



CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

The following file is part of the A. F. Budge Mining Ltd. Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

SHARON STEEL CORPORATION
LABORATORY INVESTIGATION
GOLD ROAD MINE

Prepared by The Booth Company, SLC, Utah
October 27, 1981

THE BOOTH COMPANY

~~XX DIVISION OF MCRDC~~

October 26, 1981

Engineering Division:

333 WEST 1410 SOUTH STREET
SALT LAKE CITY, UTAH 84115 • U.S.A.
PHONE 801 487-7845

Gaylon Hansen
Sharon Steel Corporation
Mining Division
University Club Bldg.
Salt Lake City, Utah 84111

Dear Gaylon:

This report describes laboratory work carried out on the below listed Gold Road Mine ore samples.

BOOTH LOT NO.	YOUR DESCRIPTION	HEAD ASSAY	
		Oz/T Au	Oz/T Ag
1897	Grab sample out of bin from Line Road Adit	0.24	0.31
1896	Grab sample of no. 1 shaft crushed spill ore	0.28	0.32
1895	Grab sample of crushed ore from sample splitter hopper	0.18	0.42
1894	Upper tailings	0.08	0.32

TESTING AND RESULTS

This work was a continuation of preliminary studies made on Lot 1892, a composite of two specimen samples, reported to you in our letter of August 28, 1981. That work proved that a grind to all minus 100 mesh did not sufficiently liberate the gold to allow satisfactory recoveries by flotation or cyaniding. This work was therefore all carried out on material stage ground to all minus 200 mesh.

Each equal weight test sample of the mine samples, lots 1897, 1896, & 1895, were stage ground in exactly the same manner. The resulting grinds were in good agreement, averaging 19 % plus 325 mesh with a variance of about 2 %. Lot 1894 (tailings) samples were stage ground with a lower ball mill retention than the others but with the same sample weight and mill feed size yielded a plus 325 mesh weight fraction of 16.5 %.

Each of the three mine samples were treated by flotation and by cyaniding. A screen analysis was made on the flotation tailings. The cyaniding was carried out separately on plus and minus 325 mesh fractions. For lots 1896 and 1895 flotation was repeated with flotation

tails being tabled to simulate a gold trap that would inevitably be part of a flotation mill flowsheet on free gold. The latter was done after observing that the larger pieces of gold were peened during grinding into thin plates that are more difficult to float. This would not likely happen in closed circuit grinding but if so a gold trap such as a jig on the ball mill discharge would entrap the peened gold particles.

Detailed data sheets are appended for the 11 tests that were run. Following is a tabulation of recoveries and extractions:

FLOTATION RECOVERIES, % OF TOTAL Au & Ag

Lot no.	Test no.	Product	Au	Ag
1897	1	Flot. conc't	88.1	52.7
1896	3	Flot. conc't	86.8	43.4
		Table conc't	<u>1.2</u>	<u>1.1</u>
		Total	88.0	44.5
1895	3	Flot. conc't	87.6	33.5
		Table conc't	<u>1.1</u>	<u>2.0</u>
		Total	88.7	35.5
1894	2	Flot. conc't	57.2	16.1

CYANIDE EXTRACTION, % OF TOTAL Au & Ag

Lot no.	Test no.	Au	Ag
1897	2	83.5	48.3
1896	2	95.1	60.2
1895	2	95.5	62.1
1894	3	72.1	14.3

From the above we conclude that gold flotation recovery on mine ore cannot be expected to exceed 88 % on a minus 200 mesh grind. The low flotation recovery on the tailing sample, lot 1894, is not surprising in view of the low head. The low silver flotation recoveries shown indicate, as we previously suggested, that some of the silver might be cerargyrite.

From the above we also conclude that you could expect 95 % cyanide extraction of gold at a minus 200 mesh grind, and a 60 % extraction of the silver.

Note that the cyanide extraction shown for lot 1897 is anomalously low for the mine samples. This sample contained woody material and other

organic contamination which would adsorb soluble gold. Assays were repeated on that test without change. It would not have been worthwhile to repeat the cyanide test.

The lower cyanide extraction on lot 1894 is not surprising in view of the fact that this is a cyanide tailing and that it is low grade.

The lower cyanide silver extractions is another indication of cerargyrite silver or perhaps some argentojarosite. Cerargyrite cyanides much more slowly than gold and argentojarosite will not cyanide.

All flotation concentrates were rougher concentrates only because there was not enough material to go to cleaner flotation. The rougher concentrate grades for the mine samples ranged from 1.75 to 7.3 oz Au/T. We believe they would clean up to 20 oz/ton or better.

Test 1 lot 1894 was a screen analysis showing that this tailing sample was surprisingly coarse, 37.5% plus 100 mesh. The plus 100 mesh contained 56 % of the gold which is a good indication, as we reported previously, of the degree to which the gold is locked in this ore.

Gold assaying was good, particularly in view of the probability of error in sampling materials containing free gold. Gold head assays and calculated heads checked well generally. Silver head assays and calculated heads were not very good and we cannot explain this.

CONCLUSIONS AND RECOMMENDATIONS

Although this ore is a hard ore requiring fine grinding it is a beautiful milling ore in terms of its cleanliness. The absence of argy-laceous or earthy slime producing minerals means excellent settling and filtering qualities that are beneficial to either flotation or cyaniding. This and the lack of impurities means minimal consumption of reagents in flotation or cyaniding.

We hoped that flotation recovery would more nearly approach cyanide extraction. We believe that flotation would represent lower capital cost, lower operating cost, and most certainly less struggle with environmentalists. However, at \$400.00 per oz. gold the 7 % difference in recovery on a 0.2 oz/ton feed would be \$5.60 per ton and look worse at a price above \$400.00 per oz.

Should you desire further work on this ore we recommend that a cyanide extraction-time curve be established. All cyanide work to date was at an arbitrarily chosen 24 hours. This time might be reduced 50 % with the same extraction which means reduced cost of agitation leach tankage and power consumption. We also recommend that settling tests should be run to get a handle on the size of a CCD thickening system for solution recovery.

We have appreciated being called upon to do this work for you.

Respectfully submitted,

THE BOOTH COMPANY

Jay B. Clitheroe

Jay B. Clitheroe

JBC/pj

Grab sample out of bin from Line Road Adit
 ASSAYER Sharon Steel PROJECT GOLD ROAD MINE DATA SHEET 1 Booth Job No. 121 E235

Flotation test and screen analysis of flotation tail. 1000 grams, 10 mesh, Stage grind to 200 mesh.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON							
	TIME MIN.	% SOLIDS	PH	AC-350	Dow-250						
Grind	25-15-15	65									
Conditioner	3	30	8.3	0.10							
Rougher Float	7-8		8.3	0.10 *	0.05						

*Added after 7 min.

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS						PERCENT DISTRIBUTION					
		Oz/T Au	Oz/T Ag					Au	Ag				
Rougher Concentrate	5.77	4.364	2.06					88.13	52.69				
Rougher Tail	94.23	0.036	0.143					11.87	47.31				
Calculated Head	100.00	0.286	0.28					100.00	100.00				
Head Assay		0.24	0.31										

ASSAYER Sharon Steel PROJECT Grab Sample out of bin from Line Road Adit
 GOLD ROAD MINE

No. 2
 DATA SHEET Booth Job No. 121 E235

Screen Analysis of flotation rougher tail, test no. 1

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON							
	TIME MIN.	% SOLIDS	PH								

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS				PERCENT DISTRIBUTION					
		Oz/T Au	Oz/T Ag			Au	Ag				
Plus 325 Mesh	18.57	0.06	0.023			31.32	2.99				
Minus 325 Mesh	81.43	0.03	0.17			68.68	97.01				
Rougher Tail	100.00	0.036	0.143			100.00	100.00				
Rougher Tail Assay		0.025	0.17								

ENGINEERING DIVISION
 RESEARCH DEPARTMENT

THE **BOOTH** COMPANY
 333 WEST 1410 SOUTH ST. • SALT LAKE CITY, UTAH 84115 • U.S.A.

OUR LOT NO. 1897

TEST NO. 1

DATE 8/31/81

BY SM

Grab sample out of bin from Line Road Adit

No. 3

ASSAYER Sharon Steel PROJECT GOLD ROAD MINE

DATA SHEET Booth Job No. 121 E235

Cyanide Test - Stage grind to 200 mesh, Screen on 325 mesh, cyanide fractions separately.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON							
	TIME XXX	% SOLIDS	PH	Lime	NaCN						
Plus 325 mesh fraction											
Bottle	24 hrs.	38.7	11.2	10.0	5.0 lb per ton soln.	NaCN consumed	= 0.57 lb per ton ore.				
Minus 325 mesh fraction											
Bottle	24 hrs.	29.3	10.5	20.0	5.1 lb per ton soln.	NaCN consumed	= 1.26 lb per ton ore.				

METALLURGICAL RESULTS

PRODUCT	% Wt.	Assays		% Distribution		Overall Extraction (-325) + (+325)		
		Oz/T Au	Oz/T Ag	Au	Ag	Au	Ag	
Plus 325 mesh								
Preg. Liquor	61.28	0.084	0.04	73.47	29.68	Preg. liquor	83.53	48.33
Residue	38.72	0.048	0.15	26.53	70.32	Residue	16.47	51.67
Pulp	100.00	0.070	0.083	100.00	100.00	Head	100.00	100.00
Calc. plus 325		0.18	0.22					
Minus 325 Mesh								
Preg liquor	70.74	0.063	0.037	85.90	54.39			
Residue	29.26	0.025	0.075	14.10	45.61			
Pulp	100.00	0.052	0.048	100.00	100.00			
Calc. minus 325		0.18	0.164					
Plus 325	19.12	0.18	0.22	19.09	24.53			
Minus 325	80.88	0.18	0.16	80.91	75.47			
Calc. Head	100.00	0.18	0.17	100.00	100.00			
Head Assay		0.24	0.31					

Grab Sample of No. 1 shaft crushed spill ore

No. 4

ASSAYER Sharon Steel PROJECT GOLD ROAD MINE

DATA SHEET

Booth job No. 121 E235

Screen analysis of flotation rougher tail, test no. 1

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON											
	TIME MIN.	% SOLIDS	PH												

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS						PERCENT DISTRIBUTION					
		Oz/T Au	Oz/T Ag					Au	Ag				
Plus 325 mesh	19.54	0.04	0.24					8.85	17.23				
Minus 325 mesh	80.46	0.10	0.28					91.15	82.77				
Rougher Tail, Calc.	100.00	0.088	0.272					100.00	100.00				
Rougher tail assay		Not assayed											

ENGINEERING DIVISION
RESEARCH DEPARTMENT

THE **BOOTH** COMPANY
333 WEST 1410 SOUTH ST. - SALT LAKE CITY, UTAH 84115 - U.S.A.

OUR LOT NO. 1896
DATE 9/11/81

TEST NO. 1
BY CW

Grab sample of no. 1 shaft crushed spill ore

No. 5

ASSAYER Sharon Steel PROJECT GOLD ROAD MINE

DATA SHEET Booth job no. 121 E235

Flotation test and screen analysis of flotation tail. 100 grams, 10 mesh, stage grind to 200 mesh.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON							
	TIME MIN.	% SOLIDS	PH	AC-350	Dow-250						
Grind	25-15-15										
Conditioner	3	30	8.3	0.1							
Rougher Float	7 - 8	30	8.3	0.1 *	0.06						

* Added after 7 min.

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS						PERCENT DISTRIBUTION					
		Oz/T Au	Oz/T Ag					Au	Ag				
Rougher Concentrate	3.77	7.29	3.33					76.45	32.42				
Rougher Tail	96.23	0.088	0.272					23.55	67.58				
Calculated Head	100.00	0.36	0.39					100.00	100.00				
Head Assay		0.28	0.32										

ASSAYER Sharon Steel PROJECT

Grab sample of no. 1 shaft crushed spill ore
GOLD ROAD MINE

DATA SHEET

No. 6

Booth job no. 121 E235

Cyanide Test - Stage grind to 200 mesh, screen on 325 mesh, cyanide fractions separately.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON							
	TIME XXX	% SOLIDS	PH	Lime	NaCN						
Plus 325 mesh fraction											
Bottle	24 hrs.	37.5	11.3	10.0	5.0 lb	per ton soln. NaCN consumed = 0.32 lb per ton ore.					
Minus 325 mesh fraction											
Bottle	24 hrs.	30.0	10.7	19.5	5.2 lb	per ton soln. NaCN consumed = 2.36 lb per ton ore.					

METALLURGICAL RESULTS

PRODUCT	% Wt.	Assays		% Distribution		Overall Extraction (-325) + (+325)		
		Oz/T Au	Oz/T Ag	Au	Ag		Au	Ag
Plus 325 mesh								
Preg. liquor	62.55	0.155	0.095	89.62	43.04	Preg. liquor	95.12	60.24
Residue	37.45	0.03	0.21	10.38	56.96	Residue	4.88	39.76
Pulp	100.00	0.11	0.14	100.00	100.00	Head	100.00	100.00
Calc. plus 325		0.294	0.374					
Minus 325 mesh								
Preg. liquor	70.00	0.115	0.091	96.41	64.87			
Residue	30.00	0.01	0.115	3.59	35.13			
Pulp	100.00	0.083	0.098	100.00	100.00			
Calc. minus 325		0.278	0.31					
Plus 325	18.26	0.294	0.374	19.09	21.21			
Minus 325	81.84	0.278	0.31	80.91	78.79			
Calc. Head	100.00	0.28	0.32	100.00	100.00			
Head Assay	"	0.28	0.32					

ENGINEERING DIVISION
RESEARCH DEPARTMENT

THE **BOOTH** COMPANY

333 WEST 1410 SOUTH ST. · SALT LAKE CITY, UTAH 84115 · U.S.A.

OUR LOT NO. 1896

TEST NO. 2

DATE 9/14/81

BY CW

ASSAYER Sharon Steel PROJECT

Grab sample of no. 1 shaft crushed spill ore
GOLD ROAD MINE

No. 7
Booth job no. 121 E235
DATA SHEET

Two 1000 gram batches for flotation, combined flotation tails for table test. Batches stage ground to 200 mesh.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON							
	TIME MIN.	% SOLIDS	PH	AC-350	Dow-250						
Grind	25-15-15										
Conditioner	3	30	8.3	0.10							
Rougher Float	7-8	30	8.3	0.10 *	0.05						

* Added after 7 min.

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS				PERCENT DISTRIBUTION					
		Oz/T Au	Oz/T Ag			Au	Ag				
2 Rougher conc't	5.06	5.37	2.31			86.83	43.36				
3 Rougher tail	94.94	0.04	0.16			13.17	56.64				
1 Calc. Head	100.00	0.31	0.27			100.00	100.00				
Head Assay		0.28	0.32								
4 Table conc't	1.37	0.277	0.22			1.22	1.11				
5 Table tail	93.57	0.04	0.16			11.95	55.53				
3 Rougher tail	94.94	0.04	0.16			13.17	56.64				
2 + 4	6.43	4.28	1.86			88.05	44.47				

ENGINEERING DIVISION
RESEARCH DEPARTMENT

THE **BOOTH** COMPANY
333 WEST 1410 SOUTH ST. • SALT LAKE CITY, UTAH 84115 • U.S.A.

OUR LOT NO. 1896 TEST NO. 3

DATE 9/24/81 BY SM

Grab sample of crushed ore from sample
splitter hopper, shaft no. 1

No. 8

ASSAYER Sharon Steel PROJECT GOLD ROAD MINE

DATA SHEET Booth job no. 121 E235.

Flotation test and screen analysis of flotation tail. 100 grams, 10 mesh, stage grind to 200 mesh.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON							
	TIME MIN.	% SOLIDS	PH	AC-350	Dow-250						
Grind	25-15-15	65									
Conditioner	3	30	8.1	0.10							
Rougher Float	7-8	30	8.1	0.10 *	0.06						

* Added after 7 min.

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS				PERCENT DISTRIBUTION					
		Oz/T Au	Oz/T Ag			Au	Ag				
Rougher Concentrate	4.65	3.33	1.61			68.41	37.65				
Rougher Tail	95.35	0.075	0.13			31.59	62.35				
Calculated Head	100.00	0.226	0.199			100.00	100.00				
Head Assay		0.18	0.42								

Grab sample of crushed ore from sample
splitter hopper, shaft no. 1

No. 9

DATA SHEET

Booth job No. 121 E235

ASSAYER Sharon Steel PROJECT

GOLD ROAD MINE

Screen analysis of flotation rougher tail, test no.1

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON								
	TIME MIN.	% SOLIDS	PH									

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS						PERCENT DISTRIBUTION					
		Oz/T Au	Oz/T Ag					Au	Ag				
Plus 325 mesh	19.85	0.068	0.132					19.39	20.09				
Minus 325 mesh	80.15	0.07	0.13					80.61	79.91				
Rougher Tail Calc.	100.00	0.075	0.13					100.00	100.00				
Rougher tail assay		Not assayed											

Cyanide test - Stage grind to 200 mesh, screen on 325 mesh, cyanide fractions separately.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON								
	TIME XXX	% SOLIDS	PH	Lime	NaCN							
Plus 325 mesh fraction												
Bottle	24 hrs.	33.4	11.3	11.8	4.6 lb per ton solution. NaCN consumed = 0.29 lb per ton ore.							
Minus 325 mesh fraction												
Bottle	24 hrs.	30.74	10.9	21.0	5.2 lb. per ton solution. NaCN Consumed = 5.2 lb per ton ore.							

METALLURGICAL RESULTS

PRODUCT	% Wt.	Assays		% Distribution		Overall Extraction (-325) + (+325)		
		Oz/T Au	Oz/T Ag	Au	Ag	Au	Ag	
Plus 325 mesh								
Preg. Liquor	66.65	0.096	0.044	90.52	63.70	Preg. Liquor	95.49	62.11
Residue	33.35	0.02	0.05	9.48	36.30	Residue	4.51	37.89
Pulp	100.00	0.07	0.046	100.00	100.00	Head	100.00	100.00
Calc. plus 325		0.21	0.14					
Minus 325 mesh								
Preg. Liquor	69.26	0.064	0.036	96.72	61.79			
Residue	30.74	0.005	0.05	3.28	38.21			
Pulp	100.00	0.05	0.04	100.00	100.00			
Calc. minus 325		0.16	0.13					
Plus 325	15.85	0.21	0.14	19.83	16.87			
Minus 325	84.15	0.16	0.13	80.17	83.13			
Calc. Head		0.17	0.13					
Head Assay	"	0.18	0.12					

THE **BOOTH** COMPANY

OUR LOT NO. 1895

TEST NO. 2

DATE 9/18/81

BY CW

Grab sample of crushed ore from sample
splitter hopper, shaft no. 1
GOLD ROAD MINE

No. 11
Booth job no. 121 E235

ASSAYER Sharon Steel PROJECT

DATA SHEET

Two 1000 gram batches for flotation, combined flotation tails for table test. Batches stage ground to 200 mesh.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON							
	TIME MIN.	% SOLIDS	PH	AC-350	Dow-250						
Grind	25-15-15	65									
Conditioner	3	30		0.10							
Rougher float	7-8	30		0.10 *	0.06						

* Added after 7 min.

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS						PERCENT DISTRIBUTION					
		Oz/T Au	Oz/T Ag					Au	Ag				
2 Rougher conc't	9.82	1.75	0.89					87.57	33.47				
3 Rougher tail	90.18	0.027	0.193					12.43	66.53				
1 Calc. Head	100.00	0.196	0.26					100.00	100.00				
Head Assay		0.18	0.42										
4 Table conc't	1.52	0.145	0.34					1.12	1.99				
5 Table tail	88.66	0.025	0.19					11.31	64.54				
3 Rougher tail	90.18	0.027	0.193					12.43	66.53				
2 + 4	11.34	1.54	0.82					88.69	35.46				

ENGINEERING DIVISION
RESEARCH DEPARTMENT

THE **BOOTH** COMPANY

333 WEST 1410 SOUTH ST. • SALT LAKE CITY, UTAH 84115 • U.S.A.

OUR LOT NO. 1895

TEST NO. 3

DATE 10/13/81

BY SM

Screen analysis with assays. 1000 grams as received, agitate at 30 % solids to break up lumps then screen.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON							
	TIME MIN.	% SOLIDS	PH								

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS				PERCENT DISTRIBUTION					
		Oz/T Au	Oz/T Ag			Au	Ag				
Plus 100 mesh	37.44	0.12	0.48			56.34	49.13				
100 x 200 mesh	15.28	0.05	0.37			9.54	15.45				
200 x 325 mesh	10.03	0.03	0.40			3.76	10.97				
Minus 325	37.25	0.065	0.24			30.36	24.45				
Calc. Head	100.00	0.08	0.37			100.00	100.00				
Head Assay		0.08	0.32								

ASSAYER Sharon

PROJECT Upper Tailings
GOLD ROAD MINE

DATA SHEET

No. 13
Booth job no. 121 E235

Flotation test. 1000 grams as received, stage grind to 200 mesh.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON								
	TIME MIN.	% SOLIDS	PH	AC-350	Dow-250							
Grind	15-12-6	65										
Conditioner	3	30	8.3	0.10								
Rougher float	7-8	30	8.3	0.10*	0.05							

* Added after 7 min.

METALLURGICAL RESULTS

PRODUCT	% WEIGHT	ASSAYS						PERCENT DISTRIBUTION					
		Oz/T Au	Oz/T Ag					Au	Ag				
Rougher conc't	3.93	0.98	0.89					57.21	16.09				
Rougher tail	96.07	0.03	0.19					42.79	83.91				
Calc. Head	100.00	0.07	0.22					100.00	100.00				
Head Assay		0.08	0.32										

ENGINEERING DIVISION
RESEARCH DEPARTMENT

THE **BOOTH** COMPANY

333 WEST 1410 SOUTH ST. - SALT LAKE CITY, UTAH 84115 - U.S.A.

OUR LOT NO. 1894

TEST NO. 2

DATE 9/25/81

BY SM

Cyanide Test - Stage grind to 200 mesh, Screen on 325 mesh, cyanide fractions separately.

POINT OF ADDITION	CONDITIONS			REAGENTS POUNDS PER TON							
	TIME XXX	% SOLIDS	PH	Lime	NaCN						
Plus 325 mesh fraction											
Bottle	24 hrs.	35.3	11.6	11.5	5.0 lb per ton solution.	NaCN Consumed = 0.3 lb per ton ore.					
Minus 325 mesh fraction											
Bottle	24 hrs.	37.8	10.7	22.5	5.0 lb per ton solution.	NaCN Consumed = 1.6 lb per ton ore.					

METALLURGICAL RESULTS

PRODUCT	% Wt.	Assays		% Distribution		Overall Extraction (-325) + (+325)		
		Oz/T Au	Oz/T Ag	Au	Ag		Au	Ag
Plus 325 mesh								
Preg. Liquor	64.74	0.064	0.106	85.46	31.67	Preg. Liquor	72.07	14.28
Residue	35.26	0.02	0.42	14.54	68.33	Residue	27.93	85.72
Pulp	100.00	0.05	0.22	100.00	100.00	Head	100.00	100.00
Calc. plus 325		0.14	0.62					
Minus 325 mesh								
Preg Liquor	62.23	0.007	0.008	53.56	5.42			
Residue	37.77	0.01	0.23	46.44	94.58			
Pulp	100.00	0.02	0.092	100.00	100.00			
Calc. minus 325		0.02	0.24					
Plus 325	16.49	0.14	0.62	58.04	33.77			
Minus 325	83.51	0.02	0.24	41.96	66.23			
Calc. Head	100.00	0.04	0.30	100.00	100.00			
Head Assay	"	0.08	0.32					

SHARONSTEEL • Mining Division

AN **NVE** COMPANY

SHARON STEEL CORPORATION

19TH FLOOR UNIVERSITY CLUB BLDG.
SALT LAKE CITY, UTAH 84111

TELEPHONE (801) 355-5301

FOR INTER-OFFICE COMMUNICATION

May 18, 1982

To: Mr. E. Peter Matthies, Vice President
and General Manager

From: William T. Worthington, Chief Geologist

Exploration Proposal

Gold Road Project

FOR INTER-OFFICE COMMUNICATION

May 18, 1982

Gold Road Project
Proposed Exploration Program, 1982

Abstract

The Gold Road Project is located 20 miles west of Kingman, Arizona and consists of 18 patented lode claims, 21 unpatented lode claims, 4 patented millsites, 7 unpatented millsites and 4 leased unpatented lode claims.

The annual direct holding cost is \$3,000.

Past production records indicate a total production, through various operating periods, of 1,691,000 tons at 0.34 ounces of gold per ton along with minor silver values.

The Gold Road Mine was shut down by government order in 1942 and was subsequently stripped of all equipment and allowed to flood. The mine is in a deteriorated condition with considerable caving of the workings having occurred.

Estimated probable ore reserves are 556,000 tons at 0.24 ounces gold and 0.28 ounces silver per ton. Inferred reserves are estimated at 503,000 tons approaching the same grade.

An exploration drilling program of a total of 6 holes is recommended for this project at a total cost of approximately \$375,000. This drilling program will evaluate the probability of possible extension to known reserves along the southern strike and down the dip of the vein.

This project is considered to have good prospect potential for the discovery of additional reserves.

A leased property, four unpatented claims totaling 61 acres owned by Gold Road Red Top Mining Company, is recommended for purchase. This property is estimated to contain a considerable tonnage of inferred ore and has substantial potential for additional discoveries but is made unattractive by a high royalty commitment.

The purchase price of the Red Top property is estimated at \$80,000.

The total cost of this proposed program is projected at \$455,000.

Pertinent maps relative to the project are included herewith.

SHARONSTEEL • Mining Division

AN **NVE** COMPANY

SHARON STEEL CORPORATION

19TH FLOOR UNIVERSITY CLUB BLDG.
SALT LAKE CITY, UTAH 84111

TELEPHONE (801) 355-5301

FOR INTER-OFFICE COMMUNICATION

May 18, 1982

Gold Road Mine Project Exploration Proposal, 1982

Location - Logistics

This project is located in Mohave County, Arizona, in Township 19 North, Ranges 19 and 20 West; San Francisco Mining District, near the old mining town of Oatman. The project is 18 miles east of the Colorado River and 20 miles west of the small city of Kingman, the principal population, transportation and supply center for this northwest area of Arizona.

The project is readily accessible by paved road, and power, natural gas and telephone lines cross the property. Water for mining and milling purposes, although barely adequate in the past, is available from a number of scattered, small, natural springs in the area.

Property

The property owned by Sharon is composed of 18 patented claims (253 acres); 21 unpatented claims (431 acres); 4 patented millsites (18 acres) and 7 unpatented millsites (14 acres). Sharon leases four unpatented claims (61 acres), known as the Red Top Group, under an agreement extending until the year 2002.

These claims form a contiguous, elongate group which is four miles long in a northerly-southerly direction and one-half mile wide at its maximum.

The annual, minimum direct, holding costs total \$3,000.

Historical Background

The Gold Road Mine was discovered in 1903 and was operated by a French Company until 1911 when it was acquired by the U. S. Smelting Company. U. S. Smelting operated the mine during the periods 1911 through 1917; 1924 through 1928 and 1935 through 1942 when it was closed by government order L-208 which closed most domestic gold mines.

All of the surface mine and the milling plant were subsequently removed with much of the equipment being transferred to Company operations in New Mexico. The property has remained inactive since 1942.

Property Condition

Maintenance of mine workings was suspended after closure in 1942 and all surface and underground facilities and equipment were stripped and removed by 1951. As a consequence of this abandonment, the surface and underground workings are in a deteriorated, overall poor condition with considerable caving of the workings having occurred. The mine is inaccessible and the workings have flooded with approximately 62 million gallons of water which stands at about the 300 foot level.

Past Production

Total production through 1942 is estimated at 1,691,000 tons of ore, most of which was milled in the facilities on site. The production was as follows: French Company - 1903 to 1911, 327,000 tons at an estimated grade of 0.60 ounces gold per ton; U. S. Company - 1911 through 1928, 564,000 tons at 0.33 ounces gold and 0.35 ounces silver per ton; U. S. Company 1935 through 1942, 800,000 tons at 0.24 ounces gold and 0.19 ounces silver per ton.

These ore tonnages and grades represent averaged, mine-run production and reflect a historically averaged mine dilution factor of 25 to 30%, a factor inherent to the mining of this type of ore occurrence.

The principal mining method employed was shrink-fill stoping which was particularly suitable to the near vertical attitude of the average 4.5 foot wide, fissure-vein ore occurrence and the host wall rock conditions.

During the later production period 75,000 to 100,000 tons of earlier produced mill tailings were reprocessed at intervals in order to maintain a full mill-circuit load due to a deficit of mine ore production. These old tailings contained approximately .08 ounces gold per ton, which could be partially recovered with the later, improved, milling process.

Mined ore production ranged from an early low of 150 tons per day to a later high of about 400 tons per day. The milling facilities through these periods were rated at approximately the mine production tonnage and were of the cyanide, agitated-vat-leach process. Gold recovery ranged from a low of 75% to a high of 92%; the silver ranged from 40% to 70%. The higher ranges of recovery were achieved during the later operating periods.

Ore production from the other principal mines of this district, the Tom Reed and United Eastern, up to 1942, amounted to 1,900,000 tons at an average mine diluted grade of 0.59 ounces gold per ton. This ore was of the same type as that produced from the Gold Road Mine and was milled by the cyanide leach process at their facilities.

Present Ore Reserves

At the time of the mine operations closure in 1942 the ore reserves, as estimated by the U. S. Company, were listed at 556,000 tons of proven ore at an average grade of 0.24 ounces gold and 0.28 ounces silver per ton. In addition, there has been estimated to be 503,000 tons of possible ore approaching

the same grade. The estimates include a mine-run dilution factor of 25%.

The, so called, proven reserves are not a certainty in that the majority of the ore blocks are exposed on one or two sides and the minority on three sides. The ore would, therefore, be more properly designated as being in the probable class.

The possible ore reserves listed above are based upon blocks exposed only partially on one side, on blocks projected from mine workings and on two widely spaced drill holes which indicate a significant diminution of the tonnage and grade. The possible ore should, therefore, more accurately be designated as being in the, somewhat lower, inferred reserve class.

The probable ore reserve blocks are scattered throughout the entire 6000 foot length by 900 foot depth of the mined and developed area of the vein. The minability of many of these ore blocks is uncertain as many are small and of difficult access, while others appear to have been left to the last as mine workings support.

The inferred ore reserves area, as projected in 1942 by the then available evidence, is along the strike of the vein in a southerly direction for a total distance of up to 1500 feet from the nearest mine workings and up to 1000 feet of vein dip interval. This projection places about half of the inferred ore potential into the adjacent Red Top property which is under lease to Sharon. Of lesser inferred ore potential is the down-dip projected extension of the ore bodies beneath the previously mined deepest levels of the mine.

There are approximately 1,000,000 tons of mill tailings on the Gold Road property. In the 1930's these tailings were thoroughly sampled by drilling, with the findings that about 120,000 tons, the French Company tailings, averaged about .08 ounces gold per ton. The remaining tailings contain .03 ounces of gold or less per ton. As previously stated, up to 100,000 tons of the French tailings were reworked during the last period of operation.

Geology - Topography

The Gold Road Mine is located in the southern portion of the Black Mountains which consist of ruggedly dissected, gently eastward dipping, layered blocks of Tertiary, volcanic flow rock units which overlie a basement complex of Pre-Cambrian gneiss and granite. The topography is rugged to moderate with elevations ranging from 2,000 to 4,200 feet. The climate is arid with moderate rainfall; hot summer and cool winter temperatures.

The principal rock formations in ascending order are the gneiss-granite basement, overlain by a thick series of trachytes, andesite, latite, tuffs, rhyolite and basalt. Intrusive into parts of these are monzonitic, granitic and rhyolitic porphyrys. The most important ore bearing host formation of these rock units is andesite. These formations are cut by numerous faults of prevailingly northwesterly strike and northeastward dip.

The Gold Road vein is a complex normal fault fissure system which strikes northwesterly and dips at about 80 degrees to the northeast in the upper levels of the mine and decreases to a 60 degree dip in the lowest levels. The vein is a compound stringer lode throughout much of its extent, which consists of two or more veins separated by wall rock with stringer veinlets in between. Much of the vein is lenticular in all dimensions which may pinch and swell from 1 foot to 25 feet, and in places the vein zone may reach 80 foot widths but only a small portion would contain ore mineralization. The average width as mined is 4.7 feet.

The ore mineralization is of the epithermal type; that is, formed at a depth within 3000 feet of the surface by ascending, circulating mineralized solutions in the temperature range of 50 to 200 degrees Centigrade. The vein filling is mineralogically of simple character, consisting mainly of quartz, calcite and adularia with associated free gold in the ore bodies. Either quartz or calcite may predominate and vary widely throughout the vein. Ore grade mineralization usually occurs where both minerals are present. Areas of the vein that consist entirely of either quartz or calcite are generally low grade or barren.

The metallic minerals consist of free gold and rare pyrite and chalcopryrite. The gold is characteristically fine grained and generally can be seen only in rich ore. The vein appears banded in cross section, showing that the minerals were deposited in successive layers from the walls to the middle of the fissure during five, somewhat, distinct stages. The gold content increased with each stage from an average of 0.06 ounces per ton during the first stage to 1.0 ounces or above during the final stage.

The ore bodies of the Gold Road and other mines in the district are characteristically lenticular in plan and irregular in longitudinal section. The bodies are generally confined to a fairly definite zone of vertical range, the parts of the vein above and, especially, below this zone being barren. Very little ore has been found below a depth of 1000 feet.

This vertical range ore zoning observation has been tested to a high degree during the past several years by deep exploration drilling on other principal mines in the district and has proven to be substantially correct, although exceptions may exist. This zoning remains to be tested at the Gold Road Mine, but indications are that it will conform to the district type ore occurrence of a series of ore bodies "bunched" along the vein strike at close spaced intervals and all occurring within a general vertical range.

Exploration To Date

The only exploration work of significance since the mine ceased operations has been the core drilling of two holes from the surface to intercept the area of inferred ore reserves along the south strike of the vein within the Red Top property. These two holes were spaced 600 feet apart along the vein strike and at the same intercept level, approximately the 700 foot level of the mine workings. The GR-1 hole was drilled in 1973

and penetrated 4 feet of vein which assayed 0.112 ounces of gold per ton; GR-2 was drilled in 1974 and penetrated 2.1 feet of vein which averaged 0.53 ounces of gold per ton. At a minimum vein mining width of 5 feet, with barren wall rock, the average grade of the vein intercepts would be 0.10 ounces of gold for GR-1 and 0.28 ounces of gold for hole GR-2. As with the other ore reserves, an average 25%, as mined, dilution factor would apply to the reduction of these grades.

As previously stated, these two drill holes have tended to diminish the tonnage and grade estimate in the area of inferred ore along the south strike of the vein.

Current geologic data is sufficient and reliable enough to justify proceeding with an initial exploration drilling phase. Concurrent with this other exploration work, such as geologic mapping, interpretive geologic-mineralogic studies, geochemical and geophysical surveys, should be continued and extended.

Potential Ore Reserves

Based upon studies of the Gold Road Mine data, recent geologic studies and exploration drilling of others in the same district, and on numerous published geologic study reports, a reasonably attractive exploration potential is apparent for the discovery of additional ore reserves.

The principal area of recognized potential lies along the projected extension of the vein beyond the southernmost limits of existing mine workings. This extension has been proven to exist for 1500 feet by the previously described GR-1 and GR-2 drill holes. Beyond this proven extension, the vein is projected for a possible strike distance of about 9,000 feet. Although a great deal of potential vein area remains to be tested to the south, the strength of the mineralization does appear to be diminishing in this direction and only a small fraction of this distance may have good ore potential. This southerly vein mineralization projection has a downward plunge (rake) of 10-25 degrees, this being due to a volcanic rock unit identified as the "Red Sill," which appears to have dammed the upward extension of the vein mineralization. Because of the plunge, potential areas of mineralization are progressively deeper with increasing distance to the south and thus may be subject to "bottoming out," due to the epithermal vertical range zoning.

Proposed Exploration

Although a significant mineral reserve is indicated to be present in the Gold Road Mine, it is insufficient to justify the high cost of re-opening the mine and does not represent a profit potential at existing prices and production costs. It is, therefore, necessary to explore for additional ore reserves in the mine area that would improve the potential. Targets of good merit are present and are herewith recommended to be tested by a surface diamond drilling program.

It is recommended that a diamond drilling program consisting of about six drill holes be conducted on the property. The holes would be

drilled at various angles to explore for additional ore along the southerly projection of the vein and to test for extensions at depth below previously indicated ore zones. The total planned footage to be drilled in this program approximates 12,500 feet and is expected to cost a total of \$375,000 under a drilling contract agreement. The operations would be conducted with one drill rig operating three shifts per day and would require six to seven months for completion.

This drilling approach, if successful in its objective, would then justify and require that the mine be reopened for further exploration and evaluation. A successful program should consist of five or six ore holes indicating a minimum recoverable tonnage potential of 1.5 to 2 million tons of ore at a significantly improved grade and/or average ore width.

Preliminary estimates have been made of the work required to reopen the southern end of the mine to the extent of providing access for underground exploration should the drilling warrant it. Such a program would cost 2.0 to 2.5 million dollars and would require approximately 18 months to complete. This work would include rehabilitation of the No. 3 shaft, dewatering of the mine to the 700 level and rehabilitation of the 700 level and Line Road Tunnel from No. 3 shaft to their southern limits. It would not include any exploration work, diamond drilling, opening of other mine levels or the northern end of the mine, new development work, permanent surface facilities, a mill, tailings pond or other such projects. It would provide access for underground exploration only.

In the event it should prove feasible to place the mine into production the full cost of a 500 ton per day operation, including exploration, reopening, development, surface plant, mill and tailings pond is estimated at from 15 to 20 million dollars. Time required to complete such a project from commencement of drilling to initial production is estimated at from 3 to 4 years.

It is, of course, much more likely that the proposed drilling will provide less conclusive results than indicated above. In this event, depending upon the kind of results forthcoming from the initial drilling, a follow-up exploration program, probably consisting of additional surface diamond drilling, will be recommended.

Property

The southerly extension of the Gold Road vein, where diamond drill holes GR-1 and GR-2 have exposed low grade gold ore and where much of the exploration will be conducted for possible ore extensions, is located on the leased Gold Road Red Top Mining Company property. This property consists of four unpatented lode mining claims totaling approximately 61 acres. Sharon has fully complied with a work commitment agreement and is now only obligated to perform annual assessment work on the property. The lease, with extensions, can be continued in effect into the year 2002.

A significant portion of the Gold Road inferred ore reserve and the major portion of the potential for vein extension and new discovery

are located within this property. Several of the proposed exploration holes will be drilled to assess this potential.

The lease contains a sliding royalty scale that provides for payment of 3% of the gross value of ore on ore valued at \$15.01 to \$20.00 per ton and increasing 1% in royalty with each \$5.00 increase in value per ton to a maximum 20% royalty on gross value of ore with a gross value of \$100.00 per ton and over. The gross value is determined by first computing the gross weight of each metal by multiplying the dry weight in short tons of each lot of such ore by the weight of each metal contained in an average ton of such lot and then multiplying the weight of such metal so computed by the average price prevailing during the calendar month in which the ore is sampled at the receiving mill, smelter or other plant.

This royalty is extraordinarily high, especially when it is remembered that it is paid on gross value of contained metal and not on recovered metal. The price of gold would have made a major upturn before Red Top ore would even approach being profitable under this schedule.

During negotiations with officials of the Gold Road Red Top Mining Company it has been indicated that the property could be purchased for \$80,000. This purchase is recommended and must be made if the Gold Road Mine is to have any chance of being economically viable.

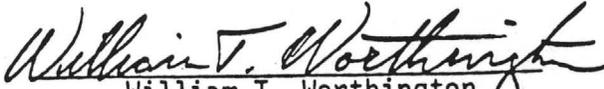
Cost

The total cost of this program, as here presented, is \$455,000.

Maps

Accompanying this Report-Proposal are the following described maps:

- Plate 1 - Gold Road Project; geographic location.
- Plate 2 - Gold Road Project; geographic location.
- Plate 3 - Gold Road Project; property, topography.
- Plate 4 - Gold Road Project; old photographs.
- Plate 5 - Gold Road Project; long section, previous mining.
- Plate 6 - Gold Road Project; long section, ore reserves, proposed drill holes.
- Plate 7 - Gold Road Project; section through No. 3 shaft.
- Plate 8 - Gold Road Project; district geology, topography.
- Plate 9 - Gold Road Project; geologic section, vein.
- Plate 10- Gold Road Project; property, topography, vein trace.


William T. Worthington

WTW:ms

APPROVED:

Gaylon W. Hansen
Manager Exploration

SHARONSTEEL • Mining Division

AN **NVF** COMPANY

SHARON STEEL CORPORATION

19TH FLOOR UNIVERSITY CLUB BLDG.
SALT LAKE CITY, UTAH 84111

TELEPHONE (801) 355-5301

FOR INTER-OFFICE COMMUNICATION

May 18, 1982

To: Mr. E. Peter Matthies, Vice President
and General Manager

From: William T. Worthington, Chief Geologist

Exploration Proposal

Gold Road Project

FOR INTER-OFFICE COMMUNICATION

May 18, 1982

Gold Road Project
Proposed Exploration Program, 1982

Abstract

The Gold Road Project is located 20 miles west of Kingman, Arizona and consists of 18 patented lode claims, 21 unpatented lode claims, 4 patented millsites, 7 unpatented millsites and 4 leased unpatented lode claims.

The annual direct holding cost is \$3,000.

Past production records indicate a total production, through various operating periods, of 1,691,000 tons at 0.34 ounces of gold per ton along with minor silver values.

The Gold Road Mine was shut down by government order in 1942 and was subsequently stripped of all equipment and allowed to flood. The mine is in a deteriorated condition with considerable caving of the workings having occurred.

Estimated probable ore reserves are 556,000 tons at 0.24 ounces gold and 0.28 ounces silver per ton. Inferred reserves are estimated at 503,000 tons approaching the same grade.

An exploration drilling program of a total of 6 holes is recommended for this project at a total cost of approximately \$375,000. This drilling program will evaluate the probability of possible extension to known reserves along the southern strike and down the dip of the vein.

This project is considered to have good prospect potential for the discovery of additional reserves.

A leased property, four unpatented claims totaling 61 acres owned by Gold Road Red Top Mining Company, is recommended for purchase. This property is estimated to contain a considerable tonnage of inferred ore and has substantial potential for additional discoveries but is made unattractive by a high royalty commitment.

The purchase price of the Red Top property is estimated at \$80,000.

The total cost of this proposed program is projected at \$455,000.

Pertinent maps relative to the project are included herewith.

FOR INTER-OFFICE COMMUNICATION

May 18, 1982

Gold Road Mine Project
Exploration Proposal, 1982

Location - Logistics

This project is located in Mohave County, Arizona, in Township 19 North, Ranges 19 and 20 West; San Francisco Mining District, near the old mining town of Oatman. The project is 18 miles east of the Colorado River and 20 miles west of the small city of Kingman, the principal population, transportation and supply center for this northwest area of Arizona.

The project is readily accessible by paved road, and power, natural gas and telephone lines cross the property. Water for mining and milling purposes, although barely adequate in the past, is available from a number of scattered, small, natural springs in the area.

Property

The property owned by Sharon is composed of 18 patented claims (253 acres); 21 unpatented claims (431 acres); 4 patented millsites (18 acres) and 7 unpatented millsites (14 acres). Sharon leases four unpatented claims (61 acres), known as the Red Top Group, under an agreement extending until the year 2002.

These claims form a contiguous, elongate group which is four miles long in a northerly-southerly direction and one-half mile wide at its maximum.

The annual, minimum direct, holding costs total \$3,000.

Historical Background

The Gold Road Mine was discovered in 1903 and was operated by a French Company until 1911 when it was acquired by the U. S. Smelting Company. U. S. Smelting operated the mine during the periods 1911 through 1917; 1924 through 1928 and 1935 through 1942 when it was closed by government order L-208 which closed most domestic gold mines.

All of the surface mine and the milling plant were subsequently removed with much of the equipment being transferred to Company operations in New Mexico. The property has remained inactive since 1942.

Property Condition

Maintenance of mine workings was suspended after closure in 1942 and all surface and underground facilities and equipment were stripped and removed by 1951. As a consequence of this abandonment, the surface and underground workings are in a deteriorated, overall poor condition with considerable caving of the workings having occurred. The mine is inaccessible and the workings have flooded with approximately 62 million gallons of water which stands at about the 300 foot level.

Past Production

Total production through 1942 is estimated at 1,691,000 tons of ore, most of which was milled in the facilities on site. The production was as follows: French Company - 1903 to 1911, 327,000 tons at an estimated grade of 0.60 ounces gold per ton; U. S. Company - 1911 through 1928, 564,000 tons at 0.33 ounces gold and 0.35 ounces silver per ton; U. S. Company 1935 through 1942, 800,000 tons at 0.24 ounces gold and 0.19 ounces silver per ton.

These ore tonnages and grades represent averaged, mine-run production and reflect a historically averaged mine dilution factor of 25 to 30%, a factor inherent to the mining of this type of ore occurrence.

The principal mining method employed was shrink-fill stoping which was particularly suitable to the near vertical attitude of the average 4.5 foot wide, fissure-vein ore occurrence and the host wall rock conditions.

During the later production period 75,000 to 100,000 tons of earlier produced mill tailings were reprocessed at intervals in order to maintain a full mill-circuit load due to a deficit of mine ore production. These old tailings contained approximately .08 ounces gold per ton, which could be partially recovered with the later, improved, milling process.

Mined ore production ranged from an early low of 150 tons per day to a later high of about 400 tons per day. The milling facilities through these periods were rated at approximately the mine production tonnage and were of the cyanide, agitated-vat-leach process. Gold recovery ranged from a low of 75% to a high of 92%; the silver ranged from 40% to 70%. The higher ranges of recovery were achieved during the later operating periods.

Ore production from the other principal mines of this district, the Tom Reed and United Eastern, up to 1942, amounted to 1,900,000 tons at an average mine diluted grade of 0.59 ounces gold per ton. This ore was of the same type as that produced from the Gold Road Mine and was milled by the cyanide leach process at their facilities.

Present Ore Reserves

At the time of the mine operations closure in 1942 the ore reserves, as estimated by the U. S. Company, were listed at 556,000 tons of proven ore at an average grade of 0.24 ounces gold and 0.28 ounces silver per ton. In addition, there has been estimated to be 503,000 tons of possible ore approaching

the same grade. The estimates include a mine-run dilution factor of 25%.

The, so called, proven reserves are not a certainty in that the majority of the ore blocks are exposed on one or two sides and the minority on three sides. The ore would, therefore, be more properly designated as being in the probable class.

The possible ore reserves listed above are based upon blocks exposed only partially on one side, on blocks projected from mine workings and on two widely spaced drill holes which indicate a significant diminution of the tonnage and grade. The possible ore should, therefore, more accurately be designated as being in the, somewhat lower, inferred reserve class.

The probable ore reserve blocks are scattered throughout the entire 6000 foot length by 900 foot depth of the mined and developed area of the vein. The minability of many of these ore blocks is uncertain as many are small and of difficult access, while others appear to have been left to the last as mine workings support.

The inferred ore reserves area, as projected in 1942 by the then available evidence, is along the strike of the vein in a southerly direction for a total distance of up to 1500 feet from the nearest mine workings and up to 1000 feet of vein dip interval. This projection places about half of the inferred ore potential into the adjacent Red Top property which is under lease to Sharon. Of lesser inferred ore potential is the down-dip projected extension of the ore bodies beneath the previously mined deepest levels of the mine.

There are approximately 1,000,000 tons of mill tailings on the Gold Road property. In the 1930's these tailings were thoroughly sampled by drilling, with the findings that about 120,000 tons, the French Company tailings, averaged about .08 ounces gold per ton. The remaining tailings contain .03 ounces of gold or less per ton. As previously stated, up to 100,000 tons of the French tailings were reworked during the last period of operation.

Geology - Topography

The Gold Road Mine is located in the southern portion of the Black Mountains which consist of ruggedly dissected, gently eastward dipping, layered blocks of Tertiary, volcanic flow rock units which overlie a basement complex of Pre-Cambrian gneiss and granite. The topography is rugged to moderate with elevations ranging from 2,000 to 4,200 feet. The climate is arid with moderate rainfall; hot summer and cool winter temperatures.

The principal rock formations in ascending order are the gneiss-granite basement, overlain by a thick series of trachytes, andesite, latite, tuffs, rhyolite and basalt. Intrusive into parts of these are monzonitic, granitic and rhyolitic porphyrys. The most important ore bearing host formation of these rock units is andesite. These formations are cut by numerous faults of prevailingly northwesterly strike and northeastward dip.

The Gold Road vein is a complex normal fault fissure system which strikes northwesterly and dips at about 80 degrees to the northeast in the upper levels of the mine and decreases to a 60 degree dip in the lowest levels. The vein is a compound stringer lode throughout much of its extent, which consists of two or more veins separated by wall rock with stringer veinlets in between. Much of the vein is lenticular in all dimensions which may pinch and swell from 1 foot to 25 feet, and in places the vein zone may reach 80 foot widths but only a small portion would contain ore mineralization. The average width as mined is 4.7 feet.

The ore mineralization is of the epithermal type; that is, formed at a depth within 3000 feet of the surface by ascending, circulating mineralized solutions in the temperature range of 50 to 200 degrees Centigrade. The vein filling is mineralogically of simple character, consisting mainly of quartz, calcite and adularia with associated free gold in the ore bodies. Either quartz or calcite may predominate and vary widely throughout the vein. Ore grade mineralization usually occurs where both minerals are present. Areas of the vein that consist entirely of either quartz or calcite are generally low grade or barren.

The metallic minerals consist of free gold and rare pyrite and chalcopryite. The gold is characteristically fine grained and generally can be seen only in rich ore. The vein appears banded in cross section, showing that the minerals were deposited in successive layers from the walls to the middle of the fissure during five, somewhat, distinct stages. The gold content increased with each stage from an average of 0.06 ounces per ton during the first stage to 1.0 ounces or above during the final stage.

The ore bodies of the Gold Road and other mines in the district are characteristically lenticular in plan and irregular in longitudinal section. The bodies are generally confined to a fairly definite zone of vertical range, the parts of the vein above and, especially, below this zone being barren. Very little ore has been found below a depth of 1000 feet.

This vertical range ore zoning observation has been tested to a high degree during the past several years by deep exploration drilling on other principal mines in the district and has proven to be substantially correct, although exceptions may exist. This zoning remains to be tested at the Gold Road Mine, but indications are that it will conform to the district type ore occurrence of a series of ore bodies "bunched" along the vein strike at close spaced intervals and all occurring within a general vertical range.

Exploration To Date

The only exploration work of significance since the mine ceased operations has been the core drilling of two holes from the surface to intercept the area of inferred ore reserves along the south strike of the vein within the Red Top property. These two holes were spaced 600 feet apart along the vein strike and at the same intercept level, approximately the 700 foot level of the mine workings. The GR-1 hole was drilled in 1973

and penetrated 4 feet of vein which assayed 0.112 ounces of gold per ton; GR-2 was drilled in 1974 and penetrated 2.1 feet of vein which averaged 0.53 ounces of gold per ton. At a minimum vein mining width of 5 feet, with barren wall rock, the average grade of the vein intercepts would be 0.10 ounces of gold for GR-1 and 0.28 ounces of gold for hole GR-2. As with the other ore reserves, an average 25%, as mined, dilution factor would apply to the reduction of these grades.

As previously stated, these two drill holes have tended to diminish the tonnage and grade estimate in the area of inferred ore along the south strike of the vein.

Current geologic data is sufficient and reliable enough to justify proceeding with an initial exploration drilling phase. Concurrent with this other exploration work, such as geologic mapping, interpretive geologic-mineralogic studies, geochemical and geophysical surveys, should be continued and extended.

Potential Ore Reserves

Based upon studies of the Gold Road Mine data, recent geologic studies and exploration drilling of others in the same district, and on numerous published geologic study reports, a reasonably attractive exploration potential is apparent for the discovery of additional ore reserves.

The principal area of recognized potential lies along the projected extension of the vein beyond the southernmost limits of existing mine workings. This extension has been proven to exist for 1500 feet by the previously described GR-1 and GR-2 drill holes. Beyond this proven extension, the vein is projected for a possible strike distance of about 9,000 feet. Although a great deal of potential vein area remains to be tested to the south, the strength of the mineralization does appear to be diminishing in this direction and only a small fraction of this distance may have good ore potential. This southerly vein mineralization projection has a downward plunge (rake) of 10-25 degrees, this being due to a volcanic rock unit identified as the "Red Sill," which appears to have dammed the upward extension of the vein mineralization. Because of the plunge, potential areas of mineralization are progressively deeper with increasing distance to the south and thus may be subject to "bottoming out," due to the epithermal vertical range zoning.

Proposed Exploration

Although a significant mineral reserve is indicated to be present in the Gold Road Mine, it is insufficient to justify the high cost of re-opening the mine and does not represent a profit potential at existing prices and production costs. It is, therefore, necessary to explore for additional ore reserves in the mine area that would improve the potential. Targets of good merit are present and are herewith recommended to be tested by a surface diamond drilling program.

It is recommended that a diamond drilling program consisting of about six drill holes be conducted on the property. The holes would be

drilled at various angles to explore for additional ore along the southerly projection of the vein and to test for extensions at depth below previously indicated ore zones. The total planned footage to be drilled in this program approximates 12,500 feet and is expected to cost a total of \$375,000 under a drilling contract agreement. The operations would be conducted with one drill rig operating three shifts per day and would require six to seven months for completion.

This drilling approach, if successful in its objective, would then justify and require that the mine be reopened for further exploration and evaluation. A successful program should consist of five or six ore holes indicating a minimum recoverable tonnage potential of 1.5 to 2 million tons of ore at a significantly improved grade and/or average ore width.

Preliminary estimates have been made of the work required to reopen the southern end of the mine to the extent of providing access for underground exploration should the drilling warrant it. Such a program would cost 2.0 to 2.5 million dollars and would require approximately 18 months to complete. This work would include rehabilitation of the No. 3 shaft, dewatering of the mine to the 700 level and rehabilitation of the 700 level and Line Road Tunnel from No. 3 shaft to their southern limits. It would not include any exploration work, diamond drilling, opening of other mine levels or the northern end of the mine, new development work, permanent surface facilities, a mill, tailings pond or other such projects. It would provide access for underground exploration only.

In the event it should prove feasible to place the mine into production the full cost of a 500 ton per day operation, including exploration, reopening, development, surface plant, mill and tailings pond is estimated at from 15 to 20 million dollars. Time required to complete such a project from commencement of drilling to initial production is estimated at from 3 to 4 years.

It is, of course, much more likely that the proposed drilling will provide less conclusive results than indicated above. In this event, depending upon the kind of results forthcoming from the initial drilling, a follow-up exploration program, probably consisting of additional surface diamond drilling, will be recommended.

Property

The southerly extension of the Gold Road vein, where diamond drill holes GR-1 and GR-2 have exposed low grade gold ore and where much of the exploration will be conducted for possible ore extensions, is located on the leased Gold Road Red Top Mining Company property. This property consists of four unpatented lode mining claims totaling approximately 61 acres. Sharon has fully complied with a work commitment agreement and is now only obligated to perform annual assessment work on the property. The lease, with extensions, can be continued in effect into the year 2002.

A significant portion of the Gold Road inferred ore reserve and the major portion of the potential for vein extension and new discovery

are located within this property. Several of the proposed exploration holes will be drilled to assess this potential.

The lease contains a sliding royalty scale that provides for payment of 3% of the gross value of ore on ore valued at \$15.01 to \$20.00 per ton and increasing 1% in royalty with each \$5.00 increase in value per ton to a maximum 20% royalty on gross value of ore with a gross value of \$100.00 per ton and over. The gross value is determined by first computing the gross weight of each metal by multiplying the dry weight in short tons of each lot of such ore by the weight of each metal contained in an average ton of such lot and then multiplying the weight of such metal so computed by the average price prevailing during the calendar month in which the ore is sampled at the receiving mill, smelter or other plant.

This royalty is extraordinarily high, especially when it is remembered that it is paid on gross value of contained metal and not on recovered metal. The price of gold would have made a major upturn before Red Top ore would even approach being profitable under this schedule.

During negotiations with officials of the Gold Road Red Top Mining Company it has been indicated that the property could be purchased for \$80,000. This purchase is recommended and must be made if the Gold Road Mine is to have any chance of being economically viable.

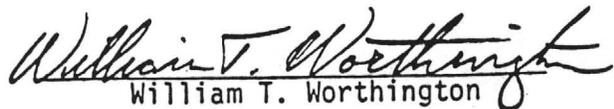
Cost

The total cost of this program, as here presented, is \$455,000.

Maps

Accompanying this Report-Proposal are the following described maps:

- Plate 1 - Gold Road Project; geographic location.
- Plate 2 - Gold Road Project; geographic location.
- Plate 3 - Gold Road Project; property, topography.
- Plate 4 - Gold Road Project; old photographs.
- Plate 5 - Gold Road Project; long section, previous mining.
- Plate 6 - Gold Road Project; long section, ore reserves, proposed drill holes.
- Plate 7 - Gold Road Project; section through No. 3 shaft.
- Plate 8 - Gold Road Project; district geology, topography.
- Plate 9 - Gold Road Project; geologic section, vein.
- Plate 10- Gold Road Project; property, topography, vein trace.


William T. Worthington

WTW:ms

APPROVED:

Gaylon W. Hansen
Manager Exploration

- BULL
 CHICKEN
 DOG
 AH

- TURTLE
 DUMB
 TOUGH
 NO

- YOU
 WE
 THEY
 NOSOTROS

SHIT

Carol,

8-7-86

I don't have an extra
Copy on The Copperhead
Silver Mine today. I will
get a Copy for you.

This is the hi grade Ag mine
that the old boys mined + shut
down because of smelter theft.

Thanks.

Kevin Kenney

INDEPENDENT MILLING CO.

DMEA LTD.

AUG 8 1986

RECEIVED

INFORMATIONAL BACKGROUND

Independent Milling Company was started as an effort to develop mineral properties in the AUBRY mining district of Mohave county, Arizona in 1974/5.

The company is a partnership, the following are partners at this time:
F.J. Denten, Francis W. Herrmann, Harry Williams, Kevin M. Kenney

The IMC mill site(s) have been in existence since 1965. Activity toward the development of a suitable metallurgical process for extracting precious metal values from ores has been ongoing since 1974. Currently gravity concentration and cyanide leaching are methods used to recover PM from the ore.

Since 1974, an estimated 400 tons of ore has been milled using various processing schemes. Most concentrates produced were further processed by others and little to no revenue returned to IMC. In 1979, two metallurgists, Kenney and CHANG, arrived in Wikieup, assisted in redesign and setup in the mill and subsequently over 50 ounces of Dore and refined products were produced, sold, or retained.

Presently (Oct. '85-86), IMC has refurbished the mill once again and is mining gold ores from the MAZEL claim and is currently producing gold and silver metal from concentrates produced at the mill.

- | | | |
|--|---------------------------------|-----------------------------------|
| <input type="checkbox"/> BULL | <input type="checkbox"/> TURTLE | <input type="checkbox"/> YOU |
| <input type="checkbox"/> CHICKEN | <input type="checkbox"/> DUMB | <input type="checkbox"/> WE |
| <input type="checkbox"/> DOG | <input type="checkbox"/> TOUGH | <input type="checkbox"/> THEY |
| <input checked="" type="checkbox"/> AH | <input type="checkbox"/> NO | <input type="checkbox"/> NOSOTROS |

SHIT

Carol, 8-7-86

I don't have an extra

Copy on The Copperhead
 Silver Mine today. I will
 get a Copy for you.

This is the hi grade Ag mine
 that the old boys mined & shut
 down because of sweeter theft.

Thanks.

Kavin Kauer

LOCATION & OWNERSHIP

Independent Milling Company, mill sites, concentrator, mines and claims are located at Wikieup, Arizona 85360

Wikieup is located in southeastern Mohave County, on hiway US 93, between Wickenburg and Kingman Arizona, the county seat. Wikieup is about 50-55 miles from Kingman.

Wikieup has a US Post Office, 4 gas stations, 3 resteraunts 1 general store, auto parts store, 2 motels, AZ DOT yard, DPS substation Sherif's Deputy, a grade school and UPS delivery.

Power is supplied by Mohave Electric Coop. Propane is delivered from Kingman or Wickenburg. An active air strip is also adjacent to town.

Elevation at Wikieup is 1970 to 2058 feet.

The closest rail heading is at Kingman (Santa Fe). Motor freight service is out of Kingman or Phoenix.

The IMC millsite is approximatly 5 miles South of Wikieup. It is necessary to cross the Big Sandy River bed. The river flows in the winter months but is dry in summer. A road is to be constructed by Mohave County in 1986 that will eliminate the river crossing in the winter months.

The mines and prospects are west of the mill and Big Sandy River. The RED DYKE GROUP of claims lie 1.5 miles west of the millsite.

X(T15N,R13W,S21,22)

LOCATION

The MAZEL GROUP and the FOUND-- MIKE GROUP and other claims lie in the area called Shannon Basin (T15N, R13 W, S7,8,17,18,19,20).

LAND STATUS

The mining claims (30) are unpatented, fee type claims. All are located on Federal land. All claims are currently registered with the BLM and hold valid AMC numbers.

The mill sites also are on federal land, they are registered and have AMC numbers assigned. The mill lies on the grazing lands of the Banegas Ranch.

PRODUCTION HISTORY

1986-present 160 tons mined from Mazel and ^{processed} processed at mill.

1985 8 tons from GOLDEN BOY decline
2 tons from " " shaft.

1984 No production R&D on placer-Black Canyon claims.

1983 No production R&D on Black Canyon and Red Dyke.

1982 No production

1981 30 tons from MAZEL

1980 30 ounces of gold sold, 100 ounces of silver refined and retained. Ore from FOUND, MAZEL TERRIBLE claims

1979 Mill rehab. 20 ounces of gold sold. Ore from FOUND

1978 Process development work on ore from Hansenburg District, Socorro, New Mexico (barite fluorite, galena).

1977 100 tons of ore(FOUND) milled on equipment from Hudson Equipment Co. Concentrates to Phoenix, No revenue to IMC.

1976 Ores from FOUND, TERRIBLE, MAZEL claims mined stockpiled at mill site. Milling equipment purchased and set up. Concentrates sent to Colorado, Phoenix and Salt Lake City. No revenues realized.
IMC Formed

Pre 1976 F.J. Denten mined 8-10 tons of ore from Mazel dike, ore to Mohave California.

MILLSITE * PHYSICAL PLANT

PROCESS DESCRIPTION

The mill building is of rough wood construction with a tin roof. Floors are concrete. The layout is on three levels to facilitate gravity flow of slurries. Similarly, the warehouse is of wood construction.

CRUSHING: Separate from mill, on elevated ground. The dump pocket is cement with wood plank sides. A grizzly/screen precedes the crusher. The crusher is 11" wide X 8" open. Crusher feed and product is handled by bobcat loader. Crusher product is removed to a cement slab or to an ore bin.

GRINDING CIRCUIT: A 4 to 5 ton capacity steel bin holds crushed ore, and is gravity discharged to a rubber belted ore feed conveyor. The mill feed discharges to a feed chute on the Hardinge TriCone mill. The ball mill and motor are mounted on a trailer and are permanently installed.

Mill discharge is overflow via a trash screen to a steel sump and a Denver 1X1 $\frac{1}{4}$ SRL pump. Dilution water is added here. The slurry is elevated to a 12" wide X 20' long sluice box for primary rougher gold recovery. Sluice tails are classified on a sieve bend screen at 48 Mesh. Plus 48 returns to the ball mill along with new feed.

CONCENTRATION: Minus 48 mesh product at present reports through a second sluice to a Wilfley 4 X 12 shaking table. An alternative is to route the -48 mesh slurry thru three (3) Wemco Fag 36" X 36" flotation cells set in cell to cell cascade fashion. Flotation tailings would then report to the Wilfley table for scavenging.

CONCENTRATES: Rougher gravity concentrates are batch amalgamated in an amalgamation barrel with clean up on a gold hound, table, or by panning. Table concentrates are batch cyanided and solutions treated via zinc precipitation or electrowinning.

PROCESS DESCRIPTION

TAILINGS: A fenced tailings impound is adjacent to the mill building. Tails flow by gravity. The pond is accessed by road for periodical sand removal and stockpiling. Tails do contain precious metal values and are amenable to agglomeration and leaching.

WATER SYSTEM: A drilled well, cased, is serviced by a submersible pump and segmented PVC pipe stem. The Well is below the warehouse. Water is pumped thru 2" ABS pipe up to a head tank located above the mill. The head tank is cement. Distribution piping is ABS and steel. No heat tracing is installed.

POWER SYSTEM: Power is purchased from MOHAVE ELECTRIC COOP. Installed power is 440, 220, 110V with approximately 75 amps of capacity. All motors (equipment) is started from a central panel, except for the crusher.

INVENTORY *

MILL SITE

2- adjacent 5 acre millsites site is 15 years old
Installed 440 V, 220 & 110 W. power Mohave Electric Coop.
Water well with submersible pump, cased, PVC well stem, ABS distribution lines.
Concrete water tank (1500-2000 gallons)
Ore pad with grizzly
Jaw crusher 11" wide X 8" open, New rebuild on jaws
Crushed ore pad 15' W X 30' L Approx.
Crushed ore bin 8 ton cap. approx.
Ore feed conveyor w/ motor and speed reducer.
Hardinge Tricone Ball Mill 31 Dia. X 4' L overflow type.
Discharge Sump and Denver SRL 1x1 1/2 slurry pump/motor.
Primary rougher sluice box, wooden, 6-8" wide/rough top belting.
Johnson UOP sieve bend screen, 48 Mesh/w scalper punch plate screen.
3- Wemco 36" x 36" Fag. flotation cells/ froth paddles/motors installed.
1- " " " / with spindle, un assembled.
Wilfley 14' Concentrating Table/motor installed/ new deck/new toggle ass'by.
Wemco pilot sized flotation cell.(1)
Tailings impound area/ fenced
Steel tank/conical bottom/ 10x10 on legs on concrete pad.
9 yd concrete mixer tub/ gasoline engine drive/ feed happer and discharge chute.
Bake classifier .
Dorr tilting pan filter-- Sutorbilt, 7 HP blower/vacuum unit .
Tee bar agitation cyanide leaching tank/ self aerating.
Pelletizing Disk.
15' X 30' wood frame warehouse full of parts, hardware etc
1 Denver SRL Slurry pump/motor 1 1/2 x 1 1/2
1 Denver vertical sand pump/motor
1 Denver diaphragm pump
1 Clarkson feeder
1 Wemco pump 1x1 1/2/motor
1 Humphrey Spiral/stand/cyclone
1 Dorrclone desliming cyclone

METALLURGICAL-REFINING EQUIPMENT

Electric Assay furnace/ w. controls/ table
2- gas fired pot (crucible) furnaces/ one blower
Mettler analytical assay balance
Platform balance
Amalgam barrel/ mercury retort
Assay fusion chemicals
Assay room tools/ molds etc.
Thumb electrolytic parting cell.
Small vacuum pump

Wilfley lab size table
Lab flotation cell

* Some items not subject to sale

INVENTORY *MINING EQUIPMENT

Dump truck/ 8-10 ton/ gas--REO
D-4 cat dozer/ diesel
TD-340 International diesel tracked loader
D-318 cat powered Joy compressor
Chicago Pneumatic air drill/ wagon type
Melroe bobcats 2- diesel, 1 gas(Kohler) M-500
M-37 Military 4/4, 3/4 T winch truck
Water truck/ tank/inoperable
GD 125 compressor (Not operational)

Jacklegs- 3 GD--IR--AC
300ft hoses and ? ft of other utility hoses
hole blowers
150' Victaulic coupled 3" air line/w couplings&gaskets
Diesel driven mine fan
Mine car
Steel sharpener
Gas operated/portable Atlas Copco Cobra Rock drill
Steels

*Some items not subject to sale

CLAIM GROUP DATA

MAZEL GROUP 5 claims T15N, R13W section 18

FOUND-GOLDEN BOY-MIKES GROUP 6 claims T15N, R13W section 17

AgCl-CARBONATE-LEO GROUP 4 CLAIMS** T15N, R13W section 20

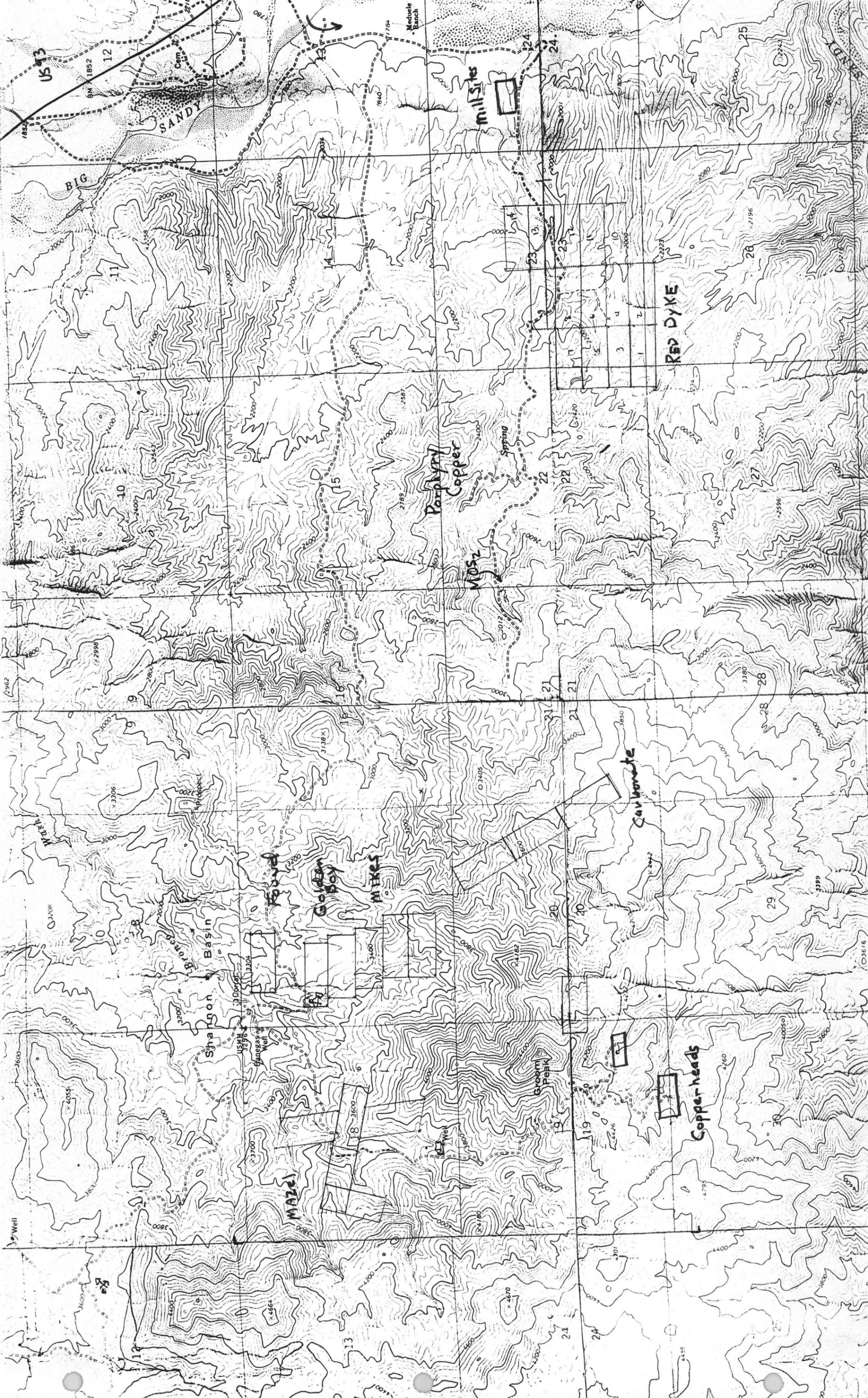
RED DYKE GROUP 14 claims T15N, R13W section 23

** The fourth claim, RIM separated from the other three.

PORPHYRY COPPER PROSPECT 1 claim T15N, R13W section 22/23

TOTAL UN-PATENTED MINING CLAIMS = 30

WIKIUP (3 miles)



SANDY

BIG

MILSITES

RED DYKE

Poppy Copper

MILSITES

Carbonate

Copper heads

Golden Boy

MILSITES

MAZZI

Singhamon Basin

Groom Peak

Well

W. Prospect

US 13

Well

Cem

Medeale Ranch

US 13

12

11

10

9

8

7

6

14

13

15

16

17

18

19

22

21

20

19

18

17

16

23

22

21

20

19

18

17

24

23

22

21

20

19

18

25

24

23

22

21

20

19

26

25

24

23

22

21

20

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

MAZEL GROUP
(5)

Located is in upper Shannon Basin, section 18.

HISTORY:

Area worked by prospectors in the early 1900's. Works include 2 tunnels of sizable dimensions, short adits, and numerous pits and excavations.

1966- F.J. Denten locates Mazel tunnel (claim 2).

1969- F.J. Denten mines 1240 lbs of oxide gold ore from adjacent to the Mazel DIKE on claim 2. Ore shipped to smelter at Mohave Co. Est. value is 240 oz Ag and 2.44 oz Au. Ore packed out on horses.

1974- F. J. Denten and Gold Silver Exploration restake the area. Some dozer work is done and a road to the Mazel Tunnel is built. Exploration work done around tunnel area. Reported good assays from west end of the dike where faulted off. No ore mined.

1979- IMC restaked claims (2). 40 tons of ore mined out of upper cut. Ore from Mazel Vein. Material is milled at IMC mill. ('79) Gold recovered-refined-sold.

1981 IMC mines 10 ton from upper cut again, Mazel Vein. A road and excavation is done below the tunnel level (30 ft) , Vein material is exposed.

1984- Tunnel sampled by Kenney-IMC

1986- IMC develops upper cut on Mazel Vein above tunnel. 160 tons of ore delivered to mill and processing is in progress. IMC stakes three additional claims to cover rhyodacite dikes and related structures.

PERTINENT DATA:

Sampling data, assays and field notes for the Mazel tunnel are contained here. Over 90 feet of ground was economically mineralized for IMC purposes. The dike rock its self, a fine grained rhyolite-rhyodacite-rhyoporphyry? is mineralized. Microscopic disseminated pyrite possible carrier of gold mineralization. Similar pyritic mineralization is noticeable in surface, lightly weathered specimens. The Mazel vein at the intersection with the dike does not cross cut the dike. There is no

readily evident extension of the vein on the South side of the dike. Underground, parallel to the dike a short tunnel is developed on the dike-country rock contact. Here slickensides and vein mineralization are evident. F.J. Denten seems to think that there is evidence to indicate that the vein crosses the dike at a position of about 50 feet south of the dike/vein intersection. On the surface there is cat work done at this point on the dike. At present We are not sure.

To the West of the vein by 300 to 400 feet the dike abruptly stops, ie, no more outcrop. At this point a fault zone intersects the dike structure. The outcrop of the dike is again noticed approximately 400 to 500 feet north and running parallel. This fault zone area has had some reported high grade samples come from it.

It is possible that the vein is a result of dilation-tension fracturing of the host rocks (Biotite granite) and subsequent hydrothermal alteration and mineralization. The vein lies very near the intersection of the dike structure and the fault zone.

The area was examined by Mr. Mike Price, geologist for Lynx Creek Mining of Prescott AZ. (Reno, Nevada 702-476-0116) He reported verbally that the area was well mineralized, that he got good assays from the tunnel area and near the dike/fault zone. Likewise he got good results (+ 1 oz/t) on the white dike (canteen mine) area to the East of tunnel.

In 1985, two Canadians were shown the area, they sampled in the fault zone area and pulled to samples of dike rock that ran better than 5 oz/ton.

This area has had no serious work done on it by IMC.

Adjacent to most of the dike structure, ferruginous-hematitic float can be noted. Most will pan free gold. Between the Mazel tunnel and the East end of the claim is where F.J. Denten mined the highgrade ore. On the East end of the claims there are two parallel, adjacent adits are developed into the dike. F.J. Denten sampled a 1' wide vein above the adits and reported assays from Iron King of \pm 0.25 Au and \pm 10 Ag.

Mazle claim 3, sits astride the intersection of the Mazel Dike (Dark)

coloration) and a large cross cutting light colored rhyolitic dike. The White dike is extremely fine grained unlike the Mazel dike. AT the Canteen mine (recently excavated by Kenney (86)), the white dike structure is apparently intruded by the darker Mazel type dike. Along this intrusive contact, fault gouges are developed and many exploration pits are developed. Surface sampling yields assayable rock. At the mouth of the tunnel the structure is about 4 feet wide. A narrow rusty brown vein is evident on the hanging wall. This area yielded a trace of gold and 4.42 oz/t Ag. (Rechin Assay Lab). Mr. Mike Price indicated to Kenney, verbally that sampling by Price and Frank Bazanella of Lynx Corp. along the surface of the Canteen structure and the mouth of the adit had yielded very good results. On the upper exposures, 18" wide over 1 oz/t samples were collected. (LYNX never provided copies of their sampling to IMC).

In 1976 , CITY SERVICE MINERAL COMPANY ran an IP survey over the area while studying some adjacent claims. Their line crossed the Mazel #3 claim , near the intersection of the intrusive dikes. Robert C. Moore, district geologist indicated to F.J. Denten that the anomaly was likely caused by faulted-mineralized rock.

ASSAY DATA:

1. Kenney sampling data: Mazel Vein-tunnel
2. Rechin Lab sheet: Claim #3 , Canteen Adit
3. Iron King Report: April 24, 1978 Mazel Vein .208Au 4.50 Ag
4. Ditte Aug. 7 1979 Mazel Vein ore .720 Au 10.66 Ag
5. Alpine Assay: 2-23-82 Mazel vein .948 Au 6.1 Ag
6. Iron King : Mazel vein Mill products leaching tests



CITIES SERVICE MINERALS CORPORATION
SUITE 102
2002 N. FORBES BOULEVARD
TUCSON, ARIZONA 85705

TELEPHONE (602) 792-3236

CERTIFIED
RETURN RECEIPT REQUESTED

September 9, 1976

Mr. Dustry Denton
General Delivery
Wikieup, Arizona 85360

RE: Your 2 claims in/near S2 NW4 sec. 18, 15N,
13W, Mohave Co., Az.

Dear Mr. Denton:

It was a pleasure seeing you again after eight years, and meeting your wife (who helped us locate some of the Wikieup area ranchers). We appreciate your extending permission on August 25th to cross your claims during the course of our survey of the surrounding Debbie group.

Per our oral agreement, a copy of the data obtained from your ground is attached.

Yours truly,

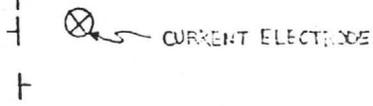
Robert C. Moore

Robert C. Moore
District Geologist

RCM:sbc
atch.

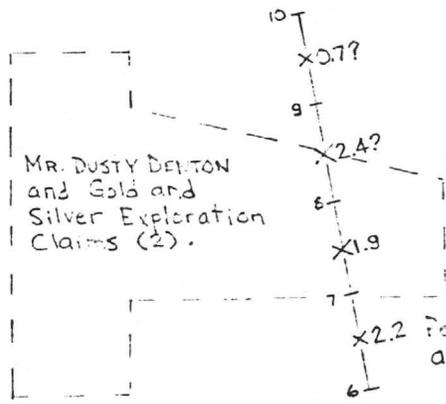
cc: R. W. Osterstock
D. M. Olson

R 14 W | R 13 W



12

7



18

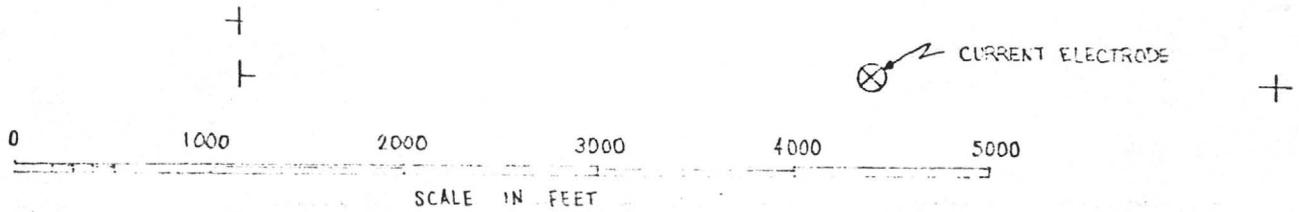
13

N
T
L

x2.2 Percent Frequency Effect (PFE)
at 0.1 and 1.0 Hz.

24

19



GRADIENT ARRAY
INDUCED POLARIZATION SURVEY



Alpine Assay

Stan Johnson
 Box 817
 Hailey, Idaho 83333

CERTIFICATE OF ASSAY

DATE ASSAYED 2-23-82

DESCRIPTION	AU Oz/T	AG Oz/T	PB %	ZN	CU	MO					CHARGES
Mike # 1	0.068	13.42									\$12.00
Mazel	0.948	6.10									12.00
Golden Girl	1.820										6.00
Golden Girl # 2	0.012	6.51									12.00
The Hern	0.069	0.74									12.00
The Hern # 2	0.025										6.00
The Found	0.460	0.76									12.00
Golden Boy	0.007	8.40	2.03								18.00
The Rim	0.049	6.30	2.78								18.00
Copper Head		25.52									6.00
Copper Head #1		29.61									6.00
Copper Head #2	0.014	44.34									12.00
Copper Head #3	0.551	32.67									12.00
The Leo	0.077	94.82	78.76								18.00
Silver Chloride	0.119	10.91	48.32								18.00

Skridge
 assayer
 ROUTE 4

Thank you.
 HWY 30 & CLEAR SPRINGS DR.
 TWIN FALLS, IDAHO 83301

TOTAL \$174.00
 (208) 734-8807

IRON KING ASSAY OFFICE
ASSAY CERTIFICATE

BOX 247 — PHONE 632-7410
 HUMBOLDT, ARIZONA 86329



ASSAY
MADE
FOR

IMC
 ON Leach Test #1 + #2
 May 1980 - Tablecont

Recovery

SAMPLE DESCRIPTION	Residues	Au	Ag	Au %	Ag %
Test I LH		7.70	30.86		
1-3		.252	5.65	96.73	81.69
1-4		.158	4.82	97.95	84.38
1-5		.116	4.16	98.49	86.52
1-6		.140	3.74	98.18	87.82
1-7		.192	3.43	97.51	88.89
Test II 2-H-1		.566	34.89	97.52	86.32
2-H-2		.476	37.86		
2-H-3		.164	19.16	68.52	47.33
2-H-4		.254	16.25	51.25	55.33
2-H-5		.160	16.20	69.29	55.47
2-H-6		.174	11.05	56.50	69.63
2-H-8		.204	10.76	60.84	70.42
TC - April Table Conc.		1.072	37.85		
Table Table Tailing (SAND FX)		.066	2.77		
Slime Table tails (Slime FX)		.128	3.17		
4-27- Table Table tails (SAND)		.108	1.91		
ORE Produced From "Mazel" claims and Some from the "Found" Leach tests by Cheng Ping Chong - K. Kennedy					

CHARGES

ASSAYER

IRON KING ASSAY OFFICE
ASSAY CERTIFICATE

BOX 247 - PHONE 632-7410
 HUMBOLDT, ARIZONA 86329



ASSAY
 MADE
 FOR

KEVIN KENNEY
 Independent Milling Co.
 P.O. Box 931
 Wikieup, Ariz. 85360

August, 7, 1979

Ref no.	SAMPLE DESCRIPTION	Gold oz/ton	Silver oz/ton			
97-28-1	Head, Mazel (MS-2)	.720	10.66			
-2	Head, Pad Blend (MS-1)	1.184	5.56			
-3	Denton Porch - Head	.430	45.01			
-4	Mazel -50 #60 Mesh	1.092	9.64			
-5	-60 +100	.938	10.0			
-6	-100 +150	1.118	12.14			
-7	-150 #200 +325	1.128	14.25			
-8	-325	1.018	14.04			
-9	+50	.282	7.07			
-10	Pad Blend +50 Mesh	1.644	5.18			
-11	-50 -15 +60	.838	5.06			
-12	-60 +100	.826	5.25			
-13	-100 +150	1.044	5.90			
-14	-150 +325	.620	6.32			
-15	-325	.422	7.28			
<p>Pad Blend Refers to 70-80 tons of ORE From "Found" CLAIM</p>						

CHARGES \$97.50

ASSAYER

Dusty's Minerals

IRON KING ASSAY OFFICE ASSAY CERTIFICATE

BOX 14 - PHONE 632-7410
HUMBOLDT, ARIZONA 86329



ASSAY
MADE
FOR

KEVIN KENNY
Dept. of Metallurgical Engineering
University of Missouri-Rolla
Rolla, Mo. 65401

April 24, 1978

Ref no.	DESCRIPTION	oz/ton Au	oz/ton Ag	% Fe	% Pb	% Zn	% Cu
84-20-1	Tails #1	.068	2.26				
84-20-2	Hds. stockpile #2	3.174	13.63				
84-20-3	Mazel #3	.208	4.50				
84-20-4	Doyle #4	.448	5.73				
84-20-5	Found #5	2.510	3.70				
84-20-6	Found #6	2.802	11.20				
84-20-7	Table #7	58.214	183.05	=	1408	755 1/2	1978 Feb Price

CHARGES \$42.00 paid

ASSAYER _____

Subject: "Mazel" Claim owned by Independent Milling
"Kevin M. Kenney"^{CO}

FIELD Notes:

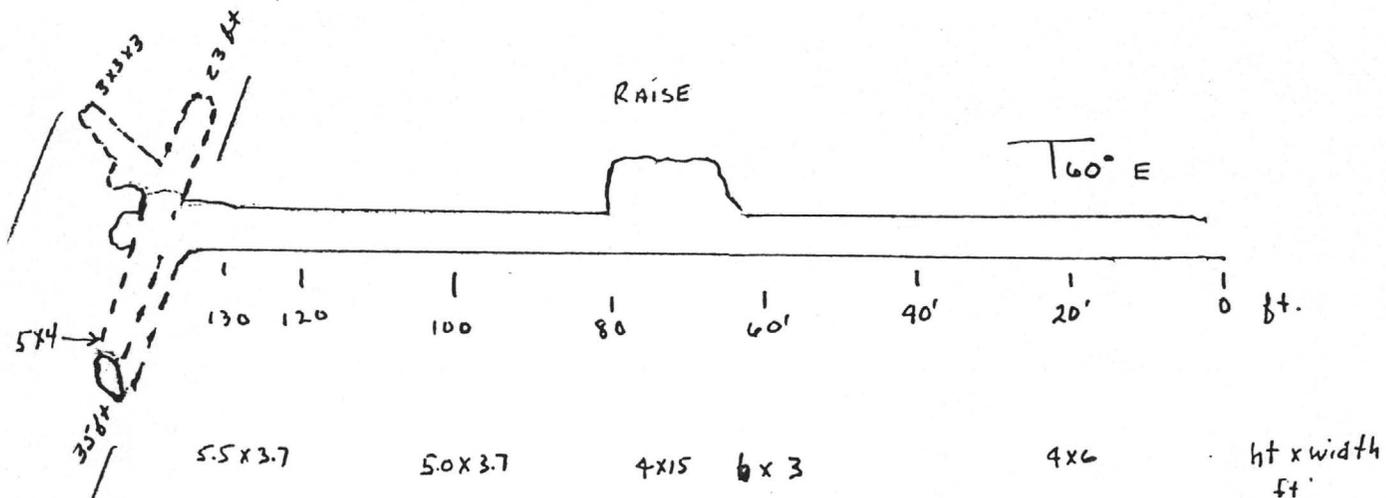
- ① The Mazel claim is located in Shannon Basin which is in the Aubrey Mining District. South end of Hualapai Mountain range. WIKIEUP is about 5 miles to the N. - NNE. T15N, R13W Mohave County.
- ② Sampling Date is 20 Feb 1984 samples are 1 - 7
- ③ Attached is a "crude" X section of said prospect.
- ④ Sampled + measured by: K. Kenney
Frank Herrmann
Lou Wallace-
- ⑤ Samples prep'd by K. Kenney at CBCC Metallurgical Lab. and pulverized-split samples sent to Iron King Assay office.
4. Reference Assay Sheet of 2-20-1984 copy included.

Kevin M. Kenney

CYPRUS

X-SECT
MAZEL

1 cm = 10 ft



opt, ppm?

ASSAY

"Rhyolitic"
Dyke
Structure

	Footage	Au	Ag	Descriptions
1	0-30 ft.	0.038	0.94	Vein Composite - Non Descript, some localized jointing VN on F.W.
2	30-50 ft	0.086	1.02	Vein Composite, very Vuggy, Narrow, decomposed localized heavy fracturing - joints - heavy Limonite staining - open space filling w/ Quartz druses and well xtaline Qtz. 4 to 5 ft wide VN on F.W. Porphyritic biotite granite and "Rhyo-dacite" dike contacts
3.	50-70 ft	2.024	4.96	Galena Noted + dk red Limonite from Pbs weath. VN 8" wide vuggy in stope VN is 4-8" wide
4.	70-80 ft	2.802	4.24	STOPE Pyrites in Quartz, Brecciated VN matl. heavy Limonite/hematite - looks good.
5.	80-100	0.166	1.78	VN Narrows to dk brown stain Note Red is gone.
6.	100-135'	1.194	2.33	VN is Weak - Non descript some Limonite and Red present.
7.	145	2.154	2.53	SAMPLE is FROM the "Rhyodacite" dike at intersection Small 3x3x3 hole - RK is Full of micro xtaline Pyrite 'sulfide' material. Note Leached out sulfide From Surface Rock on Dike

CYPRUS

Walter M. Koenig

on The cross cut developed on the intersection of the Biotite porphyry gneiss and the "Rhyodacite" well developed Sticksides are present. There is evidence of quartz Veining along the ss contact. Some pseudomorphie limonite of the pyrite noted.

In the dike, well developed masses of microfine sulfide.
Some evidence of Calcantite ($CuSO_4$)

Suggestions

1. Drill thru dike at intersection to evaluate potential sulfide mineralization in dike or dike vein contact.
2. A Block of exists from mid tunnel to surface and probably from mid tunnel to lower tunnel site. Mine it o.p. style. Evaluate PPM value of UN walls to increase Tons.
3. Drill dike and surrounding structure to locate extent of mineralization.

Kevin M. Kinney
Geologist + Metallurgist
Engineer

CYPRUS

IRON KING ASSAY OFFICE
ASSAY CERTIFICATE

BOX 247 — PHONE 632-7410
 HUMBOLDT, ARIZONA 86329



ASSAY
MADE
FOR

[Kevin Kenney
 P.O. Box 24
 Bagdad, Az. 86321]

Feb. 20, 1984

SAMPLE DESCRIPTION			oz/ton Au	oz/ton Ag		
2-8-1	A	Spec. Flux	0.006	0.20		
-2	B	"	0.006	0.20		
-3	C	"	0.010	0.01		
-4	D	"	0.016	Nil		
-5	Mazel	#1	0.038	0.94		
-6	"	#2	0.086	1.02		
-7	"	#3	2.024	4.96		
-8	"	#4	2.802	4.24		
-9	"	#5	0.166	1.78		
-10	"	#6	1.194	2.33		
-11	"	#7	2.154	2.53		
-12	Mike	A	0.034	1.05		
-13	"	B	0.048	0.11		
-14	"	C	0.016	2.47		
-15	"	PS	0.016	0.49		

CHARGES

#138.75

ASSAYER

CARLOS ROCHIN
MANAGER
REGISTERED ASSAYER
ARIZONA REG. No. 7126

HECTOR C. ROCHIN
FOUNDER
ARIZONA REG. No. 4073
FRANCISCO GONZALEZ, ASSOCIATE

HECTOR A. ROCHIN.
MINING ENGINEER AND
LAND SURVEYOR
ARIZONA REG. No. 2473

Rochin Assay Office, Inc.

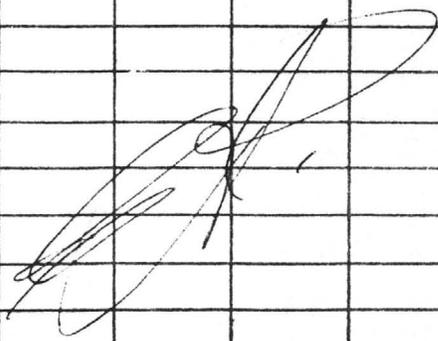
P. O. DR. 3507 - PHONE (AC 602) 364-8092

DOUGLAS, ARIZONA - 85607

ASSAYERS & METALLURGICAL CHEMISTS

CERTIFICATE OF ASSAY

Name Kevin M. Kenney P.O. Box 1014, Wikieup, Arizona 85360

	GOLD (OZ)	SILVER (OZ)	COPPER (%)	LEAD (%)	ZINC (%)				
52209 HWD-FWT-IMC3-86	Tr	0.40							
52210 HWD-HWT-IMC3-86	Tr	4.42							
52211 HWD-IRT-IMC3-86	Tr	0.42							
09 Foot wall tunnel - WhiteDuke Mergel Claim #3									
Hang wall tunnel -									
RKW sulfides									
Samples From the entrance to the Adit developed in the									
large white dike. Recently discovered by KK									
									
REMARKS:				DATE: March 29, 1986			CHARGES \$ <u>31.50</u> Paid		

GOLDEN BOY-MIKES CLAIMS

HISTORY:

- 1975- F.J. Denten samples Decline adit area next to a shaft reported 18'' wide and assayed \pm 6 oz/T Au.
- 1979- Kenney excavating in adit- evidence of lower workings (stope) vein 8'' wide in upper adit
- 1984- IMC sinks decline on vein to come under old workings. Mined out 30 tons before intersecting old workings. Ore pans free gold. Ore milled in 1986.

PERTINENT DATA:

On the Golden Boy claim, between the Shannon vein and the Decline sunk by IMC there is approximately 300+ feet of ground that is cut by approx. 4 vein structures and the 15-18 foot area described by Denten. The veins run across the basin 700 or more feet on strike. This area would be a bulk mineable target.

The veins are quartz with pyrite, galena, gold ankerite? and are developed in granitic terrane. The veins are narrow 12 to 18'' but are traceable on strike as mentioned above. The topography is relatively flat (rolling).

ASSAY DATA:

1.	Iron King Nev. 1979 Decline Vein adit	.136 Au	4.58 Ag	
		.250 Au	1.39 Ag	
2.	Alpine Assay 2-23-82	.007 Au	8.40 Ag	2.03% Pb

UPPER MIKE #4 CLAIM

A shaft and winze plus some shallow pits are developed in a rhyo type dike. Small dump. Reported by F.J. Denten to have been sampled in 1974. No recollection of assay values other than positive for silver and lead. The dike may be an extension of the Mazel dike from section 18.

At the upper most excavations, a vein is exposed (12'' wide). This exposure will assay for silver.

MIKES-GOLDEN BOY-FOUND GROUP

Location is in lower Shannon Basin, South of Windmill Section 17

HISTORY: FOUND Claim

1968- F.J. Denten sampled shallow workings. Digs open pit to expose foot wall and ore shoot. Ore shipped to Inspiration Smelter (8 ton).

1979- IMC mines 40 tons. Ore processed at IMC mill.

PERTINENT DATA:

Mineralization (ankerite-calcite-pyrite-galena-gold) is contained in a fractured quartz vein . Thickness up to 18'' noted in pit. The vein is faulted and one segment has not been mined. A parallel dipping vein was exposed in the pit. A quartz vein also, it assayed 38 to 50 oz/t Au and was 4 to 5'' wide. AT the East edge of the pit an area of mineralization 15' wide may run .1 to .12 oz/t Au This pit and surrounding has fair potential for a bulk minable site.

ASSAY DATA:

1.	Iron King, April 1978	84-20-5	2.51 Au	3.70 Ag
		84-20-6	2.802 Au	11.20 Ag
2.	Ditto August 1979	97-28-2	1.184 Au	5.56 AG
		97-28-10	1.64 Au	5.18 Ag
		11	.838 "	5.06 "
		12	.826 "	5.25 "
		13	1.044 "	5.90 "
		14	.620 "	6.32 "
3.	Alpine Assay 2-23-82	15	.422 "	7.28 "
			.460 Au	.76 Ag

GOLDEN BOY-MIKES CLAIMS

HISTORY: The Shannon Mine, u/g, shaft is located on the Golden Boy claim Worked 1900-1917 (Approx.) Shaft burned and later filled. ore is quartz vein with pyrite, galena and free milling gold. Milling accomplished by use of arrastras (preserved on hill). WWI caused shut down of mine.

1974-75- F.J. Denten and Assoc. evaluated the area adjacent to the Shannon. An area 15 to 18' wide was exposed by cat work it assayed .088 oz/t Au. Considered uneconomic at time.

UPPER MIKE # 4 CLAIM

The vein is tracable over to another canyon but is lost. A greenish rock unit in this area also possibly mineralized. Some exploration pits are present.

ASSAY DATA:

1.	Alpine Assay	2-23-82	.068 Au	13.42 Ag		
2.	Iron King.	2-20-84	2-8-12	.034 Au	1.05 Ag	
			13	.048 "	0.11 "	
			14	.016 "	2.47 "	
			15	.016 "	0.49 "	

AGCL - CARBONATE -LEO -RIM CLAIMS

The AgCl, carbonate and leo are contiguous. The rim stands alone.

HISTORY:

- 1920-1930- In the Depression years, the father of Joe Banegas (Living) and his brother mined a shaft on the LEO and the CARBONATE. Initially mined for gold, later mined lead-silver.
- 1966- Leo Salazar found gold on the AgCl claim. Stakes the area. Develops a road to the area.
- 1974- Gold Silver Exploration options claims from Salazar. Claims traded for stock. No ore mined. Ore developed on the Carbonate claim near the shaft. Reported 38% Pb, .19Au and 72 oz/t Ag Vein is 6 to 8 feet wide, dip 70 degrees.
- 1978- IMC stakes claims. Contacts ASARCO at ELPASO Tx. Sends samples. Smelter interested in ore for flux. Contract called for: 1 car load/week , 25% Pb + 70 oz/T Ag. Decline in Pb prices killed contract.

PERTINENT DATA :

The vein structure is traceable for about 3500 to 4000feet (length of 3 claims). The structure is 6 to 8 feet wide. On the Leo, an old shaft is

AGCL-CARBONATE- LEO CLAIMS

open. This is developed in ? gold ore but a low angle vein containing argentiferous galena intersects original vein. Old Banegas workings. On the CARBONATE claim the vein is exposed in an open cut. Width is about 6 feet. Vein continues onto the AGCL claim, some cat work exposes the vein but no workings are noted. F.J. Denten says the vein continues off the end of the claim.

ASSAY DATA:

1. Alpine Assay 2-23-82 Leo .077 Au 94.82 Ag 78.76 %Pb
Silver Chloride .199 Au 10.91 Ag 48.32 % Pb
RIM .049 Au 6.30 Ag 2.78 % Pb
2. Analysis of ore by Cheng Ping Chang, Chief Metallurgist, Cerro Copper Corp. St. Louis Mo. using ICP AA spectroscopy (Carbonate)
.44 Cu .44 oz/t Au 12.56 oz/t Ag

RED DYKE CLAIMS 14

Located in Section 23, about 1 mile West of the IMC mill.

HISTORY:

- Pre 1960- Prospected for gold. Shaft sunk on red dike.
- 1950- Area prospected for manganese. Several holes drilled, no apparant production.
- 1960 Claims located by Emery Blevins (Dec.) also located present IMC mill site. Claims located for molybdenum (wulfenite) mineralization. Johnson sets up milling equipment, including jigs. Mines at various places along red dike and fault zone for wulfenite. Recovers wulfenite(PbO_4), vanadinite and gold. Later Blevins had prospect leased for gold development but subsequentially disagreement on front end payments killed deal. Little production, ore piled at mill site.

RED DYKE CLAIMS

HISTORY:

- 1965- F.J. Denten and Blevins discover gold in samples from the red dike (slusher adit). Gold pannable.
- 1970- Superior Oil Co. stakes area for porphyry copper prospect that is adjacent to the fault zone (North). Several exploration holes drilled, area mapped, geophysics and geochem. No apparant search for precious metals.
- 1974- Duval Corp. analyzes samples from red dike area. Precious metals indicated (AA Analysis).
- 1977- IMC mills ore from RED DYKE claims (Ore piled at mill by Blevins) Ore very hard-breaks crusher. Recovered coarse gold in concentrates. Concentrates to Colo and Utah but no returns.
- 1984- Kenney-Denten sample drill hole cuttings near red vein and Manganese area. Fire assay by IMC yields dore metal. Further sampling and fire assaying yields evidence of precious metals. IMC stakes area based on assay results.
- NOTE: Assay procedure is critical due to hi Al_2O_3 contents. IMC has developed a flux recipe and firing schedule for ores from the RED DYKE area. Dore pellets from fire assays have been retained as evidence of mineralization.

PERTINENT DATA:

The claim area is characterized as a fault zone that has been subject to intense hydrothermal alteration and silicification. Looking West over the claims, to the north is exposed a grey to black dike like body. This is a large fault breccia that is pervasively silicified. Quartz veining and silica boxwork structures are prevalent. Secondary minerals within the box works are wulfenite, vanadinite and calcite/barite. Large masses of galena have been noted. Much prospecting has been done on this structure.

To the south, over a non descript white bleached zone (fault zone) is the red dike structure. This appears to be a strongly altered fault zone with heavy brecciation. Again heavy silicification is present

RED DYKE CLAIMS

along with characteristic secondary minerals. This fault structure is stained a characteristic brick red in contrast to the other dike. The eastern end of the structure seems buried under alluvium. Near this contact small ankerite/calcite MnO_2 veins are noted. Freeport Exploration noted this material (84 TL 8 & 9). (.1 & .53 AU 7.2 & 40 Ag) The red dike has a width of a minimum 12 feet and is tracable over ± 2000 feet. The west end of the structure seems open. Numerous excavations appear over the length of the outcrop.

ASSAY DATA:

No samples submitted for commercial analysis.
Freeport Exploration sent copies of their sampling results. (included)
Amselco sent a geologist but not data has been recieved.
Fire assay dore pellets have been retained by F.J. Denten as proof
of mineralization.

COMMENT: The report by IMC members of large grains of gold in concentrates may suggest a situation that small samples may not show representative values due to NUGGET Effect. Bulk sampling would be thus desireable.

PLACER (ALLUVIAL) GOLD POTENTIAL SECTION 17

The wash that drains the MIKE-Golden Boy claims have been evaluated for gold content. No gold is readily pannable in surface materials. Panned concentrate will fire assay. Removal of magnetic fraction and fire assay increases value. Conclusion is that gold is associated with hematite-goethite fraction derived from weathering of auriferous pyrites that mineralize the veins of the basin. Samples of screened sand has been batch cyanided by IMC and the sand does respond to that treatment.

FREEPORT

FREEPORT EXPLORATION COMPANY
A Division of Freeport Minerals Company

Valley Bank Plaza
South Virginia & Liberty
P.O. Box 1911
Reno, Nevada 89505
Phone (702) 323-2251
Telex 910-395-7008

July 13, 1984

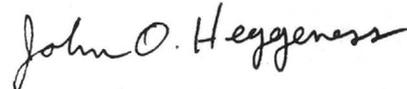
Dusty Denten
Independent Milling Co.
Box 931
Wikieup, AZ 85360

Dear Dusty:

Here are the assay results, 598 to 602 are the placer samples and 603 to 609 are from the breccia dike.

I will talk to you again in August.

Sincerely,



John O. Heggeness
Associate Geologist

JOH/dt
Enclosures

12/5/84

PROSPECT Black Canyon Submittal Wikiup Az
 COUNTY Mohave STATE Ariz.

SAMPLE LOG

PAGE ___ OF ___

SAMPLE NUMBER	LOCATION		DESCRIPTION	PATHFINDER ELEMENTS					BASE METALS				SULFO-SALTS		PRECIOUS METALS		
	Legal	Geographic		Co	Mn	Ba	F	Hg	Cu	Mo	Pb	Zn	As	Sb	Au	Ag	
JH-578-BLR			streamed sample												-	-	-
579			"												-	-	-
600			"												-	-	-
601			"												-	-	-
602			"												-	-	-
603			Red Dike Drill Cuttings												-	-	-
604			Tert Vole. Tuff? Fossil Qtz												20	-	0.3
605			Silicified Intrusive Py												-	-	-
606			Fault Bx Strong Hem												90	-	23.4
607			Fault Bx silicified												90	-	2.4
608			Fault Bx cobbles of sealed Fault Gouge												55	0.14	7.8
JH-609-BLR			Fault gouge												15	-	0.3
JH-674-BLC			Volcanic Bx weak hem												7	-	0.1
675			weakly sil. Rhy minor Qtz												7	-	0.1
676		Black Dike	Calcite Bx calcite xtals												22	0.15	1.0
677		"	Calcite, Rhy & Silica bx												30	0.17	3.8
678		"	Gouge zone w/ silica frags												97	0.03	1.5
679		"	Silicified Qtz bx												27	0.085	2.7
680		"	Calcite (black & white) & Rhy Bx												315	39	18.8
681		"	weathered Intrusive												15	0.10	0.1
682		Red Dike?	Silica bx - Alaskite bx?												15	0.10	2.1
JH-683-BLR		" ?	silicified bx pink to orange												16	0.005	0.8



P.O. Box 1428 * Hesperia, California 92345 * Phone (619) 244-3481

Certificate of Analysis

CLIENT: FREEPORT EXPLORATION
ATTENTION: A. MORAN

DATE: 06/21/84
CLIENT ORDER NO.:
INVOICE NO.: 0639
LAB NO. : 795 & 796
CC: J. HEGGENESS

ANALYTICAL METHODS: Ag - Atomic Absorption
As - Colorimetric
Au - Roasted Acid Digestion A.A.

SAMPLE #	R/Acid Au (ppm)	A.A. Ag (ppm)	Colmtr As (ppm)
JH-584-DLK	-.05	-0.1	2.5
JH-585-DLK	-.05	-0.1	2.5
JH-586-DLK	.31	1.1	90
JH-587-DLK	-.05	-0.1	25
JH-588-DLK	-.05	-0.1	25
JH-589-DLK	-.05	-0.1	35
JH-590-DLK	-.05	-0.1	-2.5
JH-591-DLK	-.05	2.6	100
JH-592-DLK	-.05	-0.1	30
JH-593-BLM	-.05	1.5	5
JH-594-BLM	-.05	1.2	2.5
JH-595-BLM	-.05	-0.1	5
JH-596-BLM	-.05	-0.1	-2.5
JH-597-BLM	-.05	-0.1	2.5
JH-598-BLC	-.05	-0.1	-2.5
JH-599-BLC	-.05	-0.1	-2.5
JH-600-BLK	-.05	-0.1	-2.5
JH-601-BLK	-.05	-0.1	-2.5
JH-602-BLK	-.05	-0.1	-2.5
JH-603-BLC	-.05	-0.1	-2.5
JH-604-BLC	-.05	0.3	20
JH-605-BLC	-.05	-0.1	-2.5
JH-606-BLC	-.05	23.4	90
JH-607-BLC	-.05	2.4	90



P.O. Box 1428 * Hesperia, California 92345 * Phone (619) 244-3481

Certificate of Analysis

CLIENT: FREEPORT EXPLORATION
ATTENTION: A. MORAN

DATE: 06/21/84
CLIENT ORDER NO.:
INVOICE NO.: 0639
LAB NO. : 795 & 796
CC: J. HEGGENESS

ANALYTICAL METHODS: Ag - Atomic Absorption
As - Colorimetric
Au - Roasted Acid Digestion A.A.

SAMPLE #	R/Acid Au (ppm)	A.A. Ag (ppm)	Colmtr As (ppm)
JH-608-BLC	.14	7.8	55
JH-609-BLC	-.05	0.3	15
	55	55	55

Brett F. Connelly

Brett F. Connelly
Laboratory Manager

*Greater than 1000 ppm reported as percent (Assay)
**Break in numerical sequence

leach solution did assay and metal was cemented out of solution by powdered zinc. A 9 yard mixer drum was set up for processing this potential resource.

ORE RESERVE CALCULATION

ESTIMATE

MAZEL GROUP 5 claims

Mazel Vein: Assume: L= +130' W= ± 2' D= 200' 160#/ft³ \$340 Au
V= 52,000ft³ = 4160 tons
Au @ .5oz/t = 2080 oz X .75%Rec. =1560 oz \$ 530,000
Ag @ 5oz/t 20800 oz X .75%Rec. = 15600oz X 5.00 \$ 78,000

4100 Tons + \$ 608,400

MAZEL DIKE: Assume: V= $\frac{1}{2}$ l X h X w
L₁= 1500' H= 200 W= 20 75% Rec. \$340 Au
\$5.00 Ag
V= 3 mil ft³ = 240,000 T
Au @ .1 oz/T X 240,000T X .75 X340 =18000 oz = \$6.12 Million
Ag @ .5 oz/T X 240,000T X .75 X 5.00 = 90000 Oz = \$450,000

240,000 Tons + \$ 6,570,000

WHITE DIKE- CANTEEN MINE

ASSUME: V= $\frac{1}{2}$ L X h X w l= 750' h= 100 w= 3'
V= 112,500 = 9000 tons.
AU @ .05 oz/t X .75 X 9000 T X 340 = 337 oz oz = \$ 114,750
AU @ .1 oz/t X .75 X 9000 T X 340 = 675 oz = \$ 229,500

CONSERVATIVE ESTIMATE MAZEL GROUP:

± 250,000 Tons \$ 7,225,000

ORE RESERVE CALCULATIONS ESTIMATE

FOUND CLAIM : Assume: L= 300' W= 1.5' D= 100 160#/ft³
V= 45000 ft³ = 3600 T
AU @ .5oz/t X 3600 T X .75 Rec. X \$340 = 2350 oz = \$ 459,000

3600 tons \$ 459,000

GOLDEN BOY CLAIM:

Potential for bulk mineable resource. Not tested

Assume: L= 750' W= 300' D= 50' = 900,000 Tons
AU @ .1oz/T X 900,000 T X .75 X 340\$ = 67,500 oz = \$ 22 million
potential 900,000 tons \$ 22,000,000

MIKE # 4 Claim

Assume: L= 300' W= 1' D= 100' 160 #/ft³
V= 2400 Tons
AU @ .05 oz/t X 2400 T X .75 X 340 = 90 oz = \$ 30,600

AGCL CARBONATE-LEO CLAIMS

Assume: L=3000' W= 6' D= 100' 160 #/ft³ ** 75% Rec.
V= 1.8 mil. ft³ = 144,000 T
AU @ .1 oz/T X 144,000 T X .75 X 340 = 10,800 oz = \$ 3.6 million
Ag @ 10 oz/T X 144,000 T X .75 X 5.00 = 1,080,000 oz = \$ 5.4 mill.

144,000 Tons \$ 9,000,000

*** Wt/ ft³ should be higher than 160 due to lead content.

ORE RESERVE CALCULATIONS ESTIMATE

RED DYKE CLAIMS : Estimate is only of the red structure (2 claims)

Assume: L= 3000' W= 12' D= 100'

V= 288,000 Tons

AU @ .1 oz/t X 288,000 X .75 X 340 = 21600 oz = \$ 7.344 millien

Total area between dikes 3000 X 600 X 100 = 14.4 M tons

14.4 M T @ Au 0.1 X .75 = 1,080,000 oz AU = 367 million \$

INSPIRATION CONSOLIDATED COPPER CO.
SMELTING DEPARTMENT

Smelter Lot 1964 Shipper Lot 7

DATE OCTOBER 29, 1969

BOUGHT OF F. J. DENTEN

Date Received OCTOBER 22, 1969

Street BOX 931 CITY WICKIUP, ARIZONA 85360

Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT		N. Y. QUOTATIONS
ICC	275	5,140	1.30	50,475	FOUND	Copper (per lb.) <u>52.1004</u> Less <u>5.504 = 46.6004</u> Silver (per oz.) <u>\$ 1.85</u> <u>92% OF \$ 40.050</u> Gold (per oz.) <u>\$ 36.846</u>

ASSAY and ANALYSES	Copper %	Silver Oz.	Gold Oz.	Silica %	Alumina %	Iron %	Lime %	Sulphur %
	<u>.08</u>	<u>1.01</u>	<u>.630</u>	<u>82.6</u>	<u>1.9</u>	<u>4.9</u>	<u>2.0</u>	<u>2.4</u>

PAYMENTS PER TON						DEBITS	CREDITS	Valuation For Freight
Copper	Lbs. per ton, less	%	Lbs. at	per Lb.	\$	\$	\$	
Silver	<u>1.01</u>	Ozs. per ton, less <u>5%</u>	<u>.96</u>	Ozs. at <u>\$ 1.85</u>	per Oz.	<u>1.78</u>		
Gold	<u>.630</u>	Ozs. per ton, less <u>- %</u>	<u>.630</u>	Ozs. at <u>\$ 36.846</u>	per Oz.	<u>23.21</u>		
<u>SILICA CREDIT - 82.6 - 25.9 = 56.7 UNITS @ 8¢</u>							<u>4.54</u>	
<u>COPPER DEFICIENCY - 8.4 # @ 46.6004</u>						<u>3.91</u>		
<u>Excess Metal Values \$ 24.99 - 15.00 = \$ 9.99 @ 10%</u>						<u>1.00</u>		
<u>Treatment Charge</u>						<u>6.00</u>		
TOTALS						10.91	29.53	
Net Value per ton							18.62	

Net Value for Freight Charges, per wet ton \$ _____

Royalty to be paid to	<u>25,237.5</u>	Dry tons at \$ <u>18.62</u>	\$ <u>469.92</u>
Sampling		tons at	
Freight			
Trucking			
AMOUNT DUE SHIPPER			<u>469.92</u>
Less _____ % Royalty			
NET AMOUNT DUE SHIPPER			\$ <u>469.92</u>

Correct H. M. Lambert

Approved [Signature]

**INSPIRATION CONSOLIDATED COPPER CO.
SMELTING DEPARTMENT**

Smelter Lot 1763 Shipper Lot 4

DATE SEPTEMBER 29, 1969

BOUGHT OF F. J. DENTEN

Date Received SEPTEMBER 18, 1969

Street BOX 931 City WILKIEP ARIZONA 85360

Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT	FOUND	N. Y. QUOTATIONS			
BY TRUCK		949	1.00	940		Copper (per lb.) <u>51.9814</u>	Less <u>5.504 = 46.4814</u>	Silver (per oz.) <u>\$1.79</u>	92% OF <u>440.850</u>

ASSAY and ANALYSES	Copper %	Silver Oz.	Gold Oz.	Silica %	Alumina %	Iron %	Lime %	Sulphur %
	<u>103</u>	<u>1.46</u>	<u>14.786</u>	<u>72.6</u>	<u>2.3</u>	<u>10.9</u>	<u>.7</u>	<u>1.7</u>

PAYMENTS PER TON			DEBITS	CREDITS	Valuation For Freight
Copper	Lbs. per ton, less _____ %	Lbs. at _____	\$ _____	\$ _____	\$ _____
Silver	<u>1.46</u> Ozs. per ton, less <u>5</u> %	<u>1.39</u> Ozs. at <u>\$1.79</u>		<u>2.49</u>	
Gold	<u>14.786</u> Ozs. per ton, less _____ %	<u>14.786</u> Ozs. at <u>\$37.582</u>		<u>555.69</u>	
SILICA CREDIT = $72.6 - 34.6 = 38.0$ UNITS @ <u>84</u>				<u>3.04</u>	
COPPER DEFICIENCY = <u>9.4</u> # @ <u>46.4814</u>				<u>4.37</u>	
Excess Metal Values $\$558.18 - 15.00 = \543.18				<u>2.50</u>	
Treatment Charge _____				<u>6.00</u>	
TOTALS			<u>38.78</u>	<u>561.22</u>	
Net Value per ton _____				<u>522.44</u>	

Net Value for Freight Charges, per wet ton _____ \$ _____

Royalty to be paid to _____	<u>.47</u> Dry tons at \$ <u>522.44</u>	\$ <u>245.55</u>
Sampling _____	<u>9.53</u> tons at <u>\$2.00</u>	<u>19.06</u>
Freight _____		
Trucking _____		
AMOUNT DUE SHIPPER _____		<u>226.49</u>
Less _____ % Royalty _____		
NET AMOUNT DUE SHIPPER _____		\$ <u>226.49</u>

Correct H. M. Lambert

Approved [Signature]

**INSPIRATION CONSOLIDATED COPPER CO.
SMELTING DEPARTMENT**

Smelter Lot 1758 Shipper Lot 3

DATE SEPTEMBER 30, 1969

BOUGHT OF F.S. DENTEN

Date Received SEPTEMBER 17, 1969

Street Box 931 City WICKIUP, ARIZONA 85360

Initial	CAR Number	WET WEIGHT	Moisture %	DRY WEIGHT	N. Y. QUOTATIONS
100	269	33,920	5.90	31,919	

ASSAY and ANALYSES	Copper %	Silver Oz.	Gold Oz.	Silica %	Alumina %	Iron %	Lime %	Sulphur %
	<u>.08</u>	<u>.50</u>	<u>.440</u>	<u>76.8</u>	<u>6.7</u>	<u>4.4</u>	<u>.9</u>	<u>1.5</u>

PAYMENTS PER TON						DEBITS	CREDITS	Valuation For Freight:
Copper	Lbs. per ton, less	%	Lbs. at	per Lb.	\$	\$	\$	
Silver	Ozs. per ton, less	%	Ozs. at	per Oz.				
Gold	<u>.440</u> Ozs. per ton, less	<u>-</u> %	<u>.440</u> Ozs. at	<u>#37.697</u> per Oz.		<u>16.59</u>		
<u>SILICA CREDIT - 76.8 - 72.3 = 4.5 UNITS @ 84</u>							<u>.36</u>	
<u>COPPER DEFICIENCY - 8.4 # @ 46.3674</u>						<u>3.89</u>		
<u>Excess Metal Values \$16.59 - 15.00 = \$1.59 @ 10%</u>						<u>.16</u>		
<u>Treatment Charge</u>						<u>6.00</u>		
TOTALS						<u>10.05</u>	<u>16.95</u>	
Net Value per ton							<u>6.90</u>	

Net Value for Freight Charges, per wet ton _____ \$ _____

Royalty to be paid to	<u>15.9595</u>	Dry tons at \$ <u>6.90</u>	\$ <u>110.12</u>
Sampling		tons at	
Freight			
Trucking			
AMOUNT DUE SHIPPER			<u>110.12</u>
Less % Royalty			
NET AMOUNT DUE SHIPPER			\$ <u>110.12</u>

Correct H. M. Lambert

Approved [Signature]

BLACK CANYON BULK MINEABLE

ALLUVIAL GOLD PROSPECT

MOHAVE CO., ARIZONA

PREPARED BY

KEVIN M. KENNEY

METALLURGICAL ENGINEER

IMC

WIKIEUP, AZ.

INTRODUCTION:

Study of the gold bearing quartz-sulfide veins in the Shannon Basin area of the South end of the Hualapai mountain range, has yielded an exploration model to help identify potential alluvial gold concentrations in soils and water courses.

MODEL:

Without siteing the vast knowledge of the geological literature concerning the geochemistry of gold, a simple model for the enrichment of gold bearing phases in stream courses is advanced.

During the weathering of quartz-sulfide veins carrying gold, both as free gold and micron ie. gold present as in crystal lattice substitution in sulfide minerals (pyrite) values are released from the quartz host rocks.

Weathering residues from various sulfide minerals occur as : hematite, goethite, limonite, lepidocrocite and jarosites etc. Geochemically these minerals can carry entrained gold. As weathering progresses these particles end up in fluvial depressions and water courses.

In prospecting, a pan of wash sand is worked until a black sand concentrate is produced. Typicall if no visible gold is found it is discarded. Work by this author suggest that the black sand should be cleaned by a magnet, the magnetic fraction discarded and the non-magnetic fraction saved for fire assay analysis. This non-magnetic fraction, if defived from gold bearing lode structures in the vicinity may show the presence of gold.

IMC WORK--PHASE I

Gold bearing sand (via fire assay) was discovered in Shannon Basin while considering the above mentioned model. Subsequentially samples from several miles down stream also carried assayable gold. 250 lb

samples were taken of Shannon basin sand, screened down to $\frac{1}{2}$ " size and then were cyanide leached (agitation) and fire assayed. The leach liquors yielded cyanide soluble gold. This was repeated several more times with similar results.

IMC--PHASE II

Cyanidation equipment was then procured. A 9-yd mixer drum was obtained and set up along with a rake classifier for dewatering the sand. Pregnant liquor storage was set up along with a small Merrill Crowe precipitation plant.

Similar geological sites were identified and some tested for their gold/silver contents.

IMC--PHASE III

At one of the sites identified as a possible resource, the State of Arizona, thru a private contractor, established a barrow pit for paving sand. During the operation a quantity of fines were generated at the mine site. IMC sampled the -10 mesh fines and found thru amalgamation, fire assay and cyanidation that the fines indeed contained gold. An outside lab confirmed this (TYRO MINE LAB). This site is on the BLACK CANYON WASH. The site was then covered with mining claims. These samples represent materials mined from a depth of not more than 15 to 20 feet from the surface. Their pit has been backfilled and water filled in the rest.

FIRE ASSAY ANALYSIS

IMC has worked out a flux recipe that works well on the pulverized sands. Typically a clear, dark green slag is produced with no sign of matte or speiss phases.

FLUX: for $\frac{1}{2}$ AT	Soda Ash	20 gm
	Borax glass	10 "
	Silica	10 "
	Calcium Fluoride	2 gm
	Flower	2.8"
	Litharge	50"

Also each sample is kept in the furnace thru a regulated firing cycle. The crucibles are brought up to temperature thru steps of increasing temperature until the final temperature is reached. This allows semi-equilibrium to be reached in the fusion step.

It is strongly recommended that $\frac{1}{2}$ AT fusions not be run because the amount of Dore metal obtained is so small that it is very hard to weigh. We recommend the minimum of 1 AT to 5 AT. The cost is more but on low grade ores, a larger sample yields statistically better numbers.

IMC has recieved a mixed batch of results from sending out samples to labs. What is indicated to us is that there is indeed a potential but the absolute number has yet to be arrived at.

SAMPLING:

To date all sampling has been off the surface or from shallow hand dug holes. No trenching or drilling has been done.

ANALYTICAL RESULTS:

Included in the appendix. These are mostly from out side sources.

RECOMMENDATIONS:

- 1) Take 50 samples via backhoe to cover the length of the claims. Assay these and composite for leach test.
- 2) If part 1 is encouraging, churn drill at sample sites and try to characterize depth of deposit. Assay and leach again.
- 3) If part 2 is encouraging, truck 100 to 500 tons of sand to IMC mill site and run a heap leach evaluation on the sand.

1435 SOUTH 10TH AVENUE
TUCSON, ARIZONA 85713

Jacobs Assay Office

Registered Assayers



PHONE 622-0813

63375

Tucson, Arizona, _____

2/8, 1984

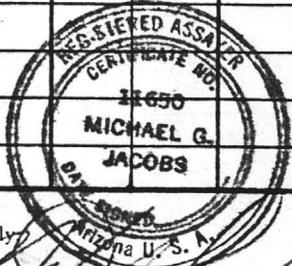
Sample Submitted by Mr. _____

KEVIN KENNEY

BLACK CANYON SAMPLES

Sample Marked	GOLD Ozs. per ton ore	GOLD Value per ton ore*	SILVER Ozs. per ton ore	COPPER Per cent Wet Assay	LEAD Per cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay
Wavy scribble								
A	0.002		<0.05					
Wavy scribble								
B	TRACE		0.05					
Wavy scribble								
C	0.002		<0.05					
Wavy scribble								
D	0.002		<0.05					
FIRE ASSAY								

1 ASSAY IN EA SAMPLE
<= LESS THAN



PAID

Charges \$ 30.00

Very respectfully,
Michael G. Jacobs

TyRO MINE

ASSAY OFFICE

P.O. BOX 9006 KS
BULLHEAD CITY, ARIZONA 86430
(602) 754-2608

November 22, 1983

F.J. Denten
Box 931
Wikieup, Arizona 85360

Burns Creek

REPORT OF LABORATORY TESTS

<u>Samples Marked</u>	<u>Troy oz/ton</u>	
	<u>Gold</u>	<u>Silver</u>
D-1	7.34	none
D-2	2.638	none

Respectfully submitted,

Ed McRann

Ed L. McRann

REPORT TO: *Chang*

Duro Creek

Date: *1/4/84*

	SAMPLE OF LOT NO.	
SP-1		
Zn	.015	.097
As	.035	.071
Sb	.141	.053
Te	.073	.060
Se	.034	.067
Sn	.016	.010
Fe	2.37	2.36
Pb	.026	.069
Ag	.004	.004
Cu	.030	.041
Ni	.007	.004
Al	.015	.015
Au	1.6	1.8
Pt	2.8	1.8
Pd	0.3	0.3

→ ≈ 1.1 oz/T

→ ≈ 0.05 oz/T

Handwritten notes:
Total Au = 1.6 + 1.8 = 3.4
Total Pt = 2.8 + 1.8 = 4.6
Total Pd = 0.3 + 0.3 = 0.6

ACTION
MINING COMPANY

P.O. BOX 533
TRONA, CALIFORNIA 93562
Telephone: (714) 372-5850

TEST REPORT

Date 6/28/85

For: Name DICK SAUT

Address 2225 W. INDIAN SCHOOL #501

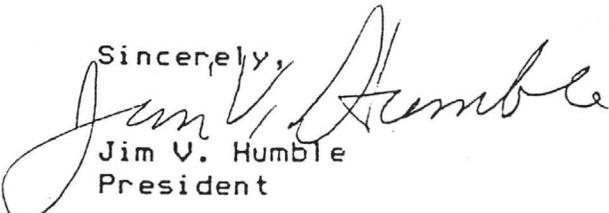
City, State, Zip, Phone PHOENIX AZ 85015

Ounces gold/ton .17 Ounces silver/ton ~~Platinum metals~~

Tests were: ELECTROLYTIC AMALGAMATION TEST.

Remarks: 5 LBS ONE WAS USE. GOLD WAS IN
MICRON SIZE SMALL ENOUGH TO PASS THROUGH
A CHAMOIS FILTER.

Sincerely,


Jim V. Humble
President





San Juan Gold

1076 C.R. 203 P.O. BOX 2484
DURANGO, COLORADO 81301
303-247-9101

TEST REPORT

Date: _____

Sample # 5F1301+2

CUSTOMER: DICK GAUT

LOCATION: [REDACTED]

GRAVITY SEPARATION: _____ g Au Free Au = _____ TO/T

MICRO EXAM: _____

SAMPLE PREPARATION: Samples 1301+2 beads combined w/ Ag + Pb for Au assay

Sample wt. _____ g Dried wt. _____ g

Calcined wt. _____ g Pulv. _____ % - _____ Mesh

~~AMALGAMATION~~ ASSAY: Resultant bead parted & re-cupelled.

Sample wt. _____ g Water _____ L

Reagent _____ # Reagent wt. _____ g

Gr. time _____ hrs. Mercury _____ ml

Am. time _____ hrs. Amalgam _____ g

HNO3 residue _____ g Retort sponge _____ g

~~CHEMICAL~~ ASSAY:

Sample wt. _____ g HNO3 residue _____ g

AR residue _____ g AR precip. _____ g

AgCl (1.00) _____ g Ag (0.75) _____ g

Misc. _____

FIRE ASSAY: Parted bead residue cupelled w/ test Pb only.

Sample - Na2CO3 - PbO - SiO2 - Na2B4O7 - CaF3 - Flour - KNO3

_____ - _____ - _____ - _____ - _____ - _____ - _____

Pb _____ g Db 0.011 "φ Db 0.00022 g

Db _____ TO/T Ag 1.032 TO/T (0.824) Au 0.220 TO/T (0.176)

Remarks: _____

TEST REPORT



Date: June 19, 1985
Sample # 5F1903

CUSTOMER: DICK GAULT

LOCATION: claim @ Wickenburg, AZ

GRAVITY SEPARATION: _____ g Au Free Au = _____ TO/T

MICRO EXAM: _____

SAMPLE PREPARATION: Re-ck #17 - Orig. sample

Sample wt. _____ g Dried wt. _____ g

Calcined wt. _____ g Pulv. _____ % - _____ Mesh

AMALGAMATION ASSAY: _____

Sample wt. _____ g Water _____ L

Reagent _____ # Reagent wt. _____ g

Gr. time _____ hrs. Mercury _____ ml

Am. time _____ hrs. Amalgam _____ g

HNO3 residue _____ g Retort sponge _____ g

CHEMICAL ASSAY: Boiled 1AT in 50% HNO3 30 mins.

Sample wt. 30.0 g HNO3 residue _____ g

AR residue _____ g AR precip _____ g

AgCl (1.00) No show ??? g Ag (0.75) _____ g

Misc. _____

FIRE ASSAY: Re ck on orig. sample residue + 0.172g. Ag. No Ag Cl.

Sample - Na2CO3 - PbO - SiO2 - Na2B4O7 - CaF3 - Flour - KNO3

15 - 30 - 35 - 4 - 35 - 1 - 3.2 - 0

- 45 - 80 - 84 - 119 - 120 - 123.8 - -

Pb 22.18 g

Db 0.007 "φ

Db 0.0568 mg

Db _____ TO/T

Ag _____ TO/T

Au 0.114 TO/T

Remarks: _____

AMERICAN SOCIETY FOR APPLIED TECHNOLOGY

A Non-Profit Scientific Foundation
P. O. Box 1705, Silver City, NM 88062
(505) 538-3849

16 May 1985

Dick Gaut
P.O.Box 404
Flagstaff, AZ 86002

Dear Dick,

Your plea for help was so strident that we decided to use the ultimate gold assay and digested three assay tons of ore in sodium peroxide.

These were probably the most expensive assays that we have ever run, for one usually cut the sample weight to a single gram for this type of work.

Be that as it may it was a worthwhile experiment for in doing an assay in this manner there is little but gold left in the filters. (We used a double Whattman #42 ashless filter.)

Filter, residue and all, was then wrapped in lead foil, scorified and cupelled.

The results are as follows:

SAMPLE #	GOLD	SILVER
(29.166 gm.)	(Oz. Troy per ton)	
1 J-3	0.092	0.37

Date Creek

On these particular samples the results compared favorably with the slagmaster assay using the following formulae:

29.16 gm	ore
11 gm	sodium carbonate (anhyd)
69 gm	red lead oxide
2 gm	silica
13 gm	borax glass
1 gm	calcium oxide
3.1 gm	flour

As silver was inquarted, the direct comparison would be invalid, however the correlation between the two methods was within five percent. (The fire was always the lowest figure.)

Fire assay

*Did
turned
ya gold*

SEMIQUANTITATIVE SPECTROGRAPHIC
ANALYSIS REPORT

H2

P. Swain

DATE 2-3-89

Sample	ABCD				
Sample	Bulls Creek				
% Cr	0.0128				
Zr	0.0076				
Ag	—				
Zn	—				
Cd	<.0010				
Sn	—				
Mo	<.0010				
Ca	1.98				
Be	0.0002				
V	0.0033				
Bi	—				
Ni	<.0010				
Co	0.0002				
Cu	0.0030				
Mn	0.0520				
W	<.0010				
As	<.0010				
Pb	0.0005				
Mg	0.58				
Al	2.60	9.4			
Si	>.1000	37.			
B	0.0017				
Sb	<.0010				
Fe	2.20	2.3			
Ti	0.17				

CYPRUS

CARLOS ROCHIN
 MANAGER
 REGISTERED ASSAYER
 ARIZONA REG. No. 7126

HECTOR C. ROCHIN
 FOUNDER
 ARIZONA REG. No. 4073
 FRANCISCO GONZALEZ, ASSOCIATE

HECTOR A. ROCHIN
 MINING ENGINEER AND
 LAND SURVEYOR
 ARIZONA REG. No. 2473

Rochin Assay Office, Inc.

P. O. DR. 3507 - PHONE (AC 602) 364-8092

DOUGLAS, ARIZONA - 85607

ASSAYERS & METALLURGICAL CHEMISTS

CERTIFICATE OF ASSAY

Name Kevin M. Kenney P.O. Box 24, Bagdad, Arizona 86321

BLACK CANYON - Burro Creek

		GOLD (OZ)	SILVER (OZ)	COPPER (%)	LEAD (%)	ZINC (%)				
50595	A	0.16	1.04							
50596	B	0.12	0.64							
50597	C	0.02	0.36							
50598	D	0.08	0.94							
A = $\frac{1}{2}$ mile above $\frac{1}{4}$ cor sec 4/9 claim # 4										
B = 100 yds South of stock pile claim # 1										
C = WASH BANK, 1000ft N of stock pile claim B										
D = NW cor B + 300' N wash gravel.										
all samples taken at 3' deep from holes spaced across wash. 60# samples, Jones Splitter to 200gm Assay samples. K. Kenney										



REMARKS:

DATE:
February 28, 1984

CHARGES \$

TyRO MINE

ASSAY OFFICE

PO. BOX 9006 KS
BULLHEAD CITY, ARIZONA 86430
(602) 754-2608

December 12, 1983

Denys Poyner
3011 Van Marter Ct.
Kingman, Arizona 86401

Burno Creek

Results and Determinations:

Denton Placer Material:

<u>Particle Size</u>	<u>% Total</u>	<u>Au ozs/ton</u>	<u>Ag ozs/ton</u>
+6	12.67		
-6+9	15.84	.036	.104
-9+12	13.86	.034	.106
-12+50	48.31	.030	.110
-50+100	7.02	.039	.121
-100	2.27	.132	.188

Panned Material

Heads	Composite	.032	.100
Cons		.100	.484
Cons		.086	.214
Tails		.020	.09

Respectfully submitted

Ed McRann
Assayer



309 Short Street
Bartlesville, OK 74004
Telephone: 918 661-8617
Telex: 49-2455
TWX: 910-841-2560

MEMO FROM
Kevin Kenney

TYRO FIREASSAY

	AU	Ag.
100 -	.132	.188
50 -	.039	.121
12 -	.030	.110
9 -	.034	.106
6 -	.036	.104
2 -	.032	.010
Composit	.086	.214

Black Canyon

6-4-86

Barro Creek (Black Canyon)

4 Samples Run

Approx location as 4 check samples by K²

Assayed by K²

1/2 AT

unparted

①. very good vitreous green slag
very fluid

Dore wt

	<u>Dore wt</u>				
1.	.00007	x2	.00014 gm =	.14mg →	.14
2.	.00011	"	.00022 "	= .22mg	.22
3.	.00109	"	.00218 "	= 2.18mg	2.18
4.	.00006	"	.00012 "	= .12mg	.12

gm → mg X 1000