



CONTACT INFORMATION

Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

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in file sealed.

Sept 1, 1927

Application of
C. L. Orem

(Exhibit "A" (e) 2. Reports)

REPORT ON THE PROPERTY

of

THE HELMET PEAK MINING AND MILLING COMPANY

J. M. Libbey. on 9/1/27

The property of the Helmet Peak Mining & Milling Company is situated in the well known "Olive Camp" section of the Pima Mining District, Pima County, Arizona.

Situated a distance of about 21 miles in a Southwesterly direction from Tucson, the property is easily accessible by good roads.

A well maintained highway, leading from Tucson to Sahuarita, Amadoville, Nogales and other points on the Nogales Branch of the Southern Pacific Lines, passes within a mile distance of the Helmet Peak Company's property.

A good road connects with the highway affording available shipping points along the line as may be required.

The Twin Buttes Camp, two or three miles to the Eastward, has railroad connection with the Nogales Line at Sahuarita, providing a convenient outlet for the surrounding country.

PROPERTY HOLDINGS

THE property held by the Helmet Peak Company, comprises a group of seventeen mining claims.

Seven of these claims are patented and the balance are being held under contiguous claim locations.

GENERAL STRUCTURE

THE surface ground of the property lies mainly within the area of older Andesites, although in some parts, out-croppings of highly altered sedimentary rocks are in evidence.

Considerable folding and shearing action is observable and the older sedimentaries and basal aggregates show evidence of extensive intrusions by later igneous rocks.

The metal bearing areas are found in the brecciated sections of the Andesite aggregates where cross faulting and shearing has accompanied the intrusion of Granitic and Dioritic porphyries and the subsequent adjustment in place.

The mineralizing solutions have undoubtedly had their origin in the underlying intrusive mass and in their migrations therefrom have caused a partial replacement of the contiguous formation in such parts as were favorable for that action.

ORE OCCURENCE

The mineralized area within which the most important development work has been done, lies within an extensive shear zone having a Southwesterly Northeasterly trend through the Camden No. 2 and Elsie claims. *now the two Frize claims. (M)*

Secondary fissuring and cross-faulting accompanying the shearing and adjustment periods has resulted in extensive areas of brecciated rock mass which furnished favorable locations for replacement action and the deposition of ore bodies.

The boundaries of the shear zone, outlined by the surface and underground development, indicate a zone of mineralization approximately 200 feet in width, with a length traceable for several hundred feet on either side of the working shafts.

The ore measures outlined by the present stage of development lie within the shear zone, with considerable regularity and demonstrate that mineralizing solutions have traversed certain series of fissures closely related to the faulting and intrusive periods.

Replacement action in brecciated areas and favorable sections of the sheeted Andesite by solutions bearing Silver, Copper, Lead and Zinc has formed the ore bodies now exposed in the mines.

Extended development work has emphasized the relation of the cross fracturing and sheeting of the rock mass to the nature of the ore deposits.

Throughout the underground workings is shown the tendency for the better class of ore to be found in the sheeted blocks adjacent to certain well defined shear planes or fissures.

This condition is analogous to the occurrence of replacement ore bodies in the bedding of sedimentary rocks.

CHARACTER OF ORE

The ores developed at this time are essentially complex in nature; but are not refractory in character.

Tests have shown that the ore would yield readily to modern metallurgical treatment.

The valuable minerals Galena, Chalcopyrite, Tetrahedrite and Sphalerite occur throughout the ore measures in the form of disseminated minerals, nodules and segregated masses.

A strong tendency is shown for like minerals to group together, that is; - to segregate into nodules and lenses of separate minerals.

In some areas the Copper-silver minerals will predominate in value and in others the Lead-Silver or Zinc-Silver will predominate.

It is the accepted theory, that; in this section of Arizona the copper minerals will finally replace the Lead Zinc minerals at depths approaching the origin of mineralization and that the resultant primary ores will be essentially copper bearing.

The more recent development on the lower levels of this mine substantiate this theory as the proportion of copper minerals in the unaltered primary ore is gradually increasing as the work approaches the underlying Granitic rocks to the Southward and below.

As this basal structure is approached at depth the degree of mineralization and proportionate value of the minerals should be increased.

Neighboring mines of the Twin Buttes area on the East and the Mineral Hill area on the North have at times produced large quantities of high grade copper ore.

Their relative position is closer to the basal granitic rocks than the workings of the Helmet Peak Company and it is therefore safe to predict that the latter company will find mineralizing conditions at a lower geological horizon.

DEVELOPMENT

The principal development work has been done within the ore zone upon the Camden No. 2 Claim and the Elsie Claim. *now Frieze No. 1 (M)*

Work has been done at other points; but that is not covered in detail at this time.

The Billings Shaft, about fifty feet in depth has been previously worked on a moderate scale and the portion now accessible shows about one hundred feet of lateral development work.

The Zinc Shaft, about seventy feet in depth has been sunk near the westerly edge of the ore zone.

Shaft No. 1 on the Camden No. 2 Claim, is 600 feet in depth, well timbered the full length, equipped with station platforms, ladders and all accessories necessary for development work or mining.

Shaft No. 2 on the Elsie Claim about five hundred feet Southwesterly from Shaft No. 1, is 400 feet in depth, well timbered all the way and fully equipped for work. *NOW FRIEZE No. 1 patented 1914*

Tributary to Shafts No. 1 and No. 2 about 3500 feet of lateral has been done in the ore zone.

ORE MEASURES

During the course of development a number of assay samples have been taken from time to time in order to determine the tenore of metal content and value of ores encountered.

Sections which showed distinct mineralization and appeared to be ore; were mainly sampled.

Approximately fifty percent of the lateral development footage shows distinct mineralization and has been sampled as ore.

Owing to the fact that the various ore areas, outlined on the levels have not been connected up directly with upraises or zinses, the actual thickness of the ore areas which would govern the actual amount of ore contained in the blocks, is more or less problematical.

In the estimate of tonnages the apparent thickness of the mineralized sheeted rock mass as disclosed by the sample cuts is a factor that can be effectively used for the third dimension.

50' LEVEL - BILLINGS SHAFT & 150' LEVEL

The available ore in the Billings Shaft area and sections of the 150' Level of Shaft No. 1 has been previously estimated at 100,000 tons.

An average of assays shown on this section, -

Gold	Silver	Copper	Lead	Zinc
.01 oz	1.2 oz	.25%	1.9%	3.8%

The gross value of the metallics contained is \$8.90 per ton.

250' LEVEL SHAFT NO. 1 AND SHAFT NO. 2

The development work on the 250' Level has opened up an extensive mineralized area between Shaft No. 1 and Shaft No. 2.

The estimated amount of ore in this area as outlined by the openings and assay sampling is approximately 100,000 tons.

An average of the metallic content of the area as shown is, -

Gold	Silver	Copper	Lead	Zinc
.01 oz	1.5 oz	0.27%	1.3%	3.0%

The value of the metallics by this average is \$7.37 per ton.

250' LEVEL TO 300' LEVEL

Later development work upon the 300' Level and 400' Level of Shaft No. 2 has opened up an interesting section.

The general formation exposed on these levels is more uniform in texture, shows less alteration by circulating ground waters and the sheeting is more pronounced.

The minerals in the ore on these levels show more of a tendency to segregate into bunches and bands of higher grade ore.

The block of ground lying between the 250' Level and the 300' Level, tributary to shaft No. 2, indicates an available tonnage of approximately 15,000 tons.

The average of assays taken along the exposures of this block shows a metallic content of, -

Gold	Silver	Copper	Lead	Zinc
.02 oz	1.3 oz	.72%	1.5%	3.5%

The gross value of these metallics is \$9.78 per ton.

300' LEVEL TO 400' LEVEL SHAFT NO. 2

Between the 300' Level and 400' Level at Shaft No. 2 the present stage of development outlines a block of ore which would contain approximately 5,000 tons.

An average of the assays taken on this block shows
 metallics, -

Gold	Silver	Copper	Lead	Zinc
.02 oz	.53 oz	0.82%	0.9%	6.4%

The gross value of the metallics in this average is
 \$12.53.

400' LEVEL SHAFT NO. 1

On the 400' Level of Shaft No. 1 a partially developed
 ore body is outlined; which from the area and exposures sampled
 is estimated to contain approximately 5,000 tons.

The average metallic content of the samples taken is, -

Gold	Silver	Copper	Lead	Zinc
.01 oz	.9 oz	.64 %	0.8%	3.1%

The gross value of metallics contained is \$7.67 per ton.

SUMMARY OF ORE MEASURES

More than double at 1955 prices.

Assays

Location	Gold oz.	Silver oz.	Copper %	Lead %	Zinc %
50' & 150'	.01	1.2	1.07	.7	1.9
250' North	.01	1.2	.25	1.9	3.8
250' 1 & 2	.01	1.5	.27	1.3	3.0
250' to 300'	.02	1.3	.72	1.5	3.5
300' to 400'	.02	.5	.82	.9	6.4
400' Shaft No. 2	.01	.9	.63	.8	3.1
General Average	.01	1.3	.50	1.2	3.3

Tonnage

Location	Estimated Tons	Gross per ton	Gross value
50' & 150'	100,000	\$ 7.60	\$760,000.00
250' North	35,000	8.90	311,500.00
250' 1 & 2 Shafts	100,000	7.37	737,000.00
250' to 300' No. 2	15,000	9.78	146,700.00
300' to 400' No. 2	5,000	12.53	62,650.00
400' Shaft No. 1	5,000	7.67	38,350.00
	<u>260,000</u>		<u>2,056,200.00</u>

600' LEVEL SHAFT NO. 1

The section of the shaft between the 400' Level and the
 600' Level being temporarily impassable, conditions there can not
 be definitely described at the time.

From reports of daily work it is evident that the rock
 structure on this level becomes more regular and conformable and
 the action of circulating water not so evident.

Mineralization similar to the levels above was found in
 some sections and undoubtedly a continuance of development, at
 this level, would be of vital importance and furnish valuable data
 regarding the possible change in the mineralizing action at in-
 creased depth.

SELECTIVE MINING

Taken in the aggregate, the large tonnage represented in the ore measures is of a grade which anticipates the recovery of the metallic values by metallurgical treatment.

Tests have been made which show the ores to be amenable to concentration and the product marketed at a margin of profit.

In the vein areas certain sections show sampling values sufficient to suggest the possibility of developing and mining these sections separately and incidentally blocking out the true ore measures.

Along this line of development an upraise could be driven from the 400' Level, west of Shaft No. 2, at the point from which samples No. 404 and 405 were cut, to follow the inclination of the sheeted ore deposit toward the 300' Level above.

In a similar manner an upraise could be run from the 300' Level to the 250' Level above to good advantage.

Upraises following the apparent slope of the ore deposits, from one level to another, would add valuable data concerning the possible continuity of the ore bodies indicated at the various levels.

In the area tributary to the Billings Shaft, good assay values are shown and it is reported that commercial ore was being uncovered in the lower workings at an earlier time.

It seems that certain sections could be mined selectively at a margin of profit, either through the shaft itself or by connecting up with the underground workings of Shaft No. 1.

A cross-cut tunnel driven from the 150' Level a distance of about 125 feet would cut the general formation beneath the Billings Shaft and prove up this area effectively.

GENERAL

It is the consensus of opinion, that; the future of this property, in the light of a potential shipping mine, depends on the degree of concentration of the metal content either through a construction of the boundaries or a more general segregation of the mass value at an increased depth.

From the results obtained from the extensive development work that has been done upon the property to date, it is evident that the factor of increased depth of exploration is of primary importance.

It is assumed in reason, that mineralization will become more intensified as the source thereof is approached and that fissures and sheeted rock masses will become more generally ore-bearing and show a relatively increased concentration of the contained minerals.

The origin of the mineralization undoubtedly lies within a zone between the ore areas now manifest and the granitic sill which underlies the series, and the mineralizing fissures may be simply offshoots from much larger ore bodies below.

To effectively prove the truth or fallacy of the supposition a vertical section of the rock series to the Granite sill beneath should be obtained.

This could be arrived at most economically and effectively by drilling the ground.

The logical action would be to send down a drill hole, as a pilot, from some point of vantage and the subsequent development be regulated according to the results obtained from the drilling.

Judging from the large area and tonnage of milling ore now exposed in the mines, it is a logical belief that ores of more concentrated mineralization will surely be found at some point in the ore zone.

EQUIPMENT & MACHINERY

The mines of the Helmet Peak Company are well equipped on the surface and underground to carry on mining and development operations.

Shaft No. 1 Surface equipment consists of a 25 H.P. Fairbanks Morse Gasoline Hoist, a 50 H.P. Commercial Gasoline Engine with duplex belt driven air compressor, blacksmith shop and necessary tools.

The machinery is well housed and an office building and small cook shack is provided.

Shaft No. 2, Surface equipment consists of a 25 H. P. Fairbanks Morse gasoline hoist and a Chicago Pneumatic hot head air compressor.

Both shafts have good headframes dumping chutes and surface equipment for handling ore and waste and pumps are installed in Shaft No. 1 in favorable locations to handle all water encountered in both shafts.

An adequate equipment is maintained for drilling in either or both shafts or tributary lateral work.

All arrangements are made so that development work or ore extraction could be carried on effectively and economically on a scale commensurate with the size of the plant and equipment.

Respectfully submitted

(Signed) J. M. Libbey
Registered Mining Eng'r.

Tucson, Arizona
September 1st, 1927

**DEMING MILLING UNIT
AMERICAN DEMING MILLING AND REFINING COMPANY
ORE SETTLEMENT**

Date: **August 23, 1951**
 Mill Lot No. **568C**
 Mine Lot No. **1**
 Mine **Tit for Tat**
 Schedule No. **D-66**

Bought of **Tucson Mining Company**
 Address **c/o Zipf, Larkin & Donahue, 133 North Stone, Tucson, Arizona**
 Shipping Point **Helmet Peak Mining District, Pima County, Arizona**

WEIGHT				METAL PRICES—of Settlement Date August 13, 1951					
NET WET LBS.	Moisture %	NET DRY LBS.	NET DRY TONS	METAL	QUOTATION	DEDUCTION	NET QUOTATION	Percent Paid	NET PRICE PAID
44400	2.8	43157	21.5785	Gold	\$/oz.				
				Silver	90.16 \$/oz.	1.50	88.66	100	.8866
				Lead	17.00 \$/lb.	2.80	14.20	100	.142
				Copper	\$/lb.				
				Zinc	17.50 \$/lb.	6.94	10.56	100	.1056
					\$/lb.				

ASSAYS						CONTENTS				
BY	AU—oz.	AG—oz.	PB—%	CU—%	ZN—%	AU—oz.	AG—oz.	PB—lbs.	CU—lbs.	ZN—lbs.
Deming	.01	4.15	5.50	.50	7.21					
Non Sulphide			.10		.15					
Settlement	.01	4.15	5.40	.50	7.06	.216	89.55	2330	216	3017

PAYMENTS FOR METALS

LIQUIDATION										PER DRY TON	TOTAL AMOUNT
METAL	ASSAY		DEDUCTED	NET ASSAY	EQUIVALENT IN LBS. OR OZS.	PERCENT PAID FOR	NET PAID FOR		RATE		
Gold	.01	Oz.	NP					Oz.	\$	\$	\$
Silver	4.15	Oz.	1.00	3.15	3.15	75	2.3625	Oz.	.8866	2.09	45.10
Lead	5.40	%	.50	4.90	98.00	80	78.400	lbs.	.142	11.13	240.17
Copper	.50	%	NP					lbs.			
Zinc	7.06	%	.50	6.56	131.20	73	95.776	lbs.	.1056	10.11	218.16
TOTAL PAYMENTS FOR METALS										23.33	503.43

DEDUCTIONS										AMOUNT
Treatment	21.5785				Dry Tons @ \$ 4.00	Per Dry Ton				86.31
Railroad Freight:	Car SP 150916 - 30.00 Ton Minimum @ 3.97 + 3% Tax Value for Freight Purposes 3.39 NT									122.67
TOTAL DEDUCTIONS										208.98
BALANCE DUE SHIPPER										294.45

FINAL SETTLEMENT

Correct **/s/R.L. Marteeny** Approved **/s/H.W. Kaanta**

C.R. SETTLEMENT

August 23, 1951

Bought of **Tucson Mining Company**
 Address **c/o Zipf, Larkin & Donahue, 133 North Stone, Tucson, Arizona**
 Shipping Point **Helmet Peak Mining District, Pima County, Arizona**

Mill Lot No. **5680**
 Mine Lot No. **1**
 Arizona Mine Schedule No. **D-66**

Tit for Tat

WEIGHT				METAL PRICES—of Settlement Date August 13, 1951					
NET WET LBS.	Moisture %	NET DRY LBS.	NET DRY TONS	METAL	QUOTATION	DEDUCTION	NET QUOTATION	Percent Paid	NET PRICE PAID
<i>Tit for Tat</i> 44400	2.8	43157	21.5785	Gold	\$/oz.				
				Silver	90.16 \$/oz.	1.50	88.66	100	.8866
				Lead	17.00 \$/lb.	2.00	14.20	100	.142
				Copper	\$/lb.				
				Zinc	17.50 \$/lb.	6.94	10.56	100	.1056

ASSAYS						CONTENTS				
BY	AU—oz.	AG—oz.	PB—s	CU—s	ZN—s	AU—oz.	AG—oz.	PB—lbs.	CU—lbs.	ZN—lbs.
Leaving	.01	4.15	5.50	.50	7.21					
Settlement	.01	4.15	5.10	.50	7.06	.216	89.55	2330	216	30.7

PAYMENTS FOR METALS

LIQUIDATION										PER DRY TON	TOTAL AMOUNT
METAL	ASSAY	DEDUCTED	NET ASSAY	EQUIVALENT IN LBS. OR OZS.	PERCENT PAID FOR	NET PAID FOR	RATE				
Gold	.01	Oz. NP					\$	\$	\$		
Silver	4.15	Oz. 1.00	3.15	3.15	75	2.3625	Oz. .8856		2.09	45.10	
Lead	5.40	% .50	8.90	98.00	80	78.400	lbs. .142		11.13	240.17	
Copper	.50	% NP					lbs.				
Zinc	7.06	% .50	6.56	131.20	73	95.776	lbs. .1056		10.11	218.16	

TOTAL PAYMENTS FOR METALS

23.33 503.43

DEDUCTIONS

DEDUCTIONS		AMOUNT
Treatment	21.5785 Dry Tons @ \$ 4.00 Per Dry Ton	86.31
Railroad Freight:	Car SP 150916 - 30.00 Ton Minimum @ 3.97 + 1% Tax Value for Freight Purposes 3.39 NT	122.67
TOTAL DEDUCTIONS		208.98

(30)

BALANCE DUE SHIPPER

294.45

Orig: *[Signature]* cc: *[Signature]* Correct: *[Signature]* Approved: *[Signature]*

AMERICAN SMELTING AND REFINING COMPANY

ORE SETTLEMENT

Date **October 24, 1951**
 Mill Lot No. **641C**
 Mine Lot No. **2**
 From Mine **Tit for Tat**
 Schedule No. **1-66**

Bought of **The Tucson Mining Company**
 Address **c/o Mr. G. Warren Bessler, 665 So. Hobart Blvd., Los Angeles 5, Cal.**
 Shipping Point **Belmont Peak Mining District, Pima County, Arizona**

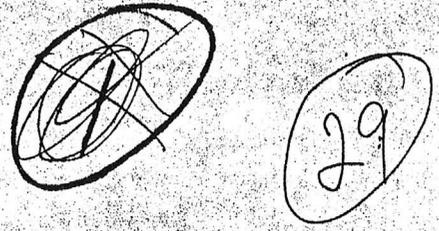
WEIGHT				METAL PRICES—of Settlement Date October 2, 1951						
NET WET LBS.	Moisture %	NET DRY LBS.	NET DRY TONS	METAL	QUOTATION	DEDUCTION	NET QUOTATION	Percent Paid	NET PRICE PAID	
<i>FROM TIT FOR TAT</i>				Gold	\$/oz.					
49140	2.00	48157	24.0785	Silver	90.00 <i>1/oz.</i>	1.50	88.50	100	.885	
				Lead	19.00 <i>1/lb.</i>	2.80	16.20	100	.162	
				Copper	24.075 <i>1/lb.</i>	6.50	17.575	100	.17575	
				Zinc	19.50 <i>1/lb.</i>	7.18	12.32	100	.1232	

ASSAYS						CONTENTS				
BY	AU—oz.	AG—oz.	PB—s	CU—s	ZN—s	AU—oz.	AG—oz.	PB—lbs.	CU—lbs.	ZN—lbs.
ANALYST	.01	19.25	36.45	1.30	9.34					
Settlement	.01	19.25	36.45	1.30	9.34	.241	463.51	17553	626	4498

PAYMENTS FOR METALS

LIQUIDATION										
METAL	ASSAY	DEDUCTED	NET ASSAY	EQUIVALENT IN LBS. OR OZS.	PERCENT PAID FOR	NET PAID FOR		RATE	PER DRY TON	TOTAL AMOUNT
						Oz.	\$		\$	\$
Gold	.01	Oz. NP								
Silver	19.25	Oz. 1.00	18.25	18.25	75	13.6875	Oz. .885		12.11	291.59
Lead	36.45	% .50	35.95	719.00	80	575.20	lbs. .162		93.18	2243.63
Copper	1.30	% .50	.80	16.00	75	11.68	lbs. .17575		2.05	49.36
Zinc	9.34	% .50	8.84	176.80	73	129.064	lbs. .1232		15.90	382.85
TOTAL PAYMENTS FOR METALS									123.24	2967.43

DEDUCTIONS

		AMOUNT
Treatment	24.0785 Dry Tons @ \$ 4.00 Per Dry Ton	96.31
Railroad Freight Car SP14413: Value for Freight Purposes - 35.30 NT		184.08
Royalty: 10% of 42687.04 , payable to Fred W. Viskott, Tucson, Arizona		268.70
Advance: October 5, 1951		1200.00
		
TOTAL DEDUCTIONS		1749.09

AMOUNT DUE SHIPPER

281 B. 3

AMERICAN SMELTING AND REFINING COMPANY

EL PASO SMELTING WORKS

BOUGHT OF Frank Otero
 ADDRESS 233 Avenida de la Republica, Ariz.
 SHIPPING POINT Phoenix, Arizona
 NAME OF MINE Tyler

EL PASO, TEXAS 9/21
 SMELTER LOT 2633
 SHIPPERS LOT
 CLASSIFICATION 90 ore
 PURCHASE TERMS 4063

RATES, EXCEPT ON CONTRACTS, SUBJECT TO CHANGE WITHOUT NOTICE

MIX	ARRIVAL DATE	CAR		GROSS WEIGHT		CONTAINERS		WET WEIGHT	% H ₂ O	DRY WEIGHT	QUOTATIONS
		NUMBER	RR	NO.	WEIGHT						
	5/1	150820	SP					39540	3.8	38037	COINAGE SILVER / PER LB FOREIGN " 90.75 / PER LB LEAD @ 15.00 / PER LB COPPER / PER LB

M/L DATE: 8/19

ASSAY	OZ. PER TON		WET LEAD %	COPPER %	INSOL %	SIO ₂ %	IRON %	Mn %	LIME %	ZINC %	S %	AL ₂ O ₃ %	As %	Sb %	Bi %
	GOLD	SILVER													
SMELTER	.01	12.2	22.4	.75						6.6			.50	.45	0
SHIPPER	.01	12.9	23.1	.95											
UMPIRE		12.4	22.6												
METALLIC															
RETYL		12.4	22.6												

VALUES PER TON

PAYMENT				FREIGHT (FIXED)	DEDUCTIONS			CHARGE	CREDIT
PAY CONTENT	PRICE	AMOUNT	BASE, INCL. LABOR ADJ.		EXCESS VALUE OVER @	NET CHARGE			
SOLD									
SILVER LESS % MIN 1.0%	11.4	.8025	10.17	10.17	10 / PER UNIT Pb + - 30 %		5.50		
LEAD LESS @ 90 %	175.0	.130	40.37	18.90			.80		
COPPER LESS @ %									
					BULLION FREIGHT TAX .00035		.13		
					INSOL-SILICA				
					IRON-LIME				
					ZINC				
GROSS VALUE			59.54	29.16	As: Sb: Bi:				
LESS DEDUCTIONS (NET CHARGE)			6.52	6.52	NET CHARGE		6.52		
NET WEIGHT VALUE			X X X	22.64	WET TON				
NET VALUE	60,000 MIN		33.02	19.0185	DRY TONS				
LESS FREIGHT	19.770								
LESS SWITCHING	4.76								
LESS HAULING									
LESS REPRESENTATION \$	9.00								
LESS UMPIRE \$	12.00								
LESS SAMPLING \$									
AMOUNT WITHHELD PENDING RECEIPT OF SILVER AFFIDAVIT									
ROYALTY 10% (Memo for royalty, hauling 65.00)									
BALANCE DUE SHIPPER									

CORRECT

APPROVED

28

732.79
1000.36

"Even a brief field study of the stratigraphy and structures in this area and that immediately to the north in the San Xavier area, justify the statement that this stratigraphic condition might exist. But more convincing still are similar indications in the results of recent detailed geologic mapping in this area to the immediate north."

"The Olive camp area appears to be a depressed geologic structure - either a down-warped (synclinal) or a down-faulted area. The Paleozoic limestone formations of the San Xavier area distinctly dip to the south (20° - 25°), apparently plunging under the Olive camp area. The contact between Paleozoic limestone and Cretaceous arkosic beds occurs along the southern border of the San Xavier area. The origin of this contact is not clearly indicated, it may be normal formational contact, produced by a break or time interval in the deposition of sediments which formed the beds, or it may be a fault contact, produced by a major rupture. If this contact is an unconformity, as the first case suggests, the limestones extend to the southward uninterruptedly below the Olive Camp area. In the event that it is a fault contact, the limestones with their overlying sedimentary beds and volcanic formations, in the Olive Camp block have been faulted downward."

"There is some basis, of course, for expecting that additional underground development may disclose other high-grade silver-lead ore shoots, such as were formerly worked in the area, or perhaps larger veins and breccia bodies of ore of commercial grade and size."

"The problem of developing possible large ore bodies in the Olive Camp area thus resolves itself, in this opinion, to first ascertaining the presence or absence of underlying limestone beds. Preferably, such development should be carried on by drilling operations. And in so doing, if the location of drill holes is carefully planned, it is probable that relatively near-surface vein or breccia type deposits of value may be encountered while the deeper prospecting is in progress."

"The depth at which the limestone, if present, may occur is highly problematical; if in a synclinal structure, it may be comparatively shallow, if block-faulted, it may lie much deeper - 2,000 feet or more."

4/18/47

Sgt. C. F. Owen M.E.

GAMDEN MINE
AS MADE BY C.L. OREM (M.E.)

The reason for the outline of procedure given you on the "Gamdin Mine" - i.e. - opening of a shallow pit by bulldozer and portable compressor, from which immediate shipment of 300 to 500 tons per day may be quickly made, marketing the products direct to smelter, custom mill, and if possible thru an initial crude washing plant utilizing coarse jig and table or possibly a sink-float unit on rental - royalty basis, is:

With the water being utilized in a preliminary washing plant the mine could be quickly tested by the unwatering process and short diamond drilling on the different ore bodies would quickly test the tonnage for a 500 ton plant, besides the shipping ores of lead-silver and copper-silver.

It is proposed at first to scrape off the surface a little over 100 ft. square in the pit area between the 52 ft. Billings shaft and the 612 ft. shaft collars to expose 40 foot width of better of direct shipping grades of copper-gold-silver ores. (See Engineer's description). At the low point this will scrape off about 15 feet of oxidized and leached material and expose the sulfides making 6 products (See Report).

This can be done under contract in the initial stages and production of several hundred tons per day started without a mill on the property. Later on an initial washing plant capable of handling a large tonnage can be put in by contracting the use of a 100 ton an hour portable gravel plant made up of large crusher, trommel screens, and with one 55 foot conveyor belt and hopper, and one 50 foot conveyor from the pit sump or bottom. This will reduce all material to 3/4" or to 1" material. This material can be cheaply separated into fines and coarse products and fed to jig-table machines, or sink-float units to step up all the pit products not previously shipped, sufficiently to go to the custom mill.

On a large initial production the water could be utilized while each level is being opened, preferably after the various ore shoots were drilled between levels ahead of unwatering each level. In a very dry country (especially the past 4 years) this is the only water available for a 500 ton plant - with a mile of lateral work filled with water and the mine making considerable water - by using ordinary economy 500 tons per day or 300,000 tons in two years besides the direct shipping and custom mill ores should be put thru under the next few years of extremely favorable market prices.

I estimate I can expose an area across over 100 ft. of sulfides that will enable large immediate production, for 8 to 10 thousand dollars in 3 to 5 weeks time by bulldozer and portable compressor manned by experienced machine operators under contract. Then to use the portable washing plant to handle all the pit products not previously shipped to smelter or custom plant. Later to bell out the raises from each level and produce by combination glory hole and open pit methods from each level as reached. With the production established to then open the deep paleozoic limestone areas for large tonnages, similar to those produced from adjoining areas, by drilling from the surface and underground.

As an illustration of what short drill holes between the levels might accomplish, - On page 3 of the outline forwarded you, the 250 ft. level shows 30 ft. or more of ore crosscut in one place (with no other development done on it) showing by assay maps and Engineers' reports (I have also had the mine foreman that supervised the sampling (50+ samples), tell me about the detail samples. I can secure his affidavit). This crosscut showed:

*This is only a copy
Original Sealed
folding apart*



\$5.25 gold values
\$2.00 silver values
\$4.75 lead values
\$2.00 copper values
\$8.36 zinc values

\$22.36 under present market prices and about \$25.00 per ton under present best bonus prices.

With late geophysical survey I pick up the sulfides over the surface at this point at not over 20 to 30 ft. depth under about an average of 8 ft. of dirt (surface debris). By ploughing off this dirt and gravel by bulldozer and drilling thru to the 250 ft. level or beyond this ore could be proven in a few days on the contract. If proven only to the 250 ft. level for 100 ft. along the vein it would mean over 1-1/2 million dollars gross ore of a price range of between \$20 and \$30 per ton gross metal content. Even at \$3.00 or \$4.00 per foot diamond drilling under contract this would mean \$1,000.00 or less besides the sampling and assaying cost.

I have assay maps on other sections of the mine, - Engineers' reports and estimates and geophysical surveys over the shallower areas to be tested. About 100,000 tons are shown above the 150 ft. level of the main shaft and below the 50 ft. level of the Billings shaft. None of the area is available for sampling except the surface workings; the Billings shaft above the 40 ft. level and the high grade ore lenses showing in it. Late geophysical methods show a strong concentration of sulfides at shallow depths below the pit area desired to excavate.

I am also enclosing excerpt from a letter dated September 20, 1934, and written by H. Whitcomb, who was then the owner of the three Whitcomb claims, which lie east of and adjoining the Clivette group belonging to Joseph Flannery.

"At a later period was acquired six more adjacent claims which has been developed somewhat more than the three previously described, but as they were lying practically idle, two claim jumpers put their stakes on two of the claims and it took practically three years law suits before the properties were finally turned back to the original owners. Mr. Billings and Kelly, the claim jumpers, (see court records,) did considerable work on this property and developed a very large body of copper, silver, lead ores. They reached this body of copper by a shaft and struck the ore just under the wash, less than forty feet from the surface. They were surprised as we were as Bornite and Chalcopyrite was in great abundance and very high in value in both silver and copper ore. A cross-cut or tummy test was run each way and they had not reached the end of the ore when the Court stopped their work. It is the biggest thing in my opinion, ever found in this wonderful district, and has the earmarks of a wonderful mine."

This is relative to the old Billings shaft, which you will note in the history of the Camden I gave you, which also shows a couple of high grade samples from the high grade old Billings stopes.

C. L. OREM

about 1947

Application of
G. L. Orem

Exhibit 8. (b) 5 - Assays.

12

ASSAYS AND ANALYSIS CERTIFICATES ON 250 FT. LEVEL.
HELMET PEAK MINING AND MILLING COMPANY
Feet indicate distance to face of drift from shaft cross-cut.

	Gold.	Silver.	Copper.	Lead.	Zinc.	Total Value.
Dec. 9th.						
#6 East Drift	.01	.7	.05	2.5	1.4	8.67
28 ft.						
#8 East Drift	.01	.8	.12	3.6	2.1	9.67
29 ft.						
Dec. 15th						
#7 East Drift	.01	.7	.05	3.6	6.5	15.56
32 ft.						
#8 East Drift	.01	.8	.02	1.2	6.2	11.28
35 ft.						
#9 East Drift	.02	1.2	.02	2.4	7.1	13.27
40 ft.						
Dec. 18th.						
#10 East Drift	.02	.9	.02	2.4	5.6	12.60
44 ft.						
#11 East Drift	.01	1.0	.02	1.1	6.2	11.20
48 ft.						
#12 East Drift	.02	1.2	tr.	1.5	5.2	10.58
55 ft.						
#1 A.	.03	1.6	.25	3.1	7.1	17.01
--						
#13 East Drift	.01	.9	.05	2.6	4.5	11.25
60 ft. 4ft. wide.						
#14 East	.01	.8	.02	2.5	6.6	12.76
65 ft. 4 ft."						
Dec. 28th						
#15 East	.01	.6	.05	1.7	2.4	6.69
71 ft.						
#16 East	.02	3.2	1.5	2.6	3.6	15.60
78 ft. 4ft."						
#1 B.	.03	16.1	3.5	9.5		33.70
assorted ore.						
Jan. 15th						
#18	.03	2.4	.5	5.1	4.6	16.36
G.C.#2 East	.02	1.2	.05	2.9	3.0	9.43
#19	.02	2.2	.05	1.5	3.1	8.03
165 to 190 ft.	.02	.6	.05	2.6	2.1	7.58
#20 West	.01	.8	tr.	3.2	1.9	7.94
165 to 190 ft.						
Jan 25						
#21 East	.02	1.2	tr.	2.7	4.4	10.87
88 ft.						
#22 East	.02	1.4	"	3.8	4.2	11.56
94 ft.						
#23 West	.01	4.4	.05	2.3		6.23
195 ft.						

Application of
G. L. Orem

Exhibit B. (b) B - Assays.

ASSAYS AND ANALYSIS CERTIFICATES ON 200 FT. LEVEL.
HELMET PEAK MINING AND MILLING COMPANY
Feet indicate distance to face of drift from shaft cross-cut.

#24 West 197 ft.	.01	4.1	.15	5.8		8.60
#25 assorted ore.	.02	26.4	9.9	3.2		46.26
Feb. 1st. #26	.02	6.0	2.1	6.5	6.5	26.16
#27 Tit-for-Tat	.03	26.2		20.6		62.27
#28 Surface Outcropping		54.1		50.2		98.70

B

Application of
C. L. Orem

(Exhibit "A" (e) 3. Reports)

Helmet Peak Mining & Milling Co.
Tucson, Arizona.

REPORT BY
J. M. LIBBEY - 10/25/27

Gentlemen:

Since your mine was sampled and reported upon, as of September 1st, 1927, a considerable amount of extended development work has been done upon the 250 Ft. Level.

Approximately 500 feet of additional drifting and crosscutting has been done in the Westerly section of that level and an extensive area of mineralized ground has been encountered therein; which materially increases the available tonnage of commercial ore in the mine.

General conditions, in evidence, are favorable for the continuance of the metal values through the further extension of the lateral and vertical dimensions.

Assured Ore

The mineralized area in the Westerly section of the 250 Ft. Level, as outlined by present development, and which can be classified as Commercial Ore, has a vein area of approximately 5,250 square feet.

The ore-bearing rocks, lying in a sheeted or bedded form, have been exposed, by the work, to a thickness of 60 feet; supplying the factor of known vertical extent.

The resultant content of the block, indicated by these factors is seen to be approximately 26,000 tons.

The mineralization, of commercial value, occurs in the form of Sulphides of Copper, Lead and Zinc, with additional values in Silver, and Gold.

The character of the ore bearing material and the mineralization is similar to the ore area in the northerly section of this level.

Samples were cut from the ore exposures within the westerly block and assayed with the following results, -

Average of samples No. 25 to 31 Incl., Length of out-10 ft., Interval between cuts - 4 feet, from westerly end of block, -
Gold .15 oz. Silver 2.10 oz. Copper .5%, Lead 1.69%, Zinc 3.83%.

At the present price of metals, the Gross Value would be \$9.55 per ton,

Average of samples No. 32 to 37 Incl. Length of out 8 to 12 ft. Interval between cuts - 4 ft. from Northerly end of block, - Gold .15 oz. Silver 1.12 oz. Copper .08%, Lead .2%, Zinc 3.06%.

(5)

At the present price of metals the Gross Value would be \$5.01 per ton.

The average value of the block outlined would be \$7.45 per ton Gross.

From the estimated tonnage of 26,000 a Gross Value of the Block is calculated at approximately \$194,700.

To summarize the amount of available ore in the mine, assured at this time, we have in, -

The 250' Level North - 35,000 tons	
@ \$8.53 gross	\$298,550
The 250' Level West - 26,000 tons	
@ \$7.45 gross	194,700
The Billings Shaft - 3,500 tons @	
\$8.13 gross	<u>28,450</u>

And a gross total of 521,700

The above estimates are based on the present low market price of metals.

As previously stated, - by inspection, the ores should yield readily to treatment and adequate laboratory tests would indicate the amount of margin of profit to be expected from mining and milling of the ore.

Possible Ore

In the new area opened up by the later development work, the proportion of the commercial ore bears a ratio of 30% to the whole area.

Assuming that the ore zone extends to the surface, a supposition amply justified by visible conditions, then it is assumed that the commercial ore ratio will maintain throughout the ore zone extended.

With these factors as a basis, the calculated amount of commercial ore to be anticipated within the extension of the Westerly block will be approximately 97,000 tons.

To summarize the Possible Commercial ore in the mine, to date, from the 250' Level to the surface, we have in, -

The 250' Level North - 110,000 tons	
@ \$8.53 gross	\$ 938,300
The 250' Level West - 97,000 tons	
@ \$7.45 gross	722,650
The Billings Shaft - 3,500 tons	
@ \$8.13 gross	<u>28,450</u>

And a Gross Total of 1,786,400

In round numbers the anticipated gross value of commercial ore in the mine from the 250' Level to the surface, as outlined by present development, may be set at between \$1,750,000 and \$2,000,000.

Extended development at greater depth will naturally increase the actual amount of available ore and will also greatly augment the theoretical amount of possible ore to be anticipated.

In General

The most Westerly section being developed at the time of the sampling, showed a strong tendency for the minerals to segregate into bands, or veins, and the samples taken from the ore exposures showed an unusual degree of enrichment in spots.

It will not be surprising to find the ore occurring in veins and deposits of workable size and of a value sufficient to permit of direct shipment to the smelter.

It is a noticeable fact that considerable leaching action has taken place along the shear planes and jointings of the rock and this action has undoubtedly impoverished the ore deposits on this horizon, to a considerable extent.

Development at greater depth will, no doubt, show that the ore zone will be more uniformly mineralized and that the ore deposits will be more dependable in form and degree of mineralization.

The various areas opened up by the development work done upon the 250' Level of the mine, indicate very plainly that the ore deposits occur within a well defined mineralized zone, having a linear extent of over five hundred feet and which will extend downward to a depth well worthy of consideration.

Conclusion.

The results obtained from this later work have surely justified the expenditure and also assure the ultimate success of more extended development at greater depth and lateral extension from all levels.

Respectfully Submitted

(Sgd) J M Libby

Tucson, Arizona
October 25th, 1927

Registered Professional Engineer No. 235

CAMDEN WORKINGS

History and Present Condition: SUMMARY BY C. L. OREM, M. E.

The original Billings' Shaft was sunk in 1916, and a shipment of high grade copper ore was made in September, 1917. Records show that Billings stated he had taken \$500.00 of the property in September, 1917. He lost the suit over the possession of the claims in the same court action. The ore was shipped out of this shaft, but records are not available.

The Helmet Peak Mining and Milling Company was organized in the early 20's, and sank a 52 ft. compartment and a half shaft near the old Billings' Shaft, which was completely caved in and did about 125 ft. of drifting both northerly and southerly, cutting into the old stope of the old shaft to the north. This showed very high grade copper ore in a larger mass of lead, zinc, copper ores.

They also sunk the main shaft, the collar of which is about 20 ft. higher and 200 ft. to the northeast, to a depth of 612 ft., and did several thousand feet of development work on the different levels. These workings exposed a very large tonnage of lead, zinc, copper ores in an andesite Breccia zone estimated to be over 1,000 ft. long and more than 200 ft. wide in places. In this area sections showed higher copper areas and other areas were richer in lead and zinc. The copper ores and the lead ores were reported to be good enough in some sections to be shipped separately to lead smelters and copper smelters. (See Libbey's Supplemental Report.)

Very little of the old shipping records are available. In December, 1928 one shipment to the Copper Queen Lead Smelter at Douglas, Arizona, showed:

26.93 tons assaying: Gold \$1.70, Silver 15.16
ozs., Lead, 28.8%, Copper 1.95% and Zinc 8.7%

Another showed:

11.46 tons assaying: Gold \$0.35, Silver 5.33
ozs., Copper 8.84%, Lead 2.1%, Zinc 1.2% This
was shipped to the Copper Furnace.

The Helmet Peak Company were developing for a large mine and mill, but failed to finish financing after the stock market crash in 1929, and Fred. W. Fickett acquired the patented claims by cash purchase from the treasurer's office, after more than 10 years of delinquent taxes.

The large shaft is inaccessible, being full of water to the 100 ft. level. The 150 ft. level is caved and inaccessible. The present Billings' shaft with 125 ft. of drifts on the 50 ft. level is full of water and debris and muck above the top of the drifts. The timbers are out of the shaft and the head frame is gone. These are probably hi-graded.

It is estimated that this shaft could be opened at a much cheaper cost than the main shaft and the high grade copper ores shipped to a copper furnace, and the lead, zinc, copper ores trucked to the Custom Mill at Benavite, on the Southern Pacific Railroad. At the time of the development of this property no lead, zinc, copper mill was available.

"The ore body which the company is developing underlies, as far as yet outlined, the westerly end of the Camden No. 2 claim. Here an elongate, roughly oval hill, long axis lying about 20° east of north, rising perhaps fifty feet above the wash along the westerly side, caps the ore body. The rock of which this hill is composed, has on first inspection the appearance, in texture and light color, of an altered rhyolite or quartz porphyry. It is probably a highly altered and sillified, brecciated andesite. This interpretation is borne out by the large angular masses of andesite encountered in the ore body beneath in some development." (See C. J. Sarle's report, page 11.)

Tucson, Arizona,
September 30, 1945.

County of Pima)
State of Arizona) ss.

J. W. Mills, being duly sworn, under oath deposes and says:

That during most of the work at Helmet-Peak Area, he was timber man and in charge of the work for the Helmet-Peak Mining and Milling Company, until most of the 400 ft. level in its main shaft was accomplished:

That he is familiar with the ore occurrences on the surface and underground, including the 70 ft. zinc shaft, and the 52 ft. Billings' Shaft, and the main shaft.

That the southeast drift of the 52 ft. Billings' shaft showed and was entirely in good copper ore and the slope from the old Billings shaft showed high grade copper ore.

That nearly all the work in the main shaft, the Billings shaft, and the zinc shaft was on the Camden No. 2 patented claim.

That the drift on the 150 ft. level in the end crosscut toward the Billings shaft was entirely in high grade copper ore, showing bunches of Bornite or Peacock Copper ore.

That the material all around the copper ores was lead, zinc, copper ores;

That the company did a lot of prospect work over a large area, and if the work had been confined to the better ore exposures, very good grades of ores could have been produced;

That the limits of these better grade ore areas have not been explored at all;

And that a width of 150 ft. of good lead, zinc, copper ore was crosscut on the 250 ft. level north.

J. W. MILLS
J. W. MILLS

Subscribed and sworn to before me this 29th day of September, 1945, by J. W. Mills.

FRED W. RICKERT,
Notary Public,

My commission expires 2/15/47
(Notarial Seal)

Long since the development of the Helmet Peak, the Eagle-Richer Company acquired the large holdings just north of this property, known as the San Xavier and Mineral Hill Area, and have put in a 250 ton per day lead, zinc, copper mill at San Xavier, handling Custom ores. They are besides mining, drilling the area with two diamond and one churn drill. Reports indicate they are drilling up to 900 ft. in depth and are getting good results.

All early reports advise the running of adequate ore tests. J. M. Libbey, in his main report on page 6, under the paragraph on Selective Mining, states, "Tests have been made which show the area to be amenable to concentration and the product marketed at a marginable profit."

On page 2, under "Character of Ore," he states:

"The ores developed at this time are essentially complex in nature, but are not refractory in character."

"Tests have shown that the ore would yield readily to modern metallurgical treatment."

In Spright's report, page 4, he states:

"The problems of the past do not exist on this property as metallurgical difficulties have been solved, the water, a valuable asset for milling, being present for flotation purposes."

Besides present facilities for handling gold and silver complex ores nearby by modern metallurgical plant, work is being done with the idea of successfully eliminating a large percentage of waste in a coarse form in the lower grades of ores on the property by such methods as modern sink-float treatment in heavier than water medium, such as used at the Mascot Mines of the American Zinc Company, of Tempe, who produce annually 1,250,000 tons of zinc ore, carrying 5% blend. They treat 4,000 tons per 24 hours and 60% of the mined ore is rejected at from 2" to 3/8" size. Also jig table preliminary treatment might be used if found to eliminate a considerable percentage of the ore in coarse sizes. Such methods might make large low grade areas previously considered too low grade, available for treatment. Some success is indicated for such processes.

G. J. Baris states, page 114

"Many other assays have been taken, especially in the main cross-cut from the foot of the 150 foot shaft. These all show a general mineralization of this large brecciated zone, though not of a grade high enough for milling."

The present development, considering the size of the ore body, cannot be considered as more than indicating a part of the milling ore which will be found between the 50 and 150 foot levels."

And on page 14

"While the present workings have shown the ore exposed to be a portion, merely the apex, of a large ore body, widening downward, the work cannot be considered as in any direction reaching the limits of the ore mass or as showing

how large the area underlain by ore may be."

Libbey's report shows:

"The boundaries of the shear zone, outlined by the surface and underground development, indicate a zone of mineralization approximately 200 feet in width, with a length traceable for several hundred feet on either side of the working shafts."

On page 11:

"Sections which showed distinct mineralization and appeared to be ore, were mainly sampled."

"Approximately fifty per cent of the lateral development footage shows distinct mineralization and has been sampled as ore."

Water Supply:

(a) IT IS PROPOSED:

TO INSTALL HEAD FRAME, COLLAR SET, IN THE 52 FT. BILLING'S SHAFT, AND TO TIMBER IT WITH 6" X 6" AND 2" X 12" TIMBERS;

TO INSTALL MINE CAR AND TRACK AND ONE HOPPER TO LOAD ORE FROM;

TO INSTALL PUMP AND PUMP OUT WATER (ESTIMATED 150 FT. OF WORKINGS);

TO RENT AND INSTALL HOIST AND CAGE;

TO MUCK OUT AND RETIMBER THE ENTIRE LEVEL;

TO PUT IN MINE CAR AND TRACK UNDERGROUND AND PORTABLE COMPRESSOR AND DRILLS AND START MINING AREAS OF DIRECT SHIPPING AND MILLING ORES.

IT IS PROPOSED:

TO MINE AREAS AS INDICATED AS ORE BODY, STARTING FROM THE POSITION OF SAMPLE 44, AND GRADUALLY DEVELOP AND REMOVE THE WHOLE ESTIMATE AS CONDITIONS WARRANT.

C. J. Seale's report, page 11, Paragraph 3 (last half)

"The bottom of the 52 ft. shaft lies 18 ft. from the hanging wall in ore. From it a drift has been run both horizontally and diagonally to the hanging wall, the other into the body of the ore. (See Geological Sketch Map.)"

This same ore body is shown by assays of the copper ore in the Billings' stop:

No. 57370 Gold 0.01 ozs., Silver 25.0 ozs., Copper 37.1%, Lead 2.60%, Zinc 2.20%.

No. 57436 Gold 0.02 ozs., Silver 28.0 ozs., Copper 27.6%, Lead 4.6%, Zinc 1.2%.

This body is also shown by assay No. 20, 70 ft. zinc shaft, running out across 20 ft.

No. 20 Gold 0.01 ozs., Silver 0.8%, Copper 0.32%, Lead 0.3%, Zinc 4.0%.

This ore body is also shown by assays Nos. 5, 6, 7, 8 and 9 on the 50' level, Billings shaft, and Nos. 12, 13 and 14 on the same zone, 30 ft. ahead of No. 8, and approximately 75 ft. below on the 150 ft. level of the main shaft.

No. of Assay	Wt. Oz.	Fe.	Zn.	Gra. Au.	Gra. Ag.	Width Cut
5	0.66	1.4	2.5	0.02	3.4	5.3 feet
6	0.65	1.4	4.0	0.01	1.8	6.0 "
7	0.41	1.2	2.3	0.01	1.1	5.7 "
8	1.05	0.3	1.0	0.01	2.1	14.5 "
9	1.62	2.0	3/9	0.06	3.8	11.7 "
12	2.11	0.2	0.5	Tr.	0.8	5.0 "
13	4.92	0.3	1.0	0.01	2.7	4.8 "
14	2.75	0.2	1.0	0.01	2.0	12.0 "

(See G. J. Saris's Geological and Assay Map.)

By considering assay No. 8 (50' deep), representing the last 15 ft. in the southeast drift of the Billings' 52 ft. shaft, and samples Nos. 12, 13 and 14, on the last crosscut in the end of the 150 ft. level of the main shaft, and the area between of 50 ft. or better on an ore zone estimated to be 40 ft. wide by these same engineers, this material could all be shipped to a copper smelter by starting at the shallower Billings' shaft and gradually reopen the deeper areas as the production proceeded. These samples are all low in lead-zinc and indicate a product of 3 1/2 to 5% copper ore, especially if selected areas are mined.

From G. J. Saris's report, under "Ore Reserves" the above area proposed to open up is set forth as follows:

"From the present workings Mr. Harper, Supt., estimates that there can be produced 105,000 tons of milling ore, with a gross value of \$8.00 per ton. I have carefully gone over these estimates with him, both underground and on the map of workings, and have taken check assays."

"The accompanying tabulation gives these assays, footage and values, and the numbers of the Geological Sketch Map show their positions."

"If the areas are in taking assays Nos. 1 to 9 and 12 to 14, inclusive, and No. 20, representing the 50, 70 and 150 foot levels, are considered, it is believed safe to regard these as roughly defining a curved zone of milling ore, 325 feet long, approximately 40 feet wide and 100 feet deep, lying between the 50 and 150 ft. levels. Based upon the average value per foot of openings available, this block containing 105,000 tons would have a gross value of \$10.00 per ton. As stated, the samples are averaged according to the width of the ore they represent, and constitute an adequate average of this zone as the present development permits. Mr. Harper's estimate is therefore regarded as very conservative."

... zones of much higher grade ore than
... example, assay No. 8, cut across 11.5
... 9, across 11.7 feet, #16.61, and No.
... 18.87."

... Quota, No. 627, Camden, the "A"
... overhead and zinc, are: Copper 17:
... lb., Lead 9½ per lb. This would
... dollar value per ton gross than
... by Sarle. For the purposes of
... given in metal content per ton rather
... value.

... the Custom Mill at Sahuarita, or to
... the railroad loading ramp, can be contracted for @ 0.75 per
... ton.

... Custom freight rates to Arizona smelters range
... from \$1.80 per ton on \$15.00 ore up.

... Custom smelting rates on copper ores in Arizona
... range from \$3.50 to \$4.50 per ton for \$15.00 ore, with 10%
... increase on higher values until a maximum charge of \$6.00
... is reached.

... Deduction of 8-10 lbs. copper per ton ore is made
... for slag loss, and from 2% to 2½ per lb. of copper from the
... N. Y. quotation, for shipping and refining and selling of the
... copper.

... Custom milling at Sahuarita, will range from \$2.50
... to \$4.00 per ton ore depending on the grade and tonnage avail-
... able.

... The old company developed a large area figuring on
... handling hundreds of feet in width. By limiting these areas
... considerably widths up to 40 ft. and in cases some times as
... high as 150 ft. can be had that are of a very high grade
... milling ore or a good grade shipping ore, where the natural
... segregation of values permit. It is now figured that under
... present conditions milling ore of 5% combined lead-zinc
... content could be handled in fairly large tonnages.

... C. J. Sarle's report, page 12, under "Development
... Advised":

"The Billings shaft thus deepened will then insure
... good ventilation and drainage of the mine, and also can be
... used in raising waste, thereby relieving congestion at the
... main shaft, while handling ore.

"This program carried out, besides greatly increas-
... ing ore output, should raise the grade of ore, facilitate se-
... lective mining and milling of the ore, and at the same time
... furnish ample water for milling."

... Under Bright's report (which see) page 3:

"A great part of the drifting has been driven in an
... Andesite Breccia, in contact with the Andesite intrusion, and
... is not a mineralizing contact, the mineralization being the
... result of deposits from mineralized solutions from the Miss.
... which is the proper place to look for ore, although I believe
... that profitable bodies of ore will be found in the vicinity of
... the Billings shaft as indicated by a shoot or pipe of copper

(borehole) located there, by following the ore shoot."

"I believe that by continuing the drift of the 150 foot level the Billings ore body will develop a nice body of high grade ore, and also continue the drift from the 350 foot level following the ore to the Prosperity vein."

"In the above mentioned section there is a large tonnage of good milling ore, that can be easily developed."

In Libbey's main report, he states:

"The boundaries of the shear zone, outlined by the surface and underground development, indicate a zone of mineralization approximately 200 feet in width, with a length traceable for several hundred feet on either side of the working shafts. These shafts are over 500 feet apart.

"Replacement action in brecciated areas and favorable sections of the sheeted Andesite by solution bearing silver, copper, lead and zinc has formed the ore bodies now exposed in the mines.

"Extended development work has emphasized the relation of the cross-fracturing and sheeting of the rock mass to the nature of the ore deposits.

"Throughout the underground workings is shown the tendency for the better class of ore to be found in the sheeted blocks adjacent to certain well defined shear planes or fissures.

"The valuable minerals Galena, Chalcopyrite, Tetrahedrite and Sphalerite occur throughout the ore measures in the form of disseminated minerals, nodules and segregated masses.

"A strong tendency is shown for like minerals to group together, that is, to segregate into nodules and lenses of separate minerals."

Also in Libbey's main report, page 6, under "Selective Mining," he states:

"In the area tributary to the Billings shaft, good assay values are shown and it is reported that commercial ore was being uncovered in the lower workings at an earlier time."

"It seems that certain sections could be mined selectively at a margin of profit, either through the shaft itself or by connecting up with the underground workings of Shaft No. 1."

"A cross-cut tunnel driven from the 150' level a distance of about 125 feet would cut the general formation beneath the Billings shaft and prove up this area effectively."

Much larger and higher grade areas are available in deeper areas of the mine and will be opened in the future development.

In Libbey's Supplemental Report, October 25, 1927, page 1, he states:

"Approximately 500 feet of additional drifting and cross-cutting has been done in the westerly section of that

level. An extensive area of mineralized ground has been encountered which materially increases the available tonnage of commercial ore in the mine.

"General conditions, in evidence, are favorable for the maintenance of the metal values through the further extension of the lateral and vertical dimensions.

Assured Ore

"The mineralized area in the westerly section of the 250 ft. level, outlined by present development, and which can be classified as commercial ore, has a vein area of approximately 250 square feet.

"The ore-bearing rocks, lying in a shatted or bedded form, have been exposed, by the work, to a thickness of 60 feet, applying the factor of known vertical extent.

"The resultant content of the block, indicated by these factors is seen to be approximately 26,000 tons.

"The mineralization, of commercial value, occurs in the form of Sulphides of Copper, Lead and Zinc, with additional values in Silver and Gold.

"The character of the ore bearing material and the mineralization is similar to the ore area in the northerly section of this level.

"Samples were cut from the ore exposures within the westerly block and assayed with the following results:

"Average of samples No. 25 to 31, incl., Length of cut, 10 ft., Interval between cuts, 4 ft. from westerly end of block - Gold .15 oz., Silver 2.10 oz., Copper .5%, Lead 1.69%, Zinc 3.83%.

"Average of samples No. 32 to 37, incl. Length of cut 8 to 12 ft. Interval between cuts - 4 ft. from northerly end of block. Gold .15 oz., Silver 1.12 oz., Copper 0.5%, Lead .2%, Zinc 3.05%.

"In General:

"The most westerly section being developed at the time of the sampling, showed a strong tendency for the minerals to segregate into bands, or veins, and the samples taken from the ore exposures showed an unusual degree of enrichment in spots.

"It will not be surprising to find the ore occurring in veins and deposits of workable size and of a value sufficient to permit of direct shipment to the smelter."

One shipment to Lead Furnace * - - - 28.8% Lead
One shipment to Copper Furnace - - - 8.84% Copper

Libbey's Supplemental Report, page 1 (Assured Ore) speaks of additional values in gold and silver located in the new area developed on the 250 ft. level.

"The mineralization of commercial value, occurs in the form of sulphides of copper, lead and zinc, with additional values in silver and gold.

... of samples No. 25 to 31 incl., length of
 ... between cuts - 4 ft. from northerly
 end ... 15 oz. Silver 2.10 oz. Copper .57,
 Lead

... in October, 1927, at \$20 an oz. would
 make ... at about \$3.00 Gold. At the present
 time ... this value would be \$5.25 Gold per ton.
 With ... would make an important area on account

... assay sheet on a preliminary concentration
 test ... gold content could be recovered in a market-
 able ... lead concentrates although the concentrates
 were of low grade in zinc to be marketable, later flotation
 tests show a very good grade of zinc concentrate can be made.
 (See Sample Sheet tabe ore test.)

	Au Ozs.	Ag Ozs.	Pb %	Zn %	Cu %	Fe %	Ins. %
Pb Conct	.12	44.6	61.5	4.5	3.00	5.8	2.0
" Mid	.04	26.8	14.7	11.3	1.38	17.2	
Zn Conct	.01	3.6	.6	56.5	.42	4.7	
" Mid	.01	9.5	2.0	8.1	.37	15.0	
Tails	.002	.41	.13	.35	.03	1.9	
Heads Total	.01	5.9	6.4	8.4	0.40		
Oxide			0.18	0.48			

It is evident that the Copper-Iron ores showed con-
 siderable increased gold content.

Echel's "Geology of Mineral Hill," 1930, reports,
 page 24:

"There are the usual rumors that Mineral Hill was
 first worked by the Spaniards who exploited the gold found
 close to the surface."

Page 27:

"The slag dump remaining from early smelter opera-
 tions was sampled for gold, silver and copper. Silver is
 present in very small amounts, but one sample showed 80 ozs.
 gold per ton. The values are very irregularly distributed
 through the slag and average far less than the figure given,
 which is included only to show that at one time gold must have
 been found in considerable quantities."

Page 30:

"Silver values in the slag are small, as is gold
 in general, but there are spots where the gold content runs to
 phenomenal figures. This is probably due to single pots of
 slag in which extraction was incomplete."

Mayusa's Report: "Ore Deposits of the Helmet Peak Area."

"Two early furnaces of Mineral Hill ran 9600 tons of
 ore. Produced 200,000 lbs. of matte, averaging 65 to 70%
 copper and \$25.00 to \$35.00 gold and silver."

In 1897, silver dropped to 43¢ per oz., and lead to 10¢. This caused the shut down of the district.

Mr. Leonard reports: States that the gold-iron veins towards the mine (just south of this property), have not been investigated and have had very little work done on them.

Enclosed are letters from Flannery, Fritz, Brown and Boggs, the most important statements concerning the gold and silver values on this old ground and the district.

Flannery's letter states:

"Replying to your inquiry regarding the Prosperity Mine, (adjoins this claim in the north side) I have known this mine since its location sometime in the nineties. The main shaft is down some 320 feet and I do not recall the amount of drifting that has been done. This shaft was started about 1898 and was worked by the owners, Mike and Luke Corda, until the drop in the price in silver in 1903. During this time the Cordas became work about fifty thousand dollars apiece from the profits of the mine. They had no hoist on the property, but after the shaft became too deep for a windlass, they operated it with a whim drawn by mules."

"The first 60 feet of the shaft was a chloride ore that was not shipped and is probably still on the dumps. At 60 feet sulphides were encountered that assayed 30 ozs. silver and a few dollars gold. The ores became steadily richer as the shaft was sunk, and at the bottom of the shaft assayed 300 ozs. silver and 1 oz gold. I took a sample on the 200 foot level that assayed 200 ozs. silver and about \$12.00 gold."

Fritz's letter states:

"When we were working on the Helmet Peak group we took dozens of samples and these records were kept by Capt. King, one of the directors of the company. From memory they ran from 2% to 12% copper with a good showing of silver. On the map which you returned, you will note many X indicated. All were the location of the sampling taken by Sarles or some person under him. Leonard and I walked through from the 50 ft. level to the 400 ft., and not once but many times - the better grade was above the 300 ft. The shaft is almost entirely in andesite."

"The Billings' shaft is just as indicated on the map. It shows nothing but very high grade. Note assays. Most surely it leads into the area just southeasterly and was never properly worked by any owner to date. The old company wandered about in the country instead of mining good ores only a few hundred feet from the main shaft. This high grade came from below and probably is an intrusion through the andesite."

Dr. Raymond J. Leonard was a prominent Geologist with the Department of Geology and Mineralogy at the College of Mines and Engineering, of the University of Arizona. Mr. Albert L. Fritz was a Civil Engineer and head of the Fritz-Hamilton Development Company, which was interested at one time in developing the Helmet-Peak and entire Olive Camp.

Brown's letter states:

"I was the original owner and locator of the Annette

claim... of this... In 1893, owing to... the mine closed down... shaft has not been de-

...the mine closed down in 1893, oper-... in a vein at the bottom... west.

...was one of the locators... the Olive, and there... \$750,000.00... bottom when operations were

...interested in any mining... Mining De-

...immediately... to the

...letter

...was one of the lessors... We shipped one car... and shipped ore running... tons

...the Annette... claim produce about... ore."

...1893, owing to the low price... a certain extent saved in... and have never since been re-opened or unworked."

...both mines are as good as they ever... north re-opening and working."

...in regard to... good gold and silver values... and fractures of this

...J. Sarle's report page 10 states:

"Estimates by... of the total production... Olive Camp approximate, in... \$3,000,000"

In John Carter... report on the swastika... the Allison Brothers, from... 1886 to 1893... operated the mines, leased and... general store... camp during that period.

The silver and... content is also evidenced in... the many assay sheets, making data, showing a large amount... sample by the company on... level shows:

Sample No. 52842 Gold 0.06 ozs., Silver 150.0 ozs. Copper 2.32, Lead 12.52, Zinc 1.02.

... surface and ... lower ...
 ... possibilities of ...
 ... copper ... gold ...
 ... considerable ...
 ... the deeper ...
 ... levels.

... copper ... southeast ...
 ... Douglas ...
 ... the following ...
 ... per ton

... Dr. ...
 ... along the ...
 ... shows a dis ...
 ... For the ...
 ... copper con ...
 ... increases and ...
 ... also apparent ...
 ... the Billings shaft, to the ...
 ... arrangement of ...
 ... ore ... in the ...
 ... cross-cut ... from the ...
 ... shaft, the ... showing strong ...
 ... of the cross

... is represented ...
 ... assay No. 8 (Sample ...
 ... ran 4.95% copper, 0.91 ozs gold, 2.1 ozs ...
 ... 14.5 ft ...
 ... 80 lbs ...
 ... 70 lbs ...
 ... pays ...
 ... 9.775 ...
 ... 70 lbs ... 9.775% per ... \$ 6.84 per ton
 ... 2.1 ozs ... 0.5 ozs ... 1.15 per ton
 ... (Now ... \$ 7.99

Costs ...
 ... railroad and loading ... \$ 0.75 pr ton
 ... 1.80
 ... 2.75
 TOTAL ... \$ 6.05
 ... 6.05 per ...
 BALANCE DUE DEE ... \$ 1.94

1.94

20 lbs. equals 77 lbs. @ 5¢
3.85

Total \$ 5.79 "

Some of the enclosed assays, much higher grades
could be obtained, by additional development,
higher margin of profit. Also, lower grade
ores would be more profitable, if smelting costs would be bettered,
for even 2%, with some gold and silver content,
under same tonnage conditions.

General market values show these ores, under
present conditions, to be much better than when the enclosed reports
were made. For instance, #50 in level west (See Assay Map
#50) would show \$20.00 per ton gross content
at present market prices. After deducting freight, smelter, slag loss, re-
fining, etc., and considering "A" Bonus Payments, this would be
equal to \$10.00 per ton.

The figures are as follows:

Gold 0.15 ozs. @ 40.00 equals	\$ 5.25	per ton
Silver 2.10 ozs. @ 10.72 equals	1.50	" "
Copper 3.6% @ 95¢ equals	3.42	" "
Zinc 3.83% @ 11.00 equals	8.42	" "
Lead 0.5% @ 17.00 equals	1.70	" "
Total	\$20.00	" "

Considering the bonus realized from the smelters
on high grade products in the mill and after all deductions
are made:

Gold 1.6% @ 40.61	\$ 1.06	per ton
Silver 3.82% @ 10.58	2.22	" "
Copper 0.5% @ 11.05	0.55	" "
Zinc 0.15 ozs.	4.80	" "
Silver 2.1 ozs. @ 10.58	1.22	" "
Total	\$ 9.82	" "

("A" Bonus)

Lead 1.69% equals 36 lbs @ 86¢ equals
\$ 0.80 " "

Zinc 3.83% equals 77 lbs @ 77¢ equals
1.62 " "

Copper 0.5% equals 10 lbs @ 87¢ equals
0.45 " "

Total \$ 2.87

Grand Total

	Grand Total	\$12.00
25.00	\$ 2.00 per ton	
	<u>2.50</u> " "	
	Total	\$ 4.50 " "
	Grand Total	\$ 8.19
	development cost per ton	<u>5.00</u>
	Net profit - - - - -	\$ 3.19

Under present conditions this property may be opened very fast due to the large amount of available development. It may develop into an important producer. Geological evidence indicates that this area may be underlain by important limestone formations and/or contact with important mineralizers such as intrusive granite.

Sarle's report states:

"It has been stated that the ore bodies of the Pima Mining District were formed by mineralizing solutions escaping from the molten, crystallizing granite magma, into older roof rocks during a late stage in the uplift of the Sierrita Mountains.

"The copiousness of these solutions and their richness in metallic elements is attested by the large bodies of copper-iron and copper-iron-zinc sulphides mixed with garnet, found in limestone, where the magma contacted the Paleozoic sedimentary rocks, as in the Mineral Hill - San Xavier and Twin Buttes Camps. Also by the large body of ore, as in the San Xavier mine, formed by metasomatic replacement of limestone, caused by solutions migrating to a distance from the granite magma to more soluble portions of the lime."

"Although no occurrences of either of these types of ore deposits have yet been found in Olive camp, its intermediate position and closeness to these camps and the evidence of widespread mineralization shown by the many argentiferous-sulphate and argentiferous-tetrahedrite veins, which have been worked in this camp, together with the subjacent occurrence of the common mineralizer, the granite, implies a high degree of probability that large ore bodies will be discovered in the Olive Camp once deep and systematic mining is undertaken there."

"In other words, these veins may well be investigated today as it will almost certainly prove that some if not all of them are but the upper attenuated ends of larger bodies of base ore."

"Unworked veins occur, and probably many which are blind will be encountered when systematic exploration and development of the camp is undertaken. Several showings of the company's holdings deserve careful investigation. The camp was abandoned only when the price of silver and lead fell. But, as stated, valuable as these ores are, and well worth developing, the major future value of this camp, in my opinion, are likely to lie in the development possibilities of huge bodies of base ore with depth. There is no reason to suppose that, with all these surface showings, mineralization within this area was not as intensive as that indicated by the large

and metamorphic replacement ores of the type which require the right conditions for the entrance and retention of mineralizing solutions.

The fact that the easily replaceable limestone and other relatively hospitable nature of the underlying sedimentary rocks to replacement, some other conditions must be afforded. These requirements have been met by the occurrence of zones of fracturing and brecciation in these rocks, permitting the entry of mineralizing solutions and the formation of replacement ores in place. One such example, apparently, has been observed in the large ore body now being developed by the Phoenix Mining and Milling Company.

Some confidently hold the view that the superficial deposits of Olive Camp are deeply underlain by the Paleozoic sedimentary rocks. If so, then bodies of contact-metamorphic and metamorphic replacement ores in limestone, where the relations of the granite magma are right, may occur beneath Olive Camp and the company's property, quite as large or larger than any of the mines known deposits of the Mineral Hill - San Xavier and Twin Buttes Camps.

The large number and wide distribution of strong veins which have been mined superficially for their rich lead-silver ores in Olive Camp, proves it beyond question to be an exceptionally richly mineralized area. That these veins in the majority of cases lead down to much larger bodies of commercial base ores has been explained. The large bodies of contact-metamorphic and metamorphic replacement ores of copper and copper-zinc sulphides, mined in contiguous camps, point, with a high degree of probability, to other ore bodies of these metals, of the same order of magnitude, existing at depth in Olive Camp. The general position of the Helmet Peak Mining and Milling Company's property, in this area, the excellent showing development of their ore body has already made, and other strong surface indications, found on their large holdings, warrant confidence that their mining operations will meet with gratifying economic results.

Bright's report states:

"The intrusive granite is the principal mineralizer in the ore deposits of Arizona."

"The presence of intrusive granite associated with the sedimentary rocks form an ideal condition for large deposits of ore. Where these conditions exist with a great number of mineralized veins encountered over the surface, it is almost a certainty of immense deposits of commercial ore, only requiring capital and intelligence in development work to locate them."

"There is evidence of large deposits of commercial ore, on the contact of the granite and Paleozoic rocks, by development of the Mineral Hill, Verde and other properties."

Libby's report states:

"The most recent development on the lower levels of this mine substantiate that Libby is the proportion of copper minerals in the unaltered primary ore is gradually increasing as the work approaches the underlying granite rocks at the lower and below."

"As this basal structure is approached at depth,

depth of mineralization and proportionate value of the mineralization will be increased."

"The following mines of the Twin Buttes area on the east and the Mineral Hill area on the north have at times produced large quantities of high grade copper ore."

"This relative position is closer to the basal granitic rocks than the workings of the Helmet Peak Company and it is therefore safe to predict that the latter company will find improved mineralizing conditions at a lower geological horizon."

"It is assumed in reason, that mineralization will be more intensified as the source thereof is approached and that fissures and sheeted rock masses will become more generally ore-bearing and show a relatively increased concentration of the contained minerals."

"The origin of the mineralization undoubtedly lies within a zone between the ore areas now manifest and the granitic sill which underlies the series, and the mineralizing fissures may be simply offshoots from much larger ore bodies below."

Leonard's report states:

"It is fairly certain that intrusive granitic rocks underlie at variable depth the entire district of which Olive Camp area forms a part. These intrusive rocks were probably the sources of all primary mineralization in the district. The ore deposits that have been developed in the past in the Olive Camp area have been chiefly small high-grade silver-lead bodies, formed mainly by fissure-filling, but perhaps to some extent by wall-rock replacement, in the near-surface Cretaceous sedimentary and volcanic formations. In areas to the north and south important copper and zinc ore developments have been made and from which considerable tonnages of ore have been mined in the past. These deposits are principally replacement bodies in Paleozoic limestone. It appears, therefore, that replacement bodies in limestone form the important type of ore deposits for the district."

"The questions of major structure, and character and thickness of formations forming that structure, thus appear to be the essential questions relative to the probability of extensive ore occurrences at depth in the Olive Camp area."

"If the ore-bearing limestone formations of the Mineral Hill-San Xavier area to the north and of the Twin Buttes area to the south are continuous or occur under Olive Camp, then the probability of occurrence of important commercial ore deposits at depth in the latter area is greatly increased."

"The problem would then become one of probable depth to the favorable horizon and the determining of dominant or master fracture zones."

Swastika pr
statement o
ficial formation
possibility that these
below the surface formations
statement nor one made for convenience."

AMERICAN SMELTING AND REFINING COMPANY
EL PASO SMELTING WORKS
ORE SETTLEMENT

EL PASO TEXAS 12-27-48
SMELTER LOT 2021
SHIPPER'S LOT
CLASSIFICATION Crs
NAME OF MINE Golden Gate

BOUGHT OF Great Northern Exploration Co.
ADDRESS 4325 N. Wilson Blvd., Tucson, Ariz.
SHIPPING POINT Sahuarita, Ariz.

CAR		WEIGHT IN AVOIRDUPOIS POUNDS				
NO.	INITIAL	GROSS	SACKS		NET WEIGHT	DRY WEIGHT
			NO.	WEIGHT		
56887	SP				3,520	2,633
<i>Iron 2 1/2% Fe</i>						

N.Y. METAL QUOTATIONS

Settlement Date 12-27-48
B/L Date 12-27-48

Silver	90.0	Gr. per lb.
Fine Silver	70.0	
Lead	21.5	Per 100 lb.
E. & M. J.		
Copper		Per 100 lb.

PREMIUM METAL CONTENT

Lead
Copper

PAYMENTS FOR METALS								AMOUNT	TRIAL
Lead	per ton	%	20.54	446	90	10.54	1,963	9.33	
Copper	11.50	%	22.3					78.79	
Silver		%							

TOTAL PAYMENTS FOR METALS

DEDUCTIONS						DEBITS	CREDITS
BASE CHARGE: F. O. B. El Paso, for Metal Payments, not exceeding \$ _____ per ton						9.50	
Handling Sacks							
Copper Deficiency <u>30.0 - 22.3 = 7.7</u>						.77	
Bullion Freight Tax						.12	
ANALYSIS	DEDUCTION	NET WT.	RATE				
Insoluble	49.4	%					
Silica	43.9	%					
Iron	3.7	%					
Mn	1.5	%					
Lime	6.0	%					
Zinc	7.4	%					
Sulphur	.1	%					
Alumina	.1	%					
As	.1	%					
Bi	.1	%					

TOTAL DEDUCTIONS
NET VALUE PER TON

Total Value at	17.1565	Dry Tax @	77.73	Per Ton			
Less Freight on	17.26	Wet Tax @	6.54	Per Ton			
		Handling Charge	1.25		106.30	3.00 Tax	242.05
		Smelting	3.72		43.98	.46 Tax	22.43
		Union					1.81
Amount withheld pending receipt of Silver Affidavit							1.00
Royalty							7.50
							26.78
Valuation for freight per wet ton							

6.54
19620

(37)

