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	TMP	CHLORITIC	Py	Tr	Q-C-J	15		27		
210	VN	FeOx 80%		"		95		63		
215	"	" "				95		57		
220	"	" "				90		7		
225	TMP	CHLORITIC " 65	Py	Tr		10		48		ABUNDANT WATER S.P. VALVES
230		" " 15	"	"		60		9		FRAC ZONE - CROSS CUT PLUGGED
235		" " 10	"	"		5		5		POOR RECOVERY ½ BAG ASSAY ONLY
240								—		NO RECOVERY
245			Tr	Tr				3		PINKISH K-SPAR S.P. VALVES
250			"	"				4		
255			"	"				3		S.P. VALVES
260			"	"				2		
265			"	"				2		
270			"	"				3		
275	V		"	0.5				5		
280	T.D.	V	"	Tr				5		V MINOR GRAV SLIDE
285										
290										
295										
300										
305										
310										
315										
320										
325										
330										
335										
340										
345										
350										
355										
360										
365										
70										
75										
80										
85										
90										
95										
00										

7' EAST

-14 IS 137' UPSLOPE FROM [illegible]
VEIN IS 207-245' UPSLOPE (OFFSET [illegible] 20' E OF DRIVE OF [illegible]) FAULT: N10E75W VE[illegible] SLICKS
EAST OF FLT VN DIPS 68° & 66-70° WEST OF FLT.

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12/16/91 3:30 pm
COMPLETED 12/17/91 11:20 AM
NORTHING 1 491 950
EASTING 292 590
ELEVATION 2120

HOLE No. MC-14
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 300'
LOGGED BY R. JEANNE
Pg 1 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm Au	ppm opt Ag	COMMENTS
05	TMD	FeOx 100%					GRN-BRN	8		
10		" "						9		
15		CHLORITIC " 95%						7		
20		" "						2		
25		" "						5		
30		" 95%						2		
35		" "						8		
40		" 35%						3		
45		" "						—		
50		" "						6		
55		" 100%			Q-C-P	40		52		
60		" 80%	Py	Tr	"	5		35		
65		" "	"	"				46		
70		" 20%	"	"			BRN-GRN	10		SP VNLTS
75		—	"	"			GRN	30		
80		" 10%	"	0.5	Q-C-P	Tr		114		
85		" 15%	"	"	"	20		80		
90			"	Tr	"	40		56		
95		" 5%	"	"	"	10		6		
100		" 5%	"	"				8		
105							GRN	6		
110			"	Tr				8		
115			"	"				4		
120			"	"				12		
125			"	"				15		MINOR [illegible] IN SP VNLT
130			"	"	Q-C-P	5		32		
135			"	"	"	15		18		
140			"	"	"	5		67		
145			"	"	"	Tr		23		
150		FeOx Tr	"	"	"	10		21		
155			"	"				20		
160			"	"	Q-CP	5		28		
165			"	"				26		
170		FeOx Tr	"	"	"	5		31		
175		"	"	"	"	15		218		
180		"	"	"	"	15		77		
185			"	"				111		SP VNLTS
190			"	"				4		
195			"	"				38		
200			"	"	"	5		5		

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12/16/91
COMPLETED 12/17/91
NORTHING 1491950
EASTING 292590
ELEVATION 2120

HOLE No. MC-14
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 300'
LOGGED BY R. JEANNE
Pg 2 of 2

	FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
✓	205	Tmp	CHLORITIC FOG 20%			Q-C-I	60	WHITE MOTTLED GRN-GRY	36		SAMPLE DAMP
✓	210		" "	Py	TR		70		77		" "
✓	215		" "	"	"		40		48		" "
✓	220		" 90%	"	"		15		70		" "
✓	225		" "	"	"		80		86		WENT WET
✓	230		" 95%	"	"		75		64		
✓	235		" 10	"	"		70	↓	63		
✓	240		" TR	"	0.5		15	WHITE MOTTLED GRN	51		
✓	245			"	TR		15	"	15		
✓	250			"	"		10	WHITE MOTTLED PURPLISH-GRN	15		PINK K-SPAR
✓	255			"	"		5		34		
✓	260			"	"		5		12		
✓	265			"	"		5		37		
✓	270			"	"		5		6		
	275			"	"		TR	PURPLISH-GRN	11		
	280			"	"		TR		3		
	285			"	"		TR		13		
	290			"	"				9		
	295			"	"				5		
	300	T.D.	↓	"	"	↓	5	↓	13		↓
	305										
	310										
	315										
	320										
	325										
	330										
	335										
	340										
	345										
	350										
	355										
	360										
	365										
	370										
	375										
	380										
	385										
	390										
	395										
	400										

MC-13 IS 120 NNE of MC-5

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12/17/91 2:40
COMPLETED 12/18/91 10:15
NORTHING 1491 902
EASTING 292 677
ELEVATION 2114

HOLE No. MC-15
BEARING N 12 E
INCLINATION -55°
TOTAL DEPTH 300'
LOGGED BY R. JEANNE
Pg 1 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	Tmp	Fe Ox 100%					BRN	5		
10								—		
15								—		
20								—		
25								2		
30		Fe Ox 80%						—		
35		"						—		
40		" 100%						—		
45		CHLORITE + 40%	Py	0.5			BRN-GRN	5		
50		" 20%	"	1			"	4		
55		Tr	"	Tr	Q-C-P	Tr	GRN	22		
60		"	"	0.5	"	"		5		
65		"	"	Tr				10		
70		Tr	"	"				1		
75		"	"	"				—		SP VNLTS
80		"	"	"				4		
85		Tr	"	"	Q-C-P	Tr		8		" "
90		"	"	"				3		
95		"	"	"				6		
100		"	"	"				4		" "
105		"	"	0.5				12		
110		"	"	0.5				17		
115		"	"	Tr				2		
120		Tr	"	0.5	Q-C-P	5		30		
125		5%	"	0.5	"	10		24		SP VNLTS
130		"	"	0.5				15		"
135		"	"	Tr				5		"
140		"	"	"				5		"
145		"	"	"				4		"
150		"	"	"	Q-C-P	Tr		1		"
155		"	"	"	"	"		2		
160		"	"	"	"	"		1		"
165		"	"	"				2		
170		"	"	"				4		
175		"	"	"				1		
180		"	"	"				5		"
185		"	"	"				4		"
190		"	"	"				3		
195		"	"	"				2		PINKISH K-SPAR
200	↓	↓	"	"	Q-C-P	10	↓	61		HIT WATER, QUIT FOR DAY

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12/17/91
COMPLETED 12/18/91
NORTHING 1 491 902
EASTING 292 677
ELEVATION 2114

HOLE No. MC-15
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 300'
LOGGED BY R. JEANNE
Pg 2 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	TMP	CHLORITIC FeOx 5%	Py	Tr	Q-C-P	5		10		BEGAN 7:31 S-P. VNLTS
210			"	"		Tr		43		
215			"	"		10		38		
220			"	0.5		5		63		
225		FeOx 5	"	Tr		95		70		
230		" 10	"	"		80		85		
235		" 5	"	"		80		105		
240	VEIN	" Tr	"	"		100		88		
245	TMP	" 10	"	"		80		32		
250		" Tr	"	"		30		9		
255			"	"		Tr		8		
260			"	"		Tr		2		
265			"	"		Tr		2		PINKISH K-SPAR
270			"	"		Tr		—		
275								3		
280								7		
285								2		
290								2		
295			Py	Tr				12		
300	T.D.							4		
305										
310										
315										
320										
325										
330										
335										
340										
345										
350										
355										
360										
365										
370										
375										
380										
385										
390										
395										
400										

115' NNE of MC-8

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 12/18/91 12:30 PM
COMPLETED 12/19/91 1:00
NORTHING 1491822
EASTING 292937
ELEVATION 2089

HOLE No. MC-16
BEARING N12E
INCLINATION -65
TOTAL DEPTH 360'
LOGGED BY R. JEANNE
Pg 1 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	TmP	FeOx 100%					GRN-BRN	3		
10		"					"	5		PERVASIVE & FRAC COATING FeOx
15		"					"	6		
20		"					"	—		
25		"					"	—		
30		"					"	—		
35		"					"	2		
40		CHLORITE " 50%	Py	Tr			GRN-BRN/GRN	—		
45		" 20%	"	0.5			"	—		
50		" 20%	"	Tr			"	—		SP VNLTS
55		" Tr	"	"			GRN	—		
60		" Tr	"	0.5				—		
65			"	Tr				21		
70			"	"				7		
75			"	"				1		SP VNLTS
80			"	"				6		
85			"	"				2		
90			"	"				6		
95		FeOx Tr	"	"				9		SP VNLTS
100			"	0.5				10		
105		"	"	Tr				8		
110			"	"				5		
115			"	"				—		
120			"	"				—		
125			"	"				4		
130			"	"				13		
135			"	"				—		
140		" Tr	"	"				2		
145		" Tr	"	"				3		
150		" 60%	"	"				6		
155		Tr	"	"				3		
160			"	"				5		
165			"	"				4		
170			"	"				6		
175			"	"				13		
180			"	"				9		
185			"	"				7		
190			"	"				7		
195			"	"				8		
200	↓	↓	"	"			↓	3		

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING & DRILLING

DATE:
COLLARED 12/18/91
COMPLETED 12/19/91
NORTHING 1491822
EASTING 292937
ELEVATION 2089

HOLE No. MC-16
BEARING N12E
INCLINATION -65°
TOTAL DEPTH 360
LOGGED BY R. JEANNE
Pg 1 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	TMP	CHLORITIC	Py	Tr			GRN	3		
210			"	.05				2		MINOR DISSEM. HEM.
215		Fe Ox 5%	"	Tr				10		
220		" "	"	"				12		
225		"	"	"				8		
230		10%	"	"	Q-C-P	Tr		9		SP VULTS
235		5	"	"				4		
240		Tr	"	"				1		
245	TMP VEIN	20%	"	"	Q-C-P	5	MOTTLED GRN-WHITE	2		ENCOUNTERED WATER
250		80%			"	40		11		ABUNDANT WATER +78°F
255		95%			"	40		24		"
260		CHLORITE 90%			"	40		14		"
265		95%			"	40		27		V. HEAVY HEMATITE STAIN
270		95%			"	95	WHITE	41		" " QUIT FOR DAY
275		70%			"	60	" "	23		BEGAN DAY 7:20 AM. SAMPLE SHORT POOR RECOVERY SP VULTS
280	TMP VEIN	CHLORITE 60%	Py	Tr	"	20	GRN-BRN WHITE	42		8:15 HAIL & LIGHTNING STORM, QUIT TILL PASSED. 9:37 BEGAN AGAIN
285	"	" 40%	"	"	"	20	"	22		
290	VEIN	80%			"	95	WHITE BRN	32		
295	"	"			"	95	WHITE	72		
300	"	"			"	95	GRAYISH/WHITE	92		
305	TMP VEIN	CHLORITIC 5%			"	60	GRN/WHITE	69		PINKISH K-SPAR
310	TMP		Py	Tr			GRN	1		
315		Fe Ox Tr	"	"				—		
320			"	"				—		
325			"	"				—		
330		Fe Ox Tr						2		
335								3		
340								2		
345								2		
350			Py	Tr				1		
355			Py	Tr				10		
360	T.D.		Py	Tr				6		SP UNITS
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER EL SING DRILLING

DATE:
COLLARED 12/20/91 10:00 AM
COMPLETED 12/20/91
NORTHING 1 492 118
EASTING 291 857
ELEVATION 2145

HOLE No. MC-17
BEARING N 12 E
INCLINATION -65°
TOTAL DEPTH 180'
LOGGED BY R. JEANNE
Pg 1 of 1

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	TMP	CHLORITE FeO 90%					GRN-BRN	141		
10		" 80						9		
15		" "						12		
20		" "						6		
25		" "						8		
30		" "						8		
35		" "						5		SP VNLTS
40		" "						3		
45		" "						5		
50		" "						4		
55		" "						16		
60		" "						11		
65		" "						2		
70		" "						1		
75		" "						2		SP VNLTS
80		" "						22		
85		" 90	1%	TR				7		" "
90		" "						54		
95	TMP / VEIN	" "	"	"	Q-C-P	40	MOTTLED WHITE & GRN-BRN	65		
100	"	" "	"	"	"	80	"	419		
105	"	" "			"	20	"	78		
110	TMP	" "			"	TR	"	8		
115		" 30			"	10	"	7		
120		" 75	2%	TR	"	15	"	8		SP VNLTS
125		" 60	"	"	"	10	"	12		
130		" 80			"	30	"	19		
135		" 80			"	15	"	15		
140		" 90			"	10	"	10		MINOR HEM
145		" 80			"	5	"	23		" "
150		" 75			"	5	"	10		
155		" 90			"	10	"	62		
160		" 30	0%	TR	"	TR	BRN-GRN	18		
165		" 40			"	"	GRY-GRN	8		
170		" "			"	"	"	11		SP VNLTS
175		" "			"	5	"	24		
180		"			"	10	"	50		TWISTED OFF COUPLING JUST BELOW DRIVE HEAD - QUIT FOR HOLIDAYS
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-15-92 4:45 PM
COMPLETED 1-16-92 4:30 PM
NORTHING 1492170
EASTING 290242
ELEVATION 2190

HOLE No. MC-18
BEARING N3E
INCLINATION -45°
TOTAL DEPTH 317.5
LOGGED BY R. JEANNE
Pg 1 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	TMP	FeOx 10%								BEGINNING WITH 6" BIT
10										S-P VNLTS
15										MINOR CLAY
20										BLUE GRAY 6:45 SP VNLTS
25										BEGIN 7:20 MINOR HEM
30										SP VNLTS
35										" "
40										" "
45										" " GRAY SILIC
50										" " SILIC TMP OR GRNGE SUGARY TEXT LT CLAY
55										" "
60										
65		CHLORITIC; FeOx 75%								SP VNLTS MINOR HEM
70		" 95%								"
75		"								"
80		"			QTZ	Tr				"
85		"								"
90		CHLORITE 60%								" MINOR CLAY
95		10%								"
100		20%					GRN BRN			"
105		20%								MINOR HEM
110		"								"
115		"			QTZ Py	Tr				"
120		" Tr								SP VNLTS
125		40%			QTZ Py	Tr				
130		20%	Py	Tr						
135		"			QTZ Py	Tr				SP VNLTS
140		10%								"
145		BIOTITE & MAFICS Tr	Py	1			BLUE GRY			"
150		CHLORETIZED, GRNDMASS Tr	"	3						"
155		SILIC w/DISSEM SULFIDES & SILIC.	"	3						"
160		HEM "	"	3	QTZ	Tr				"
165		"	"	5			PRPL GRY			DISSEM. HEM & Py IN QTZ VNLTS
170			"	3			GRN GRY			" "
175			"	3			"			
180			"	2			"			
185			"	3			"			
190			"	0.5			"			
195			"	0.5			"			
200			"	0.5			"			

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-15-92
COMPLETED 1-16-92 4:30pm
NORTHING 1492170
EASTING 290242
ELEVATION 2190

HOLE No. MC-18
BEARING N3E
INCLINATION -45°
TOTAL DEPTH 317.5'
LOGGED BY R. JEANNE
Pg 2 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	Tmp	CHLORITIC FeOx 10%	Py	Tr			GRN GRY			SP VNLTS
210		DIORITE TO "	"	1	Q-C-P	Tr				" "
215		CL GROUND MASS WEAK	"	1						" " W/DISSEM HEM
220		"	"	1						" "
225		"	"	1	Q-C-P	5				" "
230		"	"	Tr						" "
235		FeOx 5%	"	Tr						" "
240		" 1%	"	Tr						" " W/DISSEM HEM
245		" 5%	"	1	Q-C-P	Tr				" "
250			"	2	"	10	LT GRN GRY			" " " "
255			"	1	"	5	"			" "
260		Ox 10%	"	Tr	"	5	"			" "
265		" 90%					"			" "
270		" 70%	"	Tr	Q-C-P	Tr	"			" " BROKE FOOT VALVE TRIPPED OUT & IN 12:30-2:40
275		" 5%	"	1	"	5	V. LT GRY			" " W/ DISSEM HEM ENCOUNTERED WATER DRILLING WET
280			"	3	"	Tr				" " "
285			"	5	"	Tr				" " "
290			"	3			V LT. GRY GRN			" " "
295			"	3	"	Tr	"			" " "
300			"	Tr	"	"	"			" " "
305			"	1			MED-DK GRN			" "
310							"			" "
315							"			BIT SHATTERED IN BOTTOM of
320		TD ≈ 317.5					"			HOLE, HAD TO ABANDON HOLE
325										
330										
335										
340										
345										
350										
355										
360										
365										
370										
375										
380										
385										
390										
395										
400										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-17-92 10:15
COMPLETED 1-19-92 12:00
NORTHING 1492160
EASTING 290242
ELEVATION 2190

HOLE No. MC-18A
BEARING N2E
INCLINATION -46½
TOTAL DEPTH 760'
LOGGED BY R. JEANNE

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	Tmp?				QC-?	25	WHITE-BRN			PROBABLE Tmp
10	"				"	5	BRN			" "
15										SETTING 15' CASING-NO SAMPLE
20										" " " "
25	Tmp?	OX 90-95%								LIM MINOR HEM
30										" " "
35										
40										SP VNLTS
45										
50		GNDMASS & MATRIX CHLORITIZED								S.P. VNLTS
55										
60										
65										
70										
75					Q-C-?	Tr				
80					"	"				
85		OX 40%					BRN-OLIVE GRN			SP VNLTS
90		" 10					"			
95		" 5					"			
100		" 5					"			
105		FELDSPARS CLOUDY " "					"			SP VNLTS
110		" 20			Q-C-?	Tr	"			"
115		" 15			"	"	"			
120		" 15			"	"	"			
125		" 15					"			
130		" 10					"			
135		" 5					"			
140		" 4					"			
145		" 30					"			SP VNLTS
150		" 75					BLUE GRY			
155			Py	Tr			"			SP VNLTS
160					Q-C-?	Tr	"			"
165		STRONG CHLOR			"	Tr	GRN			" W/DISSEM HEM
170					"	5	MOT GRN			"
175							"			" "
180							"			"
185							WHITE MOTTLED DK GRN			"
190		STRONG CHLOR			Q-C-?	Tr	DK GRN			"
195		" "					"			"
200		" "					"			"

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-17-92 10:15
COMPLETED 1-19-92 12:00
NORTHING 1492 160
EASTING 390 242
ELEVATION 2190

HOLE No. MC-18A
BEARING N2E
INCLINATION -46½
TOTAL DEPTH 760'
LOGGED BY R. JEANNE
Pg 2 of 4

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	TMP	CHLORITIC					DK GRN			
210		" WEAKENING Ox Tr	Py	Tr			"			
215			"	0.5			"			
220			"	Tr			"			
225		Ox Tr	"	Tr	Q-C-P	Tr	"			
230		" "	"	"	"	5	"			
235		" "	"	"	"	Tr	GRN-GRY			SP VNLTS
240		" "	"	"	"	"	"			"
245		" 40%	"	"	"	80	LT BRN GRY			"
250		MAFICS CHLORITIZED MATRIX WEAKLY " Tr	"	0.5	"	Tr	GRN GRY			SP VNLTS W/HEM
255		" "	"	1			"			"
260		" 10	"	Tr	Q-C-P	30	BRN GRY			
265			"	"			GRN GRY			SP VNLTS W/HEM
270		Ox 30%	"	0.5			BRN/GRN			SP VNLTS
275		" 20%	"	Tr	Q-C-P	Tr	" "			"
280		" 10%	"	"	"	"	" "			" MINOR HEM
285		" Tr	"	"	"	5	LT GRN GRY			"
290			"	"	"	Tr	"			"
295			"	0.5			"			"
300			"	Tr			"			"
305			"	"			"			
310			"	"			MED GRN GRY			SP VNLTS
315			"	"						"
320		Ox Tr	"	"	Q-C-P	Tr				" 3:10 PM - BOTTOM OF SHERMAN DOWN IN MC-18
325			"	"						"
330			"	"						
335			"	"						"
340		Ox Tr	"	"						" MINOR HEM
345			"	"						"
350			"	"						" MINOR HEM
355		Ox Tr	"	"	Q-C-P	1	MOTTLED WHITE GRN-GRY			"
360			"	"			MED GRN GY			"
365			"	"						"
370			"	"						"
375		Ox Tr	"	"						
380			"	0.5						
385			"	Tr						
390		Ox Tr	"	"						MINOR HEM
395			"	"						
400		Ox 5%	"	"						GETTING DAMP @ 400 AT 4:50

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-17-92 10:15
COMPLETED 1-19-92 12:00
NORTHING 1492160
EASTING 290242
ELEVATION 2190

HOLE No. MC-18A
BEARING N2E
INCLINATION -46½
TOTAL DEPTH 760'
LOGGED BY R. JEANNE
Pg 3 of 4

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	TMI?	MAFICS CHLORITIZED MATRIX WEAKLY SO	Py	Tr			MED GRN			SP VAULTS WATER IN HOLE, BEGAN DRILLING WET
410					Q-C-?	Tr	"			"
415							DK GRN			"
420										
425					Q-C-?	Tr				"
430										"
435										"
440										"
445										
450										"
455										"
460							MED GRN			
465										
470										"
475										"
480							DK GRN			" PINKISH K-SPAR
485										
490										
495										
500										
505					Q-C-?	Tr	GRY GRN			
510										
515				¼						
520				5						
525				Tr	Q-C-?	Tr				
530										
535										SP VAULTS
540										
545										
550										
555										
560										
565										
570										SP VAULTS
575										"
580										
585										"
590										
595										
600										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-17-92 10:15
COMPLETED 1-19-92 12:00
NORTHING 1 492 180
EASTING 290 242
ELEVATION 2190

HOLE No. MC-18A
BEARING N 2E
INCLINATION -46½
TOTAL DEPTH 760'
LOGGED BY R. JEANNE
Pg 4 of 4

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
605	TMP	MAFICS CHLORITIZED, MATRIX LOCALLY	Py	05			DK GRY GRN			
610		AND WEAKLY SO		TR						
615										
620										
625										
630										
635										
640										QUIT FOR DAY-4:30
645										
650		MAFICS CHLORITIZED					MED GRY GRN			
655		"		0.5			"			
660		AS 605-645		TR			"			
665							DK GRY GRN			
670										SP VEINLETS
675										"
680										CALCULATED FOOTWALL AT 680'
685		MAFICS CHLORITIZED					LT GRY GRN			
690		"					"			
695		AS 605-645 WATER PINK					MIXED LT/DK GRY GRN			INCREASE IN ABUNDANCE OF PINK FELDSPARS
700		"								
705		"								
710		"								
715		"								
720		"								
725		"								
730		"								S.P. VEINLETS
735		MAFICS CHLORITIZED								
740		AS 605-645								
745										
750										
755										
760	T.D									
765										HOLE MADE <5 GPM WATER SINCE
770										GOING WET
775										
780										
785										
790										
795										
800										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-20-92 1530
COMPLETED 1-22-92 2:15
NORTHING 1492170
EASTING 290255
ELEVATION 2190

HOLE No. MC-19
BEARING N37E
INCLINATION -37°
TOTAL DEPTH 700
LOGGED BY R. JEANNE
Pg 1 of 4

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	FILL	Ox 100%					MED BRN			
10	"									
15	"									
20	TMP									
25										SP, VNLTS
30										
35										
40										
45		Ox 90%	Py	Tr	Q-CP	Tr				SP. VNLTS
50		Ox 80%			"	"	MED GRN-BRN			
55		" 60%			"	"	"			
60		PERVASIVE CHLORITIC " 5 %					DK GRN			
65		" 50%					MED GRN-GRN			
70		" "					"			
75		" 30%					"			SP VNLTS
80					Q-C-P	Tr	MED BRN			"
85		MAFICS CHLOR, GRNDMASS WEAKLY SO	Py	TR			MED GRN			CLAY
90			Py	TR			"			
95		"					"			
100		"			Q-CP	Tr	"			
105		" Ox Tr					MED PURPLISH GRN			PINK K-SPAR
110		" " 30%					MED GRN-BRN			
115		" " 40					"			SP VNLTS
120		" " Tr					MED PURPLISH GRN			
125		" " "					"			
130		" " "					"			
135		" " "					"			
140		"					"			SP VNLTS
145		" " 5%			Q-C-P	Tr	LT GRY GRN			
150		" " Tr			Q-CP	"	LT GRY			SP VNLTS
155		" " 40%					LT GRY BRN			
160		" " 10%					"			TRACE HEM
165		SILIC, SER/CHLOR	Py	1			GRNSH GRY			SP VNLTS
170			"	Tr			"			
175			"	"	Q-C-P	Tr	"			
180			"	"	Q-C-P	Tr	"			
185		Ox 5%	"	"	"	"	GRYSH GRN			
190			"	"			"			
195			"	1	Q-C-P	Tr	GRNSH GRY			
200			"	Tr			"			

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-20-92 1:30
COMPLETED 1-22-92 2:15
NORTHING 1492170
EASTING 290255
ELEVATION 2190

HOLE No. MC-19
BEARING N37E
INCLINATION -37°
TOTAL DEPTH 700
LOGGED BY R. JEANNE
Pg 2 of 4

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	TMP	SILICIFIED/CHLOR	Py	Tr			GRNSH GRY			SP VNLTS
210		OX Tr			Q-C-P	5				MINOR DISSEM HEM
215			"	"						
220			"	"						
225										SP VNLTS
230			"	"	Q-C-P	Tr				MINOR HEM VNLTS
235			"	"	"	"	MED GRN			
240			"	"	"	5				QUIT FOR DAY
245			"	"	"	"				SP VNLTS
250			"	"	"	"				"
255					"	10				
260			"	"	"	Tr	GRNSH GRY			"
265			"	"	"	"	"			"
270			"	"	"	30	" /LIMNITE			"
275			"	"	"	"	"			"
280			"	"	"	10	LT GRNSH GRY			"
285		OX Tr	"	"			"			"
290			"	"	"	Tr	"			"
295			"	"	"	"	"			"
300			"	"	"	5	"			"
305			"	"			"			"
310			"	"	Q-C-P	Tr	"			"
315			"	"	"	"	"			"
320			"	"	"	"	"			"
325		CHLOR STRONGER					MED GRNSH GRY			
330			"	"	"	"	"			"
335			"	"	"	"	"			"
340			"	"			"			"
345			"	"	"	"	"			"
350			"	"	"	"	LT GRNSH GRY			"
355			"	"	"	"	LT GRNSH BRN			" BIT BUTTONS IN SAMPLE
360			"	"			"			" TRIPPED OUT TO CHANGE BIT
365			"	"			" /GRY			HIT WATER, LIGHT WET
370			"	"			LT GRNSH GRY			"
375			"	"			" /BRN			
380			"	"			" /BRN			
385			"	"			"			
390			"	"			"			SP VNLTS
395			"	"			"			
400			"	"			" /BRN			

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ECSING DRILLING

DATE:
COLLARED 1-20-92 1:30
COMPLETED 1-22-92 2:15
NORTHING 1492170
EASTING 290455
ELEVATION 2190

HOLE No. MC-19
BEARING N376
INCLINATION -37°
TOTAL DEPTH 700
LOGGED BY R. JEANNE

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	Tmp	SILICIFIED/ CHLOR Ox Tr	Py	TR			LT GRNISH GRY			SP VNLTS
410		" 2%								
415		" Tr								
420		" "								
425		" "								
430		" "								
435		" "								
440										
445										
450										
455										
460										
465		Ox Tr								
470		" "								
475										
480										
485										
490										
495										
500										
505		Ox Tr								
510		" "					YLWISH GRY			SP VNLTS
515							LT GRNISH GRY			
520										
525		INCREASED SILICA								
530										
535										
540										
545										
550		Ox 10%					LT GRNISH GRY/BRN			FOOTWALL OF VEIN ?
555		" Tr					LT GRNISH GRY			
560										
565				0.5						SP VNLTS
570		HARDER CHLOR		"						"
575				"						
580				Tr						
585				"						
590				"						
595				"			LT PNKSH-GRNSH GRY			
600				"			"			

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-20-92 1:35
COMPLETED 1-22-92 2:15
NORTHING 1492170
EASTING 290255
ELEVATION 2190

HOLE No. MC-19
BEARING N37E
INCLINATION -37°
TOTAL DEPTH 700
LOGGED BY R. JEANNE
Pg 4 of 4

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
605	TMP	MASS CHLOR	Py	TR			LT PNKSH-GRNSH GRY			
610										
615			"	"						SP VNLTS
620										
625			"	"						
630										
635										
640										
645							MED PNKSH GRN			K-SPAR PINK
650										
655			Py	TR						
660										
665							LT PNKSH GRN			
670							"			
675			"	"			MED PNKSH GRN			
680			"	"						
685										
690			"	"						
695										
700	T.D.									
05										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-23-92 12:30
COMPLETED 1-26-92 11:50
NORTHING 1492171
EASTING 290263
ELEVATION 2190

HOLE No. MC-20
BEARING N67E
INCLINATION -30°
TOTAL DEPTH 1040
LOGGED BY R. JEANNE
Pg 1 of 6

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	FILL	OX 100%					MED BRN			
10	"									
15	"									
20	TUFF									SP VNLTS
25		OX 95%								
30		"			QTZ	5				
35		LOCALLY PERVASIVE CHLOR " 90%					OLIVE GRN-BRN			
40		" "	Py	TR	QTZ	10	MED BRN			
45		" "	"	"	"	5				
50		" "	"	"	"	10				
55		" 70			"	15				SP VNLTS
60		PERVASIVE CHLOR " 10					BRNSH GRN			
65		" " 30					"			
70		MARGS CHLOR " 60	Py	TR			MED BRN			
75		" 60					"			
80		" 50			QTZ	TR	BRNSH WHT			MINOR HEM
85		" 60					BRNSH BRN			" "
90		" 60	Py	TR						
95		" 20								
100		" 10			QTZ	TR				
105		" 10								MINOR HEM
110		" 5			QTZ	TR				
115		" 10			"	10				SP VNLTS
120		" 20			"	5				SP VNLTS
125		" 15			"	TR				
130		" 80			"	"				" "
135		MIXED PERVASIVE SILICA CHLOR " 5					OLIVE BRN			
140		" 5			QTZ	TR				
145		" 5			"	5				" "
150		" 5			"	5				
155		" 10			"	TR				" "
160		" 30			"	"	MED BRN			" "
165		" 5					OLIVE BRN			
170		" 10					"			" "
175		STRONG PERVASIVE SILICIFICATION " 5	DISSEM-INATED Py	TR	Q-C-P	TR	" / MED GRY			" "
180			" "	"	"	"	MED GRY			" "
185			" "	"	"	"				" "
190			" "	"	Q-C-P	TR				" "
195			" "	"	Q-C-P	5				" "
200		OX 10	" "	"	Q-C-P	TR				" "

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER EL SING DRILLING

DATE:
COLLARED 1-23-92-12:30
COMPLETED 1-26-92 11:50
NORTHING 1492 171
EASTING 290 263
ELEVATION 2190

HOLE No. MC-20
BEARING N67E
INCLINATION -30°
TOTAL DEPTH 1040
LOGGED BY R. JEANNE
Pg 2 of 6

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
205	TMP	STRONG PERVASIVE SILIC	Py	Tr			MED GRY			S.P. UNITS
210		" OX 15%	"	"	Q-C-P	Tr	BRNSH MED GRY			"
215		" " 3	"	"			MED GRY			"
220		PERVASIVE SILIC. " 90			"	10	BRN			"
225		" / MAFICS CHLOR " 75	"	"	"	5	BRNSH GRY			"
230		MAFICS CHLOR " 15			"	10	LT GRY			"
235		" Tr	"	"			LT BRNSH GRY			"
240			"	"			"			" MINOR HEM
245		" Tr			Q-C-P	10	"			" " "
250		" Tr			"	10	"			" " "
255		LOCAL WEAK CHLOR " 90			"	90	BRNSH-WHITE			"
260		" " 95			"	85	"			"
265		" " 90			"	60	"			"
270		MAFICS CHLOR. " 5			"	25	WHITE/BRN GRN			"
275		" 15			"	15	"			"
280		" 10	Py	TR	"	20	"			"
285		" Tr			"	30	"			"
290			"	"	"	25	WHITISH GRN			"
295			"	"	"	15	"			"
300			"	"	"	10	"			" QUIT FOR DAY 1/23
305		MAFICS WEAKLY CHLOR, INC. SILIC.	"	"	"	40	"			"
310			"	"	"	60	"			" MINOR HEM
315			"	"	"	15	"			"
320			"	"	"	15	"			"
325		OX TR	"	"	"	20	"			"
330		" "	"	"	"	25	"			"
335		OX 5	"	"	"	15	"			"
340		OX 95			"	30	BRN			"
345		MAFICS CHLOR, SILIC 5	"	"	"	5	WHITE/GRY			"
350		WEAK CHLOR, INC SILIC 95 Tr	"	"	"	10	WHITE/GRY			" MINOR HEM
355		" 75	"	"	"	20	DIRTY BRN			"
360		" 75	"	"	"	10	"			"
365		" 75	"	"	"	5	"			"
370		" 60					"			"
375		" 20	"	"	"	TR	" / MED GRY			"
380		" Tr	"	"			MED GRY			"
385		" Tr	"	"			"			"
390			"	"			"			"
395			"	"	"	Tr	"			"
400			"	"	"	Tr	"			" MINOR HEM

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-23-92 12:30
COMPLETED 1-26-92 11:50
NORTHING 1 492 171
EASTING 290263
ELEVATION 2190

HOLE No. MC-20
BEARING N67E
INCLINATION -30
TOTAL DEPTH 1040
LOGGED BY R. JEANNE
Pg 3 of 6

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	TMP	WEAK CHLOR SILICIFIED	Py	Tr			GRNSH GRY			5-PUNCTS MINOR HEM
410		INC. CHLOR SILICIFIED					"			"
415		MAFICS & SOME GNDMASS CHLOR OX Tr					GRYSH GRN			"
420		" " 5					" / BRN			"
425		MAFICS CHLOR " 15					MOTLED GRN / BRN			"
430			Py	Tr			REDISH GRN			" MOD HEM
435			"	"			GRYSH GRN			MINOR HEM
440			"	"						
445										
450										"
455		OX 5	Py	TR						
460		" Tr	"	"						
465		INTENSE OLIVE BRN SILC " 3	"	"			YELLOW OLIVE BRN			
470		" " 20	"	"			OLIVE BRN			HIT WATER, WENT WET
475		WEAKENING " 10	"	"	Q-C-P	5	OLIVE BRN / GRN			
480		" "	"	"	"	15				50 VNLTS
485		" "			"	15				"
490		" "			"	Tr				"
495		" "	"	"	"	"				"
500		MAFICS CHLOR	"	"			PNKSH GRY-GRN			"
505			"	"			"			
510			"	"	"	Tr	"			
515		OX Tr			"	"	BRNSH GRY GRN			
520		" 5					"			
525		" 5					"			
530		" 5					"			
535		" Tr	Py	Tr			"			
540		" 5	"	"			"			
545		" "	"	"			"			
550							PNKSH GRY GRN			
555			"	"			"			
560							"			
565							"			
570		" Tr					"			
575							"			
580			Py	Tr			"			
585			"	"			"			
590			"	"	Q-C-P	Tr	"			3 PUNCTS
595			"	"			"			
600							"			"

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-23-92 12:30
COMPLETED 1-26-92 11:50
NORTHING 1 492 171
EASTING 290 263
ELEVATION 2190

HOLE No. MC-20
BEARING N 67E
INCLINATION -30°
TOTAL DEPTH 1040
LOGGED BY R. JEANNE
Pg 4 of 6

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
605	TMP	MAFICS CHLOR	Py	Tr			PNKSH GRY GRN			SP VNLTS PINK K-SPAR, WHITE PLAG
610			"	"						"
615			"	"						
620		Ox Tr	"	"						"
625			"	"						
630			"	"						
635		Ox Tr	"	"						
640			"	"						
645			"	"						SP VNLTS
650			"	"						
655			"	"						
660			"	"						
665			"	"						
670			"	"						
675			"	"						
680			"	"						out for day 1/24
685			"	"						
690			"	"						
695			"	"						
700			"	"						
705			"	"						
710		Ox Tr								
715			"	"						
720										
725			"	"						
730										
735			"	"						
740			"	"						
745			"	"						
750			"	"						
755										
760			"	"						
765			"	"						
770			"	"						
775			"	"						
780			"	"						
785			"	"						
790			"	"						
795			"	"						
800			"	"						

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-23-92 12:30
COMPLETED 1-26-92 11:30
NORTHING 1492171
EASTING 290263
ELEVATION 2190

HOLE No. MC-20
BEARING N67E
INCLINATION -30°
TOTAL DEPTH 1040
LOGGED BY R. JEANNE
Pg 5 of 6

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
805	TMP	MAFICS CHLOR	Py	Tr			PINKISH GRY GRN			MAGNETITE PRESENT IN
810			"	"						FINES
815			"	"						
820										
825			"	"						
830			"	"						
835			"	"						
840			"	"						
845			"	"						
850			"	"						
855			"	"						
860			"	"						
865			"	"						
870			"	"						
875			"	"						
880		Ox Tr	"	"						PYRITE IN MAGNETITE
885		" S	"	"	Q-C-P	Tr				
890		" Tr	"	"						
895		" S	"	Tr	"	"				
900		" Tr	"	"						
905		MAFICS LOCALLY CHLOR	"	"						
910		BIOTITE STRONG TO FRESH								
915										
920		Ox Tr	"	"						
925										
930										
935			"	"						
940			"	"						3 POUNDS QUIT FOR DAY 1/25
945			"	"						
950										
955			"	"						
960					Q-C-P	Tr				
965										
970										
975										
980										
985										
990										
995										
1000	↓	↓	Py	Tr			↓			

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 19 T. 20N R. 20W G&SRB&M
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DRILLER ELSING DRILLING

DATE:
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NORTHING 1492171
EASTING 290263
ELEVATION 2190

HOLE No. MC-20
BEARING N67E
INCLINATION -30°
TOTAL DEPTH 1040
LOGGED BY R. JEANNE
Pg 6 of 6

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
1005	TMP	LOCAL CHLOR OF MAFICS, BIOTITE/OXTR					GREENISH PHN			
1010		UNALTERED TO BRONZY OXTR	Py	Tr						
1015		OXTR								S.P. VNLTS
1020										
1025			Py	Tr						
1030										
1035										
1040	T.D.		Py	Tr						SP VNLTS
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										
05										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 29 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING

DATE:
COLLARED 1-27-92 12:30
COMPLETED 1-28-92 4:30
NORTHING 1488010
EASTING 295225
ELEVATION 2072

HOLE No. MC-21
BEARING —
INCLINATION -90°
TOTAL DEPTH 500'
LOGGED BY R. JEANNE
Pg 1 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
05	Qal						LT YELLOW/GRAY			NO SAMPLE TAKEN
10	"						MED GRY			" " "
15	TMP	ALUNITE OX 70%	Py	2-5						Py IS DISSEM, IN VNLTS AND & FRAC COATINGS. GRAINS TYPICALLY TOO FINE TO DETERMINE SHAPE. ABUNDANT CLAY
20		WHITE CLAY OX TR	"	5						
25		" "	"	5						
30		" "	"	5						
35		"	"	5						
40		"	"	5-20						
45		"	"	"						LOWER CLAY CONTENT. BIOTITE BLACK TO BRONZE, COMMONLY HAS Py DEVELOPING AROUND RIMS
50		FELDSPARS CLAY ALT*	"	"						* CAN BE EASILY CONFUSED WITH A PW
55		MINOR SIL	"	"						
60			"	"						
65			"	10-15						
70			"	5-10						
75			"	"						
80			"	"						
85			"	"						
90			"	"						
95			"	"						ENCOUNTERED WATER WENT WET
100			"	"						
105			"	"						
110			"	"						
115			"	10-15						
120			"	5-10			MOTTLED PINK GRY			
125			"	"						
130		EMBAYED RIMS OF BIOTITE	"	"						
135		"	"	"						
140		FELDSPARS LESS ALTERED	"	"						
145			"	"						
150			"	"						
155			"	"						
160			"	10-15						
165			"	5-10	S.P	TR				
170			"	"						MAGNETITE COMMON
175			"	10-15						
180			"	5-10						
185			"	"						
190			"	"						
195			"	"						
200			"	10-15						

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 29 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-27-92 12:30
COMPLETED 1-28-92 4:30
NORTHING 1488010
EASTING 295225
ELEVATION 2072

HOLE No. MC-21
BEARING —
INCLINATION -90°
TOTAL DEPTH 500'
LOGGED BY R. JEANNE
Pg 2 of 3

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS	
205	Tmp?		Py	5-10			MOTTLED OLIVE GRY				
210		FELDSPAR ALT INCREASING	"	"							
215		"	"	"						Py FORMS PLATY MASSES IN FRACS	
220		"	"	"							
225		" WHITE	"	"							
230		STRONG ARGILLIC ALT OF FELDSPARS	"	"			WHITE/OLIVE GRY				
235		"	"	"			"				
240		"	"	"			"				
245		FELDS ALT TO SOFT YELLOWISH CLAY	"	"			YELLOWISH GRY				3:40
250			"	"							
255			"	"							
260			"	"							
265		MINOR WHITE CLAY	"	"							3:54
270			"	"						MAKING ABOUT 25-30 GPM WATER	
275			"	"						≈ 90'/HR DRILLING	
280			"	"							
285			"	"						VUGGY SILICA	4:09
290			"	"							
295			"	"							
300			"	"						VUGGY SILICIFICATION	
305		FELDSPARS ALT TO WHITE CLAY	"	"			WHITISH OLIVE GRY			DODECAHEDRAL PYRITE	4:25
310		" MIXED W/ YELLOW	"	"			"			"	
315		" "	"	"			MED GRY				
320		" "	"	"			"			≈ 80-100 GPM	
325			"	"			"				4:45
330			"	"			"				
335			"	"			"				
340		MINOR CHLORITE	"	3-5			GRNISH MED-GRY				5:09
345		" "	"	"			"				
350		" "	"	"			"				
355		CHLORITE INCREASES TO 400'	"	"			"				
360		INCREASINGLY WEAKER ALT OF	"	< 3			"				7:38 AM
365		FELDSPARS	"	"			"				
370			"	"			GRNISH MED-DK GRY				
375			"	"			"				
380			"	"			"			MAGNETITE PRESENT	
385			"	"			"			" "	BLEW RETURN HOSE CLAY
390			"	"			"			" "	SWITCH ROCK
395			"	"			"			" "	8:50-10:10 R
400			"	"			"			" "	11:00

MAGMA COPPER COMPANY

Reverse Circulation Drill Hole Log

PROJECT MOSS
STATE ARIZONA
COUNTY MOHAVE
SEC. 29 T. 20N R. 20W G&SRB&M
QUAD. OATMAN, AZ
DRILLER ELSING DRILLING

DATE:
COLLARED 1-27-92 12:30
COMPLETED 1-28-92 4:30
NORTHING 1498010
EASTING 295225
ELEVATION 2072

HOLE No. MC-21
BEARING —
INCLINATION -90°
TOTAL DEPTH 500'
LOGGED BY R. JEANNE
Pg 2 of 2

FEET	ROCK TYPE	ALTERATION	SULFIDES TYPE	SULFIDES %	VEINS TYPE	VEINS %	COLOR	ppb ppm opt Au	ppm opt Ag	COMMENTS
405	Tmp	CHLORITIC	Py	<3			GRNSH MED DK GRY			MAGNETITE PRESENT
410			"	<1						
415			"	"						
420			"	"						
425			"	"						
430			"	"						
435			"	"						
440			"	"			DK GRNSH GRY			
445			"	"						
450			"	"						DK, ALMOST BLACK FRACTURE COATINGS
455			"	"						
460			"	"						
465			"	"						
470			"	"						
475			"	"						
480			"	"						
485		CHLORITIC	"	"						
490		"	"	"						
495		"	"	"						
500	T.D	"	"	"						
05										
10										
15										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
85										
90										
95										
00										

APPENDIX D

DRILL HOLE GOLD ASSAYS

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-1

Drill Hole	FT	opt Au	Resource est intercepts
MC-1	5	0.003	
MC-1	10	-	
MC-1	15	-	
MC-1	20	-	
MC-1	25	-	
MC-1	30	-	
MC-1	35	-	
MC-1	40	-	
MC-1	45	-	
MC-1	50	-	
MC-1	55	0.001	
MC-1	60	-	
MC-1	65	-	
MC-1	70	-	
MC-1	75	-	
MC-1	80	-	
MC-1	85	-	
MC-1	90	-	
MC-1	95	-	
MC-1	100	-	
MC-1	105	0.005	
MC-1	110	0.002	
MC-1	115	0.031	
MC-1	120	0.004	
MC-1	125	-	
MC-1	130	-	
MC-1	135	-	
MC-1	140	0.002	
MC-1	145	-	
MC-1	150	-	
MC-1	155	-	
MC-1	160	-	
MC-1	165	-	
MC-1	170	-	
MC-1	175	-	
MC-1	180	0.005	
MC-1	185	0.006	
MC-1	190	0.005	
MC-1	195	0.002	
MC-1	200	0.003	
MC-1	205	0.004	
MC-1	210	0.007	
MC-1	215	0.006	
MC-1	220	0.011	
MC-1	225	0.003	
MC-1	230	0.006	
MC-1	235	0.004	
MC-1	240	0.002	
MC-1	245	0.007	
MC-1	250	0.017	
MC-1	255	0.005	
MC-1	260	0.005	
MC-1	265	0.004	
MC-1	270	0.005	
MC-1	275	0.006	
MC-1	280	0.007	
MC-1	285	0.015	
MC-1	290	0.008	
MC-1	295	0.008	
MC-1	300	0.006	
MC-1	305	0.010	
MC-1	310	0.012	
MC-1	315	0.014	25' @ 0.014
MC-1	320	0.024	
MC-1	325	0.010	
MC-1	330	0.006	
MC-1	335	0.006	
MC-1	340	0.010	
MC-1	345	0.015	20' @ 0.012
MC-1	350	0.012	
MC-1	355	0.012	
MC-1	360	0.008	
MC-1	365	0.009	
MC-1	370	0.007	
MC-1	375	0.008	
MC-1	380	0.008	
MC-1	385	0.017	
MC-1	390	0.009	
MC-1	395	0.009	
MC-1	400	0.007	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-1 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-1	405	0.012	
MC-1	410	0.033	
MC-1	415	0.013	25' @ 0.015
MC-1	420	0.008	
MC-1	425	0.011	
MC-1	430	0.004	
MC-1	435	0.006	
MC-1	440	0.001	
MC-1	445	-	
MC-1	450	-	
MC-1	455	-	
MC-1	460	-	

Drill Hole	FT	opt Au	Resource est intercepts

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-2

Drill Hole	FT	opt Au	Resource est intercepts
MC-2	5	0.008	
MC-2	10	0.016	
MC-2	15	0.006	
MC-2	20	0.007	
MC-2	25	0.004	
MC-2	30	0.008	
MC-2	35	0.007	
MC-2	40	0.008	
MC-2	45	0.005	
MC-2	50	0.006	
MC-2	55	0.004	
MC-2	60	0.007	
MC-2	65	0.007	
MC-2	70	0.005	
MC-2	75	0.004	
MC-2	80	0.005	
MC-2	85	0.007	
MC-2	90	0.009	
MC-2	95	0.004	
MC-2	100	0.009	
MC-2	105	0.005	
MC-2	110	0.005	
MC-2	115	0.006	
MC-2	120	0.005	
MC-2	125	0.005	
MC-2	130	0.008	
MC-2	135	0.007	
MC-2	140	0.004	
MC-2	145	0.003	
MC-2	150	0.005	
MC-2	155	0.014	
MC-2	160	0.007	
MC-2	165	0.037	
MC-2	170	0.008	
MC-2	175	0.006	
MC-2	180	0.002	
MC-2	185	0.004	
MC-2	190	0.003	
MC-2	195	0.005	
MC-2	200	0.003	
MC-2	205	0.008	
MC-2	210	-	
MC-2	215	-	
MC-2	220	0.004	
MC-2	225	0.009	
MC-2	230	0.007	
MC-2	235	0.009	
MC-2	240	0.008	
MC-2	245	0.005	
MC-2	250	0.005	
MC-2	255	0.006	
MC-2	260	0.008	
MC-2	265	0.009	
MC-2	270	0.008	
MC-2	275	0.020	
MC-2	280	0.007	
MC-2	285	0.008	
MC-2	290	0.009	
MC-2	295	0.002	
MC-2	300	0.014	
MC-2	305	0.009	
MC-2	310	0.007	
MC-2	315	0.012	
MC-2	320	0.005	
MC-2	325	0.002	
MC-2	330	0.006	
MC-2	335	0.014	
MC-2	340	0.005	
MC-2	345	0.013	
MC-2	350	-	
MC-2	355	0.004	
MC-2	360	0.004	
MC-2	365	-	
MC-2	370	0.004	
MC-2	375	0.002	
MC-2	380	0.003	
MC-2	385	-	
MC-2	390	0.004	
MC-2	395	0.005	
MC-2	400	0.004	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-2 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-2	405	0.003	
MC-2	410	0.002	
MC-2	415	-	
MC-2	420	0.003	
MC-2	425	0.004	
MC-2	430	0.004	
MC-2	435	0.002	
MC-2	440	-	
MC-2	445	-	
MC-2	450	0.001	
MC-2	455	-	
MC-2	460	-	
MC-2	465	-	
MC-2	470	-	
MC-2	475	-	
MC-2	480	0.002	
MC-2	485	-	
MC-2	490	-	
MC-2	495	0.003	
MC-2	500	-	
MC-2	505	0.004	
MC-2	510	0.003	
MC-2	515	-	
MC-2	520	-	

Drill Hole	FT	opt Au	Resource est intercepts

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-3

Drill Hole	FT	opt Au	Resource est intercepts
MC-3	5	-	
MC-3	10	0.002	
MC-3	15	0.001	
MC-3	20	0.002	
MC-3	25	-	
MC-3	30	-	
MC-3	35	-	
MC-3	40	-	
MC-3	45	-	
MC-3	50	-	
MC-3	55	-	
MC-3	60	-	
MC-3	65	-	
MC-3	70	-	
MC-3	75	0.004	
MC-3	80	-	
MC-3	85	0.002	
MC-3	90	0.001	
MC-3	95	0.004	
MC-3	100	-	
MC-3	105	0.001	
MC-3	110	0.002	
MC-3	115	0.002	
MC-3	120	0.001	
MC-3	125	0.001	
MC-3	130	0.003	
MC-3	135	0.004	
MC-3	140	0.008	
MC-3	145	0.006	
MC-3	150	-	
MC-3	155	-	
MC-3	160	-	
MC-3	165	-	
MC-3	170	0.004	
MC-3	175	0.005	
MC-3	180	0.007	
MC-3	185	0.008	
MC-3	190	0.004	
MC-3	195	0.006	
MC-3	200	0.007	
MC-3	205	-	
MC-3	210	-	
MC-3	215	0.002	
MC-3	220	0.005	
MC-3	225	0.003	
MC-3	230	-	
MC-3	235	0.005	
MC-3	240	0.001	
MC-3	245	0.004	
MC-3	250	0.003	
MC-3	255	0.006	
MC-3	260	0.003	
MC-3	265	0.002	
MC-3	270	0.004	
MC-3	275	0.004	
MC-3	280	0.003	
MC-3	285	0.002	
MC-3	290	0.004	
MC-3	295	0.002	
MC-3	300	0.006	
MC-3	305	0.003	
MC-3	310	-	
MC-3	315	-	
MC-3	320	-	
MC-3	325	-	
MC-3	330	-	
MC-3	335	0.005	
MC-3	340	0.007	
MC-3	345	0.010	
MC-3	350	0.013	
MC-3	355	0.012	
MC-3	360	0.054	
MC-3	365	0.014	
MC-3	370	0.013	
MC-3	375	0.010	
MC-3	380	0.009	
MC-3	385	0.008	80' at .020
MC-3	390	0.016	
MC-3	395	0.042	
MC-3	400	0.023	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-3 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-3	405	0.027	
MC-3	410	0.013	
MC-3	415	0.019	
MC-3	420	0.041	
MC-3	425	0.005	
MC-3	430	0.011	
MC-3	435	0.006	
MC-3	440	0.002	
MC-3	445	0.002	
MC-3	450	-	
MC-3	455	-	
MC-3	460	0.002	
MC-3	465	0.002	
MC-3	470	0.001	
MC-3	475	0.003	
MC-3	480	-	
MC-3	485	0.002	
MC-3	490	-	
MC-3	495	-	
MC-3	500	-	

Drill Hole	FT	opt Au	Resource est intercepts

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-4

Drill Hole	FT	opt Au	Resource est intercepts
MC-4	5	0.005	
MC-4	10	0.003	
MC-4	15	-	
MC-4	20	-	
MC-4	25	-	
MC-4	30	0.001	
MC-4	35	-	
MC-4	40	-	
MC-4	45	0.005	
MC-4	50	0.003	
MC-4	55	0.002	
MC-4	60	0.003	
MC-4	65	-	
MC-4	70	-	
MC-4	75	0.005	
MC-4	80	0.004	
MC-4	85	-	
MC-4	90	-	
MC-4	95	0.006	
MC-4	100	0.004	
MC-4	105	0.003	
MC-4	110	0.002	
MC-4	115	0.001	
MC-4	120	0.002	
MC-4	125	0.001	
MC-4	130	0.002	
MC-4	135	0.004	
MC-4	140	0.006	
MC-4	145	0.005	
MC-4	150	0.002	
MC-4	155	0.008	
MC-4	160	0.008	
MC-4	165	0.006	
MC-4	170	-	
MC-4	175	-	
MC-4	180	-	
MC-4	185	0.001	
MC-4	190	-	
MC-4	195	-	
MC-4	200	0.003	
MC-4	205	0.001	
MC-4	210	0.003	
MC-4	215	0.010	
MC-4	220	0.005	
MC-4	225	0.007	
MC-4	230	0.003	
MC-4	235	0.002	
MC-4	240	0.003	
MC-4	245	0.002	
MC-4	250	0.002	
MC-4	255	0.002	
MC-4	260	0.003	
MC-4	265	0.008	
MC-4	270	0.004	
MC-4	275	-	
MC-4	280	-	
MC-4	285	-	
MC-4	290	-	
MC-4	295	0.002	
MC-4	300	-	
MC-4	305	0.001	
MC-4	310	-	
MC-4	315	0.003	
MC-4	320	0.002	
MC-4	325	0.005	
MC-4	330	0.002	
MC-4	335	0.006	
MC-4	340	0.018	
MC-4	345	0.008	
MC-4	350	0.005	
MC-4	355	0.006	
MC-4	360	0.038	
MC-4	365	0.036	
MC-4	370	0.030	
MC-4	375	0.053	35' at .067
MC-4	380	0.141	
MC-4	385	0.140	
MC-4	390	0.030	
MC-4	395	0.008	
MC-4	400	0.007	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-4 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-4	405	0.006	
MC-4	410	0.011	10' at .014
MC-4	415	0.016	
MC-4	420	0.009	
MC-4	425	0.002	
MC-4	430	0.014	10' at .022
MC-4	435	0.029	
MC-4	440	0.001	
MC-4	445	0.002	
MC-4	450	0.002	
MC-4	455	0.002	
MC-4	460	0.001	
MC-4	465	-	
MC-4	470	-	
MC-4	475	-	
MC-4	480	0.004	

Drill Hole	FT	opt Au	Resource est intercepts

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-5

Drill Hole	FT	opt Au	Resource est intercepts
MC-5	5	-	
MC-5	10	0.002	
MC-5	15	0.003	
MC-5	20	0.002	
MC-5	25	-	
MC-5	30	0.001	
MC-5	35	0.006	
MC-5	40	0.004	
MC-5	45	-	
MC-5	50	0.004	
MC-5	55	0.005	
MC-5	60	0.005	
MC-5	65	0.005	
MC-5	70	0.002	
MC-5	75	0.001	
MC-5	80	0.008	
MC-5	85	0.002	
MC-5	90	0.001	
MC-5	95	-	
MC-5	100	0.002	
MC-5	105	0.001	
MC-5	110	0.003	
MC-5	115	0.004	
MC-5	120	0.014	
MC-5	125	0.002	
MC-5	130	0.004	
MC-5	135	0.002	
MC-5	140	0.003	
MC-5	145	0.004	
MC-5	150	0.007	
MC-5	155	0.006	
MC-5	160	0.006	
MC-5	165	-	
MC-5	170	0.006	
MC-5	175	0.006	
MC-5	180	0.005	
MC-5	185	0.005	
MC-5	190	0.005	
MC-5	195	0.009	
MC-5	200	0.031	
MC-5	205	0.009	
MC-5	210	0.008	
MC-5	215	0.006	
MC-5	220	0.044	
MC-5	225	0.016	
MC-5	230	0.039	20' at .020
MC-5	235	0.010	
MC-5	240	0.009	
MC-5	245	0.008	
MC-5	250	0.006	
MC-5	255	0.006	
MC-5	260	0.002	
MC-5	265	0.005	
MC-5	270	0.003	
MC-5	275	0.002	
MC-5	280	0.003	
MC-5	285	0.002	
MC-5	290	0.003	
MC-5	295	0.011	
MC-5	300	0.049	
MC-5	305	0.244	
MC-5	310	0.023	
MC-5	315	0.023	
MC-5	320	0.009	
MC-5	325	0.023	
MC-5	330	0.007	
MC-5	335	0.040	
MC-5	340	0.011	95' at .044
MC-5	345	0.018	
MC-5	350	0.026	
MC-5	355	0.027	
MC-5	360	0.140	
MC-5	365	0.018	
MC-5	370	0.028	
MC-5	375	0.062	
MC-5	380	0.060	
MC-5	385	0.011	
MC-5	390	0.008	
MC-5	395	0.003	
MC-5	400	0.007	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-6

Drill Hole	FT	opt Au	Resource est intercepts
MC-6	5	0.006	
MC-6	10	0.005	
MC-6	15	0.007	
MC-6	20	-	
MC-6	25	0.005	
MC-6	30	0.018	
MC-6	35	0.002	
MC-6	40	0.001	
MC-6	45	0.002	
MC-6	50	0.004	
MC-6	55	-	
MC-6	60	0.006	
MC-6	65	0.003	
MC-6	70	0.009	
MC-6	75	0.003	
MC-6	80	-	
MC-6	85	-	
MC-6	90	0.013	
MC-6	95	0.002	
MC-6	100	0.004	
MC-6	105	0.006	
MC-6	110	0.002	
MC-6	115	-	
MC-6	120	0.003	
MC-6	125	-	
MC-6	130	-	
MC-6	135	0.001	
MC-6	140	0.006	
MC-6	145	-	
MC-6	150	0.001	
MC-6	155	-	
MC-6	160	0.004	
MC-6	165	0.001	
MC-6	170	-	
MC-6	175	0.002	
MC-6	180	-	
MC-6	185	-	
MC-6	190	0.004	
MC-6	195	0.003	
MC-6	200	0.003	
MC-6	205	0.006	
MC-6	210	0.001	
MC-6	215	0.004	
MC-6	220	0.002	
MC-6	225	0.004	
MC-6	230	0.005	
MC-6	235	0.015	
MC-6	240	0.021	
MC-6	245	0.016	
MC-6	250	0.021	40' at .017
MC-6	255	0.014	
MC-6	260	0.009	
MC-6	265	0.015	
MC-6	270	0.023	
MC-6	275	0.005	
MC-6	280	0.020	
MC-6	285	0.009	
MC-6	290	0.030	
MC-6	295	0.025	40' at .018
MC-6	300	0.013	
MC-6	305	0.026	
MC-6	310	0.009	
MC-6	315	0.013	
MC-6	320	0.005	
MC-6	325	0.010	10' at .010
MC-6	330	0.011	
MC-6	335	0.006	
MC-6	340	0.006	
MC-6	345	0.007	
MC-6	350	0.007	
MC-6	355	0.005	
MC-6	360	-	
MC-6	365	0.014	
MC-6	370	0.022	
MC-6	375	0.026	30' at .019
MC-6	380	0.024	
MC-6	385	0.013	
MC-6	390	0.012	
MC-6	395	0.006	
MC-6	400	0.071	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-6 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-6	405	0.016	
MC-6	410	0.017	
MC-6	415	0.031	
MC-6	420	0.025	
MC-6	425	0.070	
MC-6	430	0.061	100' at .028
MC-6	435	0.026	
MC-6	440	0.025	
MC-6	445	0.038	
MC-6	450	0.017	
MC-6	455	0.026	
MC-6	460	0.020	
MC-6	465	0.025	
MC-6	470	0.009	
MC-6	475	0.031	
MC-6	480	0.010	
MC-6	485	0.009	
MC-6	490	0.020	
MC-6	495	0.010	
MC-6	500	0.007	

Drill Hole	FT	opt Au	Resource est intercepts

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-7

Drill Hole	FT	opt Au	Resource est intercepts
MC-7	5	0.011	
MC-7	10	0.007	
MC-7	15	0.022	
MC-7	20	0.002	
MC-7	25	0.003	
MC-7	30	0.011	
MC-7	35	0.001	
MC-7	40	0.006	
MC-7	45	0.004	
MC-7	50	0.005	
MC-7	55	0.004	
MC-7	60	0.006	
MC-7	65	0.004	
MC-7	70	0.004	
MC-7	75	0.010	
MC-7	80	0.007	
MC-7	85	0.018	10' at .018
MC-7	90	0.018	
MC-7	95	0.004	
MC-7	100	0.012	
MC-7	105	0.006	
MC-7	110	0.005	
MC-7	115	0.022	
MC-7	120	0.004	
MC-7	125	0.005	
MC-7	130	0.002	
MC-7	135	0.010	
MC-7	140	0.006	
MC-7	145	0.012	
MC-7	150	0.004	
MC-7	155	0.003	
MC-7	160	-	
MC-7	165	0.015	
MC-7	170	0.009	15' at .012
MC-7	175	0.012	
MC-7	180	0.009	
MC-7	185	0.008	
MC-7	190	0.013	
MC-7	195	0.003	
MC-7	200	0.006	
MC-7	205	0.011	
MC-7	210	0.008	
MC-7	215	0.011	
MC-7	220	0.007	
MC-7	225	0.004	
MC-7	230	0.008	
MC-7	235	0.014	
MC-7	240	0.007	
MC-7	245	0.005	
MC-7	250	0.010	10' at .011
MC-7	255	0.012	
MC-7	260	0.006	
MC-7	265	0.011	10' at .011
MC-7	270	0.011	
MC-7	275	0.007	
MC-7	280	0.006	
MC-7	285	0.006	
MC-7	290	0.011	10' at .010
MC-7	295	0.010	
MC-7	300	0.005	
MC-7	305	0.013	
MC-7	310	0.021	
MC-7	315	0.009	
MC-7	320	0.017	
MC-7	325	0.016	
MC-7	330	0.020	55' at .018
MC-7	335	0.021	
MC-7	340	0.013	
MC-7	345	0.015	
MC-7	350	0.024	
MC-7	355	0.034	
MC-7	360	0.001	
MC-7	365	0.010	
MC-7	370	0.013	
MC-7	375	0.023	
MC-7	380	0.011	
MC-7	385	0.030	
MC-7	390	0.023	
MC-7	395	0.015	65' at .021
MC-7	400	0.023	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-7 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-7	405	0.038	
MC-7	410	0.028	
MC-7	415	0.042	
MC-7	420	0.007	
MC-7	425	0.015	
MC-7	430	0.004	
MC-7	435	0.004	
MC-7	440	0.005	
MC-7	445	0.006	
MC-7	450	0.007	
MC-7	455	0.005	
MC-7	460	0.005	
MC-7	465	0.004	
MC-7	470	0.011	

Drill Hole	FT	opt Au	Resource est intercepts

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-8

Drill Hole	FT	opt Au	Resource est intercepts
MC-8	5	0.005	
MC-8	10	0.010	
MC-8	15	0.004	
MC-8	20	0.002	
MC-8	25	0.005	
MC-8	30	0.005	
MC-8	35	0.004	
MC-8	40	-	
MC-8	45	0.007	
MC-8	50	0.006	
MC-8	55	-	
MC-8	60	0.007	
MC-8	65	0.006	
MC-8	70	0.029	
MC-8	75	0.005	
MC-8	80	-	
MC-8	85	0.003	
MC-8	90	0.004	
MC-8	95	-	
MC-8	100	0.006	
MC-8	105	0.004	
MC-8	110	-	
MC-8	115	0.008	
MC-8	120	0.004	
MC-8	125	-	
MC-8	130	-	
MC-8	135	-	
MC-8	140	0.004	
MC-8	145	0.003	
MC-8	150	-	
MC-8	155	0.002	
MC-8	160	-	
MC-8	165	0.005	
MC-8	170	0.002	
MC-8	175	0.003	
MC-8	180	0.002	
MC-8	185	0.019	
MC-8	190	0.002	
MC-8	195	-	
MC-8	200	-	
MC-8	205	-	
MC-8	210	-	
MC-8	215	0.003	
MC-8	220	0.002	
MC-8	225	0.006	
MC-8	230	0.002	
MC-8	235	0.002	
MC-8	240	-	
MC-8	245	-	
MC-8	250	-	
MC-8	255	-	
MC-8	260	-	
MC-8	265	0.018	
MC-8	270	-	
MC-8	275	-	
MC-8	280	-	
MC-8	285	-	
MC-8	290	-	
MC-8	295	-	
MC-8	300	0.014	
MC-8	305	-	
MC-8	310	-	
MC-8	315	0.002	
MC-8	320	-	
MC-8	325	0.001	
MC-8	330	0.002	
MC-8	335	-	
MC-8	340	-	
MC-8	345	-	
MC-8	350	0.002	
MC-8	355	0.001	
MC-8	360	-	
MC-8	365	-	
MC-8	370	0.004	
MC-8	375	0.005	
MC-8	380	0.004	
MC-8	385	0.012	
MC-8	390	0.006	
MC-8	395	0.005	
MC-8	400	0.006	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-8 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-8	405	0.011	
MC-8	410	0.003	
MC-8	415	0.026	10' at .034
MC-8	420	0.043	
MC-8	425	0.005	
MC-8	430	0.006	
MC-8	435	0.005	
MC-8	440	0.002	
MC-8	445	0.004	

Drill Hole	FT	opt Au	Resource est intercepts

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-9

Drill Hole	FT	opt Au	Resource est intercepts
MC-9	5	No sample	
MC-9	10	No sample	
MC-9	15	No sample	
MC-9	20	-	
MC-9	25	0.004	
MC-9	30	0.022	
MC-9	35	-	
MC-9	40	-	
MC-9	45	0.002	
MC-9	50	-	
MC-9	55	0.015	
MC-9	60	-	
MC-9	65	0.002	
MC-9	70	0.002	
MC-9	75	-	
MC-9	80	-	
MC-9	85	-	
MC-9	90	0.002	
MC-9	95	-	
MC-9	100	0.001	
MC-9	105	0.001	
MC-9	110	0.001	
MC-9	115	-	
MC-9	120	-	
MC-9	125	-	
MC-9	130	-	
MC-9	135	0.005	
MC-9	140	0.003	
MC-9	145	0.002	
MC-9	150	0.016	
MC-9	155	0.002	
MC-9	160	0.005	
MC-9	165	0.001	
MC-9	170	0.003	
MC-9	175	0.003	
MC-9	180	0.004	
MC-9	185	0.002	
MC-9	190	0.005	
MC-9	195	0.020	10' at .018
MC-9	200	0.015	
MC-9	205	0.002	
MC-9	210	0.014	
MC-9	215	0.007	
MC-9	220	0.008	
MC-9	225	-	
MC-9	230	0.005	
MC-9	235	0.032	
MC-9	240	0.021	
MC-9	245	0.015	
MC-9	250	0.006	
MC-9	255	0.013	
MC-9	260	0.023	55' at .019
MC-9	265	0.023	
MC-9	270	0.004	
MC-9	275	0.043	
MC-9	280	0.007	
MC-9	285	0.025	
MC-9	290	0.003	
MC-9	295	-	
MC-9	300	0.007	
MC-9	305	0.008	
MC-9	310	-	
MC-9	315	0.003	
MC-9	320	0.001	
MC-9	325	-	
MC-9	330	-	
MC-9	335	-	
MC-9	340	-	
MC-9	345	-	
MC-9	350	-	
MC-9	355	0.009	
MC-9	360	-	
MC-9	365	-	
MC-9	370	0.002	
MC-9	375	-	
MC-9	380	-	
MC-9	385	-	
MC-9	390	-	
MC-9	395	-	
MC-9	400	-	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-9 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-9	405	-	
MC-9	410	0.034	
MC-9	415	0.002	
MC-9	420	0.002	
MC-9	425	0.001	
MC-9	430	-	
MC-9	435	0.002	
MC-9	440	0.001	
MC-9	445	0.003	
MC-9	450	-	
MC-9	455	0.009	
MC-9	460	0.008	
MC-9	465	0.017	
MC-9	470	0.020	20' at .024
MC-9	475	0.020	
MC-9	480	0.039	

Drill Hole	FT	opt Au	Resource est intercepts

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-10

Drill Hole	FT	opt Au	Resource est intercepts
MC-10	5	No sample	
MC-10	10	0.007	
MC-10	15	0.005	
MC-10	20	0.002	
MC-10	25	0.011	
MC-10	30	0.034	
MC-10	35	0.003	30' at .023
MC-10	40	0.044	
MC-10	45	0.008	
MC-10	50	0.039	
MC-10	55	0.008	
MC-10	60	0.009	
MC-10	65	0.004	
MC-10	70	0.003	
MC-10	75	0.005	
MC-10	80	0.012	
MC-10	85	0.033	15' at .019
MC-10	90	0.012	
MC-10	95	0.007	
MC-10	100	0.006	
MC-10	105	0.037	
MC-10	110	0.002	
MC-10	115	0.002	
MC-10	120	0.001	
MC-10	125	0.002	
MC-10	130	0.001	
MC-10	135	0.001	
MC-10	140	0.002	
MC-10	145	0.002	
MC-10	150	0.001	
MC-10	155	0.003	
MC-10	160	0.003	
MC-10	165	0.003	
MC-10	170	0.003	
MC-10	175	0.003	
MC-10	180	-	
MC-10	185	0.003	
MC-10	190	0.004	
MC-10	195	0.004	
MC-10	200	0.005	
MC-10	205	0.001	
MC-10	210	0.003	
MC-10	215	0.003	
MC-10	220	0.003	
MC-10	225	0.010	
MC-10	230	-	
MC-10	235	0.005	
MC-10	240	0.002	
MC-10	245	0.003	
MC-10	250	-	
MC-10	255	0.004	
MC-10	260	0.004	
MC-10	265	-	
MC-10	270	-	
MC-10	275	-	
MC-10	280	0.017	
MC-10	285	0.005	
MC-10	290	0.002	
MC-10	295	0.002	
MC-10	300	0.002	
MC-10	305	0.002	
MC-10	310	0.003	
MC-10	315	-	
MC-10	320	-	
MC-10	325	-	
MC-10	330	0.031	
MC-10	335	0.009	
MC-10	340	0.004	
MC-10	345	0.017	
MC-10	350	0.006	
MC-10	355	0.017	
MC-10	360	0.040	
MC-10	365	0.049	30' at .031
MC-10	370	0.047	
MC-10	375	0.008	
MC-10	380	0.023	
MC-10	385	0.003	
MC-10	390	0.001	
MC-10	395	0.009	
MC-10	400	0.002	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-10 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-10	405	0.003	
MC-10	410	0.012	10' at .011
MC-10	415	0.010	
MC-10	420	0.006	
MC-10	425	0.006	
MC-10	430	0.002	
MC-10	435	0.002	
MC-10	440	0.003	
MC-10	445	0.016	
MC-10	450	0.005	
MC-10	455	0.005	
MC-10	460	0.024	
MC-10	465	0.023	
MC-10	470	0.013	
MC-10	475	0.029	
MC-10	480	0.014	45' at .020
MC-10	485	0.012	
MC-10	490	0.026	
MC-10	495	0.024	
MC-10	500	0.012	
MC-10	505	0.006	
MC-10	510	0.011	
MC-10	515	0.027	
MC-10	520	0.024	25' at .021
MC-10	525	0.021	
MC-10	530	0.020	
MC-10	535	0.002	
MC-10	540	0.001	
MC-10	545	0.002	
MC-10	550	0.005	
MC-10	555	0.008	
MC-10	560	0.013	

Drill Hole	FT	opt Au	Resource est intercepts

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-11

Drill Hole	FT	opt Au	Resource est intercepts
MC-11	5	0.020	
MC-11	10	0.003	
MC-11	15	0.009	
MC-11	20	0.003	
MC-11	25	0.001	
MC-11	30	-	
MC-11	35	0.003	
MC-11	40	0.029	
MC-11	45	0.009	
MC-11	50	0.006	
MC-11	55	0.007	
MC-11	60	0.011	
MC-11	65	0.009	
MC-11	70	0.012	
MC-11	75	0.016	15' at .013
MC-11	80	0.010	
MC-11	85	0.003	
MC-11	90	0.002	
MC-11	95	0.006	
MC-11	100	0.022	
MC-11	105	0.005	
MC-11	110	0.002	
MC-11	115	0.032	
MC-11	120	0.001	
MC-11	125	-	
MC-11	130	0.005	
MC-11	135	0.010	
MC-11	140	0.005	
MC-11	145	0.006	
MC-11	150	0.005	
MC-11	155	0.005	
MC-11	160	0.022	
MC-11	165	0.007	
MC-11	170	0.012	
MC-11	175	0.052	
MC-11	180	0.036	
MC-11	185	0.034	75' at .037
MC-11	190	0.066	
MC-11	195	0.048	
MC-11	200	0.022	

Drill Hole	FT	opt Au	Resource est intercepts
MC-11	205	0.015	
MC-11	210	0.066	
MC-11	215	0.060	
MC-11	220	0.041	
MC-11	225	0.003	
MC-11	230	0.025	
MC-11	235	0.012	15' at .019
MC-11	240	0.021	
MC-11	245	0.004	
MC-11	250	0.003	
MC-11	255	0.007	
MC-11	260	0.001	
MC-11	265	0.003	
MC-11	270	0.005	
MC-11	275	0.003	
MC-11	280	0.004	
MC-11	285	0.001	
MC-11	290	0.002	
MC-11	295	0.003	
MC-11	300	0.009	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-12

Drill Hole	FT	opt Au	Resource est intercepts
MC-12	5	0.004	
MC-12	10	0.013	
MC-12	15	0.009	
MC-12	20	0.006	
MC-12	25	0.012	
MC-12	30	0.013	15' at .013
MC-12	35	0.013	
MC-12	40	0.003	
MC-12	45	0.009	
MC-12	50	0.001	
MC-12	55	0.002	
MC-12	60	0.002	
MC-12	65	0.002	
MC-12	70	0.012	10' at .026
MC-12	75	0.039	
MC-12	80	0.003	
MC-12	85	0.002	
MC-12	90	0.007	
MC-12	95	0.002	
MC-12	100	0.002	
MC-12	105	0.009	
MC-12	110	0.046	
MC-12	115	0.005	
MC-12	120	0.005	
MC-12	125	0.001	
MC-12	130	0.002	
MC-12	135	0.002	
MC-12	140	0.002	
MC-12	145	0.002	
MC-12	150	-	
MC-12	155	0.008	
MC-12	160	0.015	
MC-12	165	0.010	15' at .012
MC-12	170	0.012	
MC-12	175	-	
MC-12	180	-	
MC-12	185	0.003	
MC-12	190	-	
MC-12	195	-	
MC-12	200	-	

Drill Hole	FT	opt Au	Resource est intercepts
MC-12	205	0.017	
MC-12	210	0.009	
MC-12	215	-	
MC-12	220	0.020	
MC-12	225	0.058	
MC-12	230	0.057	
MC-12	235	0.058	
MC-12	240	0.057	
MC-12	245	0.006	55' at .057
MC-12	250	0.071	
MC-12	255	0.199	
MC-12	260	0.066	
MC-12	265	0.014	
MC-12	270	0.016	
MC-12	275	0.004	
MC-12	280	0.012	
MC-12	285	0.002	
MC-12	290	0.002	
MC-12	295	0.002	
MC-12	300	0.025	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-13

Drill Hole	FT	opt Au	Resource est intercepts
MC-13	5	0.008	
MC-13	10	0.002	
MC-13	15	0.003	
MC-13	20	0.002	
MC-13	25	0.003	
MC-13	30	0.002	
MC-13	35	-	
MC-13	40	0.002	
MC-13	45	0.010	10' at .010
MC-13	50	0.010	
MC-13	55	0.005	
MC-13	60	0.005	
MC-13	65	0.004	
MC-13	70	0.004	
MC-13	75	0.003	
MC-13	80	0.009	
MC-13	85	0.013	
MC-13	90	0.012	
MC-13	95	0.010	25' at .018
MC-13	100	0.035	
MC-13	105	0.022	
MC-13	110	0.004	
MC-13	115	0.006	
MC-13	120	0.008	
MC-13	125	0.010	
MC-13	130	0.012	
MC-13	135	0.021	
MC-13	140	0.010	35' at .018
MC-13	145	0.008	
MC-13	150	0.040	
MC-13	155	0.024	
MC-13	160	0.004	
MC-13	165	0.018	
MC-13	170	0.018	20' at .015
MC-13	175	0.015	
MC-13	180	0.010	
MC-13	185	0.008	
MC-13	190	0.004	
MC-13	195	0.004	
MC-13	200	0.013	

Drill Hole	FT	opt Au	Resource est intercepts
MC-13	205	0.027	
MC-13	210	0.063	30' at .036
MC-13	215	0.057	
MC-13	220	0.007	
MC-13	225	0.048	
MC-13	230	0.009	
MC-13	235	0.005	
MC-13	240	No sample	
MC-13	245	0.003	
MC-13	250	0.004	
MC-13	255	0.003	
MC-13	260	0.002	
MC-13	265	0.002	
MC-13	270	0.003	
MC-13	275	0.005	
MC-13	280	0.005	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-14

Drill Hole	FT	opt Au	Resource est intercepts
MC-14	5	0.008	
MC-14	10	0.009	
MC-14	15	0.007	
MC-14	20	0.002	
MC-14	25	0.005	
MC-14	30	0.002	
MC-14	35	0.008	
MC-14	40	0.003	
MC-14	45	-	
MC-14	50	0.006	
MC-14	55	0.052	
MC-14	60	0.035	
MC-14	65	0.046	
MC-14	70	0.010	40' at .053
MC-14	75	0.030	
MC-14	80	0.114	
MC-14	85	0.080	
MC-14	90	0.056	
MC-14	95	0.006	
MC-14	100	0.008	
MC-14	105	0.006	
MC-14	110	0.008	
MC-14	115	0.004	
MC-14	120	0.012	
MC-14	125	0.015	
MC-14	130	0.032	
MC-14	135	0.018	
MC-14	140	0.067	
MC-14	145	0.023	
MC-14	150	0.021	
MC-14	155	0.020	
MC-14	160	0.028	
MC-14	165	0.026	
MC-14	170	0.031	150' at .039
MC-14	175	0.048	
MC-14	180	0.077	
MC-14	185	0.111	
MC-14	190	0.004	
MC-14	195	0.038	
MC-14	200	0.005	

Drill Hole	FT	opt Au	Resource est intercepts
MC-14	205	0.036	
MC-14	210	0.077	
MC-14	215	0.048	
MC-14	220	0.070	
MC-14	225	0.086	
MC-14	230	0.064	
MC-14	235	0.063	
MC-14	240	0.051	
MC-14	245	0.015	
MC-14	250	0.015	
MC-14	255	0.034	
MC-14	260	0.012	
MC-14	265	0.037	
MC-14	270	0.006	
MC-14	275	0.011	
MC-14	280	0.003	
MC-14	285	0.013	
MC-14	290	0.009	
MC-14	295	0.005	
MC-14	300	0.013	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-15

Drill Hole	FT	opt Au	Resource est intercepts
MC-15	5	0.005	
MC-15	10	-	
MC-15	15	-	
MC-15	20	-	
MC-15	25	0.002	
MC-15	30	-	
MC-15	35	-	
MC-15	40	-	
MC-15	45	0.005	
MC-15	50	0.004	
MC-15	55	0.022	
MC-15	60	0.005	
MC-15	65	0.010	
MC-15	70	0.001	
MC-15	75	-	
MC-15	80	0.004	
MC-15	85	0.008	
MC-15	90	0.003	
MC-15	95	0.006	
MC-15	100	0.004	
MC-15	105	0.012	10' at .014
MC-15	110	0.017	
MC-15	115	0.002	
MC-15	120	0.030	
MC-15	125	0.024	15' at .023
MC-15	130	0.015	
MC-15	135	0.005	
MC-15	140	0.005	
MC-15	145	0.004	
MC-15	150	0.001	
MC-15	155	0.002	
MC-15	160	0.001	
MC-15	165	0.002	
MC-15	170	0.004	
MC-15	175	0.001	
MC-15	180	0.005	
MC-15	185	0.004	
MC-15	190	0.003	
MC-15	195	0.002	
MC-15	200	0.061	

Drill Hole	FT	opt Au	Resource est intercepts
MC-15	205	0.010	
MC-15	210	0.043	
MC-15	215	0.038	
MC-15	220	0.063	
MC-15	225	0.070	50' at .060
MC-15	230	0.085	
MC-15	235	0.105	
MC-15	240	0.088	
MC-15	245	0.032	
MC-15	250	0.009	
MC-15	255	0.008	
MC-15	260	0.002	
MC-15	265	0.002	
MC-15	270	-	
MC-15	275	0.003	
MC-15	280	0.007	
MC-15	285	0.002	
MC-15	290	0.002	
MC-15	295	0.012	
MC-15	300	0.004	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-16

Drill Hole	FT	opt Au	Resource est Intercepts
MC-16	5	0.003	
MC-16	10	0.005	
MC-16	15	0.006	
MC-16	20	-	
MC-16	25	-	
MC-16	30	-	
MC-16	35	0.002	
MC-16	40	-	
MC-16	45	-	
MC-16	50	-	
MC-16	55	-	
MC-16	60	-	
MC-16	65	0.021	
MC-16	70	0.007	
MC-16	75	0.001	
MC-16	80	0.006	
MC-16	85	0.002	
MC-16	90	0.006	
MC-16	95	0.009	
MC-16	100	0.010	
MC-16	105	0.008	
MC-16	110	0.005	
MC-16	115	-	
MC-16	120	-	
MC-16	125	0.008	
MC-16	130	0.013	
MC-16	135	-	
MC-16	140	0.002	
MC-16	145	0.003	
MC-16	150	0.006	
MC-16	155	0.003	
MC-16	160	0.005	
MC-16	165	0.004	
MC-16	170	0.006	
MC-16	175	0.013	
MC-16	180	0.009	
MC-16	185	0.007	
MC-16	190	0.007	
MC-16	195	0.008	
MC-16	200	0.003	
MC-16	205	0.003	
MC-16	210	0.002	
MC-16	215	0.010	10' at .011
MC-16	220	0.012	
MC-16	225	0.008	
MC-16	230	0.009	
MC-16	235	0.004	
MC-16	240	0.001	
MC-16	245	0.002	
MC-16	250	0.011	
MC-16	255	0.024	
MC-16	260	0.014	
MC-16	265	0.027	
MC-16	270	0.041	
MC-16	275	0.023	60' at .038
MC-16	280	0.042	
MC-16	285	0.022	
MC-16	290	0.032	
MC-16	295	0.072	
MC-16	300	0.082	
MC-16	305	0.069	
MC-16	310	0.001	
MC-16	315	-	
MC-16	320	-	
MC-16	325	-	
MC-16	330	0.002	
MC-16	335	0.003	
MC-16	340	0.002	
MC-16	345	0.002	
MC-16	350	0.001	
MC-16	355	0.010	
MC-16	360	0.006	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-17

Drill Hole	FT	opt Au	Resource est intercepts
MC-17	5	0.014	
MC-17	10	0.009	15' at .012
MC-17	15	0.012	
MC-17	20	0.006	
MC-17	25	0.008	
MC-17	30	0.008	
MC-17	35	0.005	
MC-17	40	0.003	
MC-17	45	0.005	
MC-17	50	0.004	
MC-17	55	0.016	10' at .014
MC-17	60	0.011	
MC-17	65	0.002	
MC-17	70	0.001	
MC-17	75	0.002	
MC-17	80	0.022	
MC-17	85	0.007	
MC-17	90	0.054	
MC-17	95	0.065	
MC-17	100	0.049	
MC-17	105	0.078	
MC-17	110	0.008	
MC-17	115	0.007	
MC-17	120	0.008	
MC-17	125	0.012	105' at .027
MC-17	130	0.019	
MC-17	135	0.015	
MC-17	140	0.010	
MC-17	145	0.023	
MC-17	150	0.010	
MC-17	155	0.062	
MC-17	160	0.018	
MC-17	165	0.008	
MC-17	170	0.011	
MC-17	175	0.024	
MC-17	180	0.050	

Drill Hole	FT	opt Au	Resource est intercepts

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-18A

Drill Hole	FT	opt Au	Resource est intercepts
MC-18A	5	0.015	
MC-18A	10	0.007	
MC-18A	15	no samp	average grade
MC-18A	20	no samp	0 to 335'
MC-18A	25	0.005	0.013
MC-18A	30	0.003	
MC-18A	35	-	
MC-18A	40	0.007	
MC-18A	45	0.016	
MC-18A	50	0.005	
MC-18A	55	0.002	
MC-18A	60	0.003	
MC-18A	65	0.012	
MC-18A	70	0.014	
MC-18A	75	0.024	25' at 0.017
MC-18A	80	0.016	
MC-18A	85	0.017	
MC-18A	90	0.007	
MC-18A	95	0.003	
MC-18A	100	0.005	
MC-18A	105	0.006	
MC-18A	110	0.012	
MC-18A	115	0.013	
MC-18A	120	0.035	
MC-18A	125	0.008	
MC-18A	130	0.014	
MC-18A	135	0.024	50' at .015
MC-18A	140	0.012	
MC-18A	145	0.008	
MC-18A	150	0.018	
MC-18A	155	0.008	
MC-18A	160	0.005	
MC-18A	165	0.008	
MC-18A	170	0.010	20' at 0.009
MC-18A	175	0.008	
MC-18A	180	0.009	
MC-18A	185	0.005	
MC-18A	190	0.019	
MC-18A	195	0.013	
MC-18A	200	0.009	
MC-18A	205	0.011	
MC-18A	210	0.008	

Drill Hole	FT	opt Au	Resource est intercepts
MC-18A	215	0.010	
MC-18A	220	0.015	
MC-18A	225	0.014	
MC-18A	230	0.030	25' at .017
MC-18A	235	0.013	
MC-18A	240	0.016	
MC-18A	245	0.013	
MC-18A	250	0.012	
MC-18A	255	0.054	
MC-18A	260	0.024	
MC-18A	265	0.012	
MC-18A	270	0.025	
MC-18A	275	0.014	
MC-18A	280	0.015	
MC-18A	285	0.010	
MC-18A	290	0.009	
MC-18A	295	0.012	
MC-18A	300	0.030	
MC-18A	305	0.039	
MC-18A	310	0.010	
MC-18A	315	0.010	
MC-18A	320	0.009	
MC-18A	325	0.014	
MC-18A	330	0.018	
MC-18A	335	0.010	
MC-18A	340	0.005	
MC-18A	345	0.003	
MC-18A	350	0.009	
MC-18A	355	0.008	
MC-18A	360	0.012	45' at .009
MC-18A	365	0.008	
MC-18A	370	0.007	
MC-18A	375	0.008	
MC-18A	380	0.008	
MC-18A	385	0.011	
MC-18A	390	0.010	
MC-18A	395	0.005	
MC-18A	400	0.004	
MC-18A	405	0.005	
MC-18A	410	0.005	
MC-18A	415	0.003	
MC-18A	420	0.005	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-18A (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-18A	425	0.008	
MC-18A	430	0.003	
MC-18A	435	0.003	
MC-18A	440	0.004	
MC-18A	445	0.008	
MC-18A	450	-	
MC-18A	455	0.002	
MC-18A	460	0.008	
MC-18A	465	0.007	
MC-18A	470	0.005	
MC-18A	475	0.005	
MC-18A	480	0.002	
MC-18A	485	0.022	
MC-18A	490	0.007	15' at 0.015
MC-18A	495	0.017	
MC-18A	500	-	
MC-18A	505	0.005	
MC-18A	510	0.005	
MC-18A	515	0.006	
MC-18A	520	0.003	
MC-18A	525	0.003	
MC-18A	530	0.012	
MC-18A	535	0.004	
MC-18A	540	0.006	
MC-18A	545	0.003	
MC-18A	550	-	
MC-18A	555	-	
MC-18A	560	0.002	
MC-18A	565	-	
MC-18A	570	0.003	
MC-18A	575	0.001	
MC-18A	580	0.001	
MC-18A	585	0.003	
MC-18A	590	0.004	
MC-18A	595	0.001	
MC-18A	600	-	
MC-18A	605	0.002	
MC-18A	610	0.002	
MC-18A	615	-	
MC-18A	620	-	
MC-18A	625	0.001	
MC-18A	630	0.001	
MC-18A	635	0.003	
MC-18A	640	0.001	
MC-18A	645	-	
MC-18A	650	0.001	
MC-18A	655	0.003	
MC-18A	660	-	
MC-18A	665	-	
MC-18A	670	-	
MC-18A	675	0.003	
MC-18A	680	0.001	
MC-18A	685	0.002	
MC-18A	690	0.002	
MC-18A	695	0.002	
MC-18A	700	-	
MC-18A	705	0.005	
MC-18A	710	0.002	
MC-18A	715	0.003	
MC-18A	720	0.002	
MC-18A	725	0.016	
MC-18A	730	0.002	
MC-18A	735	-	
MC-18A	740	0.001	
MC-18A	745	0.004	
MC-18A	750	0.002	
MC-18A	755	0.003	
MC-18A	760	-	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-19

Drill Hole	FT	opt Au	Resource est intercepts
MC-19	5	0.001	
MC-19	10	0.007	
MC-19	15	0.004	
MC-19	20	0.004	average grade
MC-19	25	0.003	0 TO 315'
MC-19	30	0.004	0.011
MC-19	35	0.008	
MC-19	40	0.007	
MC-19	45	0.004	
MC-19	50	0.004	
MC-19	55	0.003	
MC-19	60	0.002	
MC-19	65	0.005	
MC-19	70	0.010	
MC-19	75	0.003	
MC-19	80	0.005	
MC-19	85	0.010	
MC-19	90	0.005	
MC-19	95	0.003	
MC-19	100	0.005	
MC-19	105	0.003	
MC-19	110	0.010	10' at 0.025
MC-19	115	0.040	
MC-19	120	0.006	
MC-19	125	0.009	
MC-19	130	0.006	
MC-19	135	0.007	
MC-19	140	0.045	
MC-19	145	0.079	
MC-19	150	0.009	40' at .026
MC-19	155	0.009	
MC-19	160	0.039	
MC-19	165	0.007	
MC-19	170	0.008	
MC-19	175	0.010	
MC-19	180	0.006	
MC-19	185	0.007	
MC-19	190	0.004	
MC-19	195	0.009	
MC-19	200	0.003	
MC-19	205	0.006	
MC-19	210	0.009	
MC-19	215	0.004	
MC-19	220	0.005	
MC-19	225	0.012	
MC-19	230	0.011	10' at 0.012
MC-19	235	0.005	
MC-19	240	0.003	
MC-19	245	0.006	
MC-19	250	0.004	
MC-19	255	0.005	
MC-19	260	0.019	
MC-19	265	0.015	
MC-19	270	0.008	
MC-19	275	0.013	
MC-19	280	0.023	
MC-19	285	0.018	
MC-19	290	0.048	
MC-19	295	0.017	60' at .017
MC-19	300	0.010	
MC-19	305	0.011	
MC-19	310	0.013	
MC-19	315	0.014	
MC-19	320	0.005	
MC-19	325	0.003	
MC-19	330	0.005	
MC-19	335	0.001	
MC-19	340	-	
MC-19	345	0.010	
MC-19	350	0.010	
MC-19	355	-	
MC-19	360	0.005	
MC-19	365	0.010	
MC-19	370	0.010	15' at 0.009
MC-19	375	0.008	
MC-19	380	0.003	
MC-19	385	0.010	10' at 0.014
MC-19	390	0.018	
MC-19	395	-	
MC-19	400	0.001	
MC-19	405	0.003	
MC-19	410	0.005	
MC-19	415	0.005	
MC-19	420	0.007	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-19 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-19	425	0.006	
MC-19	430	-	
MC-19	435	0.004	
MC-19	440	-	
MC-19	445	0.006	
MC-19	450	0.004	
MC-19	455	0.003	
MC-19	460	-	
MC-19	465	0.002	
MC-19	470	0.004	
MC-19	475	0.007	
MC-19	480	0.004	
MC-19	485	-	
MC-19	490	0.003	
MC-19	495	0.004	
MC-19	500	0.004	
MC-19	505	0.002	
MC-19	510	0.001	
MC-19	515	0.002	
MC-19	520	0.002	
MC-19	525	0.004	
MC-19	530	0.005	
MC-19	535	-	
MC-19	540	0.008	
MC-19	545	0.004	
MC-19	550	0.005	
MC-19	555	0.015	
MC-19	560	-	
MC-19	565	0.003	
MC-19	570	0.006	
MC-19	575	0.006	
MC-19	580	0.005	
MC-19	585	-	
MC-19	590	0.029	
MC-19	595	0.002	
MC-19	600	-	
MC-19	605	0.001	
MC-19	610	0.001	
MC-19	615	-	
MC-19	620	0.020	
MC-19	625	-	
MC-19	630	-	
MC-19	635	-	
MC-19	640	-	
MC-19	645	-	
MC-19	650	0.002	
MC-19	655	0.004	
MC-19	660	-	
MC-19	665	0.002	
MC-19	670	0.001	
MC-19	675	0.003	
MC-19	680	0.003	
MC-19	685	0.001	
MC-19	690	0.002	
MC-19	695	0.003	
MC-19	700	0.002	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-20

Drill Hole	FT	opt Au	Resource est intercepts
MC-20	5	0.007	
MC-20	10	-	
MC-20	15	0.008	
MC-20	20	0.009	15' at 0.008
MC-20	25	0.007	
MC-20	30	0.005	
MC-20	35	0.017	
MC-20	40	0.005	
MC-20	45	0.007	
MC-20	50	0.021	
MC-20	55	0.012	10' at 0.016
MC-20	60	0.007	
MC-20	65	0.005	Average grade
MC-20	70	0.000	0 to 400'
MC-20	75	0.006	0.012
MC-20	80	0.007	
MC-20	85	0.008	
MC-20	90	0.003	
MC-20	95	0.005	
MC-20	100	0.006	
MC-20	105	0.005	
MC-20	110	0.008	
MC-20	115	0.020	
MC-20	120	0.018	
MC-20	125	0.019	
MC-20	130	0.008	50' at .019
MC-20	135	0.012	
MC-20	140	0.075	
MC-20	145	0.010	
MC-20	150	0.011	
MC-20	155	0.010	
MC-20	160	0.007	
MC-20	165	0.003	
MC-20	170	0.003	
MC-20	175	0.008	
MC-20	180	0.005	
MC-20	185	0.005	
MC-20	190	0.006	
MC-20	195	0.006	
MC-20	200	0.010	
MC-20	205	0.006	
MC-20	210	0.007	

Drill Hole	FT	opt Au	Resource est intercepts
MC-20	215	0.003	
MC-20	220	0.005	
MC-20	225	0.008	
MC-20	230	0.008	15' at 0.009
MC-20	235	0.010	
MC-20	240	0.007	
MC-20	245	0.014	
MC-20	250	0.018	
MC-20	255	0.042	25' at 0.021
MC-20	260	0.010	
MC-20	265	0.023	
MC-20	270	0.006	
MC-20	275	0.011	
MC-20	280	0.002	
MC-20	285	0.026	
MC-20	290	0.013	
MC-20	295	0.018	
MC-20	300	0.009	
MC-20	305	0.015	
MC-20	310	0.020	
MC-20	315	0.020	
MC-20	320	0.015	
MC-20	325	0.010	
MC-20	330	0.015	
MC-20	335	0.028	
MC-20	340	0.018	
MC-20	345	0.014	120' at 0.015
MC-20	350	0.017	
MC-20	355	0.009	
MC-20	360	0.010	
MC-20	365	0.015	
MC-20	370	0.010	
MC-20	375	0.022	
MC-20	380	0.011	
MC-20	385	0.012	
MC-20	390	0.025	
MC-20	395	0.010	
MC-20	400	0.008	
MC-20	405	0.003	
MC-20	410	0.002	
MC-20	415	0.002	
MC-20	420	0.003	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-20 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-20	425	0.005	
MC-20	430	0.006	
MC-20	435	0.006	
MC-20	440	0.002	
MC-20	445	0.002	
MC-20	450	0.002	
MC-20	455	0.002	
MC-20	460	0.008	
MC-20	465	0.009	
MC-20	470	0.008	25' at .009
MC-20	475	0.008	
MC-20	480	0.010	
MC-20	485	0.006	
MC-20	490	0.006	
MC-20	495	0.010	
MC-20	500	0.011	
MC-20	505	0.020	30' at .015
MC-20	510	0.014	
MC-20	515	0.012	
MC-20	520	0.022	
MC-20	525	0.006	
MC-20	530	0.009	
MC-20	535	0.005	
MC-20	540	0.007	
MC-20	545	0.029	
MC-20	550	0.006	15' at 0.019
MC-20	555	0.021	
MC-20	560	0.003	
MC-20	565	0.008	
MC-20	570	0.008	
MC-20	575	0.004	
MC-20	580	-	
MC-20	585	0.001	
MC-20	590	0.026	
MC-20	595	0.002	
MC-20	600	0.001	
MC-20	605	0.003	
MC-20	610	0.011	
MC-20	615	0.003	
MC-20	620	0.001	
MC-20	625	-	
MC-20	630	0.008	

Drill Hole	FT	opt Au	Resource est intercepts
MC-20	635	-	
MC-20	640	-	
MC-20	645	0.001	
MC-20	650	0.001	
MC-20	655	-	
MC-20	660	0.007	
MC-20	665	-	
MC-20	670	-	
MC-20	675	-	
MC-20	680	-	
MC-20	685	-	
MC-20	690	-	
MC-20	695	-	
MC-20	700	-	
MC-20	705	-	
MC-20	710	-	
MC-20	715	0.021	
MC-20	720	0.003	
MC-20	725	0.001	
MC-20	730	0.002	
MC-20	735	-	
MC-20	740	-	
MC-20	745	-	
MC-20	750	-	
MC-20	755	0.001	
MC-20	760	-	
MC-20	765	-	
MC-20	770	0.001	
MC-20	775	-	
MC-20	780	-	
MC-20	785	-	
MC-20	790	0.001	
MC-20	795	-	
MC-20	800	0.001	
MC-20	805	-	
MC-20	810	-	
MC-20	815	-	
MC-20	820	-	
MC-20	825	-	
MC-20	830	-	
MC-20	835	-	
MC-20	840	-	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-20 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-20	845	0.001	
MC-20	850	-	
MC-20	855	-	
MC-20	860	0.007	
MC-20	865	0.001	
MC-20	870	-	
MC-20	875	-	
MC-20	880	0.001	
MC-20	885	-	
MC-20	890	-	
MC-20	895	0.001	
MC-20	900	-	
MC-20	905	-	
MC-20	910	0.003	
MC-20	915	0.002	
MC-20	920	-	
MC-20	925	-	
MC-20	930	-	
MC-20	935	-	
MC-20	940	0.002	
MC-20	945	0.003	
MC-20	950	-	
MC-20	955	0.002	
MC-20	960	0.003	
MC-20	965	0.004	
MC-20	970	0.018	
MC-20	975	-	
MC-20	980	0.001	
MC-20	985	0.003	
MC-20	990	0.002	
MC-20	995	0.003	
MC-20	1000	0.002	
MC-20	1005	-	
MC-20	1010	-	
MC-20	1015	-	
MC-20	1020	0.001	
MC-20	1025	0.001	
MC-20	1030	0.003	
MC-20	1035	-	
MC-20	1040	-	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-21

Drill Hole	FT	opt Au	Resource est intercepts
MC-21	5	no sample	
MC-21	10	no sample	
MC-21	15	0.001	
MC-21	20	0.002	
MC-21	25	0.002	
MC-21	30	0.002	
MC-21	35	0.001	
MC-21	40	0.003	
MC-21	45	0.002	
MC-21	50	-	
MC-21	55	0.009	
MC-21	60	-	
MC-21	65	-	
MC-21	70	0.001	
MC-21	75	0.001	
MC-21	80	0.001	
MC-21	85	-	
MC-21	90	0.003	
MC-21	95	-	
MC-21	100	-	
MC-21	105	-	
MC-21	110	0.002	
MC-21	115	0.001	
MC-21	120	-	
MC-21	125	-	
MC-21	130	0.001	
MC-21	135	-	
MC-21	140	-	
MC-21	145	-	
MC-21	150	-	
MC-21	155	-	
MC-21	160	-	
MC-21	165	-	
MC-21	170	-	
MC-21	175	-	
MC-21	180	-	
MC-21	185	-	
MC-21	190	0.007	
MC-21	195	0.002	
MC-21	200	-	
MC-21	205	-	
MC-21	210	-	
MC-21	215	-	
MC-21	220	0.001	
MC-21	225	0.002	
MC-21	230	-	
MC-21	235	-	
MC-21	240	0.001	
MC-21	245	-	
MC-21	250	0.002	
MC-21	255	0.003	
MC-21	260	-	
MC-21	265	-	
MC-21	270	-	
MC-21	275	-	
MC-21	280	-	
MC-21	285	0.001	
MC-21	290	-	
MC-21	295	-	
MC-21	300	-	
MC-21	305	-	
MC-21	310	0.001	
MC-21	315	0.002	
MC-21	320	0.006	
MC-21	325	-	
MC-21	330	-	
MC-21	335	0.002	
MC-21	340	-	
MC-21	345	-	
MC-21	350	-	
MC-21	355	-	
MC-21	360	-	
MC-21	365	0.002	
MC-21	370	-	
MC-21	375	-	
MC-21	380	-	
MC-21	385	0.001	
MC-21	390	-	
MC-21	395	0.002	
MC-21	400	0.009	
MC-21	405	-	
MC-21	410	-	
MC-21	415	-	
MC-21	420	-	

MAGMA DRILL HOLE ASSAYS

DRILL HOLE MC-21 (continued)

Drill Hole	FT	opt Au	Resource est intercepts
MC-21	425	0.001	
MC-21	430	-	
MC-21	435	-	
MC-21	440	-	
MC-21	445	-	
MC-21	450	-	
MC-21	455	-	
MC-21	460	-	
MC-21	465	-	
MC-21	470	-	
MC-21	475	-	
MC-21	480	-	
MC-21	485	-	
MC-21	490	0.002	
MC-21	495	-	
MC-21	500	-	

Drill Hole	FT	opt Au	Resource est intercepts

APPENDIX E

ASSAY LAB REPORTS

SURFACE SAMPLES

DRILL HOLE SAMPLES

r-Clegg, Inc.
Spice Island Dr.
ilding 1, Unit A
Sparks, Nevada 89431
702 (359-9330)

BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

DATE PRINTED: 4-NOV-91

REPORT: R91-12259.0 (COMPLETE)

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	AU PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Bi PPM	As PPM	Sb PPM
R2 MP-53		<5	<0.2	27	61	7	17	5	5	5	14	<5
R2 MP-54		<5	<0.2	10	49	10	5	6	3	7	16	<5
R2 MP-55		<5	<0.2	5	24	2	4	3	2	<5	<5	<5
R2 MP-56		<5	0.6	11	35	16	4	11	2	<5	<5	<5
R2 MP-57		51	<0.2	6	16	<1	<1	3	<1	<5	16	<5
R2 MP-58		6	<0.2	2	26	52	6	8	5	<5	<5	<5
R2 MP-59		<5	<0.2	11	50	10	33	4	1	<5	29	<5
R2 MP-60		<5	17.3	27	30	38	2	7	3	<5	<5	<5
X2 MP-61		890	0.3	11	78	8	53	10	6	6	7	<5
R2 MP-62		6	0.3	11	74	8	53	9	6	6	9	<5
R2 MP-63		18	<0.2	6	3	3	7	6	2	<5	<5	<5
R2 MP-64		<5	<0.2	16	61	12	2	5	3	<5	<5	<5
R2 MP-65		8	0.3	267	26	212	2	36	8	<5	21	<5

r-Clegg, Inc.
Spice Island Dr.
ilding 1, Unit A
Sparks, Nevada 89431
702 (359-9330)

BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

DATE PRINTED: 4-NOV-91

REPORT: R91-12259.0 (COMPLETE)

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Hg PPM	Fe PCT	Mn PPM	Ba PPM	Cr PPM	W PPM
R2 MP-53		<0.010	5.75	5	1500	40	<20
R2 MP-54		0.017	3.61	14	1900	39	<20
R2 MP-55		<0.010	1.64	10	1800	31	<20
R2 MP-56		<0.010	0.79	808	930	173	<20
R2 MP-57		0.097	2.80	30	380	134	<20
R2 MP-58		<0.010	>10.000	227	500	12	<20
R2 MP-59		<0.010	4.66	46	770=	135	<20
R2 MP-60		<0.010	1.37	1195	1000	105	<20
X2 MP-61		3.536	1.56	92	490	123	<20
R2 MP-62		<0.010	1.52	93	760	121	<20
R2 MP-63		<0.010	0.56	41	690	217	<20
R2 MP-64		0.013	5.52	36	530	45	<20
R2 MP-65		0.081	2.51	513	1900	65	<20

...gg, Inc.
... Island Dr.
...g 1, Unit A
...ks, Nevada 89431
...2 (359-9330)

BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

DATE PRINTED: 2-DEC-91

REPORT: R91-12435.0 (PARTIAL)

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au 30g PPB
R2 MP-66		6
R2 MP-67		<5

Bondar-Clegg, Inc.
6625 Spice Island Dr.
Building I, Unit A
Sparks, Nevada 89431
702 (359-9330)

BONDAR-CLEGG

Geochemical Lab Report

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 3-DEC-91

REPORT: R91-12435.0 (COMPLETE)

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au 30g PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM
R2 MP-66		6	<0.2	22	5	3	4	8	1	<1.0	<5	7
R2 MP-67		<5	0.6	305	100	<1	3	9	3	<1.0	<5	7

ondar-Clegg, Inc.
625 Spice Island Dr.
Building 1, Unit A
Sparks, Nevada 89431
702 (359-9330)

BONDAR-CLEGG

Geochemical Lab Report

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 3 DEC 91

REPORT: R91-12435.0 (COMPLETE)

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Ba PPM	Y PPM	Sn PPM	F PPM
R2 MP-66		0.06	0.12	0.03	0.10	274	460	2	12	351
R2 MP-67		0.02	0.22	<0.01	0.03	86	460	2	13	342

ar-Clegg, Inc.
5 Spice Island Dr.
Building 1, Unit A
Sparks, Nevada 89431
702 (359-9330)

BONDAR-CLEGG

Geochemical Lab Report

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 3-DEC-91

REPORT: R91-12435.0 (COMPLETE)

PROJECT: NONE GIVEN PAGE 1B

SAMPLE NUMBER	ELEMENT UNITS	Sb PPM	Fe PCT	Mo PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT
R2 MP-66		<5	1.23	41	<10	281	223	6	<20	<20	4	0.30
R2 MP-67		<5	4.33	27	<10	367	202	21	<20	<20	3	0.29

Bondar-Clegg, Inc.
625 Spice Island Dr.
Building 1, Unit A
Sparks, Nevada 89431
702 (359-9330)

BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

REPORT: R91-12381I.II (PARTIAL)

DATE PRINTED: 15-NOV-91

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au 30g PPB
R2 MP-68		7
R2 MP-69		<5
R2 MP-70		<5
R2 MP-71		<5
R2 MP-72		<5
R2 MP-73		<5
R2 MP-74		<5
R2 MP-75		<5
R2 MP-76		<5
R2 MP-77		<5
R2 MP-78		<5
R2 MP-79		<5
R2 MP-80		<5
R2 MP-81		<5
R2 MP-82		<5
R2 MP-83		6
R2 MP-84		<5
R2 MP-85		<5
R2 MP-86		<5
R2 MP-87		<5
R2 MP-88		<5
R2 MP-89		<5
R2 MP-90		<5
R2 MP-91		<5
R2 MP-92		89
R2 MP-93		<5
R2 MP-94		<5
R2 MP-95		<5
R2 MP-96		10

Dr.
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BONDAR-CLEGG

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

REPORT: R91-12388.0 (COMPLETE)

DATE PRINTED: 2 DEC 91

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Au 30g PPB	~~Ag~~ PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	~~Cd~~ PPM	~~Bi~~ PPM	As PPM
R2 MP-68		7	<0.2	19	23	<1	15	3	1	<1.0	<5	7
R2 MP-69		<5	<0.2	10	14	2	2	2	1	<1.0	<5	<5
R2 MP-70		<5	<0.2	10	19	<1	3	2	1	<1.0	<5	10
R2 MP-71		<5	<0.2	11	10	1	2	2	1	<1.0	<5	26
R2 MP-72		<5	<0.2	6	4	<1	3	2	<1	<1.0	<5	8
R2 MP-73		<5	<0.2	12	5	4	15	4	3	<1.0	<5	23
R2 MP-74		<5	<0.2	7	6	<1	3	2	1	<1.0	<5	23
R2 MP-75		<5	<0.2	14	16	2	2	2	1	<1.0	<5	<5
R2 MP-76		<5	<0.2	6	17	1	5	5	1	<1.0	<5	10
R2 MP-77		<5	<0.2	28	26	6	5	3	1	<1.0	<5	15
R2 MP-78		<5	<0.2	10	36	22	4	11	2	<1.0	<5	13
R2 MP-79		<5	<0.2	9	32	<1	2	3	1	<1.0	<5	22
R2 MP-80		<5	<0.2	7	26	<1	5	2	1	<1.0	<5	14
R2 MP-81		<5	<0.2	20	19	<1	3	3	1	<1.0	<5	16
R2 MP-82		<5	<0.2	11	24	<1	5	3	<1	<1.0	<5	7
R2 MP-83		6	<0.2	11	36	10	9	3	1	<1.0	<5	8
R2 MP-84		<5	<0.2	7	43	17	1	15	10	<1.0	<5	6
R2 MP-85		<5	<0.2	10	16	48	2	8	6	<1.0	<5	<5
R2 MP-86		<5	<0.2	13	18	<1	3	3	2	<1.0	<5	7
R2 MP-87		<5	<0.2	16	8	<1	6	3	<1	<1.0	<5	5
R2 MP-88		<5	<0.2	15	17	<1	3	2	<1	<1.0	<5	7
R2 MP-89		<5	<0.2	9	77	<1	15	6	2	<1.0	<5	5
R2 MP-90		<5	<0.2	13	48	51	2	12	5	<1.0	<5	<5
R2 MP-91		<5	<0.2	20	21	5	3	3	1	<1.0	<5	<5
R2 MP-92		89	<0.2	17	24	45	3	26	7	<1.0	<5	30
R2 MP-93		<5	<0.2	4	22	3	2	2	1	<1.0	<5	<5
R2 MP-94		<5	<0.2	17	13	11	4	4	4	<1.0	<5	9
R2 MP-95		<5	<0.2	11	34	30	3	19	6	<1.0	<5	<5
R2 MP-96		10	<0.2	21	52	44	11	17	5	<1.0	<5	16

Dr.
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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

REPORT: R91 12330.0 (COMPLETE)

DATE PRINTED: 2-DEC-91

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	~~Au~~ PPM	Fe PCT	Mn PPM	~~Mo~~ PPM	Ba PPM	Cr PPM	V PPM	~~Sb~~ PPM	~~W~~ PPM	La PPM	Al PCT
R2 MP-68		<5	4.13	14	<10	192	36	17	<20	<20	71	0.88
R2 MP-69		<5	3.08	13	<10	219	51	15	<20	<20	11	0.98
R2 MP-70		<5	2.71	13	<10	237	32	13	<20	<20	25	1.18
R2 MP-71		<5	4.16	14	<10	174	41	18	<20	<20	26	1.02
R2 MP-72		<5	2.61	19	<10	231	62	12	<20	<20	8	0.48
R2 MP-73		<5	1.52	57	<10	267	63	17	<20	<20	3	0.94
R2 MP-74		<5	4.20	15	<10	75	53	10	<20	<20	3	0.54
R2 MP-75		<5	2.94	15	<10	311	46	16	<20	<20	27	1.33
R2 MP-76		<5	1.53	23	<10	297	198	9	<20	<20	10	0.46
R2 MP-77		<5	5.66	14	<10	98	35	17	<20	<20	33	1.71
R2 MP-78		<5	1.98	85	<10	798	46	21	<20	<20	38	1.89
R2 MP-79		<5	2.68	11	<10	144	64	11	<20	<20	2	0.91
R2 MP-80		<5	3.22	8	<10	108	30	14	<20	<20	7	1.20
R2 MP-81		<5	4.83	13	<10	131	39	21	<20	<20	2	0.87
R2 MP-82		<5	2.59	14	<10	191	49	14	<20	<20	4	0.80
R2 MP-83		<5	2.05	34	<10	236	30	23	<20	<20	50	1.55
R2 MP-84		<5	2.75	837	<10	606	37	31	<20	<20	70	2.61
R2 MP-85		<5	2.25	363	<10	76	42	22	<20	<20	44	1.50
R2 MP-86		<5	4.03	12	<10	237	32	16	<20	<20	46	1.08
R2 MP-87		<5	2.84	10	<10	545	52	14	<20	<20	4	0.73
R2 MP-88		<5	4.55	12	<10	143	18	15	<20	<20	5	1.02
R2 MP-89		<5	2.14	16	<10	233	93	8	<20	<20	9	0.72
R2 MP-90		<5	2.88	66	<10	468	32	29	<20	<20	62	1.93
R2 MP-91		<5	6.20	14	<10	134	35	41	<20	<20	21	1.90
R2 MP-92		<5	3.08	207	<10	1339	33	41	<20	<20	60	2.45
R2 MP-93		<5	1.40	23	<10	165	28	4	<20	<20	58	0.85
R2 MP-94		<5	4.75	29	<10	206	39	18	<20	<20	7	1.38
R2 MP-95		<5	2.09	33	<10	73	33	28	<20	<20	32	2.40
R2 MP-96		<5	2.83	130	<10	776	33	33	<20	<20	67	2.91

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...evada 89431
...9330)

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

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REPORT: R91-12380.0 (COMPLETE)

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SAMPLE NUMBER	ELEMENT UNITS	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ba PPM	Sn PPM	F PPM
R2 MP-68		0.04	0.16	0.05	0.50	79	4	1500	14	1256
R2 MP-69		0.04	0.11	0.07	0.45	288	2	1700	14	1615
R2 MP-70		0.06	0.17	0.06	0.54	386	2	1800	13	2457
R2 MP-71		0.05	0.08	0.03	0.62	360	2	1400	12	1905
R2 MP-72		0.02	0.07	0.05	0.49	41	<1	1800	11	1743
R2 MP-73		0.05	0.32	0.02	0.10	104	<1	800	13	1320
R2 MP-74		0.02	0.09	0.15	0.79	74	<1	1500	10	3311
R2 MP-75		0.06	0.11	0.02	0.48	340	3	1700	7	2170
R2 MP-76		0.02	0.12	0.04	0.20	610	2	680	19	548
R2 MP-77		0.11	0.10	0.14	0.60	598	3	1400	7	2218
R2 MP-78		0.42	0.26	0.02	0.63	335	6	1400	8	2500
R2 MP-79		0.08	0.16	0.07	0.70	126	1	950	8	5420
R2 MP-80		0.06	0.20	0.13	0.85	1066	3	2000	9	3935
R2 MP-81		0.07	0.14	0.07	0.72	268	1	1200	10	2853
R2 MP-82		0.04	0.05	0.05	0.56	202	1	1300	13	2103
R2 MP-83		0.20	0.43	0.09	0.63	66	5	1300	12	2985
R2 MP-84		1.38	1.21	0.03	0.63	35	15	1100	13	5920
R2 MP-85		0.79	1.69	0.03	0.27	34	12	1200	10	845
R2 MP-86		0.07	0.16	0.05	0.55	745	3	1300	11	3900
R2 MP-87		0.05	0.25	0.04	0.33	333	1	1400	12	1561
R2 MP-88		0.11	0.17	0.07	0.71	630	2	1500	8	2044
R2 MP-89		0.03	0.09	0.10	0.44	336	2	1300	14	1230
R2 MP-90		0.33	0.41	0.05	0.49	122	11	1200	9	2905
R2 MP-91		0.11	0.25	0.16	0.46	520	3	1300	6	2539
R2 MP-92		0.93	0.61	0.03	0.65	84	18	2700	12	3224
R2 MP-93		0.10	0.13	0.03	0.51	71	5	710	11	2238
R2 MP-94		0.10	0.18	0.04	0.42	146	3	1100	12	3783
R2 MP-95		0.17	0.38	0.19	0.67	76	4	930	12	3212
R2 MP-96		0.89	0.24	0.03	0.90	89	15	1400	15	6940

ar-Clegg, Inc.
Spice Island Dr.
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Sparks, Nevada 89431
702 (359-9330)

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

DATE PRINTED: 4-NOV-91

REPORT: R91-12259.0 (COMPLETE)

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	AU PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Bi PPM	As PPM	Sb PPM
MP-62		6	0.3	11	74	8	53	9	6	6	9	<5
Duplicate		6	0.2	10	65	7	45	8	6	<5	<5	<5

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A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

Geochemical Lab Report

DATE PRINTED: 23-OCT-91

REPORT: R91-12259.0 (PARTIAL)

PROJECT: NONE GIVEN

SAMPLE NUMBER	TREATMENT UNITS	AU PPB
R2 MP-53		<5
R2 MP-54		<5
R2 MP-55		<5
R2 MP-56		<5
R2 MP-57		51
R2 MP-58		6
R2 MP-59		<5
R2 MP-60		<5
X2 MP-61		890
R2 MP-62		6
R2 MP-63		18
R2 MP-64		<5
R2 MP-65		8

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Geochemical Lab Report

DATE PRINTED: 23-OCT-91

REPORT: R91-12259.0 (PARTIAL)

PROJECT: NONE GIVEN PAGE 1

SAMPLE NUMBER	FIRE ASSAY UNITS	AU PPB
R2 MP-53		<5
R2 MP-54		<5
R2 MP-55		<5
R2 MP-56		<5
R2 MP-57		51
R2 MP-58		6
R2 MP-59		<5
R2 MP-60		<5
X2 MP-61		890
R2 MP-62		6
R2 MP-63		18
R2 MP-64		<5
R2 MP-65		8

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No .....

TUCSON, ARIZONA 85713 11/27/91 19

Sample Submitted By Mr. MAGMA COPPER COMPANY MARK SANDER PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC1-1	0.003	0.05
MC1-2	TRACE	0.10
MC1-3	TRACE	0.10
MC1-4	TRACE	<0.05
MC1-5	TRACE	0.05
MC1-6	TRACE	<0.05
MC1-7	TRACE	<0.05
MC1-8	TRACE	<0.05
MC1-9	TRACE	<0.05
MC1-10	TRACE	0.05
MC1-11	0.001	0.10
MC1-12	TRACE	0.05
MC1-13	TRACE	<0.05
MC1-14	TRACE	<0.05
MC1-15	TRACE	0.05
MC1-16	TRACE	<0.05
MC1-17	TRACE	0.10
MC1-18	TRACE	0.05
MC1-19	TRACE	<0.05
MC1-20	TRACE	<0.05
PROOF A	0.008	0.05
MC1-21	0.005	0.10
MC1-22	0.002	<0.05
MC1-23	0.031	0.10
MC1-24	0.004	<0.05
MC1-25	TRACE	<0.05
MC1-26	TRACE	0.05
MC1-27	TRACE	<0.05
MC1-28	0.002	0.05
MC1-29	TRACE	<0.05
MC1-30	TRACE	<0.05
MC1-31	TRACE	0.05
MC1-32	TRACE	0.10
MC1-33	TRACE	<0.05
MC1-34	TRACE	<0.05
MC1-35	TRACE	<0.05
MC1-36	0.005	<0.05
MC1-37	0.006	0.05
MC1-38	0.005	0.05
MC1-39	0.002	0.10
PROOF A	0.010	0.05
MC1-40	0.003	<0.05
MC1-41	0.004	<0.05
MC1-42	0.007	0.20
MC1-43	0.006	0.15
MC1-44	0.011	0.10
MC1-45	0.003	0.05
MC1-46	0.006	0.05
MC1-47	0.004	<0.05
MC1-48	0.002	0.05
MC1-49	0.007	0.15
MC1-50	0.017	<0.05
MC1-51	0.005	0.05
MC1-52	0.005	<0.05
MC1-53	0.004	<0.05
MC1-54	0.005	0.05
MC1-55	0.006	<0.05
MC1-56	0.007	<0.05
MC1-57	0.015	0.25
MC1-58	0.008	0.20
MC1-59	0.008	<0.05
MC1-60	0.006	0.15

REGISTERED ASSAYER CERTIFICATE NO. 11680 MICHAEL G. JACOBS Date Signed 11/27/91 Arizona U.S.A.

Very respectfully,

Charges $ .....

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

29002

TUCSON, ARIZONA 85713 12/2/91 19

Sample Submitted By Mr. MAGMA COPPER COMPANY MARK SANDERS PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC1-61	0.010	0.15
MC1-62	0.012	<0.05
MC1-63	0.014	0.15
MC1-64	0.024	0.20
MC1-65	0.010	0.20
MC1-66	0.006	0.25
MC1-67	0.006	0.10
MC1-68	0.010	0.40
MC1-69	0.015	0.55
MC1-70	0.012	0.40
MC1-71	0.012	0.30
MC1-72	0.008	0.30
MC1-73	0.009	0.30
MC1-74	0.007	0.25
MC1-75	0.008	0.20
MC1-76	0.008	0.20
MC1-77	0.017	0.55
MC1-78	0.009	0.35
PROOF A	0.010	0.05
MC1-79	0.009	0.20
MC1-80	0.007	0.20
MC1-81	0.012	0.35
MC1-82	0.033	0.40
MC1-83	0.013	0.15
MC1-84	0.008	0.05
MC1-85	0.011	0.05
MC1-86	0.004	<0.05
MC1-87	0.006	0.10
MC1-88	0.001	0.15
MC1-89	TRACE	0.10
MC1-90	TRACE	0.15
MC1-91	TRACE	<0.05
MC1-92	TRACE	0.05
MC2-1	0.008	<0.05
MC2-2	0.016	0.15
MC2-3	0.006	0.05
MC2-4	0.007	<0.05
MC2-5	0.004	<0.05

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC2-6	0.008	<0.05
MC2-7	0.007	<0.05
MC2-8	0.008	0.15
MC2-9	0.005	<0.05
MC2-10	0.006	<0.05
MC2-11	0.004	0.05
MC2-12	0.007	0.25
MC2-13	0.007	0.15
MC2-14	0.005	0.05
MC2-15	0.004	0.15
MC2-16	0.005	<0.05
MC2-17	0.007	0.05
MC2-18	0.009	0.05
MC2-19	0.004	<0.05
MC2-20	0.009	0.20
PROOF A	0.009	0.25
MC2-21	0.005	0.20
Mc2-22	0.005	0.10
MC2-23	0.006	0.05
MC2-24	0.005	<0.05
MC2-25	0.005	0.05
Mc2-26	0.008	0.20
MC2-27	0.007	0.10
MC2-28	0.004	<0.05
MC2-29	0.003	<0.05
MC2-30	0.005	<0.05
MC2-31	0.014	0.20
MC2-32	0.007	<0.05
MC2-33	0.037	1.20
MC2-34	0.008	<0.05
MC2-35	0.006	<0.05
Mc2-36	0.002	<0.05
MC2-37	0.004	<0.05
MC2-38	0.003	<0.05

REGISTERED ASSAYER
CERTIFICATE NO.
MICHAEL D.
Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

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TUCSON, ARIZONA 85713

Certificate No 29003 19

Sample Submitted By Mr. MAGMA COPPER COMPANY MARK SANDERS PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.			SAMPLE MARKED	Au O.P.T.	Ag O.P.T.		
MC2-39	0.005	0.15			MC2-76	0.003	0.15		
MC2-40	0.003	0.40			PROOF A	0.009	0.05		
MC2-41	0.008	0.40			MC2-77	TRACE	<0.05		
MC2-42	TRACE	0.05			MC2-78	0.004	<0.05		
MC2-43	TRACE	0.30			MC2-79	0.005	0.05		
MC2-44	0.004	0.20			MC2-80	0.004	0.05		
MC2-45	0.009	<0.05			MC2-81	0.003	<0.05		
MC2-46	0.007	0.10			MC2-82	0.002	0.15		
MC2-47	0.009	0.40			MC2-83	TRACE	0.05		
MC2-48	0.008	0.15			MC2-84	0.003	<0.05		
MC2-49	0.005	0.30			MC2-85	0.004	0.15		
MC2-50	0.005	0.25			MC2-86	0.004	0.15		
MC2-51	0.006	0.05			MC2-87	0.002	0.15		
MC2-52	0.008	0.10			MC2-88	TRACE	<0.05		
MC2-53	0.009	0.15			MC2-89	TRACE	<0.05		
MC2-[illegible]	0.008	0.40			MC2-90	0.001	<0.05		
MC2-55	0.020	0.30			MC2-91	TRACE	<0.05		
MC2-56	0.007	0.15			MC2-92	TRACE	0.05		
MC2-57	0.008	0.05			MC2-93	TRACE	<0.05		
PROOF A	0.010	0.05			MC2-94	TRACE	0.05		
MC2-58	0.009	<0.05			MC2-95	TRACE	0.05		
MC2-59	0.002	0.20			PROOF A	0.009	0.05		
MC2-60	0.014	0.20			MC2-96	0.002	<0.05		
MC2-61	0.009	0.20			Mc2-97	TRACE	<0.05		
MC2-62	0.007	0.15			MC2-98	TRACE	<0.05		
MC2-63	0.012	0.05			MC2-99	0.003	0.05		
MC2-64	0.005	0.05			MC2-100	TRACE	<0.05		
MC2-65	0.002	<0.05			MC2-101	0.004	<0.05		
MC2-66	0.006	0.05			MC2-102	0.003	<0.05		
MC2-67	0.014	<0.05			MC2-103	TRACE	<0.05		
MC2-68	0.005	<0.05			MC2-104	TRACE	<0.05		
MC2-69	0.013	0.05			MC3-1	TRACE	<0.05		
MC2-70	TRACE	0.10			MC3-2	0.002	<0.05		
MC2-71	0.004	0.05			MC3-3	0.001	<0.05		
MC2-72	0.004	0.05			MC3-4	0.002	<0.05		
MC2-73	TRACE	<0.05			MC3-5	TRACE	<0.05		
MC2-74	0.004	0.05			MC3-6	TRACE	<0.05		
MC2-75	0.002	0.10			MC3-7	TRACE	<0.05		

REGISTERED A... CERTIFICATE 11850 MICHAEL ... JACOBS Date Signed 12/5 Arizona U.S.

Very respectfully,

Charges $

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Certificate No 29004

TUCSON, ARIZONA 85713 12/2/91 19

Sample Submitted By Mr. MAGMA COPPER COMPANY MARK SANDERS PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.	SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC3-8	TRACE	<0.05	MC3-44	0.005	<0.05
MC3-9	TRACE	<0.05	MC3-45	0.003	<0.05
MC3-10	TRACE	<0.05	MC3-46	TRACE	<0.05
PROOF A	0.008	0.05	MC3-47	0.005	0.30
MC3-11	TRACE	<0.05	MC3-48	0.001	0.05
MC3-12	TRACE	<0.05	PROOF A	0.008	0.05
MC3-13	TRACE	<0.05			
MC3-14	TRACE	<0.05			
MC3-15	0.004	0.05			
MC3-16	TRACE	0.10			
MC3-17	0.002	<0.05			
MC3-18	0.001	0.05			
MC3-19	0.004	0.05			
Mc3-20	TRACE	<0.05			
Mc3-21	0.001	<0.05			
MC3-22	0.002	0.05			
MC3-23	0.002	<0.05			
Mc3-24	0.001	0.05			
MC3-25	0.001	0.10			
MC3-26	0.003	0.05			
MC3-27	0.004	0.15			
MC3-28	0.008	0.05			
MC3-29	0.006	0.05			
PROOF A	0.007	0.05			
MC3-30	TRACE	<0.05			
MC3-31	TRACE	<0.05			
MC3-32	TRACE	<0.05			
MC3-33	TRACE	<0.05			
MC3-34	0.004	0.10			
MC3-35	0.005	0.10			
[illegible]	0.007	0.15			
MC[illegible]	0.008	0.15			
MC3-38	0.004	0.20			
MC3-39	0.006	<0.05			
MC3-40	0.007	<0.05			
MC3-41	TRACE	0.10			
MC3-42	TRACE	0.05			
MC3-43	0.002	<0.05			

REGISTERED ASSAYER CERTIFICATE NO. 11650 MICHAEL D. JACOBS Arizona U.S.A.

Very respectfully,

Charges $ .....

1435 S. 10th Ave.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No. 29005

TUCSON, ARIZONA 85713 12/4/91 19

Sample Submitted By Mr. MAGMA COPPER COMPANY MARK SANDERS PO#SK065143K5

MARKED	Au O.P.T.	Ag O.P.T.
MC3-49	0.004	0.05
MC3-50	0.003	0.20
MC3-51	0.006	0.05
MC3-52	0.003	<0.05
MC3-53	0.002	<0.05
MC3-54	0.004	<0.05
MC3-55	0.004	<0.05
MC3-56	0.003	0.05
MC3-57	0.002	0.10
MC3-58	0.004	0.05
MC3-59	0.002	<0.05
MC3-60	0.006	<0.05
MC3-61	0.003	0.15
MC3-62	TRACE	0.15
MC3-63	TRACE	0.15
MC3-64	TRACE	0.10
MC3-65	TRACE	0.05
MC3-66	TRACE	0.10
MC3-67	0.005	<0.05
MC3-68	0.007	0.10
PROOF A	0.006	<0.05
MC3-69	0.010	0.20
MC3-70	0.013	0.25
MC3-71	0.012	0.10
MC3-72	0.054	1.20
MC3-73	0.014	<0.05
MC3-74	0.013	<0.05
MC3-75	0.010	0.20
MC3-76	0.009	<0.05
MC3-77	0.008	<0.05
MC3-78	0.016	<0.05
MC3-79	0.042	0.75
MC3-80	0.023	0.10
MC3-81	0.027	0.05
MC3-82	0.013	0.20
MC3-83	0.019	0.40
MC3-84	0.041	0.45
MC3-85	0.005	<0.05

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC3-86	0.011	<0.05
PROOF A	0.006	<0.05
MC3-87	0.006	<0.05
MC3-88	0.002	<0.05
MC3-89	0.002	<0.05
MC3-90	TRACE	<0.05
MC3-91	TRACE	<0.05
MC3-92	0.002	<0.05
MC3-93	0.002	<0.05
MC3-94	0.001	<0.05
MC3-95	0.003	<0.05
MC3-96	TRACE	<0.05
MC3-97	0.002	<0.05
MC3-98	TRACE	<0.05
MC3-99	TRACE	<0.05
MC3-100	TRACE	<0.05
MC4-1	0.005	<0.05
MC4-2	0.003	0.05
MC4-3	TRACE	<0.05
MC4-4	TRACE	<0.05
MC4-5	TRACE	<0.05
PROOF A	0.008	<0.05
MC4-6	0.001	<0.05
MC4-7	TRACE	<0.05
MC4-8	TRACE	<0.05
MC4-9	0.005	<0.05
MC4-10	0.003	<0.05
MC4-11	0.002	<0.05
MC4-12	0.003	<0.05
MC4-13	TRACE	<0.05
MC4-14	TRACE	<0.05
MC4-15	0.005	<0.05
MC4-16	0.004	<0.05
MC4-17	TRACE	<0.05
MC4-18	TRACE	<0.05
MC4-19	0.006	0.15
MC4-20	0.004	0.10
MC4-21	0.003	<0.05

REGISTERED ASSAYER
CERTIFICATE
11850
MICHAEL D. JACOBS
Arizona U.S.

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Jacobs Assay Office

Registered Assayers

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FAX (602) 622-0813

Certificate No 29006

TUCSON, ARIZONA 85713 12/4/91 19

Sample Submitted By Mr. MAGMA COPPER COMPANY MARK SANDERS PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.	SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC4-22	0.002	<0.05	MC4-58	TRACE	<0.05
MC4-23	0.001	<0.05	MC4-59	0.002	<0.05
MC4-24	0.002	<0.05	MC4-60	TRACE	0.10
PROOF A	0.009	<0.05	MC4-61	0.001	0.10
MC4-25	0.001	<0.05	MC4-62	TRACE	0.05
MC4-26	0.002	<0.05	PROOF A	0.009	<0.05
MC4-27	0.004	0.05			
MC4-28	0.006	0.15			
MC4-29	0.005	<0.05			
MC4-30	0.002	0.05			
MC4-31	0.008	0.05			
MC4-32	0.008	0.05			
MC4-33	0.006	0.10			
MC4-34	TRACE	0.10			
MC4-35	TRACE	<0.05			
MC4-36	TRACE	0.10			
MC4-37	0.001	0.05			
MC4-38	TRACE	<0.05			
MC4-39	TRACE	<0.05			
MC4-40	0.003	0.20			
MC4-41	0.001	<0.05			
MC4-42	0.003	<0.05			
MC4-43	0.010	<0.05			
MC4-44	0.005	<0.05			
PROOF A	0.010	<0.05			
MC4-45	0.007	<0.05			
MC4-46	0.003	<0.05			
[illegible]	0.002	<0.05			
[illegible]	0.003	0.10			
MC4-49	0.002	<0.05			
MC4-50	0.002	0.05			
MC4-51	0.002	<0.05			
MC4-52	0.003	<0.05			
MC4-53	0.008	0.15			
MC4-54	0.004	0.20			
MC4-55	TRACE	0.10			
MC4-56	TRACE	0.15			
MC4-57	TRACE	<0.05			

REGISTERED ASSAYER CERTIFICATE NO. 11660 MICHAEL D. JACOBS Arizona U.S.A.

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FAX (602) 622-0813

Certificate No 29007

TUCSON, ARIZONA 85713 12/5/91 19

Sample Submitted By Mr. MAGMA COPPER COMPANY MARK SANDER PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.	SAMPLE MARKED		
MC4-63	0.003	0.20			
MC4-64	0.002	0.20			
MC4-65	0.005	0.10			
MC4-66	0.002	0.05			
MC4-67	0.006	0.05			
MC4-68	0.018	0.10			
MC4-69	0.008	0.05			
MC4-70	0.005	<0.05			
MC4-71	0.006	0.10			
MC4-72	0.038	1.20			
MC4-73	0.036	0.95			
MC4-74	0.030	0.15			
MC4-75	0.053	0.50			
MC4-76	0.141	2.40			
MC4-77	0.140	1.70			
MC4-78	0.030	0.30			
MC4-79	0.008	0.05			
MC4-80	0.007	<0.05			
MC4-81	0.006	0.05			
PROOF A	0.009	<0.05			
MC4-82	0.011	0.05			
MC4-83	0.016	0.40			
MC4-84	0.009	0.20			
MC4-85	0.002	<0.05			
MC4-86	0.014	<0.05			
MC4-87	0.029	<0.05			
MC4-88	0.001	0.10			
MC4-89	0.002	<0.05			
MC4-90	0.002	<0.05			
MC4-91	0.002	<0.05			
MC4-92	0.001	<0.05			
MC4-93	TRACE	<0.05			
MC4-94	TRACE	<0.05			
MC4-95	TRACE	<0.05			
MC4-96	0.004	<0.05			

REGISTERED ASSAYER CERTIFICATE NO. 11650 MICHAEL G. JACOBS Date Signed 12/5/91 Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

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TUCSON, ARIZONA 85713

Certificate No. 29008

12/12/91 19

Sample Submitted by: MAGMA COPPER COMPANY MARK SANDERS PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.	SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC5-1	TRACE	<0.05	MC5-38	0.005	0.10
MC5-2	0.002	<0.05	Proof	0.010	0.05
MC5-3	0.003	<0.05	MC5-39	0.009	0.10
MC5-4	0.002	0.05	MC5-40	0.031	<0.05
MC5-5	TRACE	<0.05	MC5-41	0.009	<0.05
MC5-6	0.001	<0.05	MC5-42	0.008	<0.05
MC5-7	0.006	<0.05	MC5-43	0.006	<0.05
MC5-8	0.004	<0.05	MC5-44	0.044	<0.05
MC5-9	TRACE	<0.05	MC5-45	0.016	<0.05
MC5-10	0.004	<0.05	MC5-46	0.039	<0.05
MC5-11	0.005	<0.05	MC5-47	0.010	<0.05
MC5-12	0.005	<0.05	MC5-48	0.009	<0.05
MC5-13	0.005	<0.05	MC5-49	0.008	<0.05
MC5-14	0.002	0.05			
MC5-15	0.001	0.05			
MC5-16	0.008	0.10			
MC5-17	0.002	0.10			
MC5-18	0.001	<0.05			
MC5-19	TRACE	<0.05			
Proof	0.010	0.05			
MC5-20	0.002	<0.05			
MC5-21	0.001	<0.05			
MC5-22	0.003	0.15			
MC5-23	0.004	<0.05			
MC5-24	0.014	0.05			
MC5-25	0.002	0.05			
MC5-26	0.004	0.05			
MC5-27	0.002	<0.05			
MC5-28	0.003	0.05			
MC5-29	0.004	<0.05			
MC5-30	0.007	<0.05			
MC5-31	0.006	<0.05			
MC5-32	0.006	<0.05			
MC5-33	TRACE	<0.05			
MC5-34	0.006	<0.05			
MC5-35	0.006	<0.05			
MC5-36	0.005	0.10			
MC5-37	0.005	0.05			

REGISTERED ASSAYER CERTIFICATE NO. 11899 MICHAEL B. JACOBS Arizona U.S.A.

Very respectfully,

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Registered Assayers

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FAX (602) 622-0813

Certificate No 29009

TUCSON, ARIZONA 85713 12/12/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.			SAMPLE MARKED	Au O.P.T.	Ag O.P.T.		
C5-50	0.006	<0.05			MC5-88	0.003	<0.05		
C5-51	0.006	0.05			Proof A	~~0.009~~	0.05		
C5-52	0.002	<0.05			MC5-89	0.002	0.05		
MC5-53	0.005	0.10			MC5-90	0.009	<0.05		
MC5-54	0.003	<0.05			MC5-91	0.002	0.05		
C5-55	0.002	<0.05			MC6-1	0.006	<0.05		
C5-56	0.003	<0.05			MC6-2	0.005	<0.05		
MC5-57	0.002	0.10			MC6-3	0.007	<0.05		
MC5-58	0.003	0.10			MC6-4	TRACE	<0.05		
MC5-59	0.011	0.15			MC6-5	0.005	<0.05		
* MC5-60	0.049	<0.05			MC6-6	0.018	0.15		
* MC5-61	0.244	3.75			MC6-7	0.002	<0.05		
* MC5-62	0.023	0.35			MC6-8	0.001	<0.05		
C5-63	0.023	0.40			MC6-9	0.002	<0.05		
MC5-64	0.009	<0.05			MC6-10	0.004	<0.05		
C5-65	0.023	0.50			MC6-11	TRACE	<0.05		
MC5-66	0.007	0.30			MC6-12	0.006	<0.05		
MC5-67	0.040	0.80			MC6-13	0.003	0.10		
MC5-68	0.011	0.15			MC6-14	0.009	<0.05		
MC5-69	0.018	0.50			MC6-15	0.003	0.05		
MC5-70	0.026	0.60			MC6-16	TRACE	0.10		
MC5-71	0.027	0.50			MC6-17	TRACE	0.05		
MC5-72	0.140	<0.05			MC6-18	0.013	<0.05		
MC5-73	0.018	0.65			MC6-19	0.002	0.10		
MC5-74	0.028	0.40			MC6-20	0.004	0.05		
MC5-75	0.062	0.85			MC6-21	0.006	0.10		
MC5-76	0.060	0.85			MC6-22	0.002	0.10		
MC5-77	0.011	<0.05			MC6-23	TRACE	0.05		
[illegible]	0.008	<0.05			MC6-24	0.003	0.05		
[illegible]	0.003	<0.05			MC6-25	TRACE	<0.05		
MC5-80	0.007	<0.05			MC6-26	TRACE	0.10		
MC5-81	0.002	0.05			MC6-27	0.001	<0.05		
C5-82	0.003	<0.05			MC6-28	0.006	0.15		
MC5-83	0.004	<0.05			MC6-29	TRACE	<0.05		
C5-84	0.003	0.15			MC6-30	0.001	<0.05		
C5-85	0.002	0.10			MC6-31	TRACE	<0.05		
C5-86	0.005	<0.05			MC6-32	0.004	<0.05		
C5-87	0.003	<0.05			MC6-33	0.001	<0.05		

Please note these samples have been checked.

Very respectfully,

Charges $

435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

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FAX (602) 622-0813

Certificate No 29010

TUCSON, ARIZONA 85713 12/12/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.	SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC6-34	TRACE	<0.05	MC6-71	0.005	0.05
MC6-35	0.002	<0.05	MC6-72	TRACE	0.15
MC6-36	TRACE	<0.05	MC6-73	0.014	<0.05
Proof A	0.010	<0.05	MC6-74	0.022	0.05
MC6-37	TRACE	<0.05	MC6-75	0.026	<0.05
MC6-38	0.004	<0.05	Proof A	0.011	0.20
MC6-39	0.003	<0.05			
MC6-40	0.003	<0.05			
MC6-41	0.006	<0.05			
MC6-42	0.001	<0.05			
MC6-43	0.004	0.15			
MC6-44	0.002	0.15			
MC6-45	0.004	<0.05			
MC6-46	0.005	<0.05			
MC6-47	0.015	<0.05			
MC6-48	0.021	0.40			
MC6-49	0.016	0.45			
MC6-50	0.021	0.40			
MC6-51	0.014	0.15			
MC6-52	0.009	0.05			
MC6-53	0.015	<0.05			
MC6-54	0.023	<0.05			
MC6-55	0.005	<0.05			
MC6-56	0.020	<0.05			
MC6-57	0.009	<0.05			
MC6-58	0.030	<0.05			
MC6-59	0.025	<0.05			
MC6-60	0.013	0.10			
MC6-61	0.026	0.10			
MC6-62	0.009	<0.05			
MC6-63	0.013	0.20			
MC6-64	0.005	0.20			
MC6-65	0.010	<0.05			
MC6-66	0.011	0.25			
MC6-67	0.006	<0.05			
MC6-68	0.006	0.15			
MC6-69	0.007	0.15			
MC6-70	0.007	0.15			

REGISTERED ASSAYER CERTIFICATE NO. 11050 Arizona U.S.A. Renewed 12/10

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No. 29011

TUCSON, ARIZONA 85713 12/13/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.	SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC6-76	0.024	0.40			
MC6-77	0.013	0.20			
MC6-78	0.012	0.20			
MC6-79	0.006	<0.05			
MC6-80	0.071	0.40			
MC6-81	0.016	0.30			
MC6-82	0.017	0.20			
MC6-83	0.031	0.90			
MC6-84	0.025	0.25			
MC6-85	0.070	0.40			
MC6-86	0.061	1.10			
MC6-87	0.026	0.65			
MC6-88	0.025	<0.05			
MC6-89	0.038	<0.05			
MC6-90	0.017	<0.05			
MC6-91	0.026	0.45			
MC6-92	0.020	<0.05			
MC6-93	0.025	0.15			
MC6-94	0.009	<0.05			
MC6-95	0.031	<0.05			
MC6-96	0.010	<0.05			
MC6-97	0.009	<0.05			
MC6-98	0.020	0.20			
MC6-99	0.010	<0.05			
MC6-100	0.007	<0.05			

REGISTERED ASSAYER CERTIFICATE NO. 11320 MICHAEL D. JACOBS Designed Arizona U.S.A.

Very respectfully,

harges $

1435 S. 10th Ave

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Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29012

TUCSON, ARIZONA 85713 12/16/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.			SAMPLE MARKED	Au O.P.T.	Ag O.P.T.		
MC7-1	0.011	<0.05			MC7-38	0.013	0.05		
MC7-2	0.007	<0.05			Proof A	0.010	0.15		
MC7-3	0.022	0.05			MC7-39	0.003	0.05		
MC7-4	0.002	0.20			MC7-40	0.006	<0.05		
MC7-5	0.003	<0.05			MC7-41	0.011	<0.05		
MC7-6	0.011	<0.05			MC7-42	0.008	0.05		
MC7-7	0.001	<0.05			MC7-43	0.011	0.10		
MC7-8	0.006	<0.05			MC7-44	0.007	0.10		
MC7-9	0.004	<0.05			MC7-45	0.004	<0.05		
MC7-10	0.005	<0.05			MC7-46	0.008	0.05		
MC7-11	0.004	<0.05			MC7-47	0.014	0.35		
MC7-12	0.006	<0.05			MC7-48	0.007	0.20		
MC7-13	0.004	<0.05			MC7-49	0.005	0.50		
MC7-14	0.004	<0.05			MC7-50	0.010	0.05		
MC7-15	0.010	<0.05			MC7-51	0.012	0.20		
MC7-16	0.007	0.05			MC7-52	0.006	0.40		
MC7-17	0.018	<0.05			MC7-53	0.011	0.20		
MC7-18	0.018	<0.05			MC7-54	0.011	0.25		
MC7-19	0.004	<0.05			MC7-55	0.007	0.35		
Proof A	0.013	<0.05			MC7-56	0.006	0.25		
MC7-20	0.012	<0.05			MC7-57	0.006	0.15		
MC7-21	0.006	<0.05			Proof A	0.008	0.05		
MC7-22	0.005	<0.05			MC7-58	0.011	0.10		
MC7-23	0.022	<0.05			MC7-59	0.010	0.10		
MC7-24	0.004	<0.05			MC7-60	0.005	<0.05		
MC7-25	0.005	0.05			MC7-61	0.013	0.20		
MC7-26	0.002	0.10			MC7-62	0.021	0.25		
MC7-27	0.010	0.05			MC7-63	0.009	0.15		
MC7-28	0.006	0.05			MC7-64	0.017	0.50		
MC7-29	0.012	<0.05			MC7-65	0.016	0.20		
MC7-30	0.004	0.15			MC7-66	0.020	0.20		
MC7-31	0.003	0.15			MC7-67	0.021	0.55		
MC7-32	TRACE	0.25			MC7-68	0.013	0.20		
MC7-33	0.015	0.20			MC7-69	0.015	0.05		
MC7-34	0.009	0.15			MC7-70	0.024	0.15		
MC7-35	0.012	0.15			MC7-71	0.034	0.30		
MC7-36	0.009	0.05			MC7-72	0.001	0.40		
MC7-37	0.008	0.10			MC7-73	0.010	0.15		

Very respectfully,

Charges $

1435 S. 10th A

Jacobs Assay Office
Registered Assayers

PHONE 622-081
FAX (602) 622-081

Certificate No 3013

TUCSON, ARIZONA 85713 12/16/91 19

Sample Submitted By Mr. Magma Copper Company PO#SK065143K5

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.	SAMPLE MARKED		
MC7-74	0.013	0.25			
MC7-75	0.023	0.10			
MC7-76	0.011	0.05			
Proof A	0.013	0.15			
MC7-77	0.030	0.25			
MC7-78	0.023	0.25			
MC7-79	0.015	0.15			
MC7-80	0.023	0.20			
MC7-81	0.038	0.35			
MC7-82	0.028	0.75			
MC7-83	0.042	0.35			
MC7-84	0.007	<0.05			
MC7-85	0.015	<0.05			
MC7-86	0.004	<0.05			
MC7-87	0.004	0.05			
MC7-88	0.005	<0.05			
MC7-89	0.006	<0.05			
MC7-90	0.007	0.05			
MC7-91	0.005	0.05			
MC7-92	0.005	<0.05			
MC7-93	0.004	<0.05			
MC7-94	0.011	<0.05			

REGISTERED ASSAYER CERTIFICATE NO. 11620 MICHAEL D. JACOBS Date Signed Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

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PHONE 622-0813
FAX (602) 622-0813

Certificate No 29014

TUCSON, ARIZONA 85713 12/20/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.	SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC8-1	0.005	<0.05	MC8-38	0.002	<0.05
MC8-2	0.010	0.05	MC8-39	TRACE	0.05
MC8-3	0.004	0.10	MC8-40	TRACE	0.10
MC8-4	0.002	0.10	MC8-41	TRACE	0.05
MC8-5	0.005	0.10	MC8-42	TRACE	0.10
MC8-6	0.005	<0.05	MC8-43	0.003	0.05
MC8-7	0.004	<0.05	MC8-44	0.002	0.05
MC8-8	TRACE	<0.05	MC8-45	0.006	<0.05
MC8-9	0.007	<0.05	MC8-46	0.002	<0.05
MC8-10	0.006	0.05	MC8-47	0.002	0.10
MC8-11	TRACE	0.05	MC8-48	TRACE	<0.05
MC8-12	0.007	<0.05	MC8-49	TRACE	<0.05
MC8-13	0.006	<0.05	MC8-50	TRACE	0.05
MC8-14	0.029	<0.05	MC8-51	TRACE	<0.05
MC8-15	0.005	0.05	MC8-52	TRACE	<0.05
MC8-16	TRACE	<0.05	MC8-53	0.018	<0.05
MC8-17	0.003	0.05	MC8-54	TRACE	0.05
MC8-18	0.004	<0.05	MC8-55	TRACE	<0.05
MC8-19	TRACE	<0.05	MC8-56	TRACE	<0.05
MC8-20	0.006	<0.05	MC8-57	TRACE	<0.05
MC8-21	0.004	0.10	MC8-58	TRACE	0.05
MC8-22	TRACE	0.10	Proof B	~~0.049~~	<0.05
MC8-23	0.008	0.05	MC8-59	TRACE	0.10
MC8-24	0.004	<0.05	MC8-60	0.014	0.15
MC8-25	TRACE	0.05	MC8-61	TRACE	0.15
MC8-26	TRACE	0.10	MC8-62	TRACE	0.05
MC8-27	TRACE	0.20	MC8-63	0.002	0.05
MC8-28	0.004	<0.05	MC8-64	TRACE	<0.05
MC8-29	0.003	0.05	MC8-65	0.001	<0.05
Proof B	~~0.049~~	<0.05	MC8-66	0.002	0.05
MC8-30	TRACE	0.05	MC8-67	TRACE	0.05
MC8-31	0.002	0.05	MC8-68	TRACE	<0.05
MC8-32	TRACE	<0.05	MC8-69	TRACE	0.05
MC8-33	0.005	0.05	MC8-70	0.002	<0.05
MC8-34	0.002	0.15	MC8-71	0.001	<0.05
MC8-35	0.003	<0.05	MC8-72	TRACE	<0.05
MC8-36	0.002	<0.05	MC8-73	TRACE	<0.05
MC8-37	0.019	<0.05	MC8-74	0.004	<0.05

Very respectfully,

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Certificate No 29015

TUCSON, ARIZONA 85713 12/20/91 19 ___

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC8-75	0.005	<0.05
MC8-76	0.004	<0.05
MC8-77	0.012	<0.05
MC8-78	0.006	0.20
MC8-79	0.005	0.10
MC8-80	0.006	0.05
MC8-81	0.011	<0.05
MC8-82	0.003	0.05
MC8-83	0.026	0.60
MC8-84	0.043	0.60
MC8-85	0.005	0.20
MC8-86	0.006	0.05
MC8-87	0.005	0.10
Proof B	0.050	<0.05
MC8-88	0.002	<0.05
MC8-89	0.004	0.05
MC9-4	TRACE	<0.05
MC9-5	0.004	<0.05
MC9-6	0.022	0.15
MC9-7	TRACE	<0.05
MC9-8	TRACE	<0.05
MC9-9	0.002	0.10
MC9-10	TRACE	<0.05
MC9-11	0.015	0.05
MC9-12	TRACE	0.05
MC9-13	0.002	<0.05
MC9-14	0.002	<0.05
MC9-15	TRACE	<0.05
MC9-16	TRACE	<0.05
MC9-17	TRACE	<0.05
MC9-18	0.002	0.20
MC9-19	TRACE	0.10
MC9-20	0.001	<0.05
MC9-21	0.001	0.05
MC9-22	0.001	<0.05
MC9-23	TRACE	<0.05
MC9-24	TRACE	0.05
MC9-25	TRACE	<0.05
MC9-26	TRACE	<0.05
MC9-27	0.005	<0.05
MC9-28	0.003	<0.05
MC9-29	0.002	<0.05
MC9-30	0.016	<0.05
Proof B	0.051	<0.05

REGISTERED ASSAYER CERTIFICATE NO. 11950 MICHAEL B. JACOBS Date signed Arizona U.S.A.

Very respectfully,

Charges $ ____

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FAX (602) 622-0813

Certificate No 29016

TUCSON, ARIZONA 85713 12/23/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC9-31	0.002	<0.05
MC9-32	0.005	<0.05
MC9-33	0.001	0.05
MC9-34	0.003	<0.05
MC9-35	0.003	<0.05
MC9-36	0.004	0.10
MC9-37	0.002	0.15
MC9-38	0.005	0.25
MC9-39	0.020	<0.05
MC9-40	0.015	0.10
Proof B	0.048	<0.05
MC9-41	0.002	<0.05
MC9-42	0.014	0.30
MC9-43	0.007	0.15
MC9-44	0.008	0.20
MC9-45	TRACE	0.05
MC9-46	0.005	0.05
MC9-47	0.032	0.55
MC9-48	0.021	0.45
MC9-49	0.015	0.50
MC9-50	0.006	0.05
MC9-51	0.013	0.55
MC9-52	0.023	0.30
MC9-53	0.023	0.35
MC9-54	0.004	0.60
MC9-55	0.043	0.70
MC9-56	0.007	0.15
MC9-57	0.025	1.35
MC9-58	0.003	0.15
MC9-59	TRACE	<0.05
MC9-60	0.007	<0.05
MC9-61	0.008	<0.05
MC9-62	TRACE	<0.05
MC9-63	0.003	0.05
MC9-64	0.001	<0.05
MC9-65	TRACE	<0.05
MC9-66	TRACE	0.15
MC9-67	TRACE	0.05
MC9-68	TRACE	0.15
Proof B	0.047	<0.05
MC9-69	TRACE	0.10
MC9-70	TRACE	<0.05
MC9-71	0.009	<0.05
MC9-72	TRACE	<0.05
MC9-73	TRACE	<0.05
MC9-74	0.002	<0.05
MC9-75	TRACE	0.05
MC9-76	TRACE	<0.05
MC9-77	TRACE	0.10
MC9-78	TRACE	0.05
MC9-79	TRACE	<0.05
MC9-80	TRACE	0.05
MC9-81	TRACE	0.15
MC9-82	0.034	0.35
MC9-83	0.002	0.20
MC9-84	0.002	0.20
MC9-85	0.001	0.05
MC9-86	TRACE	0.15
MC9-87	0.002	0.05
MC9-88	0.001	0.10
MC9-89	0.003	0.20
MC9-90	TRACE	0.10
MC9-91	0.009	0.20
MC9-92	0.008	0.25
MC9-93	0.017	0.20
MC9-94	0.020	0.25
MC9-95	0.020	0.10
MC9-96	0.039	0.35
MC10-2	0.007	0.15
MC10-3	0.005	0.20
Proof B	0.049	<0.05
MC10-4	0.002	0.25
MC10-5	0.011	0.20
MC10-6	0.034	0.15
MC10-7	0.003	0.25
MC10-8	0.044	0.15

REGISTERED ASSAYER CERTIFICATE ... Arizona U.S.A.

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Certificate No 29017

TUCSON, ARIZONA 85713 12/23/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.		SAMPLE MARKED	Au O.P.T.	Ag O.P.T.	
MC10-9	0.008	0.15					
MC10-10	0.039	0.25					
MC10-11	0.008	0.15					
MC10-12	0.009	0.25					
MC10-13	0.004	0.15					
MC10-14	0.003	0.05					
MC10-15	0.005	0.10					
MC10-16	0.012	0.25					
MC10-17	0.033	0.35					
MC10-18	0.012	0.20					
MC10-19	0.007	0.30					
MC10-20	0.006	0.25					
MC10-21	0.037	0.50					
MC10-22	0.002	<0.05					
MC10-23	0.002	<0.05					
MC10-24	0.001	<0.05					
MC10-25	0.002	0.05					
MC10-26	0.001	0.05					
MC10-27	0.001	0.15					
MC10-28	0.002	<0.05					
MC10-29	0.002	<0.05					

REGISTERED ASSAYER CERTIFICATE NO. 11153 BRUCE G. JACOBS Date Signed 12/24/91 Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29018

TUCSON, ARIZONA 85713 12/23/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.			SAMPLE MARKED	Au O.P.T.	Ag O.P.T.		
MC10-30	0.001	0.10			MC10-67	0.009	0.05		
MC10-31	0.003	0.25			MC10-68	0.004	<0.05		
MC10-32	0.003	0.25			MC10-69	0.017	0.40		
MC10-33	0.003	0.30			MC10-70	0.006	0.20		
MC10-34	0.003	0.25			MC10-71	0.017	0.30		
MC10-35	0.003	0.25			MC10-72	0.040	0.45		
MC10-36	TRACE	<0.05			MC10-73	0.049	0.75		
MC10-37	0.003	0.05			MC10-74	0.047	0.40		
MC10-38	0.004	0.15			Mc10-75	0.008	0.20		
MC10-39	0.004	0.20			MC10-76	0.023	0.40		
MC10-40	0.005	0.20			MC10-77	0.003	0.10		
MC10-41	0.001	0.05			MC10-78	0.001	0.30		
MC10-42	0.003	0.05			MC10-79	0.009	0.25		
MC10-43	0.003	0.20			MC10-80	0.002	0.20		
MC10-44	0.003	0.05			MC10-81	0.003	0.25		
MC10-45	0.010	0.20			MC10-82	0.012	0.35		
MC10-46	TRACE	<0.05			MC10-83	0.010	0.25		
MC10-47	0.005	<0.05			MC10-84	0.006	1.05		
MC10-48	0.002	<0.05			MC10-85	0.006	0.10		
MC10-49	0.003	<0.05			MC10-86	0.002	0.05		
MC10-50	TRACE	<0.05			MC10-87	0.002	0.10		
MC10-51	0.004	0.15			Proof B	0.046	0.15		
MC10-52	0.004	0.15			MC10-88	0.003	0.25		
MC10-53	TRACE	<0.05			MC10-89	0.016	0.25		
MC10-54	TRACE	0.05			MC10-90	0.005	0.05		
MC10-55	TRACE	0.05			MC10-91	0.005	<0.05		
MC10-56	0.017	0.10			MC10-92	0.024	0.50		
MC10-57	0.005	0.20			MC10-93	0.023	0.30		
MC10-58	0.002	0.15			MC10-94	0.013	0.15		
Proof B	0.046	0.10			MC10-95	0.029	0.65		
MC10-59	0.002	0.20			MC10-96	0.014	0.25		
MC10-60	0.002	0.10			MC10-97	0.012	0.30		
MC10-61	0.002	0.20			MC10-98	0.026	0.35		
MC10-62	0.003	0.20			MC10-99	0.024	0.20		
MC10-63	TRACE	0.10			MC10-100	0.012	0.25		
MC10-64	TRACE	0.10			MC10-101	0.006	0.35		
MC10-65	TRACE	0.10			MC10-102	0.011	0.45		
MC10-66	0.031	0.20			MC10-103	0.027	0.75		

REGISTERED ASSAYER CERTIFICATE NO. 31663 MICHAEL G. JACOBS Date Signed 12/26/91 Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

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Registered Assayers

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FAX (602) 622-0813

Certificate No 29019

TUCSON, ARIZONA 85713 12/23/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.			SAMPLE MARKED	Au O.P.T.	Ag O.P.T.		
MC10-104	0.024	0.65			MC11-29	0.006	<0.05		
MC10-105	0.021	0.95			MC11-30	0.005	<0.05		
MC10-106	0.020	0.40			MC11-31	0.005	<0.05		
MC10-107	0.002	0.05			MC11-32	0.022	0.05		
MC10-108	0.001	0.10			MC11-33	0.007	0.20		
MC10-109	0.002	0.20			Proof B	0.051	0.05		
MC10-110	0.005	0.25							
MC10-111	0.008	0.20							
MC10-112	0.013	0.20							
MC11-1	0.020	0.25							
MC11-2	0.003	0.15							
MC11-3	0.009	0.15							
MC11-4	0.003	0.05							
Proof B	0.045	<0.05							
MC11-5	0.001	<0.05							
MC11-6	TRACE	<0.05							
MC11-7	0.003	<0.05							
MC11-8	0.029	0.10							
MC11-9	0.009	0.05							
MC11-10	0.006	<0.05							
Mc11-11	0.007	0.05							
MC11-12	0.011	0.20							
MC11-13	0.009	0.20							
MC11-14	0.012	0.10							
MC11-15	0.016	0.05							
MC11-16	0.010	0.10							
MC11-17	0.003	<0.05							
MC11-18	0.002	0.05							
MC11-19	0.006	0.15							
MC11-20	0.022	0.30							
MC11-21	0.005	0.10							
MC11-22	0.002	0.20							
MC11-23	0.032	<0.05							
MC11-24	0.001	0.05							
MC11-25	TRACE	<0.05							
MC11-26	0.005	<0.05							
MC11-27	0.010	0.05							
MC11-28	0.005	<0.05							

REGISTERED ASSAYER CERTIFICATE NO. 11660 MICHAEL G. JACOBS Date Signed 12/24/91 Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

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Certificate No 29020

TUCSON, ARIZONA 85713 12/26/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC11-34	0.012	0.25
MC11-35	0.052	0.80
MC11-36	0.036	0.55
MC11-37	0.034	0.35
MC11-38	0.066	0.40
MC11-39	0.048	0.40
MC11-40	0.022	0.20
MC11-41	0.015	0.20
MC11-42	0.066	0.80
MC11-43	0.060	0.95
MC11-44	0.041	0.60
MC11-45	0.003	0.10
Mc11-46	0.025	<0.05
MC11-47	0.012	<0.05
MC11-48	0.021	1.35
MC11-49	0.004	0.05
MC11-50	0.003	<0.05
MC11-51	0.007	0.10
MC11-52	0.001	<0.05
MC11-53	0.003	0.10
MC11-54	0.005	0.05
MC11-55	0.003	0.15
MC11-56	0.004	0.20
MC11-57	0.001	0.10
MC11-58	0.002	<0.05
MC11-59	0.003	<0.05
MC11-60	0.009	0.05
MC12-1	0.004	<0.05
MC12-2	0.013	0.05
Proof B	~~0.048~~	0.05
MC12-3	0.009	0.05
MC12-4	0.006	0.10
MC12-5	0.012	0.15
MC12-6	0.013	0.15
MC12-7	0.013	0.05
MC12-8	0.003	<0.05
MC12-9	0.009	<0.05
MC12-10	0.001	0.05

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC12-11	0.002	0.05
MC12-12	0.002	<0.05
MC12-13	0.002	<0.05
MC12-14	0.012	0.05
MC12-15	0.039	0.20
MC12-16	0.003	<0.05
MC12-17	0.002	<0.05
MC12-18	0.007	0.05
MC12-19	0.002	0.15
MC12-20	0.002	<0.05
MC12-21	0.009	0.05
MC12-22	0.046	0.25
MC12-23	0.005	<0.05
MC12-24	0.005	0.05
MC12-25	0.001	<0.05
MC12-26	0.002	0.15
MC12-27	0.002	<0.05
MC12-28	0.002	0.10
MC12-29	0.002	0.10
MC12-30	TRACE	0.10
MC12-31	0.008	0.05
Proof B	~~0.048~~	0.05
MC12-32	0.015	<0.05
MC12-33	0.010	0.05
MC12-34	0.012	0.25
MC12-35	TRACE	0.15
MC12-36	TRACE	0.10
MC12-37	0.003	0.20
MC12-38	TRACE	0.10
MC12-39	TRACE	0.05
MC12-40	TRACE	0.05
MC12-41	0.017	0.25
MC12-42	0.009	0.20
MC12-43	TRACE	0.10
MC12-44	0.020	0.25
MC12-45	0.058	1.05
MC12-46	0.057	0.35
MC12-47	0.058	0.55

REGISTERED ASSAYER CERTIFICATE NO. 11650 MICHAEL G. JACOBS Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

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Registered Assayers

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FAX (602) 622-0813

Certificate No 29021

TUCSON, ARIZONA 85713 12/26/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC12-48	0.057	0.55
MC12-49	0.006	1.35
MC12-50	0.071	1.25
MC12-51	0.199	2.90
MC12-52	0.066	1.90
MC12-53	0.014	0.45
MC12-54	0.016	0.25
MC12-55	0.004	0.25
MC12-56	0.012	0.25
MC12-57	0.002	0.15
MC12-58	0.002	0.20
MC12-59	0.002	0.15
MC12-60	0.025	0.15
Proof B	0.050	0.25
MC13-1	0.008	<0.05
MC13-2	0.002	0.15
MC13-3	0.003	0.15
MC13-4	0.002	0.35
MC13-5	0.003	0.10
MC13-6	0.002	0.20
MC13-7	TRACE	0.10
MC13-8	0.002	0.10
MC13-9	0.010	0.10
MC13-10	0.010	<0.05
MC13-11	0.005	<0.05
MC13-12	0.005	<0.05
MC13-13	0.004	<0.05
MC13-14	0.004	<0.05
MC13-15	0.003	<0.05
MC13-16	0.009	<0.05
MC13-17	0.013	0.10
MC13-18	0.012	0.15
MC13-19	0.010	<0.05
MC13-20	0.035	<0.05
MC13-21	0.022	<0.05
MC13-22	0.004	<0.05
MC13-23	0.006	<0.05
MC13-24	0.008	<0.05
MC13-25	0.010	<0.05
MC13-26	0.012	<0.05
MC13-27	0.021	0.05
MC13-28	0.010	<0.05
MC13-29	0.008	<0.05
Proof B	0.053	0.10

REGISTERED ASSAYER CERTIFICATE NO. 11650 MICHAEL O. JACOBS Date Signed 12/26/91 Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29022

TUCSON, ARIZONA 85713 12/27/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.		SAMPLE MARKED			
MC13-30	0.040	0.40					
MC13-31	0.024	0.40					
MC13-32	0.004	<0.05					
MC13-33	0.018	0.15					
MC13-34	0.018	0.35					
MC13-35	0.015	0.20					
MC13-36	0.010	0.10					
MC13-37	0.008	0.05					
MC13-38	0.004	0.10					
MC13-39	0.004	<0.05					
MC13-40	0.013	0.05					
MC13-41	0.027	0.10					
MC13-42	0.063	0.55					
MC13-43	0.057	0.25					
MC13-44	0.007	0.10					
MC13-45	0.048	1.30					
MC13-46	0.009	0.05					
MC13-47	0.005	<0.05					
MC13-49	0.003	<0.05					
MC13-50	0.004	<0.05					
MC13-51	0.003	<0.05					
MC13-52	0.002	<0.05					
MC13-53	0.002	<0.05					
MC13-54	0.003	<0.05					
MC13-55	0.005	<0.05					
MC13-56	0.005	<0.05					

REGISTERED ASSAYER
CERTIFICATE NO.
11650
MICHAEL G. JACOBS
Date Signed 12/28/91
Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29023

TUCSON, ARIZONA 85713 12/28/91 19

Sample Submitted By Mr. Magma Copper Company

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC14-1	0.008	0.20
MC14-2	0.009	0.35
MC14-3	0.007	0.15
MC14-4	0.002	0.20
MC14-5	0.005	0.15
MC14-6	0.002	0.15
MC14-7	0.008	0.15
MC14-8	0.003	0.20
MC14-9	TRACE	0.20
MC14-10	0.006	0.20
MC14-11	0.052	0.50
MC14-12	0.035	0.25
MC14-13	0.046	0.15
MC14-14	0.010	0.15
MC14-15	0.030	0.45
MC14-16	0.114	0.95
MC14-17	0.080	0.80
MC14-18	0.056	0.50
MC14-19	0.006	0.05
MC14-20	0.008	0.10
MC14-21	0.006	0.05
MC14-22	0.008	0.15
MC14-23	0.004	0.20
MC14-24	0.012	0.20
MC14-25	0.015	0.20
MC14-26	0.032	0.45
MC14-27	0.018	0.40
MC14-28	0.067	0.85
MC14-29	0.023	0.25
Proof B	0.050	0.20
MC14-30	0.021	0.20
MC14-31	0.020	0.15
MC14-32	0.028	0.20
MC14-33	0.026	0.20
MC14-34	0.031	0.40
MC14-35	0.048	0.45
MC14-36	0.077	0.20
MC14-37	0.111	0.35
MC14-38	0.004	0.25
MC14-39	0.038	0.10
MC14-40	0.005	0.20
MC14-41	0.036	0.40
MC14-42	0.077	1.40
MC14-43	0.048	0.65
MC14-44	0.070	0.55
MC14-45	0.086	0.95
MC14-46	0.064	0.40
MC14-47	0.063	1.10
MC14-48	0.051	1.95
MC14-49	0.015	0.50
MC14-50	0.015	0.50
MC14-51	0.034	0.85
MC14-52	0.012	0.45
MC14-53	0.037	0.90
MC14-54	0.006	0.35
MC14-55	0.011	0.30
MC14-56	0.003	0.15
MC14-57	0.013	0.25
MC14-58	0.009	0.05
Proof B	0.051	0.25
MC14-59	0.005	<0.05
MC14-60	0.013	0.10
MC15-1	0.005	<0.05
MC15-2	TRACE	<0.05
MC15-3	TRACE	<0.05
MC15-4	TRACE	<0.05
MC15-5	0.002	<0.05
MC15-6	TRACE	<0.05
MC15-7	TRACE	0.05
MC15-8	TRACE	<0.05
MC15-9	0.005	<0.05
MC15-10	0.004	<0.05
MC15-11	0.022	<0.05
MC15-12	0.005	<0.05
MC15-13	0.010	0.05
MC15-14	0.001	<0.05

REGISTERED ASSAYER CERTIFICATE NO. 11980 MICHAEL G. JACOBS Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29024

TUCSON, ARIZONA 85713 12/28/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC15-15	TRACE	<0.05
MC15-16	0.004	<0.05
MC15-17	0.008	<0.05
MC15-18	0.003	<0.05
MC15-19	0.006	0.05
MC15-20	0.004	<0.05
MC15-21	0.012	<0.05
MC15-22	0.017	0.05
MC15-23	0.002	<0.05
MC15-24	0.030	0.20
MC15-25	0.024	0.20
MC15-26	0.015	<0.05
MC15-27	0.005	<0.05
Pfoof B	0.048	<0.05
MC15-28	0.005	<0.05
MC15-29	0.004	<0.05
MC15-30	0.001	<0.05
MC15-31	0.002	<0.05
MC15-32	0.001	<0.05
MC15-33	0.002	<0.05
MC15-34	0.004	<0.05
MC15-35	0.001	<0.05
MC15-36	0.005	<0.05
MC15-37	0.004	<0.05
MC15-38	0.003	<0.05
MC15-39	0.002	<0.05
MC15-40	0.061	0.55
MC15-41	0.010	<0.05
MC15-42	0.043	0.95
MC15-43	0.038	0.75
MC15-44	0.063	0.95
MC15-45	0.070	0.70
MC15-46	0.085	2.35
MC15-47	0.105	1.45
MC15-48	0.088	0.85
MC15-49	0.032	0.05
MC15-50	0.009	<0.05
MC15-51	0.008	<0.05
MC15-52	0.002	<0.05
MC15-53	0.002	<0.05
MC15-54	TRACE	<0.05
MC15-55	0.003	<0.05
MC15-56	0.007	<0.05
MC15-57	0.002	<0.05
MC15-58	0.002	<0.05
MC15-59	0.012	<0.05
MC15-60	0.004	<0.05

REGISTERED ASSAYER CERTIFICATE NO. 11980 MICHAEL E. JACOBS Date Issued 12/31/91 ARIZONA U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29025

TUCSON, ARIZONA 85713 12/30/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC16-1	0.003	<0.05
MC16-2	0.005	0.05
MC16-3	0.006	0.20
MC16-4	TRACE	0.15
MC16-5	TRACE	0.20
MC16-6	TRACE	0.10
MC16-7	0.002	<0.05
MC16-8	TRACE	0.05
MC16-9	TRACE	0.05
MC16-10	TRACE	0.10
MC16-11	TRACE	0.15
MC16-12	TRACE	0.10
MC16-13	0.021	<0.05
MC16-14	0.007	<0.05
MC16-15	0.001	<0.05
MC16-16	0.006	<0.05
MC16-17	0.002	0.05
MC16-18	0.006	<0.05
MC16-19	0.009	<0.05
MC16-20	0.010	<0.05
MC16-21	0.008	<0.05
MC16-22	0.005	<0.05
MC16-23	TRACE	0.05
MC16-24	TRACE	<0.05
MC16-25	0.008	0.05
MC16-26	0.013	0.05
MC16-27	TRACE	<0.05
MC16-28	0.002	0.05
MC16-29	0.003	0.05
Proof B	0.047	0.05
MC16-30	0.006	<0.05
MC16-31	0.003	0.05
MC16-32	0.005	<0.05
MC16-33	0.004	0.05
MC16-34	0.006	0.05
MC16-35	0.013	0.05
MC16-36	0.009	0.05
MC16-37	0.007	0.15
MC16-38	0.007	0.05
MC16-39	0.008	<0.05
MC16-40	0.003	0.10
MC16-41	0.003	0.05
MC16-42	0.002	0.05
MC16-43	0.010	0.15
MC16-44	0.012	0.25
MC16-45	0.008	0.15
MC16-46	0.009	0.15
MC16-47	0.004	0.05
MC16-48	0.001	0.15
MC16-49	0.002	0.20
MC16-50	0.011	0.30
MC16-51	0.024	0.15
MC16-52	0.014	0.30
MC16-53	0.027	0.55
MC16-54	0.041	0.55
MC16-55	0.023	0.50
MC16-56	0.042	0.45
MC16-57	0.022	0.70
MC16-58	0.032	0.50
Proof B	0.048	0.05
MC16-59	0.072	0.65
MC16-60	0.082	2.50
MC16-61	0.069	1.60
MC16-62	0.001	0.05
MC16-63	TRACE	0.10
MC16-64	TRACE	<0.05
MC16-65	TRACE	<0.05
MC16-66	0.002	0.20
MC16-67	0.003	0.15
MC16-68	0.002	0.10
MC16-69	0.002	0.15
MC16-70	0.001	0.05
MC16-71	0.010	0.10
MC16-72	0.006	0.10
MC17-1	0.014	0.25
MC17-2	0.009	<0.05

REGISTERED ASSAYER CERTIFICATE 11660 MICHAEL D. JACOBS Date Signed 12/31/91 Arizona U.S.A.

Very respectfully,

Charges $ _____

1435 S. 10th Ave.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29026

TUCSON, ARIZONA 85713 12/30/91 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.		SAMPLE MARKED			
MC17-3	0.012	0.15					
MC17-4	0.006	<0.05					
MC17-5	0.008	0.05					
MC17-6	0.008	0.05					
MC17-7	0.005	0.05					
MC17-8	0.003	0.10					
MC17-9	0.005	0.15					
MC17-10	0.004	0.25					
MC17-11	0.016	0.10					
MC17-12	0.011	<0.05					
MC17-13	0.002	0.10					
MC17-14	0.001	0.05					
MC17-15	0.002	0.10					
Proof B	~~0.049~~	0.05					
MC17-16	0.022	<0.05					
MC17-17	0.007	0.05					
MC17-18	0.054	0.05					
MC17-19	0.065	0.60					
MC17-20	0.049	0.55					
MC17-21	0.078	0.80					
MC17-22	0.008	0.10					
MC17-23	0.007	<0.05					
MC17-24	0.008	0.20					
MC17-25	0.012	0.30					
MC17-26	0.019	0.35					
MC17-27	0.015	0.10					
MC17-28	0.010	<0.05					
MC17-29	0.023	<0.05					
MC17-30	0.010	<0.05					
MC17-31	0.062	0.15					
MC17-32	0.018	0.25					
MC17-33	0.008	0.20					
MC17-34	0.011	<0.05					
MC17-35	0.024	0.05					
MC17-36	0.050	0.05					

REGISTERED ASSAYER CERTIFICATE NO. 11660 MICHAEL B. JACOBS Arizona U.S.A.

Very respectfully,

Charges $ _____

1135 S. 10th Ave.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29027

TUCSON, ARIZONA 85713 1/27/92 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC18A-1	0.015	0.10
MC18A-2	0.007	0.20
MC18A-5	0.005	0.30
MC18A-6	0.003	0.20
MC18A-7	TRACE	0.30
MC18A-8	0.007	0.05
MC18A-9	0.016	0.20
MC18A-10	0.005	0.30
MC18A-11	0.002	0.25
MC18A-12	0.003	0.15
MC18A-13	0.012	0.10
MC18A-14	0.014	0.30
MC18A-15	0.024	0.20
MC18A-16	0.016	0.20
MC18A-17	0.017	0.05
MC18A-18	0.007	0.25
MC18A-19	0.003	0.25
MC18A-20	0.005	0.05
MC18A-21	0.006	0.25
MC18A-22	0.012	0.15
MC18A-23	0.013	0.25
MC18A-24	0.035	0.20
MC18A-25	0.008	0.10
MC18A-26	0.014	0.25
MC18A-27	0.024	0.10
MC18A-28	0.012	<0.05
MC18A-29	0.008	0.20
MC18A-30	0.018	0.30
MC18A-31	0.008	<0.05
Proof 17N-SL	0.221	<0.05
MC18A-32	0.005	<0.05
MC18A-33	0.008	0.20
MC18A-34	0.010	0.25
MC18A-35	0.008	0.25
MC18A-36	0.009	0.20
MC18A-37	0.005	0.05
MC18A-38	0.019	0.20
MC18A-39	0.013	0.20

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC18A-40	0.009	0.05
MC18A-41	0.011	0.05
MC18A-42	0.008	0.15
MC18A-43	0.010	0.15
MC18A-44	0.015	0.15
MC18A-45	0.014	0.20
MC18A-46	0.030	0.25
MC18A-47	0.013	0.40
MC18A-48	0.016	0.25
MC18A-49	0.013	0.20
MC18A-50	0.012	0.15
MC18A-51	0.054	0.40
MC18A-52	0.024	0.35
MC18A-53	0.012	<0.05
Mc18A-54	0.025	0.40
MC18A-55	0.014	0.35
MC18A-56	0.015	0.30
MC18A-57	0.010	0.35
MC18A-58	0.009	0.40
MC18A-59	0.012	0.35
MC18A-60	0.030	0.20
Proof 17N-SL	0.222	<0.05
MC18A-61	0.039	0.45
MC18A-62	0.010	0.35

Registered Assayer
CERTIFICATE NO.
16037
MANUEL J. VIDAL
Date Signed
ARIZONA, U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

PHONE 622-081
FAX (602) 622-081

Jacobs Assay Office

Registered Assayers

Certificate No 29028

TUCSON, ARIZONA 85713 1/28/92 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC18A-63	0.010	0.10
MC18A-64	0.009	0.20
MC18A-65	0.014	0.25
MC18A-66	0.018	0.20
MC18A-67	0.010	0.10
MC18A-68	0.005	<0.05
MC18A-69	0.003	0.05
MC18A-70	0.009	0.10
MC18A-71	0.008	0.15
MC18A-72	0.012	0.10
MC18A-73	0.008	0.20
MC18A-74	0.007	0.10
MC18A-75	0.008	0.05
MC18A-76	0.008	0.10
MC18A-77	0.011	0.05
MC18A-78	0.010	0.15
MC18A-79	0.005	0.05
MC18A-80	0.004	<0.05
MC18A-81	0.005	0.15
MC18A-82	0.005	0.05
MC18A-83	0.003	<0.05
MC18A-84	0.005	0.05
MC18A-85	0.008	0.10
MC18A-86	0.003	<0.05
MC18A-87	0.003	<0.05
MC18A-88	0.004	<0.05
MC18A-89	0.008	0.05
MC18A-90	TRACE	<0.05
MC18A-91	0.002	<0.05
Proof 17N-SL	0.220	0.30
MC18A-92	0.008	0.05
MC18A-93	0.007	0.05
MC18A-94	0.005	0.05
MC18A-95	0.005	<0.05
MC18A-96	0.002	<0.05
MC18A-97	0.022	<0.05
MC18A-98	0.007	0.20
MC18A-99	0.017	0.15
MC18A-100	TRACE	0.15
MC18A-101	0.005	<0.05
MC18A-102	0.005	0.25
MC18A-103	0.006	0.20
MC18A-104	0.003	0.15
MC18A-105	0.003	0.20
MC18A-106	0.012	0.25
MC18A-107	0.004	0.15
MC18A-108	0.006	0.15
MC18A-109	0.003	0.10
MC18A-110	TRACE	<0.05
MC18A-111	TRACE	0.05
MC18A-112	0.002	0.15
MC18A-113	TRACE	<0.05
MC18A-114	0.003	0.20
MC18A-115	0.001	0.05
MC18A-116	0.001	0.05
MC18A-117	0.003	0.20
MC18A-118	0.004	0.05
MC18A-119	0.001	<0.05
MC18A-120	TRACE	<0.05
Proof 17N-SL	0.235	0.40
MC18A-121	0.002	0.05
MC18A-122	0.002	<0.05
MC18A-123	TRACE	<0.05
MC18A-124	TRACE	<0.05
MC18A-125	0.001	0.05
MC18A-126	0.001	<0.05
MC18A-127	0.003	<0.05
MC18A-128	0.001	0.10
MC18A-129	TRACE	<0.05
MC18A-130	0.001	<0.05
MC18A-131	0.003	<0.05
MC18A-132	TRACE	<0.05
MC18A-133	TRACE	<0.05
MC18A-134	TRACE	0.15
MC18A-135	0.003	0.15
MC18A-136	0.001	<0.05

Registered Assayer
CERTIFICATE No.
16057
MANUEL VIDAL
Date Signed 1/30
ARIZONA, U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-08
FAX (602) 622-081

Certificate No 29029

TUCSON, ARIZONA 85713 1/28/92 19 __

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.	SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC18A-137	0.002	<0.05			
MC18A-138	0.002	<0.05			
MC18A-139	0.002	0.05			
MC18A-140	TRACE	0.05			
MC18A-141	0.005	0.10			
MC18A-142	0.002	<0.05			
MC18A-143	0.003	0.15			
MC18A-144	0.002	0.05			
MC18A-145	0.016	0.20			
MC18A-146	0.002	0.05			
MC18A-147	TRACE	0.25			
MC18A-148	0.001	0.05			
MC18A-149	0.004	0.15			
Proof 17N-SL	0.231	0.40			
MC18A-150	0.002	0.15			
MC18A-151	0.003	0.15			
MC18A-152	TRACE	0.05			

Registered Assayer CERTIFICATE NO 16957 MANUEL J. VIDAL Date Signed 1-28-92 ARIZONA, U.S.A.

Very respectfully,

Charges $ _____

1435 S. 10th Ave.

PHONE 622-
FAX (602) 622-0813

Jacobs Assay Office

Registered Assayers

Certificate No 29030

TUCSON, ARIZONA 85713 1/28/92 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC19-1	0.001	0.30
MC19-2	0.007	0.25
MC19-3	0.004	0.25
MC19-4	0.004	<0.05
MC19-5	0.003	<0.05
MC19-6	0.004	<0.05
MC19-7	0.008	<0.05
MC19-8	0.007	<0.05
MC19-9	0.004	<0.05
MC19-10	0.004	<0.05
MC19-11	0.003	<0.05
MC19-12	0.002	<0.05
MC19-13	0.005	<0.05
MC19-14	0.010	0.10
MC19-15	0.003	<0.05
MC19-16	0.005	<0.05
MC19-17	0.010	<0.05
MC19-18	0.005	<0.05
MC19-19	0.003	0.05
MC19-20	0.005	<0.05
MC19-21	0.003	0.15
MC19-22	0.010	0.15
MC19-23	0.040	0.10
MC19-24	0.006	0.05
MC19-25	0.009	0.15
MC19-26	0.006	0.10
MC19-27	0.007	0.05
MC19-28	0.045	0.15
MC19-29	0.079	0.10
MC19-30	0.009	0.10
MC19-31	0.009	0.10
MC19-32	0.039	0.15
MC19-33	0.007	0.05
MC19-34	0.008	<0.05
MC19-35	0.010	0.05
MC19-36	0.006	0.05
MC19-37	0.007	<0.05
MC19-38	0.004	0.05
MC19-39	0.009	<0.05
MC19-40	0.003	0.05
MC19-41	0.006	<0.05
Proof 17N-SL	0.212	0.35
MC19-42	0.009	<0.05
MC19-43	0.004	<0.05
MC19-44	0.005	<0.05
MC19-45	0.012	<0.05
MC19-46	0.011	<0.05
MC19-47	0.005	<0.05
MC19-48	0.003	<0.05
MC19-49	0.006	<0.05
MC19-50	0.004	<0.05
MC19-51	0.005	<0.05
MC19-52	0.019	0.10
MC19-53	0.015	0.05
MC19-54	0.008	0.05
MC19-55	0.013	0.30
MC19-56	0.023	0.30
MC19-57	0.018	<0.05
MC19-58	0.048	0.20
MC19-59	0.017	<0.05
MC19-60	0.010	0.10
MC19-61	0.011	0.15
MC19-62	0.013	0.05
MC19-63	0.014	0.05
MC19-64	0.005	0.05
MC19-65	0.003	<0.05
MC19-66	0.005	0.05
MC19-67	0.001	<0.05
MC19-68	TRACE	<0.05
MC19-69	0.010	0.05
MC19-70	0.010	0.15
Proof 17N-SL	0.223	0.35
MC19-71	TRACE	<0.05
MC19-72	0.005	0.05
MC19-73	0.010	<0.05
MC19-74	0.010	0.05

Registered Assayer
CERTIFICATE
16857
MANUEL
VIDAL
Duly Sworn
ARIZONA, U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

PHONE 622-
FAX (602) 622-0813

Jacobs Assay Office

Registered Assayers

Certificate No 29031

TUCSON, ARIZONA 85713 1/28/92 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC19-75	0.008	<0.05
MC19-76	0.003	<0.05
MC19-77	0.010	<0.05
MC19-78	0.018	<0.05
MC19-79	TRACE	<0.05
MC19-80	0.001	0.05
MC19-81	0.003	<0.05
MC19-82	0.005	<0.05
MC19-83	0.005	0.05
MC19-84	0.007	0.05
MC19-85	0.006	0.15
MC19-86	TRACE	<0.05
MC19-87	0.004	<0.05
MC19-88	TRACE	<0.05
MC19-89	0.006	<0.05
MC19-90	0.004	0.10
MC19-91	0.003	<0.05
MC19-92	TRACE	<0.05
MC19-93	0.002	<0.05
MC19-94	0.004	<0.05
MC19-95	0.007	0.05
MC19-96	0.004	0.10
MC19-97	TRACE	0.05
MC19-98	0.003	<0.05
MC19-99	0.004	0.10
Proof 17N-SL	0.226	0.30
MC19-100	0.004	<0.05
MC19-101	0.002	0.10
MC19-102	0.001	1.50
MC19-103	0.002	0.05
MC19-104	0.002	0.05
MC19-105	0.004	<0.05
MC19-106	0.005	0.05
MC19-107	TRACE	<0.05
MC19-108	0.008	0.10
MC19-109	0.004	<0.05
MC19-110	0.005	0.05
MC19-111	0.015	0.20
MC19-112	TRACE	<0.05
MC19-113	0.003	0.05
MC19-114	0.006	0.10
MC19-115	0.006	<0.05
MC19-116	0.005	0.10
MC19-117	TRACE	0.10
MC19-118	0.029	0.05
MC19-119	0.002	0.05
MC19-120	TRACE	0.10
MC19-121	0.001	<0.05
MC19-122	0.001	0.05
MC19-123	TRACE	0.05
MC19-124	0.020	0.05
MC19-125	TRACE	<0.05
MC19-126	TRACE	<0.05
MC19-127	TRACE	<0.05
MC19-128	TRACE	<0.05
MC19-129	TRACE	<0.05
MC19-130	0.002	<0.05
MC19-131	0.004	0.20
MC19-132	TRACE	0.20
MC19-133	0.002	0.25
MC19-134	0.001	0.15
MC19-135	0.003	0.25
MC19-136	0.003	0.25
MC19-137	0.001	0.20
MC19-138	0.002	0.15
MC19-139	0.003	0.10
MC19-140	0.002	0.10

Registered Assayer
CERTIFICATE
16357
MANUEL
VIDAL
Not Signed
ARIZONA U.S.

Very respectfully,

Charges $ _____

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29032

TUCSON, ARIZONA 85713 1/30/92 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC20-1	0.007	0.20
MC20-2	TRACE	0.20
MC20-3	0.008	0.30
MC20-4	0.009	0.20
MC20-5	0.007	0.15
MC20-6	0.005	0.05
MC20-7	0.017	0.10
MC20-8	0.005	0.20
MC20-9	0.007	0.15
MC20-10	0.021	0.10
MC20-11	0.012	0.05
MC20-12	0.007	0.10
MC20-13	0.005	0.05
MC20-14	TRACE	<0.05
MC20-15	0.006	<0.05
MC20-16	0.007	<0.05
MC20-17	0.008	0.20
MC20-18	0.003	<0.05
MC20-19	0.005	<0.05
Proof 17N-SL	0.212	0.20
MC20-20	0.006	<0.05
MC20-21	0.005	<0.05
MC20-22	0.008	<0.05
MC20-23	0.020	<0.05
MC20-24	0.018	0.15
MC20-25	0.019	0.05
MC20-26	0.008	0.20
MC20-27	0.012	0.40
MC20-28	0.075	0.65
MC20-29	0.010	0.20
MC20-30	0.011	0.15
MC20-31	0.010	0.05
MC20-32	0.007	0.10
MC20-33	0.003	0.15
MC20-34	0.003	0.05
MC20-35	0.008	0.10
MC20-36	0.005	0.05
MC20-37	0.005	0.05
MC20-38	0.006	<0.05
MC20-39	0.006	<0.05
MC20-40	0.010	<0.05
MC20-41	0.006	<0.05
MC20-42	0.007	0.10
MC20-43	0.003	<0.05
MC20-44	0.005	<0.05
MC20-45	0.008	<0.05
MC20-46	0.008	0.20
MC20-47	0.010	0.05
MC20-48	0.007	0.10
Proof 17N-SL	0.231	0.25
MC20-49	0.014	0.40
MC20-50	0.018	0.25
MC20-51	0.042	0.80
MC20-52	0.010	0.20
MC20-53	0.023	0.25
MC20-54	0.006	0.05
MC20-55	0.011	0.30
MC20-56	0.002	0.30
MC20-57	0.026	0.65
MC20-58	0.013	0.10
MC20-59	0.018	<0.05
MC20-60	0.009	<0.05

Registered Assayer
CERTIFICATE NO.
16967
MANUEL J.
VIDAL
Date Signed
ARIZONA, U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29033

TUCSON, ARIZONA 85713 1/31/92 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC20-61	0.015	0.40
MC20-62	0.020	0.70
MC20-63	0.020	0.65
MC20-64	0.015	0.30
MC20-65	0.010	0.20
MC20-66	0.015	0.20
MC20-67	0.028	0.40
MC20-68	0.018	0.45
MC20-69	0.014	0.30
MC20-70	0.017	0.25
MC20-71	0.009	0.25
MC20-72	0.010	0.25
MC20-73	0.015	0.20
MC20-74	0.010	0.20
MC20-75	0.022	0.30
MC20-76	0.011	<0.05
MC20-77	0.012	0.15
MC20-78	0.025	0.05
MC20-79	0.010	<0.05
MC20-80	0.008	0.10
MC20-81	0.003	0.10
MC20-82	0.002	0.10
MC20-83	0.002	0.15
MC20-84	0.003	0.15
MC20-85	0.005	<0.05
MC20-86	0.006	<0.05
MC20-87	0.006	<0.05
MC20-88	0.002	<0.05
MC20-89	0.002	<0.05
Proof 17N-SL	0.231	0.20
MC20-90	0.002	<0.05
MC20-91	0.002	0.05
MC20-92	0.008	<0.05
MC20-93	0.009	0.05
MC20-94	0.008	0.05
MC20-95	0.008	0.05
MC20-96	0.010	0.05
MC20-97	0.006	0.20
MC20-98	0.006	0.10
MC20-99	0.010	0.05
MC20-100	0.011	0.15
MC20-101	0.020	<0.05
MC20-102	0.014	0.10
MC20-103	0.012	0.25
MC20-104	0.022	0.20
MC20-105	0.006	0.20
MC20-106	0.009	0.15
MC20-107	0.005	0.20
MC20-108	0.007	0.20
MC20-109	0.029	0.30
MC20-110	0.006	0.20
MC20-111	0.021	0.15
MC20-112	0.003	0.10
MC20-113	0.008	0.10
MC20-114	0.008	<0.05
MC20-115	0.004	0.10
MC20-116	TRACE	0.10
MC20-117	0.001	0.10
MC20-118	0.026	0.20
Proof 17N-SL	0.229	0.35
MC20-119	0.002	0.05
MC20-120	0.001	0.20
MC20-121	0.003	0.10
MC20-122	0.011	0.05
MC20-123	0.003	<0.05
MC20-124	0.001	<0.05
MC20-125	TRACE	0.10
MC20-126	0.008	0.20
MC20-127	TRACE	<0.05
MC20-128	TRACE	<0.05
MC20-129	0.001	<0.05
MC20-130	0.001	<0.05
MC20-131	TRACE	<0.05
MC20-132	0.007	0.05
MC20-133	TRACE	<0.05
MC20-134	TRACE	<0.05

Registered Assayer CERTIFICATE NO. 16957 MANUEL J. VIDAL Date Signed 1-31-92 ARIZONA, U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No. 29034

TUCSON, ARIZONA 85713 1/31/92 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC20-135	TRACE	<0.05
MC20-136	TRACE	<0.05
MC20-137	TRACE	<0.05
MC20-138	TRACE	<0.05
MC20-139	TRACE	<0.05
MC20-140	TRACE	<0.05
MC20-141	TRACE	<0.05
MC20-142	TRACE	<0.05
MC20-143	0.021	0.10
MC20-144	0.003	0.05
MC20-145	0.001	0.20
MC20-146	0.002	0.05
MC20-147	TRACE	0.05
Proof 17N-SL	0.228	0.30
MC20-148	TRACE	<0.05
MC20-149	TRACE	<0.05
MC20-150	TRACE	0.05
MC20-151	0.001	<0.05
MC20-152	TRACE	0.05
MC20-153	TRACE	0.05

SAMPLE MARKED						

Registered Assayer
CERTIFICATE NO.
16057
MANUEL J.
VIDAL
Date Signed 2-4-92
ARIZONA, U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29035

TUCSON, ARIZONA 85713 2/3/92 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC20-154	0.001	<0.05
MC20-155	TRACE	<0.05
MC20-156	TRACE	<0.05
MC20-157	TRACE	<0.05
MC20-158	0.001	0.10
MC20-159	TRACE	0.05
MC20-160	0.001	<0.05
MC20-161	TRACE	0.05
MC20-162	TRACE	0.05
MC20-163	TRACE	<0.05
MC20-164	TRACE	<0.05
MC20-165	TRACE	<0.05
MC20-166	TRACE	0.05
MC20-167	TRACE	<0.05
MC20-168	TRACE	0.05
MC20-169	0.001	0.05
MC20-170	TRACE	0.10
MC20-171	TRACE	<0.05
MC20-172	0.007	0.30
MC20-173	0.001	<0.05
MC20-174	TRACE	<0.05
MC20-175	TRACE	<0.05
MC20-176	0.001	<0.05
MC20-177	TRACE	<0.05
MC20-178	TRACE	<0.05
MC20-179	0.001	<0.05
MC20-180	TRACE	<0.05
MC20-181	TRACE	<0.05
MC20-182	0.003	<0.05
Proof 17N-SL	0.223	0.15
MC20-183	0.002	<0.05
MC20-184	TRACE	<0.05
MC20-185	TRACE	<0.05
MC20-186	TRACE	<0.05
MC20-187	TRACE	<0.05
MC20-188	0.002	<0.05
MC20-189	0.003	<0.05
MC20-190	TRACE	0.05

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC20-191	0.002	0.05
MC20-192	0.003	<0.05
MC20-193	0.004	0.15
MC20-194	0.018	0.05
MC20-195	TRACE	0.05
MC20-196	0.001	0.05
MC20-197	0.003	<0.05
MC20-198	0.002	<0.05
MC20-199	0.003	0.05
MC20-200	0.002	<0.05
MC20-201	TRACE	<0.05
MC20-202	TRACE	<0.05
MC20-203	TRACE	0.05
MC20-204	0.001	<0.05
MC20-205	0.001	0.05
MC20-206	0.003	0.05
MC20-207	TRACE	<0.05
MC20-208	TRACE	<0.05

Registered Assayer CERTIFICATE NO. 16957 MANUEL J. VIDAL Date Signed 2-3-92 ARIZONA U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29036

TUCSON, ARIZONA 85713 2/4/92 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.			SAMPLE MARKED	Au O.P.T.	Ag O.P.T.		
MC21-3	0.001	0.15			MC21-40	TRACE	0.15		
MC21-4	0.002	0.15			MC21-41	TRACE	0.10		
MC21-5	0.002	0.15			MC21-42	TRACE	0.10		
MC21-6	0.002	0.15			MC21-43	TRACE	0.10		
MC21-7	0.001	0.10			MC21-44	0.001	<0.05		
MC21-8	0.003	0.15			MC21-45	0.002	0.10		
MC21-9	0.002	0.10			MC21-46	TRACE	0.05		
MC21-10	TRACE	0.05			MC21-47	TRACE	0.15		
MC21-11	0.009	0.15			MC21-48	0.001	0.05		
MC21-12	TRACE	0.15			MC21-49	TRACE	0.15		
MC21-13	TRACE	0.15			MC21-50	0.002	0.10		
MC21-14	0.001	0.20			MC21-51	0.003	0.05		
MC21-15	0.001	0.15			MC21-52	TRACE	0.10		
MC21-16	0.001	0.25			MC21-53	TRACE	0.10		
MC21-17	TRACE	0.15			MC21-54	TRACE	0.10		
MC21-18	0.003	0.15			MC21-55	TRACE	0.05		
MC21-19	TRACE	0.10			MC21-56	TRACE	0.05		
MC21-20	TRACE	0.15			MC21-57	0.001	0.10		
MC21-21	TRACE	0.15			MC21-58	TRACE	<0.05		
MC21-22	0.002	<0.05			MC21-59	TRACE	0.05		
MC21-23	0.001	0.15			MC21-60	TRACE	<0.05		
MC21-24	TRACE	0.10			Proof 17N-SL	0.222	<0.05		
MC21-25	TRACE	0.05			MC21-61	TRACE	0.05		
MC21-26	0.001	<0.05			MC21-62	0.001	0.10		
MC21-27	TRACE	0.05			MC21-63	0.002	<0.05		
MC21-28	TRACE	0.15			MC21-64	0.006	<0.05		
MC21-29	TRACE	0.10			MC21-65	TRACE	<0.05		
MC21-30	TRACE	<0.05			MC21-66	TRACE	<0.05		
MC21-31	TRACE	0.05			MC21-67	0.002	<0.05		
Proof 17N-SL	0.218	<0.05			MC21-68	TRACE	<0.05		
MC21-32	TRACE	<0.05			MC21-69	TRACE	<0.05		
MC21-33	TRACE	<0.05			MC21-70	TRACE	<0.05		
MC21-34	TRACE	0.15			MC21-71	TRACE	0.10		
MC21-35	TRACE	<0.05			MC21-72	TRACE	<0.05		
MC21-36	TRACE	0.15			MC21-73	0.002	<0.05		
MC21-37	TRACE	0.10			MC21-74	TRACE	<0.05		
MC21-38	0.007	0.15			MC21-75	TRACE	<0.05		
MC21-39	0.002	0.15			MC21-76	TRACE	<0.05		

REGISTERED ASS... CERTIFICATE NO. 11680 MICHAEL G. JACOBS Date Signed ... Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

PHONE 622-0813
FAX (602) 622-0813

Jacobs Assay Office

Registered Assayers

Certificate No 29037

TUCSON, ARIZONA 85713 2/4/92 19

Sample Submitted By Mr. Magma Copper Company Mark Sanders PO#SK065143

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.
MC21-77	0.001	<0.05
MC21-78	TRACE	<0.05
MC21-79	0.002	<0.05
MC21-80	0.009	<0.05
MC21-81	TRACE	<0.05
MC21-82	TRACE	<0.05
MC21-83	TRACE	<0.05
MC21-84	TRACE	<0.05
MC21-85	0.001	<0.05
MC21-86	TRACE	<0.05
MC21-87	TRACE	<0.05
MC21-88	TRACE	<0.05
MC21-89	TRACE	<0.05
Proof 17N-SL	0.219	<0.05
MC21-90	TRACE	<0.05
MC21-91	TRACE	<0.05
MC21-92	TRACE	<0.05
MC21-93	TRACE	<0.05
MC21-94	TRACE	<0.05
MC21-95	TRACE	<0.05
MC21-96	TRACE	<0.05
MC21-97	TRACE	<0.05
MC21-98	0.002	<0.05
MC21-99	TRACE	<0.05
MC21-100	TRACE	0.05

SAMPLE MARKED	Au O.P.T.	Ag O.P.T.

REGISTERED ASSAYER CERTIFICATE NO. 11859 MICHAEL A. JACOBS Date signed 2/7/92 Arizona U.S.A.

Very respectfully,

Charges $

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29038

TUCSON, ARIZONA 85713 2/4/92 19

Sample Submitted By Mr. Mark Sanders Magma Copper Company PO#SK065143

SAMPLE MARKED	Cu PPM	Mo PPM		SAMPLE MARKED		
MC21-5	11	2				
MC21-10	22	2				
MC21-15	22	2				
MC21-20	17	<2				
MC21-25	17	<2				
MC21-30	28	5				
MC21-35	22	<2				
MC21-40	17	5				
MC21-45	17	170				
MC21-50	17	57				
MC21-55	11	<2				
MC21-60	11	<2				
MC21-65	11	5				
MC21-70	17	4				
MC21-75	17	<2				
MC21-80	17	<2				
MC21-85	11	<2				
MC21-90	17	5				
MC21-95	17	2				
MC21-100	22	45				

REGISTERED ASSAYER CERTIFICATE NO. Michael P. Jacobs Date signed 2/4/92 Arizona U.S.A.

Very respectfully,

Charges $

Fax. (602) 622-0813

Ph. (602) 622-0813

Jacobs Assay Office
Registered Assayers, Estab. 1880

1435 S. 10th Ave. Tucson, Az 85713

Magma Copper Company
P.O. Box M
San Manuel, AZ 85631-0460
Attn: Mark Sanders

1/7/92

Results of Reassays

Sample ID	1st Assay Au O.P.T.	1st Assay Ag O.P.T.	2nd Assay Au O.P.T.	2nd Assay Ag O.P.T.
MC5-13	0.005	<0.05	0.004	0.05
Mc5-14	0.002	0.05	0.004	0.05
MC5-15	0.001	0.05	0.002	0.05
MC5-16	0.008	0.10	0.005	0.05
MC5-17	0.002	0.10	0.005	0.15
MC5-18	0.001	<0.05	0.007	<0.05
MC5-19	TRACE	<0.05	0.002	0.05
MC5-20	0.002	<0.05	0.009	<0.05
MC5-21	0.001	<0.05	0.003	<0.05
MC5-22	0.003	0.15	0.003	0.10
MC5-23	0.004	<0.05	0.007	<0.05
MC7-2	0.007	<0.05	0.010	<0.05
MC7-4	0.002	0.20	0.009	0.10
MC7-14	0.004	<0.05	0.006	<0.05
MC7-26	0.002	0.10	0.008	0.10
MC7-47	0.014	0.35	0.010	0.20
MC7-49	0.005	0.50	0.008	0.30
MC7-52	0.006	0.40	0.008	0.30
MC7-55	0.007	0.35	0.007	0.35
MC7-56	0.006	0.25	0.009	0.15
MC7-72	0.001	0.40	0.005	0.40
MC8-32	TRACE	<0.05	TRACE	0.05
MC8-83	0.026	0.60	0.023	0.70
MC8-84	0.043	0.60	0.045	0.70
MC9-9	0.002	0.10	0.007	0.05
MC9-21	0.001	0.05	TRACE	0.10
MC9-38	0.005	0.25	TRACE	0.15
MC9-54	0.004	0.60	0.008	0.60
MC9-56	0.007	0.15	0.014	0.40
MC10-73	0.049	0.75	0.145	0.65
MC11-13	0.009	0.20	0.016	0.15
MC11-42	0.066	0.80	0.060	0.95
MC11-43	0.060	0.95	0.062	0.90
MC12-30	TRACE	0.10	TRACE	0.15
MC12-47	0.058	0.55	0.065	0.40

REGISTERED ASSAYER
CERTIFICATE NO.
11660
MICHAEL G. JACOBS
Date Signed 1/8/92
Arizona U.S.A.

Fax. (602) 622-0813

Ph. (602) 622-0813

Jacobs Assay Office
Registered Assayers, Estab. 1880

1435 S. 10th Ave. Tucson, Az 85713

	1st Assay		2nd Assay	
Sample ID	Au O.P.T.	Ag O.P.T.	Au O.P.T.	Ag O.P.T.
MC12-51	0.199	2.90	0.189	2.95
MC12-52	0.066	1.90	0.068	1.95
MC12-53	0.014	0.45	0.012	0.45
MC12-57	0.002	0.15	0.007	0.15
MC14-16	0.114	0.95	0.104	0.85
MC14-18	0.056	0.50	0.050	0.45
MC14-37	0.111	0.35	0.108	0.25
MC14-38	0.004	0.25	0.010	0.15
MC15-47	0.105	1.45	0.093	1.45
MC15-48	0.088	0.85	0.078	0.80

REGISTERED ASSAYER
CERTIFICATE NO.
11653
MICHAEL O.
JACOBS
Date Signed 1/8/92
Arizona U.S.A.

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813
FAX (602) 622-0813

Certificate No 29038

TUCSON, ARIZONA 85713 2/4/92 19

Sample Submitted By Mr. Mark Sanders Magma Copper Company PO#SK065143

SAMPLE MARKED	Cu PPM	Mo PPM		SAMPLE MARKED			
MC21-5	11	2					
MC21-10	22	2					
MC21-15	22	2					
MC21-20	17	<2					
MC21-25	17	<2					
MC21-30	28	5					
MC21-35	22	<2					
MC21-40	17	5					
MC21-45	17	170					
MC21-50	17	5					
MC21-55	11	<2					
MC21-60	11	<2					
MC21-65	11	5					
MC21-70	17	4					
MC21-75	17	<2					
MC21-80	17	<2					
MC21-85	11	<2					
MC21-90	17	5					
MC21-95	17	2					
MC21-100	22	45					

REGISTERED ASSAYER
CERTIFICATE NO.
MICHAEL D. JACOBS
Date Signed 2/4/92
Arizona U.S.A.

Very respectfully,

Charges $

dar-Clegg, Inc.
3 Spice Island Dr.
Building 1, Unit A
Sparks, Nevada 89431
702 (359-9330)

BONDAR-CLEGG

Geochemical Lab Report

A DIVISION OF INCHCAPE INSPECTION & TESTING SERVICES

DATE PRINTED: 3-FEB-92

REPORT: R92-10044.4 (COMPLETE)

PROJECT: NONE GIVEN PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Au OPT	Ag OPT	JACOBS	
R2 MC1-18		<0.0002	<0.02	TRACE	0.25
R2 MC1-20		<0.0002	<0.02	"	"
R2 MC5-53		<0.0002	<0.02	0.005	0.10
R2 MC5-61		0.236	4.26	0.244	3.75
R2 MC7-14		<0.0002	0.30	0.004	<0.05
R2 MC7-66		0.018	<0.02	0.020	0.20
R2 MC8-74		0.003	<0.02	0.004	<0.05
R2 MC8-77		0.016	0.12	0.012	<0.05
R2 MC8-84		0.039	0.75	0.043	0.60
R2 MC9-84		0.011	0.31	0.002	0.20
R2 MC9-93		<0.0002	<0.02	0.017	0.20
R2 MC10-40		<0.0002	<0.02	0.005	0.20
R2 MC11-28		0.039	<0.02	0.005	<0.05
R2 MC12-42		<0.0002	<0.02	0.009	0.20
R2 MC12-51		0.209	2.98	0.199	2.90
R2 MC13-30		0.047	0.44	0.040	0.40
R2 MC15-47		0.083	1.83	0.105	1.45
R2 MC16-53		0.027	0.55	0.027	0.55
R2 MC16-60		0.009	2.74	0.082	2.50

APPENDIX F

METALLURGICAL REPORTS

McCLELLAND LABORATORIES, INC.

1016 Greg Street, Sparks, Nevada 89431 702 / 356-1300
FAX 702 / 356-8917

Report
on
Direct Agitated Cyanidation Testwork -
Moss Bulk Ore and Cuttings Samples
MLI Job No. 1567
May 29, 1991

for

Mr. Mark Sander
Magma Copper Company
7400 North Oracle Road
Suite 200
Tucson, AZ 85704

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McCLELLAND LABORATORIES, INC.

1016 Greg Street, Sparks, Nevada 89431 702 / 356-1300
FAX 702 / 356-8917

Report
on
Direct Agitated Cyanidation Testwork
Moss Bulk Ore and Cuttings Samples
MLI Job No. 1567
May 29, 1991

for

Mr. Mark Sander
Magma Copper Company
7400 North Oracle Road
Suite 200
Tucson, AZ 85704

EXECUTIVE SUMMARY

Direct agitated cyanidation (bottle roll) tests were conducted on 1 bulk ore sample, and 14 cuttings intervals from the Moss project to determine gold recovery, recovery rate, and reagent requirements. The bulk ore sample was evaluated at a 100 percent minus 1 inch feed size. Cuttings intervals were evaluated at the as received feed size.

Metallurgical results show that the bulk ore sample was not readily amenable to direct agitated cyanidation treatment at a minus 1 inch feed size. A gold recovery of 42.1 percent was achieved in 96 hours of leaching. Gold recovery rate was fairly slow and extraction was progressing at a slower, but fairly constant rate, when leaching was terminated at 96 hours. Reagent requirements were low.

Metallurgical results show that the cuttings intervals were amenable to direct agitated cyanidation treatment at the as received feed size. Gold recoveries ranged from 51.9 to 78.1 percent, and averaged 62.4 percent in 96 hours of leaching. Gold recovery rates were fairly rapid and extraction was substantially complete in from 6 to 24 hours. Additional gold was extracted after 24 hours, but at a slow rate. Cyanide and lime requirements were low to moderate.

SAMPLE PREPARATION AND HEAD ASSAYS

One bulk ore sample, and 14 cuttings intervals from the Moss project were received for the testing program. The bulk ore sample was stage crushed to 100 percent minus 1 inch in size, and was thoroughly blended and split to obtain 3 kilograms for a bottle roll test, and samples for triplicate direct head assay. Cuttings intervals were thoroughly blended and split to obtain 1 kilogram for a bottle roll test. Cuttings intervals from hole MM-2 were split further to obtain a 300 gram sample for direct head assay.

Head samples were assayed directly using conventional fire assay fusion procedures to determine gold content. Head assay results and head grade comparisons for the bulk ore sample are provided in Table 1. Head assay results for cuttings intervals are provided with overall metallurgical results from the bottle roll tests later in this report.

Table 1. - Head Assay Results and Head Grade Comparisons, Moss Bulk Ore Sample

Determination Method	Head Grade, ozAu/ton
Direct Assay: Initial	0.250
Duplicate	0.254
Triplicate	0.325
Calculated, Bottle Test	0.214
Arithmetic Average	0.261
Maximum Deviation from Average	0.064
Precision, percent	80.3

Head grades determined by the various methods did not agree closely. Gold occurrence was somewhat "spotty". The cause of "spottiness" was not established. The calculated head grade determined from the bottle roll test is considered more reliable than direct head assays because of the quantity of sample evaluated.

DIRECT AGITATED CYANIDATION TEST PROCEDURES AND RESULTS

Direct agitated cyanidation (bottle roll) tests were conducted on 1 bulk ore sample, and 14 cuttings intervals from the Moss project to determine gold recovery, recovery rate, and reagent requirements. The bulk ore sample was evaluated at a 100 percent minus 1 inch feed size. Cuttings intervals were evaluated at the as received feed size. Ore charges

were mixed with water to achieve 40 weight percent solids. Natural pulp pHs were measured. Lime was added to adjust the pH of the pulps to 11.0 before adding the cyanide. Sodium cyanide, equivalent to 2.0 pounds per ton of solution, was added to the alkaline pulps.

Leaching was conducted by rolling the pulps in bottles on the laboratory rolls for 96 hours. Rolling was suspended briefly after 2, 6, 24, 48, and 72 hours to allow the pulps to settle so samples of pregnant solution could be taken for analysis by A.A. methods. Pregnant solution volumes were measured and sampled. Cyanide concentration and pH were determined for each pregnant solution. Make-up water, equivalent to that withdrawn, was added to the pulps. Cyanide concentrations were restored to initial levels. Lime was added, if necessary, to maintain the leaching pH at between 10.8 and 11.2. Rolling was then resumed.

After 96 hours, the pulps were filtered to separate liquids and solids. Final pregnant solution volumes were measured and sampled for analysis. Final pH and cyanide concentrations were determined. Leached residues were washed, dried, weighed, and assayed in triplicate to determine residual gold content.

Overall metallurgical results for the bottle roll tests are provided in Tables 2 through 7. Gold leach rate profiles are shown graphically in Figures 1 through 6. Triplicate gold tail assay results for the cuttings intervals are provided in Table 8. A summary of bottle roll test results conducted on the cuttings intervals is provided in Table 9.

Table 2. - Overall Metallurgical Results, Bottle Roll Test, Moss Bulk Ore Sample

Metallurgical Results	Feed Size
Extraction: pct. total Au	-1"
in 2 hours	10.2
in 6 hours	18.4
in 24 hours	29.0
in 48 hours	34.7
in 72 hours	38.6
in 96 hours	42.1
Extracted, ozAu/ton ore	0.090
Tail Grade, ozAu/ton[1)]	0.261
Calculated Head, ozAu/ton ore	0.214
Head Grade, ozAu/ton ore[2)]	0.261
Cyanide Consumed, lb/ton ore	0.15
Lime Added, lb/ton ore	3.4
Final Solution pH	11.0
Natural pH (40% solids)	7.1

1) Average of three (0.132, 0.119, and 0.121 ounce gold per ton).
2) Average of all head grade determinations.

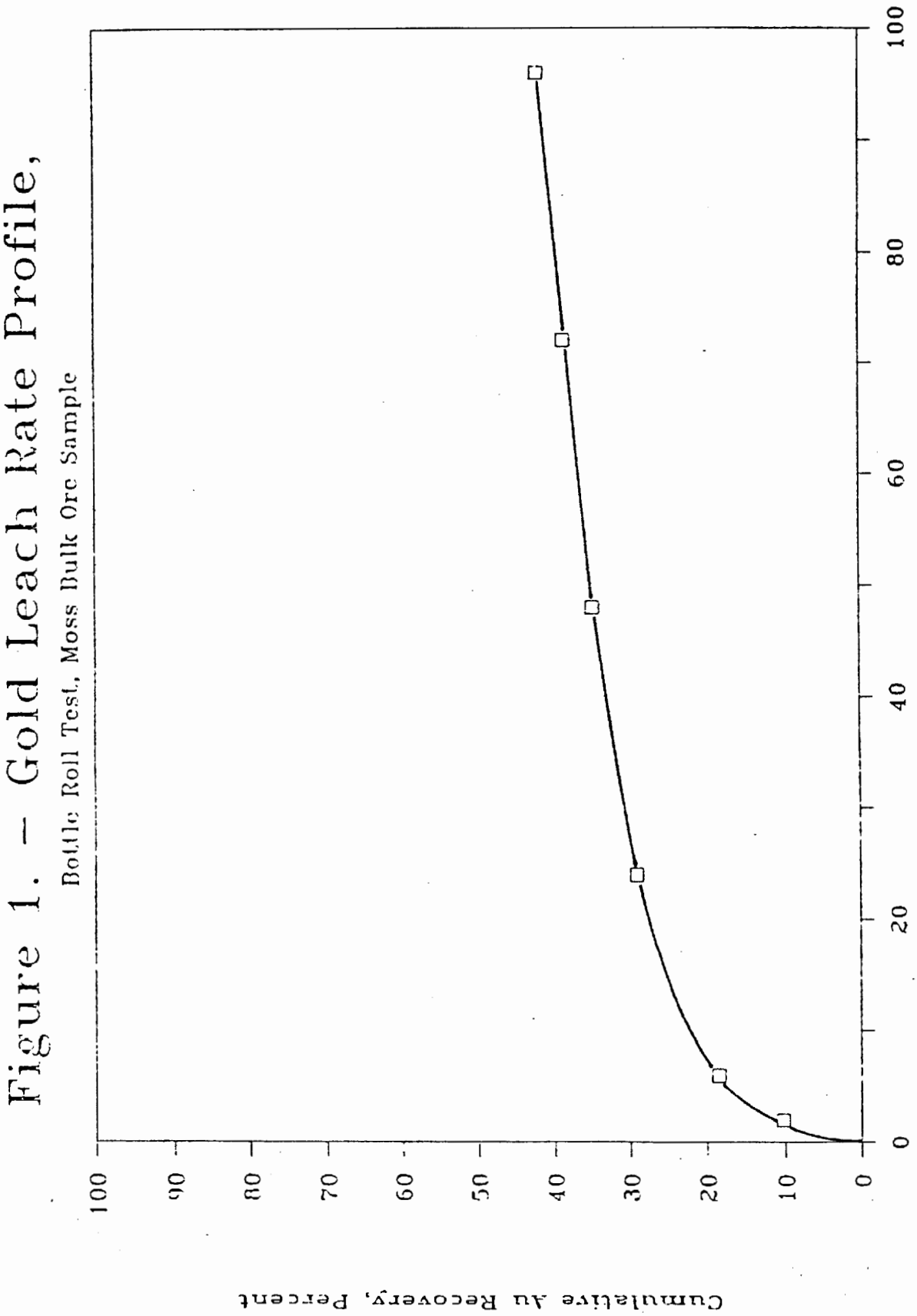
Figure 1. - Gold Leach Rate Profile,
Bottle Roll Test, Moss Bulk Ore Sample
Cumulative Au Recovery, Percent
0
10
20
30
40
50
60
70
80
90
100
0
20
40
60
80
100
Leach Time, Hours
□ -1" Feed

Metallurgical results show that the bulk ore sample was not readily amenable to direct agitated cyanidation treatment at a 100 percent minus 1 inch feed size. A gold recovery of 42.1 percent was achieved in 96 hours of leaching. Gold recovery rate was fairly slow and extraction was progressing at a slower, but fairly constant rate, when leaching was terminated at 96 hours. Additional gold values would be extracted with a leaching cycle longer than 96 hours, but at a slow rate.

Cyanide consumption was low at 0.15 pounds per ton of ore. The lime requirement was low at 3.4 pounds per ton of ore.

Table 3. - Overall Metallurgical Results, Bottle Roll Tests, Moss Cuttings Intervals, As Received Feeds

Metallurgical Results	Sample	
Extraction: pct total Au	MM-1-30	MM-1-64
in 2 hours	20.0	13.3
in 6 hours	38.0	33.9
in 24 hours	49.7	63.3
in 48 hours	54.9	71.7
in 72 hours	57.4	74.7
in 96 hours	60.0	75.0
Extracted, ozAu/ton ore	0.021	0.027
Tail Assay, ozAu/ton[1)]	0.014	0.009
Calculated Head, ozAu/ton ore	0.035	0.036
Predicted Head, ozAu/ton ore[2)]	0.029	0.046
Cyanide Consumed, lb/ton ore	0.24	0.10
Lime Added, lb/ton ore	4.3	5.9
Final Solution pH	11.1	11.1
Natural pH (40% solids)	7.8	7.8

1) Average of three.
2) Provided by Magma Copper personnel.

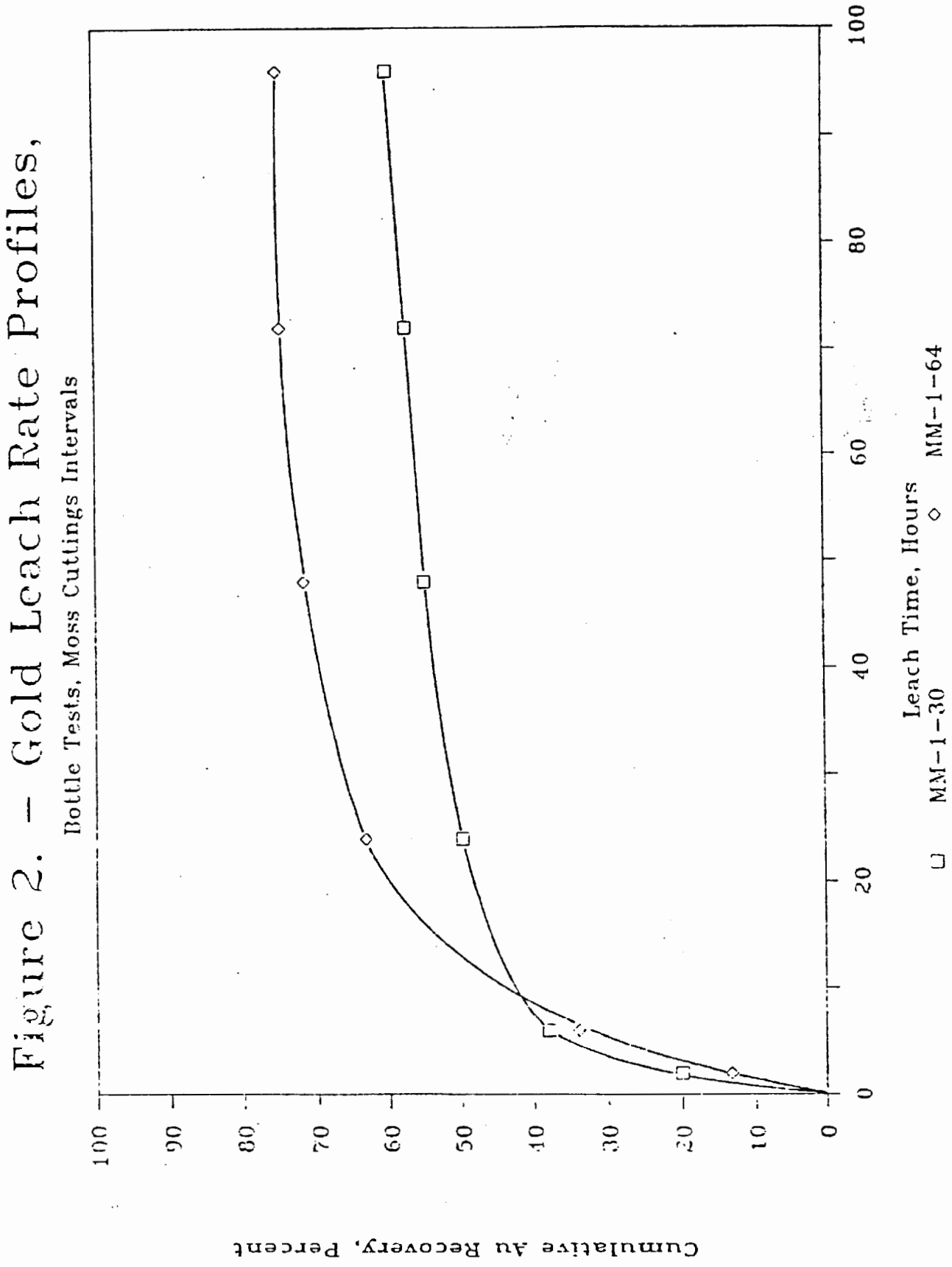
Figure 2. - Gold Leach Rate Profiles,
Bottle Tests, Moss Cuttings Intervals
Cumulative Au Recovery, Percent
0
10
20
30
40
50
60
70
80
90
100
0
20
40
60
80
100
Leach Time, Hours
MM-1-30
MM-1-64

Table 4. - Overall Metallurgical Results, Bottle Roll Tests, Moss Cuttings Intervals, As Received Feeds

Metallurgical Results	Sample		
Extraction: pct total Au	MM-2-22	MM-2-23	MM-2-31
in 2 hours	22.6	28.2	19.4
in 6 hours	39.3	42.5	33.1
in 24 hours	47.4	54.3	45.0
in 48 hours	49.3	58.9	50.0
in 72 hours	51.1	61.8	52.7
in 96 hours	51.9	64.3	53.8
Extracted, ozAu/ton ore	0.014	0.018	0.028
Tail Assay, ozAu/ton[1)]	0.013	0.010	0.024
Calculated Head, ozAu/ton ore	0.027	0.028	0.052
Head Assay, ozAu/ton ore	0.028	0.026	0.046
Predicted Head, ozAu/ton ore[2)]	0.052	0.032	0.055
Cyanide Consumed, lb/ton ore	0.14	0.27	1.29
Lime Added, lb/ton ore	5.9	4.6	5.1
Final Solution pH	10.9	10.8	10.9
Natural pH (40% solids)	7.8	7.6	7.7

1) Average of three.
2) Provided by Magma Copper personnel.

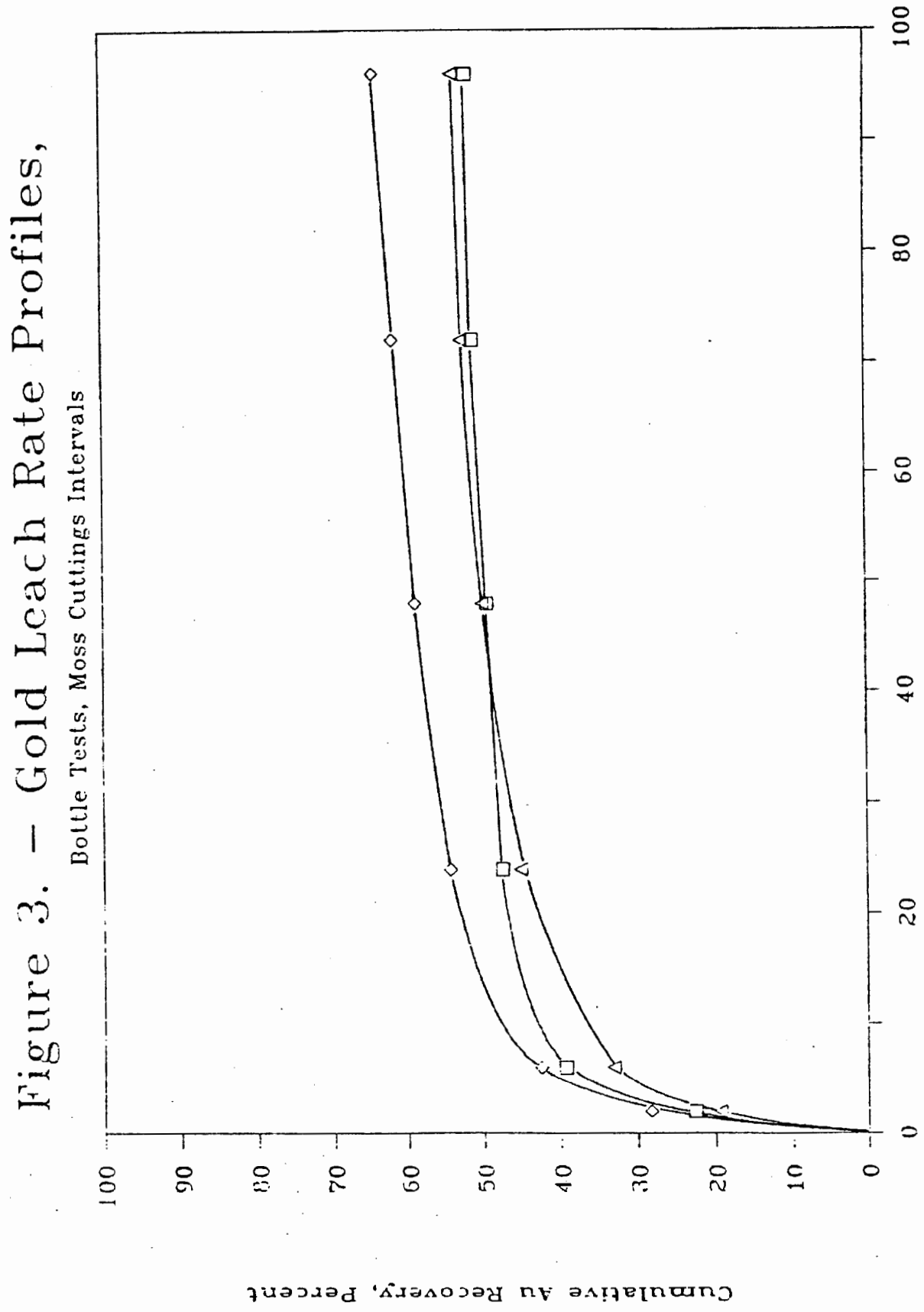
Figure 3. – Gold Leach Rate Profiles,
Bottle Tests, Moss Cuttings Intervals
Cumulative Au Recovery, Percent
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
Leach Time, Hours
MM-2-22
MM-2-23
MM-2-31

Table 5. - Overall Metallurgical Results, Bottle Roll Tests, Moss Cuttings Intervals, As Received Feeds

Metallurgical Results	Sample		
Extraction: pct total Au	MM-2-33	MM-2-36	MM-2-37
in 2 hours	38.4	29.5	27.1
in 6 hours	52.0	41.2	38.1
in 24 hours	59.0	50.2	47.9
in 48 hours	63.0	54.4	52.6
in 72 hours	63.9	55.8	54.5
in 96 hours	64.6	58.1	57.1
Extracted, ozAu/ton ore	0.053	0.025	0.024
Tail Assay, ozAu/ton[1)]	0.029	0.018	0.018
Calculated Head, ozAu/ton ore	0.082	0.043	0.042
Head Assay, ozAu/ton ore	0.093	0.038	0.038
Predicted Head, ozAu/ton ore[2)]	0.071	0.038	0.039
Cyanide Consumed, lb/ton ore	0.86	0.46	0.32
Lime Added, lb/ton ore	4.6	4.2	3.9
Final Solution pH	10.9	10.9	10.8
Natural pH (40% solids)	7.7	7.7	7.7

1) Average of three.
2) Provided by Magma Copper personnel.

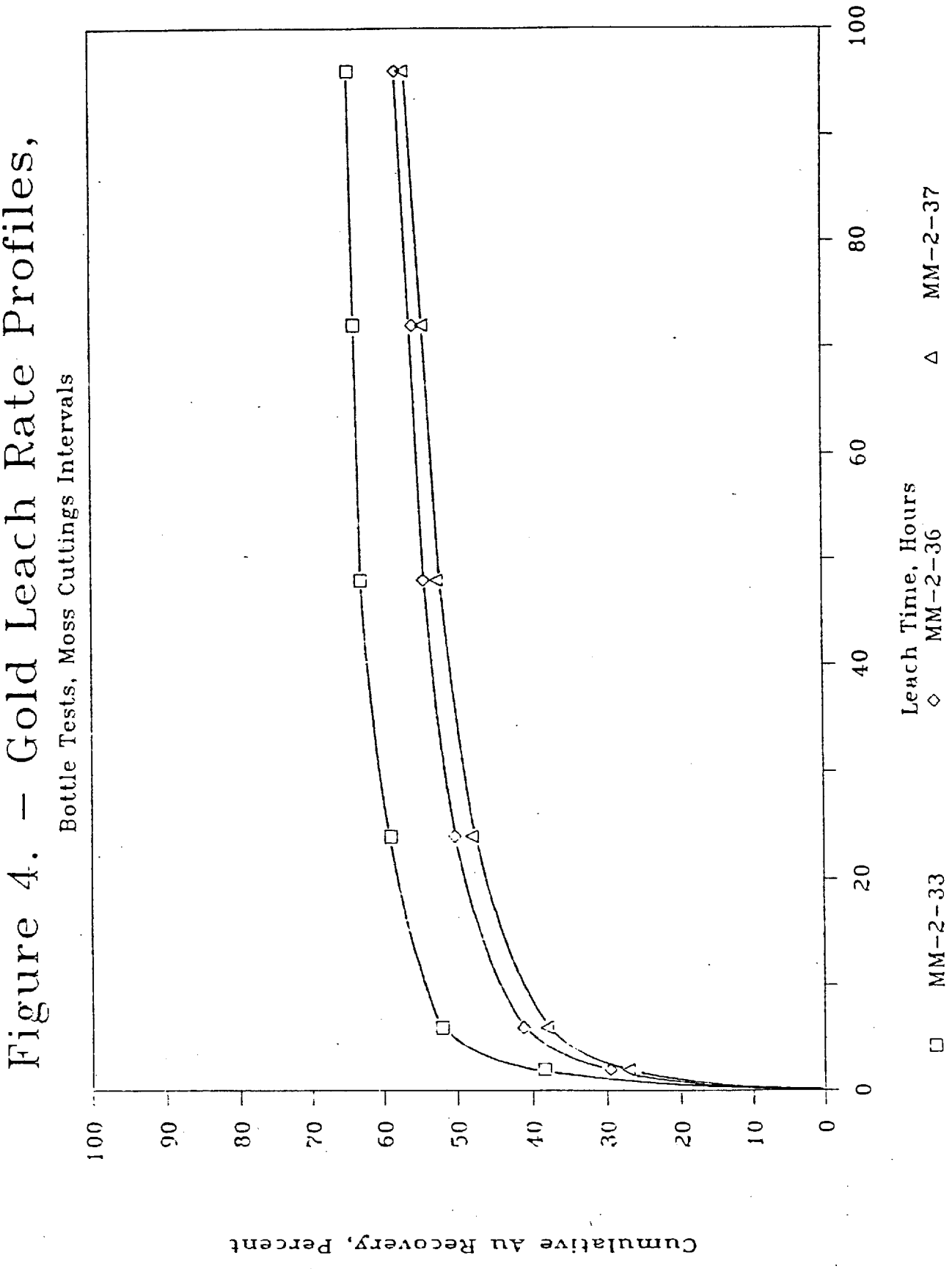
Figure 4. – Gold Leach Rate Profiles,
Bottle Tests, Moss Cuttings Intervals
Cumulative Au Recovery, Percent
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
Leach Time, Hours
□ MM-2-33
◇ MM-2-36
△ MM-2-37

Table 6. - Overall Metallurgical Results, Bottle Roll Tests, Moss Cuttings Intervals, As Received Feeds

Metallurgical Results	Sample			
Extraction: pct total Au	MM-4-18	MM-8-30	MM-8-49	MM-8-56
in 2 hours	20.3	21.0	23.3	36.9
in 6 hours	33.3	39.5	38.7	57.8
in 24 hours	44.1	52.9	54.3	70.3
in 48 hours	48.8	59.5	61.0	72.5
in 72 hours	51.4	63.8	64.5	74.7
in 96 hours	53.4	66.7	66.5	78.1
Extracted, ozAu/ton ore	0.031	0.014	0.125	0.025
Tail Assay, ozAu/ton[1)]	0.027	0.007	0.063	0.007
Calculated Head, ozAu/ton ore	0.058	0.021	0.188	0.032
Predicted Head, ozAu/ton ore[2)]	0.056	0.016	0.185	0.028
Cyanide Consumed, lb/ton ore	0.47	0.28	0.73	0.75
Lime Added, lb/ton ore	3.8	4.3	3.6	5.0
Final Solution pH	10.7	10.8	10.8	10.9
Natural pH (40% solids)	8.0	8.2	8.1	8.3

1) Average of three.
2) Provided by Magma Copper personnel.

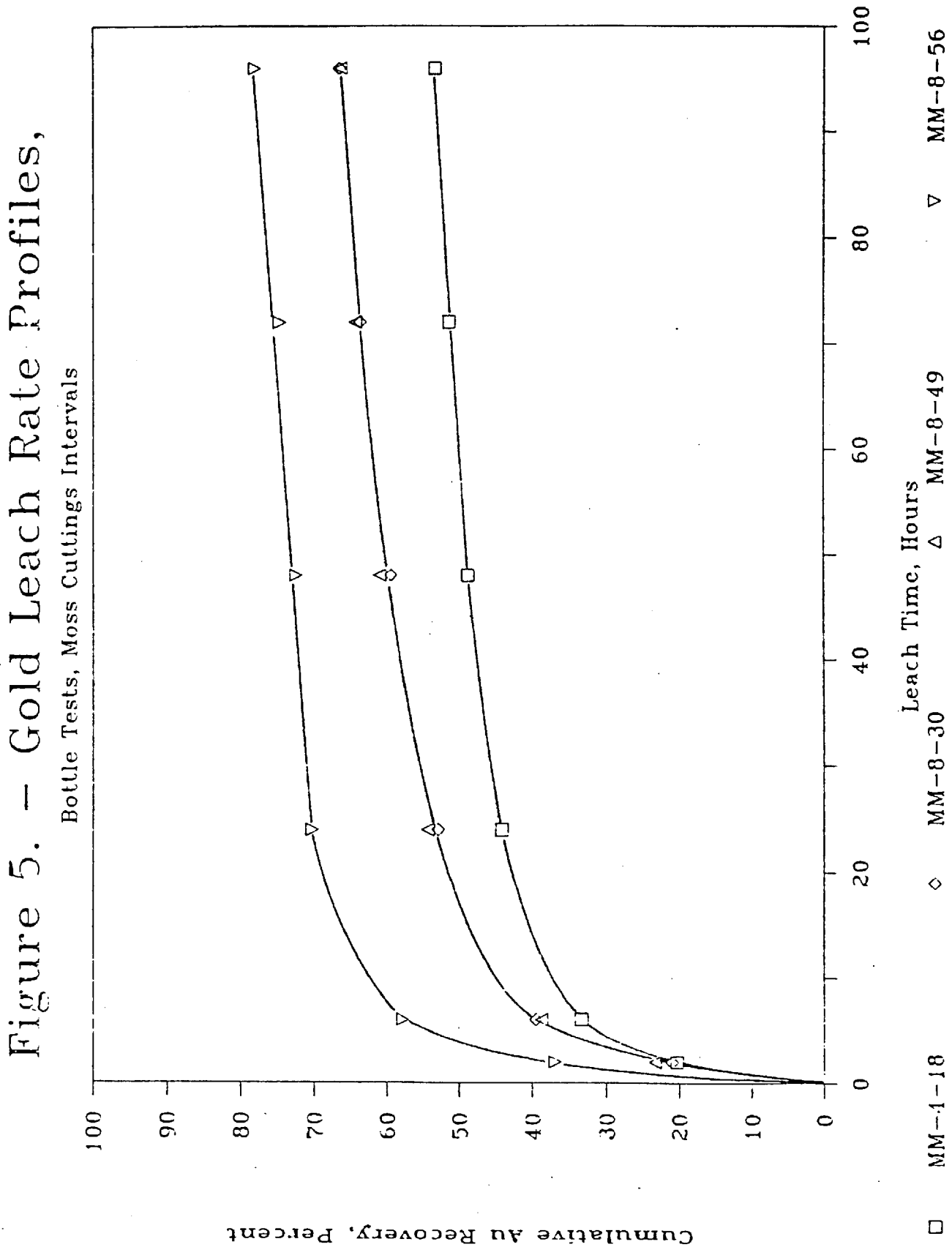
Figure 5. - Gold Leach Rate Profiles,
Bottle Tests, Moss Cuttings Intervals
Cumulative Au Recovery, Percent
Leach Time, Hours
0
10
20
30
40
50
60
70
80
90
100
0
20
40
60
80
100
MM-1-18
MM-8-30
MM-8-49
MM-8-56

Table 7. - Overall Metallurgical Results, Bottle Roll Tests, Moss Cuttings Intervals, As Received Feeds

Metallurgical Results	Sample	
Extraction: pct total Au	MM-14-72	MM-18-58
in 2 hours	14.8	22.2
in 6 hours	29.4	40.4
in 24 hours	45.4	55.7
in 48 hours	51.5	61.2
in 72 hours	54.6	64.4
in 96 hours	57.5	66.4
Extracted, ozAu/ton ore	0.046	0.089
Tail Assay, ozAu/ton[1)]	0.034	0.045
Calculated Head, ozAu/ton ore	0.080	0.134
Predicted Head, ozAu/ton ore[2)]	0.077	0.127
Cyanide Consumed, lb/ton ore	0.61	0.44
Lime Added, lb/ton ore	5.0	3.9
Final Solution pH	11.1	10.9
Natural pH (40% solids)	8.3	8.4

1) Average of three.
2) Provided by Magma Copper personnel.

Figure 6. – Gold Leach Rate Profiles,

Bottle Tests, Moss Cuttings Intervals

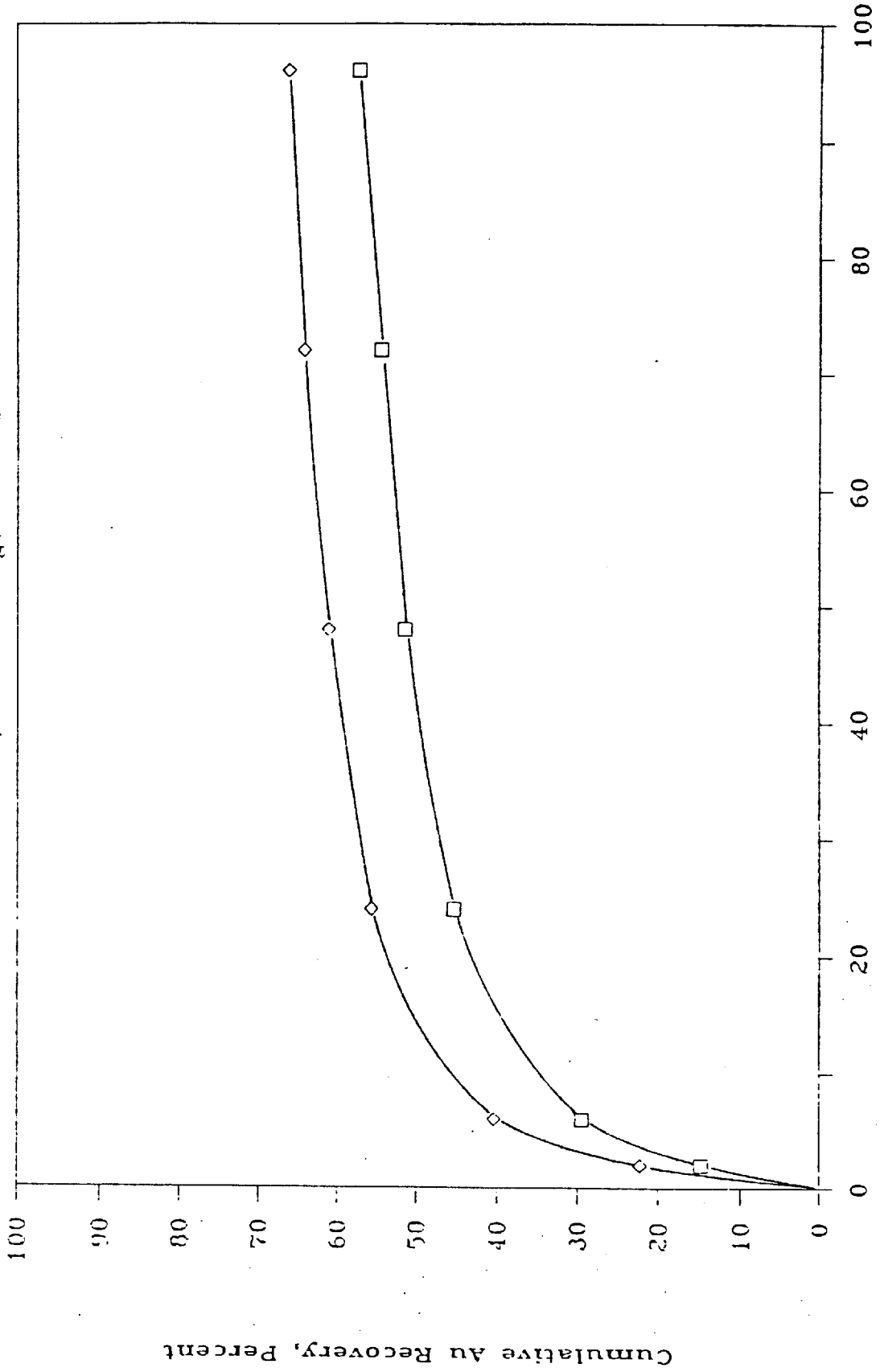

Table 8. - Tail Assay Results, Bottle Leached Residues, Moss Cuttings Intervals, As Received Feeds

	Tail Assays, ozAu/ton			
Interval	Initial	Duplicate	Triplicate	Average
MM-1-30	0.013	0.015	0.014	0.014
MM-1-64	0.012	0.010	0.006	0.009
MM-2-22	0.014	0.009	0.015	0.013
MM-2-23	0.008	0.008	0.014	0.010
MM-2-31	0.028	0.027	0.018	0.024
MM-2-33	0.030	0.027	0.030	0.029
MM-2-36	0.018	0.019	0.018	0.018
MM-2-37	0.018	0.018	0.018	0.018
MM-4-18	0.029	0.025	0.028	0.027
MM-8-30	0.007	0.008	0.007	0.007
MM-8-49	0.063	0.070	0.057	0.063
MM-8-56	0.006	0.007	0.009	0.007
MM-14-72	0.035	0.031	0.036	0.034
MM-18-58	0.047	0.044	0.045	0.045

Table 9. - Summary of Bottle Roll Test Results, Moss Cuttings Intervals, As Received Feeds

Interval	Extracted, ozAu/ton	Calculated Head, ozAu/ton	Au Recovery, percent	Cyanide Consumed, lb/ton	Lime Added, lb/ton
MM-1-30	0.021	0.035	60.0	0.24	4.3
MM-1-64	0.027	0.036	75.0	0.10	5.9
MM-2-22	0.014	0.027	51.9	0.14	5.9
MM-2-23	0.018	0.028	64.3	0.27	4.6
MM-2-31	0.028	0.052	53.8	1.29	5.1
MM-2-33	0.053	0.082	64.6	0.86	4.6
MM-2-36	0.025	0.043	58.1	0.46	4.2
MM-2-37	0.024	0.042	57.1	0.32	3.9
MM-4-18	0.031	0.058	53.4	0.47	3.8
MM-8-30	0.014	0.021	66.7	0.28	4.3
MM-8-49	0.125	0.188	66.5	0.73	3.6
MM-8-56	0.025	0.032	78.1	0.75	5.0
MM-14-72	0.046	0.080	57.5	0.61	5.0
MM-18-58	0.089	0.134	66.4	0.44	3.9

Metallurgical results show that the Moss cuttings intervals were amenable to direct cyanidation treatment at the as received (cuttings) feed size. Gold recoveries ranged from 51.9 (MM-2-22) to 78.1 (MM-8-56) percent, and averaged 62.4 percent in 96 hours of leaching. Gold recovery rates were fairly rapid and extraction was substantially complete in from 6 to 24 hours. Additional gold values were extracted between 24 and 96 hours, but at a slow rate.

Cyanide consumptions were low to moderate and ranged from 0.10 (MM-1-64) to 1.29 (MM-2-31) pounds per ton of ore. Consumption rates were more rapid early in the leaching cycles. Lime requirements were low to moderate and ranged from 3.4 to 5.9 pounds per ton of ore. Controlling pH was not difficult even though lime addition was required at various sampling intervals to maintain leaching pH at between 10.8 and 11.2. An average of 82.5 percent of the total lime required was added during initial pH adjustment procedures. The remaining 17.5 percent was added during the leaching cycles.

CONCLUSIONS

- The Moss bulk ore sample was not readily amenable to direct agitated cyanidation treatment at a 100 percent minus 1 inch feed size.
- Gold recovery rate was fairly slow. Additional gold values would be extracted with a longer leach cycle, but at a very slow rate.
- The Moss cuttings intervals were amenable to direct cyanidation treatment at the as received feed size.
- Gold recovery rates were fairly rapid.
- Reagent requirements were low to moderate.

RECOMMENDATIONS

We recommend that column percolation leach tests be conducted on core or representative bulk ore samples from the Moss project to determine gold recovery, recovery rate, reagent requirements, and sensitivity to feed size under simulated heap leaching conditions.

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Report
on
Direct Agitated Cyanidation Testwork - Moss Cuttings Intervals
MLI Job No. 1727
January 29, 1992

for

Mr. Mark Sander
Magma Copper Company
7400 North Oracle Road - Ste 200
Tucson, AZ 85704

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McCLELLAND LABORATORIES, INC.

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Report
on
Preliminary Direct Agitated Cyanidation Testwork - Moss Cuttings Intervals
MLI Job No. 1727
January 29, 1992

for

Mr. Mark Sander
Magma Copper Company
7400 North Oracle Road - Ste 200
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EXECUTIVE SUMMARY

Direct agitated cyanidation (bottle roll) tests were conducted on two Moss cuttings intervals at the as received (nominal 10 mesh) feed size to determine precious metal recovery, recovery rate, and reagent requirements.

Metallurgical results show that Moss cuttings intervals were amenable to direct agitated cyanidation treatment at the as recieved feed size. Gold recoveries of 87.9 and 78.7 percent were achieved from intervals MC-6 (56) and MC-14 (28), respectively, in 96 hours of leaching. Respective silver recoveries were 70.0 and 59.4 percent. Gold recovery rates were fairly rapid and extraction was substantially complete in 24 hours. Additional gold values were extracted between 24 and 96 hours, but at a very slow rate. Reagent requirements were low.

SAMPLE PREPARATION AND HEAD ASSAYS

Two cuttings intervals from the Moss project were received for the preliminary testing program. Each interval was thoroughly blended and split to obtain one kilogram for a bottle roll test, and a sample for single direct head assay.

Head samples were assayed directly using conventional fire assay fusion procedures to determine precious metal content. Head assay results are provided with overall metallurgical results from bottle roll tests later in this report.

DIRECT AGITATED CYANIDATION TEST PROCEDURES AND RESULTS

Direct agitated cyanidation (bottle roll) tests were conducted on two Moss cuttings intervals at the as received (nominal 10 mesh) feed size to determine precious metal recovery, recovery rate, and reagent requirements. Ore charges were mixed with water to achieve 40 weight percent solids. Natural pulp pHs were measured. Lime was added to adjust the pH of the pulps to 11.0 before adding the cyanide. Sodium cyanide, equivalent to 2.0 pounds per ton of solution, was added to the alkaline pulps.

Leaching was conducted by rolling the pulps in bottles on the laboratory rolls for 96 hours. Rolling was suspended briefly after 2, 6, 24, 48, and 72 hours to allow the pulps to settle so samples of pregnant solution could be taken for gold and silver analysis using A.A. methods. Pregnant solution volumes were measured and sampled. Cyanide concentration and pH were determined for each pregnant solution. Make-up water, equivalent to that withdrawn, was added to the pulps. Cyanide concentrations were restored to initial levels. Lime was added, when necessary, to maintain the leaching pH at between 10.8 and 11.2. Rolling was then resumed.

After 96 hours, the pulps were filtered to separate liquids and solids. Final pregnant solution volumes were measured and sampled for analysis. Final pH and cyanide concentrations were determined. Leached residues were washed, dried, weighed, and assayed in triplicate to determine residual precious metal content.

Overall metallurgical results for the bottle roll tests are provided in Table 1. Gold leach rate profiles are shown graphically in Figure 1. Triplicate tail assay results are provided in Table 2.

Table 1. - Overall Metallurgical Results, Bottle Roll Tests, Moss Cuttings Intervals, As Received Feeds

	Sample			
Metallurgical Results	MC-6 (56)		MC-14 (28)	
Extraction, pct. of total	Au	Ag	Au	Ag
in 2 hours	41.2	35.0	31.7	15.2
in 6 hours	78.2	50.0	59.6	26.8
in 24 hours	83.0	62.0	73.4	43.6
in 48 hours	85.5	67.0	76.8	51.3
in 72 hours	87.0	69.0	78.1	55.8
in 96 hours	87.9	70.0	78.7	59.4
Extracted, oz/ton ore	0.029	0.07	0.037	0.41
Tail Assay, oz/ton*	0.004	0.03	0.010	0.28
Calculated Head, oz/ton ore	0.033	0.10	0.047	0.69
Assayed Head, oz/ton ore	0.034	0.13	0.051	0.56
Cyanide Consumed, lb/ton ore	0.58		0.46	
Lime Added, lb/ton ore	2.8		3.7	
Final Solution pH	11.1		11.0	
Natural pH (40% solids)	8.4		8.4	

* Average of three.

Figure 1. – Gold Leach Rate Profiles,

Bottle Roll Tests, As Rec'd Feeds

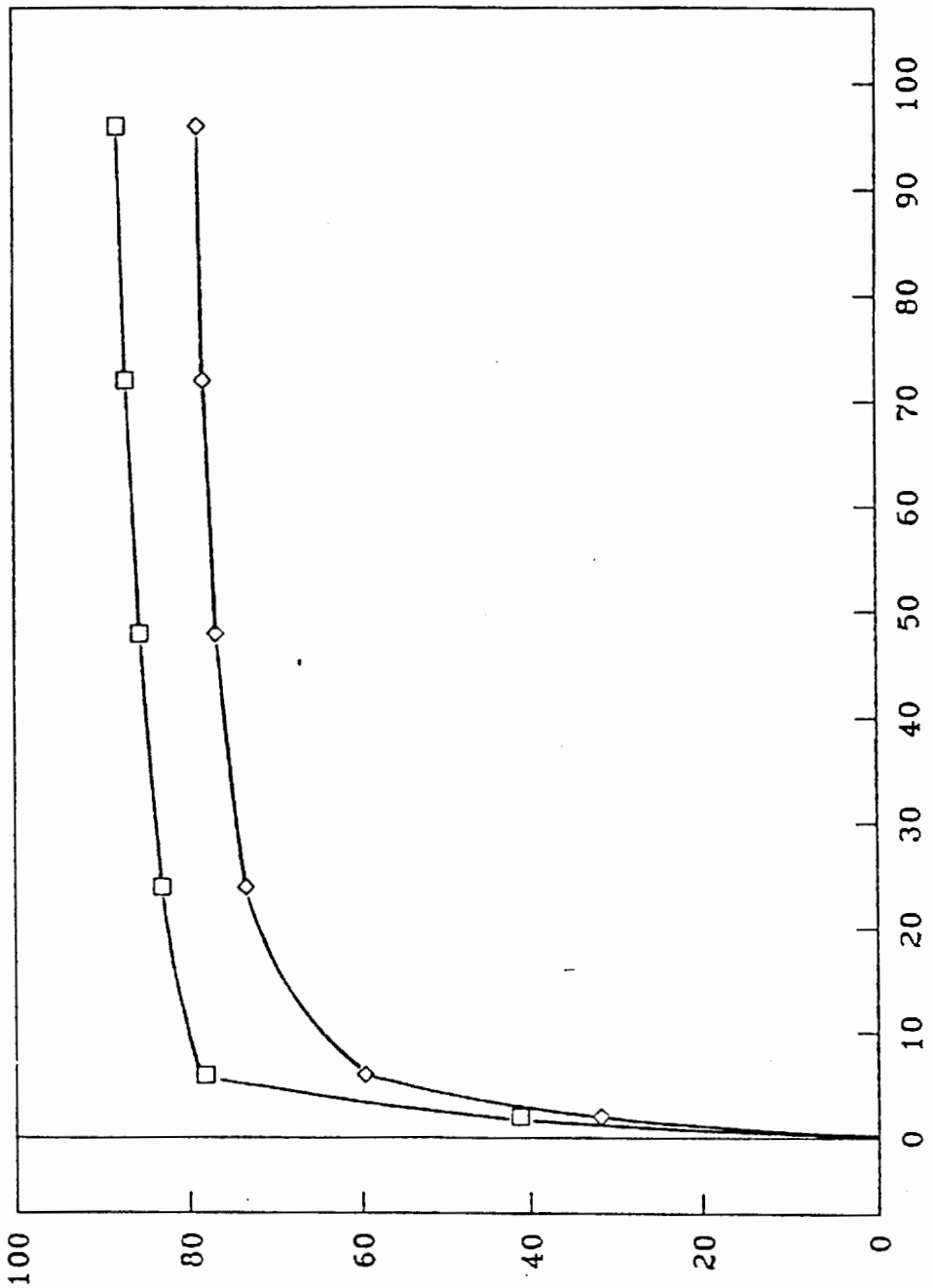

Table 2. - Tail Assay Results, Bottle Leached Residues, Moss Cuttings Intervals, As Received Feeds

	Tail Assays, oz/ton			
	MC-6 (56)		MC-14 (28)	
	Au	Ag	Au	Ag
Initial	0.004	0.03	0.011	0.24
Duplicate	0.004	0.03	0.010	0.45
Triplicate	0.003	0.03	0.010	0.15
Average	0.004	0.03	0.010	0.28

Metallurgical results show that the Moss cuttings intervals were amenble to direct agitated cyanidation treatment at the as received (nominal 10 mesh) feed size. Gold recoveries of 87.9 and 78.7 percent were achieved from intervals MC-6 (56) and MC-14 (28), respectively, in 96 hours of leaching. Respective silver recoveries were 70.0 and 59.4 percent. Gold recovery rates were fairly rapid and extraction was substantially complete in 24 hours. Additional gold values were extracted between 24 and 96 hours, but at a very slow rate.

Cyanide consumptions were low for both intervals and averaged 0.52 pounds per ton of ore. Consumption rates tended to increase slightly after 48 hours of leaching. Lime requirements were low for both intervals and averaged about 3.3 pounds per ton of ore. Controlling pH was not difficult for either interval even though lime was added to interval MC-14 (28) at various sampling intervals to maintain leaching pH at between 10.8 and 11.2. About 80.0 percent of the total lime required for that interval was added during initial pH adjustment procedures. The remaining 20.0 percent was added during leaching.

CONCLUSIONS

- The Moss cuttings intervals were amenable to direct agitated cyanidation treatment at the as received (nominal 10 mesh) feed size.
- Gold recovery rates were fairly rapid.
- Reagent requirements were low.

RECOMMENDATIONS

We recommend that additional testwork be conducted on representative cuttings composites from various areas of the Moss ore deposit to determine if these metallurgical results are representative of the entire mineable ore body. We recommend also that column percolation leach tests be conducted on representative core or bulk ore composites to determine gold recovery, recovery rate, and reagent requirements under simulated heap leaching conditions.

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