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07/18/88

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: MOHAWK

ALTERNATE NAMES:

PINAL COUNTY MILS NUMBER: 570B

LOCATION: TOWNSHIP 8 S RANGE 16 E SECTION 26 QUARTER SW
LATITUDE: N 32DEG 42MIN 16SEC LONGITUDE: W 110DEG 40MIN 53SEC
TOPO MAP NAME: MAMMOTH - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
GOLD
LEAD
MANGANESE
SILVER
ZINC
VANADIUM
MOLYBDENUM

BIBLIOGRAPHY:

TENNEY, J.B., HISTORY OF MINING IN AZ. AZBM 1927-29, P. 325-329
ADMMR MOHAWK FILE
CREASY S. GEOLOGY OF THE SAN MANUEL AREA PINAL CO. AZ. PP 471, 1965, P. 31
WILSON, E.D. AZ. LODE GOLD MINES AND GOLD MINING AZBM BULL. 137, 1967, P. 170-174
AZBM BULL 144, 1939, P 60-62
ADMMR U FILE

MOHAWK MINE TRANSVAAL

PINAL COUNTY
OLD HAT DIST.

This property now part of SAN MANUEL MINE - (file)
AXEL L. JOHNSON - 3-1961

See: ABM Bull. 115, p. 16
A.L.Flagg vanadium reports - Book V

See ABM-Bull 137 p 171

9/91

MOHAWK @ PINAL

TIGER PROJECT SUMMARY

INCLUDES TIGER AND MOHAWK DEPOSITS

The Tiger Project is located in Pinal County, Arizona on property owned by Magma Copper Company adjacent to the San Manuel Mining Division's underground block caving and open pit copper oxide dump leach facilities. The Tiger deposit is a narrow vein precious metals ore body previously mined by underground methods. Extensive exploration drilling has delineated a potentially open pit minable reserve. Preliminary designs are completed and detailed cost data is required to complete the feasibility study.

The ore deposit is to be mined by open pit methods in benches 20 feet high. The pit wall will be "triple benched." In other words, three benches (60 feet) will be mined before stepping in to leave a catchment. Overall pit walls will be left at about 53 degrees, depending on ramp locations, with inter-ramp slopes of 60 degrees. The face angle is expected to be 75 degrees. This will leave an 18.5 foot catchment every 60 vertical feet. (See the attached sketch.)

Blasting practices must be very well controlled as both a competent pit wall must be maintained and the very close SX-EW facilities must be protected. Magma will be responsible for the design, loading and firing of blast patterns in the Tiger pits with the aid of our current blasting contractor. A typical pattern will consist of 5 inch blast holes, 25 feet deep, spaced 12 feet apart on a square grid. Magma staff will sample drill hole cuttings and deliver them to our assayer. To minimize ore dilution, blast patterns may be designed to extract waste away from unbroken ore.

To insure delivery of material to its proper location, Magma's engineering staff will survey and stake out ore/waste zones and monitor the delivery of mined material. Pit progress will be surveyed monthly to determine volumes of material mined and placed in waste dumps. Quarterly aerial surveys will be flown to verify monthly surveys. These surveys will be used to determine monthly pay quantities. Magma's engineering staff will design, and pass to the surveyor for staking, pit plans and designs. These plans will include temporary and permanent ramp locations, bench toes and crests, and other required control points. Magma will provide minimal bench and dump grade control.

The design parameters used for the permanent haul road in the preliminary pit contained in this data, are based on the general characteristics of a 50 ton mechanical drive haulage truck. Roads are 40 wide, including berm, at 12% grade. Temporary haul roads for stripping the upper benches will vary considerably and will be designed to take best advantage of each situation. Other roads, to and from the crusher site for instance, will built and maintained by the mining contractor whose input into the design will be critical.

Ore is to be crushed by the contractor to 100% passing a 6" grizzly and delivered to a stockpile or storage bin at Magma's crushing/agglomeration facility. Magma will take possession of the ore at that point for final sizing, agglomeration and stacking on the leach pad.

The total volume of material to be mined is 7,000,000 yards or 14,700,000 tons. Ore volume is approximately 1,337,000 yards (2,888,000 tons). Total waste volume is 5,634,000 yards (11,834,000 tons) of which 1,295,000 yards (2,332,000 tons) is Gila conglomerate.

The preliminary mining schedule calls for a 6-month pre-production stripping phase (ore stockpiled as the pad is constructed), followed by 39 months of sustained ore production. Stripping requirements decrease as the production continues. The early high stripping requirements is a reflection of the deposit geometry; a narrow, near vertical ore zone with essentially barren wall rock. The ore delivery rate is a function of the long leach cycle of the ore and the limited pad area. Although a fixed total mining rate would be advantageous from a mining point of view, an increasing ore delivery rate it is not considered a viable schedule for the heap.

COST ASSUMPTIONS

DAILY WORK SCHEDULE: No restrictions. Prefer 3 shifts/day-7 days/week.

ELECTRIC POWER: Available line power at crusher site suitable for crushing/screening equipment. Include estimate of power consumption only (kw-hrs) with cost estimate. (Magma pays electric bill.)

WATER: Process water for dust control available at crusher site. Potable water available at nearby facilities.

FUEL: Diesel fuel available on site for off-road equipment only.

OFFICE SPACE: No on site offices available; contractor to provide their own.

CHANGE ROOM FACILITIES: No on site facilities available; contractor to provide their own.

EQUIPMENT MAINTENANCE FACILITIES: No on site facilities available; contractor to provide their own.

PROJECT ACCESS: Paved access from town of Mammoth to east side of Magma property (gate #5). Well maintained dirt road to mine site (about 1.5 miles) around north side of existing copper oxide leach dump.

COST ESTIMATE FORMAT

Three separate costs need to be estimated. Drilling, loading and hauling, and crushing. In each of these estimates, please outline the fuel and electric power requirements separately, we will apply our costs to those items. A listing of the primary equipment items and manpower requirements by job classification is also requested. Please include an estimate of water requirements and a proposed daily work schedule (ie. shifts/day etc.).

For example:

DRILLING: COST PER FOOT =
FUEL GAL/FOOT =

MINING: COST PER CUBIC YARD =
FUEL GAL/CUBIC YARD =

CRUSHING: COST PER TON =
KW-HRS PER TON =

EQUIPMENT FLEET:
LOADERS: number, size, make/model
TRUCKS: number, size, make/model, performance data
DRILLS: number, make/model
DOZERS:
ROAD MAINTENANCE EQUIPMENT: graders, RT dozers, water trucks, etc.
CRUSHING PLANT: crusher make/model, size, power requirements, permitted?
screens, conveyors

MANPOWER:
EQUIPMENT OPERATORS:
TRUCK DRIVERS:
CRUSHER OPERATORS:
MAINTENANCE:
SUPERVISION:

WORK SCHEDULE:

WATER REQUIRED: gpm or gallons per day

MOHAWK PIT RESERVES

YARDS

AJF 09-Sep-91

FCONE 001 MODEL #6

BENCH	ORE YDS.	WASTE YDS.	TOTAL	CUM. TOTAL
3140	0	3,142	3,142	3,142
3120	0	13,613	13,613	16,755
3100	156	50,823	50,979	67,734
3080	5,687	139,288	144,975	212,709
3060	18,785	137,941	156,726	369,435
3040	20,741	124,029	144,770	514,205
3020	17,184	96,283	113,467	627,672
3000	24,555	77,756	102,311	729,983
2980	25,805	65,081	90,886	820,869
2960	21,385	42,814	64,199	885,068
2940	23,890	30,501	54,391	939,459
2920	22,066	22,524	44,590	984,049
2900	14,465	10,551	25,016	1,009,065
2880	11,484	4,137	15,621	1,024,686
TOTAL	206,203	818,483	1,024,686	

MAMMOTH PIT RESERVES

YARDS

AJF 09-Sep-91

FCONE 001 MODEL #6

BENCH	ORE YDS.	WASTE YDS.	TOTAL	CUM. TOTAL
3440	0	1,445	1,445	1,445
3420	0	9,183	9,183	10,628
3400	0	18,836	18,836	29,464
3380	0	25,647	25,647	55,111
3360	0	43,126	43,126	98,237
3340	6,975	56,093	63,068	161,305
3320	12,179	50,862	63,041	224,346
3300	9,719	65,163	74,882	299,228
3280	7,669	80,215	87,884	387,112
3260	12	87,952	87,964	475,076
3240	0	118,184	118,184	593,260
3220	74	204,827	204,901	798,161
3200	8,115	277,431	285,546	1,083,707
3180	10,106	335,903	346,009	1,429,716
3160	17,409	404,122	421,531	1,851,247
3140	43,526	400,680	444,206	2,295,453
3120	73,940	393,844	467,784	2,763,237
3100	79,680	367,332	447,012	3,210,249
3080	79,621	303,662	383,283	3,593,532
3060	76,944	287,368	364,312	3,957,844
3040	108,694	370,092	478,786	4,436,630
3020	89,934	187,580	277,514	4,714,144
3000	90,520	170,828	261,348	4,975,492
2980	85,700	159,598	245,298	5,220,790
2960	76,039	117,748	193,787	5,414,577
2940	68,356	100,897	169,253	5,583,830
2920	71,709	83,254	154,963	5,738,793
2900	49,179	62,981	112,160	5,850,953
2880	21,643	39,584	61,227	5,912,180
2860	16,507	27,772	44,279	5,956,459
2840	11,270	13,572	24,842	5,981,301
2820	9,696	7,015	16,711	5,998,012
2800	5,626	3,331	8,957	6,006,969
TOTAL	1,130,842	4,876,127	6,006,969	

MOHAWK PIT RESERVES

YARDS

AJF 09/09/91

BENCH	ORE				WASTE				
	QUARTZ MONZONITE	TERTIARY ROCKS	GILA CON-GLOMERATE	TOTAL YDS. ORE	QUARTZ MONZONITE	TERTIARY ROCKS	GILA CON-GLOMERATE	TOTAL YDS. WASTE	TOTAL ALL YARDS
3140	0	0	0	0	0	41	3,101	3,142	3,142
3120	0	0	0	0	0	5,522	8,091	13,613	13,613
3100	0	156	0	156	0	15,105	35,718	50,823	50,979
3080	0	5,687	0	5,687	0	57,327	81,961	139,288	144,975
3060	0	18,785	0	18,785	0	116,344	21,597	137,941	156,726
3040	0	20,741	0	20,741	0	85,253	38,776	124,029	144,770
3020	0	17,184	0	17,184	0	69,124	27,159	96,283	113,467
3000	0	24,555	0	24,555	0	77,756	0	77,756	102,311
2980	0	25,805	0	25,805	0	65,081	0	65,081	90,886
2960	0	21,385	0	21,385	0	42,814	0	42,814	64,199
2940	0	23,890	0	23,890	0	30,501	0	30,501	54,391
2920	0	22,066	0	22,066	0	22,524	0	22,524	44,590
2900	0	14,465	0	14,465	0	10,551	0	10,551	25,016
2880	0	11,484	0	11,484	0	4,137	0	4,137	15,621
TOTAL	0	206,203	0	206,203	0	602,080	216,403	818,483	1,024,686

MAMMOTH PIT RESERVES

YARDS

AJF 09/09/91

BENCH	ORE QUARTZ MONZONITE	ORE TERTIARY ROCKS	ORE GILA CON-GLOMERATE	ORE TOTAL YDS. ORE	WASTE QUARTZ MONZONITE	WASTE TERTIARY ROCKS	WASTE GILA CON-GLOMERATE	WASTE TOTAL YDS. WASTE	TOTAL ALL YARDS
3440	0	0	0	0	34	1,411	0	1,445	1,445
3420	0	0	0	0	2,818	6,365	0	9,183	9,183
3400	0	0	0	0	1,970	16,866	0	18,836	18,836
3380	0	0	0	0	711	24,936	0	25,647	25,647
3360	0	0	0	0	4,423	38,703	0	43,126	43,126
3340	0	6,975	0	6,975	2,281	53,812	0	56,093	63,068
3320	3,263	8,916	0	12,179	3,519	47,343	0	50,862	63,041
3300	1,377	8,342	0	9,719	1,962	52,641	10,560	65,163	74,882
3280	319	7,350	0	7,669	324	56,715	23,176	80,215	87,884
3260	0	12	0	12	0	56,877	31,075	87,952	87,964
3240	0	0	0	0	4,907	60,143	53,134	118,184	118,184
3220	0	74	0	74	7,636	98,227	98,964	204,827	204,901
3200	4,625	3,490	0	8,115	52,262	97,929	127,240	277,431	285,546
3180	0	10,106	0	10,106	0	169,541	166,362	335,903	346,009
3160	7,118	10,291	0	17,409	33,549	186,043	184,530	404,122	421,531
3140	11,830	31,696	0	43,526	50,206	199,860	150,614	400,680	444,206
3120	19,633	54,307	0	73,940	43,149	175,990	74,705	393,844	467,784
3100	23,976	55,704	0	79,680	45,654	269,636	52,042	367,332	447,012
3080	34,199	45,422	0	79,621	79,469	201,971	22,222	303,662	383,283
3060	15,579	61,365	0	76,944	117,011	141,773	28,584	287,368	364,312
3040	42,026	66,668	0	108,694	93,121	221,063	55,908	370,092	478,786
3020	69,771	20,163	0	89,934	101,429	86,151	0	187,580	277,514
3000	70,016	20,504	0	90,520	91,119	79,709	0	170,828	261,348
2980	67,331	18,369	0	85,700	92,109	67,489	0	159,598	245,298
2960	67,988	8,051	0	76,039	80,436	37,312	0	117,748	193,787
2940	57,109	11,247	0	68,356	70,005	30,892	0	100,897	169,253
2920	62,334	9,375	0	71,709	59,571	23,683	0	83,254	154,963
2900	42,634	6,545	0	49,179	61,218	1,763	0	62,981	112,160
2880	21,643	0	0	21,643	39,089	495	0	39,584	61,227
2860	16,084	423	0	16,507	27,712	60	0	27,772	44,279
2840	11,232	38	0	11,270	13,444	128	0	13,572	24,842
2820	9,696	0	0	9,696	6,956	59	0	7,015	16,711
2800	5,626	0	0	5,626	3,331	0	0	3,331	8,957
TOTAL	665,409	465,433	0	1,130,842	1,291,425	2,505,586	1,079,116	4,876,127	6,006,969

TIGER MINE PRODUCTION SCHEDULE

AJF 09/09/91

QUARTER	MAMMOTH					MOHAWK					
	BENCHES	ORE YDS.	WASTE YDS. ROCK	GILA	SUBTOTAL	BENCH	ORE YDS.	WASTE YDS. ROCK	GILA	SUBTOTAL	GRAND TOTAL
1ST	3440 TO 3260	36,553	564,816	207,602	808,971	3140 TO 3080	156	20,668	46,910	67,734	876,705
2ND	3260 TO 3200	5,106	455,149	373,791	834,047	3080	5,425	54,687	78,188	138,301	972,348
3RD	3200 TO 3120	87,499	371,771	277,780	737,050	3080 TO 3060	16,667	104,241	22,634	143,541	880,591
4TH	3120 TO 3100	87,499	367,987	78,784	534,270	3060 TO 3040	16,667	73,463	29,445	119,575	653,846
5 TH	3100 TO 3080	87,499	331,559	44,150	463,208	3040 TO 3020	16,667	67,608	28,206	112,481	575,689
6 TH	3080 TO 3060	87,499	301,978	28,361	417,838	3020 TO 3000	16,667	58,744	11,020	86,430	504,269
7 TH	3060 TO 3040	87,499	269,138	40,106	396,743	3000 TO 2980	16,667	51,612	0	68,279	465,022
8 TH	3040 TO 3020	87,499	227,170	28,549	343,218	2980 TO 2980	16,667	42,034	0	58,701	401,919
9 TH	3020 TO 3000	87,499	176,633	0	264,132	2980 TO 2960	16,667	37,180	0	53,846	317,979
10 TH	3000 TO 2980	87,499	164,467	0	251,966	2960 TO 2940	16,667	30,019	0	46,685	298,652
11 TH	2980 TO 2960	87,499	154,056	0	241,555	2940 TO 2940	16,667	21,279	0	37,946	279,501
12 TH	2960 TO 2940	87,499	132,611	0	220,111	2940 TO 2920	16,667	17,680	0	34,347	254,457
13 TH	2940 TO 2920	87,499	110,582	0	198,081	2920 TO 2900	16,667	14,489	0	31,156	229,237
14 TH	2920 TO 2860	87,499	123,971	0	211,471	2900 TO 2880	16,667	8,146	0	24,812	236,283
15 TH	2860 TO 2800	39,180	45,095	0	84,275	2880	622	224	0	846	85,121
TOTAL		1,130,833	3,796,982	1,079,122	6,006,937		206,201	602,075	216,404	1,024,681	7,031,618

ORE	1,337,034
WASTE ROCK	4,399,057
GILA	1,295,526
GRAND TOTAL	7,031,618

MOHAWK PIT RESERVES

TONS

AJF 09-Sep-91

FCONE 001 MODEL #6

BENCH	ORE TONS	WASTE TONS	TOTAL	CUM. TOTAL
3140	0	5,671	5,671	5,671
3120	0	26,491	26,491	32,162
3100	337	96,920	97,257	129,419
3080	12,285	271,356	283,641	413,060
3060	40,576	290,177	330,753	743,813
3040	44,801	253,943	298,744	1,042,557
3020	37,118	198,193	235,311	1,277,868
3000	53,039	167,953	220,992	1,498,860
2980	55,738	140,576	196,314	1,695,174
2960	46,192	92,477	138,669	1,833,843
2940	51,602	65,883	117,485	1,951,328
2920	47,662	48,652	96,314	2,047,642
2900	31,244	22,791	54,035	2,101,677
2880	24,806	8,935	33,741	2,135,418
TOTAL	445,400	1,690,018	2,135,418	

MAMMOTH PIT RESERVES

TONS

AJF 09-Sep-91

FCONE 001 MODEL #6

BENCH	ORE TONS	WASTE TONS	TOTAL	CUM. TOTAL
3440	0	3,121	3,121	3,121
3420	0	19,834	19,834	22,955
3400	0	40,687	40,687	63,642
3380	0	55,397	55,397	119,039
3360	0	93,152	93,152	212,191
3340	15,066	121,162	136,228	348,419
3320	26,306	109,863	136,169	484,588
3300	20,994	136,950	157,944	642,532
3280	16,564	164,924	181,488	824,020
3260	26	178,790	178,816	1,002,836
3240	0	236,148	236,148	1,238,984
3220	160	406,797	406,957	1,645,941
3200	17,529	553,444	570,973	2,216,914
3180	21,829	665,659	687,488	2,904,402
3160	37,603	806,470	844,073	3,748,475
3140	94,017	811,243	905,260	4,653,735
3120	159,710	823,810	983,520	5,637,255
3100	172,109	774,699	946,808	6,584,063
3080	171,980	647,911	819,891	7,403,954
3060	166,200	610,423	776,623	8,180,577
3040	234,778	779,271	1,014,049	9,194,626
3020	194,257	405,173	599,430	9,794,056
3000	195,522	368,990	564,512	10,358,568
2980	185,112	344,731	529,843	10,888,411
2960	164,243	254,336	418,579	11,306,990
2940	147,649	217,938	365,587	11,672,577
2920	154,891	179,829	334,720	12,007,297
2900	106,226	136,040	242,266	12,249,563
2880	46,748	85,502	132,250	12,381,813
2860	35,654	59,987	95,641	12,477,454
2840	24,345	29,312	53,657	12,531,111
2820	20,943	15,153	36,096	12,567,207
2800	12,152	7,195	19,347	12,586,554
TOTAL	2,442,613	10,143,941	12,586,554	

MOHAWK PIT RESERVES

TONS

AJF 09/09/91

	ORE				WASTE				
BENCH	QUARTZ MONZONITE	TERTIARY ROCKS	GILA CON-GLOMERATE	TOTAL TONS ORE	QUARTZ MONZONITE	TERTIARY ROCKS	GILA CON-GLOMERATE	TOTAL TONS WASTE	TOTAL ALL TONS
3140	0	0	0	0	0	90	5,581	5,671	5,671
3120	0	0	0	0	0	11,927	14,564	26,491	26,491
3100	0	337	0	337	0	32,627	64,293	96,920	97,257
3080	0	12,285	0	12,285	0	123,826	147,530	271,356	283,641
3060	0	40,576	0	40,576	0	251,302	38,875	290,177	330,753
3040	0	44,801	0	44,801	0	184,146	69,797	253,943	298,744
3020	0	37,118	0	37,118	0	149,308	48,885	198,193	235,311
3000	0	53,039	0	53,039	0	167,953	0	167,953	220,992
2980	0	55,738	0	55,738	0	140,576	0	140,576	196,314
2960	0	46,192	0	46,192	0	92,477	0	92,477	138,669
2940	0	51,602	0	51,602	0	65,883	0	65,883	117,485
2920	0	47,662	0	47,662	0	48,652	0	48,652	96,314
2900	0	31,244	0	31,244	0	22,791	0	22,791	54,035
2880	0	24,806	0	24,806	0	8,935	0	8,935	33,741
TOTAL	0	445,400	0	445,400	0	1,300,493	389,525	1,690,018	2,135,418

MAMMOTH PIT RESERVES

TONS

AJF 09/09/91

BENCH	ORE QUARTZ MONZONITE	ORE TERTIARY ROCKS	ORE GILA CON-GLOMERATE	ORE TOTAL TONS ORE	WASTE QUARTZ MONZONITE	WASTE TERTIARY ROCKS	WASTE GILA CON-GLOMERATE	WASTE TOTAL TONS WASTE	TOTAL ALL TONS
3440	0	0	0	0	73	3,048	0	3,121	3,121
3420	0	0	0	0	6,087	13,747	0	19,834	19,834
3400	0	0	0	0	4,255	36,432	0	40,687	40,687
3380	0	0	0	0	1,536	53,861	0	55,397	55,397
3360	0	0	0	0	9,554	83,598	0	93,152	93,152
3340	0	15,066	0	15,066	4,928	116,234	0	121,162	136,228
3320	7,048	19,258	0	26,306	7,602	102,261	0	109,863	136,169
3300	2,975	18,019	0	20,994	4,238	113,704	19,008	136,950	157,944
3280	689	15,875	0	16,564	701	122,506	41,717	164,924	181,488
3260	0	26	0	26	0	122,855	55,935	178,790	178,816
3240	0	0	0	0	10,598	129,909	95,641	236,148	236,148
3220	0	160	0	160	16,493	212,169	178,135	406,797	406,957
3200	9,990	7,539	0	17,529	112,885	211,527	229,032	553,444	570,973
3180	0	21,829	0	21,829	0	366,209	299,450	665,659	687,488
3160	15,375	22,228	0	37,603	72,465	401,853	332,152	806,470	844,073
3140	25,553	68,464	0	94,017	108,444	431,696	271,103	811,243	905,260
3120	42,406	117,304	0	159,710	309,204	380,136	134,470	823,810	983,520
3100	51,789	120,320	0	172,109	98,611	582,413	93,675	774,699	946,808
3080	73,869	98,111	0	171,980	171,654	436,257	40,000	647,911	819,891
3060	33,651	132,549	0	166,200	252,743	306,229	51,451	610,423	776,623
3040	90,776	144,002	0	234,778	201,141	477,495	100,635	779,271	1,014,049
3020	150,705	43,552	0	194,257	219,087	186,086	0	405,173	599,430
3000	151,234	44,288	0	195,522	196,817	172,173	0	368,990	564,512
2980	145,435	39,677	0	185,112	198,955	145,776	0	344,731	529,843
2960	146,853	17,390	0	164,243	173,742	80,594	0	254,336	418,579
2940	123,356	24,293	0	147,649	151,210	66,728	0	217,938	365,587
2920	134,642	20,249	0	154,891	128,673	51,156	0	179,829	334,720
2900	92,089	14,137	0	106,226	132,231	3,809	0	136,040	242,266
2880	46,748	0	0	46,748	84,433	1,069	0	85,502	132,250
2860	34,741	913	0	35,654	59,857	130	0	59,987	95,641
2840	24,262	83	0	24,345	29,037	275	0	29,312	53,657
2820	20,943	0	0	20,943	15,025	128	0	15,153	36,096
2800	12,152	0	0	12,152	7,195	0	0	7,195	19,347
TOTAL	1,437,281	1,005,332	0	2,442,613	2,789,474	5,412,063	1,942,404	10,143,941	12,586,554

TIGER MINE PRODUCTION SCHEDULE

TONS

AJF 09/09/91

QUARTER	MAMMOTH PIT					MOHAWK PIT					
	BENCHES	ORE TONS	WASTE TONS ROCK	WASTE TONS GILA	SUBTOTAL	BENCH	ORE TONS	WASTE TONS ROCK	WASTE TONS GILA	SUBTOTAL	GRAND TOTAL
1ST	3440 TO 3260	78,956	1,220,010	373,680	1,672,646	3140 TO 3080	336	44,644	84,438	129,418	1,802,064
2ND	3260 TO 3200	11,030	983,128	672,819	1,666,977	3080	11,719	118,125	140,738	270,582	1,937,559
3RD	3200 TO 3120	189,000	803,030	500,000	1,492,030	3080 TO 3060	36,000	225,161	40,741	301,902	1,793,932
4TH	3120 TO 3100	189,000	794,857	141,810	1,125,667	3060 TO 3040	36,000	158,682	53,001	247,683	1,373,350
5 TH	3100 TO 3080	189,000	716,171	79,469	984,640	3040 TO 3020	36,000	146,035	50,771	232,806	1,217,446
6 TH	3080 TO 3060	189,000	652,277	51,049	892,326	3020 TO 3000	36,000	126,388	19,835	182,723	1,075,049
7 TH	3060 TO 3040	189,000	581,342	72,190	842,532	3000 TO 2980	36,000	111,483	0	147,483	990,015
8 TH	3040 TO 3020	189,000	490,690	51,387	731,077	2980 TO 2980	36,000	90,795	0	126,795	857,872
9 TH	3020 TO 3000	189,000	381,529	0	570,529	2960 TO 2960	36,000	80,309	0	116,309	686,838
10 TH	3000 TO 2980	189,000	355,251	0	544,251	2960 TO 2940	36,000	64,841	0	100,841	645,092
11 TH	2980 TO 2960	189,000	332,763	0	521,763	2940 TO 2940	36,000	45,963	0	81,963	603,726
12 TH	2960 TO 2940	189,000	286,442	0	475,442	2340 TO 2920	36,000	38,189	0	74,189	549,631
13 TH	2940 TO 2920	189,000	238,858	0	427,858	2920 TO 2900	36,000	31,297	0	67,297	495,155
14 TH	2920 TO 2860	189,000	267,780	0	456,780	2900 TO 2880	36,000	17,595	0	53,595	510,375
15 TH	2860 TO 2800	84,629	97,406	0	182,035	2880	1,343	484	0	1,827	183,862
TOTAL		2,442,615	8,201,534	1,942,404	12,586,553		445,398	1,300,491	389,524	2,135,413	14,721,966

ORE	2,888,013
WASTE ROCK	9,502,025
GILA	2,331,928
GRAND TOTAL	14,721,966

*GENERAL REFERENCES

REFERENCE 1 F1 <USBM-ABGMT PRODUCTION FILE DATA

REFERENCE 2 F2 <USBM FILE DATA - CLUSTER # 519

REFERENCE 3 F3 <ABGMT CLIPPINGS FILE DATA - MOHAWK MINE FILE, MOLYBDENUM GOLD MINING CO. FILE MOLYBDENUM CORP. OF AMERICA FILE, ST. ANTHONY AND DEV. CO. FILE.

REFERENCE 4 F4 <ARIZONA DEPARTMENT OF MINERAL RESOURCES FILE DATA.

C30<VANADINITE, PYROLUSITE, CUPRODESCLOIZITE, GALENA, SPHALERITE, PYRITE, CHALCOPYRITE, CHALCOCITE, GOLD, SILVER.>

C50<UNDER MAMMOTH - ST. ANTHONY PRODUCTION.>

A13<BRANCH IN ARIZONA IS MOLYBDENUM GOLD MINING COMPANY [1937]), , MOHAWK GOLD MINING CO. (1892 - 1897)>

L110<CLAIM WHICH ADJOINS THE MOHAWK CLAIM. IN 1933, THE MOLYBDENUM CORP. OF AMERICA OBTAINED CONTROL OF THE NEW YEAR AND MOHAWK PROPERTIES AND CARRIED ON UNDERGROUND DEVELOPMENT OF BOTH MINES.>

M110<VEIN DIPS TOWARDS THE MOHAWK VEIN. THE VEINS ARE INTERSECTION AT A DEPTH OF 600 OR 700 FEET. THE INTERSECTION OF THE TWO VEINS PLUNGES SOUTHEASTWARD.>

N75<MENT IS COMMON BUT MOST INTENSE IN THE VEINS. BRECCIA FRAGMENTS ARE ALTERED TO SERICITE AND CLAY. SOME CHLORITIZATION.>

F5<PETERSON, N.P., GEOLOGY AND ORE DEPOSITS OF THE MAMMOTH MINING CAMP AREA, PINAL COUNTY, ARIZONA, 1938, ABM BULL., 144, P. 60-62>

F6<WILSON, E.D., LODE GOLD MINES AND GOLD MINING, ABM BULL. 137, P. 170-174>

F7<BLM DISTRICT SHEET # 706, SE 1/2, T. 8S, R. 16E>

F8<CREASY, S., GEOLOGY OF THE SAN MANUEL AREA, PINAL COUNTY, ARIZONA, 1965, USGS PP. # 471, P. 31>

U.S. CRIB-SITE FORM

RECORD IDENTIFICATION

*RECORD NUMBER B10 <>
*RECORD TYPE B20 <X,1,M>
DEPOSIT NUMBER B40 <>
*REPORT DATE G1 <8,2,/,0,3> YR. MO.
*INFORMATION SOURCE B30 <1,2>
*FILE LINK IDENT. B50 <USBM-004021071A>
*REPORTER(SUPERVISOR) G2 <LARABA, PETER (last, first, middle initial)> <GEST, DON E. (last, first, middle initial)>
*REPORTER AFFILIATION G5 <ABGMT>
*SITE NAME A10 <MOHAWK - NEW YEAR MINE>
SYNONYMS A11 <>

LOCATION

MINING DISTRICT/AREA A30 <MAMMOTH DISTRICT>
COUNTY A60 <PINAL>
*STATE A50 <A,Z>
*COUNTRY A40 <U,S>
PHYSIOGRAPHIC PROV A63 <1,2,/>
DRAINAGE AREA A62 <1,5,0,5,0,2,0,3,/>
*LAND STATUS A64 <0,1,/,/,(1,9,7,8,)>
QUADRANGLE NAME A90 <MAMMOTH (1972)>
*QUADRANGLE SCALE A100 <2,4,0,0,0>
SECOND QUAD NAME A92 <( )>
SECOND QUAD SCALE A91 <>
ELEVATION A107 <3,2,4,8,/,FT>

UTM
NORTHING A120 <3,6,1,8,3,3,0>
EASTING A130 <5,2,9,8,6,0>
ZONE NUMBER A110 <+,1,2>

*ACCURACY
ACCURATE ACC (circle)
ESTIMATED EST <>

GEODETIC
*LATITUDE A70 <_ _ _ - _ _ - _ _ N>
*LONGITUDE A80 <_ _ _ - _ _ - _ _ W>

CADASTRAL
TOWNSHIP(S) A77 <0,0,8,S,:,/,:,/,:,/,:,/>
*RANGE(S) A78 <0,1,6,E,:,/,:,/,:,/,:,/>
SECTION(S) A79 <26 :,/,:,/,:,/>
SECTION FRACTION(S) A76 <NE OF SE OF SW>
MERIDIAN(S) A81 <GILA AND SALT RIVER>

POSITION FROM NEAREST PROMINENT LOCALITY A82 <3.8 MILES SE OF SIGNAL PEAK (ELEVATION 4364)>
LOCATION COMMENTS A83 <JUST SE OF THE MAMMOTH MINE>

ESSENTIAL INFORMATION
ESSENTIAL SOMETIMES OR HIGHLY RECOMMENDED

COMMODITY INFORMATION

*COMMODITIES PRESENT C10 <CU, AG, PB, MO, V, ZN, >
*ORE MINERALS C30 <ANGLESITE, CER[illegible]SITE, BROCHANTITE, MALACHITE, AZ[illegible]TE, CALAMINE, WULFENITE
COMMODITY SUBTYPES C41 <
*GEN. ANALYTICAL DATA C43 <
COM. INFO. COMMENTS C50 <GOLD IN QUARTZ. MOLYBDENUM TAKEN OUT OF THE MOHAWK WAS REPORTED

* SIGNIFICANCE

	PRODUCER	NON-PRODUCER
MAJOR PRODUCTS	MAJOR <PB, CU, >	MAIN COMMODITIES PRESENT C11 < >
MINOR PRODUCTS	MINOR <AG, AU, >	MINOR COMMODITIES PRESENT C12 < >
POTENTIAL PRODUCTS	POTEN <MO, V, ZN, >	
OCCURRENCES	OCCUR < >	OCCURRENCES OCCUR < >

*PRODUCTION

PRODUCER	NON-PRODUCER
PRODUCTION (YES) (circle) PRODUCTION SIZE (SML) MED LGE (circle one)	PRODUCTION UND NO (circle one)

*STATUS

EXPLORATION OR DEVELOPMENT

PRODUCER	NON-PRODUCER
STATUS AND ACTIVITY A20 <H>	STATUS AND ACTIVITY A20 < >

*DISCOVERER L20 <FRANK SCHULTZ
*YEAR OF DISCOVERY L10 <1881> *NATURE OF DISCOVERY L30 <B> *YEAR OF FIRST PRODUCTION L40 <1896> *YEAR OF LAST PRODUCTION L45 <1934
*PRESENT/LAST OWNER A12 <MOHAWK GOLD MINING CO. (1892), MOLYBDENUM CORP. OF AMERICA (1933)
*PRESENT/LAST OPERATOR A13 <F.W. ROSE (1942), MOHAWK MINING CO. (1899-1901), MOLYBDENUM CORP. OF AMERICA (ITS
EXPL./DEV. COMMENTS L110 <IN 1917 THE MOHAWK GOLD MINING CO. OWNED JUST THE MOHAWK AND THE MOHAWK WEDGE PATENTED CLAIMS. IN 1926, DEVELOPMENT WORK WAS DONE ON THE NEW YEAR

DESCRIPTION OF DEPOSIT

*DEPOSIT TYPE(S) C40 <VEIN / SHEAR ZONE
DEPOSIT FORM/SHAPE M10 <TABULAR
*DEPTH TO TOP M20 < > *UNITS M21 < > *MAXIMUM LENGTH M40 < > *UNITS M41 <
*DEPTH TO BOTTOM M30 < > *UNITS M31 < > *MAXIMUM WIDTH M50 <20> *UNITS M51 <FT
*DEPOSIT SIZE M15 (SMALL) M15 <MEDIUM> M15 <LARGE> (circle one) *MAXIMUM THICKNESS M60 <500+> *UNITS M61 <FT
*STRIKE M70 <W TO NW> *DIP M80 <STEEPLY SW
*DIRECTION OF PLUNGE M100 < > *PLUNGE M90 <
*DEP. DESC. COMMENTS M110 <VEINS OCCUR WITHIN SHEAR ZONES. THE TWO VEINS DEVELOPED ARE KNOW AS THE MOHAWK AND DREAM. THE MOHAWK VEIN IS VERTICAL WHILE THE DREAM

DESCRIPTION OF WORKINGS

*Workings are: SURFACE M120 UNDERGROUND (M130) BOTH M140 (circle one)
*DEPTH BELOW SURFACE M160 <532> *UNITS M161 <FT> *OVERALL LENGTH M190 <2500> *UNITS M191 <FT
*LENGTH OF WORKINGS M170 <500> *UNITS M171 <FT> *OVERALL WIDTH M200 <10> *UNITS M201 <FT
*OVERALL AREA M210 <25,000> *UNITS M211 <FT²
DESC. OF WORK. COM. M220 <TWO VERTICAL SHAFTS, MOHAWK AND NEW YEAR SHAFTS, ARE 140 FT APART. IN THE MOHAWK THERE ARE 5 LEVELS (ALL INDRE), WITH MANY CROSS-CUTS, DRIFTS, WINZES, AND STOPES. THE NEWYEAR SHAFT WORKINGS HAVE CROSSCUT A WIDE, LOW GRADE VEIN ON THE 425-FOOT LEVEL

GEOLOGY

*AGE OF HOST ROCK(S) K1 <P.B.E.C.-T.E.R.T., PREC (1420-1450 MY), TERT (22.3 MY)
*HOST ROCK TYPE(S) K1A < QUARTZ MONZONITE, RHYOLITE.
*AGE OF IGNEOUS ROCK(S) K2 <T.E.R.T., 22.3 MY
*IGNEOUS ROCK TYPE(S) K2A <RHYOLITE INTRUSIVE AND RHYOLITE BRECCIA
*AGE OF MINERALIZATION K3 <T.E.R.T., 29 TO 22 MY
*PERT. MINERALS (NOT ORE) K4 <CALCITE, TOURMALINE, HEMATITE, LIMONITE, FLUORITE
*ORE CONTROL/LOCUS K5 <VEINS WITHIN SHEAR ZONES. NW STRIKING RHYOLITE INTRUSIONS.
*MAJ. REG. TRENDS/STRUCT. N5 <QUATERNARY GILA CONGLOMERATE OVERLIES ORE ZONE
*TECTONIC SETTING N15 <
*SIGNIFICANT LOCAL STRUCT. N70 <THE MAMMOTH FAULT, N22W, 56 TO 70 DEG NE, CUTS THE VEINS
*SIGNIFICANT ALTERATION N75 <OXIDATION TO A DEPTH OF 500 FT. SILICIFICATION FROM SLIGHT TO COMPLETE REPLACE-
*PROCESS OF CONC./ENRICH. N80 <
*FORMATION AGE N30 <
*FORMATION NAME N30A <
SECOND FM AGE N35 <
SECOND FM NAME N35A <
*IGNEOUS UNIT AGE N50 <
*IGNEOUS UNIT NAME N50A <
SECOND IG. UNIT AGE N55 <
SECOND IG. UNIT NAME N55A <
GEOLOGY COMMENTS N85 <

GENERAL COMMENTS

FOR MORE INFORMATION,
GENERAL COMMENTS GEN <SEE C.R.I.B. ENTRY FOR THE MAMMOTH – ST. ANTHONY MINE, ADJACENT MINE TO NW.

Mammoth (f) Collins (f) Mohawk (f)

FOR IMMEDIATE RELEASE
February 9, 1988

SAN MANUEL, ARIZONA, February 9, 1988, Magma Copper Company (NASDAQ-MGCP) has entered into an agreement in principle with Cyprus Minerals Company to form a joint venture under which Cyprus would conduct exploration for gold on a portion of Magma's San Manuel property located about 40 miles northeast of Tucson, Arizona.

Drilling began last month for exploration along the Mammoth-Mohawk vein which produced gold and was mined from the 1880's through the 1940's.

The area under exploration was the site of several mines in the Old Hat Mining District which supported the communities of Tiger and Mammoth, Arizona.

Under the proposed arrangements, Cyprus would have the right to earn a 50% interest in the property covered by the joint venture by undertaking certain exploration activites.

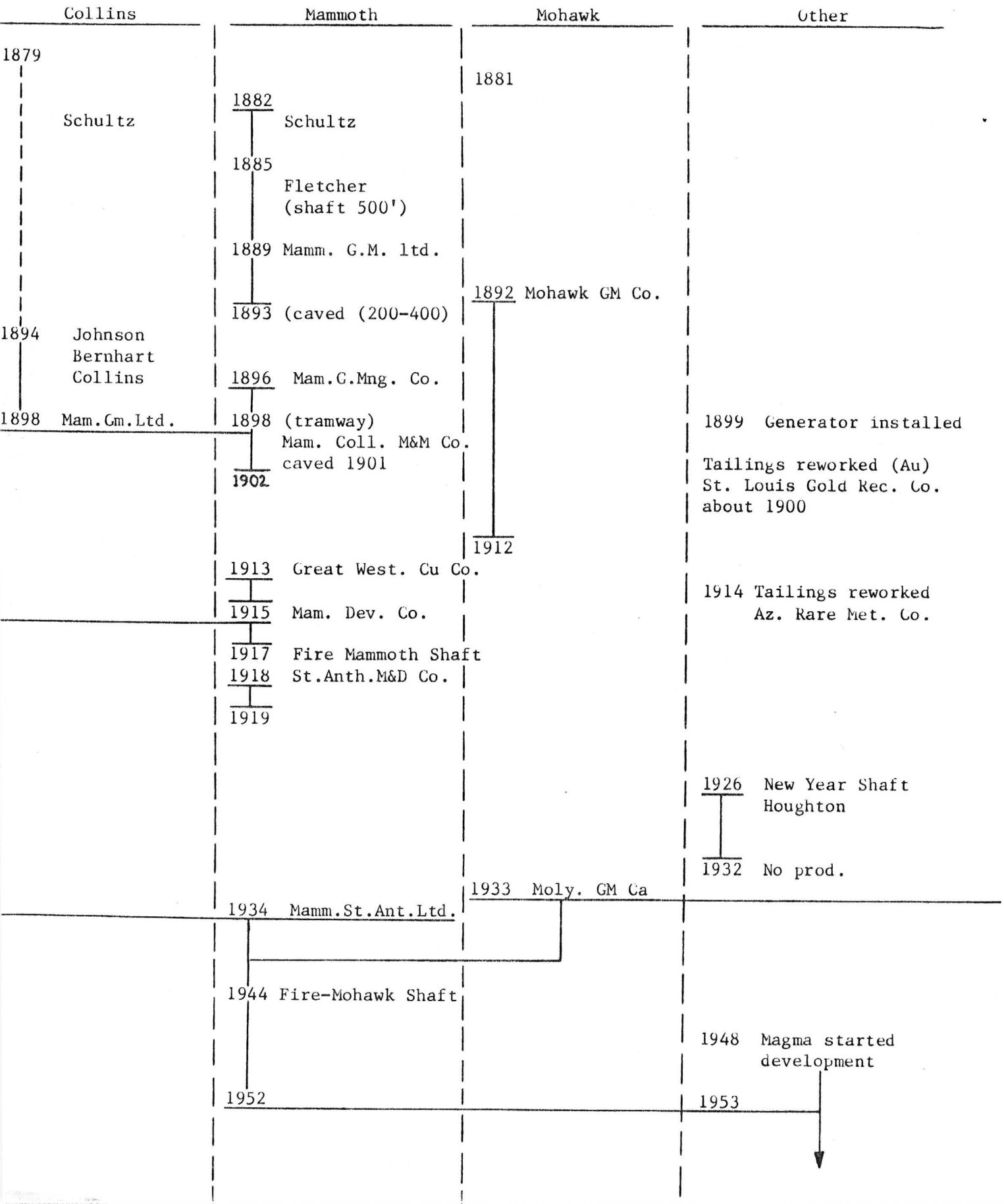
Cyprus also would be the operator of the mine if one were built.

Magma Copper Company is the second largest copper producer in the U.S. and operates mines in San Manuel and Miami, Arizona, and a smelter, refinery and rod plant in San Manuel as well as a rod plant in Chicago.

Cyprus Minerals Company, headquartered in Englewood, Colorado, is a major producer of coal, copper, molybdenum, gold and industrial minerals. # # #

NEWS FROM MAGMA
MAGMA COPPER COMPANY
P. O. Box M, San Manuel, Arizona 85631
Public Relations Officer—Frank Harris (602) 385-3256/385-2153

Tiger Mines' Chronology



TAKEN FROM THE REPORT OF THE GOVERNOR -1896

MOHAWK MINE

This is the first southerly extension of the Mammoth in Pinal County, about 50 miles northerly from Tucson, and 3 miles easterly from the San Pedro River. The working shaft is 334 feet deep, and there are two other shafts about 100 feet deep each. The vein has been drifted upon for nearly 400 feet on the 100-foot level and about 250 feet on the 200-foot level. Veins average 12 feet in width. There is a 20-stamp mill and one Griffin mill with a power plant sufficient for a larger mill. The vein stone is quartz and the ore free milling.

MOHAWK MINE PINAL COUNTY

NJN WR 4/8/88: John Dowis (card) reported that through discussion with Magma Copper Company, it appears that Cyprus Minerals' immediate target in the Tiger area (Mammoth (file) Mohawk (file) Collins (file) Pinal County, is the opern pit gold potential of the vein systems. Underground potential, though not the primary target may be considered if drilling reveals it to be warrented.

Report On The

M O H A W K M I N E .

Pinal County, Arizona. By

Colin Timmons, E. M.

Tucson, Arizona, June 5, 1917.

Tucson, Arizona, June 5, 1917.

The Mohawk Mine is the property of the Mohawk Gold Mining Company, which owns the Mohawk and Wedge claims--21.6 acres--and a 5-acre mill-site, all patented and situated in the Old Hat Mining District, Pinal County, Arizona.

The Mohawk adjoins the Memmoth Mine and is on the same vein with the same characteristic ore, namely lead molybdate and gold. The Mammoth is a well known property, having produced over $2,000,000.00 in gold, and is now the largest producer of lead molybdate in America.

The mines are in low, rolling hills at an elevation of 3,000 feet, on the south side of the San Pedro River, which is three miles distant, and 26 miles from Winkelman, the present terminus of the Arizona & Eastern Railroad, to which station there is a fine automobile road. They are also connected with Tucson, 50 miles, by an excellent auto-road.

---- GEOLOGY.----

To the south of the Mohawk for many miles the country is granite, intersected by rhyolite and andesite dikes, with local areas of pegmatite. To the north the country rock is chiefly rhyolite with intrusions of a later granite. There are two veins developed on the Mohawk. The larger, known as the Mohawk, is entirely in the rhyolite. The other vein, called the Dream vein, is a contact with granite wall and rhyolite hanging wall. There are crushed zones, more or less ore bearing, connecting these two veins.

The Mohawk vein is practically vertical, while the Dream vein dips at 40 to 50 toward it, indicating a union of the veins at a depth of 600 or 700 feet.

The Mohawk vein is a wide, loosely filled vein from 8 to 20 feet between walls, with central streak of enriched material usually softer than the remainder of the vein. The walls are shattered and filled with lead molybdate and vanadate.

The Dream vein is smaller and runs in lenses from a foot to 6 feet thick. The hanging wall is usually shattered and the veins gradually diminish after leaving the central lines of the true vein matter.

----- DEVELOPMENT.------

MAIN SHAFT:

The main working shaft is sunk between the two veins and is now 532 feet deep. It has two hoisting compartments, 4' 5" x 5' 8" in the clear, and a half compartment containing an inclined ladder way with platforms at each 20 feet descent. The shaft is vertical and well timbered throughout. It was sunk in rhyolite, but will enter the granite within the next 50 feet. The Mohawk vein is reached by cross-cuts from the shaft at the 125 foot level, the 225 foot, the 325 foot, and the 425 foot. The Dream vein is opened on the 325 foot, the 425 foot and the 525 foot. The first and second levels on the Mohawk are largely exhausted and partly inaccessible.

THIRD LEVEL (325 ft.)MOHAWK VEIN:

The 3rd level on the Mohawk vein is opened for a distance of 500 feet entirely in ore. 300 feet of this distance has been stoped to a height of 75 feet; 200 feet is still unbroken ground. The ore broken is from 10 to 20 feet wide. There are now 2,500 tons of ore broken in this stope. The walls so called are rich in lead molybdate, the north wall being exceptionally rich, averaging 2 per cent for a thickness of four feet, as shown by numerous cross-cuts. Both faces on this level are still in ore.

The 200 feet of the vein not stoped has ore in the level the size of the drift, which is 8 feet wide and 10 feet high without any walls being exposed. This block of ground is opened above on the second level also, and thus there is a block of ground ready to mine 200 feet long and 100 feet high which will probably prove as rich as the ground mined.

FOURTH LEVEL(425 ft.) MOHAWK VEIN:

The fourth level is 375 feet long, 10 to 20 feet wide, entirely in ore, and both faces are still in ore. About three-fourths of the ground explored has been stoped. There are 10,000 tons of broken ore in the stope.

The third and fourth levels are timbered with square-sets, 8" x 8" and 10" x 10" posts and 8" x 8" and 10" x 12" caps. These are roofed with 3" plank with chutes every 15 feet. The ore was broken down on these planks and the ground stoped without timbers; afterwards all the ore was drawn off and milled, except as shown in my map, which accompanies this report. The walls stand

well and there are no timbers in the mine except the floor sets.

About the line of the third level there has been a horizontal fault or throw, displacing the Mohawk vein 50 to 100 feet. The ore continues below the third level for 25 feet and the stope on the fourth level has been carried as high as the floor of the third level, but in ground about 75 feet to the north.

From the surface to the third level the vein dips slightly to the north and northeast. On the fourth level and in the fourth level stope the dip is in the contrary direction and is the same as in the Mammoth Mine.

There is a winze following the foot wall on the fourth level which shows the vein descending to the south and southeast, which is in agreement with the other veins of the district.

DREAM VEIN:

The Dream vein is first cut by a cross-cut 196 feet long on the third level, and afterwards a drift was run 463 feet on this vein. The ore on this level has been stoped to an average height of 40 feet as shown on map.

On the fourth and fifth levels there are stopes about 200 feet long on each level. This ground is now inaccessible for sampling. The levels are thoroughly timbered and the ore broken down on the top timbers. Afterwards, when the ore was taken out and milled, it left the large stopes, as shown on the map, without opportunity to sample them. I sampled the vein where it can be reached, also the ore in the chutes, and broken ore on the floors. The general average of these assays is $3.60 gold and 1 per cent lead molybdate.

On the fifth level there is a cross-cut southwest about 100 feet long to a large mineralized zone of iron-stained porphyry and quartz carrying gold. This is in the granite and at this point a winze has been sunk 115 feet. The last 15 feet is in the water zone and is practically on a level with the water-level in the adjoining mines. If this winze was sunk 50 feet deeper there would be water enough encountered for the mill, and it would be a great saving in comparison with pumping from the river, where the company has a pumping plant which was formerly used to send the water to the mill at the mine.

The Dream vein from the third level to the surface is undebeloped, and judging from its behavior in the portion of the vein already mined, I believe it will be found that the ore from the third level upward can be very profitably extracted.

ORE IN SIGHT.

MOHAWK VEIN:

Before attempting to estimate the ore in sight, I wish to say that a certain per centage of the rock broken in mining the ore must be discarded before it reaches the stamps. I estimate this amount as one-third of the whole. A portion of the vein is unaltered rhyolite with simply a coating of lead molybdate and iron oxide. This portion can be eliminated at a small cost, thereby raising the value of what remains and reducing the cost of crushing, for that which will be rejected is the hardest part of the ore. I have reduced the amount of ore in sight by one-third for the reason given.

1. Broken ore in the stope, 2nd level.....	4,670	tons.
2. Ore above third level stope, below second level.....	6,000	" .
3. Blocked ore exposed on three sides, between 2nd and 3rd levels.....	14,000	" .
Total.....	24,670	Tons.
4. Broken on the stope, third level.....	2,530	" .
5. Ore below third level floor, above fault.....	12,500	" .
6. Blocked ore bbetween 3rd level and 4th levels..... west end.	9,000	" .
7. Blocked ore between 3rd and 4th levels, east end.....	10,000	" ;
8. Broken ore in the stope 4th level.....	10,550	" .
Total.....	69,250	Tons.
Less one-third.....	23,083	" .
Net Total.....	46,167	Tons.

The assay map I have prepared will show at a glance where this ore lies and how the amount is calculated. The ore body may be considered as 15 feet thick throughout.

There is additional ore on the walls of the vein throughout the stopes which is as rich in lead molybdate as that in the vein itself. Numerous cross-cuts show lead molybdate in the wall rocks for 4 to 6 feet thick on both the third and fourth levels. Older reports made when the first and second levels were mined show that lead molybdate is present in abundance in these levels too.

The fifth level when developed ought to be particularly rich in lead molybdate, since the bottom of the fourth level is probably the richest part of the mine which has been exposed, and the corresponding level and deeper levels in the adjoining mine are the richest part of the vein yet explored.

ORE IN THE DREAM VEIN:

The ore in the Dream vein which could be considered ore in sight cannot be measured. As shown on the map, there is a stope in the third level 460 feet long and other stopes 200 feet long on the fourth and fifth levels respectively. These stopes are not timbered and thus are not accessible. On the third level I was able to obtain a few samples from portions of the vein left by former workers. On the fourth and fifth levels the samples were taken from material in the chutes. All the ore carries lead molybdate, and inasmuch as it was worked formerly for the gold values alone, it is evident the ore would prove much more profitable now. There are 300 feet of ground above the third level which can be stoped cheaply and there are large blocks of ground on both the fourth and fifth levels ready for stopong. I would estimate the probable ore on these three levels at 25,000 tons.

VALUE OF ORE.

MOHAWK VEIN:

The ore now broken and in sight, in Mohawk vein, after eliminating the waste, equals 46,167 tons. The average saving of the lead molybdate in the concentrate is 2 per cent, which is 80 per cent of the assay value of the ore. The concentrate contains 6.4 lbs. of molybdic acid to the ton of ore, worth $1.20 per lb. in Arizona.

The value of the concentrate can be doubled by reducing it to metallic lead and converting the molybdenum into molybdenum sulphide or oxide. My estimate of profits, however, is made on the value of lead molybdate concentrate in Arizona.

The amount of gold saved in the past by amalgamation alone is 70 per cent of the assay value, which equals $2.100 per ton. The molybdic acid value is $7.68, or a total value of $9.78. Value of total ore in sight in Mohawk vein $451,513.26. On separate sheets I have calculated the cost of mining and milling the ore as taken from actual costs in similar ore bodies in Arizona. The mining cost is $1.81, the milling and concentrating $.95, the total cost is therefore $2.76 per ton, or for the 46,167 tons $127,420.92, which leaves a profit of $324,092.34. From this amount there will have to be deducted the cost of delivering the concentrates to the railroad which is approximately $5.00 per ton.

------ EQUIPMENT.--------

The present equipment at the mine is as follows:

1. 10" x 12" double-cylinder, double-drum, geared Lidgerwood hoist.

1. 250 h.p. vertical compound condensing mill engine.

1. 50 h.p. electric motor.

1. 5,000 gallon galvanized oil tank.

1. 25,000 gallon water tank.

Blacksmith shop.

Assay Office. Manager's residence. Bunk-houses. Office buildings.

All these buildings are well built of adobe and lumber.

1 30-stamp mill, 6 batteries of 850 lbs. stamps complete for amalgamation.

The ore was never concentrated and a complete concentrating plant in addition to the machinery at present will be necessary for the saving of the lead molybdate.

To be able to treat 150 tons of ore daily and make a satisfactory saving of the molybdate, will require re-crushing machinery, concentrating tables, rock drills and a general renewal and overhauling of both mill and mine, such as always occur when a mine has been idle a number of years. With the mine and mill thus equipped, a profit of $20,000 a month can be earned.

--------CONCLUSION.--------

In conclusion I wish to say, that the Mohawk mine affords an excellent opportunity for mining rather than for promotion on the stock market. There will be no long delays in getting returns. The shaft has already been sunk more than 500'; the four levels already run were all in ore. Thousands of tons of ore are now in the stopes ready for the mill, and thousands additional are in sight. The ore is easily and simply treated and there is great demand for this product, a demand reasting upon the fact that various special steels are immensely benefited by the addition of the proper amount of molybdenum. This use of molybdenum will be intensified by the tremendous increase of high class steel demanded by locomotion both on land and in the air.

Signed: Colin Timmons.

Tucson, Arizona, June 5, 1917.

LIST OF SAMPLES AND ASSAYS.

Lead Molybdate Ore.

Mohawk Vein. Third Level.

No.	Description.	Width.	Percentage $PbMoO_4$.	Gold Value Per Ton.
12.	West end of level, south side; large pieces thrown out, one third taken.....	4'	3.04	$ .60.
13.	West end of level, north side.....	10'	.10	.60.
14.	Along hanging wall for 70'; large pieces thrown out, ⅓ taken.....	4-6'	.84	.80.
15.	Along hanging wall for 200' on top of broken ore; large pieces thrown out, ⅓ taken.....		3.00	1.40.
16.	General average from fine, broken stuff in big stope, one third of whole.....	15 - 20'	4.40	2.60.
17.	Hanging wall side, 160' in length, under stope, one third, thrown out.....	5'	5.42	2.40.
18.	Along drift for 50' south from the stope, not all exposed.....	8'	1.42	2.60.
19.	To the east of the drift from shaft, about 20' of drift partly filled with waste	6'	.50	2.80.
	General average of 3rd level....		2.34	$1.72.

No.	Description.	Width.	Percentage $PbMoO_4$.	Gold Value. Per Ton.
1.	Across west face of level.....	18	1.60	$1.00.
2.	Along hanging-wall from face of level to beginning of stope, 75' length, fine material, about one-fifth of whole..	4'	.20	5.60.
3.	Along foot-wall, 60' length, opposite No.2.....	4'	.45	1.20.
4.	Hard portion of samples Nos.2-3, about four-fifths of Whole.		.42	.80.
5.	Along foot-wall continuation of No.3, length 145'.....	8 - 10'	2.90	1.80.
6.	Along foot-wall continuing east 140', fine material, about (½) one-quarter of whole.....	2 - 5'	6.20	2.20.
7.	General sample fine material(½) from caved ground east end of level.....		3.10	3.20.
8.	Along hanging wall beginning at caved ground and going west 75', hanging wall not exposed.....	4 - 6'	5.51	1.40.
9.	Rough sample from broken ore top of stope.....		1.78	1.20.
10.	Taken entirely around stope, 35 x 12 x 100, both walls, 5', good molybdate ore on foot-wall.....	4 - 6'	2.05	1.00.
	General average of 4th level....		2.42	$1.94.

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11.	From cross-cut at bottom of winze 50' below 4th level....	15"	1.11	.80.

Note. The amount of lead molybdate in the sample was determined by concentrating them and calculating the percentage of the resulting lead molybdate concentrates, which were afterwards assayed, giving a general average of 16.2 per cent MoO_3. Therefore, the above represents recovered values in lead molybdate.

LIST OF SAMPLES AND ASSAYS.

Gold Only.

Note. The lead molybdate ore was sampled separately, as it occurs in a portion of the vein which carries but little quartz. The following samples were taken clear across the vein in order to obtain the general average of the whole in gold.

Mohawk Vein. Third Level.

No.	Description.	Width.	Gold Per Ton.
16.	Across west face of level.....	14'	$ 2.06.
17.	125' east face, across floor.....	18'	2.40.
18.	25' Further east.....	20'	4.60.
19.	50' " " across floor.....	16'	6.60.
20.	100' further east, across floor.....	20'	2.80.
21.	50' further east, across floor.....	12'	4.70.
22.	Across top of 2,500 tons broken ore.....	15 - 20'	3.51.
23.	20' east of proceeding sample.....	"	3.30.
24.	20' further east.....	"	2.48.
25.	20' " "	"	7.02.
26.	20' " "	"	3.10.
27.	20' " "	"	5.75.
28.	20' " "	"	14.68.
29.	20' " "	"	4.75.
30.	20' " "	"	1.44.
	General average of third level.		$ 4.61.

Mohawk Vein. Fourth Level.

No.	Description.	Width.	Gold Per Ton.
1.	Across west face of level.	12'	$2.20.
2.	125' east of face, across floor.....	12'	4.20.
3.	50' further east.across fl.	15'	1.40.
4	125' " " " "	18'	3.20.
5.	Across top of 1,500 tons broken ore.....15 - 20'		1.24.
6.	20' east of proceeding sample.....	"	1.65.
7.	20' " " " "	"	1.44.
8.	20' " " " "	"	3.10.
9.	20' " " " "	"	4.75.
10.	Across top of 9,000 tons broken ore, beginning 20' east of proceeding sample...	"	3.92.
11.	20' further east.....	"	3.60.
12.	20' " "	"	3.92.
13.	20' " "	"	4.54.
14.	20' " "	"	1.65.
15.	20' " "	"	2.06.
	General average of fourth level...		$2.86.

Cost Of Mining 225 Tons Daily, Mohawk Mine.

12 Rock drill men at $4.00	$48.00.
Powder, $27.00. Fuse and primer $7	34.00.
5 Trammers, at $3.50	17.50.
3 Muckers, at $3.00	9.00.
2 Blacksmiths and two helpers	17.00.
3 Formen	15.00.
Carpenter and assistant	9.00.
3 Nippers at $3.00	9.00.
5 Ore sorters at $3.00	15.00.
3 Hoist men at $4.00	12.00.
Superintendent	10.00.
Light	6.00.
Timber	15.00.
Repairs and renewals	15.00.
Power	40.00.
Total or $1.81 per ton	$271.50.

Cost Of Milling 150 Tons Daily, Mohawk Mine.

Master mechanic	$ 6.00.
1 Mill man	6.00.
2 Mill men at $5.00 each	10.00.
3 Assistants at $3.00 each	9.00.
3 Rock breaker men	9.00.
3 Car men, shaft to mill	9.00.
1 Pump man	4.00.
3 Engineers	12.00.
Renewals	15.00.
Light $6.00, oil $5.00, quicksilver $2.	13.00.
Power, book-keeper, assayer	50.00.
$40.00. $5.00. $5.00.	$143.00

Total or 95 cents per ton.