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

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

ACCESS STATEMENT

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

CONSTRAINTS STATEMENT

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

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

QUALITY STATEMENT

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

03/20/90

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: SPRINGFIELD GROUP

ALTERNATE NAMES:
GORILLA CLAIM
VENUS CLAIM

YAVAPAI COUNTY MILS NUMBER: 814

LOCATION: TOWNSHIP 10 N RANGE 1 W SECTION 16 QUARTER N2
LATITUDE: N 34DEG 12MIN 28SEC LONGITUDE: W 112DEG 22MIN 06SEC
TOPO MAP NAME: CROWN KING - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
COPPER
SILVER
GOLD
LEAD
ZINC
FLUORINE FLUORSPAR

BIBLIOGRAPHY:
USGS CROWN KING QUAD
ADMMR SPRINGFIELD GROUP FILE
LINDGREN, W. ORE DEPTS JEROME & BRADSHAW MTN
QUADS USGS BULL 782 1926 P 165
ELEVATORSKI, E.A. AZ FLUORSPAR 1971 P 38
ADMMR SPRINGFIELD MINE COLVO FILE

SPRINGFIELD MINE

YAVAPAI COUNTY
CROWN KING DIST.

See: IC 6905 p. 40

AMB Bull. 180, p. 354

DMR - Fluorspar p. 38

Ariz. Mng. Journal, July, 1918, p. 26

SPRINGFIELD MINE YAVAPAI COUNTY

See: U.S.G.S. Bulletin # 782 pp 165-66, 23,25,48

See: Production Possibilities of the Marginal Copper Mines in Arizona, 1941, p. 102.

MINING WORLD 2-60

May 1, 1957

M. Gemmill reported:

Springfield Inactive

Owned by Glen Van Tilborg
Crown King, Ariz.

MINING JOURNAL 9/30/42

SPRINGFIELD MINE

YAVAPAI COUNTY
CROWN KING DISTRICT

Travis P. Lane, Field Engineer - Weekly Report 5-30-59

SEE TEE Mining Corp., of Albuquerque is drilling a copper zone at the Springfield mine some 5 miles southwesterly from Crown King. The crew comprises 2 drill runners. It was too late in the day to visit the property. According to information in Crown King one shallow hole (200') and several holes around 500' deep have been drilled, and the crew is presently drilling a hole destined for 1000' depthe Following completion of this hole it is said the company plans to deepen a shaft (now bottomed at 185') and explore laterally at a new horizon.

TPL - WR - 10-3-59
SEE TEE Mining Corp. of Grants, NEW Mexico is continuing with development of the Springfield Mine with three men employed. These people unwatered the main shaft (reportedly 300' deep) and for some time have been exploring by underground drilling.

TPL - WR - 12-26-59
Advised that the Springfield Mine exploration job has been terminated.

SEE TEE Mining Corp., Box 506, Grants, New Mexico
Mr. Bailey, Pres.
Al Pyrah, Boss TPL - 12-29-59

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Springfield Copper Date Nov. 28th, I944.

District Crown King Engineer A. C. Nebeker

Subject: Present Operations.

The Springfield Copper Mine is out from Crown King 6 miles southwest.

Mr P. R. Helm is manager of operations.

At the present they are shipping one car of copper-silicious ore per week to the Clarkdale Smelter , 4 men being employed.

The company is contracting the sinking of the shaft for I00 feet.

Mr Tony Bennett is taken the shaft sinking contract.

DEPT. MINERAL RESOURCES
RECEIVED
DEC 6 1944
PHOENIX ARIZONA

DEPARTMENT OF MINERAL RESOURCES
State of Arizona
MINE OWNER'S REPORT

Date May Ist,1947

1. Mine: SPRINGFIELD.

2. Location: Sec. ..... Twp. ..... Range ..... Nearest Town Crown King,Ariz

Distance 3 miles Direction ~~West~~ N.E. Road Condition Good

3. Mining District & County: Pine Grove Dist.,Yavapai County.

4. Former Name of Mine: Same

5. Owners: P.R.Helm,315 W Minnezona St., Phoenix,
J.P.Sweet, 2404 A,Derby St., Berkeley,Calif.
J.H.Nelson, Crown King, Arizona.

Address: .....

6. Operator: M.B.Callan,under lease.

Address: Crown King, Arizona.

7. Principal Minerals: Copper with small amount of silver

8. Number of Claims: Nine Lode Yes Placer No

Patented ### No Unpatented Yes

9. Type of Surrounding Terrain: Mountainous. Granite,porphyry,diorite and schist

10. Geology & Mineralization:

11. Dimension & Value or Ore Body:

Mineralized zone quite extensive, ore running around 4 to 7 percent.

12. Ore "Blocked Out" or "In Sight": Ore being shipped at present.

Ore Probable:

13. Mine Workings—Amount and Condition:

	No.	Feet		Condition
Shafts	several	I-I60 --------	On Gorilla-	Good
		I-I85 --------	" Venus-	Good
Raises				
Tunnels	2 drifts	I-I50	Good	
		Both I00	"	
Crosscuts				
Stopes				

14. Water Supply: Pumping required about 2 hours a day

Makes from 5000 to I0,000 gals.a day

15. Brief History: Property operated by George P.Harrington and Randolph and Gemmill until I9I7.They shipped a number of cars from the Venus claim and from I9I7 to I930 it was worked intermittently by leasers who all shipped ore during the term of their lease. from the Venus claim.

The present owners operated from I942 to I945 under a loan from the RFC working only on the Gorilla claim.They shipped I to two cars a week. The Gorilla claim was leased to M,B,Callan in I946 and his lease is still operating. The property can be thoroughly examined at present,while the water is being kept pumped out.

16. Signature: J. High Nelson or R. S. Patterson
Crownking, Arizona

17. If Property for Sale, List Approximate Price and Terms: Consult owners or any one of them for price and terms.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

DEPT. MINERAL RESOURCES
RECEIVED
DEC 9 1942

Mine Springfield

Date Dec. 7th, 1942.

District Crown King

Engineer A. C. Nebeker

Subject: Progress made since R. F. C. loan.

At the request of Mr Helm, I visited the Springfield mine.

Mr Hugh Nelson is in charge of the work at the mine, and three men working. They have cut down and barked enough timber for timbering the tunnel into the winze, and for winze sets to the lower level. They have the tunnel well timbered into the winze and are now putting in the collar set and making head room for the bucket dump and hoist, all work is well done.

The equiptment on the property consists of a I. R. Portable 160 cu. ft. compressor, two jackhammers, one stoper, a mine car, power emery wheel, a jack pump to remove water from winze, tugger hoist, steel, complete set of tools for timbering and blacksmith shop, mine track to winze, and a nice two room building. The large pieces of this equipment is rented, so the most of the money will be used in actual development.

They have brightened up several places on the ore deposit, and they show the sulphide ore, and it appears they have a worth while project.

A C Nebeker

NAME OF MINE: SPRINGEIELD

COUNTY: YAVAPAI
DISTRICT: PINE GROVE
METALS: CU

OWNER: P. R. Helm
OPERATOR AND ADDRESS:

DATE:		MINE STATUS DATE:	
5/1/44	P.R.Helm, 2606 N. 7th St. Phoenix (owner)	5/1/44	Developing
		may 1944	~~Shipping to Clarkdale~~
		2/46	Idle

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Springfield Date December 7th, 1942

District Crown King Engineer A. C. Nebeker

Subject: Progress made since R. F. C. loan.

At the request of Mr. Helm, I visited the Springfield mine.

Mr. Hugh Nelson is in charge of the work at the mine, and three men working. They have cut down and barked enough timber for timbering the tunnel into the winze, and for winze sets to the lower level. They have the tunnel well timbered into the winze and are now putting in the collar set and making head room for the bucket dump and hoist, all work is well done.

The equipment on the property consists of a I. R. Portable 160 cu. ft. compressor, two jackhammers, one stoper, a mine car, power emery wheel, a jack pump to remove water from winze, tugger hoist, steel, complete set of tools for timbering the blacksmith shop, mine track to winze, and a nice two room building. The large pieces of this equipment is rented, so the most of the money will be used in actual development.

They have brightened up several places on the ore deposit, and they show the sulphide ore, and it appears they have a worth while project.

(Signed: A. C. Nebeker)

File

SPRINGFIELD COPPER MINES,
Near Crown King, Arizona.

This group of copper mining claims is located at the foot of Towers Mountain in the Southern Bradshaw's, 2½ miles west of Crown King, Arizona, and lies at an elevation of about 6,500 feet.

There is considerable spruce, as well as pine timber on the property, which is especially important now when Oregon Pine is so difficult to procure. This spruce can be used for much of the mine timber needed.

A good county road, into Crown King, is located over the old railway roadbed and connects with State 69 (the Black Canyon Road) at the foot of Antelope Hill. There is also quite a good Forest road from Crown King to and through the Springfield property, and, connecting with the Senator Highway into Prescott.

The Springfield group consists of eleven claims, held by possessory title, but work has been done on only three of these claims--the Gorilla, the Venus, and the Uranus--where "Chimney" or "Pipe" deposits have been opened up. These are the same kind of "Chimney" deposits as the Duluth mine at Cananea, and the Pilares mine at Nacozari, and others. Three of these "Chimneys" have been opened up, but only to a limited extent.

There are indications of similar "Chimneys" on all the claims, and there is reason to believe these emanate from a large ore body, as has occurred with other similar deposits. This can only be proven, however, and the extent of the ore body determined, by quite a program of exploratory prospecting and development, which would take a great deal of time and cost a lot of money, and this delay, we believe, would not be in the interest of our Nations urgent need for more copper.

The development program we have planned, and which would bring this property into production quickly, is to confine our mining operations to the development of the Gorilla claim, which has the best showing, with the amount of underground work done, (see maps attached), and to forget the rest of the property for the time being.

An adit driven on this claim encountered a "chimney" of ore 80 feet from the entrance. This measured 15 feet by 20 feet--a square foot area of 450 feet--A shaft was sunk in the ore 50 feet and at the 42 foot level, a drift, almost entirely around the ore, showed it had increased to 30 feet in both directions, or an area of 900 square-feet--just double the size 42 feet above--. Engineers estimate 3,500 tons of 4 per cent copper ore between these two levels--(see report of J. N. D. Gray attached.)

Our operating plans are to raise, above the shaft on the adit level, about 35 feet to the surface, where we would place our compressor, hoist and other machinery. We would then sink the shaft, at least another 100 feet, following the ore all the way. We would then have ample ore developed to raise a new working shaft, and begin mining, milling at the Corner mill all the ore this mill could handle. At the same time, we would continue development of the main ore body.

The Corner mill--a 75 ton selective oil flotation mill--has just been completed on the old Crown King property. They want our ore. (See letter from Mr. Douglas. C. Corner attached.) and we plan to have them mill it until we have developed enough ore to justify building a larger mill at the mine.

This program will bring the mine into production, enable us to concentrate our ore, and have the smelter turning out copper from the Springfield very quickly. We believe this to be in the interest of our Nations urgent need for one of its strategic metals--copper.

Springfield Copper Mines

by P. R. Helm

August 24, 1942.

2606 N. 7th St.,
Phoenix, Ariz.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

DEPT. OF MINERAL RESOURCES
SEP 8 1942
PHOENIX, ARIZONA

Date Aug 28th, I942.

Mine Springfield — Engineer A. C. Nebeker

District Crown King — Location Prescott. Ariz.

Former name Known as Springfield Group for years.

Owner P. R. Helm, Hugh Nelson, Sweet and Patterson — Address Crown King

Operator Hugh Nelson, when operating. — Address Crown King

President — Gen. Mgr.

Mine Supt. — Mill Supt.

Principal Metals Copper — Men Employed none

Production Rate none — Mill: Type & Cap.

Power: Amt. & Type When worked, gasoline engines.

Operations: Present

The owners have put in an application for a $20,000 loan and now waiting to see if they get it.

Operations Planned If the loan is granted, they plan to make a raise in the ore to the surfac off the tunnel level, and then they will continue to sink the present winze another I00ft deeper and then cross-cut the ore both ways to block out ores for a small mill of the flotation type.

Number Claims, Title, etc. The Springfield group consists of eleven full size mining claims and the title has been held in good standing by assessment work being done each year and recording the same.

Description: Topog. & Geog. The property is on the divide between Poland Creek and Pine Creek, at Elevation of 6500 feet. The mountains are covered with pine and oak trees common to the district, having steep sides and cut by deep gullies.
The annual rain fall is around 30 inches, with snow in the winters which at times may stop transportation by Auto for several days.
The temperture is very comfortable both summer and winter making a very nice place to live.

Mine Workings: Amt. & Condition ; On the Gorilla claim, which is in the centre of the group there is a adit of approximately I50 feet, this is open and followed a fissure . About 50 feet in from the portal of the adit a winze was sunk on the ore for 50 feet, and at the point 45 feet down a drift was run around three sides of the copper ore. There is about I0 feet of water now in the bottom of the winze.
On the Venus Claim on the northwest end of the group and about I500 feet from the works on Gorilla is a tunnel and shaft . Water in the shaft, tunnel open.

(over)

Geology & Mineralization

The geology is the same general formation that makes up the Bradshaw Mountains, Granite, Granodiorite, schists and porphyry dikes which are more or less favorable spots for ore along the contact fissures.
The ore on the Gorilla Claim is of the pipe nature, the pipe is I6 ft X 24Ft in size and has a dip and rake to the N. E. The ores are both the carbonates and sulphides of copper, making along the seams of the fractured zone and carrys from 2% to 5% copper.

Ore: Positive & Probable, Ore Dumps, Tailings

There is no dump ore worth considering and the pipe of ore between the surface and the bottom of the 50 ft winze will approximate 3000 tons and the average value 4% copper. What ore maybe developed by sinking and drifting around the pipe is really anybodies guess, if the present showing will continue with depth several thousand tons will be developed.

Mine, Mill Equipment & Flow Sheet

There is no mining equipment on the property other than three weather worn frame hous es.

The ore has been tested for flotation and found to be adapted to the same with a ratio of concentration of 3 to I. Recovery of 99%
Is t conc. copper I7.37% 2nd, Conc. 7.04 %

Road Conditions, Route

The road to the property is good, it is on the Prescott, Crown King road and only five miles from the Crown King Post Office.

It is 30 miles to Railroad and trucking to rail will cost around $2.50 per ton. The railroad then will take it to Clarkdale Smelter , rate from $I.50 up.

Water Supply

The property being well up in the hills where rain fall is 24 inches to 30 inches , there will be plenty of water developed in the mine for small operations.

Brief History

Thi s property has been held cfor years, very little has been done and as far as I can learn no shippments have been made of ore.

Special Problems, Reports Filed

The problem of labor is a handicap, and the ores are making in such broken formation they will need close watching and a cheap mining method must be worked out inorder to make a winner.

Remarks

There should be plenty of timber for all mining purposes taken from the property.
Electrict Power line is only 2 miles distance, This could be brought over for $900.00 per mile.

If property for sale: Price, terms and address to negotiate. Owners will sell on a lease and option agreement. Price not stated

Signed A. C. Nebeker
A. C. Nebeker

Use additional sheets if necessary. Separate sheets on each problem.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine SPRINGFIELD Date August 28, 1942

District Crown King Engineer A. C. Nebeker

Subject:

Owner: P. R. Helm, Hugh Nelson, Sweet & Patterson, Crown King, Arizona.

Operator: Hugh Nelson, when operating, Crown King.

Principal Metals: Copper

Power - Amt. & Type: When worked, gasoline engines.

Operations- Present: The owners have put in an application for a $20,000 loan and now waiting to see if they get it.

Operations Planned: If the loan is granted, they plan to make a raise in the ore to the surface of the tunnel level, and then they will continue to sink the present winze another 100 ft. deeper and then cross-cut the ore both ways to block out ores for a small mill of the flotation type.

Number Claims, Title, etc.: The Springfield group consists of eleven full size mining claims and the title has been held in good standing by assessment work being done each year and recording the same.

Description - Topog. & Geog.: The property is on the divide between Poland Creek and Pine Creek at elevation of 6500 feet. The mountains are covered with Pine and Oak trees common to the district, having steep sides and cut by deep gullies. The annual rainfall is around 30 inches with snow in the winters which at times may stop transportation by auto for several days. The temperature is very comfortable both summer and winter, making a very nice place to live.

Mine Workings - Amt. & Condition: On the Gorilla claim, which is in the center of the group, there is an adit of approximately 150 feet. This is open and followed a fissure. About 50 feet in from the portal of the adit a winze was sunk on the ore for 50 feet, and at the point 45 feet down a drift was run around three sides of the copper ore. There is about 10 feet of water now in the bottom of the winze. On the Venus claim on the northwest end of the group and about 1500 feet from the works on Gorilla is a tunnel and shaft. Water in the shaft, tunnel open.

Geology & Mineralization: The geology is the same general formation that makes up the Bradshaw Mountains - granite, granodiorite, schists and porphyry dikes which are more or less favorable spots for ore along the contact fissures. The ore on the Gorilla claim is of the pipe nature, the pipe is 16 ft. x 24 ft. in size and has a dip and rake to the N.E. The ores are both the carbonates and sulphides of copper, making along the seams of the fractured zone and carries from 2% to 5% copper.

Ore - Positive & Probable, Ore Dumps, Tailings: There is no dump ore worth considering and the pipe of ore between the surface and the bottom of the 50ft. winze will approximate 3000 tons and the average value 4% copper. What ore may be developed by sinking and drifting around the pipe is really anybody's guess, if the present showing will continue with depth several thousand tons will be developed.

Mine, Mill Equipment & Flow Sheet: There is no mining equipment on the property other than three weather worn frame houses.

The ore has been tested for flotation and found to be adapted to the same with a ratio of concentration of 3 to 1. Recovery of 99%.
1st, conc. copper 17.37% 2nd, conc. 7.04%

Road Conditions, Route: The road to the property is good. It is on the Prescott, Crown King road and only five miles from the Crown King Post Office. It is 30 miles to railroad and trucking to rail will cost around $2.50 per ton. The railroad then will take it to Clarkdale smelter. Rate from $1.50 up.

Water Supply: The property being well up in the hills where rain fall is 24 inches to 30 inches, there will be plenty of water developed in the mine for small operations.

Brief History: This property has been held for year. Very little has been done and as far as I can learn, no shipments have been made of ore.

Special Problems, Reports Filed: The problem of labor is a handicap, and the ores are making in such broken formation they will need close watching and a cheap mining method must be worked out in order to make a winner.

Remarks: There should be plenty of timber for all mining purposes taken from the property. Electric Power line is only 2 miles distance. This could be brought over for $900.00 per mile.

If property for sale, price, terms and address to negotiate: Owners will sell on a lease and option agreement. Price not stated.

/s/ A. C. Nebeker

Arizona Department of Mineral Resources, Capitol Building, Phoenix, Arizona

QUESTIONNAIRE

Relating to survey of potential copper production from Arizona small and marginal mines for national defense purposes;

Name of mining property Springfield group

Location Crown King Ariz.

Ownership Jack Lovell, Hugh Nelson, R. J. Patterson

Name of Manager

Post Office address Crown King Ariz

Copper production (pounds) during each of the past five years:

1936 — 1937 — 1938 —

1939 — 1940 —

1941 rate of copper production based upon first four months

How much copper could this property produce annually

on a 14 cent price?

on a 16 cent price?

on an 18 cent price?

on a 20 cent price?

What price copper is necessary for this property? 15 cents cents per pound?

What plant facilities would be required and how much is the estimated cost in the event a 14 cent price could be assured? The ~~Crown~~ Jesse Schrade built a small flotation mill, handling 25 ton per day

a 16 cent price could be assured?

18 cent price?

20 cent price?

For what length of time would assurance of price and sale of full production be necessary?

(Over)

How long would it take, after financing has been provided for, before production on the above basis could be reached? ..one month.....

Does your organization have the facilities for raising the necessary capital to increase production to the amount stated? ...no.....

If not, do you believe that your company would be amenable and agreeable to government financing? .....

Do you believe that you could finance the capital investment yourself on some such basis as a guarantee of sale of output at a fixed price and for a definite period, with damages to cover unamortized portion of capital investment in the event the government failed to take the output for the agreed upon time - or some similar arrangement? .....

Please let us have your comments on the probability or possibility of your organization participating in such a program for national defense purposes .....

.....

.....

.....

.....

What would be your ideas on financing and carrying out such a plan as is indicated by these questions?.....

.....

.....

.....

.....

Kindly list names and addresses of other potential copper producers in Arizona whose operations should be included within this survey.....

The Gorilla claim has blocked out in the first 50 feet 3000 tons of calcopyrite averaging 4% copper and 1 oz of silver.

.....

.....

Date June 14th 41 ..... Signed L. Schrade .....

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date 8/7/40

Mine SPRINGFIELD GROUP.

District PINE GROVE MINING DISTRICT CROWN KING - YAVAPAI COUNTY

Location 2 1/2 MILES W OF CROWN KING

Former name — CROWN KING

Owner HUGH NELSON - P.R. HELTY (PHOENIX) J.P. SWEET

Address C/O R.S. PATTERSON - CROWN KING - ARIZ

Operator —

Address —

President —

Gen. Mgr. —

Mine Supt. —

Mill Supt. —

Principal Metals COPPER

Men Employed — (?)

Production Rate —

Mill: Type & Cap. —

Power: Amt. & Type —

Operations: Present LOUIS SEMRADE HAS 30 TON HUNTINGTON MILL HAS LEASE & OPTION - WORKING INTERMITTENTLY. WORKING IN SHAFT.

Operations Planned —

Number Claims, Title, etc. 9 CLAIMS.

Description: Topog. & Geog. 6000 TO 6200 ft. ELEVATED. RUGGED COUNTRY - HEAVILY TIMBERED.

Mine Workings: Amt. & Condition 200 ft. SHAFT — VERTICAL ON SPRINFIELD CLAIM. ON GORRILA CLAIM TUNNEL & 40 ft. WINZE. & DRIFTING ON ORE.

(over)

Geology & Mineralization GRANITE & PORPHYRY CONTACT.
SOME DIORITE DIKES. — COPPER AS
CHALCOPYRITE - IN QUARTZ VEIN WITH IRON PYRITE.

Ore: Positive & Probable, Ore Dumps, Tailings
CLAIM 4000 TONS ACTUALLY BLOCKED.
SAMPLED 4 to 5% COPPER.
DUMPS - CARRYING COPPER. TONNAGE QUESTIONABLE.

Mine, Mill Equipment & Flow Sheet
HUNTINGTON MILL 30 TON CAPACITY -
TABLES

Road Conditions, Route 2½ MILES WEST OF CROWN KING ON
SPRINGFIELD ROAD. ROUGH BUT PASSABLE - GOOD GRADE
& CAN BE IN FINE SHAPE AT REASONABLE COST.

Water Supply CAN DEVELOP PLENTY OF ADDITIONAL -
NOW ENOUGH FOR SMALL MILLING.

Brief History HAVE SHIPPED SEVERAL CARS.

Special Problems, Reports Filed ORE IN BOTTOMS OF SHAFTS.
NEEDS DEVELOPMENT TO GREATER DEPTH.

Remarks IF PARTIES SERIOUSLY INTERESTED IN BUYING
OR LEASING - SHAFT CAN BE UNWATERED
BY 3 to 4 days NOTICE -

If property for sale: Price, terms and address to negotiate.
FOR SALE OR LEASE
SEE OWNERS.

ADDRESS OWNERS
c/o R. S. Patterson

Signed.....

Use additional sheets if necessary.

MS-55

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA

OWNERS MINE REPORT

Date 8-7-40

1. Mine Springfield Group

2. Mining District & County Pine Grove Mining District
Crown King - Yavapai County

3. Former name Crown King

4. Location 2-1/2 miles of Crown King (West)

5. Owner Hugh Nelson - P. R. Helm - J. P. Sweet

6. Address (Owner) c/o R. S. Patterson
Crown King, Arizona.

7. Operator

8. Address (Operator)

9. President

10. Gen. Mgr.

11. Mine Supt.

12. Mill Supt.

13. Principal Metals Copper

14. Men Employed (?)

15. Production Rate

16. Mill: Type & Cap.

17. Power: Amt. & Type

18. Operations: Present Louis Schrade has 30 ton Huntington Mill, has lease & option, working intermittently, working in shaft.

19. Operations Planned

P. R. Helm, President of the Verde Falls Gold Mining Company and co-owner of the Springfield Group of claims Crown King, has changed his address from Crown King, Arizona. to 315 West Minnezona Avenue. Phoenix, Arizona.

8-146

20. Number Claims, Title, etc. 9 Claims.

21. Description: Topography & Geography 6,000 to 6,200 ft. elevated. Rugged country - heavily timbered.

22. Mine Workings: Amt. & Condition 200 ft. shaft - vertical on Springfield claim and drifting on ore.

(over)

23. **Geology & Mineralization** Granite and Porphyry contact. Some diotire dikes. Copper has chalcopyrite in quartz vein with iron pyrite.

24. **Ore: Positive & Probable, Ore Dumps, Tailings** Claim. 4000 tons. Actually blocked. Sampled 4 to 5% copper. Dumps - carrying copper. Tonnage questionable.

24-A **Vein Width, Length, Value, etc.**

25. **Mine, Mill Equipment & Flow Sheet** Huntington Mill - 30 ton capacity - tables.

26. **Road Conditions, Route** 2-1/2 miles west of Crown King on Springfield Road. Rough, but passable, good grade and can be in fine shape at reasonable cost.

27. **Water Supply** Can develop plenty of additional - now enough for small milling.

28. **Brief History** Have shipped several cars

29. **Special Problems, Reports Filed** Ore in bottom of shafts. Needs development to greater depth.

30. **Remarks** If parties seriously interested in buying or leasing - shaft can be unwatered by 3 to 4 days notice.

31. **If property for sale: Price, terms and address to negotiate.** For Sale or lease - see owners.

ADDRESS OWNERS

32. **Signed** c/o R. S. Patterson

33. **Use additional sheets if necessary.**

Arizona Department of Mineral Resources, Capitol Building, Phoenix, Arizona

QUESTIONNAIRE

Relating to survey of potential copper production from Arizona small and marginal mines for national defense purposes;

Name of mining property....Springfield Group.....

Location.....Crown King, Arizona.....

Ownership.....Jack Sweet, Hugh Nelson, R. I. Patterson.....

Name of Manager.....

Post Office address.....Crown King, Arizona.....

Copper production (pounds) during each of the past five years:

1936..... 1937..... 1938.....

1939..... 1940.....

1941 rate of copper production based upon first four months.....

How much copper could this property produce annually

on a 14 cent price? .....

on a 16 cent price? .....

on an 18 cent price?.....

on a 20 cent price?.....

What price copper is necessary for this property? ...15..... cents per pound?

What plant facilities would be required and how much is the estimated cost in the event a 14 cent price could be assured? ...The lessee, Schrade, built a small flotation mill, handling 25 tons per day.....

a 16 cent price could be assured? .....

.....

18 cent price? .....

.....

20 cent price? .....

.....

For what length of time would assurance of price and sale of full production be necessary?.....

(Over)

C O P Y

How long would it take, after financing has been provided for, before production on the above basis could be reached? .....One month.....

Does your organization have the facilities for raising the necessary capital to increase production to the amount stated? ..No.....

If not, do you believe that your company would be amenable and agreeable to government financing? .....

Do you believe that you could finance the capital investment yourself on some such basis as a guarantee of sale of output at a fixed price and for a definite period, with damages to cover unamortized portion of capital investment in the event the government failed to take the output for the agreed upon time - or some similar arrangement? .....

Please let us have your comments on the probability or possibility of your organization participating in such a program for national defense purposes .....

.....

.....

.....

.....

What would be your ideas on financing and carrying out such a plan as is indicated by these questions?.....

.....

.....

.....

.....

Kindly list names and addresses of other potential copper producers in Arizona whose operations should be included within this survey.....

.....The Gorilla claim has blocked out in the first 50 feet 3000 tons of

.....calcopyrite averaging 4% copper and 1 ounce of silver.

.....

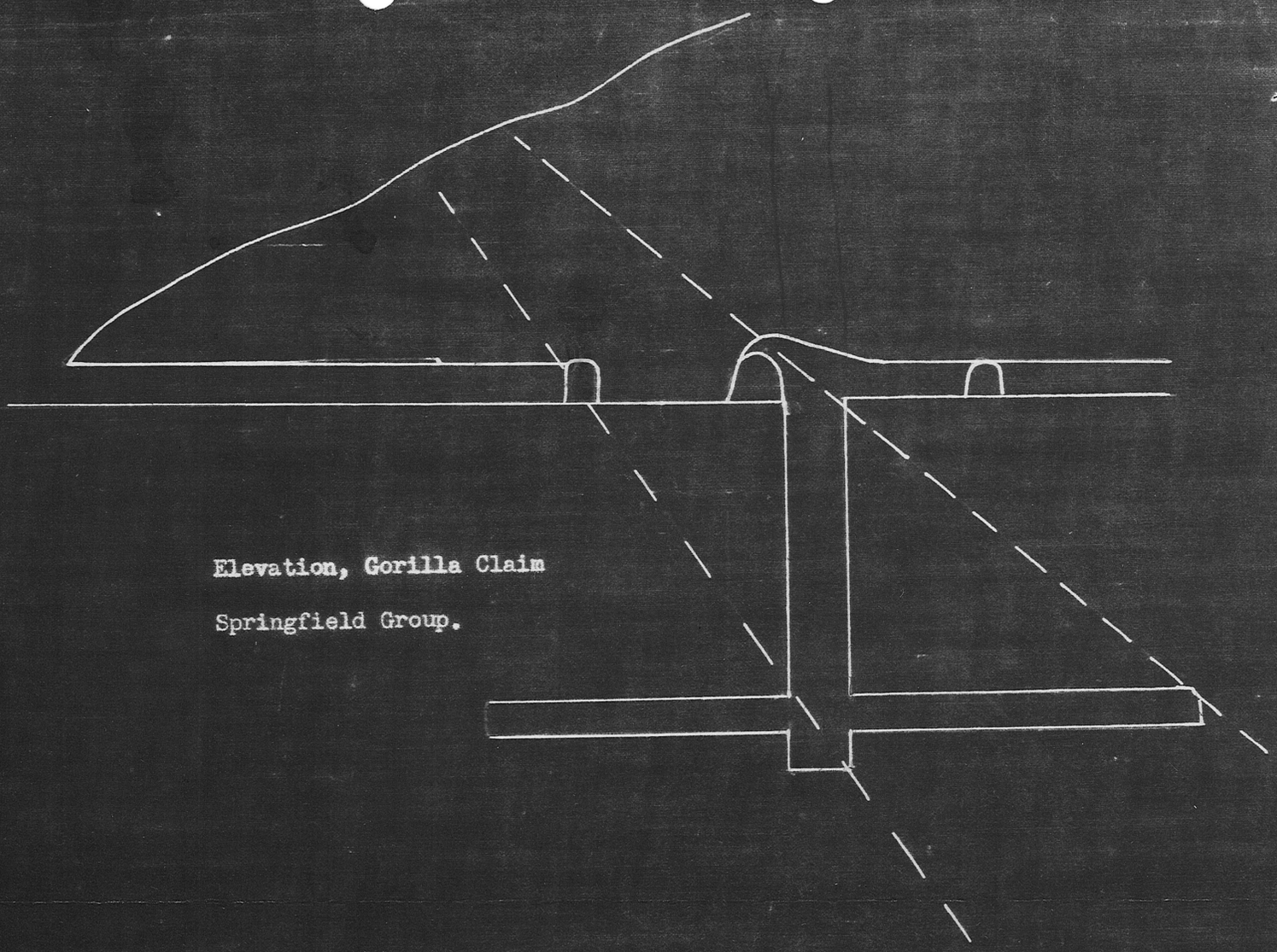
.....

.....

Date .....June 14, 1941..... Signed....L. Schrade.....

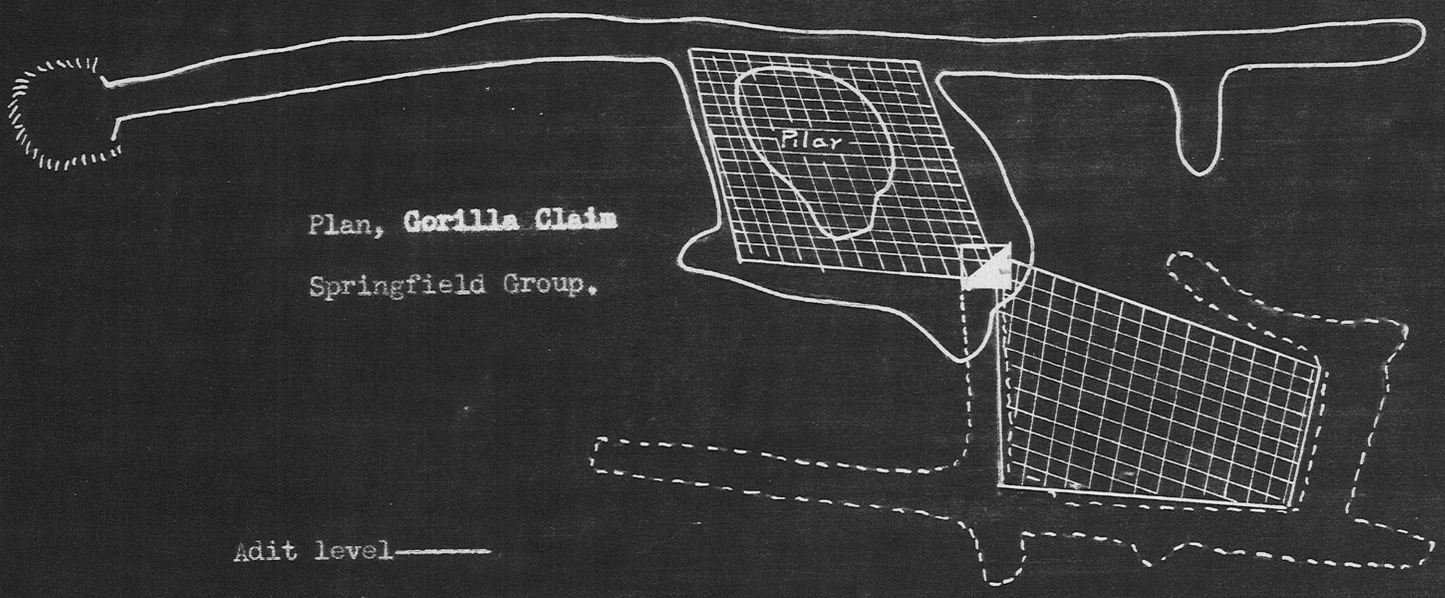
RECORD OF COPPER ORE SHIPMENTS FROM SPRINGFIELD MINE

Sampled	Lot	Dry Tons	Au	Ag	Cu	Zn	Fe	CaO	SiO_2	Al_2O_3	S	Total lbs Copper	Total oz Gold	Total oz Silver
4-8-44	2956	57.160	.01	1.22	2.90	0.0	13.2	0.6	46.7	13.1	13.8	3315.28	0.5716	69.8452
4-25-44	3008	56.435	.01	1.26	4.52	0.3	14.9	0.8	42.6	12.3	14.7	5101.724	0.5643	71.1081
5-3-44	3025	50.372	.01	1.94	4.70	0.2	13.3	0.5	44.9	12.5	14.0	4734.968	0.5037	97.7216
5-16-44	3058	60.788	Tr	2.08	5.75	0.1	15.3	0.3	41.7	12.1	16.8	6990.620		126.4390
5-23-44	3079	63.922	.01	2.09	5.31	0.2	15.1	0.5	41.9	12.1	16.0	6788.516	0.6392	133.5969
6- 8-44	3120	67.013	.01	2.41	6.08	0.1	19.5	0.1	35.3	10.1	21.5	8148.371	0.6701	161.5013
6-14-44	3129	53.510	.01	1.86	4.72	0.2	15.4	0.5	42.4	11.7	16.7	5051.344	0.5351	99.5286
6-24-44	3144	51.666	.01	2.00	4.77	0.1	15.1	0.0	42.8	11.8	16.4	4928.936	0.5166	103.332
6-29-44	3166	55.780	.01	1.71	4.56	0.1	14.0	0.5	44.5	12.4	15.4	5087.136	0.5578	96.3838
7- 7-44	3188	59.054	.01	1.84	5.13	0.1	13.3	0.4	45.6	12.5	14.5	6059.530	0.5905	108.6593
7-10-44	3196	41.768	.01	1.90	5.02	0.4	15.6	0.6	41.8	11.5	17.0	4193.507	0.4176	79.3592
7-19-44	3222	55.193	.Tr	1.61	4.15	0.1	13.7	0.4	46.1	12.2	14.8	4581.019	0.5519	88.8607
7-25-44	3232	61.468	.01	1.71	3.92	0.4	13.0	0.3	46.5	13.1	13.5	4819.091	0.6146	105.1102
8 -1-44	3255	62.366	.01	1.76	4.91	0.1	12.7	0.4	47.7	12.9	11.8	6121.395	0.6236	109.7113
8-12-44	3278	63.152	.008	2.14	5.38	0.2	15.0	2.8	44.5	11.7	16.1	6794.095	0.5062	135.1452
8-15-44	3293	64.221	.005	2.04	4.96	Tr	13.1	0.0	48.4	12.1	13.5	6370.723	0.3211	131.0108
8-22-44	3305	64.192	.03	2.37	5.63	0.3	14.2	0.2	44.9	12.0	14.3	7228.019	1.9257	152.1350
8-29-44	3318	65.261	.004	1.75	5.00	0.0	10.7	0.2	50.7	13.3	10.7	6526.100	0.2510	114.2067



Elevation, Gorilla Claim

Springfield Group.

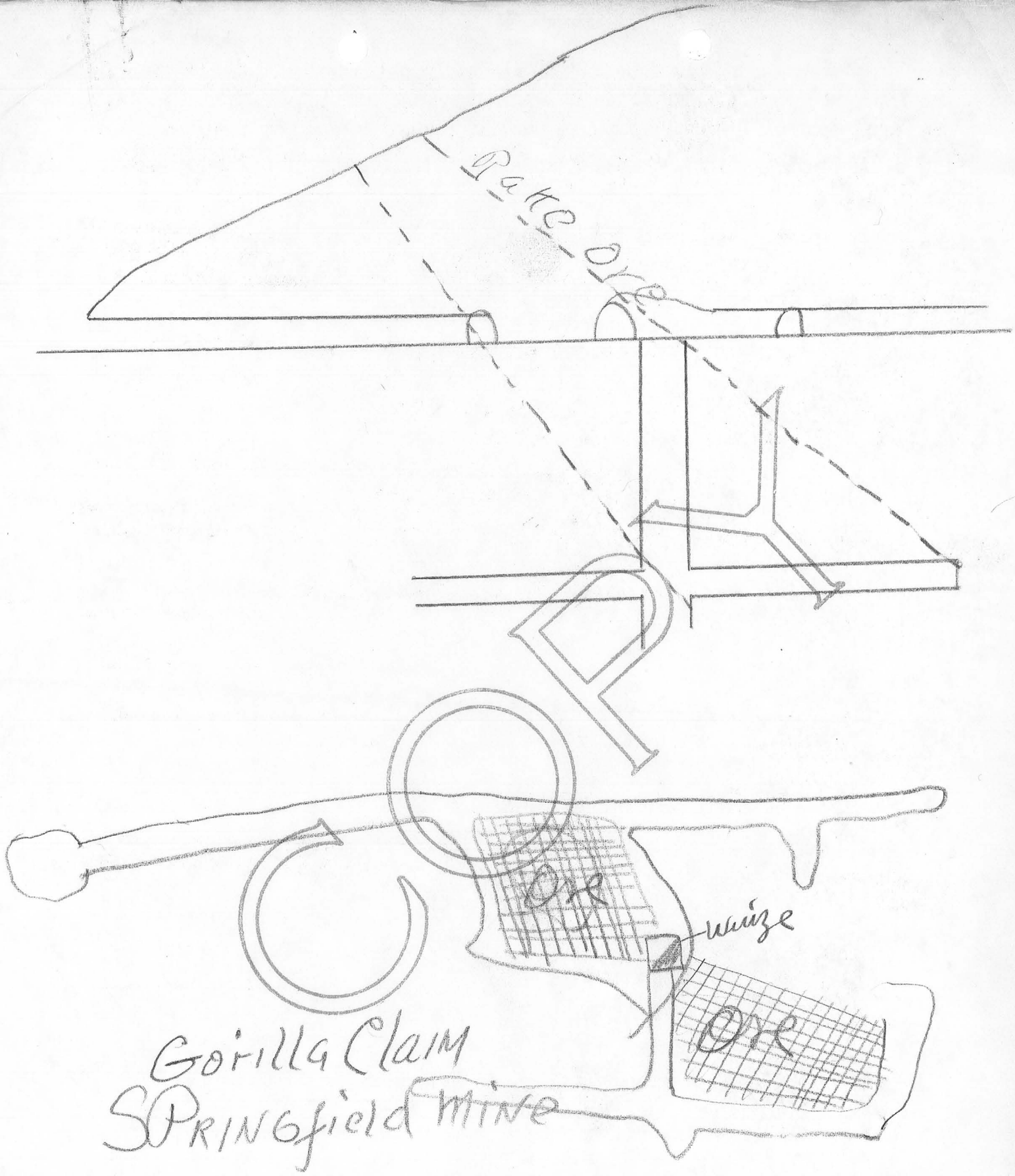


Plan, Gorilla Claim

Springfield Group.

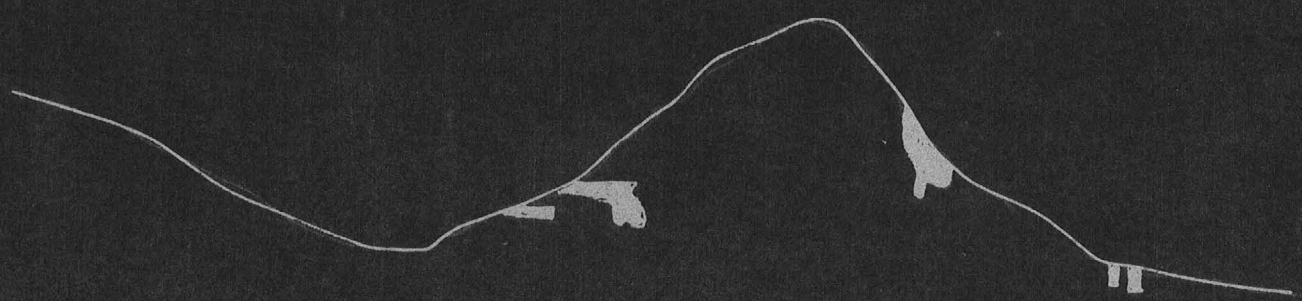
Adit level———

42' level .....

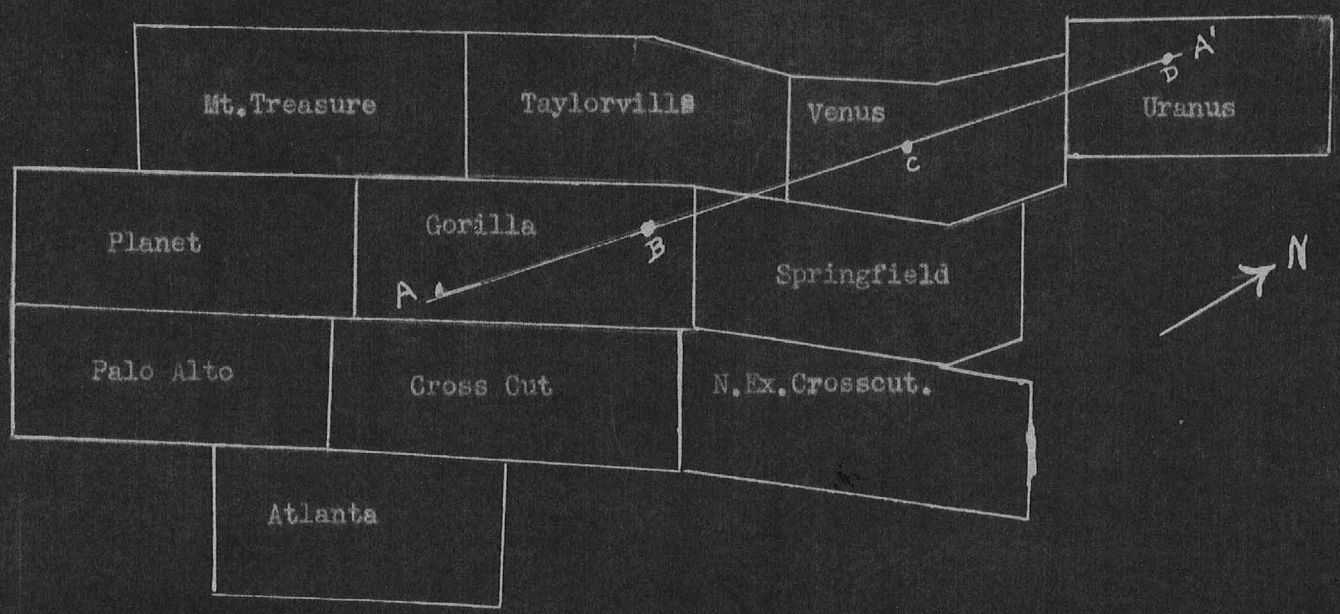

Pake ore
ore
winze
ore
Gorilla Claim
Springfield Mine

SECTION - A-A'

Springfield Claims



Section along A - A'



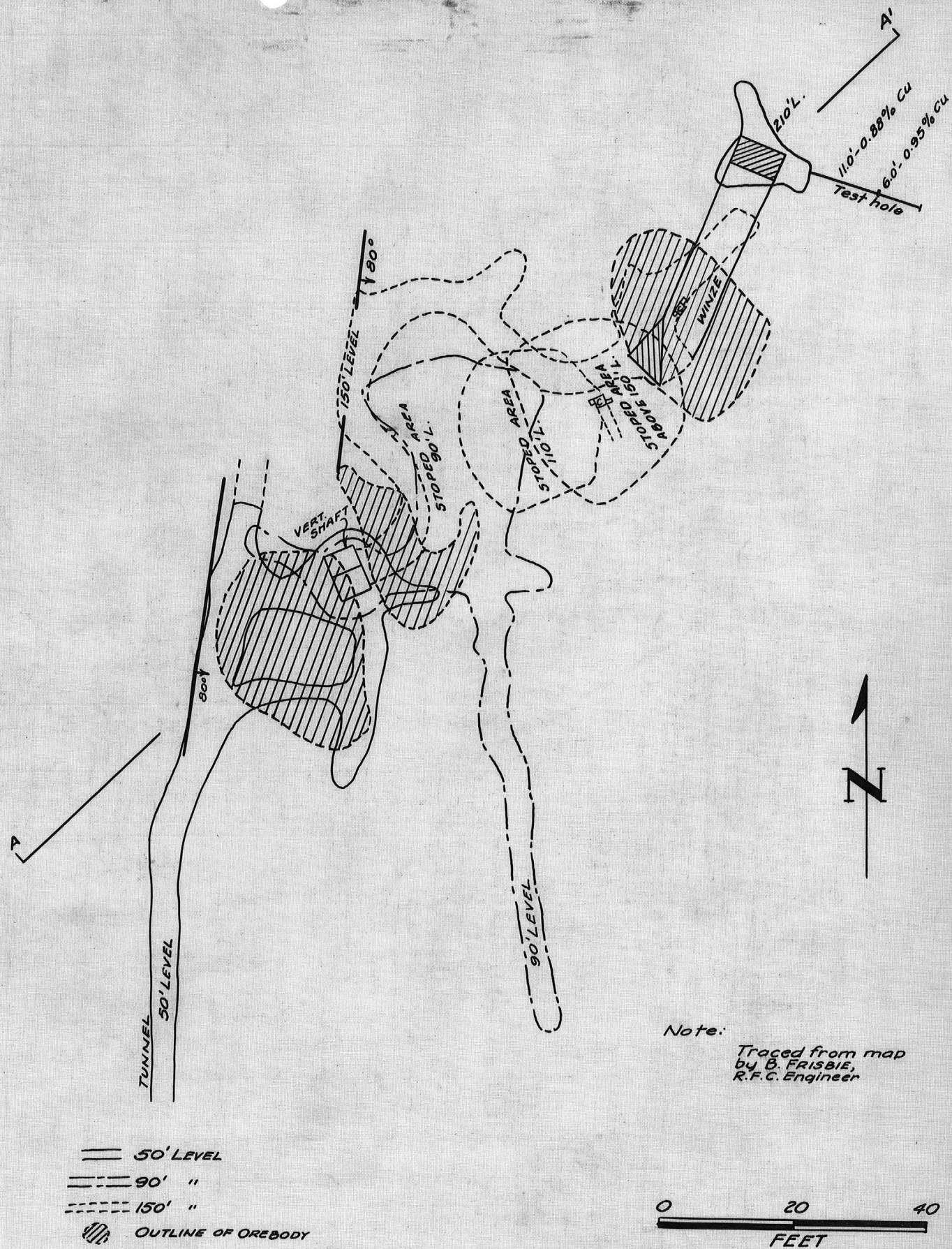
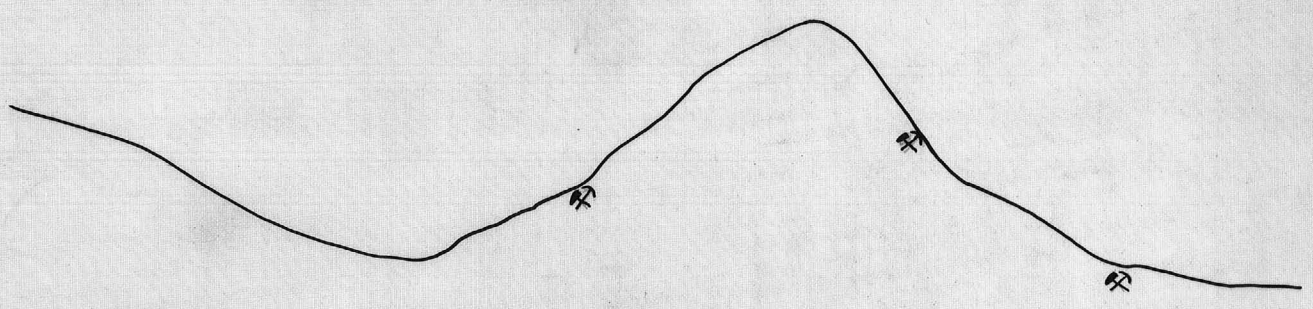


FIG. 2- MAP OF UNDERGROUND WORKINGS, GORILLA CLAIM, SPRINGFIELD COPPER MINE, YAVAPAI CO., ARIZONA



SECTION ALONG A-A'

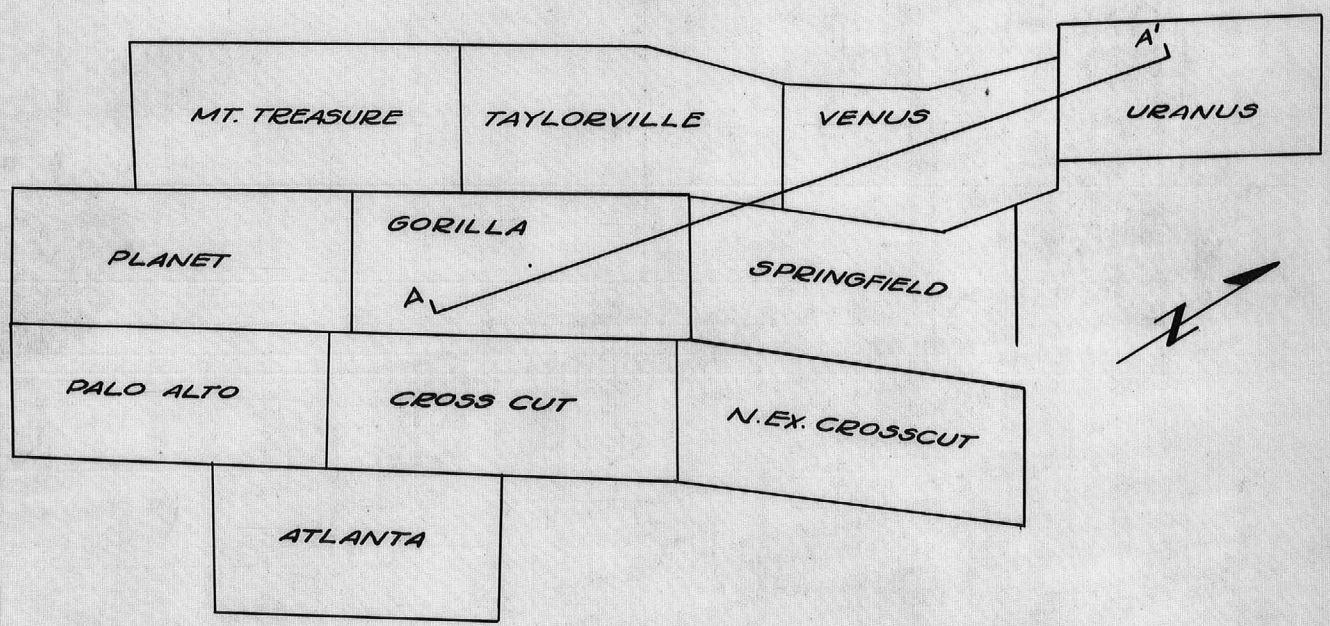


FIG. 1– SKETCH MAP–SPRINGFIELD COPPER GROUP, YAVAPAI CO., ARIZ.

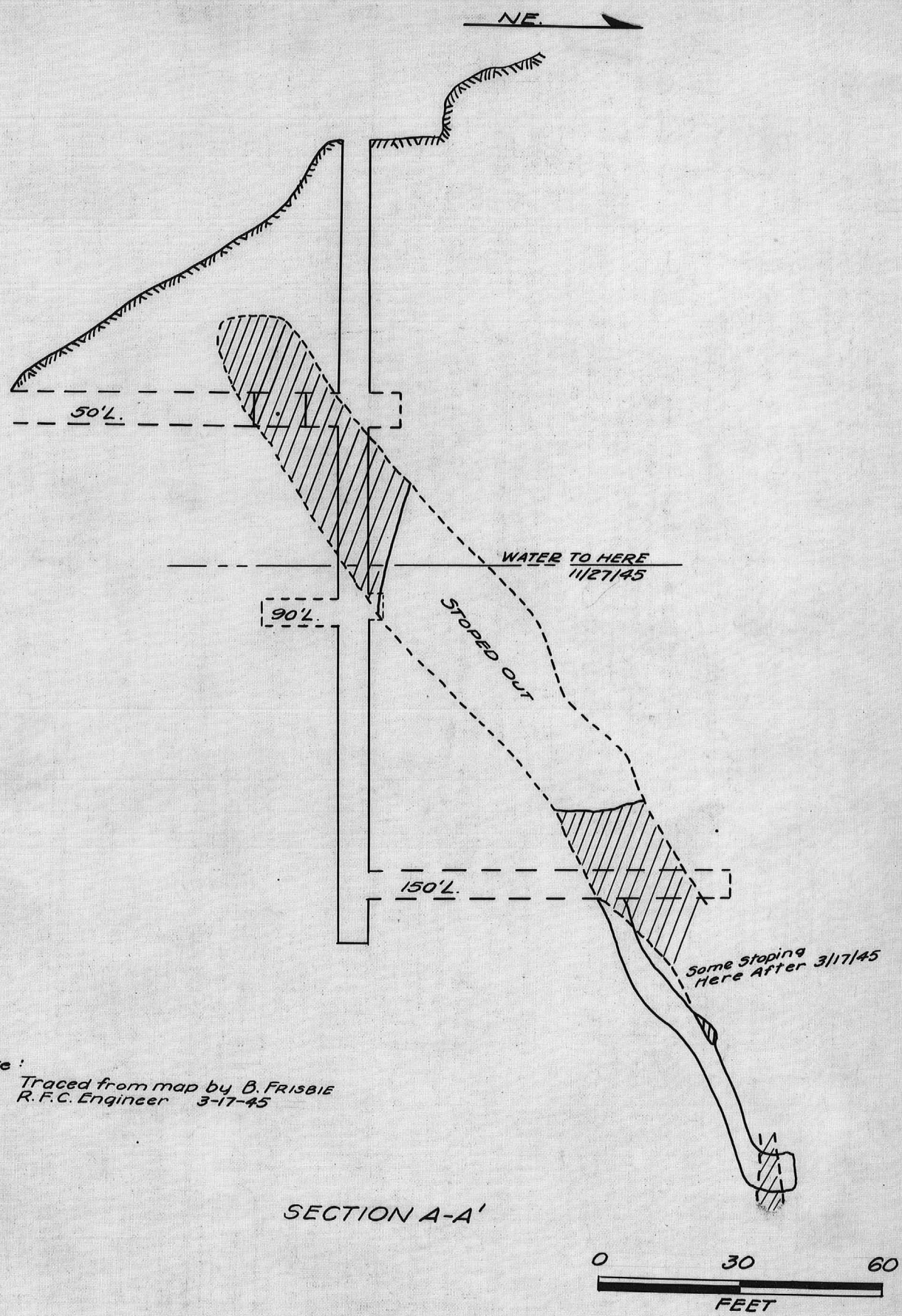


FIG. 3—VERTICAL PROJECTION THROUGH OREBODY, GORILLA CLAIM
SPRINGFIELD COPPER MINE YAVAPAI CO. ARIZONA

WAR PRODUCTION BOARD

WASHINGTON, D. C.
September 30, 1942

IN REPLY REFER TO:
4H:DLF

Mr. W. J. Graham, President
Arizona Small Mine Operators Association
528 Title and Trust Building
Phoenix, Arizona

Re: Springfield Mine
Crown King, Arizona
P. R. Helm

Dear Mr. Graham:

Thank you for your letter of September 10, 1942 regarding the Springfield Mine.

I have inquired of the R.F.C. whether or not an application for a loan had been made by Mr. P. R. Helm, they were unable to find it. Please contact Mr. Helm or the local R.F.C., representative and find out if an application for a loan has been made, send us the date and docket number and the applicants name. We will then trace it here in Washington.

If Mr. Helm has not made application for a loan and the property justifies a loan, have Mr. Helm make an application to the R.F.C. in Washington.

Applications for development loans up to a maximum of $20,000 should be addressed to D. M. Rait, Chief of Mining Section, Reconstruction Finance Corporation, 607 Commonwealth Building, Washington, D. C.

For loans between $20,000 and $40,000, applications should be made to G. Temple Bridgeman, Executive Vice President, Metals Reserve Company, 811 Vermont Avenue, Washington, D. C.

For amounts greater than $40,000, the Federal Loan Agency requires the recommendation of the War Production Board; and, in these instances, you should write us giving full details regarding the project.

These details should include;

(1) A statement of the developed ore reserves, supported by maps, sections and data showing methods of calculations.

FOR VICTORY
BUY
UNITED STATES
WAR
BONDS
AND
STAMPS

WAR PRODUCTION BOARD

WASHINGTON, D. C.

September 30, 1942

IN REPLY REFER TO:
4H:DLF

#2- Mr. W. J. Graham

(2) A detailed estimate of the costs of production showing separately mining, milling, smelting, overhead, taxes, etc. Also, a statement regarding the scale of operations, i.e., the tonnage of ore to be mined per day and per month and the amount of metal to be produced per day and per month.

(3) A detailed estimate of the capital expenditures necessary to put the plant into production and a statement of the amount for which a Government loan is required.

(4) A statement regarding proposed method of repayment of the Government loan.

(5) A statement of the time necessary to do the construction work and to obtain the full production rate.

If you desire any additional information, we shall be glad to furnish it.

Very truly yours,

F. H. Hayes

F. H. Hayes
Asst. Chief of Production
Copper Branch

July 27, 1942

SUBJECT: P. R. Helm
2606 North 7th Street,
Phoenix, Arizona

Dear Bill:

Will you kindly check into the status of the loan of P. R. Helm, 2606 North 7th Street, Phoenix?

Mr. Helm made an application for a Class "B" loan in January. The property was investigated by Ralph B. Youtz and Mr. Youtz made his report the latter part of May. What he said indicated an entirely favorable report. To date no decision has been made and it would seem as though plenty of time had elapsed so that they could give a "Yes" or "No".

A letter dated July 3 from Senator Henderson to Senator Hayden stated that the loan "is now being studied by engineers of the mining section".

If it is being held up for lack of sufficient information, please let me know so that the information can be supplied, or, if there is anything against it, let me know the reasons.

During the hearings in Reno, Salt Lake City, and Denver the whole government finance program was on the carpet pretty badly due to the slowness with which they act.

Thanking you for an early reply, I am

Yours very truly,

CHARLES F. WILLIS, Consultant
Metals Reserve Company

CFW:MH

Crown King, Arizona.
May 13, 1947

Mr. Charles F. Willis,
Phoenix, Arizona.
Dear Mr. Willis:

I am enclosing a listing of the Springfield Copper mine. I have answered the questions as best I could and what I have answered are correct but the others can be best answered by any prospective purchaser after his examination. I do not know yet what price Mr. Helm would place on the property, but I do know that the rest of us will meet any purchaser half way and I feel sure we can bring Mr. Helm in line. this is for you alone, as I do not want it to go any further. If a purchaser consults Mr. Helm and feels that his price is out of line tell him to see Hugh Nelson or me, as we can be contacted quickly, while Mr. Sweet is-liable to be off somewhere in California or Arizona or Nevada on government business. My interest is an equity which the owners recognize, but which is not on record. That is the reason I am always consulted before any move is made.

The present lease may be given up in July and if any one should wish to examine the property now is a good time to do it for when the leasers quit the water will fill everything up. The Venus shaft mentioned in the report has no ore in sight but we all know an ore shoot goes down at an angle and I am satisfied a drift will cut the same shoot that produced the ore which Mr. Harrington and the others found when they worked in that shaft. Of course it is going to take money to make a real mine out of the Springfield but I think it would be money well spent and would give good returns.

With best regards, I am,

Sincerely,

R. S. Patterson

Hugh Nelson is the J. H. Nelson mentioned in the report as an owner.

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

DEPT. MINERAL RESOURCES
RECEIVED
APR 5 1945
PHOENIX

Filing Information

File System.....

File No.....

This chart to be used for gallons of gasoline required per month.

Date Apr 2 - 1945

Name of Mine Springfield

Owner or Operator P. R. Helm

Address Crown King - Arizona

Mine Location Crown King

PRESENT OPERATIONS: (check X)

Production ✓; Development ✓; Financing.....; Sale of mine.....;

Experimental (sampling).....; Owner's occasional trip.....;

Other (specify).....

PRODUCTION: **Past and Future.** **Tons**

Approx. tons last 3 months .....

Approx. present rate per 3 months .....

Anticipated rate next 3 months .....

If in distant future check (X) here .....

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per ~~Month~~ Quarter
Personal Cars			
Light or Service Trucks			
Ore Hauling Trucks			
Compressors	30		2750
Other Mine or Mill Eqpt.			

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Producing Copper

REMARKS:

Has been producer for past year

Application Approved

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By W. S. Belcher

CHP.

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date: Jan 8 1945

Name of Mine: Springfield

Owner or Operator: P. R. Offelen

Address: Crown King Ariz

Mine Location: 4 mi N from Crown King

Filing Information

File System:

File No.:

This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production ✓; Development ✓; Financing ; Sale of mine ;

Experimental (sampling) ; Owner's occasional trip ;

Other (specify)

PRODUCTION: **Past and Future.**

	Tons
Approx. tons last 3 months	1050
Approx. present rate per 3 months	
Anticipated rate next 3 months	
If in distant future check (X) here	

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars			
Light or Service Trucks			
Ore Hauling Trucks			
Compressors + Hoist			700
Other Mine or Mill Eqpt.			

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Copper

REMARKS:

This property has been regular shipper for months and just shipping and also preparing for sinking shaft.

Approve 700 gal per mo.

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By: [illegible]

Field Engr. A. D. M. R.

January 2, 1945

MEMORANDUM

TO: A. C. Nebeker

FROM: Chas. H. Dunning

Mr. P. R. Helm was in and said he had written you a short time ago regarding a continuance of his gas for the Springfield, but had had no reply and was now out of gas.

He needs about 700 gallons per month.

Will you look into this and if the application has been lost or mislaid, better try to get him something to tide him over.

CHD:LP

CC: Phoenix Office

Yellow & White

Office

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date ~~P R Helm~~ 10/17/44

Name of Mine Springfield

Owner or Operator P R Helm

Address Crown King

Mine Location Crown King

Filing Information

File System

File No.

This chart to be used for gallons of gasoline required per month.

PRESENT OPERATIONS: (check X)

Production X; Development ; Financing ; Sale of mine ;

Experimental (sampling) ; Owner's occasional trip ;

Other (specify)

PRODUCTION: **Past and Future.**

	Tons
Approx. tons last 3 months	
Approx. present rate per 3 months	Several cars
Anticipated rate next 3 months	"
If in distant future check (X) here	

EQUIPMENT OPERATED:

Type	Quantity or Horse Power	Miles or Hours Per Month	Gallons Required Per Month
Personal Cars	One	2040	
Light or Service Trucks			
Ore Hauling Trucks			
Compressors			
Other Mine or Mill Eqpt.			

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Copper Lead Zinc.

REMARKS:

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By Chas H Denning

February 8, 1944

Office of Price Administration
War Price and Rationing Board 81.7.1
Ellis Building
Phoenix, Arizona

Gentlemen:

Mr. P. R. Helm is making application for supplemental and occupational gasoline.

Mr. Helm is the manager-partner in the operation of the Springfield Copper Mine, located in Crown King and will use this gasoline in a car owned by his son, P. R. Helm, Jr. of 2606 North Seventh Street, Phoenix which is the same address as for P. R. Helm, Sr. They are asking for 1115 miles per month. The property has been opened up by an RFC loan and is fully developed and is just about to start shipments of copper ore to Clarkdale.

I can certify as to the need of this gasoline and as to the critical material to be mined from this property.

Very truly yours,

J. S. Coupal
Director

JSC:JES

October 25, 1943

War Price and Rationing Board
No. 8171
137 North Second Avenue
Phoenix, Arizona

Gentlemen:

Mr. P. R. Helm, manager, Springfield Copper Mine, 2606 North Seventh Street, Phoenix, is in need of supplemental gas in order to carry out the operations at the Springfield Mine.

The property is in course of preparation for immediate shipment of copper ores and has been opened up for Federal financing.

The operation and management of this property calls for picking up of supplies, both in Prescott and in Phoenix, and regular visits from Crown King to the mine. Mr. Helm estimates this at about 1,200 miles a month.

I believe gasoline should be supplied him so as to not hamper this operation which is for one of the critical war minerals which is mainly copper.

Yours very truly,

J. S. Coupal, Director

JSC:LP

Washington, D.C.
September 29, 1942

SUBJECT: Mine Loans,
Class B
P. R. Helm
Springfield Group

You will be interested to know that Helm has been granted $5,000 to see what further showings he may be able to make with it.

Bill Broadgate

DEPT. MINERAL RESOURCES
RECEIVED
OCT 1 1942
PHOENIX, ARIZONA

Washington, D.C.
Aug. 17, 1942

DEPT. MINERAL RESOURCES
RECEIVED
AUG 19 1942
PHOENIX ARIZONA

SUBJECT: Mine Loan
Class B.
P. R. Helm,
Springfield group.

As per former memo, the RFC agreed to review this loan, and not only have they had the Washington examiner go over it, but they have referred it back to Arizona to Rockwood for further examination.

The Rockwood report has not yet arrived back in Washington.

Perhaps you will find it convenient to interrogate the local office on the possibilities of this loan.

And, by the way, Patterson of Crown King transmitted a petition to the Senators, signed by the local inhabitants at Crown King, asking that the loan be passed and stating that "nothing had been heard of it" since it was filed, or at least implying that. I (confidentially) suggested that the Senators do not transmit the petition to the RFC as I believe it would have an adverse effect under the circumstances.

Bill

Bill Broadgate

DEPT. MINERAL RESOURCES
RECEIVED
AUG 5 1942
PHOENIX, ARIZONA

Washington, D.C.
Aug. 3, 1942

SUBJECT. Mine Loan, Class B
P. R. Helm,
Springfield Mine.

The RFC has consented to review this loan according to information reaching me today.

Bill

Bill Broadgate

DEPT. MINERAL RESOURCES
RECEIVED
AUG 1 1942
PHOENIX, ARIZONA

Washington, D.C.
July 30, 1942

SUBJECT: Mine Loan
Class B
P. R. Helm,
Springfield Group

This application has been before the Board of RFC for approval or disapproval for some time. The Board sits every day, but does not seem to be able to get its business dispatched with any expedition. I do not know the exact date the application went before the Board but shortly after the Field report was made, I believe.

I should be interested to know what gave you the idea that the field report of Mr. Ralph B. Youts was favorable? The field man is not supposed to express any opinion or tell the contents of his report to the owner. I am inclined to think either the several comments I have heard from time to time from owners that the field engineer "was highly pleased with the mine" is wishful thinking only, or else the engineers are weak-kneed and give the owners the wrong impression in an effort to be nice and sluff them off. Anyway, it is bad business, because if the property is turned down the disappointment is keener.

No one can express any decision until the RFC Board records its official action, and if the information I am about to give you leaks out, a man may lose his job. But the reports and information which came in from the field were not satisfactory, and the Helm application is recommended to the Board for turndown; if they take the recommendation, the answer will be no. I understand the application is not on the Springfield, but an adjacent claim, the Gorrilla, I believe, which does not show satisfactory indications of being worthwhile developing, according to the Examining Section.

Bill

Bill Broadgate

REPORT ON SPRINGFIELD MINE, Crown King Arizona

SITUATION:

The Crown King Mining District is situated towards the Southern end of the Bradshaw Mountains in Yavapai County, Arizona. Latitude 34 degrees 20 minutes N. Longitude 112 degrees 10 minutes W.

The property is 2 1/2 miles West of Crown King R.R. Station on the crest of the ridge which surrounds the settlement. A good automobile road connects Crown King and Prescott, which is the County Seat, the distance being about 45 miles. There is a branch of the Sante Fe from Prescott to Crown King.

TOPOGRAPHY:

The elevation of Crown King is about 5600 feet. The actual elevation of the property is 6300 feet. The district is hilly with small streams, some of which have water in them the year round. The annual rainfall is around 30 inches and is fairly evenly distributed over the year. The average temperature is about 60 degrees F. Timber grows above 5,000 feet and consists largely of yellow pine and its varieties.

GENERAL DESCRIPTION:

Mining has been carried on in the Crown King District for about 50 years. Gold and silver were thr chief metals mined. The Crown King and Tiger mine alone produced several million dollars. In the early days, this was a very active camp but gradually the mines closed down due to the usual reasons, high working costs, impoverishment with depth, refractory ores having no suitable process, high metallurgical losses, copper coming in with depth and at that time worthless.

The Springfield Group attracted no attention in the early days as the copper ore had no commercial value and the claims were merely held for timber. Recently enough work has been done to make the property appear as a very promising prospect. The Group consists of 9 claims held in possessory title.

GEOLOGY:

The basal rocks of the district are schists, with diorites and granites intruding.

West of Crown King an intrusion of quartz - diorite forms a basin which is in contact W, S, and E. with Granite and N. with diorite. At the periphery of this intrusion of, quartz-diorite are found ore deposits.

The claims are located on the Western fringe of this quartz-diorite intrusion.

Cutting through the quartz-diorite on the Springfield claims in a N & S direction is an altered zone in which the feldspar minerals predominate. Within this zone are mineralized chimneys in which Copper and Iron Sulphides, with orthoclase as the gangue, make up the mass. Three such chimneys have been opened up to a limited extent and while there is not sufficient development done to form any definite conclusions there is a possibility that these chimneys are emanating from a larger ore body.

The most noticable feature of these chimneys is the gangue. It is composed mainly of Orthoclase and to a lesser extent of plagioclase. With them are the sulphides. Where the rock grades back into the diorite the sulphides gradually go out. Several feet back from the commercial ore the country rock carries 0.5%

copper. There is undoubtedly some connection between the feldpathic gangue and the copper sulphides as wherever the feldspars have been found copper sulphides are there also.

Where work stopped these chimneys are strong and appeared to be widening and the feldspar gangue appearance of persistence.

The principal showings areoon the Gorilla claim. These workings consist of an 80 ft adit, off which a 50 ft. winze has been sunk through a body of copper ore. At 42 ft. in this winze the ore body has been drifted around on three sides. The attached sketch shows these workings in plan and section. The rake of the ore is 40 NE. This block of ground is estimated to contain 3500 tons of ore containing 4% copper, 1 1/2 oz. Silver and 0.01 oz. Gold. The samples on which this estimate is based are as follows:

No.	% Cu.	No.	% Cu.	No.	% Cu.	No.	%Cu.
1	2.90	6	4.10	11	4.39	16	13.69
2	6.30	7	3.30	12	2.49	17	5.85
3	3.50	8	2.14	13	2.69	18	1.05
4	11.26	9	2.68	14	6.30	19	4.55
5	4.60	10	5.27	15	8.79	20	2.50

There is a 120' shaft on the Venus claim which cuts through an ore chute similar to the Gorilla, at about 60', but apart from taking out some ore from around the shaft, this ore body has not been prospected.

Similar conditions are found where a little work has been done on the Uranus Claim and there are surface indications of several other chimneys on the property.

MINING:

The nature of the ground and the shape of the pre body point to cheap explor/atory and mining methods.

MILLING:

The tests that have been made on the ore from the Gorilla Mine show conclusively that excellent results can be obtained by Flotation.

FLOTATION TEST OF ORE FROM GORILLA ORE BODY

	% Material	Au. Oz.	Ag. Oz.	Cu. %	Cu. Distribution
Needs	100	.01	2.00	4.97	100
1st Concentrate	21	.03	6.10	14.37	75.2
2nd "	19.5	---	---	7.04	21.3
Middling	12.5	---	---	.95	2.4
Tailing	52	Trace	.20	.098	1.2

Ration of concentration - 3 ; Recovery - 99%

SURFACE

EQUIPMENT:

This equipment consists of a 15HP gas driven hoist, Head Frame, Blacksmith Shop, Sheds, Bungalow, Bunk-House and Cookhouse. All are in good condition.

DISPOSAL
OF PRODUCT:

There are two copper smelters in the neighborhood, viz.

Southwest Metals Co., Humboldt, Arizona
A. S. & R. at Hayden, Arizona
They are both in the market for custom ore.

COSTS:

With sufficient ore developed(15,000) tons to operate a 50 ton mill, the total costs should not exceed $6.50 per ton. On a 4% copper ore, containing also 1½ oz. silver, a 95% saving in the mill and with the usual smelter deductions there should be a profit with copper at 15 cents per pound or $3.00 per ton.

SUMMARY:

The principal features which make this prospect attractive are:

(1) Ore already developed (3500) tons 4% Cu. , 1.5 oz. Ag.
(2) Showing on Gorilla Claim are excellent where work has stopped.
(3) A reasonable sized ore body to follow.
(4) If ore continues down it can be cheaply and quickly developed.
(5) No dead work required.
(6) Excellent proppects of ore continuing to depth with possibilities of ore zone enlarging.

If further ore is developed then:

(7) Amenability to flotation treatment.
(8) Low mining costs.
(9) Close to Railroad.
(10) Proximity to Copper Smelters.
(11) Good Climatic and Living Conditions.

The ore so far opened up ~~xxx~~ is of a milling grade but there is not sufficient tonnage actually developed to warrant the immediate installation of a mill. The present showing, however, justify the expense necessary for fuether exploration. The principal showing is on the Gorilla and work should be concentrated there.

If the size and values already found hold only for another 150 feet, and they have every appearance of so doing, then there will be sufficient tonnage available2(15,000) tons to warrant the installation of a 50 ton flotation mill. An appropriation of $ 10,000 will be required to carry out this exploration work.

June 1923. J. N. D. Gray

SPRINGFIELD MINE

No ore reserves at present. Leasers have cleared it out. Development by sinking would be required.

There is a 150 ffot shaft, a 150 ft drift, a 75 ft winze and a 200 ft drift at the 75 foot level.

The copper deppists come in chimneys alongside the veins. Several pipes show on the surface. The shaft was sunk on one chimney which was 30 to 40 ft in diameter and ran and ran 4% in copper. Another chimney15x15 ran 6% in copper. These chimneys indicate a large ore deposit at depth. They come up through softer places in the surrounding hard rock. The vein is prominent and in place for a considerable distance indicates these chimneys are what are called ore shoots in gold and silver mines.

The property has not been worked for two years abd probably has some water in the workings. Pillars of ore have been left around the shaft for support and these can be examined. Smelter returns on 30 carloads ran from 2.90 to 7.13% in copper.

1301.262 tons were shipped from April 8, 1944 to Sept. 26, 1944 and ran as follows:

Copper: 2.90 - 4.52 - 4.70 - 5.75 - 5.31 - 6.08 - 4.72 - 4.77 - 4.56 - 5.13 - 5.02-
% 4.15 - 3.92 - 4.91 - 5.38 - 4.96 - 5.63 - 5.00 - 4.88 - 4.13 - 5.49.

Silver: 1.22 - 1.26 - 1.94 - 2.08 - 2.09 - 2.41 - 1.86 - 2.00 - 1.71 - 1.84 - 1.90 -
Oz. 1.61 - 1.71 - 1.76 - 2.14 -.2.04 - 2.37 - 1.75 - 2.28 - 1.69 - 2.36.

382.95 tons shipped from Nov. 22, 1946 to July 2, 1947 ran as follows:

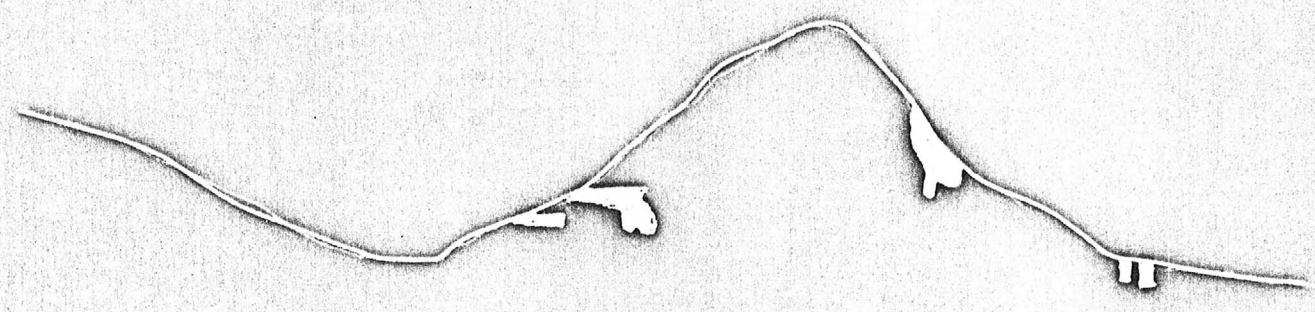
Copper: 3.24 - 5.46 - 4.37 - 4.35 - 3.69 - 7.13 - 4.57 - 7.02 -

Silver: 1.27 - 1.99 - 1.65 - 1.33 - 1.61 - 2.35 - 1.95 - 2.65.

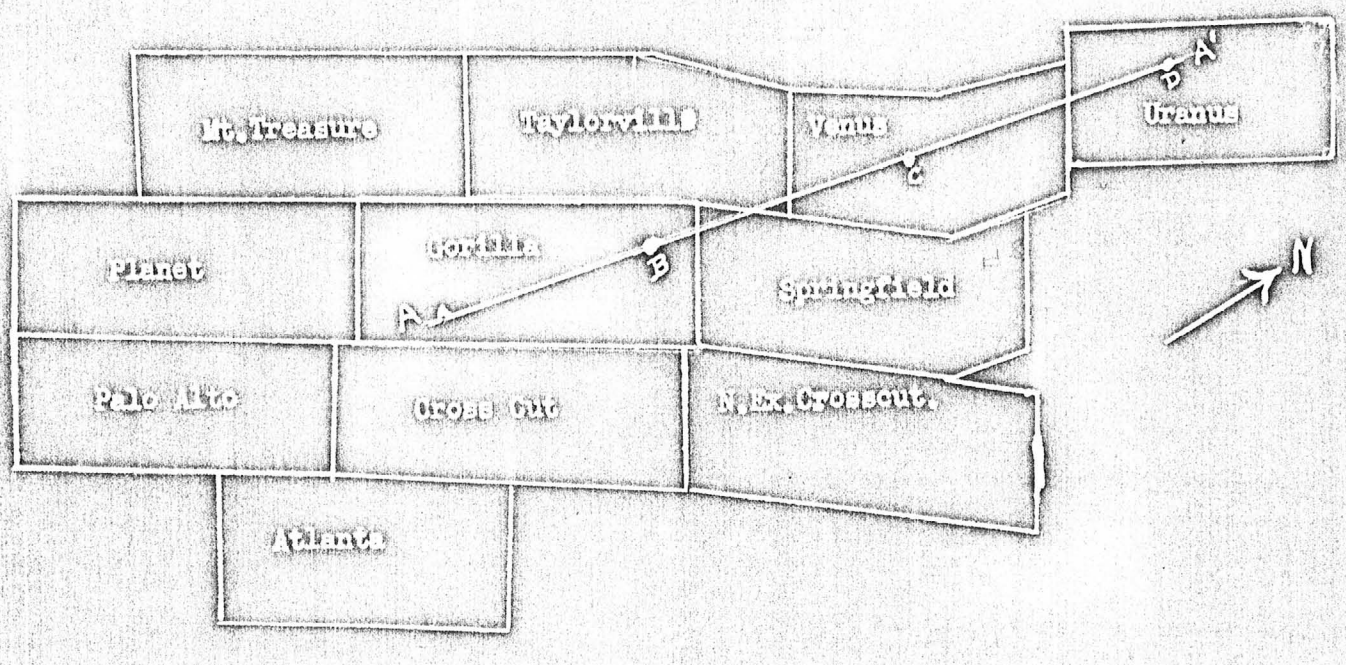
The above are actual smelter returns and can be verified at the smelter. They should offset any possible misjudgment by the owners.

The ore is Bornite and Chalcocite, copper sulphides. It carries lots of pyrites. It is good milling and concentrating ore. 3 cars were shipped in 1919 that averaged 8 to 10% in copper.

Equipment on the property consists of a 15 HP gasoline hoist, plunger pump, tugger, stopers and jackhammers.



Section along A - A'



Springfield
Copper mine
Crown King Ariz

Phoenix, Arizona
2606 North 7th Street
July 15, 1942

Mr. W. J. Graham, President,
Small Mine Operators Association,
Phoenix, Arizona,

My dear Mr. Graham:

One of this nation's most urgent needs in strategic materials is for more copper. It needs it badly. It needs it quickly, and it needs lots of it.

Before the Japs struck at Pearl Harbor, the authorities in Washington believed that all the copper required could be brought here from South America. They also thought we could bring in all the rubber, tin, and many other strategic needs, but the Japs stopped all that, and, at the rate U-Boats are sinking our cargo vessels--so much faster than new ships are being built and commissioned--the need for copper is daily becoming more urgent, and may become critically so.

Recognizing this need, the authorities have increased the price for newly mined copper, and have made loans totaling many millions of dollars to some of our large operating companies so that these companies can explore, open up, and mine certain copper deposits. In Arizona, big loans have been made for this purpose to Phelps Dodge for their Morenci operations, to the Miami interests for their Castle Dome properties, and to the Bagdad people. These are all big operations and are valuable in a long range program, but it will take time, and a lot of time, for these operations to begin producing copper.

There is another source for copper which does not seem to have been given much consideration, but could be very important in solving this copper shortage. I refer to the numbers of small copper properties which could be brought into production quickly, and whose total output would be a very large tonage. Time should not be wasted in exploring and trying to find out the extent and total tonage possibilities of the ore bodies of these properties, but they should be brought into production just as quickly as possible. Their tonage would increase as development programs proceed, and a surprisingly large total tonage of copper would be quickly realized from this source.

Louis Cates, who as president of Phelps Dodge, is one of our largest copper producers, realizes the importance of these small copper mines. In an interview given the Phoenix papers about the middle of last March, he said, "Every small mine must be brought into operation at the earliest possible date---------it is surprising what a ton here and a ton there

will do." Mr. Wyle Brown, president of the Phelps Dodge Products Corporation, who accompanied Mr. Cates, also said, "The government is prepared to comb the country with a fine tooth comb for these materials."

So far, the government seems to have overlooked the importance of these small copper mines as a helpful means of solving the copper shortage. This may be because it has not been forcefully brought to their notice.

I am one of the owners of a small property--the Springfield Copper Mine near Crown King, Arizona--The group consists of eleven claims. Some work has been done on three of the claims. The Gorilla, the Venus, and the Uranus, where "chimney" or "pipe" deposits have been opened up. These "chimney" deposits are the same type as at Deluth Mine in Cananea, and the Pilares Mine near Nacozari, and others. There are indications of these "chimney" deposits on all the claims, but work has been done on only three. It is possible, and I think we can say there is a strong probability that these "chimneys" eminate from a large ore body, as has been the case in other similar deposits. But that can only be proven by further prospecting, exploration, and development. To prospect all these claims and prove the extent of the ore bodies, would take a lot of time and would cost a lot of money. In my opinion, this is not justified at the present time. This country needs copper now, not potential future possibilities.

Our best showing is on our Gorilla claim, and we propose to forget the rest of the property for the time being and to center our work there. An Adit driven on this claim encountered a "chimney" or "pipe" of ore at 80 feet. This measured 15 feet in one direction and 20 feet in the other direction. A shaft was sunk, and at the 42 foot level a drift, almost entirely around the "chimney," showed it had widened to 30 feet in both directions. Engineers estimate between 3,500 and 3,800 tons of 4% ore between these two levels. Our operating plans are to raise above the shaft on the Adit level, about 35 feet to the surface where we would place our compressors, hoist, and other machinery, then sink an incline shaft from the 42 foot level another 50 feet or more. There should then be enough ore blocked out in this "chimney" to justify raising a new working shaft and begin mining and milling the ore developed. At the same time, we would continue development of the main ore body.

There have been two mills just recently completed near Crown King. Both want our ore. One 25 ton mill is about a 2 mile haul from our mine. The other 75 ton capacity has

been erected on the old Crown King Mine, about a 4 mile haul. The program outlined would enable us to begin milling our ore quickly. We would mill the ore brought up while sinking our incline shaft, and as soon as we had completed our working shaft would go into production.

There are many other small properties which could be quickly brought into production, much the same as our Springfield Mine. These operations would total a big tonage, and would be an important factor in solving the copper shortage.

We made an application in January to the RFC for a class "B" Development Loan. This loan would provide us sufficient funds to get into production quickly, and I believe, would be of aid to the Nation in this National emergency. On the eleventh of May an engineer of the RFC made an examination, but we have not yet (July 15-42) learned whether the loan is to be granted.

Respectfully submitted,

P. R. Helm
Springfield Copper Mine

PRH:BW

June 17, 1941

Mr. L. Schrade
Crown King, Arizona

Dear Mr. Schrade:

I have your questionnaire relative to the Springfield Group. While you did tell us that 15¢ a pound would be the necessary price of copper to work this property, you did not give us any idea as to how much copper could be produced annually at that price and this is most essential in our report. You also did not tell us the estimated capital investment required to get into production. We would greatly appreciate having this information.

If you can show that there is some reasonable amount of copper to be produced at 15¢ a pound, we would be able to include the Springfield Group in our report, and if we do so we would like to have some additional information upon that asked above.

Included within this report we anticipate putting a brief description of the properties which will be listed as potential producers. In order to have these brief reports uniform in their contents we have gotten up another questionnaire showing the points we want to cover, and it will be greatly appreciated if you will fill in one of these questionnaires for the Springfield Group and return it to us.

Thanking you, and with kindest personal regards, I am

Yours very truly,

Chairman, Board of Governors
Arizona Department of Mineral Resources

CFW:LP
Enc.

RECORD COPPER ORE SHIPMENTS FROM SPRINGFIELD MINE

Sampled	Lot	Dry Tons	Au	Ag	Cu	Zn	Fe	CaO	SiO_2	Al_2O_3	S	Total lbs Copper	Total oz Gold	Total oz Silver		
4-8-44	2956	57.160	.01	1.22	2.90	0.0	13.2	0.6	46.7	13.1	13.8	3315.28	0.5716	69.8452		
4-25-44	3008	56.435	.01	1.26	4.52	0.5	14.9	0.8	42.6	12.3	14.7	5101.724	0.5643	71.1081		
5-3-44	3025	50.372	.01	1.94	4.70	0.2	13.3	0.5	44.9	12.5	14.0	4734.968	0.5037	97.7216		
5-16-44	3058	60.788	Tr	2.08	5.75	0.1	15.3	0.3	41.7	12.1	16.8	6990.620		126.4390		
5-23-44	3089	63.922	.01	2.09	5.31	0.2	15.1	0.5	41.9	12.1	16.0	6788.516	0.6392	133.5969		
6-8-44	3120	67.013	.01	2.41	6.08	0.1	19.5	0.1	35.3	10.1	21.5	8148.371	0.6701	161.5013		
6-14-44	3129	53.510	.01	1.86	4.72	0.2	15.4	0.5	42.4	11.7	16.7	5051.344	0.5351	99.5286		
6-24-44	3144	51.666	.01	2.00	4.77	0.1	15.1	0.0	42.8	11.8	16.4	4928.936	0.5166	103.332		
6-29-44	3166	55.780	.01	1.71	4.56	0.1	14.0	0.5	44.5	12.4	15.4	5087.136	0.5578	96.3838		
7-7-44	3188	59.054	.01	1.84	5.13	0.1	13.3	0.4	45.6	12.5	14.5	6059.530	0.5905	108.6593		
7-10-44	3196	41.768	.01	1.90	5.02	0.4	15.6	0.6	41.8	11.5	17.0	4193.507	0.4176	79.3592		
7-19-44	3222	55.193	Tr	1.61	4.15	0.1	13.7	0.4	46.1	12.2	14.8	4581.019	0.5519	88.8607		
7-25-44	3232	61.468	.01	1.71	5.92	0.4	13.0	0.3	46.5	13.1	13.5	4819.091	0.6146	105.1102		
8-1-44	3255	62.366	.01	1.76	4.91	0.1	12.7	0.4	47.7	12.9	11.8	6121.395	0.6236	109.7113		
8-12-44	3278	63.152	.008	2.14	5.38	0.2	15.0	2.8	44.5	11.7	16.1	6794.095	0.5062	135.1452		
8-15-44	3293	64.221	.005	2.04	4.96	Tr	13.1	0.0	48.4	12.1	13.5	6370.723	0.3211	131.0108		
8-22-44	3305	64.192	.03	2.37	5.63	0.3	14.2	0.2	44.9	12.0	14.3	7228.019	1.9257	152.1350		
8-29-44	3318	65.261	.004	1.75	5.00	0.0	10.7	0.2	50.7	13.3	10.7	6526.100	0.2510	114.2067		
9-7-44	3342	63.360	Tr	2.28	4.88	0.2	11.9	0.1	47.5	13.8	12.1	6183.916		144.4605		
9-12-44	3353	62.260	.005	1.69	4.13	0.1	10.1	0.3	50.1	14.5	10.8	5288.636	0.31630	106.9094		
9-26-44	3385	124.800	.01	2.36	5.49	0.0	16.5	0.3	40.8	11.3	17.2	13703.040	1.2480	294.4280		
10-11-44	3414	61.500	.01	1.50	3.86	Tr	11.5	0.5	50.1	12.7	12.2	4747.500	0.615	92.3500		
10-17-44	3433	59.860	.007	1.34	3.45	0.1	9.1	0.2	54.5	14.0	9.4	4130.340	0.41902	80.2124		
10-27-44	3453	59.410	.01	1.34	3.74	0.0	10.1	0.4	51.1	14.1	10.9	4363.868	0.594	79.5960		
11-3-44	3468	59.110	.01	1.20	3.34	0.0	7.9	0.2	55.2	14.6	8.4	3948.548	0.5911	70.9320		
11-11-44	3480	61.170	.01	0.99	2.98	0.0	8.4	0.4	55.2	14.6	8.3	3645.732	0.6117	60.5583		
11-13-44	3497	59.380	.01	0.91	2.83	0.2	8.2	0.2	54.9	14.6	8.8	3420.288	0.5938	54.0358		
11-21-44	3509	49.14	.01	1.20	3.01	0.3	9.2	0.6	53.8	14.1	9.6	2958.228	0.4914	58.968		
12-5-44	3534	61.360	.01	.89	2.54	0.3	7.9	0.0	56.7	14.6	7.6	3117.088	0.6136	54.610		
12-12-44	3544	61.290	.01	1.32	3.43	0.0	10.8	0.3	49.1	13.8	11.3	4204.494	0.6129	80.9028		
12-23-44	3567	131.270	.01	1.56	3.80	0.1	14.1	0.4	45.6	12.1	14.0	9976.520	1.3127	204.7912		
2-12-45	3649	58.83	.01	.99	2.97	0.2	11.5	1.0	46.9	14.6	11.6	3494.502	0.5883	58.2417		
4-18-45	3732	59.58	.01	.80	2.24	0.2	10.4	0.5	50.5	14.5	10.9	2669.184	0.5958	40.6640		
4-26-45	3744	58.18	002	1.00	2.64	0.2	11.2	0.7	50.5	13.4	11.6	3071.904	0.46544	58.1800		
5-1-45	3748	59.92	.01	1.39	3.37	0.1	14.9	0.5	46.4	11.9	16.1	4035.608	0.5992	82.2988		
5-8-45	3762	59.23	.01	1.50	4.07	0.2	13.8	0.4	45.2	12.6	14.8	4821.322	0.5923	88.8450		
5-15-45	3774	51.98	.01	1.61	3.78	0.1	12.6	0.5	46.7	13.6	13.3	3929.688	0.5198	83.6878		
11- 9-46	4480	51.062	.005	1.27	3.24	0.2	12.8	0.5	46.1	13.8	14.1	3308.818	0.2553	64.8487		
11-28-46	4502	46.748	.015	1.99	5.46	0.2	16.1	0.0	39.7	11.6	16.8	5104.881	0.7122	93.0285		
12-23-46	4524	50.041	.008	1.65	4.37	0.4	16.3	0.9	41.0	12.3	16.8	4373.583	0.4003	82.0285		
1-16-47	4540	50.960	.015	1.33	4.35	0.2	15.5	0.7	41.4	12.4	17.0	4432.520	0.7644	67.7768		
2- 4-47	4563	46.199	.010	1.61	3.69	0.2	20.7	0.7	33.6	10.1	23.1	3409.486	0.4620	74.3804		
3-20-47	4608	50.601	.003	2.35	7.13	0.1	22.4	0.7	30.8	8.9	24.6	5395.902	0.1518	118.9123		
4-10-47	4631	61.562	.020	2.41	6.21	0.1	21.6	0.6	32.8	9.2	23.0	7646.000	1.2312	128.3644		
5-22-47	4692	56.841	.018	1.87	4.45	0.4	26.3	0.3	26.0	7.6	28.8	5058.849	1.0226	107.0926		
6-12-47	4721	38.983	.020	1.95	4.57	0.3	23.9	0.1	28.4	3.0	26.8	3563.046	0.7796	76.0218		
6-25-47	4734	38.957	.010	2.65	7.02	0.4	20.4	0.2	34.6	10.1	21.6	5469.562	0.3895	102.8360		