



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

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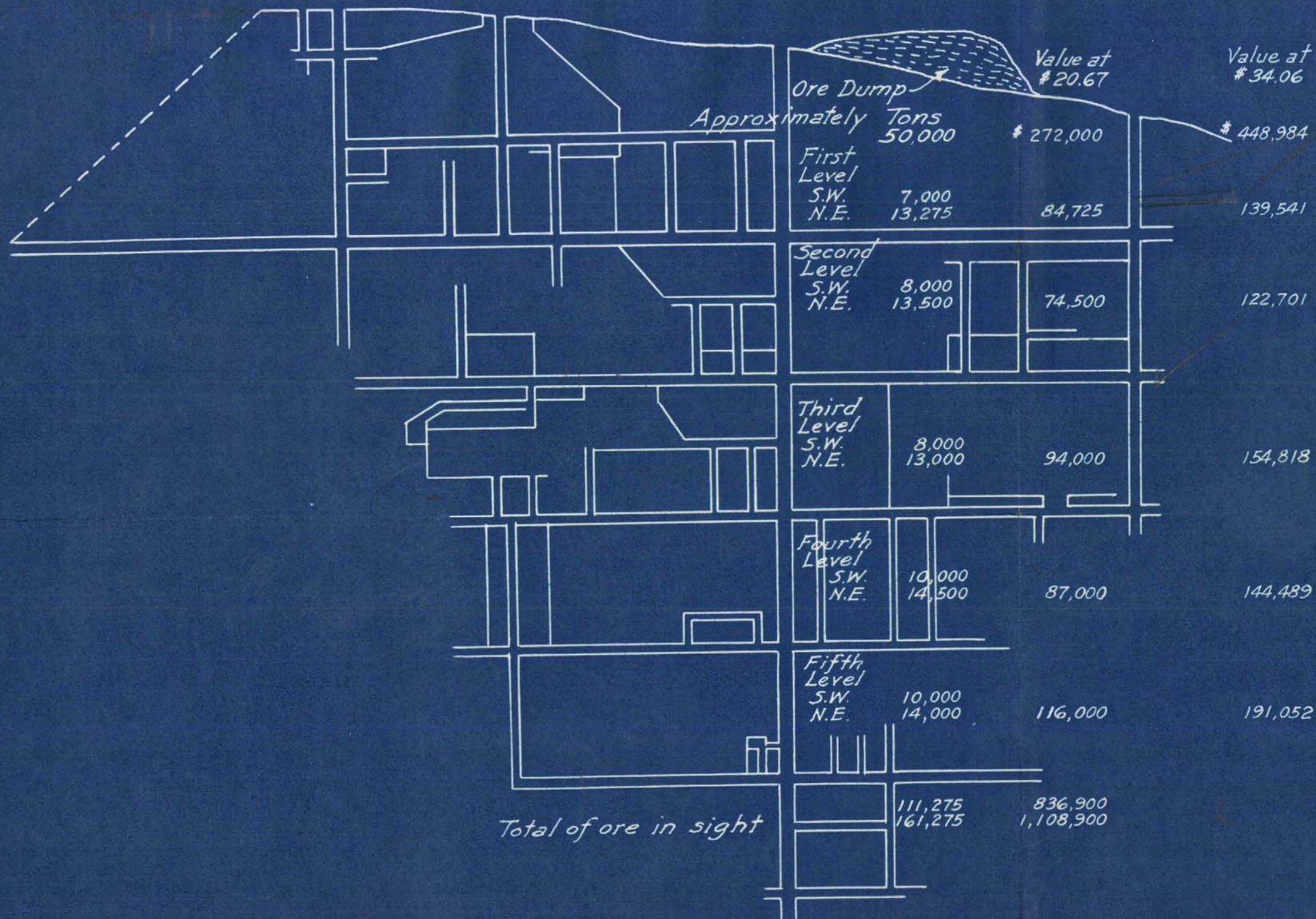
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Underground Workings of the
JESSIE MINE
 Owned by
ARIZONA CONSOLIDATED MINING CO.

*Showing accurate tonnage of
 low grade ore blocked out
 and value of same as estimated
 by A.W. Warwick E.M.
 London, Eng.*

S.W. ←

→ N.E.



Independence owned by
Lelan Dividend Co.

Columbia owned by
Estates of F.R. Wright
Sam Hill
Hull estate



Arroyo pat
El Canyon map. Jno Sill
Juddy " Independence
Roosvelt " Ohio
al Jance " Little Sam

Property of
ARIZONA CONSOLIDATED MINING CO.

BIG BUG DISTRICT
Arizona

SCALE 1" = 600'

DATE

Office Copy

REPORT ON

U N I O N - J E S S E M I N E S

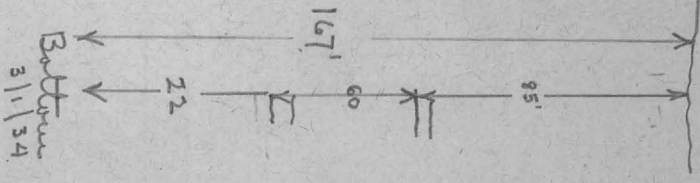
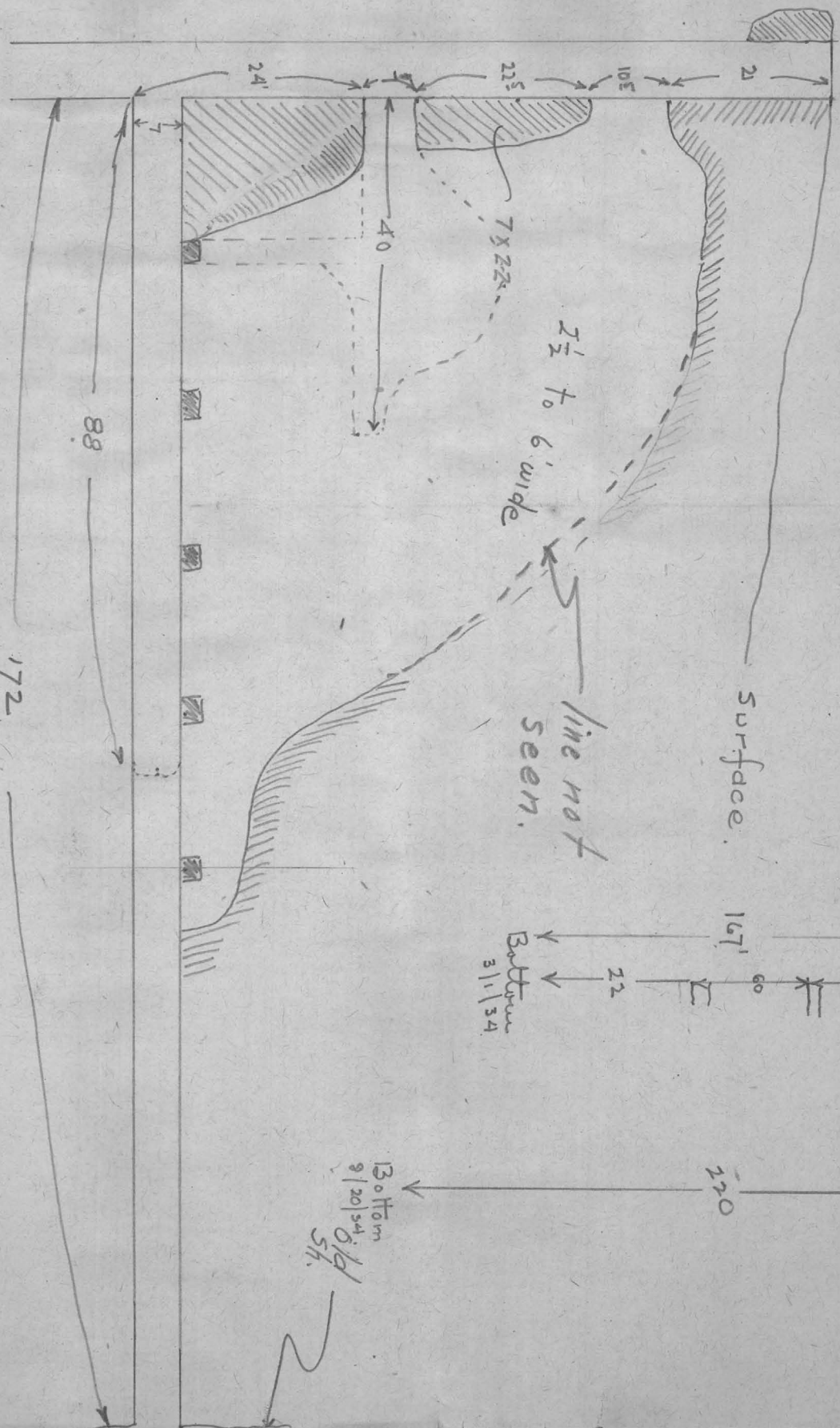
ALBERT S. KONSELMAN,
Mining Engineer,
Bank of Arizona Bldg.,
Prescott, Arizona.

Open
Stope

4 X 11

Jessie Sh.

→ NE



130' from
8/20/24
Old
Sh.

120

REPORT ON
UNION-JESSE MINES

ALBERT S. KONSELMAN,
Mining Engineer,
Bank of Arizona Bldg.,
Prescott, Arizona.

ALBERT S. KONSELMAN
MINING ENGINEER
BANK OF ARIZONA BLDG.
PRESCOTT, ARIZONA

March 5, 1934.

Mr. F. A. Reid,
Suite 1019, Bank of America Bldg.,
Los Angeles, California.

Dear Sir:

The writer was engaged by Mr. W. A. Nickerson, President of the Arizona Consolidated Mining Co., to investigate and report upon certain conditions at the Union-Jesse Mines of this Company and to check various statements made in a prospectus which it proposes to issue.

Mr. Nickerson, a mining engineer himself, had already investigated these matters, but it appears necessary that they be looked into and certified to by someone entirely disinterested in the Company's affairs.

Some of the statements made are based on actual observation; others are simply matters of judgment and based on experience and information gained from reports of other engineers.

The writer spent four days on the property inspecting the accessible surface and underground workings, making a mill test for capacity, sampling and surveying. He spent two days in his office going over reports and data he assembled.

His findings are discussed in this report.

Yours very truly,

Albert S. Konselman.

ASK/go

I N D E X

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I LOCATION, PROPERTY and TITLE

The group of Mining Claims owned by the Arizona Consolidated Mining Company are situated in the Big Bug Mining District in Yavapai County, Arizona, five miles east of the town of Humboldt.

The property consists of the following claims:

<u>Name</u>	<u>Title</u>	<u>Yavapai County Records</u>	
Ella	U. S. Patent	B. M. *36	Page 32
Little Jesse	"	B. M. 29	" 177
Little Grace	"	B. M. 39	" 500
Dividend	"	B. D. *10	" 469
Arroya	"	B. D. 85	" 476
Antelope	Right of location	B. M. 63	" 467
Lucile	"	B. M. 69	" 323
Bertha	"	B. M. 69	" 255
Marion C	"	B. M. 55	" 68
Fannie Grant	"	B. M. 71	" 583
Paymaster	"	B. M. 29	" 178
Independent #2	"	B. M. 29	" 169
Golden Star	"	B. M. 39	" 214
Little Jack	"	B. M. 31	" 493
Golden Rose	"	B. M. 100	" 567
Little Sam	"	B. M. 34	" 289
Aida	"	B. M. 100	" 566
Union	"	B. M. 26	" 61
James G. Blaine	"	B. M. 38	" 376
St. Louis	"	B. M. 100	" 565
Arizona	"	B. M. 41	" 53
Yavapai	"	B. M. 41	" 55
Maude	"	B. M. 100	" 563
Chicago	"	B. M. 100	" 564
Mispah	"	B. M. 39	" 214
El Caney	"	B. M. 46	" 177
John Gill	"	B. M. 75	" 184
Teddy	"	B. M. 46	" 185
Roosevelt	"	B. M. 47	" 186
Ohio	"	B. M. 69	" 258
El Terra	"	B. M. 47	" 187
Highland	"	-----	---
Atlantic Mill site	Right of Location	B.M.S.* 2	" 481
Pacific Mill site	Right of Location	B.M.S. 3	" 18
Union Mill site	Right of Location	B.M.S. 3	" 19

<u>Name</u>	<u>Title</u>	<u>Yavapai County Records</u>
Little Ora Mill site	Right of Location	B.M.S. 5 Page 157

* B. D. Book of Deeds

* B. M. Book of Mines

* B.M.S. Book of Mill Sites and Water Rights

A deed of conveyance of these Claims executed August 1, 1933, in favor of the Arizona Consolidated Mining Company, is recorded in Book of Deeds 160, on page 3, records of Yavapai County, at Prescott, Arizona.

THE UNION - JESSE MINES

It was not within the scope of this investigation to give a detailed description of the Geology of the property. This has already been described in reports by A. L. McCarty, A. W. Warwick, W. F. Bradley and M. G. Hansen.

In general, it can be stated that the Group lies in an area of rock formations, which because of their variety have been designated as the Crooks Complex. Locally the Yavapai schists predominate. Their strike is N 30 E with a general dip to the southeast. Shears along their strike became channels into which mineralizing agents found their way and along which bodies of commercial ore were deposited.

These shears have also been lines of weakness through which basic dykes have intruded. This is especially noticeable along the Union and the Jesse Veins. These two

veins have supplied the major production of the Group to date. From this observation and from experience under similar conditions in other parts of the region, it is believed that these dykes have an important bearing on the ore deposition.

Except along segments of the vein where massive quartz has left a bold outcrop, the croppings are not prominent.

The croppings of four veins have attracted sufficient attention to invite prospecting by shafts and tunnels. One of these passes through the Yavapai Claim and continues into the Maude and Chicago ground.

Farther south the Union Vein has been opened up for almost the full length of the Union Claim. It passes through the James G. Blaine Claim and shows up strongly in a shaft sunk on the St. Louis Claim.

One of the strongest veins on the property passes through the Independent, Golden Star and Little Jack Claims.

The Little Jesse Vein is the best known because of its production. This vein is found on the Little Grace, Little Jesse and Ella Claims and continues to the northeast for at least 3000 feet through the contiguous Gold Leaf properties. This vein is especially notable for the length and richness of its ore shoots.

It has been stoped for over 600 feet southwest of the Little Jesse #2 shaft and farther into Little Grace ground;

the ore shoot continues in the drift now being run to the northeast on the 85 foot level (now 88 ft. in from the shaft); it shows up in a series of shallow prospect holes from which samples showing good values in free gold (by panning) were taken; it extends into the Gold Leaf ground where stopes, now inaccessible, were mined to the surface.

All of these observable facts justify the belief that the lateral extension of this vein can be confidently expected to add to present known ore reserves.

It has been shown that the outcrops of these veins are not prominent all along their strike and, for that reason, it is not unusual for underground cross cutting to expose veins not readily seen in even a close scrutiny of the brush covered surface.

Workings off the Union Tunnel, which penetrates the ridge between the Mill and Leland Gulches, have cut several additional veins in Union and Paymaster ground. These veins having apparently the same character, and having been formed under the same conditions as the known productive veins, are likely prospects and warrant development.

It can therefore be said with certainty that there are four veins on which sufficient work has been done to prove them to be ore bearing; and, in addition to these, there are at least six others on which further prospecting

is justified. Their thickness varies with the curvature of the enclosing walls from less than a foot to $2\frac{1}{2}$ feet, and where mineralization has extended into the walls (as in the Union) widths of 10 to 15 feet have been extracted.

DEVELOPMENT

During past operations and with that accomplished by the present owner, much development work has been done. The workings of the Union Mine are accessible to the first level below the tunnel. Dewatering, which can be done at anytime, will make the deeper level enterable.

The workings on the first level of the Independent were inspected. A little cleaning up will open that portion which is now difficult to get into.

The Little Jesse is the more thoroughly developed. It is being reopened through the most northeasterly of its four shafts. This shaft is being deepened and has attained a depth of 167 feet. From those workings that are now open and from maps of older workings, there is shown to be at least 9000 feet of work done on the property distributed as follows:

<u>Claim</u>	<u>Shafts</u>	<u>Drifts</u>
Little Jesse	1150	2800
Independent	150	500
Union	300	4000
Total.....	<u>1600</u>	<u>7300</u>

This is a rough approximation made from scaling of maps. It does not include raises and intermediate drifts, nor does it include shafts, cuts and tunnels on other

claims. It is safe to say that on the entire group, there is in excess of 10,000 feet of work done.

PAST PRODUCTION

The Union-Jesse Mines supplies the major production of the Group. These were early day producers and operated under several organizations. Exact records of production are not available.

Lingren on page 133 of Bulletin 782, published by the United States Geologic Survey estimates the combined production of these mines up to 1922, at \$800,000.

The best informed man regarding this is Judge Edwin Wells of Phoenix. His son Elmer Wells told the writer of his father's connection with these mines, while a banker in Prescott. His statement was that over one million dollars was taken from this ground. Since that is the best information obtainable, it can be presumed that this figure is more nearly correct.

SHAFTS

The shaft at the north end of the Little Jesse is now being used and ore taken from development is being run through the mill.

The shaft on the Union was inspected to the 1st level, 85 ft. below the tunnel. Both these shafts are equipped with hoists and production through them can now be obtained.

In addition to these, there are shafts sunk on the

vein in commercial ore on the Yavapai, St. Louis, Little Jack and Independent Claims. These lack hoisting equipment and head frames and need repair. They are not ready for immediate production, but can be put in shape at relatively small expense when such production is required.

ORE RESERVES

In order to make a complete check on total reserves put in sight by existing development, it would have been necessary to completely reopen the Little Jesse Mine and repeat work already done and reported on.

For the purposes of this investigation, that was not deemed necessary. Those workings which are accessible were inspected and corroborative samples taken.

The report by A. W. Warwick is the best and only evidence of reserves left in the inaccessible portions of the Little Jesse. This report was carefully read. It "reads" as though the writer knew his business. It is undated and the question arises as to how much ore was added and mined since this report was written.

Warwick gives the past production as \$615,000, but the last level he saw was the Fifth. As nearly as can be determined \$385,000 has been extracted since the report was written, but two additional levels have been opened and the present operators have added materially to the reserves through lateral extensions and the sinking of the Union shaft.

Correcting Warwick's estimate for subsequent extraction would give \$1,171,000 as the value remaining, or \$2,050,000 when corrected to present value of \$35.00 per ounce. To bring this total to \$3,000,000 based on the value of additions since the Warwick estimate was made plus those which can be reasonably expected, would not be out of line with this type of property.

It is not meant by this that \$3,000,000 is set as the limit of the property's productivity, but that prudence demands a certain amount of caution in predicting too far ahead of development.

SAMPLES

- No. 1 Union Mine 85' level in West End of back of Stope, 10' above rail across 18 inches white quartz containing fresh iron sulphides - .34 oz gold, 2.1 oz silver--value \$13.25.
- No. 2 In same stope at East End over 15 inches of ore having the same appearance as No. 1-- .94 oz gold; 4.9 ounces silver --value \$36.05.
- No. 3 Union Mine, tunnel level across 20" in back of main drift just west of the Big Stope same character as Nos. 1 and 2 -- 1.46 ounces gold; 3.7 ounces silver--value \$53.40.
- No. 4 Jesse Mine, in East breast of stope 20 ft above 85' level 40 ft. from Jesse No. 2 shaft across 20 inches--2.34 oz gold, 0.5 oz silver--value \$82.20.
- No. 5 Back of same stope 18 ft. from shaft across 29"-- 3.56 oz gold, 3.6 oz silver -- value \$126.40.
- No. 6 Back of same stope 5' from shaft across 16" - 1.52 oz gold, 0.9 oz silver--value \$53.40.
- No. 7 East face of 85' level, 88' from shaft across 18" on hangwall side, .23 oz gold, trace in silver--value \$8.10.

- No. 8 Same location as No. 7, 29" of silicified schistose rock on footwall side .05 oz gold, trace in silver--value \$1.75.
- No. 9 Back of 85' level, 73 ft. from shaft across 19", .18 oz gold, trace in silver, value \$6.30.
- No. 10 Back of 85' level, 68 ft. from shaft across 13"--4.65 oz gold, 2.7 oz silver--value \$164.75.

In samples 1-2-3 the sulphides were fresh and un-oxidized, and show that a highgrade concentrate can be made.

The samples were taken to corroborate claims made for the grade of the ore in accessible places, on the assumption that if these were satisfactory, information as to grade in closed workings could be accepted as accurate.

COSTS

Where a property is managed by an experienced man who is at the same time financially interested, costs will be low when compared to other properties of similar type.

A few examples of stoping costs made in mines using the shrinkage system in 1929 and 1930 are given for comparison:

<u>Mine</u>	<u>Width of Vein</u>	<u>Stoping Cost</u>
Nevada Mass	4.5 ft.	2.74
Feck-Hughes	0 to 60 ft.	1.56
Cortez	1 to 20 ft.	1.97
Eighty-five	2 to 10 ft.	1.97

Mr. Nickerson estimates a mining and milling cost of \$3.50 per ton. At the start when he is able to look into every detail, he may make these costs, but as the

enterprise grows and responsibility has to be delegated to tohers, it is felt that these costs are bound to rise. Therefore, on a basis of a sustained operation, it is believed that \$4.00 to \$4.50 would be a more conservative figure to go on.

MILL CAPACITY

In order to test the capacity of the mill, the ore in the bin was leveled off and the mill started. It was run for one hour and forty-five minutes, during which time a cubic foot box was filled four times from the feed and weighed. At the end of the test the amount actually run through the mill was measured and the weight of ore ground calculated. Data on which the calculation was made follows:

Box No.1.....	96	lb.
" No.2.....	100	"
" No.3.....	111	"
" No.4.....	109	"
Average per cubic foot.....	104	"
Total grind 85 cubic feet		
Total grind in tons	4.42	
Wet tons per 24 hours	60.50	✓
Dry tons per 24 hrs. (moisture estimated @5%)	57.5	✓

Mill capacity depends entirely on the character of the feed. The ore in the bin came from development in the Little Jesse. It would slow up considerably when the hard quartz from the Union is run.

The milling machinery is housed in the old stamp mill building and occupies but a part of this. It is powered through a new Wankesha four cylinder $6\frac{1}{2} \times 8$ --900

R M P engine, using a low grade fuel and capable of delivering about 100 H. P.

To increase the present capacity, either a larger grinding unit or a secondary crushing unit to supply a finer feed to the ball mill would be necessary.

VALUES AND PROFIT

The grade of the ore (as shown by samples taken and the past experience of the property and District in general) is high. At present prices, which in the opinion of the writer will be maintained, mill heads with a recoverable value equivalent to .570 ounces of gold can be supplied and on a 60 ton per day basis would yield the following monthly profit:

60 tons x .57 ounces x \$35.00 per ounce x 30 days =	\$35,900
Less costs 1800 tons @ \$4.50	8,100

Net per month	<u>\$23,800</u>
---------------	-----------------

This is an ideal condition. Loss in capacity due to breakdowns and unforeseen contingencies are bound to occur. At this stage of the enterprise estimates must necessarily be rough and the lines cannot be too finally drawn.

The figure given is, however, indicative of a monthly profit of about \$20,000.00.

II INSURANCE

The following items are insured against destruction by fire:

- A) Mill building
- B) Mill machinery and supplies
- C) Assay office and equipment

The above are covered by Policy #11333 of the Hartford Fire Insurance Company and Policy #5302 of the Home Insurance Company.

Each policy is for \$5,500 and provides protection up to January 1st, 1935.

In addition the following are insured:

- A) Managers dwelling
- B) Furnishings in (A)
- C) Employees' dwelling #1
- D) Employees' dwelling #2

These are covered by the Hartford Fire Insurance Company's policy #11334 and the Home Insurance Company's policy #5303. Both are for \$1250.00 and expire Jan. 10, 1937.

Employees have each agreed in writing to reject the terms of the Arizona Workman's Compensation Law and have accepted a type policy broader in its protection issued by the Mutual Benefit Health and Accident Association of Omaha, Nebraska.

SURVEYS

A survey was made to locate a tunnel and open stope at the north end of the Union Claim. The north drift off the Union crosscut tunnel was re-surveyed. The purpose of this survey was to determine where the vein found in the upper and surface workings would strike the drift level.

THE CUSTOM ASSAY OFFICE

ASSAY CERTIFICATE

Au @ 35.00
 Ag @ 64 1/2¢
 3-2-34

PRESCOTT, ARIZONA

A. S. Konselman,

Samples submitted were found to contain:

Lot	DESCRIPTION	Au.Oz.	Ag.Ozs	Cu.%	Pb.	Zn.	Insol	Fe.	Cao	S
	Sample # 1	.34	2.1		11 90 1 35	>	13.25			
	2	.94	4.9		32 90 3 16	>	36.05			
	3	1.46	3.7		51 00 2 40	>	53.40			
	4	2.34	0.5		81 90 30	>	82.20			
	5	3.56	3.6		124.10 2.30	>	126.40			
	6	1.52	0.9		52 80 60	>	53.40			
	7	.23	Trace		8 10 -		8.10			
	8	.05	Trace		-		1.75			
	9	.18	Trace		6 30 -		6.30			
	10	4.65	2.7		163 00 175		164.75			

Charges Paid

H. C. Swoot

Registered Assayer.

The result of the survey shows that the drift is already on this vein; that the face of the drift is under the north end of the stope and has 35 feet to go to be under the bottom of the shaft, which point is 176 ft. below the shaft collar.

The old Union Shaft and another, about 360 ft. north-east of the Union shaft were located by stadia. Both are on the Union Vein. The Union shaft is almost directly above the southwest face of the Union Tunnel level.

CONCLUSION

As it now stands the property is well equipped with mining machinery and tools and supplies to carry on the work, and trucks to transport the ore to the mill.

The mill equipment is brought up to date with the addition of its new power plant and floatation machine.

Equipment for the technical control by assaying and engineering is at hand and except for those items that even a long established mining business continually requires, the essentials are now provided.

With its capable management, it gives every promise of becoming a stable and profitable enterprise.

ALBERT S. KONSELMAN,
Registered Professional Engineer,
Room 31, Bank of Arizona Bldg.,
Prescott, Arizona,
March 5, 1934.

TRAVERSE OF

Union Tunnel - Union Shaft - Upper Tunnel

POINT	DEFLECTION ANGLE	BEARING			DISTANCE	COS	SIN	LATITUDE (COSINE)		DEPARTURE (SINE)		COORDINATES		Δ	1/2 Δ	RADIUS	LENGTH	SUB-TANG.	
		DEG.	MIN.	SEC.				NORTH	SOUTH	EAST	WEST	N	E						
1		S 17 30 0			196.33	.95372	.30071		187 24	59 04		5000	2000						f
2		N 86 32 -		E	47.25	.06047	.99817	2 286		47 16		4812 76	2059 04						
3		N 37 22 -		E	98.74	.79477	.60691	78 48		59 93		4815 62	2106 20						
4		N 32 21 -		E	56.03	.84480	.53509	47 33		29 98		4894 10	2166 13						
4A		N 39 45 -		E	62.00	.76884	.63944	47 67		39 65		4941 43	2196 11						
5		N 47 27 -		E	113.26	.67623	.73669	76 59		83 44		4989 10	2235 76						
6		N 50 53 -		E	86.05	.63090	.77586	54 29		66 76		5065 69	2319 20						
7		N 46 08 -		E	98.43	.69298	.72095	68 21		70 96		5119 98	2385 96						
8												5188 19	2456 92						
2		N 17 30 -		W	196.33							5000 00	2000 00						
1		N 18 24 -		W	60.06	.94888	.31565	56 99		18 95		5056 99	1981 05						
A		N 79 35 -		E	361. -	18081	98352	65 27		35505		5122 26	2336 10						
B		N 59 23 -		E	93 -	.52929	.86059	47 36		80 03		5169 62	2416 13						
C																			
A		N 79 35 -		E								5122 26	2336 10						
B		N 73 27 -		E	40 -	.28485	.95857	11 39		38 34		5133 65	2374 44						
D																			
A		N 79 35 -		E								5122 26	2336 10						
B		S 35 59 -		W	862.	.81428	.58047	701 91		500 36		4720 35	1835 74						
E																			

Scaled. Bearing, f assumed coordinate

TRAVERSE OF

Location 1st Shaft

POINT	DEFLECTION ANGLE	BEARING			DISTANCE	COS	SIN	LATITUDE (COSINE)		DEPARTURE (SINE)		COORDINATES		Δ	½ Δ	RADIUS	LENGTH	SUB-TANG.	TANG LENGTH
		DEG.	MIN.	SEC.				NORTH	SOUTH	EAST	WEST	N	E						
2		N	17	30	-	W													
1		N	18	24	-	W													
H		N	79	35	-	E													
B		S	41	37	-	W	862	74760	66414		64443	57249	512216	233610					
E													447783	176361					

ARIZONA CONSOLIDATED MINING COMPANY

AN ARIZONA CORPORATION

Heads 7.2 oz

Recovery 90%

Operating 70%

Tails .02 "

Conc 3.5 "

Ratio 30.

Tonnage 28

Union Ore 50%

Jesse Run 50%

Crew 3 operators - 1 crusher. - 1 subst

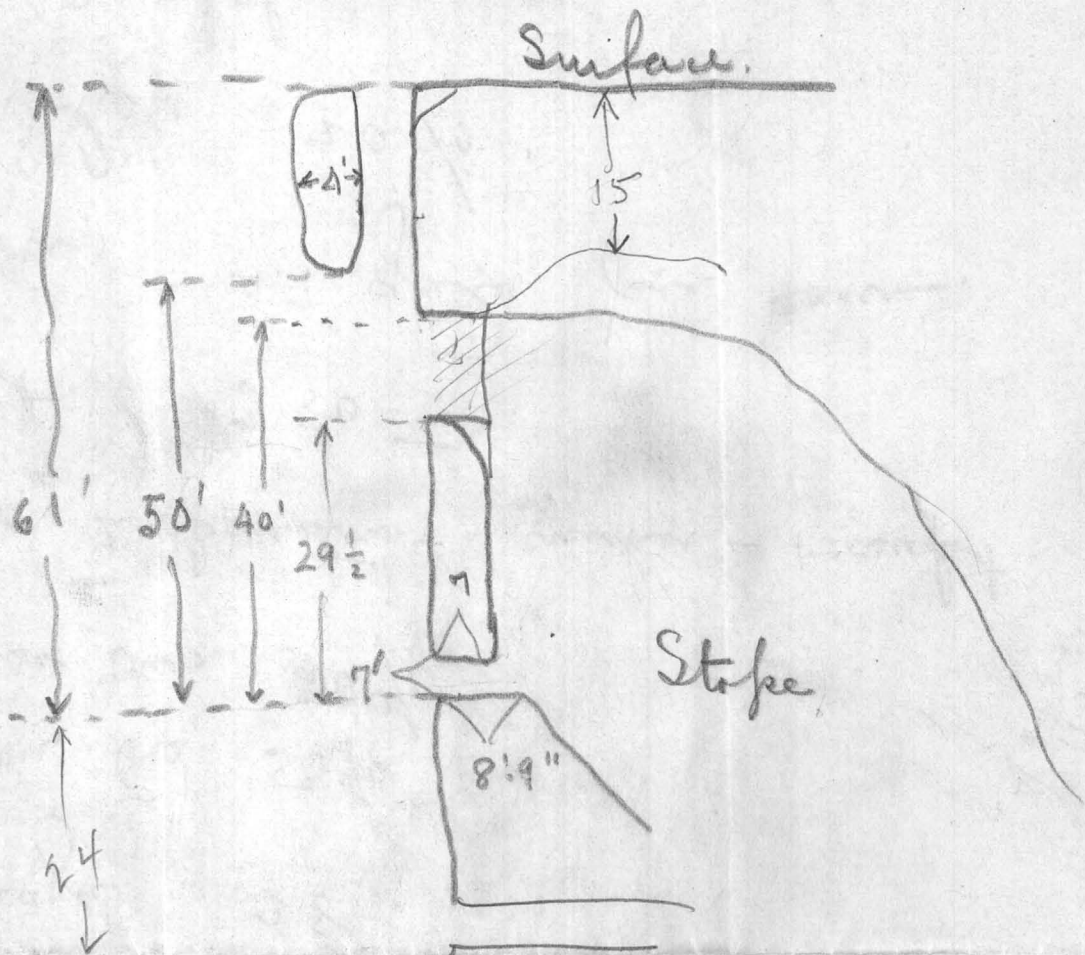
Cost \$3.80 F

Power 4.7 gals per hour.

% Solids 20%

< 40 mesh.

2000
12
400
35
\$14,000
\$2,600



10