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REYMERT MINE PRODUCTION

COMPILED FROM VARIOUS REPORTS AND RECORDS OF THE COMPANY IN MILWAUKEE

Year		Tons	Average Silver oz. per ton	Approximate total Silver Ounces *
1886		?		
1887		849	22.8	19,367
Jan - 1888	-Company	5,326	31.71	168,886
Mch - 1889	operation			
Mch 25, 1889		11,890	19.30	228,651
Feb 8, 1891				
?				
1925 & 1926		5,175	16.10	193,990
1927		6,743	18.00	121,374
1928		6,916	16.19	112,013
1929		4,536	17.25	78,253
1930		799	15.33	12,074
1931		217	16.00	3,427
1932		No returns	- -	- -
1933	-Lessees	No returns	- -	- -
1934		1,116	19.642	21,938
1935		7,588	14.357	198,941
1936		11,497	11.29	129,801
1937		10,051	11.348	114,609
1938		15,195	16.229	246,603
1939		20,908	11,598	242,499
1940		20,609	10.259	212,264
1941		9,147	10.02	91,662
1942		8,057	15.043	121,215
1943		2,980	12.50	37,251
1944		1,454	12.83	19,072
		151,053	15.11av.	2,283,890
1945 Apl to Sep		11,366	15.00(about)	170,490
		162,419		2,454,380

* Some of these figures may represent only the silver paid for by the smelters.

MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 1

Smelter Lot 1 DATE January 10, 1950

Shipper Lot M-1 (Delivered Dec 29, 1949

BOUGHT OF Reymert Extension Silver Mines Classification Ore.

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	74	148600	36960	111640	2.9	108402
						54.201

N. Y. QUOTATIONS

Date Jan. 1, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper .20	Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 20.10	Oz.	20.10 oz. per ton, less 5%-19.095 oz. at .90 Per oz.		17.1855
Gold .01	Oz.	oz. per ton, oz. at Per oz.		
Iron 6.0	Pct.	units at Per Unit.		
Lime 9.9	"	units at Per Unit.		
Alumina 4.5	"	units at Per Unit.		
Silica 40.6	"	units at Per Unit.		
Sulphur .6	"	units at Per Unit.		
BASIC 22.6				
Manganese	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	5.00	17.1855
		Net Value Per Ton		12.1855

Total Value of 54.201 Dry Tons at $ 12.1855		660.47
Less Freight Tons at $ From		
Less Switching	7.52	
Less Sampling		
Less Additional Treatment Charge of 10% of metals paid for in excess of $15.00. Excess is 2.1855. .21855 X 54.201	11.85	
TOTALS	19.37	660.47
Amount Due Shipper—Voucher No. 67989		641.10

Made by Checked Approved

MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 43

Smelter Lot 114 DATE April 12, 1950

Shipper Lot M-12

BOUGHT OF Reymert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
MA	79	105720	37360	68360 34180	4.1	65557 32.7785

N. Y. QUOTATIONS

Date April 6, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper .14	Pct.	lbs. per ton, less		
Silver 24.00	Oz.	24.00 oz. per ton, less 5%=22.80 oz. at .90 Per oz.		20.5200
Gold .01	Oz.	oz. per ton, oz. at Per oz.		
Iron 8.6	Pct.	units at Per Unit.		
Lime 2.0	"	units at Per Unit.		
Alumina 3.9	"	units at Per Unit.		
Silica 29.8	"	units at Per Unit.		
Sulphur .2	"	units at Per Unit.		
[illegible] 23.4	"	units at Per Unit.		
Manganese	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	5.00	20.5200
		Net Value Per Ton		15.5200

Total Value of 32.7785 Dry Tons at $ 15.5200			508.72
Less Freight	Tons at $ From		
Less Switching		7.52	
Less Sampling			
Less Additional Treatment Charge of 10% of metals paid for in excess of $15.00. Excess is 5.52. .552 X 32.7785		18.09	
	TOTALS	25.61	508.72
	Amount Due Shipper—Voucher No.		483.11

Made by Checked Approved

MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 35

Smelter Lot 95 DATE March 25, 1950

Shipper Lot M-11

BOUGHT OF Reynert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	78	145680	37280	108400	3.9	104172
				5420		52.086

N. Y. QUOTATIONS

Date March 20, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS	PAYMENTS PER TON	DEBITS	CREDITS
Copper .16 Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 15.00 Oz.	15.00 oz. per ton, less 5%=14.25 oz. at .90 Per oz.		12.8250
Gold .01 Oz.	oz. per ton, oz. at Per oz.		
Iron 6.0 Pct.	units at Per Unit.		
Lime 6.3 "	1 units at .04 Per Unit. Credit	.04	
Alumina 5.8 "	units at Per Unit.		
Silica 36.2 "	units at Per Unit.		
Sulphur .2 "	units at Per Unit.		
Barite 20.0 "	units at Per Unit.		
Manganese "	units at Per Unit.		
Arsenic "	units at Per Unit.		
Antimony "	units at Per Unit.		
Bismuth "	units at Per Unit.		
Insoluble "	units at Per Unit.		
	Treatment Charge	5.00	
	TOTALS	4.96	12.8250
	Net Value Per Ton		7.8650
Total Value of 52.086	Dry Tons at $ 7.8650		409.66
Less Freight	Tons at $ From	7.52	
Less Switching			
Less Sampling			
Less Additional Treatment Charge			
	TOTALS	7.52	409.66
	Amount Due Shipper—Voucher No.		402.14

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 33

Smelter Lot 81 DATE March 15, 1950

Shipper Lot M-10

BOUGHT OF Reymert Extension Silver Mines Classification Ore.

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	76	147820	36120	111700 55.85	6.9	103993

N. Y. QUOTATIONS

Date Mar. 8, 1950

Copper (per lb.) 51.9965

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper	.12 Pct.	21.80 lbs. per ton, less 5%-20.71 lbs. at .90 Per lb.		18.6390
Silver	Oz.	oz. per ton, less oz. at Per oz.		
Gold	.01 Oz.	oz. per ton, oz. at Per oz.		
Iron	9.0 Pct.	units at Per Unit.		
Lime	2.0 "	units at Per Unit.		
Alumina	3.5 "	units at Per Unit.		
Silica	36.6 "	units at Per Unit.		
Sulphur	.3 "	units at Per Unit.		
Manganese	Derive 18.4 "	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.	5.00	
		Treatment Charge	5.00	18.6390
		TOTALS		18.6390
		Net Value Per Ton		

Total Value of 51.9965 Dry Tons at $ 13.6390 — 709.18

Less Freight ... Tons at $ ... From ... — 7.52

Less Switching

Less Sampling

Less Additional Treatment Charge of 10% of metals paid for in excess of $15.00. Excess is 3.6390. .36390 x 51.9965 — 18.92

TOTALS — 26.44 — 709.18

Amount Due Shipper—Voucher No. — 682.74

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 53

Smelter Lot 147 DATE May 6, 1950

Shipper Lot M-16

BOUGHT OF Reymert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	75	92880	35980	56900	2.6	55421
"	78	139680	37280	102400	7.1	95130
		232560	73260	159300		150551
				79650		75.2755
						75.2755

N. Y. QUOTATIONS

Date May 1, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper .12	Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 12.00	Oz.	12.00 oz. per ton, less 5%-11.40 oz. at .90 Per oz.		10.2600
Gold .01	Oz.	oz. per ton, oz. at Per oz.		
Iron 3.0	Pct.	units at Per Unit.		
Lime 10.6	"	6 units at .04 Per Unit. Credit	.24	
Alumina 4.3	"	units at Per Unit.		
Silica 33.8	"	units at Per Unit.		
Sulphur .4	"	units at Per Unit.		
Manganese 11.0	"	units at Per Unit.		
Barite				
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	4.76	10.2600
		Net Value Per Ton		5.50
		Total Value of 75.2755 Dry Tons at $ 5.50		414.02
		Less Freight Tons at $ From		
		Less Switching	15.04	
		Less Sampling		
		Less Additional Treatment Charge		
		TOTALS	15.04	414.02
		Amount Due Shipper—Voucher No.		398.98

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 54

Smelter Lot 150 DATE May 10, 1950

Shipper Lot M-18

BOUGHT OF Reymert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
MA	77	142300	37500	104800	10.4	93901
				524		
						46.9505

N. Y. QUOTATIONS

Date May 4, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS	PAYMENTS PER TON	DEBITS	CREDITS
Copper .18 Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 12.00 Oz.	12.00 oz. per ton, less 5%-11.40 oz. at .90 Per oz.		10.2600
Gold .01 Oz.	oz. per ton, oz. at Per oz.		
Iron 2.7 Pct.	units at Per Unit.		
Lime 6.1 "	units at Per Unit.		
Alumina 2.2 "	units at Per Unit.		
Silica 42.6 "	units at Per Unit.		
Sulphur .3 "	units at Per Unit.		
Manganese "	units at Per Unit.		
Arsenic "	units at Per Unit.		
Antimony "	units at Per Unit.		
Bismuth "	units at Per Unit.		
Insoluble "	units at Per Unit.		
	Treatment Charge	5.00	
	TOTALS	5.00	10.2600
	Net Value Per Ton		5.2600
Total Value of 46.9505	Dry Tons at $ 5.2600		246.96
Less Freight	Tons at $ From		
Less Switching		7.52	
Less Sampling			
Less Additional Treatment Charge			
	TOTALS	7.52	246.96
	Amount Due Shipper—Voucher No.		239.44

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 57

Smelter Lot 155 DATE May 12, 1950

Shipper Lot M-19

BOUGHT OF Reymert Extension Silver Mines, Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	77	123000	37500	85500	10.8	76266
				4275		38.133

N. Y. QUOTATIONS

Date May 8, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper .10	Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 12.00	Oz.	12.00 oz. per ton, less 5%-11.40 oz. at .90 Per oz.		10.2600
Gold .01	Oz.	oz. per ton, oz. at Per oz.		
Iron 5.4	Pct.	units at Per Unit.		
Lime 7.6	"	units at Per Unit.		
Alumina 3.7	"	units at Per Unit.		
Silica 48.6	"	units at Per Unit.		
Sulphur .3	"	units at Per Unit.		
Barite 7.8	"	units at Per Unit.		
Manganese	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	5.00	10.2600
		Net Value Per Ton		5.2600

Total Value of 38.133 Dry Tons at $ 5.2600			200.58
Less Freight	Tons at $ From		
Less Switching		7.52	
Less Sampling			
Less Additional Treatment Charge			
	TOTALS	7.52	200.58
	Amount Due Shipper—Voucher No.		193.06

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 61

Smelter Lot 168 DATE May 19, 1950

Shipper Lot M-21

BOUGHT OF Reymert Extension Silver Mines Classification Ore.

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	78	101980	37280	64700	1.0	64053
				3235		32.0265

N. Y. QUOTATIONS

Date May 15, 1950

Copper (per lb.) .1920

Less .0275

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper .75	Pct.	15.00 lbs. per ton, less 8#-7.00 lbs. at .1645		1.1515
Silver 4.70	Oz.	4.70 oz. per ton, less 5#-4.465 oz. at .90		4.0185
Gold .01	Oz.	oz. per ton, oz. at		
Iron 4.2	Pct.	units at Per Unit.		
Lime 3.1	"	units at Per Unit.		
Alumina 1.4	"	units at Per Unit.		
Silica 76.4	"	25 units at .04 Per Unit. Credit	1.00	
Sulphur .3	"	units at Per Unit.		
Barite 1.0	"	units at Per Unit.		
Manganese	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	4.00	5.1700
		Net Value Per Ton		1.1700
Total Value of 32.0265		Dry Tons at $ 1.17		37.47
Less Freight		Tons at $ From		
Less Switching			7.52	
Less Sampling				
Less Additional Treatment Charge				
		TOTALS	7.52	37.47
		Amount Due Shipper—Voucher No.		29.95

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 67

Smelter Lot 182 DATE May 30, 1950

Shipper Lot M-23

BOUGHT OF Reymert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
MA	78	136000	37280	98720	6.9	91908
				49360		45.954

N. Y. QUOTATIONS

Date May 25, 1950

Copper (per lb.) .....

Less .....

Silver (per oz.) .90

Gold (per oz.) .....

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper .16	Pct.	..... lbs. per ton, less ..... lbs. at ..... Per lb.		
Silver 11.10	Oz.	11.10 oz. per ton, less 5%-10.545 oz. at .90 Per oz.		9.4905
Gold .01	Oz.	..... oz. per ton, ... oz. at ..... Per oz.		
Iron 5.2	Pct.	..... units at ..... Per Unit.		
Lime 7.3	"	..... units at ..... Per Unit.		
Alumina 3.5	"	..... units at ..... Per Unit.		
Silica 55.8	"	2 units at ..... Per Unit. Credit	.08	
Sulphur .2	"	..... units at ..... Per Unit.		
Barite 8.0	"	..... units at ..... Per Unit.		
Manganese	"	..... units at ..... Per Unit.		
Arsenic	"	..... units at ..... Per Unit.		
Antimony	"	..... units at ..... Per Unit.		
Bismuth	"	..... units at ..... Per Unit.		
Insoluble	"	..... units at ..... Per Unit.		
		Treatment Charge	5.00	
		TOTALS	4.92	9.4905
		Net Value Per Ton		4.5705
		Total Value of 45.954 Dry Tons at $ 4.5705		210.03
		Less Freight ..... Tons at $ ..... From		
		Less Switching	7.52	
		Less Sampling		
		Less Additional Treatment Charge		
		TOTALS	7.52	210.03
		Amount Due Shipper—Voucher No.		202.51

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 88

Smelter Lot 250 DATE July 21, 1950

Shipper Lot M-32

BOUGHT OF Reymert Extension Silver Mines, Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
WA	79	152380	37360	115020	5.7	108464
				57.510		54.232

N. Y. QUOTATIONS

Date July 14, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper	.18 Pct.	9.00 lbs. per ton, less 3.-8.55 lbs. at .90 Per lb.		7.6950
Silver	.01 Oz.	oz. per ton, less oz. at Per oz.		
Gold	2.60 Oz.	oz. per ton, oz. at Per oz.		
Iron	20.4 Pct.	15 units at .04 Per Unit. Credit	.60	
Lime	4.0 "	units at Per Unit.		
Alumina	23.0 "	units at Per Unit.		
Silica	.2 "	units at Per Unit.		
Sulphur	22.0 "	units at Per Unit.		
Manganese	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.	5.00	
		Treatment Charge		
		TOTALS	4.40	7.6950
		Net Value Per Ton		3.2950

Total Value of 54.232 Dry Tons at $ 3.2950 — 178.69

Less Freight — Tons at $ — From — 7.52

Less Switching

Less Sampling

Less Additional Treatment Charge

TOTALS 7.52 178.69

Amount Due Shipper—Voucher No. 171.17

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 92

Smelter Lot 252 DATE July 21, 1950

Shipper Lot M-33

BOUGHT OF Reymert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR		WET WEIGHT			Moisture	DRY WEIGHT
Initial	Number	Gross	Tare	Net	%	
M.A.	71	81340	36400	44940	2.6	43772
				2247		21.886

N. Y. QUOTATIONS

Date July 17, 1950

Copper (per lb.) .2220

Less .0275

Silver (per oz.) .90

Gold (per oz.) 92% of 35.00 (32.20)

ASSAY and ANALYSIS	PAYMENTS PER TON	DEBITS	CREDITS
Copper 1.68 Pct.	33.60 lbs. per ton, less 8#-25.60 lbs. at .1945 Per lb.		4.9792
Silver 4.60 Oz.	4.60 oz. per ton, less 5%- 4.37 oz. at .90 Per oz.		3.9330
Gold .03 Oz.	.03 oz. per ton, oz. at 32.20 Per oz.		.9660
Iron 7.50 Pct.	units at Per Unit.		
Lime 6.5 "	units at Per Unit.		
Alumina 2.5 "	units at Per Unit.		
Silica 66.2 "	14 units at .04 Per Unit. Credit	.56	
Sulphur .4 "	units at Per Unit.		
Barite .6 "	units at Per Unit.		
Manganese "	units at Per Unit.		
Arsenic "	units at Per Unit.		
Antimony "	units at Per Unit.		
Bismuth "	units at Per Unit.		
Insoluble "	units at Per Unit.		
	Treatment Charge	5.00	
	TOTALS	4.44	9.8782
	Net Value Per Ton		5.4382

Total Value of 21.886 Dry Tons at $ 5.4382		119.02
Less Freight Tons at $ From		
Less Switching	7.52	
Less Sampling		
Less Additional Treatment Charge		
TOTALS	7.52	119.02
Amount Due Shipper—Voucher No.		111.50

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 94

Smelter Lot 264 DATE August 2, 1950

Shipper Lot M-34

BOUGHT OF Reymert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	77	135060	37500	97560	13.9	83999
						41.9995

N. Y. QUOTATIONS

Date July 24, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS	PAYMENTS PER TON	DEBITS	CREDITS
Copper .26 Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 7.20 Oz.	7.20 oz. per ton, less 5%-6.84 oz. at .90 Per oz.		6.1560
Gold .01 Oz.	oz. per ton, oz. at Per oz.		
Iron 3.4 Pct.	units at Per Unit.		
Lime 11.8 "	units at Per Unit.		
Alumina 3.8 "	units at Per Unit.		
Silica 43.6 "	units at Per Unit.		
Sulphur .3 "	units at Per Unit.		
Barite 18.4 "	units at Per Unit.		
Manganese "	units at Per Unit.		
Arsenic "	units at Per Unit.		
Antimony "	units at Per Unit.		
Bismuth "	units at Per Unit.		
Insoluble "	units at Per Unit.		
	Treatment Charge	5.00	
	TOTALS	5.00	6.1560
	Net Value Per Ton		1.1560

Total Value of 41.9995 Dry Tons at $ 1.1560		48.30
Less Freight Tons at $ From	7.52	
Less Switching	X138	
Less Sampling	X52	
Less Additional Treatment Charge		
TOTALS	7.52	48.30
Amount Due Shipper—Voucher No.		40.78

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 70

Smelter Lot 196 DATE June 8, 1950

Shipper Lot M-25

BOUGHT OF Reymert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	78	143480	37280	106200	6.8	98978
						49.489

N. Y. QUOTATIONS

Date June 1, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS	PAYMENTS PER TON	DEBITS	CREDITS
Copper .09 Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 13.50 Oz.	13.50 oz. per ton, less 5%-12.825 oz. at .90 Per oz.		11.5425
Gold .01 Oz.	oz. per ton, oz. at Per oz.		
Iron 12.8 Pct.	units at Per Unit.		
Lime 5.8 "	units at Per Unit.		
Alumina 2.8 "	units at Per Unit.		
Silica 61.2 "	8 units at 104 Per Unit. Credit	.32	
Sulphur .4 "	units at Per Unit.		
Barite 5.6 "	units at Per Unit.		
Manganese "	units at Per Unit.		
Arsenic "	units at Per Unit.		
Antimony "	units at Per Unit.		
Bismuth "	units at Per Unit.		
Insoluble "	units at Per Unit.		
	Treatment Charge	5.00	
	TOTALS	4.68	11.5425
	Net Value Per Ton		6.8625
Total Value of 49.489	Dry Tons at $ 6.8625		339.62
Less Freight	Tons at $ From		
Less Switching		7.52	
Less Sampling			
Less Additional Treatment Charge			
	TOTALS	7.52	339.62
	Amount Due Shipper—Voucher No. 69167		332.10

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 71

Smelter Lot 198 DATE June 8, 1950

Shipper Lot M-26

BOUGHT OF Reymert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	78	143280	37280	106000	1.5	104410
						52.205

N. Y. QUOTATIONS

Date 6-3-50

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper .12	Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 12.00	Oz.	12.00 oz. per ton, less 5%-11.400 oz. at .90 Per oz.		10.2600
Gold .01	Oz.	oz. per ton, oz. at Per oz.		
Iron 4.8	Pct.	9 units at .04 Per Unit. Credit	.36	
Lime 13.6	"	units at Per Unit.		
Alumina 4.7	"	units at Per Unit.		
Silica 31.8	"	units at Per Unit.		
Sulphur .5	"	units at Per Unit.		
Sulphide 16.4	"	units at Per Unit.		
Manganese	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	4.64	10.2600
		Net Value Per Ton		5.6200
				293.39

Total Value of 522 05 Dry Tons at $ 5.6200 — 293.39

Less Freight Tons at $ From

Less Switching 7.52

Less Sampling

Less Additional Treatment Charge

	DEBITS	CREDITS
TOTALS	7.52	293.39
Amount Due Shipper—Voucher No 69167		285.87

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 74

Smelter Lot 200 DATE 6-10-50

Shipper Lot M-27

BOUGHT OF Raymert Extension Mines Classification Crude Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
MA	78	157,380	37,280	120,100	4.00	115,296

N. Y. QUOTATIONS

Date 6-6-50

Copper (per lb.)

Less

Silver (per oz.)

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper 0.10	Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 8.00	Oz.	8.00 oz. per ton, less 5%-7.600 oz. at .90 Per oz.		6.8400
Gold 0.01	Oz.	oz. per ton, oz. at Per oz.		
Iron 8.8	Pct.	units at Per Unit.		
Lime 4.0	"	units at Per Unit.		
Alumina 3.3	"	units at Per Unit.		
Silica 64.6	"	11 units at .04 Per Unit. Credit	.44	
Sulphur 0.4	"	units at Per Unit.		
Barite 5.4	"	units at Per Unit.		
Manganese	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	4.56	6.8400
		Net Value Per Ton		2.2800

Total Value of 57.648 Dry Tons at $ 2.2800 — 131.44

Less Freight Tons at $ From

Less Switching — 7.52

Less Sampling

Less Additional Treatment Charge

	DEBITS	CREDITS
TOTALS	7.52	131.44
Amount Due Shipper—Voucher No. 69167		123.92

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 79

Smelter Lot 218 DATE June 26,1950

Shipper Lot M29

BOUGHT OF Reymert Extension Silver Mines Classification Crude Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
MA	74	139,260	36,960	102,300	5.4	96,776

N. Y. QUOTATIONS

Date June 19, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper 0.13	Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 7.20	Oz.	7.2000 oz. per ton, less 5%-6.8400 oz. at .90 Per oz.		6.1560
Gold 0.01	Oz.	oz. per ton, oz. at Per oz.		
Iron 4.8	Pct.	units at Per Unit.		
Lime 5.0	"	units at Per Unit.		
Alumina 3.5	"	units at Per Unit.		
Silica 62.6	"	9 units at .04 Per Unit. Credit	.36	
Sulphur 0.2	"	units at Per Unit.		
Barite Manganese 2.6	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	4.64	6.1560
		Net Value Per Ton		1.5160

Total Value of 48.3880 Dry Tons at $ 1.5160		73.36
Less Freight Tons at $ From		
Less Switching	7.52	
Less Sampling		
Less Additional Treatment Charge		
TOTALS	7.52	73.36
Amount Due Shipper—Voucher No.		65.84

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 82

Smelter Lot 224 DATE June 30, 1950

Shipper Lot M30

BOUGHT OF Reymert Extension Silver Mines Classification Crude Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
MA	75	165,300	35,980	129,320 6466	6.4	121,044

N. Y. QUOTATIONS

Date June 23, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper 0.16	Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 7.60	Oz.	7.60 oz. per ton, less 5%-7.2200 oz. at .90 Per oz.		6.4980
Gold 0.01	Oz.	oz. per ton, oz. at Per oz.		
Iron 3.0	Pct.	units at Per Unit.		
Lime 29.5	"	25 units at .04 Per Unit. Credit	1.00	
Alumina 3.0	"	units at Per Unit.		
Silica 19.0	"	units at Per Unit.		
Sulphur 0.2	"	units at Per Unit.		
Barite 18.0	"	units at Per Unit.		
Manganese	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	4.00	6.4980
		Net Value Per Ton		2.4980

Total Value of 60.5220 Dry Tons at $ 2.4980			151.18
Less Freight Tons at $ From			
Less Switching		7.52	
Less Sampling			
Less Additional Treatment Charge			
	TOTALS	7.52	151.18
	Amount Due Shipper—Voucher No.		143.66

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. 17

Smelter Lot 49 DATE Feb. 20, 1950

Shipper Lot M-5

BOUGHT OF Reymert Extension Silver Mines Classification Crude

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	71	96500	36400	60100	6.3	56314
				30.05		28.157

N. Y. QUOTATIONS

Date 2-11-50

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper .20	Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 21.20	Oz.	21.20 oz. per ton, less 5%-20.14 oz. at .90 Per oz.		18.1260
Gold .01	Oz.	oz. per ton, oz. at Per oz.		
Iron 9.2	Pct.	units at Per Unit.		
Lime 3.8	"	units at Per Unit.		
Alumina 7.4	"	units at Per Unit.		
Silica 30.8	"	units at Per Unit.		
Sulphur .1	"	units at Per Unit.		
Barite 12.2	"	units at Per Unit.		
Manganese	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	5.00	18.1260
		Net Value Per Ton		13.1260
		Total Value of 28.157 Dry Tons at $ 13.1260		369.59
		Less Freight Tons at $ From		
		Less Switching	7.52	
		Less Sampling		
		Less Additional Treatment Charge of 10% of metals paid for in excess of $15.00. Excess is 3.126. .3126 X 28.157	8.80	
		TOTALS	16.32	369.59
		Amount Due Shipper—Voucher No.		353.27

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SUPERIOR, ARIZONA

Settlement No. 18

Smelter Lot 53 DATE Feb. 20, 1950

Shipper Lot ~~M-7~~ M-6

BOUGHT OF Reymert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	71	129120	36400	92720	8.7	84653
						~~42.3265~~ 42.3265

N. Y. QUOTATIONS

Date Feb. 13, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS		PAYMENTS PER TON	DEBITS	CREDITS
Copper .21	Pct.	15.10 lbs. per ton, less ~~5.~~-14.345 lbs. at .90 Per lb.		12.9105
Silver 15.10	Oz.	oz. per ton, less oz. at Per oz.		
Gold .01	Oz.	oz. per ton, oz. at Per oz.		
Iron 6.4	Pct.	2 units at .04 Per Unit. Credit	.08	
Lime 7.2	"	units at Per Unit.		
Alumina 5.5	"	units at Per Unit.		
Silica 32.2	"	units at Per Unit.		
Sulphur .2	"	units at Per Unit.		
Manganese	"	units at Per Unit.		
Arsenic	"	units at Per Unit.		
Antimony	"	units at Per Unit.		
Bismuth	"	units at Per Unit.		
Insoluble	"	units at Per Unit.		
		Treatment Charge	5.00	
		TOTALS	4.92	12.9105
		Net Value Per Ton		7.9905

Total Value of 42.3265 Dry Tons at $ 7.9905			338.21
Less Freight	Tons at $	From	
Less Switching			7.52
Less Sampling			
Less Additional Treatment Charge			
		TOTALS	7.52 338.21
		Amount Due Shipper—Voucher No.	330.69

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MAGMA COPPER COMPANY

SUPERIOR, ARIZONA

Settlement No. Jan.xx18,xx1950 5

Smelter Lot 8 DATE Jan. 18, 1950

Shipper Lot M-2

BOUGHT OF Reymert Extension Silver Mines Classification Ore

ADDRESS Superior, Ariz.

BOWER CO., PHOENIX

CAR Initial	CAR Number	WET WEIGHT Gross	WET WEIGHT Tare	WET WEIGHT Net	Moisture %	DRY WEIGHT
M.A.	78	168600	37280	131320	3.5	126724
						63.362

N. Y. QUOTATIONS

Date Jan. 11, 1950

Copper (per lb.)

Less

Silver (per oz.) .90

Gold (per oz.)

ASSAY and ANALYSIS	PAYMENTS PER TON 1172.20 oz.	DEBITS	CREDITS
Copper .13 Pct.	lbs. per ton, less lbs. at Per lb.		
Silver 18.50 Oz.	18.50 oz. per ton, less 5%-17.575 oz. at .90 Per oz.		15.8175
Gold .01 Oz.	oz. per ton, oz. at Per oz.		
Iron 6.0 Pct.	2 units at .04 Per Unit. Credit	.08	
Lime 7.0 "	units at Per Unit.		
Alumina 3.0 "	units at Per Unit.		
Silica 38.6 "	units at Per Unit.		
Sulphur .6 "	units at Per Unit.		
Barium 29.6 "	units at Per Unit.		
Manganese "	units at Per Unit.		
Arsenic "	units at Per Unit.		
Antimony "	units at Per Unit.		
Bismuth "	units at Per Unit.		
Insoluble "	units at Per Unit.		
	Treatment Charge	5.00	
	TOTALS	4.92	15.8175
	Net Value Per Ton		10.8975
Total Value of 63.362	Dry Tons at $ 10.8975		690.49
Less Freight	Tons at $ From		
Less Switching		7.52	
Less Sampling			
Less Additional Treatment Charge of 10% of metals paid for in excess of $15.00. Excess is .8175. .08175 X 63.362		5.18	
	TOTALS	12.70	690.49
	Amount Due Shipper—Voucher No.		677.79

Made by Checked Approved

GEORGE M. COLVOCORESSES
MINING AND METALLURGICAL ENGINEER
1102 LUHRS TOWER
PHOENIX, ARIZONA

April 14th, 1945

SUMMARY OF MORE IMPORTANT DATA RELATIVE TO REYMERT MINE PINAL COUNTY, ARIZONA

Based on reports made to the Reymert Mining Company by G. M. Colvocoresses in 1941 and other reports, etc. as noted.

LOCATION & GENERAL CONDITIONS:--

This property belonging to the Reymert Mining Company of Milwaukee, Wisconsin consists of seven patented lode mining claims, captioned as follows:

America	Africa
Alaska	Europe
Asia	Great Pacific
Australia	All patent survey #2878A

Also one unpatented lode claim known as the Reymert and Four Mill sites.

The total area included in the lode claims, some of which are not full sized, is about 140 acres. The property lies on the Pioneer Mining District, Pinal County, Arizona in Sections 15, 22, 23, 26, and 27 of Township 2 South; Range 11 East; Gila and Salt River Base and Meridian. The elevation is from 2700 to 3500 feet above sea level. The camp is 6.5 miles in air line southwest of the town of Superior

where the Magma Mine and Smelter are located and with which it is connected by 8 miles of good road, all but 2 miles of which is over a paved highway, - U.S. #60.

The country is rugged with a main ridge extending north and south over the length of the claims on the east side of the gulch in which the camp is located. There is no timber and only the usual semi-desert vegetation of shrubs and grasses.

The climate is excellent and suitable for work at all seasons of the year, the normal annual rainfall is about 18".

Water from the mine is suitable for all but domestic purposes. The supply would probably be limited to about 50,000 gallons per day, which was reported to have been the flow into the Alaska Shaft at 400' depth. For drinking and camp requirements water is hauled out from Superior as local wells did not prove satisfactory but some water might be secured from the underflow of Queen Creek and from its tributaries, including Reymert Creek which flows through the camp.

GENERAL GEOLOGY:--

The country is mainly a Pre-Cambrian mica and sericite schist, locally known as the Pinal Schist with schistosity striking generally north and south and dipping to the east. This basal formation was intruded by dikes of diorite or diabese and near the south end of the claims by a dike of basic greenstone, - probably a gabbro or hornblendite, - and a later intrusion of rhyolite. These intrusive dikes, excepting the rhyolite, strike mostly east and west and have affected locally the schistosity. In places there have been areas of

silicification in the schist itself forming bands of hard erosion-resistant rock along the surface.

The latest of the intrusions was probably the rhyolite and any sedimentaries that may have been subsequently deposited have been completely removed by erosion, so that only recent gravels and soils represent any later formation.

A detailed study of the geology of the area has been made at and near the Magma Copper Mine seven miles northeast of the Reymert and here the upper sedimentary rocks are still in evidence while there is an essential difference between the diorite which occurs as intrusive dikes and the diabese which forms a sill lying between two sedimentary formations.

But at the Reymert all of the rocks of this general class, whether diorite or diabese (and their exact classification seems to have no practical importance) appear to have come in as intrusive dikes or stocks and I do not consider that there is sufficient evidence to justify the assumption of some geologists that the diabese found on the America Claim, in the lower portion of the Alaska Shaft and reported in the drill holes represents a laccolith or batholith underlying the schist at a depth of 200 to 400 feet below the surface. This theory is undoubtedly possible and may appear to be suggested by the formation in the Alaska Shaft and record of the drilling but the surface outcrops, the nature of the contacts and the very wide distribution of the schist throughout all of this area and in the other shafts argue against such a condition and only further exploration and deep development in the mine itself can tell the story in a convincing manner.

MINERALIZATION:--

The main fissure or shear zone in which the ores occur strikes north 10 degrees west and can be traced for some three miles or more but pay ore seems to be confined to a length of 6000 ft. from the south section of the America Claim to the north end of the Great Pacific. This fissure was apparently formed by a violent tectonic movement which was perhaps to some extent connected with the intrusion of the rhyolite and there is evidence of one and probably two subsequent reopenings of the fissure.

The mineralization appears to have been derived from solutions at low temperature and the first filling to have been composed largely of crushed wall rock and massive black calcite associated with only a small amount of silver and with some copper, lead and zinc. The second mineralization took place after a reopening of the fissure brought in a finer calcite and more quartz and iron oxide and then either the final phase of this process or a third reopening and mineralization introduced still more quartz and iron oxide with barites and the bulk of the silver values which are generally found at points where the evidence of repeated disturbance and successive periods of mineralization is the most pronounced.

Post-mineral faulting is noted at several points and the splitting of the fracture which separated the Black Vein and Blue vein in sections probably occurred concurrently with the second or third period of mineralization or may have been due to a separate disturbance which preceeded both of them.

The better grade of the ore or pay streak filling is composed largely of fine calcite, quartz, fluorite, barite, manganese and iron oxide. Horn silver (cerargyrite) and argentite (silver-sulphide) have been found in places, usually near the surface, but most of the silver appears to be intimately associated with the barite and manganese leading some geologists to conclude that silver is in the form of a "silver manganite" although no such mineral is definitely known to exist.

The vein which was reported to have been found in the cross cut on the 400' level at the Alaska Shaft was filled with crushed and altered diabese and carried 1.8 oz. silver but with this exception and perhaps in some of the inaccessible workings on the America Claim ~~all of~~ the walls of the productive ~~developed~~ portions of the vein are schist and nearly all of the metallic minerals are oxidized. There is little evidence as to whether or not this upper section of the vein represents a zone of leaching which will be succeeded in depth by a zone of secondary enrichment, with primary ore still further below; and it is obviously of great importance to the future of the property to determine whether or not such conditions actually exist.

The effect of the various types of wall rock upon the vein has been two-fold, physical and chemical. In the schist it has been clearly demonstrated that the three stages of filling took place under favorable conditions and the black calcite was partly replaced or associated with barite and silver values.

From a physical standpoint the schist is a comparatively easily fractured rock and would always be affected by the recurrent reopening of the fracture, whereas the diabese is exceptionally tough

and would normally be much less shattered by any such disturbances. The fissure, having been originally filled with the black calcite, was readily susceptible to remineralization in the schist while in the diabese such was not the case.

From the chemical standpoint the comparison is not so clear. At the Magma Mine the best values and largest ore shoots are often found in the diabese while the reverse is true at Globe and in some of the other camps. At the Reymert the workings near the south end showed good values along the rhyolite but there are as yet no stopes in the diabese and altho this rock was noted in the Alaska Shaft the diorite dikes, outcropping on the surface, do not cut through the vein except at the north end of the mine.

Considering the question from both physical and chemical standpoints I think it fair to say that the chances for finding any good ore bodies either in depth or near the surface are very much poorer in the diorite or diabese than in the schist and therefore there would be very little incentive to explore in any large area of diorite which might be found to underlie the schist.

HISTORY:--

This district was first prospected in the 1870's and the Reymert Mine was located by John Reymert and associates in 1886 and soon after sold to the Reymert Mining Co., controlled by Mr. Van Dyke of Milwaukee. This Company operated until 1891 during a portion of which period they treated the ore in a mill by chloridizing and pan amalgamation.

In 1912 an option was given to the Gunn-Thompson people, who sank the Alaska Shaft in 1913-1914 to a depth of 410 feet with

discouraging result. Further exploration was carried on by the Lincoln Issues Company (affiliated with the Gunn-Thompson interests) and the Magma Copper Company during 1919 and 1920. This consisted mainly of diamond drilling but the seven holes then drilled failed to find any commercial ore.

Mr. Forbach and his associates first took a lease on the property in 1925, and with some interruptions operated until the middle of 1941 when James Tod operated until the middle of 1944, and subsequently the mine was again leased to Forbach with some new associates. During recent years most of the ore was shipped to the Magma Smelter at Superior and to the International Smelter at Miami.

A complete record of production up to the end of 1944 is appended as Exhibit A.

WATER TABLE:--

Accepting as accurate the elevations given on the old maps and on those prepared in 1937 by the Eagle-Picher Company, it appears that the collar of the main Alaska Shaft has an elevation of 3097.47 above sea level and it is recorded that when sinking the shaft in 1912 water was first encountered at a depth of 220' equivalent to an elevation of 2877'. In other workings not far from this shaft conducted by Carrow in 1935, water was said to have been found at an elevation of 2900' or some 23' higher. The geologists of the Eagle-Picher Company state that in their opinion this did not

represent the permanent water table but merely a "perched water table" and they concluded that any permanent water table existing in this district would only be found at much greater depth; but this opinion is not supported by any actual observations.

The collar of the new A (or Australia) Shaft in which we have recently been working (1943) is given an elevation of 3320' (or 3317') and we struck water at a depth of 420' equivalent to an elevation of 2900'. The water in the Alaska Shaft, 2200' to the north has stood continuously at about the 2877' mark, but such a variation in the elevation of a water table is not at all unusual in mountainous country. Therefore, it appears that the present level of the water in the country between the Alaska Shaft and the A Shaft is from 2877 to 2900' regardless of whether this represents a "perched" or a permanent water table.

The flow of the water in the Alaska Shaft was reported to have been 2 gallons per minute at 220',--or just about the same flow that we encountered,--but it increased to 30 gallons per minute at 230' and to 40 gallons per minute at 270' below which point it was nearly constant until they drifted on the 400' level when it increased to 50 gallons per minute.

I think that we have demonstrated that whether the water table is "perched" or permanent it has remained practically constant for for over 30 years and neither in the Alaska nor in the Australia workings has there been found any zone of secondary enrichment nor any evidence of primary ore altho the percentage of sulphides of

lead and zinc appear to have slightly increased in both sections of the mine, but the small percentage of copper seems to have remained fairly constant.

TONNAGE AND GRADE OF ORE:--

During recent years a number of investigations have been made to determine the total tonnage and average grade of both the higher grade shipping ore and the low grade material which might be mined if a satisfactory method of local treatment could be developed.

In 1937 the engineers of the Eagle-Picher Co. were able to measure and sample above the water level probable ore amounting to nearly 200,000 tons to which they gave an average content of over 8 oz. silver per ton. Some of this ore has since been mined but there were other indicated reserves concerning which they could not obtain sufficient data to justify an estimate.

A year or two later a similar procedure was repeated by engineers of the Anaconda Mining Co., and I am informed that their findings were similar altho I have never seen their report.

During the month just passed the engineers of the Magma Company have been conducting an examination, the results of which I hope to secure in the near future.

In connection with all the above it should be noted that altho there is a wide zone of crushed and mineralized rock throughout the entire length of the vein, yet the pay streaks have nearly always been found along the foot and hanging walls and between these streaks the vein-filling,-where sampled,-was not found to contain more than 3 or 4 oz. of silver, altho there may be sections of a higher grade.

Mining by the lessees has nearly always been done by open stoping which was timbered with square sets, most of which were not filled. In many places the ground has become too heavy for the timbers and there have been caves in which much good ore has been lost or made inaccessible. Only the higher grade ore, 15 ounce or better, has been intentionally taken and a great deal of lower grade ore has been left in the walls or between the ore shoots.

This system of mining has many disadvantages but is probably the only method that could have been followed to produce shipping ore, but if the average product could be reduced to say 8 ounces (through building a local mill) and still leave a profit a great many of those old stopes could be reopened and worked for production of a large tonnage.

It is my opinion that a thorough examination of the entire mine down to the water level, which would involve catching up many of the old workings would, probably reveal the existence of from 300,000 to 500,000 tons of ore that would average better than 8 oz. of silver per ton.

CHARACTER OF ORE AND TREATMENT:--

No effort has been made to determine an average complete analysis of the ore taken from this mine and many of the shipments and samples have only been assayed for silver. Some of the ore contains a noticeable amount of barium which presumably has been classed as insoluble.

Based on the analysis of shipments made during the last four years and samples previously sent for metallurgical tests. I give

below what I believe to be an approximate analysis:

Ag	---- 8 to 10 oz.
Pb	- 0.80 %
Zn	- 0.15 %
Cu	- 0.40 %
$Mn\ O_2$	- 3.50 %
$Fe_2\ O_3$	- 8.00 %
$Ca\ CO_3$	- 37.00 %
Insol	- 50.00 %
	99.85

Included in the insoluble is a small and varying percentage of $Al_2\ O_3$ and $Ba\ SO_4$. Occasionally sulphides of copper, lead and zinc are noted and samples taken near the water level in the Australia Shaft workings carried up to a maximum of 3.40% Pb, 1.90% Zn, 1.65% Cu and gold 0.04 oz. per ton. The average gold content in recent shipments was 0.003 oz.

In reference to the composition of the ore I quote as follows from a report by R. E. Illidge.

"The Reymert sample received at Galena is a silver bearing silicious iron-manganese oxide containing a little barite. Lesser constituents are lime and alumina. All of the minerals are so interlocked with one another that any degree of grinding to critically free a large percentage of them is impossible. It is true that in the small sizes, such as minus 80 mesh, some of the minerals are fairly free, but in no case not enough to be able to take economic advantage of. Some of the barite is fairly free at minus 4 mesh,

but it still is speckled with iron and manganese. Positive identification of all the minerals present might be subject to speculation.

Only three are definitely known namely: some free quartz which is pseudomorphic after calcite, limonite and barite. No definite crystallization of calcite was observed altho the lime present is probably as limestone. The manganese-iron oxide mineral might be psilomelane but this mineral has a specific gravity of 4.0 and it was impossible to obtain a good gravity separation between it and the lighter siliceous portion. Hand picked pieces which gave every appearance of being totally black differed widely in iron and manganese content while showing about the same in insoluble. The corresponding silver relationship is not known at this time because of the tedious task of hand picking enough of minus 80 mesh grains for assay. In lieu of the high iron content and high insoluble this mineral might conceivably belong to the braunite group which is a manganese-iron silicate. Pyrolusite or wad is probably present because of the manganese concentration in the extreme fines. No clue was observed in isolating the silver mineral. A marked similarity, however, exists in the ratio of silver to manganese through all the screen sizes even though assay values vary considerably, thus showing that the two bear a definite, though unknown, relationship.

Conclusions:-

The silver apparently is locked with the manganese. No appreciable amount of free manganese mineral exists down to at least 100 mesh and it is very questionable whether any exists at all. Under a microscope magnifying 80 diameters much locked mineral is seen in minus 140 mesh product. It is also true that the iron oxide present is not manganese free. Such intimacy of constituent minerals requires

requires a degree of grinding for their freedom far exceeding economic considerations. The only conclusion that can be reached under such circumstances is that gravity treatment has no application and the possibilities of flotation are most remote. To the best of knowledge of the writer, iron oxide flotation is not out of the laboratory yet, and even though it were a commercial success it is not conceivable that pure enough separation could be had at an economic grind on this ore."

Numerous tests have been made by various parties to determine if it would be possible to economically concentrate or recover the silver in the low grade ore, but all standard methods including leaching, flotation and cyanidation have so far given unsatisfactory results.

E. H. Crabtree, metallurgist for the Eagle-Picher Co. tried out a number of combinations of various processes and concluded that a recovery of 85% of the silver might be obtained by coarse crushing followed by a reducing roast and then grinding in water solution either with or without lime and counter-current cyaniding.

I do not believe that anyone has yet attempted to work out a method for economically saving any of the by-products such as the small quantities of manganese or barium and during the past twenty years all of the production from the Reymert Mine has been shipped directly to the copper smelters where under certain conditions it has some fluxing value.

EXPLORATION AT DEPTH:--

The remarkable strangth and persistence of the Reymert Vein on the surface, and the occurrence of numerous shoots of pay ore over a length of 6000' lying between the surface and the upper water level all seem to call for a far more comprehensive exploration at depth than has ever been undertaken.

Obviously the potential future value of the mine and the total extent of the ore reserve depend upon conditions which may exist below the water level and these in turn seem to hinge upon three factors.

(a) The downward extension of the schist.

(b) The existence of zones of secondary enrichment and of primary ore, and

(c) The tonnage and grade of such secondary and primary ore as may be found.

On the assumption that the schist continues to a much greater depth than the present workings,- excepting where it is cut by the diorite dikes, - the fissure will probably continue to maintain its width and length and the general character of the filling should not greatly change so that the factor of grade would be the only variable.

All of the ore which I observed is heavily oxidized and I can find no reliable record of any evidence of secondary enrichment which must exist, if at all, in a zone below the now accessible workings. In any zone of secondary enrichment the values will undoubtedly show a very substantial increase; to what extent it is impossible to predict but one might reasonably visualize bodies of 30 to 40 oz. silver ore in such a zone. As to the value of the primary ore, if any, we

Nelson P. Hulst

Philip Wiseman

W. Tovote

W. C. Browning of Magma Co. and others.

Copies of the above and a number of maps may be examined in my office, but no extra copies are at present available and if it is desired that these should be prepared and submitted to the Bureau of Mines, the copying and printing would involve some expense.

Yours very truly,

[illegible]

have practically no data on which to base an assumption and any estimate would merely be a guess, but there is certainly a probability of finding sulphides of lead, copper and zinc.

While the record of the Alaska Shaft below the 200' level and the log of the Magma Company diamond drill holes are ~~certainly~~ not encouraging they are entirely inconclusive and a thorough exploration of portions of this vein down to and below the permanent water table would certainly seem to be justified unless this water table should be found to exist at a much greater depth than can reasonably be anticipated.

Since the physical character of the ore zone is such that no satisfactory drill cores can be obtained such work should in my judgment be carried on by shafts and drifts utilizing as far as possible the existing facilities and previous development. The outcome of such a procedure is of course problematical and the expense is bound to be heavy but I am of the opinion that such a procedure may be definitely classed as an attractive mining venture.

The above data has been prepared after noting the contents of several reports on the property other than my own, especially those by:--

F. W. Oury	1891
Ira B. Joralemon	1914
Robert W. Hernon of Eagle-Picher Co.	1937
E. H. Crabtree of Eagle-Picher Co.	1937

also numerous letters with comment on previous investigations and development written by:--

Ex A

REVISED FROM MILWAUKEE OFFICE RECORDS

REYMERT MINING COMPANY PRODUCTION

COMPILED FROM VARIOUS REPORTS

Year		Tons	Averaged Silver oz. per ton	Approximate Silver Ounces
1886	)	?		
1887	)	849	22.8	19.367
	)			
Jan - 1888)	)-Company	5326	31.71	168.886
Mch - 1889)	)operation			
	)			
Mch 25, 1889	)	11890	19.30	228.651
Feb. 8, 1891	)			
?				
1925 & 1926	)	5175	16.10	193.990
1927	)	6743	18.00	121.374
1928	)	6916	16.19	112.013
1929	)	4536	17.25	78.253
1930	)	799	15.33	12.074
1931	)	217	16.00	3.427
1932	)	No returns	--	--
1933	)-Lessees	No returns	--	--
1934	)	1116	19.642	21.938
1935	)	7588	14.357	198.941
1936	)	11497	11.29	129.801
1937	)	10051	11.348	114.609
1938	)	15195	16.229	246.603
1939	)	20908	11.598	242.499
1940	)	20609	10.259	212.264
1941	)	9147	10.02	91.662
1942	)	8057	15.043	121.215
1943	)	2980	12.50	37.251
1944	)	1454	12.83	19.072
		151053	(15.11 av.)	2283.890

March 30, 1946

Mr. L. W. Wickes
1206 Pacific Mutual Building
Los Angeles 14, California

RE: Reymert Mine

Dear Mr. Wickes:

As requested by Mr. de Vaux and in line with our previous correspondence, I am sending you one set of prints, eleven altogether, representing the log of the diamond drill holes at the Reymert Mine as I obtained the same from the records of the Magma Copper Company at Superior. I had three copies of these prints made from photostats of the original blue prints, and the total cost of same is $8.71 as per invoice enclosed. I believe that Mr. de Vaux will wish a set of the prints for his own records and I will hold the third copy of same to be sent to you later or otherwise disposed of. You can settle with Mr. de Vaux in respect to the payment for this printing as may seem proper.

In connection with the above I believe that you will be interested in receiving the following extract from a letter which I wrote to the Reymert Mining Company on January 18, 1944, when I made a study of the question of carrying on some further drilling at the mine, and in that connection had several discussions with Mr. Browning who happened to be working with me for the United Verde Copper Company in connection with the tax suit.

I quote as follows:

"During the week of January 3rd to 8th I discussed the problem at some length with Mr. W. C. Browning, former manager of the Magma Copper Company who was in charge of the exploration and drilling that was done at the Reymert back in 1920.

Browning was interested to learn of our recent development on the Australia Claim, and particularly that we had reached the water level at that point while the vein was still in the schist and he seemed to agree with Joralemon in believing that there was a very much better chance of finding pay ore in the vein when the wall rock was schist rather than when it had passed into the diorite as had been the case both above and below the water level in the Alaska Shaft and in all of the deeper portions of the drill holes that the Magma Company put down on the Alaska and Asia Claims, in none of which any ore was found.

"Browning seemed to think that in view of the geological conditions at the Australia Shaft it might be well worth-while to drill into the vein some 200' below the water level at which point he felt satisfied that we should find the primary ore, but of course he had no basis for judging as to whether or not such ore would prove to be of commercial value.

We discussed at some length the difficulty of obtaining satisfactory results when drilling in such material as composes the Reymert fissure or ore zone, and he agreed with me in believing that it would probably be impossible to recover any good cores and that sludge samples might be untrustworthy. Also we both felt that the holes would be likely to deviate a great deal from their pointed courses, since that had proved to be the case with all the holes that he had drilled on the property."

Trusting that the above may prove of some interest, I remain

Yours very truly,

GMC

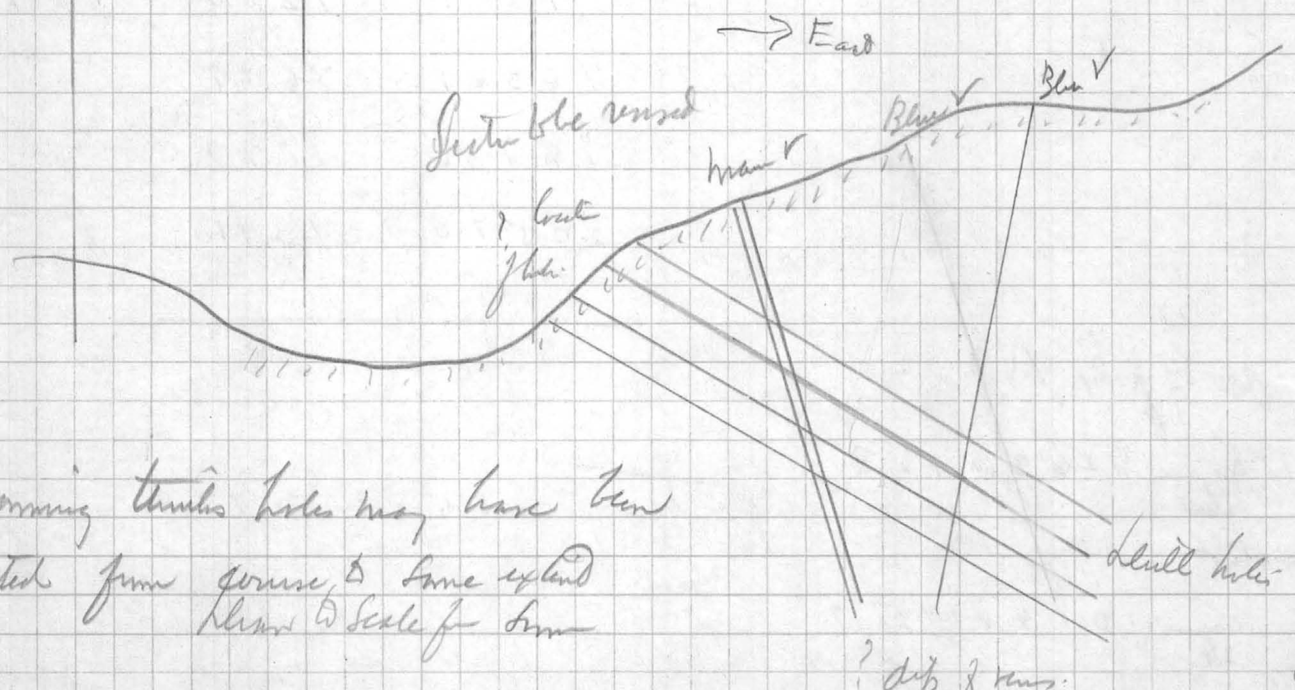
GMC:IW
Enclosures

Reymond Report. Ex

Record of Diamond Drill Holes, Sunk 1919 & 1920

#	Depth	Av. oz.	Character of rock
1	675	0 - 1.04	diorite
2	1474	0 - 0.28	"
3	1220	0 - 0.16	" & schist, little copper
4	990	nil	diorite & schist, trace of copper
5	125	nil	schist (from east side) Alaskan shaft
6	1100	nil	schist + diorite
7	1026	0 - 1.0	" " "

No gold beyond a trace in any cores or sludge.



Bromming thinks holes may have been deflected from course & some extend

Drawn to Scale for Gen

Gen

Summary of Production (Revise & calculate)

	Tons	Average grade in oz. silver	Approximate value
			~~$ oz. 25000~~
1886-88 by Reymert Co.	1800		
88-89 " " "	5326	31,71	
89-91 " " "			
(Early operations by chloridizing & pan amalgamation to Feb 91, when 11890 tons were mined & milled @ 19.3 oz per ton.	11890	19,30	
93.-1912. Mine idle. Alaska			
Shaft ~~sunk~~ sunk in 1913+14.			
26 & 27 Fulbach Bros under lease produced	11284	20.22	
27-34. Idle.			
36. Fulbach & Carrow (mostly from 135' level & surface workings) Alaska	17027	13.9	
36-Aug 37. Carrow	{ 4617	11,91	
	{ 2145	10.6	
36 Fulbach	1323	12.23	
37. "	9371	12.80	119609.6
38 "	16061	16,17	
39 "	19766	11.70	
40 "	20570	13.11	

Reymert add U of Ex A

37. Magma 7269 @ 12.8
Intand
Hyden

39. Magma 12979 @ 12.3
Lot
Hyden

38. Magma 10144 @ 18.7
Lot
Hyden

over

2nd Copy

January 18th, 1944

Reymert Mining Company
902 Wells Building
Milwaukee 2, Wisconsin

Memo re Proposed Drilling

Gentlemen:

Referring to letter from Douglas Van Dyke dated December 24th, 1943 and his suggestion in respect to drilling below the water level at the mine, I have given this matter considerable study and trust that this memo may prove of interest.

During the week of January 3rd to 8th I discussed the problem at some length with Mr. W. C. Browning, former manager of the Magma Copper Company who was in charge of the exploration and drilling that was done at the Reymert back in 1920.

Browning was interested to learn of our recent development on the Australia Claim, and particularly that we had reached the water level at that point while the vein was still in the schist and he seemed to agree with Joralemon in believing that there was a very much better chance of finding pay ore in the vein when the wall rocks were schist rather than when it had passed into the diorite as had been the case both above and below the water level in the Alaska Shaft and in all of the deeper portions of the drill holes that the Magma Company put down on the Alaska and Asia Claims, in none of which any ore was found.

Browning seemed to think that in view of the geological conditions at the Australia Shaft it might be well worth-while to drill into the vein some 200' below the water level at which point he felt satisfied that we should find the primary ore, but of course he had no basis for judging as to whether or not such ore would prove to be of commercial value.

Browning compared the Reymert to the Desert Silver Mine, near Silver Peak, Nevada, some distance west of Tonopah, where he said that the geological conditions and the ore occurrence were very similar, but at the Desert Silver the high grade oxidized silver ore was evidently a secondary enrichment and the values in the primary ore below the water level proved to be non-commercial.

We discussed at some length the difficulty of obtaining satisfactory results when drilling in such material as composes the Reymert fissure or ore zone, and he agreed with me in believing that it would probably be impossible to recover any good cores and that sludge samples might be untrustworthy. Also we both felt that the holes would be likely to deviate a great deal from their pointed courses, since that had proved to be the case with all the holes that he had drilled on the property.

If any drilling is to be done I think that the logical place to start the holes would be on the 420 foot level which we have recently opened up and which is just above the level of the water.

These holes could be pointed diagonally across the fissure but would pretty surely be deflected and soon become nearly vertical unless we should first cross-cut for some distance ~~and~~ into either the foot or hanging wall and drill from the ends of the cross-cuts. Since the pay ore is confined to narrow stringers, not more than 3 or 4 feet wide, while the width of the fissure is over 70 feet on the 420 foot level, there would be a serious danger that such holes would entirely miss the pay shoots even though these might pass within a few feet of them on one side or the other.

I have talked on the telephone with Glenn Thatcher who drilled for me in Southern California two years ago and he said that he would be glad to consider taking the contract and if this involved at least a total 500 feet of drilling in two or more holes that his price would probably not exceed $2.50 per foot, although he would want to look over the ground before making any close estimate or offering to bid on the work. Aside from the contract cost of the drilling we should have to stand the expense of raising the back of the drift to provide head room and to furnish compressed air, water and transportation and stand the expense of any casing or cementing that might be necessary. If each hole were not more than 250 feet deep, only about 15 feet of head room would be required to handle the rods, but if holes were to go deeper he would want as much as 25 feet of head room.

The drilling would have to be conducted on one of the two shifts when Tod's operations are not in progress since it would

probably be extremely inconvenient to combine this work with the regular mining now in progress and we know from experience that neither the hoist nor compressor,--particularly the latter, are reliable pieces of equipment.

Assuming that you should decide to drill two 250 foot holes one at or near each end of the 420 foot level drift and inclined so as to cut across the fissure filling I think that the expense would be about as follows:

(1) Cutting out stations in back of drift and enlarging same to permit drilling; hoisting the muck, connecting up air ~~and~~ ^pipe^ lines and providing sumps for water supply $300.00

(2) Operating hoist and compressor on shift while drilling was in progress,--probably 30 days. Labor, fuel, etc. 450.00

(3) Contract price of drilling 500' at $2.50 per foot 1250.00

(4) Core boxes, assaying cores, sludges, etc. 100.00

(5) Allowance for contingencies such as repairs to equipment and casing or cementing holes, not less than 400.00

Total (About) $2500.00

For Reymert Supplementary Report
Exhibit A

Assays of Muck from Shaft on the Alaska Claim

July 1913 to April 1914

Collar at 3097' elevation.	Ag oz.	Fe %	Pb %	Zn %	Mn %	Au oz.	Cu %	SiO_2 %	CaO %	
Surface to 25'	5.6	4.0	1.14	1.6				43		
25 to 50	8.5	3.0	0	2.5	1%		nil	52	25%	
50 to 75	7.8	2.0	0	0.8		Trace		43		
75 to 100	13.0	2.0	0	0.8	to		to	37	to	
100 to 125	6.5	1.5	0	0.8				32		
125 to 150	4.2	3.6	0	0.8	2.7		0.20	42	30%	
150 to 175	2.9	3.2	0	1.0				43		
175 to 200	7.9	2.7	2.5	2.0				38		
200 to 225	3.5	1.8	1.0	0.5				44		diorite rock
Shaft in foot-wall & diabese from 225 - 400										
Vein 30' in hanging wall cross-cut on 400' level, 8' wide, crushed diorite with quartz & calcite.	1.8		1.7	3.0		Tr.				oxidized.
Stringer 2"-3" wide on foot-wall of vein	13.5		26.0	~~26.0~~						

Diorite @ 190'
Water encountered at 215'
Shaft bottomed at 410'

(Dip of vein 80° to East. Shaft was sunk in 1913 and 1914.)

(MAGMA MINE)

Inter-Office Memo

Superior, Arizona
October 23, 1936

The tons ore, and ounces silver, delivered to the Magma Copper Company, from Reymert Mine, from 1926 to September 30, 1936, follows:

Tons ore	39,848.39
Silver, ozs.	644,903.23

Signed (R. Mays)

Average of 16.2 ozs per ton.

There was also shipped to the Hayden Smelter in 1927 about 100 cars of ore from the Reymert, in addition to the above to Magma Smelter.

(1)

REYMERT MINE NOTES

Tucson - March 18th, 1941

The mine has been worked at intervals since 1889 and up to 1937 had produced about 80,000 tons of ore with a value of about $866,905 or say $11.00 per ton. Some of the ore mined near the surface carried 30 oz. or more in silver but in recent years the average content has been only about 12 to 14 oz. Values in all other metals are negligible.

The very careful examination of the Eagle Picher Co. in 1937 resulted in their making an estimate of 29,817 tons of probable ore @ 11.1 oz., 71,786 tons of carefully sampled possible ore @ 11.91 oz. and 92,918 tons of partially sampled possible ore @ 8.15 oz.

At the present price of silver (71¢ per oz.) the net payment to the mine on 11 oz. ore after deducting trucking, with allowance for moisture, and smelter charges and deductions is about $2.00 per ton, which leaves practically no profit.

Some higher grade ore has been mined and shipped during the past three years but unless recent developments have proven a large tonnage of such material the future net returns from shipments of proven and probable ore are likely to prove negligible and a drop in the price of the metal would obviously force a discontinuance of operations.

Therefore, it would appear that the only chance of earning a profit from 11 oz. ore lies in the erection of a treatment plant at the mine.

The metallurgy of the ore has been thoroughly tested by the Eagle Picher Co. and others and I am informed that no satisfactory recovery can be made by flotation. Roasting and cyaniding at an

estimated cost of $1.50 per ton (which seems low) can recover 85% of the values and on that basis the miner might receive about $4.50 per ton from 11 oz. ore but if the price of silver should fall to 50¢ per oz. the return would only be in the order of $3.00 and from both of these figures at least $1.00 per ton should be deducted to amortize the mill while personally I should be inclined to deduct another 50¢ to allow for increased costs, taxes, etc.

On any reasonable basis it does not appear that the operation of the mine for treatment of the developed ore indicated ore is likely to be even moderately profitable and the investment of new capital would not be an attractive venture.

It remains then to consider the possibility of developing either (a) a very large body of say 10 oz. ore which could be mined and milled at a total cost of less than $3.00 or (b) finding new ore bodies which would average better than 15 oz. which would have a gross value of at least $7.50 per ton even should silver drop to 50¢ per oz. which in my judgment is quite probable.

In respect to (a) we can probably assume that all of the tonnage estimated as possible by the Eagle Picher Co. could be proven less such ore as has been mined since 1937 and plus any new ore bodies that have been developed and we may thus be able to work on the basis of a tonnage of some 200,000 tons (in round figures). But this tonnage is insufficient to justify the erection of any mill with a greater capacity than 200 tons per day and if we allow $1.00 per ton for amortizing the new investment (which including the mine equipment will be in the order of $200,000) and $1.50 for milling cost, with 85% recovery, the miner would receive only a little over $3.00 per ton at present price of silver or $1.50 with silver down to 50¢. Therefore, the cost of mining and all other expenses would have to be less than

$1.00 per ton to make any such procedure attractive and considering the conditions in which the ore occurs, I do not believe that such a low cost can be attained.

Many other factors such as the limitations of water supply must also be given consideration and in my judgment there is little chance that such a procedure would ever result in substantial profit to the investors.

It remains then to consider (b) and evaluate the chances for and against the discovery of any substantial body of higher grade ore either (1) by lateral work within say 300' of the surface or (2) by development at greater depth where primary ore may be found or the oxidizing and leaching action will have been less effective than in the upper levels.

As to (1) it would appear that all of the reasonable probabilities of good ore in the upper levels have already been pretty well exhausted.

As to (2) we unfortunately have a very bad record in respect to all past efforts to find ore in depth, these having been represented by (a) the 400 shaft sunk in the Alaska Claim in 1916 and (b) the several diamond drill holes put down by the Magma Co. in the Asia claim in 1919 & 20

Then at its face value all of this exploration would seem to very definitely indicate that the physical condition of the main vein deteriorates with depth through the closing of the fissure and that the values decrease and become negligible in whatever vein material remains.

With such a record to stand on it must be admitted that the future of the property looks pretty dark and that it did not appear in the least attractive to such keen minds as the late Seeley Mudd, Phillip Wiseman, Jno. Cole and the officials of the Magma Co. even

tho further work was recommended by Ira Jeralman and ~~[illegible]~~ Dr. Torote

Diamond drill holes pitched at angle of 22 degress from horizontal and started about 150' below outcrop of vein on hillside which has a slope of about 30 degrees. Holes may have deflected and run out of line or even if they got thru the veins it is unlikely that any core could be gotten and even the sludge would run out of the holes in the porous vein filling. Therefore, Forbach thinks that all results ~~would be~~ worthless.

Re: Geology

Mineralization is of the low temperature fissures filling type, and in places the wall rock is unaltered and the calcite has been recrystallized.

The early mineralization carried quartz with copper and galena and zinc blends are found in a narrow vein. Most of the pay ore was formed during the third period of mineralization. The problem of enrichment is not solved but horn silver and native silver and argentite were found near the surface but the high grade of the ore produced from near the surface may have been due to sorting and again an enrichment may have been caused by manganese and calcite.

No primary ore has been noted anywhere and the small proportion of iron pyrites or other sulphides and the refractory nature of the ore are unfavorable to the theory that there has been any secondary enrichment and that primary ore will be found.

The schist forms the walls of most of the veins at the surface and in the mine and there are horses of schist in the veins. Where diorite forms the walls, - as at the north end of the claims the values are low and this may account for the lack of pay ore in the cross cut on the 400' level at the Alaska shaft where 8' of vein material assayed only 1.8 oz. ag.

The low grade of the vein in diorite may be partly due to mechanical causes and the wedging out of the open fissure or to chemical causes and lack of a favorable agent for precipitation of silver. The presence of high grade ore in the upper 200-300 ft. of the vein may be due to physical-chemical conditions at time of formation or to secondary enrichment from oxidizing and leaching of the upper and now eroded portions of the vein.

The permanent water table is not known and may be at great depth but water is found in the vein @ 220-240' and at 400' the flow is reported to have been 50 g.p.m. in the Alaska shaft.

Eagle Picher and Anaconda engineers both sampled the vein with single jacks and moils to cut channels and they made a thoro job as far as the ore was accessible. Both groups were testing the possibility of finding a large tonnage of 10 oz. ore that could be cheaply mined but conditions make cheap mining very difficult especially when the high grade center of the vein has already been mined, wells are bad and cave easily.

Eagle Picher Estimate - 29,817 probably @ 11.1
71,786 possible @ 11.91

(not fully sampled) - 92,918 possible @ 8.17

Since this estimate was made in May of 1937 Forbach has opened up several new ore bodies and there is a lot of ore which is quite inaccessible for sampling.

Notes from Reports

W. Toyote in 1917. Admits that work of ~~Grimm~~ Gunn-Thompson people was very disappointing and will discourage others but mentions that veins at Globe all ore narrowed and impoverished when the walls are in diorite and thinks that Reymert vein should show up better in the schist and exploration should be continued.

Ira B. Joraleman - June 18, 1914. Examined shaft and noted that vein in cross cut was partly composed of crushed and altered diabese (diorite) but he had no doubt that it actually was the main vein. Says that work was very disappointing and not much use to do any more work in depth at this point where the lack of ore may be due to the intrusion of diorite but the chance should be better further to the south where the walls of the vein should be schist. He suggests a long drift for some 1500' to south on the 400' level and similar drifting on the 600' level. Or a new shaft might be sunk on the Africa Claim. He thinks that there is only a remote chance that the vein may have been split and part of it might be found further to the east but it might pay to continue the cross-cut for another 100' to the east.

Seeley Mudd in 1914 - Advises against diamond drilling because of the nature of the vein and rock and suggests that either the shaft should be sunk to 600' or the development abandoned. Wiseman agrees but is doubtful as to results and would prefer to give up all efforts to prove ore in depth. Mudd thinks that the schist might go

particularly in the Blue vein

deeper in the southern portion of the claims but doubts its affect on the mineralization.

Dr. Hulst thought copper should come in with depth but Wiseman does not agree.

Hulst thinks that the true vein must still lie east beyond the cross-cut and that the cross-cut should be continued in any event to cut the Blue vein.

Oury in 1891 states that cost of mining was $2.58 per ton, transportation to mill $0.97 and milling $8.15, or total cost of $11.69. Thinks that this cost should be reduced to $6.19.

Ore was then treated by chloridizing roast and pass amalgamation.

Phoenix

Trace map of claims to scale 200' - 1" as per ruff tracing and mark in location of Alaska shaft and other surface outcrops and workings and color for diabese and rhyotite and schist.

Trace section map of mine and carry down to 600' level and stopes on either side.

Notes for Report - from Report of Hermon of E.P. Co.

Examined in March, April and May, 1937.

Production to date 80,000 (about) with value $866,905. Average ore carries 20% CuO and 40% SiO_2.

Fissure vein striking north-south at right angles to schistosity of schist County rock and diorite intrusions. Vein narrows where it crosses the diorite. Vein filling is epithermal type and values seem to decrease with depth.

Three periods of mineralization.

(1) Fissures filled with black calcite.

(2) Fissures reopened and filled with quartz.

(3) Fissures reopened and filled with quartz, barite and Ag.

Location

Pioneer Mining District, Pinal County, Arizona. Sections 15, 22, 23, 26, and 27. Township 2, South Range 11 East, Gila and Salt River Base and Meridian.

8½ miles southwest of Superior. Elevation 2700-3500. Main ridge runs north-south.

Water supply from gravels below Queen Creek.

History

District prospected in 70's.

Early operations 88 &'89. to February of '91 produced.

Reymert from 1887-1930 said to have produced silver to the value of $575,000.

Shipments by Forbach to Magma 1926- Septe. 30, 1936 39848.39 tons with 644903.23 oz. Ag. - average of 16.2 oz. per ton. Also shipped in 1927 about 100 cars of ore which assayed.

Cu 0.15 - 0.30%

Au 0.01

Fe 3 - 7.%

SiO_2 ~~Cu~~ 0 40-55%

Mn 1.8 - 2.8

S - 0

H_2O - 1.00 - 3.00 %

Value of 15 oz. ore @

Smelter for 95% Ag @ 70.5¢ - $10.046

Less truck 0.50

Treat 3.50

4.00 - $6.00 to miner.

Geology

Pre Cambrian mica sericite schist (Pinal schist) derived from Sandstone and grit and to south a schisture basic rock (gabbro) which may be termed a greenstone.

Intrusions of diorite which affected the schistosity. The diorite came up in stocks.

Later came the vein filling and rhyolite and lastly the late gravels and soils.

There are two types of faults, (1) those which cross-cut the formation are of little importance and (2) those which are parallel to the veins which preceded the mineral fractures but some were contemporaneous to the vein filling and some post mineral.

One fault throws the vein 270-290' south of diorite dike.

The vein is in a fracture plane and its second reopening brought the association of the rhyotite and the later mineralization.

Two veins the main or Black Vein and the Blue Vein and many small stringers.

The first mineralization filled the fissure with black calcite carrying about 2 to 6 oz. silver.

A later movement split the vein and formed the Blue vein and the silver values rose in the later solutions while the black cacite and early quartz were comparatively barren. The pay streak carries quartz, fluorite, calcite, barite, manganese and iron oxide. The silver is in an unknown form possibly "silver manganite" (Forbach says there is some free silver. Horn silver and argentite are occasionally found. Barite is the latest mineral and is usually a guide to the ore although sometimes it is barren.

Metallurgy

Flotation tests have proved wholly unsuccessful. Crabtree reported that 85% Ag could be saved by roasting and cyaniding and estimated cost @ $1.50 per ton. Forbach and Vance claim that ore need only to be crushed to 10 mesh and roasted to about 400 degrees C. and then cyanided with loss of only 1# K Ag per ton and no lime needed. Use 3% Na Cl and ferrous sulphate.

Cost of haul to Magma say 60¢ and $3.50 treatment charge.

Cost of haul to International $1.50 and $2.50 treatment.

Magma pays for 95% of the silver @ 70.4¢ per oz.

Complete analysis of 4617 tons of ore shipped in 1936.

Au - 0.01 oz.

Ag - 11.91 oz.

Cu - 0.16%

Fe - 4.17

CaO - 20.50

Al_2O_3 - 1.60

$Si\ O_2$ - 42.50

Mn - 1.80

70.73 - Balance of 29.27% undetermined but made up of O_2 , CO_2 and $BaSO_4$. No free ~~skm~~ sulphur.

Field Notes

Mica and sericite (Pinal) schist dips 50 to 60 degrees in southerly direction but at times takes different angle. New shaft at A workings is 42' deep on the Australia Claim.

All ore shoots appear to rake toward the south.

The workings near the south end of the property can best be tapped in depth by a long adit which is driven in for

At north end of American Claim the vein is cut off by a diorite dike and it is also faulted. The vein is found again further to the north and has been developed by shafts in the schist and granite for a distance of a mile north of the Alaska shaft but all values north of the diorite are very low.

All of the dikes of diorite and diabese seem to strike nearly east and west which leads one to expect that this may be true of the diorite that cuts out the values in the Alaska shaft.

The strike of the vein is pretty consistently N 10 degrees West and the dip is about 80 degrees to the east.

Wherever the vein enters the diorite the silver values are low and there is very little barite but much heavy block spar. In the granite values are even lower or nil all of which leads to the conclusion that the character of the wall rock has had a chemical effect upon the deposition of values as well as a physical effect in causing the vein to pinch. Forbach calls the mineralized area a shear zone rather than a fissure and values often jump from one side to the other when zone is wide, - 30' or more.

Alaska 2 compartment shaft sunk by Lincoln Issues Co. (A Guinn Thompson subsidiary) in 1913 and 1914 is still in very good shape. The 30' head frame may need some minor repairs and should be painted. A few sets which were burned should be replaced at the 135' level and large sections of the guides should be renewed.

Water now stands at about 240' and this water is pumped up and used for all purposes except drinking. Forbach has never seen the shaft below the 240' level but thinks that the timbers are good. He estimates that $1000 should be spent on shaft to 400' level but as new pipe ladder etc. would be required and real condition is not known I think it safer to allow $3000 for this purpose including the dewatering and cleaning out of old timbers and muck which may be on the station or in the sump.

The present hoist is run by a big Buick engine and should be suitable for work on the 400' level and to sink to the 600. A new 3/4 inch hoisting rope will be needed (?) at cost of

Present equipment includes two Chicago Pneumatic Hot-head compressors, each 35 H.P. and delivering 212 Cu. ft. per min. Also a little starting compressor. This equipment should suffice.

Also there is an Ing. Rand drill sharpener which seems very good and quite sufficient and a poor change room that will do for a time.

No ore is hoisted from this shaft at present so that the proposed development work would not interfere with the regular operation of the mine. There is a good track and ore bin and ample room for dumping waste.

South of the Alaska there is another shaft (now working) 150' away and 200' beyond this is another shaft.

The stopes on the 200' level (lowest point now accessible) contain good ore both north and south of the shaft and not more than 50' away from it but these are still in the schist and it is important to determine the conditions in the diorite which comes in just below.

There are several theories regarding this diorite.

(a) It may be a batholith as assumed by Macklman and others and underlie all of the schist to the north of the shaft but if Forbach is correct in saying that the old workings in the Gulch on the America claim went to a depth of 350' which would be some 450' below the collar of the shaft this cannot be correct and there is not good reason to assume that the schist will extend deeper going south as supposed by Joraleman, Mudd and others altho the upper limit may be irregular and vary.

(b) It may be simply a blind dike which does not extend to the surface and in that case it probably strikes E - W as do all these whose outcrop can be noted.

The fact of the matter is that there is at present insufficient factual evidence to justify any theory and the only way to dtermine the true conditions is to explore at greater depth which

fortunately can be done at comparatively small expense. The actual showings in the mine very definitely justify such an expenditure.

Camp site should be protected at once by staking and recording several millsite claims of 5 acres each to cover all this area and also site for a mill and tailings.

NOTE RE RAYMERT MINE

6/18/40

Interview with Howard Mottier.

Raymert owners will give a new ten year lease with 10% royalty. Forbach has given Cliff F. Smith, Ore Buyer, for the International Smelting Co. of Miami, an option to purchase the present lease for $18,000 cash which will include all the buildings and permanent improvements also the hoist, compressor and other items of heavy equipment but not the drills or small tools.

The Anaconda Co. took over the assignment of this option for a time but recently dropped it and Smith is now trying to find another buyer but would expect to retain an interest for himself and Mottier would also be entitled to some protection.

Cost of operating indlude:

Mining - not known but say	$3.00	1.60
Truck to smelter	1.50	3.50
Treatment, probably	2.50	.50
General Expense	0.50	
	$7.50	

Last months shipments of 300 tons are said to have had a value of $21,500 after deducting the trucking and treatment charge. This represents a paid value of over $7.00 per ton less say $3.00 for mining and overhead and probably nearly $1.00 for royalty. This should have left the operator a profit of at least $3.00 per ton or $9000 for the month.

The new or recently developed shoot of ore on the 70' or 100' level has a length of over 400', width 6' and

it is estimated that there are 20,000 tons of similar grade ore developed above this level which would represent a profit of $60,000. (Don't see how this block of ground can contain so large a tonnage).

Below the leve Forbach believes that a similar tonnage of ore will be found in the next 100' of depth and that this can be mined with similar profit; the ore is probably very heavy since a shoot 100 ft. high by 400 ft. long by 6 ft. wide would only contain 20,000 tons if figured @ 12 cu. ft. per ton but @ 9 - 10 cu. ft. to the ton, this figure would be increased to perhaps 25,000 tons.

(Since the values are in silver, the future price of that metal would be a most important factor. Magma and International Smelters both seem to want this class of ore and probably will continue to give favorable terms of treatment.

Property might appeal to Eagle-Picher, Amparo, Geo. Kingdon.

For Reymert Supplementary Report
Exhibit A

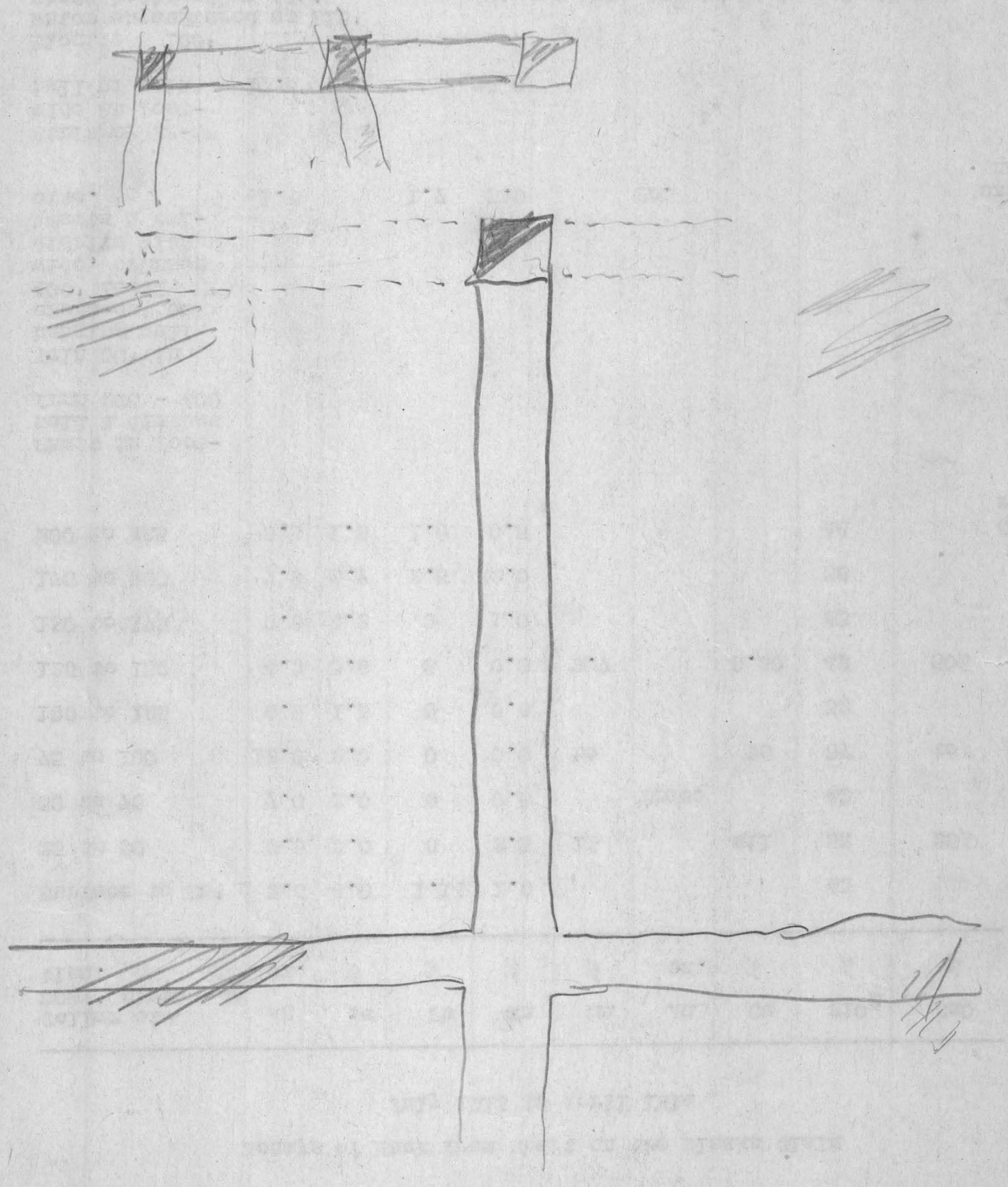
Assays of Muck from Shaft on the Alaska Claim

July 1913 to April 1914

Collar at 3097' elevation.	Ag oz.	Fe %	Pb %	Zn %	Mn %	Au oz.	Cu %	SiO_2 %	CaO %	
Surface to 25'	5.6	4.0	1.14	1.6				43		
25 to 50	8.5	3.0	0	2.5	1%		nil	52	25%	
50 to 75	7.8	2.0	0	0.8		Trace		43		
75 to 100	13.0	2.0	0	0.8	to		to	37	to	
100 to 125	6.5	1.5	0	0.8				32		
125 to 150	4.2	3.6	0	0.8	2.7		0.20	42	30%	
150 to 175	2.9	3.2	0	1.0				43		
175 to 200	7.9	2.7	2.5	2.0				38		
200 to 225	3.5	1.8	1.0	0.5				44		diorite rock
Shaft in foot-wall & diabese from 225 - 400										
Vein 30' in hanging wall cross-cut on 400' level, 8' wide, crushed diorite with quartz & calcite.	1.8		1.7	3.0		Tr.				oxidized.
Stringer 2"-3" wide on foot-wall of vein	13.5			26.0						

Diorite @ 190'
Water encountered at 215'
Shaft bottomed at 410'

(Dip of vein 80° to East. Shaft was sunk in 1913 and 1914.)



April 5th, 1941

Mr. W. S. Van Dyke, Jr.
Reymert Mining Company
902 Wells Building
Milwaukee, Wisconsin

Dear Mr. Van Dyke:

As a supplement to my report on your property dated March 29th, 1941, I beg to submit the following report which is more particularly a partially detailed description of the present workings and conditions with recommendations in respect to certain future development and operations which appear to me advantageous and which I have discussed with Forbach, whose opinions in these matters seem to agree with mine.

This report should be studied in conjunction with the Claim Map of the Lincoln Issues Company and also the map showing the surface plan and underground section of the Alaska Shaft area, both of which were sent you with my first report. At a somewhat later date it may seem to you advisable to obtain, if possible, all of the survey maps made by the Eagle Picher and Anaconda Engineers and to supplement these with some additional surveying and mapping that would permit the preparation of a complete plan and section of all of the workings, brought right up to date, and this could be revised from time to time to show the progress of the stoping and such development work as may be undertaken.

Ore Occurrence and Workings

Without attempting to describe in detail all the various ore shoots which are formed above the 200' level and throughout the length of 6000' I will briefly mention the most important, all of which I examined as far as these were accessible.

Starting at the south end of that portion of the vein in which pay ore occurs an outcrop of ore is noted about 200' south of the north end line of the Great Pacific and this apparently continues northward across the line and for about 700' in the Europe Claim forming a showing some 900' in length but pay ore is not continuous for this entire distance.

In most of this section both Black Vein and Blue Vein are noted, lying about 100' apart, and considerable ore has been mined out from surface shafts and adits and in places the workings have gone down to within some 40' of the level of the long adit (which I shall term the Europe Adit) that runs in 200' below the outcrop of the veins.

The adit itself appears to pass through a poor section of the vein between two well defined shoots of pay ore but a five foot width of the Black Vein assayed 13.8 oz. silver in a little drift on the south side of the adit, where width of mineralization is about 30'.

The Blue Vein in this adit is cut 120' further to the east and a raise connects with the workings from an old shaft which is now in poor repair. The width of mineralization is 20' but there is no well defined pay streak and again the adit seems to have cut the vein between the pay shoots that have been stoped on the

upper workings and some of which carried 24 oz. silver over comparatively short lengths.

The Europe Adit is said to have been driven by the old Reymert Company and its portal is over the west line of the claim and on ground which was formerly held by the Lincoln Issues Company and known as the Webster Claim, which has now been abandoned. I recommend that a new claim to cover this ground should be staked and recorded at once.

The adit or tunnel starts on the north side of a gulch and runs North 55 degrees East for a distance of over 700' cutting through both the Black and the Blue Veins at an elevation of some 200' below the outcrops. This work is practically all in schist although a few narrow bands of rhiolite were noted and small stringers of quartz with a little galena. At about 550' from the portal the Black Vein is cut with Black calcite and quartz filling and usual strike and dip to the east. The width of the mineralized fissure at this point is about 30' but the pay streak as shown in the face of a short drift on the north side of the adit is only four feet wide and assayed 13.8 oz. silver. Elsewhere samples of vein matter contained only four or five ounces suggesting that the adit may have passed through the south end of an ore-shoot and suggesting further drifting to the north.

About 120' further to the east the Blue Vein was cut with mineralization extending over a width of some 20' but no well defined pay streak is in evidence although some samples are said to have carried upwards of 20 ounces of silver and considerable lead. From a short drift on the north side of the adit a raise connects

with the old workings from the surface where a comparatively short shoot of 24 ounce ore is said to have been mined to within 40' of the adit level.

In the breast of the adit some 60' further east a 2' vein of quartz makes to the north and is reported to carry 20 ounces silver and some lead in the form of galena.

Considering the adit level in conjunction with such portions of the upper workings as are now accessible and with the records of past production from this section of the mine, I am of the opinion that there are excellent chances to develop additional pay ore between the adit level and the surface and that such development work is well justified. This is also Forbach's opinion and he states that it is his intention to construct a road to the dump at the portal and carry an air line down the old raise from the Blue Vein shaft and then drift north and south on both the Black Vein and the Blue Vein.

The shoots of ore which were mined out in the upper workings in this part of the mine were comparatively short and values apparently somewhat erratic but it is reasonable to suppose that substantial tonnages of ore still remain to be mined particularly in the 100' above the adit and there are also excellent chances of finding ore below that level. I feel that Forbach should be encouraged to proceed with this work as soon as possible and that his results should be watched with interest.

Should good ore be found extending to a greater depth it will probably be advisable to sink one or more winzes in the pay shoots by which means the lower horizon can be developed and worked

to a considerable depth and this location would seem to be the logical point from which to later explore the south section of the vein which is so far from the Alaska Shaft that any deep ore that may be found in the Africa, Europe or Great Pacific Claims would have to be mined and hoisted as a separate operation.

Returning to the surface workings the shaft near the south end of the Europe Claim has a depth of 120' and from the bottom there are drifts running 40' to the north and 120' to the south from which there has been considerable stoping of ore that ran 15-30 ounces for width of three to 15 feet. Much of this ore is on the contact with the rhyolite dike and best values are on the west side of the dike. There is another band of rhyolite and a split from the main vein lying still further west. At this point there is an adit from the mouth of the shaft running south for 200' under the hill which rises about 120' and on which there are several pits that show veins in rhyolite or along the contact and with much quartz.

The south end line of the Europe which is also the north end line of the Great Pacific is 150' south of this shaft and 30' below the top of a hill which is about 100' beyond it to south and here also there are several small open pits in some of which 12 ounce ore was found. This hill rises to about the same level as the hill on the Australia Claim. The bearing of the vein outcrop is North seven degrees West from the Great Pacific summit to the Australia summit, but there is some faulting between. Going south the Great Pacific Hill drops sharply from the summit at a point 100' south of the Europe line and for nearly 400' to a gulch which is 100' lower in elevation and then the slope rises steadily to the next ridge

which is just on the south end line of the Great Pacific and at an elevation some 300' higher than the north end of the claim.

An intrusion of basic greenstone or gabbro comes in on the southern part of the Great Pacific Claim and there are several pits in which the vein shows low values after it has crossed south of the prominent band of silification which lies about 200' south of the north line of the Great Pacific.

Apparently the fissure splits up and feathers out in several stringers going south and the top of the ridge in the Great Pacific may be considered as the south limit of the mineralized section of the fissure, just as the diorite contact on the America may be called the north limit thus making the total length of the ore-bearing zone some 6000',of which distance over 2000' carries pay ore and a greater length would carry milling ore.

The silicious rib which crosses the vein appears to me to be only a silicification in the schist.

Proceeding north we next come to an open stope and surface cut on north side of a gulch just beyond the middle of Europe Claim. The stoped vein is here on the west side of the rhyolite dike which has filled part of the fissure but seems to have come in prior to the last period of mineralization. The stope is about six feet wide, east of which lies the dike fifteen feet wide and then the eastsplit of the vein which runs six to twelve ounces and may perhaps be mined later. Forbach intends to test this out, but the grade of ore is probably too low to be marginal.

The next shaft, located 250' south of the north line of the Europe Claim, has also a lot of open cut workings along the sur-

face which are on both sides of the rhyolite dike. Considerable ore was taken out of the stopes that went down 140' below the outcrop. About 120' north of this shaft the rhyolite plays out and no mining was done north of this point for a distance of more than 150'. The next shaft goes down 120' and for a length of some 200' very good ore was mined, while between the two last mentioned shafts there may be ore in the east or hanging wall which should be prospected. The stopes here are often very wide and the values jump from one side of the fissure to the other as is often noted in these workings. The ore carries 22 to 25 ounces and seems to be going down and raking to the south but it was getting low grade near the end of the stope.

This shoot on the Europe Claim could all be developed from the adit and the drift would only have to be extended 160' to the north to get under the middle shaft.

The Blue Vein at this point looks to be 150' from the Black Vein and the shaft which is connected with the adit is sunk on the east side of the ridge.

Within 100' of the line there is an outcrop of ore showing copper in places and two cars averaging 17 ounces in silver were mined and shipped.

There is another outcrop 40' east of the Blue Vein in which there is barium and manganese and perhaps sufficient silver to make mining profitable.

In the first 300' of the Africa claim (going north) the outcrop slopes down to 150' below the level of the north Europe shaft and there are a number of pits in which there is very little good

silver ore but in some of them there is a lot of galena over a narrow width. The Galena may represent a separate and later mineralization.

In the Africa gulch the vein is faulted to the east as it goes north. Near the middle of the Africa Claim a tunnel was driven North 33 degrees East for 200' and cut the Black vein and from this cross-cut drifts run 50' to the south and 350' to the north. Here the ore was stoped both above and below by the old timers and Forbach has continued this work and took out 42 cars of 30 ounce ore but this was sorted to bring it up to high shipping grade. The vein is narrow and should be further prospected, it is said to have carried good ore to a depth of 80' below the tunnel and above and nearly up to the surface for a length of say 200'.

The strike of the schist at this point is North 85 degrees East and dip 80 degrees to south.

The North Africa workings start about 400' south of the north end line and on the slope of the hill where there is an open stope on the Black vein five feet wide and with some underhand stoping which produced 20 ounce ore and a lot of 10 to 12 ounce ore is left in the walls, this last would be very suitable for a mill. The outcrop of this zone is 30 feet wide in places but the pay shoot is generally narrow and near the top of the hill is a cut with a face of 10 ounce ore but as is usually the case the values may be expected to improve a short distance below the surface as good ore is rarely found within 10 to 15 feet of the outcrop.

Here I noted much fine grained spar which probably came in during the second period of mineralization and there is also much hematite which is generally an indication of ore especially where it

occurs in an oolitic form.

At the top of the hill (on end line between the Africa and Australia) the Blue vein and the Black vein are close together but they separate about half way up the Australia.

The surface of the outcrop drops very rapidly going north on the Australia for a length of 500' during which the change in elevation is about 150'. At a point 100' north of the line there is an adit and further north and about 75' below the outcrop is another adit with stoping above and below. Here the Blue and Black veins seem to be very close together but both are narrow and fairly good grade and stoping to the south was extended almost to the end line of the claim. A lot of good ore has been left here and it is a favorable location for future development and production which Forbach intends to start very soon.

At the foot of the ridge (150' below the crest) is the new Australia shaft which is only 42' deep and at the bottom of this the drift goes 340' south which puts the breast to within 150 to 200' of the north line of the Africa Claim.

There was a lot of difficulty in sinking this shaft because of the character of the vein and similar conditions have always prevailed when any shaft was sunk in the Reymert vein or fissure.

From this shaft the drift goes north nearly all in ore and it is stoped out to a depth of 200'. There is still good ore in the bottom of this drift according to Forbach's statement.

There are two little drifts on the north side of the gulch in which the last mentioned shaft was sunk and the old Australia shaft is 100' beyond. At this point the fissure outcrop is very wide in spots and both the Black and Blue veins are noted. A large tonnage

of fairly good ore was mined in this section during 1938-1939.

In the bottom of these Australia workings the ore is generally about 20' wide but the grade is low, probably not more than 10 ounces along the lowest level. The old Australia shaft is 186' deep and from the level at the bottom there are two winzes about 80' deep so that the lowest level is some 325' below the collar of the new Australia shaft or about 266' below the crest of the ridge on the south side of the claim.

All ore in these workings is very heavily oxidized and at bottom of winze there is a width of five feet of 15 ounce ore and another five feet of seven ounce ore.

This winze which is inclined to follow down the vein should be raised up to the surface which is about 100' above the 40' level from which it is sunk but most of the first 40' would be through an open stope that would merely have to be timbered. The winze should then be sunk 42' where it would hit the top of the very good body of ore which has been mined nearly to this point from the old Australia shaft and in which a lot of good ore has been left in places, running 30 ounces for a width of 10' but these workings are caved and no longer accessible.

To open up this ore body from the winze and convert the winze into a serviceable working shaft would cost close to $5000, which Forbach cannot afford to spend at present (some road work and installation of equipment would also be involved) but he hopes that he may be able to borrow this money and repay it at so much per ton of ore produced.

The program would seem to be worth while as it would

provide access to a body of ore which has been pretty well developed for a length of 550' and is said to contain several shoots of high grade material.

Samples taken a short distance below the Australia outcrop by Eagle Picher Company carried 16 ounces silver and considerable lead.

At the old Australia shaft the Black and Blue veins are still very close together but they split again 100' further north. Up to the point where the stoping stopped (say 500' north of the old Australia shaft) there is very little pay ore left in the old workings but considerable low grade ore might still be mined.

There is a raise to the surface near the north end of these stopes and from this point the outcrop drops gradually about 40' to the gulch which is just north of the end line of the Australia and some low grade ore is found in surface pits.

Here the Blue vein is nearly 200' east of the Black vein and on the south side of this gulch there is a little adit and on the north side there are adits from which the Blue vein has been mined and in this ore there is quite a bit of copper showing. Some have thought that much more copper would make in depth but I cannot agree with this opinion.

At this point the "Ryan Shaft" was sunk on the Black vein. This is a good two compartment shaft which is 80' deep but the lower 40' has caved in. The fissure here is exposed in an open cut with width of 20' and the fines from the ore mined assayed 21 ounces but the coarser pieces only assayed eight to nine ounces.

No stoping was done in this section of the vein which appears to lie between the shoots of pay ore although the low values are continuous. In places the fissure outcrop is 82' wide and in one place the Eagle Picher Company sampled in a trench 11' wide of 12 ounce ore. Again the surface of the outcrop descends as one goes north on the Asia Claim and in a gulch is found the "B" or Asia shaft; - this is located 500' from the south end of the Alaska claim and from this shaft there are drifts on the 65' level which extend south for 600' and north for 70' at which point the drift lacks only some five feet of connecting with a south drift from the South Alaska shaft. Therefore this portion of the vein is practically opened up and partially stoped for a length of 1350'.

From the 65' level of the Asia shaft going south the ore is all fairly good grade, say 12-15 ounce, and it was stoped for a width of 15' with a somewhat lower average grade. Most of the stoping was done for 120' south of the "B" shaft where ore was mined right up to the surface. Below the level not much work was done except for a little underhand stoping in the floor of the drift.

There was also some stoping to the north of the shaft and for a width of eight feet some 30 ounce ore was taken out in short sections. The workings on the north portion of the Asia Claim and on the Alaska are all shown on the map and most of Forbach's work, - aside from the operations of his son on the Europe Claim, - is now concentrated in the Alaska Incline.

This Alaska Incline is on the Blue Vein which lies some 40' east of the Black vein on which the Alaska shaft and old workings are located.

The Incline goes down to the 68' level but there are sub levels between and ore has been partly mined for a length of 200' south of the incline shaft and back north toward the main shaft. There is good ore in the south face some eight feet wide, which is being mined at present.

The dimensions of the Alaska shaft are 10'6" x 5' inside timbers or 12' x 6'6" outside timbers. The hoisting compartment is 4'6" x 5' and the manway is the same size. The long axis of the shaft is east - west and its general condition has been described in my first report.

To the north of the Alaska shaft I was able to visit the 135' and 200' levels but most of the ore in this section appears to have been mined although it may be expected to extend to greater depth and the old workings on the north end of the Alaska and southern section of the America Claim are said to have extended down to a depth of 350' from the collar of the America Shaft which would correspond to a depth of over 450' below the collar of the Alaska shaft.

Some of these workings in the America Claim were once visited by Forbach, who reports that they still contained some excellent ore but they are now entirely caved and inaccessible and could best be opened by a 400' level to be run north from the Alaska shaft and by still deeper levels if pay values are found to continue.

In the Alaska shaft I noted some diorite or diabese but the nature of this occurrence is not well defined and on the surface of the America the diorite intrusion is prominent and its contact

with the schist appears to be nearly vertical and to strike east-west, suggesting that the diorite is an intrusive dike.

Forbach's mining has nearly always been done by open stoping, which is timbered with square sets, most of which are not filled. In many places the ground has become too heavy for the timbers and there have been caves in which much good ore has been lost or made inaccessible. Only the higher grade ore, 15 ounce or better, has been intentionally taken and a great deal of lower grade ore has been left in the walls or between the ore shoots.

This system of mining has many disadvantages but is probably the only method that could be followed to produce shipping ore but if the average product could be reduced to 10 ounces (through building a local mill) and still leave a profit a great many of his stopes could be reopened and worked for production of a large tonnage. If this improved method of operation is to be followed at any time in future it should be adopted as quickly as possible to prevent the loss or leaving behind of the large tonnage of lower grade material which seems to accompany the pay ore in nearly every location that I inspected.

I am enclosing as Exhibit A a record of the Alaska Shaft from which it is apparent that even though this shaft was started in the vein it must have been located in a nearly barren spot between the ore-shoots since no pay values were found except from a depth of 75 to 100'.

Apparently the vertical shaft entered the footwall and the diorite at nearly the same point.

The character of the vein which was found in the cross-cut on the 400' level was decidedly different from that of the vein as noted in the upper workings but Joraleman was quite positive that this represented the Black Vein and it seems probable that the Blue Vein had made a junction at some higher point, although this matter should be further investigated by continuing the cross-cut for another 50' to the east.

I am also enclosing (with the copy of this report which goes forward by regular mail) a set of blue-prints of the seven drill holes sunk by the Magma Company.

The record of these holes is extremely discouraging both because they apparently failed to penetrate pay ore at any point in the vein and because they seem to show that the diorite in some cases is found only a short distance below the surface, giving color to the opinion that this occurs as a sill or laccolith rather than a vertical dike.

In the first report I have discussed this question and pointed to the evidence which favors a different conclusion and it appears to me that the entire situation is confused and can only be clarified by further development, which under the circumstances is fully justified, and absolutely essential in order to prove or disprove the theories of the various geologists and determine the character and quality of the ore below the 200' level.

I am also enclosing herewith my statement of account and shall be very glad to go into further details or answer any questions that may occur to you.

Yours very truly,

GMC:at

REYMERT MINING COMPANY
902 Wells Building
Milwaukee 2, Wisconsin

3/26/45

March 21, 1945

Mr. George M. Colvocoresses
1102 Luhrs Tower
Phoenix, Arizona

My dear Colvo:

This will acknowledge receipt of your letter of March 13, 1945 in which you request such information as we have in connection with the history of Reymert Mining Company. I enclose herewith a tabulation of the shipments. This was compiled from smelter returns and various returns. You will note that it differs slightly from the figures which you have. I regret to state that I do not know which is more accurate. I also enclose herewith a list of shipments made during the year 1944 by James Tod. This is taken from the smelter returns. I regret to state that we do not have the report of the Anaconda or Inspiration Company made in 1938 and therefore I am unable to furnish you with same. I enclose herewith report on Reymert Mining Company made by the Eagle Picher Mining and Smelting Co. during 1937. This is the only copy of this report we have and I must ask that you return same when it has served its purpose.

I also enclose herewith memoranda of the history of Reymert Mining Company which was compiled by Mr. George D. Van Dyke some years ago. This history contains various reports and gives some idea of the earlier operations of Reymert Mining Company. It would be very difficult for us to duplicate this memoranda and I must therefore ask that you take especial care of it and return it to us when it has served its purpose. It is my understanding that the Magma Copper Company was given a copy of this memoranda some years ago but I cannot be sure of this fact. Please do not let either of these reports get away from you and may I ask that you return them to us promptly when they have served their purpose.

I hope this will give you what you want and will be of assistance to you in furnishing Mr. Gustafson of the Magma Copper Company such information as he desires.

Yours very truly,

REYMERT MINING COMPANY

W D Van Dyke Jr

W. D. Van Dyke, Jr.
Treasurer

ek

Cate.

89 John H. Van Slyke & ano.

Option price to Ayer (Trim) e 250,000

+ 5 fig e refiled in 1917 to Ayer (Magma)

(Also Pyramid Co or to paid 25% of stock

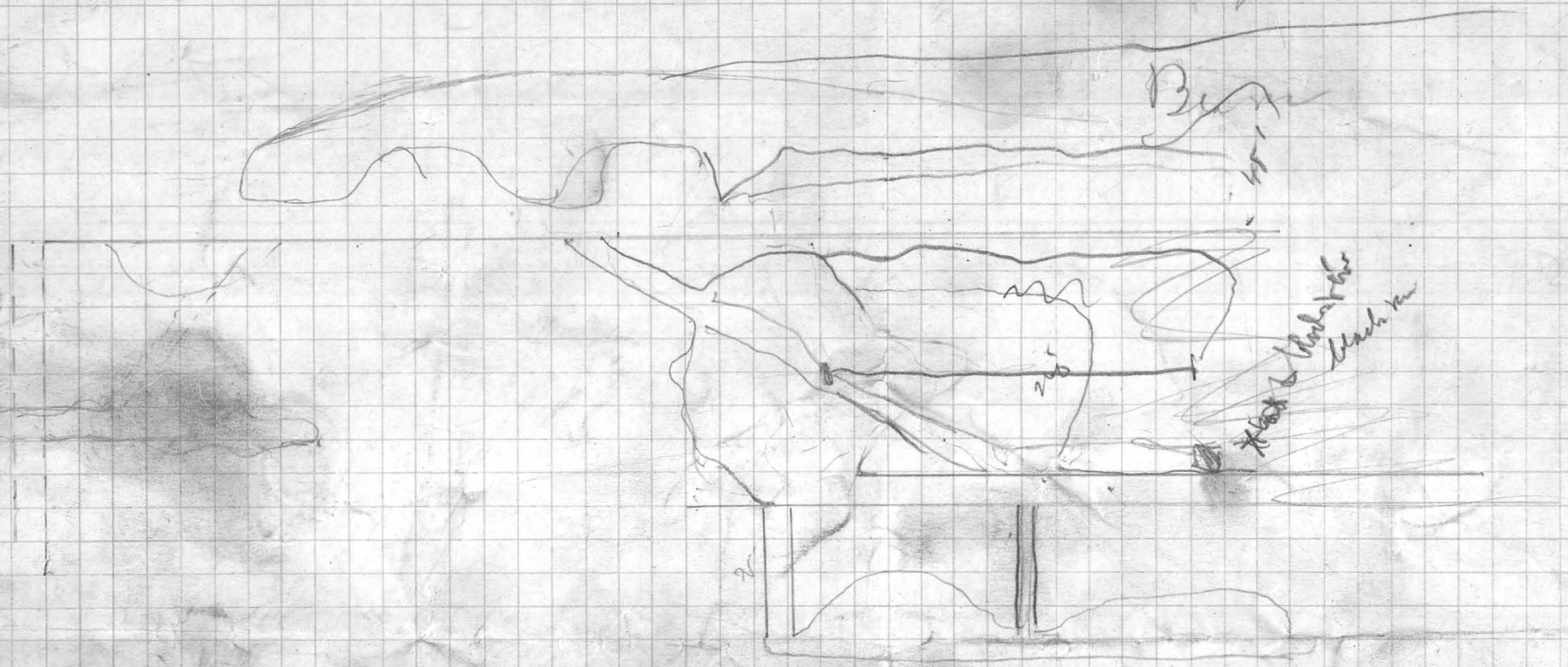
Jan [illegible] Co

Optioned on similar terms & [illegible] Cash

payment to Magma Co on Sept 20. 1916

Scale 50' = 1"

Blue Run & Inclined Slip



Inclined Slip looking in

Blue Run near Celeste Slip

REYMERT

Ore Reserves from E. P. Report

	Location		Tons	Aver. Silver Content	Class
Block A	Lateral	2350 N.	5774	7.8 oz.	Possible
" B	"	2600 "	1466	6.1	"
" C	"	2740 "	7864	10.3	"
" D	"	3500 "	8847	11.2	"
" E	"	5000 "	63872	8.6	"
East F)			10304	15.16	"
)	"	5400			
West F)			3314	9.5	"
G	"	6300	19365	11.7	Probable
G	"	"	3983	18.2	Possible
G	"	"	15631	11.2	"
H	"	6400	21806	7.06	"
I	"	7600	10452	10.0	Probable
I	"	"	4280	12.0	Possible
I	"	"	4285	8.68	"
I	"	"	13278	11.4	"

TOTAL

March 28, 1937

20.9
2.2
4.67
1.7
1.5
8.2
28.91

PROGRESS REPORT

Reymert Ore

Samples of the Reymert Ore as received at Ruby had the following analysis:

Au	Ag	Pb	Zn	Cu	Fe	Mn	CaO
Tr	10.8 oz.	0.82%	0.15%	0.17%	4.67%	2.20%	20.9%

This ore is highly oxidized, the silver being intimately associates with the manganese and the manganese occurring almost wholly as either manganese dioxide or as a higher oxide. The base metals contained in the ore exist either as oxides or carbonates, or perhaps as complex manganites The lime occurs as calcite and limestone.

This ore is typical of many manganese-silver ores found in the Western U. S. and in Mexico, both in constituent minerals and in the fact that the silver is highly refractory to ordinary treatment methods. Normally these ores carry more gold than does the Reymert, which either may or may not be amenable to treatment, but in all of them the silver fails to respond, probably due to its occurrence as a complex silver manganite.

The rather extensive test work we have done on this ore has merely produced results coinciding with those obtained by other investigators, chiefly Coghill, and Clevenger and Caron. The manganese-iron minerals, judging from gravity alone, should be amenable to gravity concentration, but their intimate locking with other minerals, combined with the apparent porosity of the relative large free mineral particles and the tendency to slime in crushing of the limonitic material precludes any separation whatever by this means.

Altho flotation of the "hard" varieties of manganese dioxide minerals is now commercially successful, the same procedure produces negative results on this ore. Ordinary psilomelane is readily floated with fish oil and gas oil, as attempted in Tests 20, and 21, attached hereto, but for some reason the same minerals, when containing silver, do not concentrate. No doubt the relatively large amount of limonitic slime in this ore precludes all selective action. Attempts to make a manganese-calcite concentrate, using soaps and fatty acids similarly failed, probably for the same reason, altho calcite should be readily floated. Final flotation tests were made on a reduced ore (test #36), arguing that the silver, however originally tied up, should be reduced to the metallic or to a low oxide state, and could be sulphidized and the resulting product floated. Altho this produced a concentrate assaying 70 oz. Ag, only a 31% recovery was made.

Direct cyanidation of the ore, regardless of the fineness of grinding or of the time of agitation gave only about the same extraction as all other preliminary tests, whether gravity concentration, flotation, or magnetic concentration, namely around 30%. Roasting with sulphur in an oxidizing atmosphere, following by cyanidation was the same.

As stated in the first preliminary report on this ore extraction should be improved by either a sulphurous acid leach or a reducing roast followed by cyanidation, but it was believed that the cost of either of these two methods would be prohibitive. Since no other methods were at all encouraging, these were tried anyway.

The development of the process as it now stands is as follows:

Crush ore to 1/4 inch
Reduce at 1110 deg. F for one hour
Cool in reducing atmosphere to atmospheric temp1
Grind to approx. 200 mesh in water
Dilute and wash twice by decantation
Agitate in cyanide solution (0.3% KCN) for 24 hours with air

This method gives around an 85% silver extraction with a sodium cyanide consumption of from 3 to 4 pounds and a lime consumption of around 8 lbs.

This method is known as the Caron Process, and was patented July 3, 1917 Patent Number is U.S. 1232216. The main differences between Caron's application of the process and ours, is that he used producer gas, whereas we propose to use natural gas. He ground in cyanide solution, whereas we propose to grind only in water and wash previous to cyanidation.

General

This general treatment of reducing roast followed by cyanidation should be tried on ores from different parts of the Reymert mine, which vary in manganese, silver, and lime content. It is not expected that these different contents should affect the silver recovery, but they would be well to check.

E. H. Crabtree

THE REYMERT ORE

The Reymert sample received at Galena is a silver bearing silicious iron-manganese oxide containing a little barite. Lesser constituents are lime and alumina. All of the minerals are so interlocked with one another that any degree of grinding to critically free a large percentage of them is impossible. It is true that in the small sizes, such as minus 80 mesh, some of the minerals are fairly free but in no case not enough to be able to take economic advantage of. Some of the barite is fairly free at minus 4 mesh but it still is speckled with iron and manganese. Positive identification of all the minerals present might be subject to speculation.

Only three are definitely known, namely: some free quartz which is pseudomorphic after calcite, limonite and barite. No definite crystallization of calcite was observed although the lime present is probably as limestone. The manganese-iron oxide mineral might be psilomelane but this mineral has a specific gravity of 4.0 and it was impossible to obtain a good gravity separation between it and the lighter siliceous portion. Hand picked pieces which gave every appearance of being totally black differed widely in iron and manganese content while showing about the same in insoluble. The corresponding silver relationship is not known at this time because of the tedious task of hand picking enough of minus 80 mesh grains for assay. In lieu of the high iron

content and high insoluble this mineral might conceivably belong to the braunite group which is a manganese-iron silicate. Pyrolusite or wad is probably present because of the manganese concentration in the extreme fines. No clue was observed in isolating the silver mineral. A marked similarity, however, exists in the ratio of silver to manganese through all the screen sizes even though assay values vary considerably, thus showing that the two bear a definite, though unknown, relationship.

Conclusions

The silver apparently is locked with the manganese. No appreciable amount of free manganese mineral exists down to at least 100 mesh and it is very questionable whether any exists at all. Under a microscope magnifying 80 diameters much locked mineral is seen in minus 140 mesh product. It is also true that the iron oxide present is not manganese free. Such intimacy of constituent minerals requires a degree of grinding for their freedom far exceeding economic considerations. The only conclusion that can be reached under such circumstances is that gravity treatment has no application and the possibilities of flotation are most remote. To the best knowledge of the writer, iron oxide flotation is not out of the laboratory yet, and even though it were a commercial success it is not conceivable that pure enough separation could be had at an economic grind on this ore.

The solution of the treatment of this ore may be found in either hydro or pyrometallurgy or a combination of both. It is reasonably certain that it is beyond the help of sound ore dressing practice.

R. E. Illidge.

Feb. 4, 1937

Eagle Picher M. & S. Co.
Ruby, Arizona

We have been working on the sample of manganese-silver ore which you sent us at Mr. Allens suggestion, and the results of these tests are covered in the enclosed report.

You will see therefrom that the ore does not appear to be amenable to flotation but that it does respond fairly well to cyanidation after preliminary treatment by SO_2 followed by washing, alkalization, and aeration. This treatment would hardly appear to be commercial on the grade of ore submitted to us, but it might be of interest to you on a higher grade of ore.

Edward H. Nutter, Chief Engineer
Minerals Sep. North American Corp

Dec. 4, 1936

Mr. Morton:

The following report outlines briefly the work we have done to date in an attempt to concentrate the Reymert ore.

As far as actual extraction is concerned, each test we have made, whether flotation, gravity concentration, or cyanidation, has been an absolute failure.

The data obtained from these tests however, point to two possible solutions: (1) flotation of the silver by making a bulk manganese-calcite concentrate, or (2) crushing thru 30 mesh, screening out the minus 200mesh material and tabling the plus 200 mesh product for a manganese-silver concentrate to be combined with the fines for shipment.

Work is being continued along these two lines. The first, if successful, will have the advantage of making a more favorable product for the smelter, thus reducing the base charge; the second, if successful, will not make as high grade concentrate, but the recovery will probably be higher and the milling costs, both initial construction costs and current operating costs, will be lower.

E. H. Crabtree Jr.

- - - -

PRELIMINARY INVESTIGATION

Reymert Ore

Samples of the Reymert ore consisted essentially of calcite, psilomelane, quartz, limonite, and probably pyrolusite and hamatite, together with minor amounts of other non-metallic minerals. Very little, if any, sulphide is present. Silver in the amount of 10.6 oz. to the ton is present, probably intimately associated with the manganese minerals. These latter, in turn, are closely locked with the calcite in the larger sizes.

Calculated mineralogical analysis is approx. as follows:

Ag	10.6 oz.
MnO_2	3.5 %
$CaCO_3$	37.5 %
Fe_2O_3	8.2 %
Insol	51.0 %
	100.2

Properties of these minerals as affecting their amenabilities to concentration are as follows:

Mineral	Gravity	Hardness
Pyrolusite	4.8	1.0 - 2.5

Psilomelane	4.0	6.0
Calcite	2.72	3.0
Limonite	3.6	5.0
Hematite	5.0	6.0
Quartz	2.6	7.0

From the above characteristics, three main points are significant to consider in concentrating:

L. The pyrolusite with its extreme softness will slime badly on crushing.

2. The calcite having virtually the same gravity as that of the quartz, will preclude satisfactory separation of these two minerals by gravity concentration.

3. The psilomelane, if free, and if not too fine, should separate from the calcite and quartz by gravity.

- - - -

Economics of Milling Reymert Ores as Opposed to Shipping them Straight

It was first assumed, considering the close proximity of the smelter to the Reymert Mine that a 2/1 ratio of concentration with an 80% silver extraction would be amply sufficient to justify milling as opposed to shipping the ore direct. The following figures show the net return from different grades of ore under both conditions, and with various ratios of concentration and indicate that at least a 4/1 and preferably a 5 or 6/1 ratio should be attained. In each of these it has been assumed that the haul of either ore or concentrates would cost 50¢; that smelter treatment charge of either would be $3.50; that 80% silver extraction could be obtained by milling; and that the milling cost would be $1.00

Net Return from Smelter after Deducting Treatment Charge, Milling Cost and Haul, but not Deducting Mining Cost or Royalty

Ag Grade	Value shipping direct	Milling 2/1 Ratio	4/1 Ratio	8/1 Ratio
5.0 oz.	--	--	0.93	1.45
6.0	--	--	1.51	2.01
7.0	1.12	1.10	2.10	2.60
8.0	1.85	1.68	2.68	3.18
9.0	2.58	2.27	3.28	3.78
10.0	3.31	2.85	3.85	4.35
11.0	4.05	3.44	4.44	4.94
12.0	4.78	4.02	5.02	5.52
13.0	5.50	4.60	5.60	6.10
14.0	6.25	5.20	6.20	6.70
15.0	6.95	5.75	6.78	7.28
16.0	7.70	6.35	7.35	7.85

The above values would be appreciably enhanced should it prove possible to

reasonably well float the calcite and thus reduce the treatment charge, or to obtain a milling cost of less than $1.00, both of which factors appear at present to not be unlikely.

Use for complete average analysis Bmm [illegible]

			%	8 - 10 g.
Ag.		10 g.	0.80	0.80
Pb.	?		0.15	0.15
Zn	?		0.17	0.40
Cu.	?		3.50	3.50
MnO_2	?		8.20	8.00
Fe_2O_3	8.00		37.50	37.00
$CaCO_3$	37.00		50.00	50.00
Insol.	50.00		100.34	99.85

Ave gold in [illegible] 0.003 g. per ton

In lowest level (420) of the [illegible] [illegible] [illegible] [illegible] [illegible] showed gold [illegible] [illegible] 0.04 g. Pb [illegible] 3.40 % Zn [illegible] 1.90 & Cu [illegible] 1.65 × [illegible] & sulphides & [illegible] + depth

Dups

GMC

REYMERT

ORE RESERVES FROM E. P. REPORT

Location			Tons	Aver. Silver Content	Class
Block A	Lateral	2350 N.	5774	7.8 oz.	Possible
" B	"	2600 N.	1466	6.1 "	"
" C	"	2740 N.	7864	10.3 "	"
" D	"	3500 N.	8847	11.2 "	"
" E	"	5000 N.	63872	8.6	"
East F	"	5400 N.	10304	15.16	"
West F	"		3314	9.5	"
G	"	6300 N.	19365	11.7	Probable
G	"	"	3983	18.2	Possible
G	"	"	15631	11.2	"
H	"	6400 "	21806	7.06	"
I	"	7600 "	10452	10.0	Probable
I	"	"	4280	12.0	Possible
I	"	"	4285	8.68	"
I	"	"	13278	11.4	"

TOTAL

COPY

GMC

EAGLE-PICHER MINING & SMELTING COMPANY

Ruby, Arizona

March 28, 1937

Mr. E. D. Morton:

Attached is a summary of the 58 tests so far made on the Reymert ore in an attempt to make a satisfactory silver extraction at a cost which would not be prohibitive to commercial practice. This is presented at the present time because, particularly considering the other unfinished work in the laboratory, further tests on this ore will take considerable time and will only be productive of throwing light on the minor details of the process.

Increased extractions over those already attained will come slow and will be perhaps only in individual per cents., and estimates of costs can only be lowered from now on by perhaps a nickle at a time.

The last tests made to date, which have been amply checked, show that we can expect not less than an 85% silver extraction at a cost of around $1.50 to $1.75 per ton. Plant installation would probably cost from $800 to $1000 per ton per day capacity, altho this may be considerably reduced.

This process would consist of a reducing roast with natural gas after crushing to 1.4 in., cooling in gas, grinding in water solution either with or without lime, washing by decantation, and 24 hours agitation with cyanide followed by counter current decantation. Precipitation has not yet been investigated, but would probably be either by Merrill-Crowe simultaneous clafification-precipitation or by sodium sulphide. Precipitation might, but probably will not, enter complications. Design of a suitable roasting furnace is probably the major problem left.

Attached also is a brief discussion of the Reymert ore characteristics as regards their effect on treatment, together with factors yet to be determined in the roasting-cyanidation process.

(E. H. Crabtree)

Reynolds

Technical Reports File

NOW, THEREFORE, in consideration of One Dollar and other good and valuable consideration, receipt whereof is hereby acknowledged, I do hereby assign, transfer and set over to JAMES TOD and MABEL RAE TOD, his wife, doing business as Reymert Lease, the said Mining Lease Agreement, together with all rights and interest of every kind and character in anywise existing or held by me under and by ~~fernality~~ virtue of the said Mining Lease Agreement.

TO HAVE AND TO HOLD the same unto the said JAMES TOD and MABEL RAE TOD, his wife, doing business as Reymert Lease, ~~or~~ their personal representatives, successors and assigns from and after the delivery hereof subject to all of the obligations and conditions of said Mining Lease Agreement to be kept and performed between said assignees.

IN WITNESS WHEREOF I have hereunto subscribed my name this _____ day of May, 1941.

_____

NEW YORK OFFICE
25 BROADWAY

RAILROAD STATION
MIAMI, ARIZONA

INTERNATIONAL SMELTING AND REFINING COMPANY

INSPIRATION, ARIZONA

FILE NO.

W. J. FORBACH LIME ORE RECEIVED AT INTERNATIONAL SMELTING AND REFINING COMPANY

Year	Dry Tons	Ag. Ozs. Per Ton	Silver Ounces
1937	2,102,311	12.82	26,957.74
1938	5,696.4435	12.00	68,360.11
1939	6,786.9545	10.78	73,176.96

Hayden ~~100.234~~ in 1938, 4 cars.

~~108.247~~

~~=~~ 104.24 t @ 12.6825 g

57.93 @ 11.78

57.98 @ 11.49.

220.25

For Reymert ^Supplementary Report, Ex. A. (Copy)

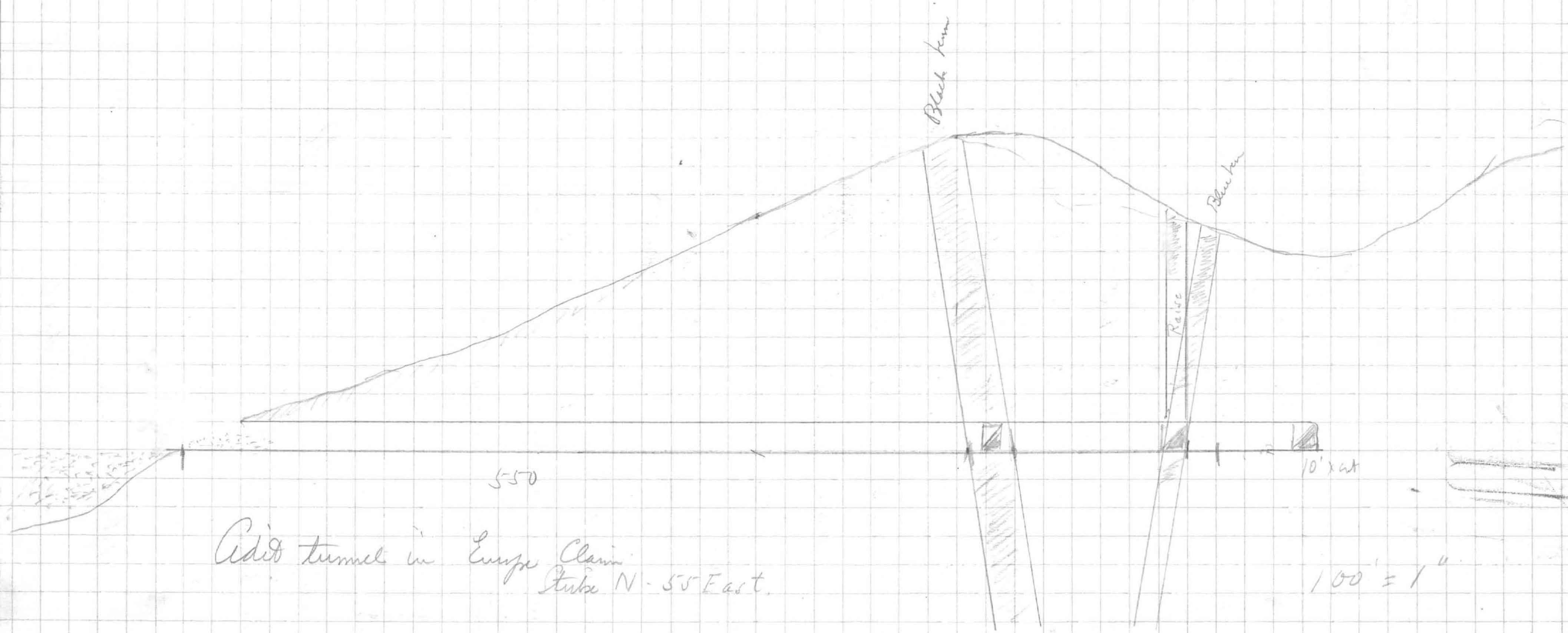
Assays of ~~water~~ muck from Shaft, on Alaska Claim
July 1913 to Apl 1914

Collar at 3097' elevation;	Ag. oz.	Fe %	Pb %	Zn %	Mn %	Au oz.	Cu %	SiO2 %	CaO %	
Surf to 25'	5.6	4.0	1.14	1.6				43		
25 - 50	8.5	3.0	0	2.5	1%		nil	52	25	
50 - 75	7.8	2.0	0	0.8	to	trace	to	43	to	
75 - 100	13.0	2.0	0	0.8	2.7		0.20 %	37.	30%	
100 - 125	6.5	1.5	0	0.8				32.		
125 - 150	4.2	3.6	0	0.8				42.		
150 - 175	2.9	3.2	0	1.0				43.		
175 - 200	7.9	2.7	2.5	2.0				38.		
200 - 225	3.5	1.8	1.0	0.5				44.		diorite rock.
Shaft in footwall of diabase from 225 to 400'.										
Vein 30' in hanging wall X cut on 400' level 8' wide, crushed	1.8		1.7	3.0		tr				oxidized
diorite with qtz + calcite.	13.5	—	—	26.0				Stringer 2"-3" wide in foot wall of vein.		

Diorite @ 190'
Water encountered at 215'
Shaft bottomed at 410'

Dip of vein 80° to East. Shaft was sunk in 1913 & 14

~~Diamond drilling~~ of Magma Co in 1919 mostly on Asia Claim



Adit tunnel in Europe Claim
Strike N - 55 East

February 5th, 1942

REPORT ON REYMERT MINE AND TOD'S OPERATIONS

GENERAL

Since the Tod Lease has now been in force for a period of over seven months it seems proper to briefly summarize the work which has been accomplished and to comment on the present condition of the mine and future prospects of this operation.

The previous operations of Forbach had resulted in shipments during 1938 of 16,061 tons of ore averaging 16.17 oz. of silver per ton; in 1939 his shipments had been 19,766 with average content of 11.70 oz. and in 1940 he shipped 20,570 tons with average silver content 13.11 oz. In round figures the mine had produced during these three years at the rate of better than 50 tons per day and with an average grade exceeding 13 oz. per ton.

This rate and grade of production appeared to be fairly well sustained during the early part of 1941 when my reports of March 29th and April 5th dealt with the situation as of those dates, and the operating reports which I have subsequently sent from time to time together with the communications from Tod will have served to enable you to follow the progress of his work in considerable detail and have given a description of the various ore bodies which will not be repeated.

In March 1941 I figured that the minimum grade of pay ore was about 12 oz. per ton but since that date the scale of wages has substantially increased also the cost of supplies, trucking, and smelter

charges, while the ore which has recently been mined came for the most part from a greater depth and from narrower veins or pay streaks than those which were mined by Forbach. Coupled with the lack of efficiency and far higher percentages of timber now being used the critical grade of ore has definitely risen with every prospect that this rise will continue unless wider ore bodies should be found or more economical methods of operation serve to counteract the general industrial conditions, which now tend to increase the cost of all operations.

It appeared to me in March of '41 and it still appears that no one could reasonably expect that the Reymert Mine could long continue to produce with any reasonable degree of profit if operations were confined to opening up and mining the comparatively small shoots of shipping ore which have been left between the old workings above the 200' level and that the future of the property must depend upon the exploration of the veins at greater depth where there was a chance that the ore would improve in a zone of secondary enrichment, if any such zone existed.

At the time when Tod purchased the lease from Forbach it was his definite and expressed intention to carry out such [illegible] exploration and development and the fact that he has not done so must be attributed to a complete /lack of appreciation of the true condition of the mine at the time when he took it over--otherwise it is most unlikely that he would have purchased the lease and certainly not at the figure which was actually paid.

Neither Tod nor his engineer realized that many of Forbach's stopes were then almost or quite exhausted of pay ore, that others required a lot of timber to make them safe and especially that in almost every ore shoot the production could only be kept up to shipping grade by selective mining or careful sorting by men who,like Forbach and most of his miners, were skilled and experienced in judging by eye the difference between the higher and lower grade of material.

Also Tod did not appreciate the poor condition of much of the equipment for the replacement of which, as well as new constructions,--some of doubtful value under present conditions.--he promptly expended a large portion of the money which he had originally set aside for development while the balance of this fund and a considerable additional sum was spent to meet the operating deficit arising from the shipment of a much smaller tonnage or of a much lower grade of ore than had been intended or anticipated.

PRODUCTION, COSTS, AND PROSPECTS

The record of Tod's shipments up to January 1st, 1942, is as follows according to information given me at the mine:

Total shipments, June to December 31st, 1941.

5510 tons for which smelter has paid after deducting all charges for smelting and transportation $20,825.71 or in round figures an average payment of $3.78 per ton.

While I have not been able to obtain any accurate figures regarding the working costs of the Tod operation and do not believe that any such record has been kept it is evident that a serious operating loss has been incurred from the outset and probably during each and every month with the possible exception of December when the grade of the ore had somewhat improved while the expenses were reduced through cutting down the number of employees.

A statement made to me by Tod late in November was to the effect that his investment at the Reymert was then well over $60,000.00 and assuming it to have been in the order of $65,000.00 I should hazard a guess that this might be roughly broken down as follows:

Purchase Forbach Lease	$30,000.00
New equipment & construction	10,000.00
Exploration & development in upper levels & old workings.	10,000.00
Loss on direct mining operations.	15,000.00
	$65,000.00

Without wishing to appear unduly pessimistic I fear that there is but little reason to expect any substantial improvement in the near future. All mining operations are now confined to the A. or Australia Workings and Smith has evidently been told that any future exploration or development must be paid for with the returns from shipments, but unless the grade of ore in this shoot should show a substantial and unexpected improvement it is unlikely that these returns will do much more than cover the current operating expenses.

Having recently replaced his foreman and arranged to give this work a closer personal supervision Smith is now making a most earnest effort to improve the grade of the shipments and if he is successful in this respect the results may exceed my present expectations and the tonnage may be increased to some extent as soon as the shaft sinking has been completed and means provided for the economical disposal of the waste, but so far no effort has been made to prepare for mining in any other portion of the property after the very limited tonnage which can be expected in the A. working has been or begins to be exhausted.

LOW GRADE ORE AND METALLURGICAL EXPERIMENTS

As to the low grade ore it may be said that the situation has changed but little since March of 1941.

At several points and particularly in the vicinity of the Alaska shaft substantial bodies of ore which Tod and Smith had estimated to average 12 oz. or better were found to be of much lower grade and all attempts to develop and mine them were quickly discontinued. Personally I do not feel that any of these showings were accurately sampled or measured and the lack of efficient engineering has been one of the principal defects of Tod's operations.

There is no question but that a large tonnage of ore that will average from 6 to 10 oz. silver per ton had been left in and between the old stopes above the 200' level and this practice still continues, but neither the tonnage or grade of such material are known with any degree of accuracy.

The estimate of 200,000 tons averaging 8 oz. as tentatively made by Smith is, in my opinion, much too high and a considerable percentage of this ore is so located that it could only be recovered at a prohibitive expense considering the preliminary work that would be involved in cleaning out and equipping portions of the old workings in order to make it accessible.

Since the possibility of mining this low grade ore with any profit must obviously depend upon the development of an economical method of treatment considerable attention has been paid to the metallurgy of the ore and Tod has carried on a substantial amount of research work the results of which have been negative.

His experiments amply substantiated the well known fact that neither gravity nor flotation would serve to concentrate the silver values which are all in oxidized form and although they confirmed the possibility of using cyanide yet even this method failed to yield a high recovery of values excepting after fine grinding following a chloridizing roast which would probably involve too great a cost to make such a procedure commercially practical. Direct smelting of the ore still seems to be the most feasible method of treatment, but either copper or lead must be used as a collector or carrier for the silver and the composition of the Reymert ore does not make it attractive to the local copper smelter at Superior, where the Magma Company has discontinued its purchase, while the trucking and switching costs to the International Smelter at Miami, amounting to about $1.85 per ton must be added to the treatment charge which is paid to the smelter.

As matters stand at present and as they are likely to stand for some little time to come, I can see no prospect that any better smelting terms are likely to be secured from Magma, Miami, or any of the other copper smelters in Arizona while there is no lead smelter operating nearer than El Paso, Texas.

In the vicinity of the Reymert Mine there are a number of lead prospects and partially developed mines, some of which also carry a certain amount of precious metals or zinc and at various times in the past the question of developing these properties and erecting a local lead smelter has been given careful study by several of the larger mining companies but none of them have as yet decided to follow such a procedure.

While the operation of a local lead smelter might serve to improve the market for the Reymert ore, yet in view of the silicious character of this material there is no real assurance that it would do so and in any event the chance that such a smelter will soon be erected and operated appears extremely slight.

I have given considerable thought to the possibility of treating the ore by chloridizing volatilization since such a plant could be installed right at the mine at a comparatively small expense and would require no water for operation and only a small amount of power. However, the recovery of values that could be obtained by this process is problematical as well as the operating costs and these can only be determined by experiments in conducting which some expense would be involved with no assurance that the outcome would be favorable.

For the time being, it therefore appears that both because of the uncertain quantity and quality of low grade ore which has actually been developed and because of the doubt that it could be profitably treated by any known method of concentration, leaching, or smelting the value of the low grade ore reserve in this mine is still dubious and no real progress

in the solution of this problem has yet been made. A few months ago Tod was apparently prepared to follow the matter up and erect a cyanide mill even in the face of the unfavorable results of his experiments as noted in my report of November 26th, 1941, but since he has been called for active duty in the Army I gather that those plans have been temporarily abandoned.

In order to more accurately reflect the character of the ore I have attached Exhibit A., which gives the approximate analysis of some of the shipments.

Exhibit B. sets forth the approximate costs of recent operations indicating the advantage of producing at least forty tons per day when conditions in the mine permit and assuming that the smelter will take up to 1200 tons per month.

Yours very truly,

G. M. Colvocoresses

G. M. Colvocoresses

EXHIBIT A. REYMERT REPORT

APPROXIMATE ANALYSIS OF AVERAGE REYMERT SHIPPING ORE.

Au----------0.003 oz., fairly uniform

Ag----------15.00 oz. or better

Pb--------- 0--1.00%

Cu--------- 0- -0.50%

Zn.-------- 0.- 1.00%

Mn.-------- 1.00 - 3.00%

Fe -------- 2.00 - 4.00%

CaO------- 20.00 - 28.00% (less in some sections of mine)

SiO_2------ 35.00 - 45.00% (more " " " " ")

Al_2O_3---- Not determined.

Ba as Ba SO_4, Not determined but occurs in considerable quantity in some parts of mine.

S--- Generally absent except with barite or as infrequent occurrence of iron pyrites.

From the above it will be noted that this ore is usually silicious and would only have fluxing value to a smelter which normally had a basic charge and an excess of sulphur. This is not the case at Magma which does not at present desire the Reymert ore on any terms, while the smelter toll charged at Miami would not indicate any particular need to purchase the output and the present contract is limited to 1000 tons per month while the Reymert Mine should ship a larger tonnage in order to keep down the unit costs of production.

EXHIBIT B. REYMERT REPORT

APPROXIMATE ESTIMATE OF OPERATING COSTS OF TOD LEASE.

As these can be roughly estimated from figures furnished by Smith and his bookkeeper.

	Production 40 tons per day. Per dry ton.	Production 30 tons per day. Per dry ton.
Mining Labor, including development	$ 1.70	$ 2.20
Timber	0.70	0.80
Fuel, lighting, explosives & misc.	0.25	0.30
General & overhead expense at camp	0.50	0.65
Social Security & Arizona Unemployment Tax & Industrial Insurance.	0.30	0.37
	$3.25	4.32
Trucking to smelter & switching charge	2.00	2.00
Smelter Toll	3.50	3.50
Royalty (2½% of $6.00)	.15	.15
	$8.90	$ 9.97

From the above it appears that unless the working costs can be decreased or production increased to more than 30 tons per day even a 15 oz. ore for which the smelter pays about $10.00 per ton will barely cover expenses while 13 oz. ore produced at the rate of 40 tons per day would yield no better results.

RAYMERT MINE

(Notes by G. M. Colvocoresses)

Visited 10/17/38 and looked over surface and plant and some of the openings with Forbach.

Country is Pinal Schist and there is a very strong outcrop of silicified rock with quartz and barite which can be traced for some 3 miles. Vein is apparently a fissure with filling of quartz and barite, a little manganese, iron minerals, dark limestone as a nearly black spar and silver minerals mostly chloride and sulphate in the vugs and a little argentite.

Except for one old shaft which had a depth of over 400' ~~but has long been caved~~ the workings are confined to the first 200' from the surface and in places the vein or veins,- since there are two branches in places,- have been mined right up to the outcrops.

The width of the stopes varies from 4 or 5 ft. to double that figure but in the wider stopes the walls are generally bad and the mining costs are rather high. The ore shoots have varying length some running continuously for 200' or more but the pay streak has a habit of jumping back and forth between the foot and hanging walls of the shear zone which also adds to the cost and difficulty of mining.

The higher grade ore must be mined selectively with considerable sorting and constant sampling and the grade which Forbach must ship to pay at the Magma Smelter is a minimum of 20 oz. of silver and even so he has been making no real profit and will probably have to quit if the present price of silver (64¢ per oz.) is not maintained. At this time he is shipping about 100 tons of selected ore per day and leaving a

lot of 10 oz. ore in the stopes or dumps. Forbach thinks that with proper equipment and after completing a considerable amount of preliminary development the mine could produce 300 tons of 15 oz. ore per day.

Several years ago the Magma Co.,- who held the mine under option put down two diamond drill holes which cut the vertical vein at a depth of over 300' and officially it was reported that no values were found but Forbach claims that the drillers and others told him that they really did find some veryygood ore but kept this quiet so as to get better terms of purchase from the Van Dykes who own the property, also the Magma Co. proceeded to stake a lot of claims in this vicinity.

In '37 the Eagle Picher Co. had an option on the mine and did quite a bit of development in the upper levels but they found it very hard to treat the ore with any type of concentration and so dropped out.

Recently the Inspiration Co. have been investigating the mine and making metallurgical tests and it is said that they were able to save 70% of the silver by flotation. The old operators crushed the ore in a stamp-mill and gave it a chloridizing roast after which they used pan-amalgamation but they did not recover more than 60% of the values.

The silver chloride is difficult to save in any type of mill and the barite ($BaSO_4$) often runs from 10 to 20%.

It would seem that the C. V. process might give good results and save up to 85 or 90% of the silver if the fusion

point of the ore is not too low as could only be determined by tests and provided the costs would not be too heavy.

A dry process would have advantages since water for any large mill would have to be pumped from a long distance although it is reported that the deep shaft made some 48,000 gallons per day.

Forbach is working from several shafts and drifts and with inferior equipment so that his costs are high.

The problem to me appears to be mainly a metallurgical one since there is good reason to believe that several hundred thousand tons of low grade ore will be developed, at this mine.

If this ore will average 15 oz. and price of silver averages 50¢ per oz. the gross value would be $7.50 per ton.

A recovery of 90% = $6.75 per ton and mining cost might be estimated at $2.50, treatment $2.25 and general expense 50¢ making a total of $5.25 and leaving a profit of $1.50 per ton.

With a recovery of only 70% the net value of the ore would be only $5.25 per ton leaving no profit since the cost of flotation and treatment of concentrates would still be in the order of $2.25 per ton.

There is only a trace of gold in the ore and copper content is about 10# per ton; both these metals are neglected in figuring values although some of the copper might be recovered and add slightly to the estimated profit.

If the Inspiration Co. do not make any deal, Forbach promises to send an average sample for testing by the C. V. process and any future procedure should depend on the results of such a test and also be guided by the probable future course of the silver market.

G.M.Colvocoresses.

Further notes on Raymert from conference with Forback.

February 24th, 1938

Was under option last autumn to the Eagle Picher Co. who dropped it in January when they felt satisfied that it would not develop into any large body of milling ore and the mill treatment proved very complicated.

Forback now has the entire lease as Frank Carrow who had a part of it has dropped out.

The old Raymert Co. are supposed to have milled about 100,000 tons of ore and in recent years Forback has shipped over 1200 cars. Last shipments have run 19 to 35 oz. Ag. with average over 25 ounces. Copper is 0.1 to 0.6% and Au. 0.01 to 0.02 oz. , Mn 2-3%. More copper seems to be coming in with depth..

Forback has developed one ore body with width of 12' length 130' with ore in both faces and to depth 100'.

Another shoot has width of 7' and a length of 500' on the 70' level average value 17-25 oz.

There is more ore now in sight than at any previous time and the chances for proving up additional tonnage seem good.

RAYMERT MINE

(Note by E. S. Smith - Humboldt - Dec. 1918)

This property is now being reopened by W. J. Forback formerly at Bluebell Mine.

Mine is located in Pinal County about 4 miles from the Magma Railroad near Queen Creek. It is about 8 miles southwest of Superior. It was worked some 25 - 30 years ago for silver and was then equipped with a 10 stamp mill and pan amalgamation.

A fissure vein in Pinal schist is traceable for a length of 5 claims. Forback took 40 samples which averaged 9-10 oz. Ag. with no cu. and 0.2% Pb.

These samples were taken from portions of the ore shoots left by the old operators and from the dumps and were probably lower in grade than the average production which was said to have been about 14 oz. in Ag. The ore carried 23% CaO, 10-12% Fe., and 3.4% Mn.

The old development comprised a 350' shaft and 3000 to 4000' of drifts etc. nearly all of which were said to have been in ore.

The main ore shoot was said to have been quite long and to have had an average width of 18 ft.

At one time the mine was under option to the Gunn Thompson crowd who did some development work but did not take it over.

* * * * * * * * * * * *

(Note by G. M. Colvocoresses - November 1937)

Forback has now worked this mine at intervals for several years and quite steadily since about 1933.

He has opened up a new orebody in the vein which is quite persistent and averages 20 oz. Ag, with no Au, only a trace of Pb. and 0.5% Cu, and he has been shipping continuously with fair profit for the last three years.

The silver occurs largely in a sulphate and the ore is not well suited to concentration by either flotation or cyanide.

According to Arthur Smith of the Belmont Cb, this is a good little mine but holds no promise of ever becoming a large producer altho Forback is convinced that there are substantial reserves of lower grade ore containing about 10 oz. in silver which could be developed and worked if a proper method of treatment were devised and a local treatment plant installed. I think that his opinion is worth checking by anyone who is looking for a medium sized silver mine.

March 28, 1937

PROGRESS REPORT

Reymert Ore

Samples of the Reymert Ore as received at Ruby had the following analysis:

Au	Ag	Pb	Zn	Cu	Fe	Mn	CaO
Tr	10.8 oz.	0.82%	0.15%	0.17%	4.67%	2.20%	20.9%

This ore is highly oxidized, the silver being intimately associates with the manganese and the manganese occurring almost wholly as either manganese dioxide or as a higher oxide. The base metals contained in the ore exist either as oxides or carbonates, or perhaps as complex manganites The lime occurs as calcite and limestone.

This ore is typical of many manganese-silver ores found in the Western U. S. and in Mexico, both in constituent minerals and in the fact that the silver is highly refractory to ordinary treatment methods. Normally these ores carry more gold than does the Reymert, which either may or may not be amenable to treatment, but in all of them the silver fails to respond, probably due to its occurrence as a complex silver manganite.

The rather extensive test work we have done on this ore has merely produced results coinciding with those obtained by other investigators, chiefly Coghill, and Clevenger and Caron. The manganese-iron minerals, judging from gravity alone, should be amenable to gravity concentration, but their intimate locking with other minerals, combined with the apparent porosity of the relative large free mineral particles and the tendency to slime in crushing of the limonitic material precludes any separation whatever by this means.

Altho flotation of the "hard" varieties of manganese dioxide minerals is now commercially successful, the same procedure produces negative results on this ore. Ordinary psilomelane is readily floated with fish oil and gas oil, as attempted in Tests 20, and 21, attached hereto, but for some reason the same minerals, when containing silver, do not concentrate. No doubt the relatively large amount of limonitic slime in this ore precludes all selective action. Attempts to make a manganese-calcite concentrate, using soaps and fatty acids similarly failed, probably for the same reason, altho calcite should be readily floated. Final flotation tests were made on a reduced ore (test #36), arguing that the silver, however originally tied up, should be reduced to the metallic or to a low oxide state, and could be sulphidized and the resulting product floated. Altho this produced a concentrate assaying 70 oz. Ag, only a 31% recovery was made.

Direct cyanidation of the ore, regardless of the fineness of grinding or of the time of agitation gave only about the same extraction as all other preliminary tests, whether gravity concentration, flotation, or magnetic concentration, namely around 30%. Roasting with sulphur in an oxidizing atmosphere, following by cyanidation was the same.

As stated in the first preliminary report on this ore extraction should be improved by either a sulphurous acid leach or a reducing roast followed by cyanidation, but it was believed that the cost of either of these two methods would be prohibitive. Since no other methods were at all encouraging, these were tried anyway.

The development of the process as it now stands is as follows:

Crush ore to 1/4 inch
Reduce at 1110 deg. F for one hour
Cool in reducing atmosphere to atmospheric templ
Grind to approx. 200 mesh in water
Dilute and wash twice by decantation
agitate in cyanide solution (0.3% KCN) for 24 hours with air

This method gives around an 85% silver extraction with a sodium cyanide consumption of from 3 to 4 pounds and a lime consumption of around 8 lbs.

This method is known as the Caron Process, and was patented July 3, 1917 Patent Number is U.S. 1232216. The main differences between Caron's application of the process and ours, is that he used producer gas, whereas we propose to use natural gas. He ground in cyanide solution, whereas we propose to grind only in water and wash previous to cyanidation.

General

This general treatment of reducing roast followdd by cyanidation should be tried on ores from different parts of the Reymert mine, which vary in manganese, silver, and lime content. It is not expected that these different contents should affect the silver recovery, but they would be well to check.

E. H. Crabtree

THE REYMERT ORE

The Reymert sample received at Galena is a silver bearing silicious iron-manganese oxide containing a little barite. Lesser constituents are lime and alumina. All of the minerals are so interlOcked with one another that any degree of grinding to critically free a large percentage of them is impossible. It is true that in the small sizes, such as minus 80 mesh, some of the minerals are fairly free but in no case not enough to be able to take economic advantage of. Some of the barite is fairly free at minus 4 mesh but it still is speckled with iron and manganese. Positive identification of all the minerals present might be subject to speculation.

Only three are definitely known, namely: some free quartz which is pseudomorphic after calcite, limonite and barite. No definite crystallization of calcite was observed although the lime present is probably as limestone. The manganese-iron oxide mineral might be psilomelane but this mineral has a specific gravity of 4.0 and it was impossible to obtain a good gravity separation between it and the lighter siliceous portion. Hand picked pieces which gave every appearance of being totally black differed widely in iron and manganese content while showing about the same in insoluble. The corresponding silver relationship is not known at this time because of the tedious task of hand picking enough of minus 80 mesh grains for assay. In lieu of the high iron

content and high insoluble this mineral might conceivably belong to the braunite group which is a manganese-iron silicate. Pyrolusite or wad is probably present because of the manganese concentration in the extreme fines. No clue was observed in isolating the silver mineral. A marked similarity, however, exists in the ratio of silver to manganese through all the screen sizes even though assay values vary considerably, thus showing that the two bear a definite, though unknown, relationship.

Conclusions

The silver apparently is locked with the manganese. No appreciable amount of free manganese mineral exists down to at least 100 mesh and it is very questionable whether any exists at all. Under a microscope magnifying 80 diameters much locked mineral is seen in minus 140 mesh product. It is also true that the iron oxide present is not manganese free. Such intimacy of constituent minerals requires a degree of grinding for their freedom far exceeding economic considerations. The only conclusion that can be reached under such circumstances is that gravity treatment has no application and the possibilities of flotation are most remote. To the best knowledge of the writer, iron oxide flotation is not out of the laboratory yet, and even though it were a commercial success it is not conceivable that pure enough separation could be had at an economic grind on this ore.

The solution of the treatment of this ore may be found in either hydro or pyrometallurgy or a combination of both. It is reasonably certain that it is beyond the help of sound ore dressing practice.

R. E. Illidge.

Feb. 4, 1937

Eagle Picher M. & S. Co.
Ruby, Arizona

We have been working on the sample of manganese-silver ore which you sent us at Mr. Allens suggestion, and the results of these tests are covered in the enclosed report.

You will see therefrom that the ore does not appear to be amenable to flotation but that it does respond fairly well to cyanidation after preliminary treatment by SO_2 followed by washing, alkalization, and aeration. This treatment would hardly appear to be commercial on the grade of ore submitted to us, but it might be of interest to you on a higher grade of ore.

Edward H. Nutter, Chief Engineer
Minerals Sep. North American Corp

Dec. 4, 1936

Mr. Morton:

The following report outlines briefly the work we have done to date in an attempt to concentrate the Reymert ore.

As far as actual extraction is concerned, each test we have made, whether flotation, gravity concentration, or cyanidation, has been an absolute failure.

The data obtained from these tests however, point to two possible solutions: (1) flotation of the silver by making a bulk manganese-calcite concentrate, or (2) crushing thru 30 mesh, screening out the minus 200mesh material and tabling the plus 200 mesh product for a manganese-silver concentrate to be combined with the fines for shipment.

Work is being continued along these two lines. The first, if successful, will have the advantage of making a more favorable product for the smelter, thus reducing the base charge; the second, if successful, will not make as high grade concentrate, but the recovery will probably be higher and the milling costs, both initial construction costs and current operating costs, will be lower.

E. H. Crabtree Jr.

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PRELIMINARY INVESTIGATION

Reymert Ore

Samples of the Reymert ore consisted essentially of calcite, psilomelane, quartz, limonite, and probably pyrolusite and hamatite, together with minor amounts of other non-metallic minerals. Very little, if any, sulphide is present. Silver in the amount of 10.6 oz. to the ton is present, probably intimately associated with the manganese minerals. These latter, in turn, are closely locked with the calcite in the larger sizes.

Calculated mineralogical analysis is approx. as follows:

Ag	10.6 oz.
MnO_2	3.5 %
$CaCO_3$	37.5 %
Fe_2O_3	8.2 %
Insol	51.0 %

Properties of these minerals as affecting their amenabilities to concentration are as follows:

Mineral	Gravity	Hardness
Pyrolusite	4.8	1.0 - 2.5

Psilomelane	4.0	6.0
Calcite	2.72	3.0
Limonite	3.6	5.0
Hematite	5.0	6.0
Quartz	2.6	7.0

From the above characteristics, three main points are significant to consider in concentrating:

L. The pyrolusite with its extreme softness will slime badly on crushing.

2. The calcite having virtually the same gravity as that of the quartz, will preclude satisfactory separation of these two minerals by gravity concentration.

3. The psilomelane, if free, and if not too fine, should separate from the calcite and quartz by gravity.

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Economics of Milling Reymert Ores as Opposed to Shipping them Straight

It was first assumed, considering the close proximity of the smelter to the Reymert Mine that a 2/1 ratio of concentration wai th on 80% silver extraction would be amply sufficient to justify milling as opposed to shipping the ore direct. The following figures show the net return from different grades of ore under both conditions, and with various ratios of concentration and indicate that at least a 4/1 and preferably a 5 or 6/1 ratio should be attained. In each of these it has been assumed that the haul xx of either ore or concentrates would cost 50¢; that smelter treatment charge of either would be $3.50; that 80% silver extraction could be obtained by milling; and that the milling cost would be $1.00

Net Return from Smelter after Deducting Treatment Charge, Milling Cost and Haul, but not Deducting Mining Cost or Royalty

Ag Grade	Value shipping direct	Milling 2/1 Ratio	4/1 Ratio	8/1 Ratio
5.0 oz.	--	--	0.93	1.45
6.0	--	--	1.51	2.01
7.0	1.12	1.10	2.10	2.60
8.0	1.85	1.68	2.68	3.18
9.0	2.58	2.27	3.28	3.78
10.0	3.31	2.85	3.85	4.35
11.0	4.05	3.44	4.44	4.94
12.0	4.78	4.02	5.02	5.52
13.0	5.50	4.60	5.60	6.10
14.0	6.25	5.20	6.20	6.70
15.0	6.95	5.75	6.78	7.28
16.0	7.70	6.35	7.35	7.85

The above values would be appreciably enhanced should it prove possible to

reasonably well float the calcite and thus reduce the treatment charge, or to obtain a milling cost of less than $1.00, both of which factors appear at present to not be unlikely.

Sept Report to Ken Mings

September 18, 1945

Mr. Norman De Vaux
Dominion Hotel
Globe, Arizona

RE: Reymert

Dear Mr. De Vaux:

As per previous correspondence and telephone conversations I herewith send you three bound copies of the report on the Reymert Mine which you desired me to prepare.

Under separate cover I am also sending three prints of the longitudinal section map of the Reymert Mine. This map is so extremely long that it will be inconvenient to handle but I think that it gives a far better impression of the length of the workings and the comparatively shallow depth than could be given in any other manner.

I know of no mine where the ore showings cover such a leng length on the vein without extending to a depth of at least 500 to 600 feet.

It is unfortunate that no word as yet has been received concerning the option, but after that matter has been straightened out I can either add a notation to the report or have page 2 rewritten with particulars concerning the option to be inserted in place of the present page.

After carefully considering the other reports on the property I thought it best to embody quotations from them in the form of an appendix and they are readily available for reference without mixing up the sequence of the report itself.

I trust that you will find this report comprehensive and satisfactory and you will note that I have not hesitated to recommend the further exploration and development of the mine just as I did to the Van Dykes in 1941. If the Van Dykes owned 100% or even 50% of the stock in the property I am quite sure that they would have followed my recommendation, and I think that this project should make a strong appeal to what I may term "venture capital".

Of course one must face the uncertainty of the silver market and there are some people particularly in California who look on this in a very pessimistic manner, but I believe that the chances favor the maintenance of the present price, at least for some years to come.

Personal regards and expecting to see you next Monday or before.

Yours very truly,

GMC/tar

Office Copy

Report on the

REYMERT MINE

and its future

Development & Exploration

by

G. M. Colvocoresses

September 15th, 1945

LOCATION & GENERAL CONDITIONS: - -

This property belonging to the Reymert Mining Company, an Arizona Corporation with principal office in Milwaukee, Wisconsin consists of seven patented lode mining claims, captioned as follows:

America	Africa
Alaksa	Europe
Asia	Great Pacific
Australia	All patent survey #2878A

Also one unpatented lode claim known as the Reymert and Four Mill sites known as the Alaska, Asia, America and Australia, on which the camp buildings are located.

The above named claims and mill sites are now in possession of and being worked by the Reymert Lease, - a Co-Partnership, under the terms of a lease agreement ex-

ecuted as of the first day of September, 1944 for a period of ten years from that date. An option to purchase the said property has been requested and terms of same, if granted, will be noted at the end of this report.

The area included in the lode claims,(see map Exhibit A) some of which are not full sized, is about 140 acres. The property lies in the Pioneer Mining District, Pinal County, Arizona in Sections 15, 22, 23, 26 and 27 of Township 2 South; Range 11 East; Gila and Salt River Base and Meridian. The elevation is from 2700 to 3500' above sea level. The camp is 6.5 miles in air line southwest of the town of Superior where the Magma Mine and Smelter are located and with which it is connected by 8 miles of good road, all but 2 miles being a paved highway, - U. S. Highway #60.

The country is rugged with a main ridge extending north and south over the length of the claims on the east side of a gulch in which the camp is built. There is no timber and only the usual semi-desert vegetation of shrubs and grasses.

The climate is excellent and suitable for work at all seasons of the year, the normal annual rainfall is about 18" or somewhat less.

Drinking and domestic water must be hauled out from Superior, but water from the mine is suitable for all other purposes. The supply would probably be limited to about 50,000 gallons per day, which was reported to have been the flow into the Alaska Shaft at 400' depth, but additional water

if required, might be secured from the underflow of Queen Creek and from its tributaries, including Reymert Creek which runs through the camp but is almost always without surface flow.

GENERAL GEOLOGY: - -

The country is mainly a Pre-Cambrian mica and sericite-schist, locally known as the Pinal Schist with schistosity striking generally north and south and dipping to the east. This basal formation was intruded by dikes of diorite or diabase and near the south end of the claims by a dike of basic greenstone, - probably a gabbro or hornlendite, - also a later intrusion of rhyloite. These intrusive dikes, excepting the rhyolite, strike mostly east and west and have locally affected the schistosity to some extent. In places there are areas of silicification in the schist itself forming bands of hard erosion resistant rock along the surface.

The latest of the intrusions was probably the rhyolite and any sedimentaries that may have been subsequently dedeposited have been completely removed by erosion, so that they are now represented only by recent gravel and top soil.

A detailed study of the geology of the area has been made at and near the Magma Copper Mine seven miles northeast of the Reymert but at Magma the upper sedimentary rocks are still in evidence while there is an essential difference between the diorite, which occurs as intrusive dikes, and the diabase, which forms a sill lying between two sedimentary formations.

At the Reymert all of the rocks of this general class, whether diorite or diabase (and their exact classification seems to have no practical importance) appear to have

come in as intrusive dikes or stocks and I do not consider that there is sufficient evidence to justify the assumption of a few geologists that the diabase found on the American Claim, in the lower portion of the Alaska Shaft and reported in the drill holes represents a laccolith or batholith underlying the schist at a depth of 200 to 400' below the surface. This theory is undoubtedly possible and was suggested by the formation in the Alaska Shaft and record of the drilling but the surface outcrops, the nature of the contacts and the very wide distribution of the schist along the surface and in other underground workings argue against such a condition and have convinced the majority of those who have studied the area that the diorite occurs as narrow dikes. Only further exploration and deep development in the mine itself can tell the story in a convincing manner.

MINERALIZATION: - -

The main fissure or shear zone in which the ores occur strikes from north 10° west to due north and can be traced for some three miles or more but pay ore seems to be confined to a length of 6000' from the south portion of the American Claim to the north end of the Great Pacific. This fissure was apparently formed by a violent tectonic movement which was perhaps to some extent connected with the intrusion of the rhyolite and there is evidence of one and probably two subsequent reopenings of the fissure. The width of this fissure is irregular, sometimes narrowing to 10' or less and again swelling to over 100', with an average of perhaps 60'. The dip also varies to some extent but will average about 80° to the east.

The filling of the entire fissure has been impregnat-

ed with metallic minerals to a greater or less extent but the pay ore is usually confined to two veins some 3 to 6' in width which sometimes join at points where the fissure is narrow but for the most part follow along the walls; - the so called Blue or East Vein on the hanging wall or the Black or West Vein on the footwall.

The mineralization appears to have been derived from solutions at low temperature and the first filling to have been composed largely of crushed wall rock and massive black calcite associated with only a small amount of silver but with some copper, lead and zinc. The second mineralization which took place after a reopening of the fissure brought in a finer calcite and more quartz and iron oxide and then either the final phase of this process or a third reopening and mineralization introduced still more quartz and iron oxide with barite and the bulk of the silver values which are generally found at points where the evidence of repeated disturbance and successive periods of mineralization is the most pronounced.

Post-mineral faulting is noted at several points and the splitting of the fracture which separated the Black Vein and Blue Vein in certain sections of the zone probably occurred concurrently with the second or third period of mineralization or may have been due to a separate disturbance which preceeded both of them.

The better grade of the ore or pay streak filling is composed largely of fine calcite, quartz, fluorite, barite, manganese and iron oxide. Horn silver (cerargyrite) and argentite (silversulphide) have been found in places, usually near the surface, but most of the silver appears to be intimately associated

with the barite and manganese leading some geologists to conclude that silver is in the form of a "silver manganite" although no such mineral is definitely known to exist.

The vein which was reported to have been found in the crosscut on the 400' level at the Alaska Shaft was filled with crushed and altered diabase and carried 1.8 oz silver but with this exception and perhaps in some of the inaccessible workings on the America Claim the walls of the productive portions of the vein are schist and nearly all of the metallic minerals are oxidized. There is no positive evidence as to whether or not this upper section of the vein represents a zone of leaching which will be succeeded in depth by a zone of secondary enrichment, with primary ore still further below; and it is obviously of great importance to determine whether or not such conditions actually exist.

The effect of the various types of wall rock upon the vein has been two-fold, physical and chemical. In the schist it has been clearly demonstrated that the three stages of filling took place under favorable conditions and the black calcite was partly replaced or associated with barite and silver values.

From a physical standpoint the schist is a comparatively easily fractured rock and would always be affected by the recurrent reopening of the fracture, whereas the diabase is exceptionally tough and would normally be much less shattered by any such disturbances. Therefore the fissure, having been originally filled with the black calcite, was readily susceptible to remineralization in the schist while in the diabase such was not the case.

From the chemical standpoint the comparison is not so clear. At the Magma Mine the best values and largest ore shoots

are often found in the diabase while the reverse is true at Globe and in some of the other camps. At the Reymert the workings near the south end showed good values along the rhyolite but as yet no stopes have been opened anywhere in the diabase and although this rock was noted in the Alaska Shaft the diabase dikes, outcropping on the surface, do not cut through the vein except at the north end of the mine.

Considering the situation from both the physical and chemical standpoints I think it fair to say that the chances for finding any good ore bodies either in depth or near the surface are very much poorer in the diorite (or diabase) than in the schist. Therefore there would be very little incentive to explore in any large area of diorite if by chance that rock might be found to underlie the schist while the exploration in the schist below the water-level holds many attractive possibilities.

HISTORY: - -

This district was first prospected in the 1870's and the Reymert Mine was located by John Reymert and associates in 1886 and soon after sold to the Reymert Mining Company, controlled by Mr. John H. Van Dyke of Milwaukee. This company operated until 1891 during a portion of which period they treated the ore in a mill by chloridizing and pan amalgamation.

In 1912 an option was given to the Gunn-Thompson people, who sank the Alaska Shaft in 1913-1914 to a depth of 410' with a short crosscut run 57' to the east on the 400' level that located, 30' from the shaft, a vein in the diorite which at that point did not contain pay-ore. Further exploration was carried on by the Lincoln Issues Company (affiliated with the Gunn-Thompson interests) and the Magma Copper Company during 1919 and 1920.

This consisted mainly of diamond drilling but the seven holes then drilled were also in diorite and failed to find any commercial ore or to yield satisfactory cores.

Mr. Forbach and his associated first took a lease on the property in 1925, and with some interruption operated until the middle of 1941 when James Tod purchased the lease and operated until the middle of 1944. Subsequently the mine was again leased to Forbach who assigned this present lease to the co-partnership doing business as the Reymert Lease. During recent years most of the ore was shipped to the Magma Smelter at Superior or to the International Smelter at Miami.

A complete record of production up to September 1945 is appended to this report.

WATER TABLE: - -

Accepting as accurate the elevations given on the old maps and on those prepared in 1937 by the Eagle-Picher Company, it appears that the collar of the main Alaska Shaft has an elevation of 3097.47' above sea level and it is recorded that when sinking the shaft in 1912 water was first encountered at a depth of 220' equivalent to an elevation of 2877'. In other workings not far from this shaft conducted by Carrow in 1935, water was said to have been found at an elevation of 2900' or some 23' higher, but at times the standing water dropped to 2860' elevation. The geologists of the Eagle-Picher Company state that in their opinion this water did not represent the permanent water level but merely a "perched water table" and they concluded that any permanent water table existing in this district would only be found at much greater depth; but this opinion has not yet been supported by any actual observations.

The collar of the new A (or Australia) Shaft in which the operators have recently been working is given an elevation of 3320' and water was struck at a depth of 420' equivalent to an elevation of 2900'. The water in the Alaska Shaft, 2200' to the north, - has recently stood continuously at about the 2877' mark, but such a variation in the elevation of a water table is not at all unusual in mountainous country. Therefore, it appears that the present elevation of the water in the country between the Alaska Shaft and the A Shaft is from 2860' to 2900' regardless of whether this represents a "perched" or a permanent water table.

The flow of the water in the Alaska Shaft was reported to have been two gallons per minute at 220', - - or just about the same flow that was encountered in the Australia Shaft, - - but it increased to 30 gallons per minute at 230' and to 40 gallons per minute at 270' below which point it was nearly constant until they crosscut on the 400' level when it increased to 50 gallons per minute after the 8' vein had been cut.

I think that it has been demonstrated that ~~whether~~ the water table has remained practically constant for over 30 years and neither in the Alaska nor in the Australia workings has there been found any zone of secondary enrichment nor any evidence of primary ore although the percentage of sulphides of lead and zinc appear to have slightly increased in both sections of the mine, while the small percentage of copper seems to have remained fairly constant.

Any real change in the character of the filling of a vein of this nature would normally be expected to occur from 100' to 200' below the point to which the water rises in the workings. It is only in the Alaska Shaft that such a depth has been reached

and the shaft at this point is in the diabase where no pay ore has anywhere been found.

It is therefore my opinion in which I concur with Ira Joralemon (see Appendix page 7) that the first new exploration should consist of extending the east crosscut on the 400' level for another 40 to 50' to make sure that there is no other vein lying closer to the hanging wall of the fissure and then drifting north and south on the 8' vein or any better vein that may be found until the formation changes to schist which should occur within 300' or less in each direction, where additional cross cuts should be run to cut the width of the fissure.

LOW GRADE ORE and LOCAL TREATMENT: - -

During recent years a number of investigations have been made to determine the total tonnage and average grade of both the shipping ore and the low grade material which might be mined if a satisfactory method of local treatment could be developed.

In 1937 the engineers of the Eagle-Picher Company were able to measure and sample above the water level probable ore amounting to nearly 200,000 tons to which they gave an average content of over 8 oz. silver per ton. Some of this ore has since been mined but other reserves of low grade ore have been developed which more than compensate for the tonnage mined.

A year or two later a similar procedure was repeated by engineers of the Anaconda Mining Company, and I have been informed that their findings were similar although I have never seen their report.

During the spring of 1945 engineers of the Magma Copper Company conducted an examination, and I was informed that their findings generally confirmed those of the Eagle-Picher Company.

In connection with all the above it should be noted that although there is a wide zone of crushed and mineralized rock throughout the entire length of the vein, yet the pay streaks have nearly always been found along the foot and hanging walls and between these streaks the vein-filling, - where sampled,- was often found to contain not more than 3 or 4 ounces of silver, although there may be sections of higher grade.

Mining by the lessees has nearly always been done by open stoping which was timbered with square sets, most of which were not filled. In many places the ground has become too heavy for the timbers and there have been caves in which much good ore has been lost or made inaccessible. Only the higher grade ore (15 ounce or better) has been intentionally taken and a great deal of lower grade material has been left in the walls or between the ore shoots.

This system of mining has many disadvantages but is probably the only method that could have been followed to produce shipping ore, but if the average product could be reduced, to say 8 ounces (through building a local mill) and still leave a profit a great many of those old stopes could be reopened and worked for production of a large tonnage.

It is my opinion that a thorough examination of the entire mine down to the water level, which would involve catching up many of the old workings, would probably reveal the existence of over 300,000 tons of ore that would average better than 8 oz of silver per ton.

CHARACTER OF LOW GRADE ORE AND TREATMENT: - -

No effort has been made to determine an average complete analysis of the ore taken from this mine and many of the shipments and samples have only been assayed for silver. Some

of the

of the ore contains a noticeable amount of barium which presumably has been classed as insoluble.

Based on the analysis of shipments made during the last fouryears and samples previously sent for metallurgical tests, I give below what I believe to be an approximate analysis, although this varies greatly in different sections of the mine.

Ag	say	8.00 oz to 10 oz
Pb		0.80 % plus
Zn		0.15 % plus
Cu		0.10 % to 0.50 %
$Mn O_2$		3.50 %
$Fe_2 O_3$		8.00 % to 40.00 %
$Ca CO_3$		20.00 % to 40.00 %
Insol		45.00 % to 65.00 %

Included in the insoluble is a small and varying percentage of Al_2O_3 and a larger quantity of $Ba SO_4$. Occasionally sulfides of copper, lead and zinc are noted and samples taken near the water level in the Australia Shaft workings carried up to a maximum of 3.40 % Pb, 1.90 % Zn, 1.65 % Cu and gold 0.04 oz per ton. The gold content in many shipments was only a trace but has recently been up to 0.01 oz.

Numerous tests have been made by various parties to determine if it would be possible to economically concentrate or recover the silver in the low grade ore, but all standard methods including leaching, flotation and cyanidation have so far given unsatisfactory results.

L. H.Crabtree, metallurgist for the Eagle-Picher Co. tried out a number of combinations of various processes and concluded that a recovery of 85% of the silver might be ob-

by fine grinding
tained/in water solution either with or without lime and counter-current cyaniding but the cost of such proceedure is prohibitive. However there is constant progress in the art of metallurgy and reason to hope that this problem may yet be solved and eventually give some commercial value to the large tonnage of low grade ore left in the upper workings of the mine.

I do not believe that anyone has yet attempted to work out a method for economically saving any of the by-products such as the small quantities of manganese or barium and during the past twenty years all of the production from the Reymert Mine has been shipped directly to the copper smelters where under certain conditions it has some fluxing value.

FUTURE PRICE OF SILVER: - -

In connection with all future plans at the Reymert special consideration must be given to the probable market for silver, since there is as yet no assurance that any other metal will be found in commercial quantity. In this connection I can only say that every effort is going to be made by all those interested in silver to have the government maintain the present pegged price of 71.1ø per oz for several years to come and that in all of my calculations I have assumed that they would be successful in that effort.

PROBABLE CONDITIONS AT DEPTH : - -

From the upper two hundred feet of the vein the Reymert Mine has produced in round figures, 160,000 tons of ore containing 2,500,000 ounces of silver. The remarkable strength and persistence of the Reymert Vein of the surface, and the occurrence of numerous shoots of pay ore over a length of 6,000' lying between the surface and the upper water level seem to call

for a far more comprehensive exploration at depth than has ever been undertaken.

Obviously the future value of the mine and the total extent ~~for~~ of the ore reserve depend almost entirely upon conditions which may exist below the water level and these in turn seem to hinge upon three factors :

(a) The downward extension of the shear zone in the schist.

(b) The existence of zones of secondary enrichment and of primary ore, and

(c) The tonnage and grade of such secondary and primary ore as may be found.

On the reasonably safe assumption that the schist continues to a much greater depth than the present workings, - excepting where it is cut by the diorite dikes, the fissure and shear zone will probably continue to maintain their width and length and the general character of the filling should not greatly change so that the factor of grade would be the only variable.

All of the ore which I have observed is heavily oxidized and I can find no reliable record of any evidence of secondary enrichment which must exist, if at all, in a zone below the workings. In any such zone of secondary enrichment the values will undoubtedly show a very substantial increase; to what extent it is impossible to predict, but one might reasonably visualize bodies of 30 to 40 oz silver ore. As to the value and character of the primary ore, if any, we have little information, but the solutions which mineralized the Reymert Vein appear to have originated from a deep seated magma and in spite of differences in the local geological conditions primary ore bodies

similar to those which were found below the oxidized zone and to a depth of three or four thousand feet in the Magma and the Old Dominion Mine may be hoped for below the permanent water level in the Reymert.

While the record of the Alaska Shaft below the 200' level and the log of the Magma Company diamond drill holes are not encouraging they only reflect conditions in the diorite and therefore they are entirely inconclusive and a thorough exploration of portions of this vein in the schist below the water level would containly be well justified.

Since the physical character of the ore zone is such that no satisfactory drill cores can be obtained until the primary ore is encountered such work should, in my judgment, be carried on by shafts and drifts utilizing as far as possible the existing facilities and previous development. The outcome of such a procedure is, of course, problematical but I am of the opinion that it may be definately classed as an attractive mining venture.

EXPLORATION AND DEVELOPMENT RECOMMENDED: --

After visiting in 1941 all of the then accessible workings, revisiting many of them since that date, personally watching all of the work which has subsequently been done and discussing the situation with the men most familiar with the mine and with several competent engineers and geologists who are familiar with the property it is my opinion that new exploration should be started from the Alaska Shaft which first of all should be re-equipped for operation and cleaned out to the 400' level.

While Col. Tod was operating the mine the water was pumped down for a considerable distance and the shaft and timbers were found to be in excellent shape giving every reason to expect

that similar conditions will maintain all the way down to the sump and that the total expense of putting the lower part of the shaft in operating condition with piping, guides, ladders, etc, and resuming work in the east crosscut on the 400' level,- (unless this should prove to be badly caved) will not exceed $3,000. Equipping the shaft for operation will involve the purchase and installation of a new or second-hand power unit, hoist and compressor, pumps and some new drills and steel to supplement the material which is already at the mine. This will likely involve an expenditure of $15,000.00 or somewhat less.

The first actual exploration should involve the extension of the crosscut on the 400' level for another 40 or 50' to the east in order to make sure that the entire width of the fissure had been explored and any vein or branch-vein lying close to the hanging wall had been opened up.

The next work, in my judgment, should consist in running a long drift along the already discovered veins or any better vein that may be found, extending this drift both to the north and south through the diorite and into the schist.

From showings on the surface and in the upper workings it would not appear that the diorite dike should extend for a total width (north-south) of more than 600 to 800' and I believe that drifting on either direction 400' from the crosscut should surely serve to being the ends of both drifts into the schist. After that crosscuts should again be run in that formation for the full width of the fissure, say 100'. Therefore I visualize that the total drifting and crosscutting on the 400' level will amount to probably a little over 1000' and the cost of this work under present conditions will probably be in the order of $15.00

per foot.

While I do not advocate the further sinking of the Alaska Shaft until the 400' level has been thoroughly developed in accordance with the above program (which may be modified from time to time as conditions require) yet, unless these conditions should prove to be most discouraging, it will next be in order to continue sinking, preferably to the 600' level, and then to repeat much of the cross-cutting and drifting already done on the 400' level.

The total maximum expense of the advised exploration and development may thus be estimated as follows:

New equipment and installation	$15 000
Recondition shaft and 400' level	3 000
1,000' of drifting and crosscutting on 400' level	15 000
Sinking Alaska Shaft on additional 200' @ $60 per foot	12 000
1,000' of drifting and crosscutting on 600' level	20 000
	$65,000

I do not anticipate that more than $50,000 will have to be spent before it will become apparent that either (a) you have been opening up substantial bodies of pay ore against the extraction of which the further work can properly be charged; or (b) that geological conditions are such as to completely discourage any further exploration.

Since we have every reason to believe that good ore was left in the bottom of the old workings both south and especially north of the Australia Shaft where high grade ore was taken from the Alaska and America claims it is fairly certain that by connecting up the 400' level with these old stopes a fairly large

tonnage of shipping ore can be mined above the 400' level and bring in some returns which should partially offset the expense of the new work.

Aside from the net return from such ore as may be taken out below the old stopes, the investment which may be made for the exploration and development at depth must be considered as representing a speculative mining venture but it will be based upon sufficient favorable evidence and indications to make it, in my opinion, a fully justified and attractive speculation.

There is always the chance that the mere extension of the 400' level crosscut will serve to find the true vein further to the east but even so I would not expect it to carry any pay values while the walls are composed of diorite. Joralemon mentions having been informed that iron-stained schist was coming in at the east end of this crosscut but other reports describe these workings as being all in diorite and it will not be prudent to anticipate worthwhile discoveries of ore until the drifts have been advanced for several hundred feet and have definately passed through the diorite dike in at least one direction.

Yours very truly,

G. M. Colcord

GMC/tar

Registered Mining Engineer
in Arizona # 761

Attached:
(a) Record of Reymert Mine Production, page 19.
(b) Appendix 14 pages.

Exhibits:
Exhibit A - Longitudinal Section Map of Mine (in roll).
Exhibit B - Cross Section of Alaska Shaft.

REYMERT MINE PRODUCTION

COMPILED FROM VARIOUS REPORTS AND RECORDS OF THE COMPANY IN MILWAUKEE

Year		Tons	Average Silver oz. per ton	Approximate total Silver Ounces *
1886	)	?		
1887	)	849	22.8	19,367
	)			
Jan - 1888)	)-Company	5,326	31.71	168,886
Mch - 1889)	)operation			
	)			
Mch 25, 1889	)	11,890	19.30	228,651
Feb 8, 1891	)			
?				
1925 & 1926	)	5,175	16.10	193,990
1927	)	6,743	18.00	121,374
1928	)	6,916	16.19	112,013
1929	)	4,536	17.25	78,253
1930	)	799	15.33	12,074
1931	)	217	16.00	3,427
1932	)	No returns	- -	- -
1933	)-Lessees	No returns	- -	- -
1934	)	1,116 tons	19.642	21,938
1935	)	7,588	14.357	198,941
1936	)	11,497	11.29	129,801
1937	)	10,051	11.348	114,609
1938	)	15,195	16.229	246,603
1939	)	20,908	11.598	242,499
1940	)	20,609	10.259	212,264
1941	)	9,147	10.02	91,662
1942	)	8,057	15.043	121,215
1943	)	2,980	12.50	37,251
1944	)	1,454	12.83	19,072
		151,053	15.11av.	2,283,890
1945 Apl to Sep		11,366	15.00(about)	170,490
		162,419		2,454,380

* Some of these figures may represent only the silver paid for by the smelters.

APPENDIX

During my connection with the Reymert Mine I have obtained and carefully studied many reports by other engineers or geologists and have also made previous reports to the owners.

The great bulk of their texts comprised comment on conditions which existed and work which was in progress at the time that these reports were written and of course, there was much repetition in respect to geology, etc.

On the following pages are given extracts which seem to me to cover the most important points and those which have a bearing on the character and probable results of future exploration.

S. H. Colvocoresses

(1)

Corrected

APPENDIX

From the Report of F. W. Oury, M. E. 1891

"The Vein: The distinctness with which the vein outcrops, the fact that is can be traced plainly along its course for a long distance, and the character of the country rock in which it occurs, all make it undoubted that this deposit of ore is a true fissure vein.

The country rock is a highly metamorphic mica schist occuring in distorted forms with perfect cleavage surfaces, which facts are unmistakable signs of the enormous lateral pressure to which it has been subjected and assure the observer at once, that the vein is the filling of a very extensive rupture of the rock caused by the pressure. The evidences which everywhere appear of this great force which has been at work, and the contortions which it has produced, as well as the firmness and distinctness of the vein, not only on the surface, but as far down as it has been disclosed, are unmistakable proofs of its permanence, and leave no doubt." (in that respect).

From a letter to: Mr. W. H. Aldridge
14 Wall Street
New York City

from: W. C. Browning of Lincoln Issues Company
Superior, Arizona

May 8, 1914

" Dear Mr. Aldridge: RE: Reymert Mine

We have corsscut the vein on the 400' level at Reymert Mine without securing any very encouraging results. The vein has a width of 8' and a sample taken from that width assayed as follows:

Silver	1.8 oz
Gold	Trace
Lead	1.7 %
Zinc	3.0 %

On the foot wall is a 2" or 3" streak of material that shows some galena. Sample of this material assayed 13⅓ ounces of silver and 26% pb. The vein material is quartz and black calcite, showing some manganese and iron stains. The wall rock on both sides of the vein is diorite similar to what you saw when here last. I would like the looks of the vein better if one of the wall rocks was schist. Another surprising feature is that we are not getting more than 10 gallons of additional water per minute since we cut the vein."

From a letter to: Mr. Thomas F. Cole
c/o Calumet & Arizona Mining Co.
Bisbee, Arizona

from: Nelson P. Hulst, M. E.

December 4, 1916

"It appears that at the bottom of the shaft the vein was crushed, partly altered diabase in which seams and bunches of calcite, quartz, iron and manganese oxides.

I am led to believe from the tenor of Mr. Browning's letter respecting the exploration work of the Lincoln Issues Co. as per our copy (which says, "I presume you will wish to start sinking the shaft again and do additional development work, on say the 600' level") that Mr. Browning thought it worth while to carry the exploration deeper.

deeper.

To my mind the fact that only 10 gallons of water was the flow from the so called 8' vein in the crosscut at bottom of the shaft, indicates quite conclusively that the 8' vein in the diabase is not a part of offshoot of the main large vein showing a width of 60' at the surface, because where they had this true vein in the shaft about 180' above the crosscut the flow was 40 gallons per minute. The true vein must be to the east of the face of the crosscut."

From a report by Ira B. Joralemon on REYMERT MINE 1914

"The Reymert vein outcrops for a length of nearly 3 miles, with a few short interruptions. The rocks cut are diabase (or diorite) and schist. The strike of the vein is from due morth and south to N. 20° W. and the dip averages 80° east. The seven claims of the Reymert Mining Co. take in about 6,000' along the vein. . . . . .

The outcrop of the Reymert vein is made up of black calcite, with varying amounts of manganese and iron oxides. In places there is also more or less quartz, and sometimes barite. Often the vein is in two branches, with horses of country rock between them. In the America, the north claim of the Reymert Group, and in the Knickerbocker Group north of the Reymert, one or both walls of the vein are diabase. In the diabase, the vein is seldom over 15' wide, and often consists only of stringers of iron and manganese, oxides and of calcite. South of the center of the America claim, both walls are schist. Here

the vein greatly widens, reaching in the Alaska claim a width of over 60' of calcite, with bands of manganese and iron.

The Lincoln Issues Co. sunk a 400' shaft on the Alaska claim to develop this part of the vein. The shaft started in vein material. At 150' depth the footwall came in the west end of the shaft, and at 250' left the east end. The vein material cut by the shaft averaged a little over 6 ounces of silver, with insignificant amounts of copper, lead and zinc. It is thoroughly oxidized where the vein leaves the shaft. Although on the surface and on the tunnel, or 30' level, both walls of the vein are schist, the footwall as shown from 150' depth to the bottom of the shaft is all diabase.

On the 400' level a crosscut was run through the diabase to the east to cut the vein. The footwall was encountered 30' from the shaft, almost exactly in line with that above. Although on the surface the vein was over 60' wide, on the 400' level it is only 8' wide. Most of this vein on the 400 is crushed, partly altered diabase. Through this material are scattered seams and bunches of calcite, quartz, iron and manganese oxides. The only visible valuable mineralization is in a three or four inch seam on the footwall, which contains more or less galena. According to the superintendent, the 8' of vein on the 400 level assays 1.8 oz of silver, 1.7 % lead and 3 % zinc. The crosscut passed through about 8' of diabase in the hanging wall, and for the remaining 10 to 12' of it's length cut slightly iron stained schist.

As a whole, the Reymert Vein has a remarkably striking surface showing, both in size and in the intensity of mineralization. The large bodies of 5 to 20 ounce silver ore cannot be recovered without a chloridizing roast, and little of the ore is rich enough to justify this process. The new work done by Lincoln Issues Co. does not leave much hope for finding ore at greater depth at that point. This may be due to the influence of the diabase, which forms the walls of the vein on the 400' level. The outlook where the walls are schist is much more favorable than where the walls are diabase. Further south it seems reasonably certain that the walls will be schist to great depth.

The presence of a little zinc in the oxidized zone makes it likely that the sulphide ore will be base, and hard to treat. There should, however, be places where the silver values are concentrated to form rich ore. In the southern part of the property the copper tends to increase and there may be bodies or enriched copper ore areas at a depth of 500' or more. While not so large as the outcrops on the Alaska claim it seems to me that the veins on the Africa claim have a better chance of containing good ore in depth. . . . . .

I should suggest running a long drift south on the vein on the 400' level, with cross cuts to determine the width of the vein, and sinking to the 600 level and drifting to the south there also."

From a letter to: Mr. W. H. Aldridge
14 Wall Street, New York City

from: Seeley W. Mudd
Engineer of Mines
1208 Hollingsworth Building
Los Angeles, California

July 2, 1914

"I note Mr. Jorale mon's reference to the desire-ability of work at some other point, other than the sinking of the 400' shaft to a greater depth. Perhaps the Africa outcrop may seem a little more favorable to the eye but on the other hand the largest and best stopes are at the north of the deep shaft on the Alaska. Personally, if further work is to be done, I would favor sinking the present shaft and drifting on a still lower level north and south on the vein.

You ask what I think about diamond drilling: Ordinarily I am much inclined toward drilling, but in this case cannot favor it very strongly. The vein is nearly vertical and if drilling were done it is probable you would want to put down inclined holes. There would be danger of deflection and some uncertainty as to where the vein would be found. If the vein retained its calcitic character, I fear you would get comparatively little core. You surely would not get much core, nor very satisfactory material from a broken shattered rock for little core could be expected of it, and there would be a serious danger of losing your water and, therefore, great doubt as to whether you would recover the drillings from the material passed through."

From a letter to: Mr. Thomas F. Cole
c/o Calumet & Arizona Mining Company
Bisbee, Arizona

from: Nelson P. Hulst

November 17, 1916

"It appears that at the bottom of the shaft the vein was crushed partly altered, diabase, in which were seams and bunches of calcite, quartz, iron and manganese oxides.

I am led to believe from the tenor of Mr. Browning's letter respecting the exploration work of the Lincoln Issues Company as per our copy (which says, "I presume you will wish to start sinking the shaft again and do additional development work, ~~so~~ or say the 600' level) that Mr. Browning thought it worth while to carry the exploration deeper.

To my mind the fact that only 10 gallons of water was the flow from the so called 8' vein in the cross cut at bottom of the shaft, indicates quite conclusively that this was not the main vein showing a width of 60' at the surface, because where they had this true vein in the shaft about 180' above the cross cut, the flow was 40 gallons per minute, The true vein must be to the east of the face of the cross cut."

From a letter to: Mr. Thomas F. Cole
Warren, Arizona

from: Ira B. Joralemon

January 12, 1917

"Dear Sir: -

After going over the correspondence concerning the Reymert Mine, I think my report of June 17th, 1914 covers the situation as well as I can cover it. I think the work suggested in that report is worth doing. In addition it might be worth while to continue the cross cut on the 400' level for about 100' further east, to make sure that there is

not another branch of the vein.

The drift south on the vein on the 400' level should be run for at least 1500' and a similar drift should be run on the 600' level.

It might be well to postpone development of the Africa claim until the results of this drifting are known.

Ira B. Joralemon"

From a letter to: Mr. J. H. Tweedy
Milwaukee, Wisconsin

from: W. Tovote of ROOS & TOVOTE
Consulting Mining Engineers
Tucson, Arizona

October 24, 1917

"The Reymert has a wonderful showing at and near the surface, where a block of schist produces geologically favorable conditions for ore deposition. In depth the schist leaves the vein or rather the vein leaves the schist and the new work done by the Gunn-Thompson people shows the vein between two diabase walls. The vein here is poor and narrow. While the possibility remains that only a branch of the vein has been opened and that another branch remains in the hanging wall on the 400' level. I would not rely upon this possibility, even if it is worth investigating. It is an established fact in the Globe district, geologically identical with the Reymert counrty, and which has been explored far more, that the veins are poor and weak where they are found between two diabase walls, but that they improve as soon as one wall is made up by a differect rock, immaterial whether foot or hanging wall. The diabase (at Globe) occurs in more or less horizontal sills of varying thinkness which are displaced or shifted in realtion to each

other by the fault-planes in which the veins were formed. It is, therefore, only a matter of depth or lateral development to find the vein again in favorable place with great probability of improvement in mineralization.

To establish these possibilities a careful geological mapping should be required. My deductions are based on the geology of the Globe district and especially the Old Dominion Mine where I was geologist for nearly three years (1911 to 1914)."

From Report to EAGLE-PICHER COMPANY by Robert M. Hernon

1937

"The vein is a very prominent fissure vein composed of the minerals: calcite, quartz, barite, Mn oxides, Fe oxides and small amounts of fluorite and some unknown silver mineral. The vein strikes across the schist country rock nearly at right angles to the schistosity. Where the vein crosses diorite intrusive or encounters diorite in depth, it tends to narrow, split up, and apparently becomes low grade. Faulting has resulted in a strike-slip of about 280' to the left along the vein. Cross-faults are of little importance, and offsets on them are to the right.

The mineralization occurred in three main periods. First, fissures filling with black calcite; second, reopening and fissure filling quartz; third, reopening and fissure filling with quartz barite and the introduction of the main silver values. The nature and texture of the vein filling indicate it to be of epithermal type.

Information is not available as to whether en-

richment took place or not. . . . . .

TOPOGRAPHY - The Reymert mining claims lie in a belt crossing the lateral spurs of a long ridge. The main ridge runs north-south and the claims lie on the west side of the crest. The hills and gulches are steep-sides, but with generally smooth soil covered sides, covered with typical desert vegetation of which the giant sahuaro is the most conspicuous. Elevations vary from 2700 to 3500' above sea-level. . . . . .

ADJACENT MINES - Several groups of claims, some patented and some unpatented, lie south of the Reymert group. These include the Woodpecker, Ajax, Ajax #1, and the Tally-Wall group among others. Production is small and silver is the valuable metal. The mineralization is similar to that of the Reymert vein except the Tally-Wall property where the values are silver but the gangue is sugar quartz.

The Magma Mine at Superior is one of the richest copper mines in the state. It's production amounts to about 70 million dollars since 1914, though the figures are not complete. The ore averaged slightly under 6% copper last year. The ore is milled and smelted locally. "

From a letter to: Mr. W. D. Van Dyke, Jr
Reymert Mining Company
902 Wells Building
Milwaukee, Wisconsin

from: Mr. G. M. Colvocoresses

April 5, 1941

" I am enclosing as Exhibit A a record of the

Alaska Shaft from which it is apparent that even though this shaft was started in the vein it must have been located in a nearly barren spot between the ore-shoots since no pay values were found except from a depth of 75' to 100'.

Apparently the vertical shaft entered the foot-wall and the diorite at nearly the same point.

The character of the vein which was found in the crosscut on the 400' level was decidedly different from that of the vein as noted in the upper workings, but Joraleman was quite positive that this represented the Black Vein and to me it seems probable that the Blue Vein had made a junction at some higher point, although this matter should be further investigated by continuing the crosscut for another 50' to the east."

From the report to Reymert Mining Company
by G. M. Colvocoresses

March 29, 1941

" Location of Exploration

After carefully examining the outcrop over the entire length of the mineralized fissures (6000') and practically all of the underground workings now accessible I believe that the best location for future exploration is found in the Alaska shaft and for the following reasons:

(a) This shaft is already sunk nearly 200' below the present water level, thus saving the heavy expense of carrying on a similar procedure at any other point.

(b) This shaft is sunk in diorite, which is much better sinking ground than the vein or the schist but it appears likely that the dike of diabase will extend only a short distance to the north and south and drifts run in these directions should soon reach the schist and find normal conditions in the vein.

(c) Very good ore is found in the vein both north and south of the shaft on the 200' level and should this continue downward it is reasonable to assume that the ore below the old workings might extend some 900' to the morth and for a much longer distance to the south. It is true that the Alaska shaft is far to the north of the center of the pay ore shoots but I can see no reason to believe that any better or deeper ore will be found in the southern section of the vein and a separate program of development at that part of the property can be considered later as conditions may make it advisable to do so.

As to the method of development I am strongly opposed to any drilling at present since local formations seem to make it impossible to point a drill hole with any assurance that it will follow its intended course and there is still less chance that satisfactory cores or even sludge could be obtained from the fissure material or veins. This was the experience of the Magma Company in 1919 and 1920 and it would be folly to repeat their unsatisfactory procedure.

Therefore I am in favor of conducting the development by straight underground mining work and the program which I advocate is as follows: -

(1) Underwater and recondition the Alaska Shaft to the 400' level, replacing such timber as may be required and cleaning out any debris that may be found in the sump and crosscut.

(2) Extend the 57' crosscut for an additional 50' to the east which should make it quite certain that the Blue Vein or any split in the Black Vein has been penetrated.

(3) Drift on the vein both north and south for a distance of at least 400' in each direction and crosscut the full width of the fissure at each end of the drift.

(4) Then carefully review such actual conditions as may then have been found to exist before starting any further work. If satisfactory results have so far been obtained this may reasonably be expected to involve sinking the shaft to an additional depth of 100' to 200' with drifts along the vein in both directions on the lowest level.

Should the extension of the 400' level definitely prove the existence of a large body of diabase pinching out the vein and/or cutting off the values or should any other very discouraging condition be developed, I do not believe that any further exploration would be justified, and it would merely remain to mine out the pay ore in the upper portion of the mine as economically as possible.

But should this proposed work disclose the continued existence of a strong and well mineralized vein, - and that is what I confidently anticipate, - then the further sinking of the shaft and work on a lower level will promptly be in order and can be continued with far more assurance of success than is justified by the conditions which can now be noted on the surface

and down to the 200' level.

The 400' level may penetrate a zone of secondary enrichment, although, I only mention this as a fair probability; but I am very positive that information obtained from this work will permit some very definite conclusions as to the existence and probable location of such a zone or its entire non-existence.

I should also expect to find that the downward extensions of the ore shoots which have been mined to the north and south of the shaft and in the Black Vein and Blue Vein will contain sufficient pay ore to repay from profits the cost of development which would then become a proper charge against future extractions.

If conditions on the 400' level give promise of a further continuance of ore to greater depth I recommend the further sinking of the shaft to a depth of 500' or perhaps 600'. Develppments on the 400' are likely to indicate the proximity of any radical change and if no such change is indicated and good ore seems likely to persist in depth it would probably be as well to sink the full 200', with merely a station on the 500' and to resume drifting on the 600' level."

It will be noted that the program of exploration which I advocated in 1941 is practically the same as I advocate today and very similar to those suggested by Browning and Joralemon except that the latter recommended drifting much further to the south from the Alaska Shaft, While I believe that any deep development on the Africa or Australia Claims should be deferred until we have fully developed the possibilities at the Alaska.

S. M. C.

October 2, 1945

Statement of Account

Reymert Lease
c/o Mr. Norman De Vaux
Dominion Hotel
Globe, Arizona

to

G. M. Colvocoresses

To Report on Reymert Mine and Its Future Exploration and Development — $250.00

Received Payment.

Pd in full
10/2. 45

Page 10--Reymert Shipments

No.	Date Rec.	Date of Settlement	Lbs. dry weight	Au. 003 Ag. per ton	Net value per ton	Smelter payment	Net Payment after deducting freight & trucking
October							
198	3	9	119.811	18.76	9.09	544.54	421.19
199	7	13	87.328	22.59	11.64	508.25	416.76
200	9	13	96.886	22.12	11.84	549.34	446.90
201	13	16	106.714	17.69	8.37	446.60	331.61
202) 203)	19	27	236.304 H2008.50	17.87	8.49	1003.11	754.71
204	23	29	92.287	18.19	8.70	401.45	305.04
205	26	30	136.957	18.87	9.16	627.26	483.99
206	29	11/4	70.098	17.49	8.24	288.80	213.35
207	30	11/7	86.928	18.22	8.73	379.44	289.89
November							
208	4	10	98.656	19.50	9.58	472.56	369.19
209	6	10	69.076	14.26	6.07	297.20	195.61
210	10	14	126.347	14.09	5.96	376.51	248.02
211	14	19	97.924	14.26	6.07	297.20	195.61
212	16	21	74.028	13.83	5.82	215.42	138.06
213) 214) 215)	25	12/1	316.634	15.33	6.78	1073.39	748.87
216) 217)	27	12/4	167.812	13.73	5.78	484.98	311.41
December							
218) 219)	5	8	289.054	14.30	6.09	880.17	592.78

No.	Date Rec.	Date of Settle-ment	Lbs. dry Weight	Au. 003 Ag. per ton	Net val-ue per ton	Smelter Payment	Net Payment after deduct-ing freight & trucking
177	13	18	142.173	21.87	11.18	794.75	661.74
178	14	18	1261617	19.05	9.28	587.50	469.51
179	18	25	130.000	21.84	11.15	724.75	603.98
180	20	26	123.287	23.12	11.96	737.26	621.28
181	21	27	100.321	23.37	12.71	637.54	542.17
182	22	29	119.933	26.23	13.84	829.94	716.27
183	26	9/1	124.844	23.86	12.41	774.66	646.46
184	29	9/2	136.193	22.95	11.86	807.62	665.42
185	(Sept.) 8/29	3	118.144	25.76	13.55	800.43	677.21
186	2	9	125.936	23.12	11.96	753.10	622.48
187	4	15	141.552	23.36	12.10	856.39	711.08
188	8	15	122.311	27.00	14.31	875.14	746.54
189	9	15	110.182 H_2O ~~0~~ 9.30	26.44	13.97	769.62	652.43
190	12	17	127.760 H_2O - 8	26.14 Cu - 07	13.97	811.96	688.74
191)) 192)	16	23	296.507	25.07	13.14	1948.05	1641.67
193	21	25	994.124	25.77	13.56	638.16	537.03
194	22	28	85.781	22.70	11.71	502.25	412.29
195	25	29	102.582	Au-.005 23.93	12.44	638.06	530.44
196	27	10/1	51.334	17.32	8.12	208.42	152.71
197	30	10/5	791995	23.38	12.12	484.77	400.64

GMC

Office Copy
Corrected Copy

Reymert Report Fil[illegible]

October 27th, 1943

Reymert Mining Company
902 Wells Building
Milwaukee 2, Wisconsin

Final Shaft Sinking Report

Gentlemen:

This report is intended to cover the shaft sinking and other development work carried on by the Reymert Mining Company from June 1st, 1943 to October 16th, 1943 under the terms of an Agreement with the Lessees dated May 21st, 1943.

Attached is a print of a section map of the Australia or A Shaft Workings at the mine and also a plan of the crosscutting and drifting which we carried out on the 360 and 420' levels with assays of th@ vein material that was encountered. The financial statements covering these operations will be forwarded at a later date after final figures have been prepared and approved by the Lessees of their representative.

PROCEDURE

Our work consisted in straightening out and retimbering the lower 40' of the Australia Shaft above the 300' level; in sinking the said shaft for an additional 120' and crosscutting and drifting for a total length of 130'.

The two compartment shaft, 5' X 8' inside timbers was sunk and timbered from the 300' level for an additional depth of 120' at which point water was encountered and a level established. The incline of the shaft is about 80° from the vertical with dip to the east and throughout the entire distance the shaft was sunk in the main Reymert fissure which is mainly filled with a mixture of schist wall rock, black calcite, quartz, barite and iron oxide containing small but varying percentages of lead and zinc sulphides, manganese, copper oxide and varying values in silver.

DEVELOPMENT IN ORE ZONE

It will be recalled that in sections of the upper portions of this fissure two pay streaks which I shall term veins had been found to carry commercial silver ore and these were worked along on near the foot and hanging walls. The foot wall vein was noted in the shaft at the 300' level, but apparently pitched off to the west a short distance below and was not found again either in the shaft or in the crosscut which was driven 20 feet into the footwall on the 360' level.

Except in the portions of the pay ore shoots which usually carry a high percentage of lead, with which the

silver is often associated, the ore is very difficult to distinguish from the filling of the fissure and it is likely that the 360' crosscut passed through this zone in a barren section with one ore-shoot lying to the south while the north shoot that was worked on the 300' level should lie further to the north.

The crosscuts on the 420' level proved that the mineralized fissure at this point was unusually wide,--about 75 feet,--and we penetrated into the schist in both the hanging and foot walls.

Of the hanging wall vein no sign was found but the footwall vein was cut 17' east of the foot wall and a drift on same was run for a length of 20'. The width of this vein was about 4 feet and samples taken were as follows:

taken were as follows:

Samples taken by foreman and assayed by Holeman at the Mine:

		Ag. Oz.
9/28	vein sample, same location as my #2	12.5
10/7	muck from vein	16.00
10/13	muck from vein last round north	33.30
10/14	face of drift, same location as my #6	43.60

Samples taken by me and assayed in Phoenix:

			Au.Oz.	Ag.Oz.	Pb %	Zn %	Cu %
#1	9/17	Vein in face of drift	0.02	6.5	--	--	0.05
2	9/29	Vein on S.face of drift, W.6'	0.01	9.2	--	--	--
3	9/29	Vein on S.face of drift, high-grade stringer 2' wide	0.02	30.3	--	--	--
4	10/7	Vein in N.face of drift 5' W.	0.01	6.0	3.40	1.51	--
5	10/7	Vein in S.face of drift " ".	0.04	2.8	2.22	1.90	--
6	10/15	Vein in N.face of drift 4' beyond sample #4, width 4'	0.02	8.9	--	--	--
7	10/15	Vein in S.face of drift check on #5	trace	2.7	--	--	--
8	9/17	Stringer of copper ore	0.04	0.9	--	--	1.65

Since I cannot place much reliance on the samples taken and assayed at the mine and my one high grade sample (#3) must have included a high grade stringer, or small pocket it does not appear to me that the vein as developed by the 20' length of drift can be estimated to have an average value of over 9 oz. silver and even with careful sorting I doubt if a 15 oz. shipping product could be made, so that the vein at this particular point seems to be non-commercial. It is probable that

we are still working in the barren or low grade section between the shoot which was mined south of the shaft above the 300' level and the shoot which was formerly mined by Forbach from his old shaft to the north of the Tod workings, and which was not reached by the two crosscuts that were started toward the foot wall on the 300' level.

An extension of this drift both to the north and south should serve to develop the downward extension of these ore shoots and while one must face the possibility that one or both of them may have pinched out or become non-commercial above the 420' level I believe that the chances would favor the discovery of pay ore which could be mined with profit from the 420 to the to 300' level.

VALUES IN METALS OTHER THAN SILVER

The work which we have done has given no indication that the Reymert ore is likely to contain commercial values in any metal other than silver.

Somewhat less than 1% of lead and zinc has been found in the ore all the way down from the surface to the water level. These metals occur mostly as sulphides and on the whole I think that they have tended to slightly increase as depth was gained, but the best of my recent samples contained 3.40% lead and 1.90% Zn., so that up to date their occurrence is of no real importance

and there is no reason to believe that it would become so at greater depth.

The content of gold in the shipments made during the last two years has been pretty constant at 0.003 oz. per ton and while assays are erratic and somewhat higher in my recent samples the best one of these carried only $1.40 per ton, and here again there is no logical reason to expect that the gold will substantially increase with greater depth.

As to copper I regret to report that so far there has been no real improvement. All of the copper ore found from the surface to the 420' level is oxidized and occurs as carbonate or silicate and careful inspection has failed to disclose the existence of any appreciable quantity of copper sulphide. Although one of my samples of picked specimens of copper ore from the 420' level contained 1.65% as compared with much less than 0.50% in shipments from the upper workings this sample did not come from the silver vein and I do not think that the average percentages of copper in the ore has increased from the surface down to the present water level.

WATER TABLE

Accepting as accurate the elevations given on the old maps and on those prepared in 1937 by the Eagle-Picher Company, it appears that the collar of the Main Alaska Shaft has an elevation of 3097.47 above sea level and it is recorded that when sinking the shaft in 1912 water was first encountered at

a depth of 220' equivalent to an elevation of 2877'. In other workings not far from this Shaft conducted by Carrow in 1935, water was said to have been found at an elevation of 2900' or some 23' higher. The geologists of the Eagle-Picher Company state that in their opinion this did not represent the permanent water table but merely a "perched water table" and they concluded that any permanent water table existing in this district would only be found at much greater depth; but this opinion is not supported by any actual observations.

The coller of the new A (or Australia) Shaft in which we have recently been working (1943) is given an elevation of 3320' (or 3317') and we struck water at a depth of 420' equivalent to an elevation of 2900'. The water in the Alaska Shaft, 2200' to the north has stood continuously at about the 2877' mark, but such a variation in the elevation of a water table is not at all unusual in mountainous country. Therefore it appears that the present level of the water in the country between the Alaska Shaft and the A Shaft is from 2877 to 2900' regardless of whether this represents a "perched" or a permanent water table.

The flow of the water in the Alaska Shaft was reported to have been 2 gallons per minute at 220',--or just about the same flow that we encountered,--but it increased to 30 gallons per minute at 230' and to 40 gallons per minute at 270' below which point it was nearly constant until they drifted on the 400' level when it increased to 50 gallons per minute.

A similar increase might logically be expected if we should attempt to deepen the Australia Shaft and therefore any further sinking would undoubtedly prove to be progressively more and more expensive and require the installation of pumping equipment.

I have been informed by Forbach that when the mine was first worked some 50 years ago the water stood about 140' below the present elevation and that it was believed that this level shifted from time to time over a substantial range, but I can find no evidence to support that statement since, according to the report of F. W. Oury written in 1891, none of the working had at that time reached the water level. Some of the later maps show that a winze in the America Claim workings went down to an elevation of 2876' and one of the old shafts on that claim may have gone somewhat deeper but I have found no record as to whether those workings were wet or dry, nor any report of indications that a lower water level had once existed around the Alaska Shaft.

~~In any event~~ I think that we have demonstrated that whether the water table is "perched" or permanent it has remained practically constant for over 30 years and neither in the Alaska nor in the Australia workings has there been found any zone of secondary enrichment nor any evidence of primary ore altho the percentage of sulphides of lead and zinc appear to have slightly increased in both sections of the mine. ~~This is not true~~ but the small percentage of copper seems to have remained fairly constant in respect to copper and I have observed no indications favorable to the existence of commercial copper ore at greater depths.

GEOLOGICAL CONSIDERATIONS

There is one importance difference between the conditions in the Alaska and Australia Shafts for in the former the walls of the fissure were in diorite below the 200' level while in the latter no diorite has yet been noted and in all probability the schist continues to a substantially greater depth thus creating a condition which, in the opinion of some geologists, should be more favorable for the deposition of the higher grade silver ore.

The theory of ore deposition developed by the geologists assumes that there were three distinct periods of mineralization as follows:

(1) Fissure filling with black calcite carrying very little silver.
(2) Second reopening of fissure with introduction of quartz.
(3) Third reopening of fissure and final filling with more quartz, barite and additional silver in sufficient quantity to form shoots of pay ore in certain sections.

The work which we have recently conducted does not seem to me to have either strengthened or weakened this theory; but on the assumption that it is correct I think that it may be significant that we have found that sulphides of lead and zinc exist in the same horizon as the oxides of copper. From this fact one may perhaps deduce that the copper minerals were introduced during one of the two earlier periods of mineralization and thus they

have been subjected to oxidizing influences for a much longer period of time than the lead and zinc. From a commercial standpoint the occurrence of all of these ores appears to have no importance and I anticipate that values of future production will continue to be limited to the silver content of the Reymert ore.

CONCLUSION

We have demonstrated that in this section of the mine there is no appreciable change in the character of the mineralization down to the water level and the only incentive to exploration at greater depth lies in the probability that such shoots of silver ore as have been found above that level will continue downwards with similar size and value, but present conditions entail extremely high working costs and in order that the ore should be mined with profit the grade must be substantially higher than was the case two years or even one year ago.

I can see no good reason for carrying the development work to any greater depth until after the conditions existing on the 420' level have been fully developed and it would be my suggestion to first continue drifting on the vein which was found near the footwall of the fissure for, altho the assays in the 20' of drift did not average better than 8 or 9 oz. in silver, I think that there is reason to believe that shoots of higher grade material will be found along the strike of this vein both to the north and

to the south, and prove to be the continuance of the shoots found and mined on the upper levels.

Yours very truly,

G M C.

GMC:b

Copies of this report with maps will be sent to Messrs. Tod and Smith.

Alaska Shaft from which it is apparent that even though this shaft was started in the vein it must have been located in a nearly barren spot between the ore-shoots since no pay values were found except from a depth of 75' to 100'.

Apparently the vertical shaft entered the foot-wall and the diorite at nearly the same point.

The character of the vein which was found in the crosscut on the 400' level was decidedly different from that of the vein as noted in the upper workings, but Joraleman was quite positive that this represented the Black Vein and to me it seems probable that the Blue Vein had made a junction at some higher point, although this matter should be further investigated by continuing the crosscut for another 50' to the east."

From the report to Reymert Mining Company
by G. M. Colvocoresses

March 29, 1941

" Location of Exploration

After carefully examining the outcrop over the entire length of the mineralized fissures (6000') and practically all of the underground workings now accessible I believe that the best location for future exploration is found in the Alaska shaft and for the following reasons:

(a) This shaft is already sunk nearly 200' below the present water level, thus saving the heavy expense of carrying on a similar procedure at any other point.

(b) This shaft is sunk in diorite, which is much better sinking ground than the vein or the schist but it appears likely that the dike of diabase will extend only a short distance to the north and south and drifts run in these directions should soon reach the schist and find normal conditions in the vein.

(c) Very good ore is found in the vein both north and south of the shaft on the 200' level and should this continue downward it is reasonable to assume that the ore below the old workings might extend some 900' to the north and for a much longer distance to the south. It is true that the Alaska shaft is far to the north of the center of the pay ore shoots but I can see no reason to believe that any better or deeper ore will be found in the southern section of the vein and a separate program of development at that part of the property can be considered later as conditions may make it advisable to do so.

As to the method of development I am strongly opposed to any drilling at present since local formations seem to make it impossible to point a drill hole with any assurance that it will follow its intended course and there is still less chance that satisfactory cores or even sludge could be obtained from the fissure material or veins. This was the experience of the Magma Company in 1919 and 1920 and it would be folly to repeat their unsatisfactory procedure.

Therefore I am in favor of conducting the development by straight underground mining work and the program which I advocate is as follows: -

(1) Underwater and recondition the Alaska Shaft to the 400' level, replacing such timber as may be required and cleaning out any debris that may be found in the sump and crosscut.

(2) Extend the 57' crosscut for an additional 50' to the east which should make it quite certain that the Blue Vein or any split in the Black Vein has been penetrated.

(3) Drift on the vein both north and south for a distance of at least 400' in each direction and crosscut the full width of the fissure at each end of the drift.

(4) Then carefully review such actual conditions as may then have been found to exist before starting any further work. If satisfactory results have so far been obtained this may reasonably be expected to involve sinking the shaft to an additional depth of 100' to 200' with drifts along the vein in both directions on the lowest level.

Should the extension of the 400' level definitely prove the existence of a large body of diabase pinching out the vein and/or cutting off the values or should any other very discouraging condition be developed, I do not believe that any further exploration would be justified, and it would merely remain to mine out the pay ore in the upper portion of the mine as economically as possible.

But should this proposed work disclose the continued existence of a strong and well mineralized vein, - and that is what I confidently anticipate, - then the further sinking of the shaft and work on a lower level will promptly be in order and can be continued with far more assurance of success than is justified by the conditions which can now be noted on the surface

and down to the 200' level.

The 400' level may penetrate a zone of secondary enrichment, although, I only mention this as a fair probability; but I am very positive that information obtained from this work will permit some very definite conclusions as to the existence and probable location of such a zone or its entire non-existence.

I should also expect to find that the downward extensions of the ore shoots which have been mined to the north and south of the shaft and in the Black Vein and Blue Vein will contain sufficient pay ore to repay from profits the cost of development which would then become a proper charge against future extractions.

If conditions on the 400' level give promise of a further continuance of ore to greater depth I recommend the further sinking of the shaft to a depth of 500' or perhaps 600'. Develppments on the 400' are likely to indicate the proximity of any radical change and if no such change is indicated and good ore seems likely to persist in depth it would probably be as well to sink the full 200', with merely a station on the 500' and to resume drifting on the 600' level."

It will be noted that the program of exploration which I advocated in 1941 is practically the same as I advocate today and very similar to those suggested by Browning and Joralemon except that the latter recommended drifting much further to the south from the Alaska Shaft, while I believe that any deep development on the Africa or Australia Claims should be deferred until we have fully developed the possibilities at the Alaska.

S. h. C.

COPY

EAGLE-PICHER MINING & SMELTING COMPANY

Ruby, Arizona

March 28, 1937

Mr. E. D. Morton:

Attached is a summary of the 58 tests so far made on the Reymert ore in an attempt to make a satisfactory silver extraction at a cost which would not be prohibitive to commercial practice. This is presented at the present time because, particularly considering the other unfinished work in the laboratory, further tests on this ore will take considerable time and will only be productive of throwing light on the minor details of the process.

Increased extractions over those already attained will come slow and will be perhaps only in individual per cents., and estimates of costs can only be lowered from now on by perhaps a nickle at a time.

The last tests made to date, which have been amply checked, show that we can expect not less than an 85% silver extraction at a cost of around $1.50 to $1.75 per ton. Plant installation would probably cost from $800 to $1000 per ton per day capacity, altho this may be considerably reduced.

This process would consist of a reducing roast with natural gas after crushing to 1.4 in., cooling in gas, grinding in water solution either with or without lime, washing by decantation, and 24 hours agitation with cyanide followed by counter current decantation. Precipitation has not yet been investigated, but would probably be either by Merrill-Crowe simultaneous clarification-precipitation or by sodium sulphide. Precipitation might, but probably will not, enter complications. Design of a suitable roasting furnace is probably the major problem left.

Attached also is a brief discussion of the Reymert ore characteristics as regards their effect on treatment, together with factors yet to be determined in the roasting-cyanidation process.

(E. H. Crabtree)

(Jod)

EQUIPMENT PURCHASED BY REYMERT LEASE FROM
W. J. FORBACH

One 400 foot two stage belt driven American compressor
Two 212 cubic foot Chicago Pnuematic Air Compressors
One 6X6 belt driven air compressor for filling air bottle
One 212 foot Chicago Pnuematic air compressor complete
Two receivers (Alaska shaft)
One 35 HP gas operated hoist (Alaska Shaft)
One 20 HP Leroi Hoist
One gasoline operated hoist (A shaft)
Two Ingersoll Rand air tuggers, single drum
Six 800# mine buckets
Three Denver Jackhamers
One Cochise Jackhamer
One Ingersoll Rand Stoper
One Cochise Stoper
One #5 Buffalo Blower
Eight mine cars
Miscellaneous mine steel
All mine rails and all pipe on claims
One 2500 gallon water tank (Alaska)
One 3000 gallon water tank (A shaft)
One 500 gallon storage tank for drinking water
One 650 gallon wagon tank with 5 ton chain block
One 1000 gallon gasoline storage tank with gasoline pump
Twenty mine picks
Twenty shovels
Drill sharpener and blacksmiht tools
Pumping plant and engine (Alaska)
One Chevrolet engine with shafting (Assay Office)
Miscellaneous tools and small equipment

Reymert Lease

EXACT COPY

Notice of Mining Location

LODE CLAIM

TO ALL WHOM IT MAY CONCERN:

This Mining Claim, the name of which is the REYMERT Mining Claim, situate on lands belonging to the United States of America, and in which there are valuable mineral deposits, was entered upon and located for the purpose of exploration and purchase by W. J. Forbach, a citizen of the United States, for and on behalf of the Reymert Mining Company

(Locator must insert either "a citizen of the United States," or "who has declared his intention to become a citizen of the United States.")

the undersigned, on the 11th day of April, 19 41.

The length of this claim is (1500) fifteen hundred feet, and I claim ten (10) feet, in a northerly direction, and fourteen hundred and ninety(1490) feet in a southerly direction, from the center of the discovery shaft, at which this notice is posted, lengthwise of the claim, together with three hundred (300) feet in width of the surface grounds, on each side of the center of said claim. The general course of the lode deposit and premises is from the north to the south

The claim is situated and located in the Pioneer Mining District, in Pinal County, in the State of Arizona, about in a direction from adjoining the west side of the Europe Patented Lode Mining Claim, Patent Survey 2878A

The surface boundaries of the claim are marked upon the ground as follows: Beginning at a wooden stake set in the ground and surrounded by a rock monument.

at a point in a northerly direction ten (10) feet from the discovery shaft (at which this notice is posted), being in the center of the north end line of said claim; thence due east 300 feet to a X the northwest corner of Europe/claim, being the north east corner of said claim; thence south 1500 feet to a X the southwest corner/ of the Europe, being at the south east corner of said claim; thence due west 300 feet to a wooden stake at the center of the south end of said claim; thence west 300 feet to a wooden stake being at the south west corner of said claim; thence north 1500 feet to a stake at the north west corner of said claim; thence east 300 feet to the place of beginning.

Dated and posted on the grounds this 11th day of April, 19 41

WITNESS:

F. M. Colvocoresses

No. 0110—NOTICE OF LOCATION OF LODE CLAIM—3M PRINTED IN ARIZONA

EXCERPTS FROM THE MINING LAWS OF THE STATE OF ARIZONA

Title XXXIV of the Revised Statutes of 1913, Chap. I, and Amendments thereto.

Section 4038. Such location shall be made by erecting at or contiguous to the point of discovery a conspicuous monument of stones not less than three feet in height, or an upright post, securely fixed, projecting at least four feet above the ground, in which monument of stones or on which post there shall be posted a location notice which shall be signed by the name or names of the locator or locators.

Sec. 4030. From the time of the location of a mining claim ,as above specified, the locator shall be allowed ninety days within which to do or cause to be done the following things:

* * * * * * *

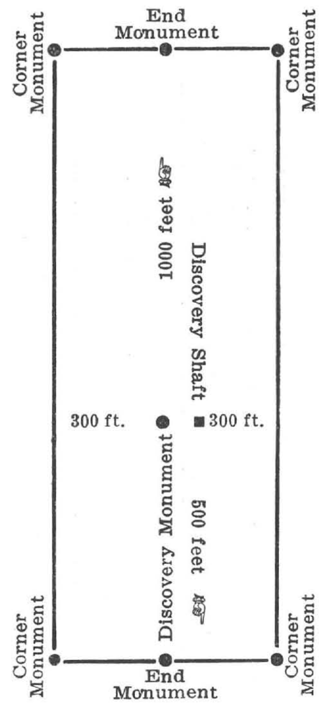
2. To sink a discovery shaft in the claim to a depth of at least eight feet from the lowest part of the rim of the shaft at the surface, and deeper, if necessary, until there is disclosed in said shaft mineral in place.

* * * * * * *

Sec. 4032. Such surface boundaries shall be marked by six substantial posts projecting at least four feet above the surface of the ground, or by substantial stone monuments at least three feet high, to-wit: One at each corner of said claim and one at the center of each end-line thereof.

Provided, however, that when the point of a monument of a mining claim is at the same point, and coincides with a monument of the survey of the United States, the monument of such government survey shall be and is hereby declared to be a mining claim monument of claims heretofore or hereafter located.

Sec. 4034. Location notices may be amended at any time and the monuments changed to correspond with the amended location; Provided, That no change shall be made that will interfere with the rights of others.



This diagram is to give locator a general idea of plan of location under the new law. The Discovery Shaft can be in the center of claim or any distance from either end desired. In the diagram it is placed 500 feet from one end and 1000 feet from the other. Commence description of claim at a center end monument, giving its distance and direction from center of Discovery Shaft; thence bound the claim in either direction. In description be careful to state locality of claim with reference to some natural object, or permanent monument, as will identify the claim.

Notice of Location

LODE CLAIM

....

....

....

....

Dated.............................A. D. 19.......

Filed and recorded at request of

....

....

.............................A. D. 19.......

at.............................M.,

Book.............................

Pages.............................

....

County Recorder.

By.............................

Deputy Recorder.

Printed In Arizona

STATE OF ARIZONA, } ss.
County of.......................

I,............................., County Recorder in and for the County and State aforesaid, do hereby certify that the within instrument was filed for record at.............o'clock ....M., on this............day of......................, 19....., and duly recorded in Book No..............of......................Records of.......................County, Arizona, at pages............

Witness my hand and official seal the day and year first above written.

....

County Recorder.

ASSESSMENT OF PATENTED AND UNPATENTED PRODUCING MINES

Office of the

STATE TAX COMMISSION

OF ARIZONA

Phoenix, Arizona, July 8, 1943

To the Hon. Board of Supervisors, Florence, Arizona

Pinal County,

GENTLEMEN:

In accordance with Paragraph 106, Article 1, Chapter 73, Arizona Code, 1939, we hereby transmit to you the assessed valuation of the following described property. Under the same authority you are directed to enter said assessment on the Assessment and Tax Roll for the current year.

If any of the property described below now appears upon your Assessment and Tax Roll for this year, you are hereby instructed to strike such property from said roll, thereby avoiding a double assessment.

NAME OF OWNER
REYMERT MINING COMPANY
REYMERT LEASE
c/o George M. Colvocoresses, 1102 Luhrs Tower, Phoenix

ASSESSED VALUATION FOR THE YEAR 1943 OF ALL PRODUCTIVE PATENTED AND UNPATENTED MINES AND ALL CLAIMS IN A GROUP CONTIGUOUS THERETO, BELONGING TO SAID OWNER, AND SITUATED IN THE COUNTY OF PINAL

STATE OF ARIZONA, ... $ 10,840

DETAILED DESCRIPTION OF PROPERTY

Name of Claim	Acres	Patent Number	Name of Claim	Acres	Patent Number

(SEE ATTACHED LIST)

STATE TAX COMMISSION

ATTEST:

Chairman

Secretary

PRODUCTIVE PATENTED AND UNPATENTED MINES,
AND ALL CLAIMS IN A GROUP CONTIGUOUS THERETO

(Under Ownership of Respondent Dec. 31,1942)

- - - -

List separately each productive contiguous group, and indicate claims from which production for the year 1942 was taken. Head each group with the name of Mining District and County wherein located.

Name of Claim	Acres	Patent Number
Patented Claims, Pioneer Mining District, Pinal County, Arizona		
Asia America Alaska Australia Africa Europe Great Pacific		384823 Feb. 13 1914
Unpatented Claims, Pioneer Mining District, Pinal County, Arizona		
Reymert Lode Claim		83473
Mill Sites Unpatented	do not exceed	
America	5 acres	85113
Asia	" "	85111
Australia	" "	85112
Alaska	" "	85114

3 7

ASSESSMENT OF PATENTED AND UNPATENTED PRODUCING MINES

Office of the

STATE TAX COMMISSION

OF ARIZONA

Phoenix, Arizona, July 10, 1944

To the Hon. Board of Supervisors, Florence, Arizona

Pinal County,

GENTLEMEN:

In accordance with Paragraph 106, Article 1, Chapter 73, Arizona Code, 1939, we hereby transmit to you the assessed valuation of the following described property. Under the same authority you are directed to enter said assessment on the Assessment and Tax Roll for the current year.

If any of the property described below now appears upon your Assessment and Tax Roll for this year, you are hereby instructed to strike such property from said roll, thereby avoiding a double assessment.

NAME OF OWNER
REYMERT MINING COMPANY
Reymert Lease
c/o George M. Colvocoresses, 1102 Luhrs Tower, Phoenix

ASSESSED VALUATION FOR THE YEAR 1944 OF ALL PRODUCTIVE PATENTED AND UNPATENTED MINES AND ALL CLAIMS IN A GROUP CONTIGUOUS THERTO, BELONGING TO SAID OWNER AND SITUATED IN THE COUNTY OF PINAL

STATE OF ARIZONA, ... $ 10,840

DETAILED DESCRIPTION OF PROPERTY

Name of Claim	Acres	Patent Number	Name of Claim	Acres	Patent Number

REYMERT MINE CLAIMS

STATE TAX COMMISSION

Chairman

ATTEST:

Secretary

Looks up Statutes & patents Mining Claims for

~~lieu of personal property taxes~~

Lien to be there on personal property

X Cut assess these to ~~still~~

Unpatented real prop

~~6227~~

62210

Seita'

Lien still there

which it was stated that the shaft walls were very solid and by setting in a few stulls, clearing out the bad air and continuing the ladders it may be feasible to reach and examine the 220' level at a comparatively small expense.

An investigation of such conditions as actually exist on this 220' level and around the collar of the winze should then enable one to determine the advisability of cleaning this out and the chance that at this point pay ore might be mined and sorted for shipment.

Keep for Record.

TO ALL WHOM IT MAY CONCERN:-

Know ye that REYMERT MINING COMPANY hereby claims the America Millsite of five acres as staked on this ground 330 by 660 feet, and referred to the America Lode Mining Claim, patent Survey 2878A, owned by the said Reymert Mining Company and located in the same district.

Date of Location - May 10th, 1941.

And that the undersigned REYMERT MINING COMPANY, an Arizona Corporation, does hereby declare and publish as a legal notice to all the world that it has a valid right to the occupation, possession and enjoyment of all and singular that tract or parcel of land not exceeding five acres situate lying and being in the Pioneer Mining District, County of Pinal, State of Arizona, bounded and described as follows, to-wit:

The west half of the southeast quarter of the northwest quarter of the northeast quarter of Section Twenty-Two, Township Two South, Range Eleven East, Gila and Salt River Base and Meridian.

Together with all and singular the herediments, improvements and appurtenances thereunto belonging or in anywise appertaining.

Dated this 10th day of May, 1941.

REYMERT MINING COMPANY

By_____

TO ALL WHOM IT MAY CONCERN:-

Know ye that REYMERT MINING COMPANY hereby claims the Asia Millsite of five acres as staked on this ground 330 by 660 feet, and referred to the Asia Lode Mining Claim, patent Survey 2878A, owned by the said Reymert Mining Company and located in the same district.

Date of Location - May 10th, 1941.

And that the undersigned REYMERT MINING COMPANY, an Arizona Corporation, does hereby declare and publish as a legal notice to all the world that it has a valid right to the occupation, possession and enjoyment of all and singular that tract or parcel of land not exceeding five acres situate lying and being in the Pioneer Mining District, County of Pinal, State of Arizona, bounded and described as follows, to-wit:

The west half of the northeast quarter of the southwest quarter of the northeast quarter of Section Twenty-Two, Township Two South, Range Eleven East, Gila and Salt River Base and Meridian.

Together with all and singular the herediments, improvements and appurtenances thereunto belonging or in anywise appertaining.

Dated this 10th day of May 1941.

REYMERT MINING COMPANY

By_____

TO ALL WHOM IT MAY CONCERN:-

Know ye that REYMERT MINING COMPANY hereby claims the Alaska Millsite of five acres as staked on this ground 330 by 660 feet, and referred to the Alaska Lode Mining Claim, patent Survey 2878A, owned by the said Reymert Mining Company and located in the same district.

Date of Location May 10th, 1941.

And that the undersigned REYMERT MINING COMPANY, an Arizona Corporation, does hereby declare and publish as a legal notice to all the world that it has a valid right to the occupation, possession and enjoyment of all and singular that tract or parcel of land not exceeding five acres situate lying and being in the Pioneer Mining District, County of Pinal, State of Arizona, bounded and described as follows, to-wit:

The east half of the southeast quarter of the northwest quarter of the northeast quarter of Section Twenty-Two, Township Two South, Range Eleven East, Gila and Salt River Base and Meridian.

Together with all and singular the herediments, improvements and appurtenances thereunto belonging or in anywise appertaining.

Dated this 10th day of May 1941.

REYMERT MINING COMPANY

By_____

TO ALL WHOM IT MAY CONCERN;-

Know ye that REYMERT MINING COMPANY hereby claims the Australia Millsite of five acres as staked on this ground 330 by 660 feet, and referred to the Australia Lode Mining Claim, patent Survey 2878A, owned by the said Reymert Mining Company and located in the same district.

Date of Location - May 10th, 1941.

And that the undersigned REYMERT MINING COMPANY, an Arizona Corporation, does hereby declare and publish as a legal notice to all the world that it has a valid right to the occupation, possession and enjoyment of all and singular that tract or parcel of land not exceeding five acres situate lying and being in the Pioneer Mining District, County of Pinal, State of Arizona, bounded and described as follows, to-wit:

The east half of the northeast quarter of the southwest quarter of the northeast quarter of Section Twenty-Two, Township Two South, Range Eleven East, Gila and Salt River Base and Meridian.

Together with all and singular the herediments, improvements, and appurtenances thereunto belonging or in anywise appertaining.

Dated this 10th day of May 1941.

REYMERT MINING COMPANY

By_____

SURRENDER AND CANCELLATION OF LEASE

Reymert Mining Company
902 Wells Building
Milwaukee 2, Wisconsin

Gentlemen:

Referring to that certain mining lease executed as of September first 1944, between the Reymert Mining Company, Lessor, and William J. Forbach, Lessee, and recorded in Book 5 of Leases at Page 46, Records of Pinal County and also referring to that certain assignment of the above cited lease from William J. Forbach to the Reymert Lease, a co-partnership which is recorded in Book 5 of Mortgages and Leases Assigned at Page 157, Records of Pinal County and referring particularly to the sub-paragraph (f) of said lease concerning the termination thereof but waiving by mutual consent the provision for 30 day notice of intention.

YOU ARE HEREBY ADVISED AND NOTIFIED that pursuant to the said provision of the said lease and option the undersigned Reymert Lease, a co-partnership, being the lessee therein named, desires to quit and surrender the said mining property and all of its rights therein or under said mining lease and option and this is intended to be and is the written notice to you of its desire and intention to quit and surrender the said mining property and to terminate forthwith the said lease and option and all rights under said contract as of the 30th of June 1946.

SIGNED - Reymert Lease, A Co-partnership

BY _____

_____

_____

_____

TO ALL WHOM IT MAY CONCERN:-

Know ye that REYMERT MINING COMPANY hereby claims the AMERICA Alaska Millsite of five acres as staked on this ground 330 by 660 feet, and referred to the AMERICA Alaska Lode Mining Claim, patent Survey 2878A, owned by the said Reymert Mining Company and located in the same district.

Date of Location MAY 10 1941.

And that the undersigned REYMERT MINING COMPANY, an Arizona Corporation, does hereby declare and publish as a legal notice to all the world that it has a valid right to the occupation, possession and enjoyment of all and singular that tract or parcel of land not exceeding five acres situate lying and being in the Pioneer Mining District, County of Pinal, State of Arizona, bounded and described as follows, to-wit:

The XX half of the S E quarter of the N W quarter of the N E quarter of Section Twenty-Two, Township Two South, Range Eleven East, Gila and Salt River Base and Meridian.

Together with all and singular the herediments, improvements and appurtenances thereunto belonging or in anywise appertaining.

Dated this _____ day of _____ 1941.

REYMERT MINING COMPANY

By _____

BILL OF SALE

KNOW ALL MEN BY THESE PRESENTS:

That I, WILLIAM J. FORBACH, for and in consideration of the sum of Ten and no/100 Dollars ($10.00) and other good and valuable considerations to him in hand paid by F. E. CARROW, the receipt whereof is hereby acknowledged, has bargained, sold and assigned and by these presents does bargain, sell and assign to the said F. E. Carrow, all of the right, title, interest, claim and demand of the said William J. Forbach in and to that certain lease known as REYMERT LEASE, also all right, title, interest, claim possession and demand of the said William J. Forbach to anything and everything arising under and because of said lease upon the Reymert Mine, executed by the Reymert Mining Company to said William J. Forbach as of September 1st, 1944.

To have and to hold the said described property unto the said F. E. Carrow, his personal representatives and assigns forever.

WITNESS the hand of the said William J. Forbach this 17th day of December, 1945.

/s/ William J. Forbach

STATE OF ARIZONA)
) SS.
COUNTY OF MARICOPA)

This instrument was acknowledged before me this 18th day of December, 1945, by William J. Forbach.

/s/ Dorothy C. Haire
Notary Public

My commission expires
March 23, 1949.

Original recorded in Pinal County, Arizona, in Book #5 of Mortgages and Leases assigned, page 234, on April 3, 1946.

Date of location May 10, 1941

Description of Millsites:

"America"

The west half of the southeast quarter of the northwest quarter of the northeast quarter of Section Twenty-Two etc.

"Alaska"

The east half of the southeast quarterof the northwest quarter of the northeast quarter of Section Twenty-Two etc.

" Asia"

The west half of the northeast quarter of the southwest quarter of the northeast quarter of Section ~~Wes~~ Twenty-Two etc.

"Australia"

The east half of the northeast quarter of the southwest quarter of the northeast quarter of Section Twenty-Two etc.

QUIT CLAIM DEED

This Indenture made as of the 29th day of June 1946, between the Reymert Lease, a co-partnership, whose members were F. A. Bennett, Norman De Vaux, William J. Forbach and Frank E. Carrow, First Parties, and the Reymert Mining Company, a corporation organized and existing by virtue of the laws of Arizona, Second Party.

WITNESSETH:

That the said first parties for and in consideration of the sum of One Dollar ($1.00) to them in hand paid by the said second party, the receipt whereof is hereby confessed and acknowledged, have remised, released and quit-claimed, and by these presents do convey, remise, release and quit-claim unto the said second party and to its successors and assigns forever, all the right, title, interest, claim and demand which the said first parties have in and to the following described patented lode mining claims, situate in the Pioneer Mining District, Pinal County, Arizona, to wit:

AMERICA	Lode,	recorded	in	Book	3	of	Mines	Page 513;
ALASKA	"	"	"	"	11	"	"	" 278;
AFRICA	"	"	"	"	3	"	"	" 515;
ASIA	"	"	"	"	1	"	Amended locations of Mines, Page 372;	
AUSTRALIA	"	"	"	"	3	"	Mines	Page 514;
EUROPE	"	"	"	"	3	"	"	" 515;
GREAT PACIFIC	"	"	"	"	9	"	"	" 271;

in the office of the County Recorder, Pinal County, Arizona, and also an unpatented lode mining claim entered upon and located on April 11, 1941, known as the "Reymert", recorded in the office of the County Recorder, Pinal County, Arizona, in Book 52 of Mines, at Page 56; also four (4) mill sites located May 10, 1941, known as "Alaska Mill Site", "Asia Mill Site", "America Mill Site" and "Australia Mill Site", which unpatented lode mining claim and mill sites are in the same mining district as the patented mines aforesaid.

TO HAVE AND TO HOLD THE same, together with all and singular the appurtenances and privileges thereunto belonging, or in any wise appertaining, and all the estate, right, title, interest and claim whatsoever, of the undersigned lessee, either in law or

equity, in possession or expectancy to the proper use, benefit and behoof of the said second party, its successors and assigns forever.

IN WITNESS WHEREOF, the first parties have executed this Quit-Claim Deed as of the day and year hereinbefore written.

_____

_____

_____

_____

BILL OF SALE

KNOW ALL MEN BY THESE PRESENTS:

That I, WILLIAM J. FORBACH, for and in consideration of the sum of Ten and no/100 Dollars ($10.00) and other good and valuable considerations to him in hand paid by F. E. CARROW, the receipt whereof is hereby acknowledged, has bargained, sold and assigned and by these presents does bargain, sell and assign to the said F. E. Carrow, all of the right, title, interest, claim and demand of the said William J. Forbach in and to that certain lease known as REYMERT LEASE, also all right, title, interest, claim possession and demand of the said William J. Forbach to anything and everything arising under and because of said lease upon the Reymert Mine, executed by the Reymert Mining Company to said William J. Forbach as of September 1st, 1944.

To have and to hold the said described property unto the said F. E. Carrow, his personal representatives and assigns forever.

WITNESS the hand of the said William J. Forbach this 17th day of December, 1945.

/s/ William J. Forbach

STATE OF ARIZONA)
) SS.
COUNTY OF MARICOPA)

This instrument was acknowledged before me this 18th day of December, 1945, by William J. Forbach.

/s/ Dorothy C. Haire
Notary Public

My commission expires
March 23, 1949.

Original recorded in Pinal County, Arizona, in Book #5 of Mortgages and Leases assigned, page 234, on April 3, 1946.

CERTIFICATE OF CO-PARTNERSHIP

KNOW ALL MEN BY THESE PRESENTS:

I.

That we, the undersigned, have associated ourselves for the purpose of forming, and have formed, a co-partnership, the name of which is

REYMERT LEASE

with its principal place of business at the mine office of the Lease near Superior, in Pinal County, State of Arizona.

II.

The names, residences and post office addresses of all the members of the co-partnership are:

Name	Residence	Post Office Address
F. A. Bennett	1925 South 4th Ave., Tucson, Arizona	Box 93, Tucson, Arizona
Norman de Vaux	Dominion Hotel, Globe, Arizona	Dominion Hotel, Globe, Arizona
William J. Forbach	Superior, Arizona	Superior, Arizona
Frank E. Carrow	No. 10, Martin Hill Globe, Arizona	Box 1433, Globe, Arizona.

IN WITNESS WHEREOF, we have hereunto affixed our signatures this _____ day of January, 1945.

_____

_____

_____

_____

ASSIGNMENT OF LEASE

KNOW ALL MEN BY THESE PRESENTS:

That I, WILLIAM J. FORBACH, of Superior, Arizona, in consideration of One Dollar ($1.00) and other valuable consideration, to me paid by REYMERT LEASE, a co-partnership, the members of which are F. A. Bennett, Norman de Vaux, William J. Forbach, and Frank E. Carrow, do assign unto said REYMERT LEASE, a co-partnership, that certain lease dated September 1, 1944, made by Reymert Mining Company, a corporation organized under the laws of the State of Arizona, to the undersigned, William J. Forbach.

TO HAVE AND TO HOLD the same unto said REYMERT LEASE, a co-partnership, from the date hereof for and during all the residue and remainder of the term mentioned in said lease; subject, nevertheless, to the rents, covenants, conditions and provisions therein mentioned;

And I do hereby covenant with said REYMERT LEASE, its successors and assigns, that the covenants and agreements in said lease contained on the part of the undersigned as lessee to be observed and performed have been, up to the date hereof, duly observed and performed, and that the assigned premises are now free and clear of all charges and encumbrances, grants, leases, taxes and assessments whatsoever, made or suffered by lessee.

This assignment is subject to the written consent of said lessor, Reymert Mining Company.

IN WITNESS WHEREOF, I have hereunto set my hand this 21st day of January, 1945.

/s/ William J. Forbach

STATE OF ARIZONA,)
) SS.
County of Gila.)

On this the 21 day of January, 1945, before me, ____, the undersigned officer, personally appeared WILLIAM J. FORBACH known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purpose therein contained.

In witness whereof, I hereunto set my hand and official seal.

/s/ George W. Clay
Notary Public
My commission expires
September 16, 1946

In consideration of the above assignment and the written consent of the lessor, Reymert Mining Company, thereto, the undersigned hereby assumes and agrees to make all payments and to perform and keep all promises, covenants, conditions and agreements of said lease of September 1, 1944, between Reymert Mining Company, a corporation, lessor, and William J. Forbach, lessee, by lessee to be made, kept and performed; and it is agreed that said lease of September 1, 1944, is hereby incorporated by reference thereto in this acceptance, and all of the terms thereof shall be read and understood herein in the same manner as they are expressed in said lease as now written or as hereafter amended between the parties.

It is likewise further agreed by assignee that no further assignment of said lease or sub-letting of the premises described in said lease, or any part thereof, will be made without the

written consent of lessor first had and obtained.

IN WITNESS WHEREOF, the undersigned assignee has executed these presents as of the 21 day of January, 1945.

REYMERT LEASE, a co-partnership

By F. A. Bennett

By Norman de Vaux

By William J. Forbach

By Frank E. Carrow

Members of co-partnership.

STATE OF ARIZONA,)
) SS.
County of Pinal)

On this the 21 day of January, 1945, before me, George W. Clay, the undersigned officer, personally appeared F. A. BENNETT, NORMAN DE VAUX, WILLIAM J. FORBACH and FRANK E. CARROW, who acknowledged themselves to be the members of REYMERT LEASE, a co-partnership, and acknowledged that they, as such members, executed the foregoing instrument for the purposes therein contained, by signing the name of the co-partnership by themselves as members.

In witness whereof, I hereunto set my hand and official seal.

/s/ George W. Clay
Notary Public

My commission expires:

September 16, 1946

CONSENT TO ASSIGNMENT OF LEASE

Reymert Mining Company, a corporation organized under the laws of the state of Arizona, hereby consents to the assignment of that certain lease dated September 1, 1944, made by Reymert Mining Company, lessor, to William J. Forbach, lessee, and recorded October 18, 1944, in Book 5 of Leases, page 46, in the office of the Recorder for the County of Pinal, State of Arizona, by the foregoing assignment dated January 21, 1945, by William J. Forbach to Reymert Lease, a co-partnership, subject to the following conditions:

(1) This consent shall not be construed as a consent to the assignment of said lease by said co-partnership without the consent in writing of said Reymert Mining Company.

(2) The failure of Reymert Mining Company to enforce any provision of said lease against said assignor shall not be construed as a waiver of such provision of the lease; it being understood that said co-partnership shall perform the covenants and conditions of said lease.

(3) Said co-partnership shall incur no liability for labor or materials until a corrected notice of non-liability of Reymert Mining Company has been posted. Said notices may be executed and posted on behalf of Reymert Mining Company by George M. Colvocoresses, its duly authorized agent.

In presence of:

/s/ J. F. Fisher

/s/ Elmira M. Nilsson

REYMERT MINING COMPANY,

By /s/ Douglass Van Dyke

Vice-President and Secretary

/s/ W. D. Van Dyke, Jr.

Treasurer

ARTICLES OF CO-PARTNERSHIP

THIS AGREEMENT, made and entered into at Globe, Gila County, State of Arizona, as of the 22nd day of January, 1945, by and between F. A. BENNETT, 1925 South 4th Avenue, Tucson, Arizona; NORMAN DE VAUX, Dominion Hotel, Globe, Arizona; WILLIAM J. FORBACH, Superior, Arizona, and FRANK E. CARROW, No. 10, Martin Hill, Globe, Arizona.

W I T N E S S E T H :

THAT WHEREAS, the parties hereto desire to enter into a co-partnership agreement for the purpose of conducting mining operations under a mining lease from Reymert Mining Company, a corporation,

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements hereinafter contained, said parties have agreed and by these presents do agree as follows:

FIRM NAME:

The parties hereto have adopted and do hereby adopt the trade and business name of REYMERT LEASE, under which name they shall carry on and conduct the business of the partnership.

PRINCIPAL PLACE OF BUSINESS:

The principal office of the co-partnership shall be at the mine office near Superior, Pinal County, State of Arizona.

PRINCIPAL BUSINESS:

The principal business of the co-partnership shall be the mining, development, processing and sale of ores and mineral products from the property of Reymert Mining Company, an Arizona corporation, pursuant to the terms of a mining lease dated September 1, 1944, by and between said Reymert Mining Company

and William J. Forbach, or such other lease, if any, as may be acquired by this co-partnership from said Reymert Mining Company in lieu thereof, and all amendments thereto.

CAPITAL:

The capital of the co-partnership shall be contributed by the parties hereto under the terms and conditions hereinafter set out.

For a valuable consideration paid by the remaining partners, the said William J. Forbach shall assign to the co-partnership the said lease of September 1, 1944, hereinabove referred to, or secure for and in the name of the co-partnership, a new mining lease on the property described in said lease of September 1, 1944, which shall be held and owned by the members of the co-partnership in the following proportions:

F.A. Bennett, one-third;
Norman de Vaux, one-third;
William J. Forbach, one-sixth;
Frank E. Carrow, one-sixth.

Simultaneously with the delivery of the assignment or grant of said lease to the co-partnership, the said F. A. Bennett and the said Norman de Vaux shall each contribute to the credit of the co-partnership the sum of $2,500.00 as an advancement, which sums shall be repaid to them out of 50% of the first distributions of profits of the co-partnership, or in case of a liquidation of the assets of the co-partnership, out of such assets. Any part of such advancements remaining unpaid after one year from the date thereof shall draw interest at the rate of 6% per annum.

CONDUCT OF THE BUSINESS:

Mr. Norman de Vaux shall have charge of the office, shall keep the books of the partnership, shall have exclusive charge

of all the financial details of the partnership, including the receiving and collecting of all moneys due the partnership and the payment of all moneys due from said partnership to others. The books of the partnership, together with all notes, bills, letters and others rights belonging to the partnership shall be kept where the business of the partnership shall be carried on, and shall be at all times open to the examination of each of the partners. Said books shall be kept in the exclusive custody of Mr. De Vaux, and all partnership moneys received from any and all sources shall be deposited by Mr. de Vaux in the name of the partnership in the Valley National Bank at Superior, Arizona, and shall be withdrawn therefrom only by check drawn and signed by Mr. de Vaux or by Mr. F. A. Bennett.

Neither the business nor the capital assets of the partnership shall be disposed of except with the consent in writing of the partners owning and holding a 75% interest in the partnership.

Mr. William J. Forbach shall act as superintendent in charge of all mining operations, devoting all or such portion of his time to the management and supervision of such business as may be necessary for that purpose. He shall draw a salary of $250.00 per month unless or until otherwise agreed upon by the partners.

Except as hereinabove provided, no salaries shall be paid to any of the partners unless or until the operations of the lease make the payment of salaries feasible, in which case salaries may be fixed and agreed upon by the several partners.

DIVISION OF PROFITS AND LOSSES:

Expenses, taxes, salaries, wages, losses and damages which may be incurred in carrying on the business, and the interest due on the capital advancements hereinabove provided for, shall be

paid out of the receipts and earnings of said business before any apportionment of profits. If and when profits are apportioned or distributed, they shall be distributed as follows:

To F. A. Bennett, one-third;
To Norman de Vaux, one-third;
To William J. Forbach, one-sixth;
To Frank E. Carrow, one-sixth.

All losses incurred in the transaction of the business shall be borne by the several partners in the above proportions.

ASSIGNMENTS OF INTERESTS:

Neither of the partners shall, without the previous consent in writing of the others, assign or hypothecate, or attempt to assign or hypothecate, his share or interest in the partnership.

TERM OF CO-PARTNERSHIP:

The term of the partnership shall be co-extensive with the term of said mining lease of September 1, 1944, from said Reymert Mining Company; namely, ten years from said date, unless said lease is sooner terminated, or co-extensive with the term of such other lease, if any, that the partnership may receive from said Reymert Mining Company in lieu of said lease of September 1, 1944; provided, however,

1. That if any of the partners shall be desirous of terminating the partnership at any time before the expiration of the term hereinabove fixed, he shall be at liberty so to do on giving six calendar months' previous notice in writing of such desire to the others. The continuing partners shall have the privilege of taking the whole of the partnership business at the rate at which the same shall be valued and appraised, on paying their share of such valuation to the retiring partner.

2. That in case of the death of either of the partners before the expiration of the term of the partnership, the surviving

partners will settle and adjust all accounts, matters and things relating to the partnership with the executors or administrators of such deceased partner; but the surviving partners shall have the option of taking the whole of the partnership property at a valuation, the amount of which shall be determined by the award of two arbitrators or their umpire in the usual manner, and the costs of making such valuation shall be paid by the surviving partners and executors or administrators of the deceased partner according to their respective proportions in the partnership business.

PROCEEDINGS ON DISSOLUTION:

Upon the dissolution of the partnership, a full and general account of the assets, liabilities and transactions of the co-partnership shall be taken, and the assets and property thereof shall, as soon as practicable, be sold; the debts due the co-partnership collected, and the proceeds applied first to the discharge of the liabilities of the co-partnership and the expense of liquidating the same; next, in payment of the balance of the advances hereinabove referred to made by F. A. Bennett and Norman de Vaux, and any other advances made by any of the partners. The surplus, if any, shall be divided between the parties in proportion to their respective interests in the partnership as hereinabove set forth.

DISPUTES AND ARBITRATIONS:

It is agreed that all disputes and differences, if any, which shall arise between the partners, shall be settled and determined in accordance with the agreement of three of the partners. In the event that three of said partners shall not agree as to any dispute or difference, such dispute and difference shall be

referred to and decided by three competent arbitrators, one to be chosed by each of the factions involved, where only two factions exist, and the third to be chosen by the two arbitrators so selected. In the event more than two factions are involved in any such disputes and differences, an additional arbitrator may be selected by each additional faction or factions. The decision of the arbitrators shall in all respects be final and conclusive on the parties, and shall be given in writing within ten days next after such submission to arbitration.

IN WITNESS WHEREOF, the parties hereto have executed these presents as of the day and year first hereinabove written.

_____

_____

_____

_____

STATE OF ARIZONA,)
)SS.
)
County of Gila.)

On this the _____ day of January, 1945, before me, _____ the undersigned officer, personally appeared F.A.BENNETT, NORMAN DE VAUX, WILLIAM J. FORBACH and FRANK E. CARROW, known to me (or satisfactorily proven) to be the persons whose names are subscribed to the within instrument, and acknowledged that they executed the same for the purpose therein contained.

In witness whereof, I hereunto set by hand and official seal.

_____
Notary Public

My Commission expires:

Reymert Legal file

Patented Claim as per Lease

REYMERT PAPERS RECORDED - PINAL COUNTY
June 2nd, 1941

MILLSITE CLAIMS:

Alaska - in Book No. 1 of Mill-Site and Water Rights
Page 399. #85114

America - in Book No. 1 of Mill-Site and Water Rights
Page 399 #85113

Australia in Book No. 1 of Mill-Site and Water Rights
Page 398 #85112

Asia - in Book No. 1 of Mill-Site and Water Rights
Page 398 #85111

AGREEMENT BETWEEN REYMERT MINING CO. AND JAMES AND MABEL RAE TOD:

Book #5 of Contracts and Agreements, page 598, #85108

ASSIGNMENT OF MINING LEASE AGREEMENT:

Book No. 4 of Mortgage and Leases Assigned, Page 584, #85109

NOTICE OF NON-LIABILITY:

Book No. 22 of Miscellaneous, Page 551, #85110

Quit Claim Deed, Furlach & Carrow

ARIZONA
CORPORATION COMMISSION

Statutes of Arizona

Relating to

Investment Companies

and

Dealers in Securities

CHAPTER 38
REVISED STATUTES OF ARIZONA
CIVIL CODE
1928

ARIZONA
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CHAPTER 38
REVISED STATUTES OF ARIZONA
CIVIL CODE
1928

3

lars, one twentieth of one per cent, fifty thousand dollars to one hundred thousand dollars, one twenty-fifth of one per cent, one hundred thousand to five hundred thousand dollars, one fiftieth of one per cent, all in excess of five hundred thousand dollars, one one-hundredth of one per cent; if such securities have no par value the fee shall be computed on the price at which said securities are to be sold or the value as alleged in the application and found by the commission; for issuing a license to dealer's agent, two dollars and fifty cents. (§ 12, id., rev.)

§ 1903. Violations defined; penalty. Any person who knowingly or wilfully subscribes to, makes, or causes to be made, or publishes or exhibits any false statements or representations or any false papers or any false entry in any book with the intention of deceiving the commission or officer, examiner or employee of the commission, for the purpose of obtaining favorable action on any of the matters herein referred to, or to any person for the purpose of influencing such person to purchase, either for himself or for others, the securities of any issuer, is guilty of a felony, and shall be fined not less than five hundred dollars nor more than one thousand dollars, or be imprisoned for not less than one nor more than ten years. Any person who violates any provision of this article, for which a penalty is not otherwise provided, shall be guilty of a misdemeanor. (§ § 14-15, id., rev.)

Investment companies and dealers in securities.

Article 1. Investment companies.

§ 1887. Defined. Every corporation, copartnership and association (other than state and national banks, and corporations not organized for pecuniary profit) whether incorporated or unincorporated, which shall sell or negotiate for the sale of any stock, bonds, or other securities of any kind other than bonds of the United States, of the state of Arizona, or of some county, city, town or school district therein, to any person in the state of Arizona, other than to those who associated themselves together to form such company and other than those specifically exempted herein, shall for the purpose of this article, be known as a domestic investment company, and if organized outside of this state, shall be known as a foreign investment company. (§ 1, Ch. 69, L. '12; 2259, R. S. '13, rev.)

§ 1888. Papers to be filed with corporation commission before beginning business. Before offering for sale, or attempting to sell, any such stocks, bonds, or other securities, or transacting business of any kind whatever in this state, excepting that of preparing the instruments hereinafter required, such investment company shall file in the office of the corporation commission a verified statement showing in detail the plan upon which it proposes to transact business; a copy of all contracts, bonds, or other instruments which it proposes to make with, or to sell to, its subscribers; an itemized account of its financial condition, the amount of the property owned by it, and its liabilities and such other information, papers and documents touching its affairs as the commission may require. If such investment company be unincorporated, it shall also file with the commission a copy of its articles of association and such other papers pertaining to its organization as the commission may require. (§ 2, Ch. 69, L. '12; 2260, R. S. '13, rev.)

§ 1889. Consent of foreign company to service on agent. Every foreign investment company shall also file its written consent, irrevocable, in the office of the corporation com-

mission, that actions may be commenced against it, in the proper court of any county of this state in which the cause of action may arise or in which the plaintiff may reside, by service of process upon an agent, attorney, or other person, designated by such company, and residing within this state, and agreeing that such service of process on the person so designated shall be valid and binding upon the company. The consent shall be accompanied by a certified copy of the resolution of the board of directors or governing body of the company, authorizing the officer to execute the same. (§ 4, Ch. 69, L. '12; 2262, R. S. '13, rev.)

§ 1890. Examination by corporation commission; fees. The commission shall examine the statements and documents so filed, and make an examination of such investment company at the expense of such company. If it finds that said company is solvent, that its articles, its constitution and by-laws, its proposed plan of business and proposed contract contains and provides for a fair, just and equitable plan for the transaction of business, and promises a fair return on stocks, bonds, or other securities by it offered for sale, the commission shall issue to such company a certificate reciting that such company has complied with the provisions of this article; that detailed information in regard to the company and its securities is on file in the office of the commission for public inspection and information; that such investment company is permitted to do business in this state, and in bold type, that the commission in no wise recommends the stock, bonds or other securities to be offered for sale by such investment company. If the commission finds that any of the provisions are unfair, unjust, or oppressive to any class of contributors, or, that the company is not solvent and does not intend to do a fair and honest business, or does not assure a fair return on the stocks, bonds or other securities to be offered for sale, then the commission shall notify such investment company in writing of its findings. Such company may make alterations or amendments, and, if satisfied the commission may then issue such certificate.

The commission shall receive the following fees: For filing an application for a permit to

The commission shall grant said permit if it finds from said application and further investigation, that the issuer is solvent, that his organization and methods and plans of doing business are fair, just and equitable to investors in his securities and that said securities, or the sale or methods of sale thereof, will not work a fraud upon the laws or the investors in said securities. The commission may make a detailed examination of the affairs of the issuer at the expense of the dealer or issuer, including a fee of ten dollars per day for the time engaged in such examination and the expenses of the examiner. The permit may be revoked by the commission at any time for cause sufficient to justify the refusal thereof in the first instance, or for failure on the part of the dealer to comply with the laws or any regulation, order or requirement of the commission. (§ § 3-4-5-6, id., rev.)

§ 1900. License and permit to sell. The dealer may appoint one or more agents, but no agent shall sell or offer for sale any securities until a license has been issued by the commission to such agent so to act. Said license may be revoked at any time for cause by the commission. No dealer or agent of any dealer shall sell or offer for sale any securities unless such dealer has a permit therefor, in such form and containing such conditions as the commission designates. The permit and agent's license shall be for a term of one year from the date thereof and cannot thereafter be renewed except on a new application and the payment of the proper fees. (§ § 7-8-9, id., rev.)

§ 1901. Laws governing; powers of commission. Hearings, rehearings, proceedings, orders, decisions and appeals may be had or taken in like manner and shall be governed by the provisions of Article 1 of this chapter. The commission may make and enforce all necessary orders or rules for carrying out the provisions of this article. (§ § 10-11, id., rev.)

§ 1902. Fees of commission. In addition to fees herein provided, the commission shall collect the following fees: For filing the application of any dealer for a permit to sell securities, twenty-five dollars; for issuing a permit to sell securities under fifty thousand dol-

sions of this article, or any investment company, doing any business or offering or attempting to do any business, before complying with the provisions of this article or any agent who does or attempts to do any business for an investment company, which agent is not at the time duly registered and has not fully complied with the provisions of this article, shall be guilty of a crime, and be fined for each offense not less than one hundred dollars, nor more than five hundred dollars, or by imprisonment in the county jail for not more than six months, or by both such fine and imprisonment. (§ 13, Ch. 69, L. '12; 2270, R. S. '13, rev.)

Article 2. Dealers in securities.

§ 1898. Definition of terms. As used in this article the term "securities" includes all stocks, bonds or other securities of any kind other than real property mortgages, and bonds of the United States, or of any state or of any county, city, town, school district, road district, improvement district or irrigation district; the term "issuer" shall mean the person issuing said securities, and the term "dealer" shall mean any person, not an investment company or its agent, who shall sell, offer to sell, or negotiate or advertise for the sale of securities to any person in the state of Arizona, but does not include an owner, not the issuer, who sells securities of which he is the actual owner, when such sale is not made in the course of repeated and successive transactions of a similar nature, nor one who in a trust capacity created by law, lawfully sells any securities embraced within such trusts. (§ § 1-2, Ch. 33, L. '21, rev.)

§ 1899. Application to commission to sell; conditions of permit; examination; revocation. Every dealer, before selling or offering to sell any securities shall make a written application for a permit therefor, to the corporation commission in such form, and containing such information as the commission directs. The application shall not be for the securities or stock of more than one issuer, but more than one permit may be granted to the same dealer.

issue securities, ten dollars, plus one twentieth of one per cent of the value of the securities sought to be issued up to and including fifty thousand dollars, plus one twenty-fifth of one per cent of such amount in excess of fifty thousand dollars and not exceeding one hundred thousand dollars, plus one fiftieth of one per cent of such amount in excess of one hundred thousand dollars and not exceeding five hundred thousand dollars, plus one one-hundredth of one per cent of such amount in excess of five hundred thousand dollars; the value of such securities shall be deemed to be their face value, if they have face value, otherwise, the price at which the company proposes to sell or issue the same, or the value, as alleged in the application of the consideration (if other than money) to be received in exchange therefor; for filing an application for a permit or other authority to make dividends, create debts, or to divide, withdraw, increase, reduce or pay to the stockholders, or any of them, the capital stock, or any part thereof, the same amount that would otherwise be chargeable or collectible if such application were for a permit to issue securities, the value to be determined by the amount of dividends made, debts created, or capital stock divided, withdrawn, increased, reduced or paid. (§ 5, Ch. 69, L. '12; 2263, R. S. '13, am., Ch. 112, L. '19, rev.)

§ 1891. Amendments of charter and change of business. No amendment of the articles, constitution or by-laws, of any such company shall become operative until a copy has been filed with and approved by the commission; nor shall any such company transact business on any other plan than that set forth in the statements required to be filed, until a written statement showing in full detail the proposed new plan of transacting business and a copy of the proposed new contract have been filed with the commission, in like manner as provided in regard to the original plan of business and proposed contract, and the consent of the commission obtained. (§ 6, Ch. 69, L. '12; 2264, R. S. '13, rev.)

§ 1892. Registration of agents; annual financial report; penalty for failure to file. An investment company may appoint agents, but

such agent shall not do any business as such until he first registers with the commission as agent and pays a registration fee of one dollar. Registration shall entitle him to act until the first day of July following, unless said authority be revoked by the commission for cause. Every investment company, domestic or foreign, shall file at the close of business on the first day of July of each year, and at such other times as required by the commission, a statement verified by oath, setting forth in form prescribed by the commission, its financial condition and the amount of its assets and liabilities, and furnishing other information concerning its affairs as the commission may require. Failure to file such report within ten days, or failure to file any other report herein required within thirty days after the receipt of request therefor, shall work a forfeiture of the right of the company to do business in this state. (§ 7, Ch. 69, L. '12; 2265, R. S. '13, rev.)

§ 1893. Prospectus of securities; regulation. No company, or person shall issue or publish any advertisement or circular concerning any security sold or offered for sale by it, unless the name of the company, or person issuing, circulating or publishing the same be subscribed thereto, and a true copy thereof has been first filed in the office of the commission, nor shall any company or person issue or publish any such advertisement or circular after notice in writing given to it by the commission that, in its opinion, the same contains any statement that is false or misleading or likely to deceive a reader thereof. (Ch. 70, L. '19, rev.)

§ 1894. Accounts subject to regulation and supervision of commission. The general accounts of every such company shall be kept in such manner and form as may be prescribed by the commission and all books, papers, methods, and affairs of such company shall be subject to inspection and investigation by said commission. The commission may enforce the attendance of witnesses and the production of evidence by subpoena throughout the state, and may take testimony under deposition either within or without the state. The company investigated shall pay a fee of not to exceed ten dollars per day, or fraction thereof, and the actual traveling expenses, if away from the capitol building, of each person making such examination, and the failure or refusal of any company to pay such fees, upon the demand of the commission, shall work a forfeiture of its right to do business in this state. (§ § 9-10, Ch. 69, L. '12; 2266-7, R. S. '13, cons. & rev.)

§ 1895. Appointment of receiver. Whenever it appears to the commission that the assets of such a company are impaired and do not equal its liabilities, or that it is conducting its business in any unsafe, inequitable, or unauthorized manner, or is jeopardizing the interest of its stockholders or investors in securities by it offered for sale, or whenever a company fails or refuses to file any papers, statements, or documents, required of it, without reasons sufficient to the commission said commission shall at once communicate such facts to the attorney general who shall thereupon apply for the appointment of a receiver to take charge of and wind up the business of such company. Such facts shall be sufficient to authorize the appointment of a receiver. (§ 11, Ch. 69, L. '12; 2268, R. S. '13, rev.)

§ 1896. Making false statement; felony. Any person who knowingly or wilfully subscribes to, or makes, or causes to be made, any false statements or false entry in any book of such investment company, or exhibits any false papers with intention of deceiving the commission, or person authorized to examine into the affairs of such investment company, or makes or publishes any false statement of the financial condition of such investment company or of the stocks, bonds, or other securities by it offered for sale, shall be guilty of a felony, and be fined not less than two hundred nor more than five hundred dollars, and imprisoned for not less than one nor more than ten years. (§ 12, Ch. 69, L. '12; 2269, R. S. '13.)

§ 1897. Selling securities without complying with law; penalty. Any person who sells, or attempts to sell, any securities of an investment company, or the securities by it offered for sale, who has not complied with the provi-

Original Recorded in Pinal County, Ariz in Book #— of Mtgs. and Leases assignm't page 234 - on April 3-1946 (fee No. 15506) mortgages

(Reymert Legal file

BILL OF SALE

KNOW ALL MEN BY THESE PRESENTS:

That I, WILLIAM J. FORBACH, for and in consideration of the sum of Ten and no/100 Dollars ($10.00) and other good and valuable considerations to him in hand paid by F. E. CARROW, the receipt whereof is hereby acknowledged, has bargained, sold and assigned and by these presents does bargain, sell and assign to the said F. E. Carrow, all of the right, title, interest, claim and demand of the said William J. Forbach in and to that certain lease known as REYMERT LEASE, also all right, title, interest, claim possession and demand of the said William J. Forbach to anything and everything arising under and because of said lease upon the Reymert Mine, executed by the Reymert Mining Company to said William J. Forbach as of September 1st, 1944.

To have and to hold the said described property unto the said F. E. Carrow, his personal representatives and assigns forever.

WITNESS the hand of the said William J. Forbach this 17th day of December, 1945.

William J Forbach

STATE OF ARIZONA)
)ss.
COUNTY OF MARICOPA)

This instrument was acknowledged before me this 18th day of December, 1945, by William J. Forbach.

Dorothy Haire
Notary Public

My commission expires
March 23, 1949.

3

Phoenix, Arizona
May 21st, 1941

Reymert Mining Company
902 Wells Building
Milwaukee, Wisconsin

Gentlemen:

Pursuant to the terms of our Agreement of Lease, dated April 26th, 1941, and in particular to paragraph three thereof, the undersigned hereby makes application for the right to assign the said Lease Agreement in full to James Tod and Mabel Rae Tod, his wife, doing business as Reymert Lease.

Your written consent and approval of this assignment is hereby requested.

Yours very truly,

W. J. Forbach

W. J. Forbach

ESCROW INSTRUCTIONS

VALLEY NATIONAL BANK
Phoenix, Arizona

Dear Sirs:

We hand you herewith Cashier's Check for $30,000.00, which we request you to hold and handle as follows:

In the event that on or before May 30th, 1941 you have received:

(1) An executed copy of the mining lease on the seven mining claims described in U. S. Patent Survey #364023, known as the Reymert Mine in Pinal County, Arizona, given by Reymert Mining Company to Mr. W. J. Forbach, dated April 26th, 1941, the said lease being assigned by the present Lessee to us without any liens or encumbrances whatever.

(2) A proper written consent from the original Lessors to the assignment of this Lease by W. J. Forbach to us, whereby they agree that all the terms of said lease will apply between them, as Lessors, and us, as Lessees, as if it were an original lease.

(3) A letter from the original Lessor, the Reymert Mining Company, whereby the Reymert Unpatented Lode Mining Claim and the unpatented Millsite Claims, captioned - America, Alaska, Asia and Australia - are to be included under the terms of the said Lease of April 26th, 1941, it being understood and agreed that the annual assessment work on the said Reymert Claims is to be performed by the Lessee.

(4) A notice from Mr. Clifton Smith of Miami, Arizona, waiving any and all rights he or any party or parties associated with him may have now, or previously have had, in respect to the said Lease.

Upon receipt of all the above documents in form satisfactory to us you are to turn over to us the above enumerated documents and pay the $30,000.00 to Mr. W. J. Forbach or his order.

Upon the joint written instructions of James + Mabel Rachford

In the event that all the above mentioned documents have not been received by you by May 30th, 1961, you will return the Cashier's check to us, and any documents you may have in your possession to the party or parties from whom you received them.

This mining lease, made this 26th day of April, 1941, by and between Reymert Mining Company, a corporation, organized and existing under the laws of Arizona, (hereinafter called Lessor) and William J. Forbach of Superior, Arizona, (hereinafter called Lessee) WITNESSETH:

The Lessor, in consideration of the rents, royalties, covenants and agreements to be paid, kept, observed and performed by the lessee, has leased, let and demised to the lessee the following described seven patented lode mining claims located in the Pioneer Mining District, Pinal County, State of Arizona, and collectively known as the Reymert group of mines, to-wit: America, Alaska, Asia, Australia, Africa, Europe and Great Pacific, all more particularly described in United States Patent number 384823, dated February 13, 1914, issued to Reymert Mining Company and recorded on March 21, 1914, in the office of the County Recorder of Pinal County, Arizona, in Book 1-A, of Mining Deeds, page 236, also the Reymert unpatented lode mining claim & the 4 unpatented mill-sites. Annual assessment work on Reymert Claim to be performed & recorded by 2nd party

To have and to hold the above described premises for the purpose of mining and/or milling the ores thereon or therein, for the term of ten (10) years from the date hereof, unless said terms be sooner terminated as hereinafter provided. The lessee shall have no right or power to assign this lease or any part thereof or to sublet the whole or any part of said premises without the written consent of the lessor first had and obtained.

The lessee, in consideration of the premises, has covenanted and agreed, and by these presents does covenant and agree, to and with the lessor to commence work on said premises at the date hereof, April 26, 1941, and to work the same continuously with reasonable diligence in a thorough and workmanlike manner, so as to take out the greatest amount of ore possible with due regard to the development and preservation of the mine or mines now or hereafter on said premises,