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James Doyle Sell Mining Collection

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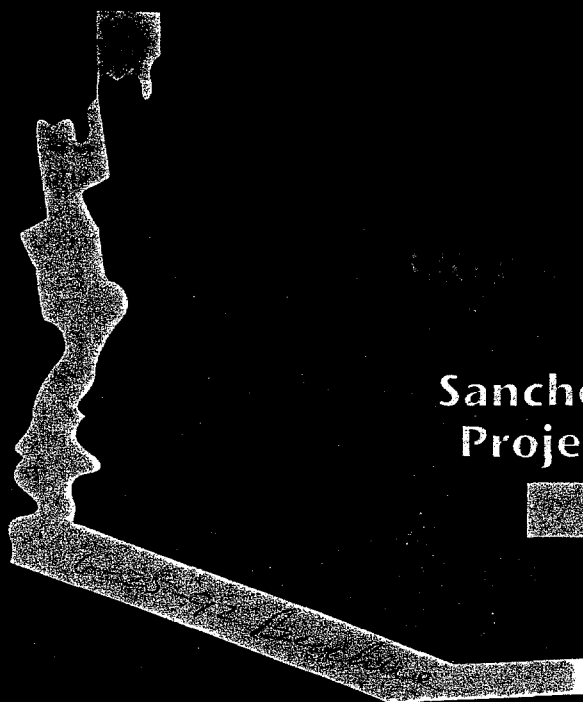
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Sanchez
Project



INTRODUCTION

AZCO was formed in 1988 to acquire the mining rights to the Sanchez porphyry copper deposit located about 10 miles northeast of Safford in southeastern Arizona. This deposit is estimated to contain 191 million tons with an average grade of 0.317% copper.

A final feasibility study prepared by FLUOR/WRIGHT (November 1990), indicates that the Sanchez project could be a viable copper producer at copper prices materially below those currently prevailing, **capable of producing an average of 56 million pounds of high-grade copper cathode annually over the estimated 20 year life of the project.**

The Company intends to seek approximately \$75 million by means of debt and equity financing to develop the Sanchez mine. Full production is anticipated to commence in the first quarter of 1994.

HISTORY OF SANCHEZ PROJECT

Between 1957 and 1980 five operating companies conducted exploration programs at Sanchez. A total of 148 surface holes were drilled, most by Inspiration Consolidated Copper Company ('Inspiration'), the last company to conduct drilling at Sanchez. Inspiration also undertook underground sampling, metallurgical and mine testing and engineering work, the whole program costing approximately US \$12m. Historically low copper prices, coupled with financial and operating problems at other Inspiration properties, prevented development at Sanchez. Between 1984 and 1986 the site was not leased. Butte Resources Limited acquired a lease in 1986 but carried out no work on the site. Following improvements in the copper price and in the recovery process, AZCO acquired a lease over the property in 1988. The lease contains provisions for the payment of a royalty of 2% gross revenue up to a maximum of \$5 million, with advanced royalties of \$100,000 payable annually. Since 1988, AZCO has spent over US \$4 million on an intensive mine evaluation program, including drilling, metallurgical and environmental work, culminating in a final feasibility study prepared by FLUOR/WRIGHT.

GEOLOGY & ORE RESERVES

Sanchez is a porphyry-type copper deposit located along the west flank of the Gila Mountains near Safford, in Graham County, Arizona. A cylindrical mass of monzonitic porphyry intruding andesitic volcanic rocks has been the focus of large scale, low-grade copper mineralization. The orebody is approximately 2,000 to 2,500 ft. in diameter, is zoned mineralogically with copper oxide minerals at the surface giving way vertically to mixed oxides and sulphides. The oxide zone, approximately 1000 feet thick, is the target AZCO is seeking to develop. Based on a cut-off of 0.20% copper, the ultimate pit design contains an estimated 168,027,000 tons of ore-grade materials, averaging 0.336% copper, and 23,104,000 tons of low grade material, averaging 0.176% copper, suitable for leaching. Another 205,810,000 tons of waste and low grade material that will not be leached must also be moved. The total quantity of material to be excavated is 396,941,000 tons, at an overall mine life stripping ratio of 1.08:1.

NOTES ON SANCHEZ RESERVES

At Sanchez only the economics of the oxide portion of the ore body have been estimated. Because most drill holes terminate at the base of the oxide zone, the data base for determining a resource for the sulphide and mixed zones is somewhat limited. Statistics on average grade have been compiled for 40-foot drill intercepts of all assay data from the mixed and sulphide parts of the deposit, as well as that from the oxide zone. These statistics are given below where they are compared with the same statistics for 40-foot composites of drill intercepts in the oxide zone.

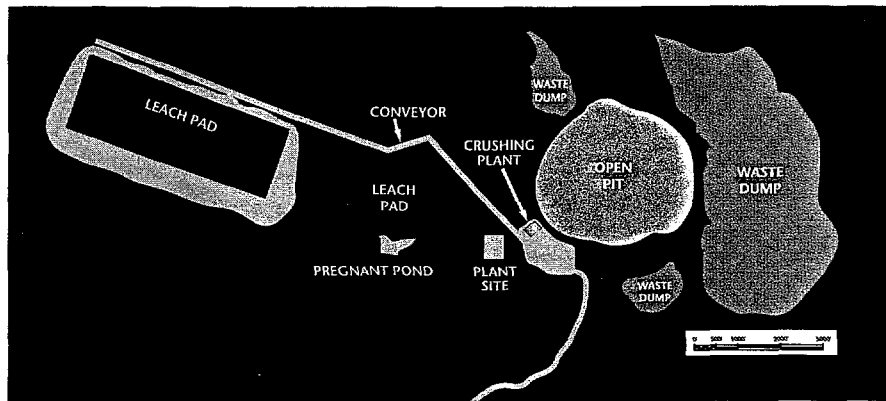
<u>Mineral type</u>	<u>Mean (% Cu)</u>
Primary sulphide	0.60
Mixed zone	0.38
Oxide zone	0.30

The apparent high-grade of the primary sulphide designation is probably the result of the following: 1. It is based on only 3, 40-foot composites; 2. the sulphide below the mixed zone show signs of enrichment by chalcocite; 3. the deepest holes are in the center of the deposit where the oxide grades are highest (the center of the oxide deposit grades above 0.5% Cu). The slightly higher grade of the mixed zone shown in the table results from secondary chalcocite enrichment.

Although some gold values have been encountered, it is unlikely that they will be recoverable in the leaching operation.

MINING AND PROCESSING

AZCO proposes to mine the ore body, at a nominal rate of 12.0 million tons per year of ore, using conventional open pit mining techniques and equipment. The ore will be hauled by truck to an on-site two stage crushing plant. The crushed ore will be transported by conveyor belts to a stockpile adjacent to the leach pad area, then discharged via a movable stacker conveyor onto the leach pad.



The crushed ore will then be impregnated (cured) with a strong sulphuric acid solution for a minimum of three days. The wetted ore will then be continuously washed with weaker raffinate solution for approximately 119 days (17 weeks), completing one leach cycle. Successive layers of cured fresh ore will be stacked on top of this layer with additional leaching occurring each time. Production will increase with each succeeding cycle. In this process the copper oxide is dissolved to produce a pregnant leach solution ('PLS'), which then flows down to the leach pad and is collected in a pond. The PLS will then be transferred to a Solvent Extraction ('SX') plant where the PLS, by a process using organic reagents and gravitational separation, will be turned into a solution containing 50-60 gms/litre pure copper sulphate solution. This solution will then be transferred to the electrowinning ('EW') plant where high purity copper cathode sheets will be plated out by simple electrolysis. These sheets require no further refining.

The SX-EW process is a tested and proven method of copper recovery and is used as a low cost alternative to the smelting process. There are now some 40 SX-EW plants throughout the world. Over the last 15 years, in particular, leaching and SX-EW techniques have been refined and improved, resulting in a higher percentage extraction of copper. Wright Engineers engaged the services of specialist SX-EW consultants to conduct a series of tests to determine the optimum economic level of copper recovery by leaching and SX-EW process. An operating team is currently being assembled, headed by David Beling (see 'Directors and Management')

METALLURGICAL TESTWORK

Metallurgical testwork is currently underway to demonstrate the recovery of copper and the consumption of acid from the Sanchez deposit, under the operating conditions defined by the Wright Engineers Ltd. Feasibility Study of November 1990.

Column tests point to significant reduction in acid consumption.

The new tests consist of 4 columns of ore extracted from deep in the deposit in large diameter drill core, and one column from the surface. In the new tests, the strong acid solution was added in an agglomerator and the

acidified ore was placed in columns 20 feet in height to duplicate the height of the proposed leach lifts. Rinsing of the acidified ore columns began three days after loading. The rinse solution used is raffinate collected from another leaching operation. As of day 48, these tests indicate copper kinetics virtually identical to those from previous tests of surface material in 20 foot columns. In these previous tests, copper recoveries averaged 82% after 240 days of rinsing, with copper continuing to leach from the columns until they were taken off stream. In the current tests, **which duplicate proposed operating conditions**, the only acid that has been added to the columns was put there during the initial step of acidification in the agglomerator. The amount used was 25 pounds per ton of ore. Judging from the results of other tests of this type conducted in 1990 and 1991, no further acid addition to the ore will be necessary. Thus the total acid consumption by the ore will amount to **25 pounds per ton or about 4 pounds of acid per pound of copper, is significantly less than the 50 pounds referred to in the Wright Engineers feasibility study.**

Metcon Research Inc.'s Progress Report dated 29 January 1992, compiled by Mike Sierakoski (see 'Consultants'), states: "The use of lower aquifer water from the Sanchez deposit was another question that was discussed in regard to possible higher concentrations of chlorides and other ions. The chloride concentration would be more a concern for the materials of construction used in the solvent extraction facility than its effect on the leaching kinetics. The current locked cycle column testing is being done for the Sanchez ore is using barren leach solution from an operating copper facility as the rinse solution. Each cycle, this solution has the copper removed via solvent extraction and is then recycled as the rinse solution for each respective column. This solution was chosen to match the chemical composition of the proposed Sanchez solutions and is expected to yield leaching data that will simulate the actual operation.

The latest lock cycle tests on the Sanchez ore was done to duplicate the proposed actual operating conditions, using columns twenty feet in height. Prior to loading into the columns, the ore was crushed to minus one inch and a strong sulphuric acid cure solution was added by direct application technique at the rate of 25 pounds of acid per ton. The raffinate solution from the solvent extraction contains sufficient free acid to serve as the rinse solution for the life of the project. Results after 120 days of rinse are listed below with a comparison to previous twenty foot column tests on similar ore. The acid consumption of 25 pounds per ton determined by the latest tests is consistent with other operating plants that use strong acid cure leaching techniques.

120 Days of Rinse

Columns	New Columns Indicated % Copper Ext	Old Columns (20') Actual % Copper Ext	Acid Consumption for New 20' Locked Cycle Tests Pounds of Acid/Ton of Ore
801 Monzonite	52.11	61.56	24.97
804 Monzonite	56.18	61.47	25.00
805 Andesite	60.00	63.58	26.09
806 Andesite	71.68	72.88	25.70
Surface Andesite	77.42	75.57	24.97

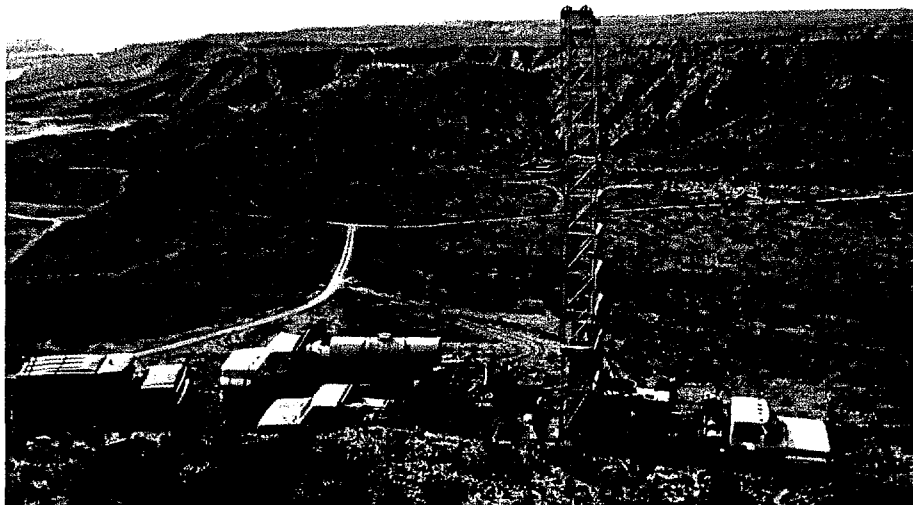
These results indicate that the copper extraction for ore from **both the surface and the subterranean portions of the Sanchez deposit are similar.** The latest series of tests demonstrate that the monzonite ore leaches at a slower initial rate than the andesite ore, consistent with all other tests done to date on this project.

ACID SUPPLY AND CONSUMPTION IN ARIZONA AND NEW MEXICO

Currently, sulphuric acid production from smelters in the southwestern US totals 2,820,000 tons per year. By 1993, this will increase to 2,950,000 tons per year. The breakdown of acid production is as follows:



Outcrop of the north part of the Sanchez ore body.



Drilling on Sanchez.

Company/Smelter	Annual Production (tons)
Asarco, Hayden, Arizona	620,000 - 650,000
Asarco, El Paso, Texas	170,000 (1992)
Cyprus, Miami, Arizona	650,000 (1993)
Magma, San Manuel, Arizona	300,000
Phelps Dodge, Chino, New Mexico	350,000
Phelps Dodge, Hidalgo, New Mexico	700,000

Current acid consumption in Arizona/New Mexico by leaching operations is approximately as follows:

Asarco, Ray - oxide leach	320,000
Cyprus, Miami - oxide leach	400,000
Magma, San Manuel - oxide leach	100,000

As can be seen from the above production/consumption figures, compiled by Paul Thompson, P. Eng., production of acid in Arizona and New Mexico exceeds consumption by over 2,000,000 tons. The extent of this imbalance is so large that Phelps Dodge actually incurs a loss in transporting acid to Florida, where it is used in the phosphate industry. According to Michael Levanger, Regional Sales Manager for sulphuric acid sales for Asarco, the company sells acid from its Hayden, Arizona plant to destinations in Ohio and the Pacific Northwest in order to dispose of it. For this reason, Asarco is eager to discuss sales of acid to AZCO.

WATER RESOURCES

AZCO has obtained two separate legal opinions on the subject of water rights, and under the present planning and assumptions, water rights problems are unlikely. The subject of water accessibility and rights has been researched by Fred Brost, President of Mining and Environmental Consultants Inc., Arizona (see 'Consultants'). A complete report is available at AZCO's offices.

SALES AND MARKETING

Under an agreement dated 15 August 1991, AZCO appointed Axel Johnson Ores and Metals Inc., (Axore) New York as exclusive marketing agent for its copper cathode product. Axore will negotiate terms for potential buyers and arrange contracts; organize freight; insurance; prepare bills of lading, etc. In addition to these customary sales functions, Axore also will organize all hedging and other risk offset programs on behalf of AZCO.

AZCO has agreed to pay fees to Axore of US \$20.00/ton cathodes shipped, with a minimum of US \$250,000/year. These fees commence once production from the Sanchez has reached 75% of design capacity, continuing for a period of 4 years. Normal force majeure conditions and waivers apply. This agreement will continue in full force and effect while Axore retains its share position in AZCO of 263,158 shares.

ENVIRONMENTAL AND REGULATORY BACKGROUND

The Sanchez Copper Project is located on unpatented mining claims on public lands under the jurisdiction of the U.S. Bureau of Land Management (BLM). An Environmental Impact Statement (EIS) will have to be reviewed and approved by the BLM before development can commence. The Arizona Department for Environmental Quality (ADEQ) will require an Aquifer Protection Permit (APP) and an Air Pollution Control Installation Permit (APC). Several other State and County permits will be obtained during construction (water well, building, sanitation). Of these, the EIS is viewed as the most difficult to obtain and is the focus of our current activities.

The project is located in an area zoned for mining by the BLM Area Resource Management Plan (RMP) and by the State and County planning and zoning agencies. Baseline data have been collected over the past several years and a Plan of Operations (POO) developed, and it has been determined that there are no Threatened and Endangered (T&E) species nor significant archaeological sites on the property. This means that **there is nothing**

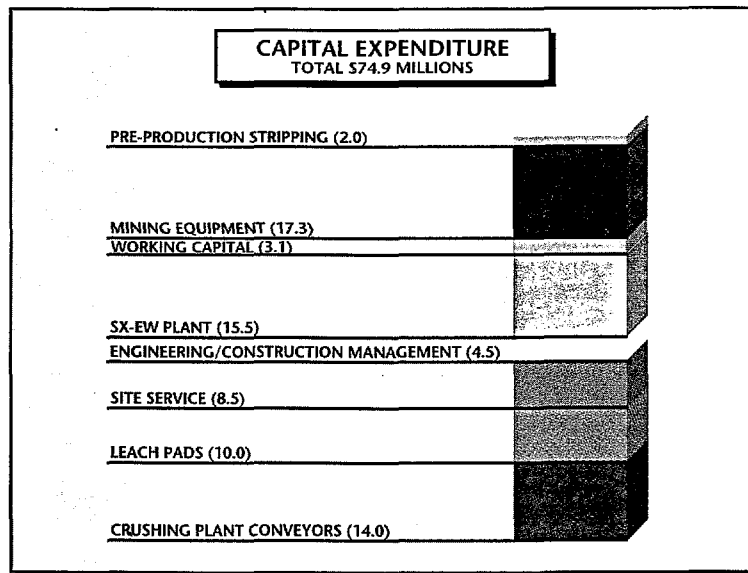
on the property that could preclude development. Over the past few years, AZCO has developed a good working relationship with local and County officials, who actively support development of the mine.

In August, 1991, the POO was filed with the BLM, initiating the formal permitting process. Public presentations of the project and proposed environmental impact and mitigation measures have been very well received. The Safford Area Manager, who is responsible for reviewing and approving the project, has expressed satisfaction with AZCO's efforts. The entire draft EIS has now been reviewed by the BLM and the revised completed document was submitted in March of 1992. The EIS remains on schedule for the third quarter 1992 approval.

As part of the overall approval program, the BLM is coordinating with a number of State and Federal agencies, including the U.S. Bureau of Mines, the U.S.G.S., the ADEQ and the State Historical Preservation Office (SHPO). This works to our advantage, since it brings these agencies into the process ahead of our formal applications to them and should accelerate the processing of our applications. AZCO has been keeping the various agencies involved and informed, with formal applications to the SHPO for clearance and to the ADEQ for an operating permit. Approval is anticipated for late 1992.

FINANCING

A preliminary estimate of the cost of funding the Sanchez Project is approximately \$74.9 million. This is analyzed as follows:

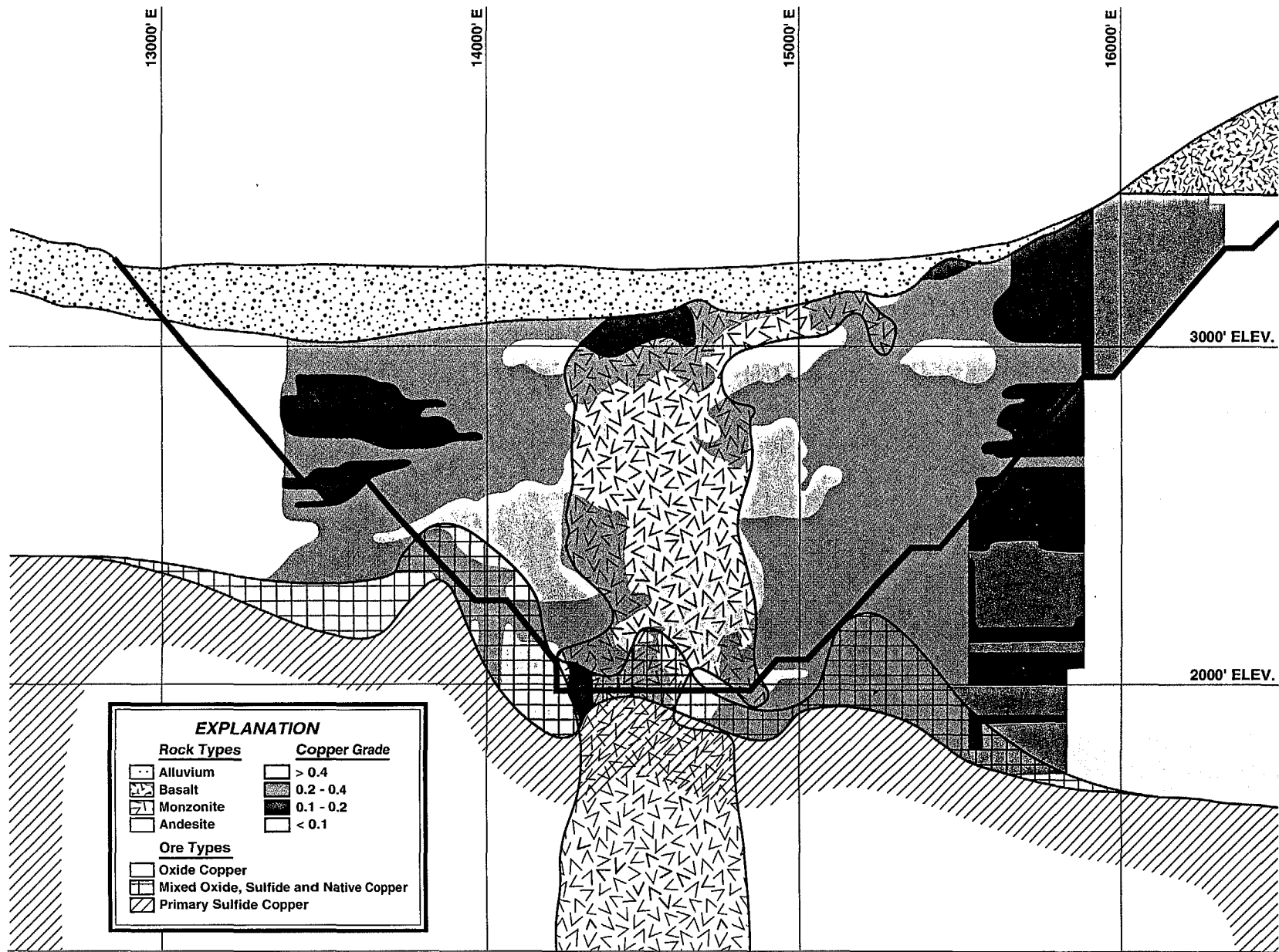


It is the Directors' intention to maximize borrowing according to market conditions and to fund the balance of the Company's funding requirements by way of equity.

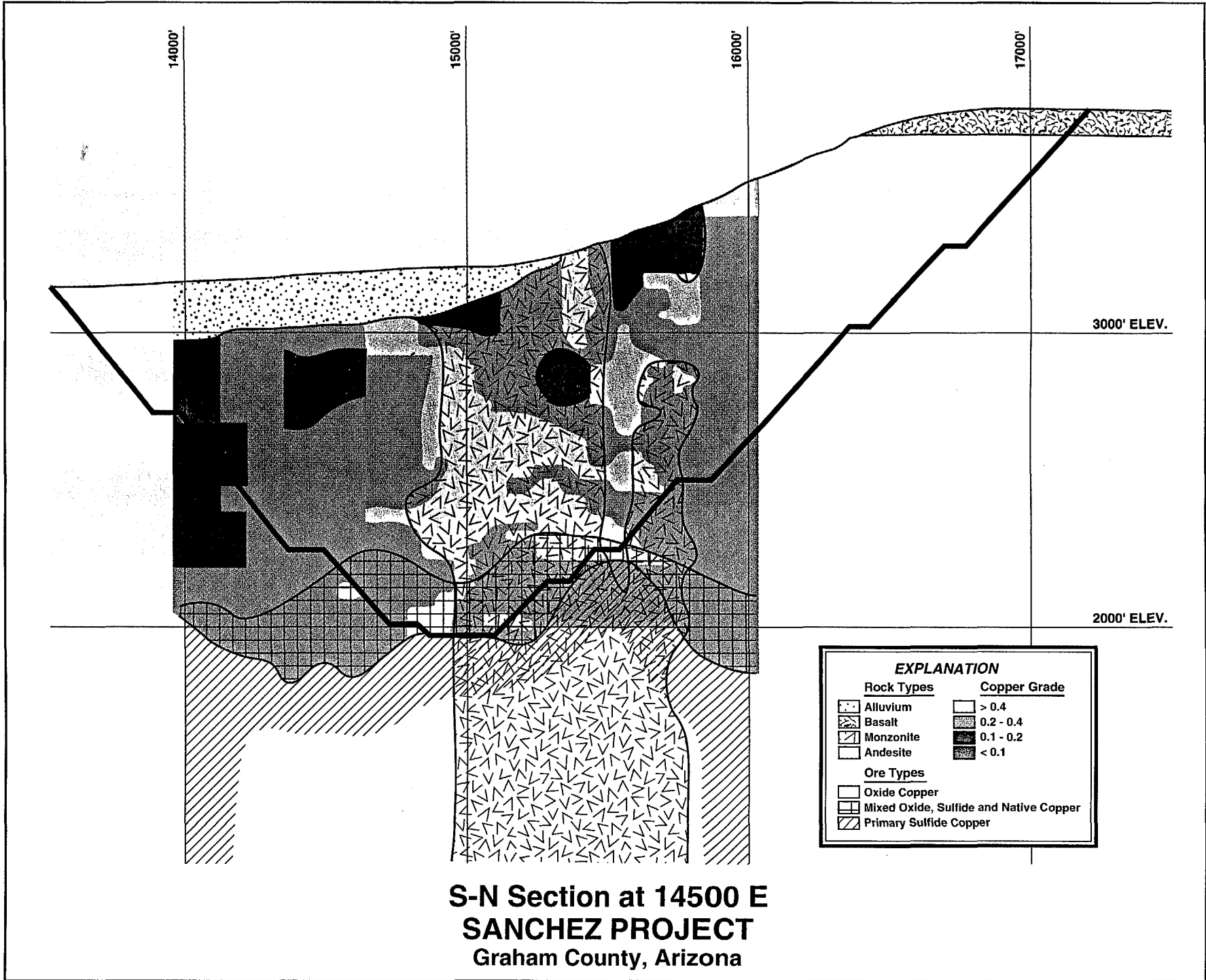
NOTE: In July of 1991 Caterpillar World Trading Corporation ('CATERPILLAR') submitted a proposal July 1991 offering to supply AZCO with an initial fleet of new mining equipment worth approximately US \$15 million, with repayment in cathode copper. This offer will be considered as part of the overall financing strategy.

CAPITAL EXPENDITURE

In April 1992, AZCO raised C\$6.5 million through the sale of shares to continue its program to put the Sanchez project into production at the earliest possible date. This phase of the work includes; environmental and permitting, detail engineering, firm prices for major equipment and construction contracts. Also, funds have been budgeted to carry the Piedras Verdes project to the completion of a feasibility study and to continue with the Suaqui Verde development. In addition, AZCO is in the process of raising approximately US \$75 million to meet the estimated cost to bring the Sanchez mine into production.



W-E Section at 15000 N
SANCHEZ PROJECT
 Graham County, Arizona



**S-N Section at 14500 E
SANCHEZ PROJECT
Graham County, Arizona**

SANCHEZ - ARIZONA COPPER PROJECT

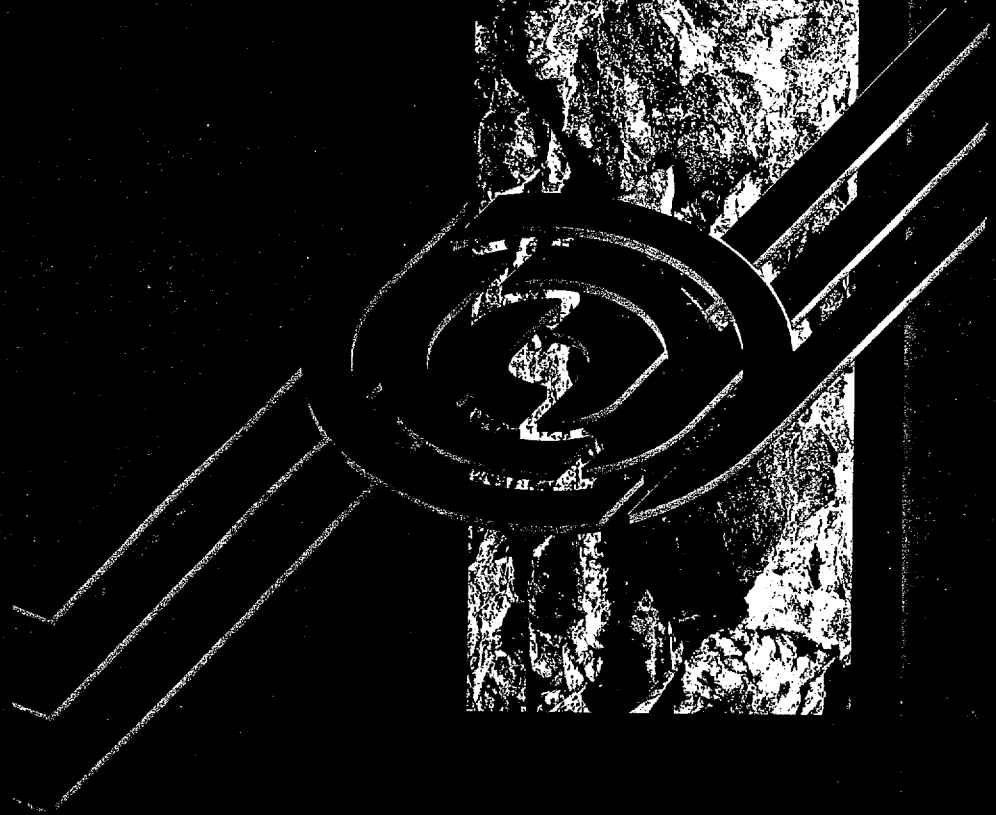
NPV 10 81.290 IRR 45.39%
NPV 15 49.415

BASE CASE: COPPER: 1.00 US\$/Lb
ORE GRADE (Aver) 0.336%
TONS PROCESSED (Aver) 12 MM TONS

CAPITAL EXPEND 74.95 MM US\$
OPERATING COST 49 Cents/Lb
DEBT/EQUITY RATIO 75:25

Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	ACCUM
TOTAL ORE LEACHED - MM TONS		13.048	11.579	10.480	11.053	11.832	11.104	12.000	12.000	12.000	11.254	11.998	12.000	11.928	10.636	10.704	10.256	7.259				191.131
MARGINAL ORE - MM TONS		2.00	1.579	0.480	1.053	1.832	1.104	2.000	2.000	2.000	1.254	1.998	2.000	1.928	0.636	0.704	0.256	0.000				22.824
COPPER GRADE		0.294	0.337	0.398	0.306	0.281	0.337	0.309	0.264	0.271	0.327	0.371	0.314	0.261	0.289	0.327	0.363	0.390				
COPPER RECOVERY		63.25%	69.16%	71.18%	76.34%	75.92%	75.15%	77.57%	81.87%	80.85%	78.14%	76.64%	82.70%	86.63%	85.83%	81.17%	81.58%	99.78%				
PAYABLE COPPER TONS/YEAR		24,265	26,988	29,691	25,820	25,242	28,123	28,762	25,935	26,292	28,757	34,114	31,162	26,971	26,382	28,410	30,370	28,247	7,623	7,143	6,724	497,021
PAYABLE COPPER (MM LBS)		48.530	53.976	59.382	51.640	50.484	56.246	57.524	51.870	52.584	57.514	68.228	62.324	53.942	52.764	56.820	60.740	56.494	15.246	14.286	13.448	994.042
# PRODUCTION FROM NORMAL ORE (MM)		42.630	49.318	57.966	48.534	45.080	52.989	51.624	45.970	46.684	53.815	62.334	56.424	48.254	50.888	54.743	59.985	56.494	15.246	14.286	13.448	926.711
% PROD. FROM MARGINAL ORE (MM)		5.900	4.658	1.416	3.106	5.404	3.257	5.900	5.900	5.900	3.699	5.894	5.900	5.688	1.876	2.077	0.755	0.000	0.000	0.000	0.000	67.331
COPPER PRICE US\$/Lb		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROSS REVENUE		48.530	53.976	59.382	51.640	50.484	56.246	57.524	51.870	52.584	57.514	68.228	62.324	53.942	52.764	56.820	60.740	56.494	15.246	14.286	13.448	994.042
TOTAL OPERATING COST		25.446	25.338	25.884	26.972	27.987	29.518	30.021	31.439	31.619	31.443	32.444	33.614	27.561	24.683	24.995	24.981	18.717	4.738	4.437	4.384	486.221
OPERATING PROFIT		23.084	28.638	33.498	24.668	22.497	26.728	27.503	20.431	20.965	26.071	35.784	28.710	26.381	28.081	31.825	35.759	37.777	10.508	9.849	9.064	507.821
-ROYALTY 2.00%		0.971	1.080	1.188	1.033	0.389	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.660
-STATE TAXES		1.607	1.625	1.940	1.953	1.870	2.121	2.306	1.963	1.947	2.317	3.049	2.373	2.215	2.385	2.720	3.025	3.185	0.932	0.877	0.751	41.162
-FEDERAL TAX		1.073	2.881	3.937	2.280	2.093	3.031	3.106	1.808	1.869	3.388	5.655	4.159	4.020	4.458	6.153	7.327	8.284	2.148	2.174	1.938	71.784
CASH/FLOW BEF CAP COST		19.434	23.053	26.434	19.402	18.144	21.576	22.091	16.659	17.150	20.366	27.079	22.178	20.146	21.238	22.952	25.406	26.308	7.428	6.798	6.375	390.215
-MINE DEVELOPMENT	1.673																					1.673
-PROPERTY DEVELOPMENT																						0.000
-CAPITAL COST 100%	69.289	1.988	0.840	12.740	0.840	3.203	1.800	6.908	2.530	4.224	3.003	9.554	1.008	1.512	0.504	0.504	1.008	0.000	0.000	0.000	0.000	121.455
-CAPITALIZED INTEREST	1.633																					1.633
-WORKING CAPITAL CHANGE		2.000																			-2.000	0.000
+SALVAGE																						0.000
CASH FLOW BEFORE FINANCING	(72.595)	15.446	22.213	13.694	18.562	14.941	19.776	15.183	14.129	12.926	17.363	17.525	21.170	18.634	20.734	22.448	24.398	26.308	7.428	6.798	8.375	265.454
+BANK LOAN DRAWDOWN 75%	54.446																					54.446
+EQUITY FUNDING	0.000																					0.000
-OPTIONAL LOAN DRAWDOWN	0.000																					0.000
-BANK LOAN REPAYMENT																						0.000
-OPTIONAL LOAN REPAYMENT 50%		6.906	9.680	5.711	8.317	6.755	9.375	7.360	0.341	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	54.446
-INTEREST 6%		1.633	2.852	2.272	1.929	1.430	1.025	0.462	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	11.623
NET CASH FLOW	-18.149	6.906	9.680	5.711	8.317	6.755	9.375	7.360	13.768	12.926	17.363	17.525	21.170	18.634	20.734	22.448	24.398	26.308	7.428	6.798	8.375	253.831
DISCOUNTED NCF (5%)	-17.28	-11.57	-2.79	2.14	8.98	14.28	21.27	26.50	35.82	44.16	54.81	65.06	76.85	86.73	97.20	108.00	119.18	130.66	133.74	136.43	139.59	
DISCOUNTED NCF (10%)	-16.50	-11.87	-3.87	0.42	6.10	10.30	15.59	19.36	25.79	31.27	37.96	44.11	50.85	56.25	61.71	67.08	72.39	77.60	78.93	80.04	81.29	
DISCOUNTED NCF (15%)	-15.78	-12.14	-4.82	-1.07	3.69	7.05	11.10	13.87	18.37	22.04	26.33	30.10	34.06	37.08	40.01	42.77	45.38	47.83	48.83	48.90	49.42	

FINANCIAL PROJECTIONS



AMERICAN SMELTING AND REFINING COMPANY
TUCSON ARIZONA

February 5, 1975

FILE MEMORANDUM

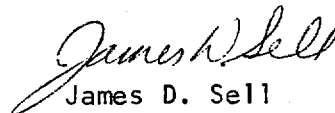
Sanchez Property
Safford District
Graham County, Arizona

Verbal with Jack Eastlick, ICC Chief Geologist, Operating Division,
February 4, 1975:

Eastlick's group has taken the Sanchez Property over for reevaluation. He stated that the early work had an emphasis on oxide copper and little info was developed on the sulfide potential. They believe that horst-graben structures are developed in the deposit which has obscured the geology-alteration-mineralization and therefore full appreciation of the deposit was lacking.

He has apparently drilled at least one hole outside the "old zone" of oxide and beneath a down-faulted oxide occurrence has intercepted 1% copper as sulfide.

He is recommending a strong drilling program for continued reevaluation.


James D. Sell

JDS:lb

ASARCO

JDS

Exploration Department
Southwestern United States Division
James D. Sell
Manager

July 9, 1984

William W. Sorsen, P.E.
770 Sunset Drive
Globe, AZ 85501

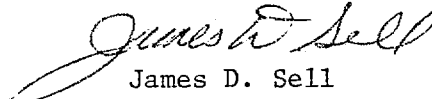
Dear Mr. Sorsen:

Your three-page summary of the Sanchez Copper Property, Graham County, AZ, was received by J. R. Stringham on May 22, 1984.

After review of your material and our files by the Exploration Department, the Mining Department, and the Smelting Department at this office, it is concluded that Asarco would not be interested in the property at this time.

Thank you for bringing it to our attention.

Sincerely,


James D. Sell

JDS/cg

5-28-92

Called - will send draft -
will be in here \approx 2 days
- final ^{drafts} has not come out
yet

W. D. Gay



Gold production up, costs down at Castle Mountain mine



28, 1994

The Northern Miner, V. 80, N. 39, p. 22, Nov. 28, 1994