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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Arizona Department of Mines and Mineral Resources Mining Collection

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03/20/90

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: SHELDON

ALTERNATE NAMES:
CRESENT
FRENCH SHELDON
CAPITAL VEIN
PAT. MS 1354, 1355, 1359
PAT. MS 3287, 1173, 2360

YAVAPAI COUNTY MILS NUMBER: 1074B

LOCATION: TOWNSHIP 12.5N RANGE 1 W SECTION 19 QUARTER SE
LATITUDE: N 34DEG 26MIN 55SEC LONGITUDE: W 112DEG 23MIN 44SEC
TOPO MAP NAME: GROOM CREEK - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
COPPER
SILVER
GOLD
LEAD

BIBLIOGRAPHY:
USGS GROOM CREEK QUAD
BLM MINING DISTRICT SHEET
ADMMR POLAND MINE FILE
ADMMR FRENCH-SHELDON MINE FILE
LINDGREN, W. ORE DEPTS JEROME & BRADSHAW MTN
QUADS USGS BULL 782 1926 P 109-111
CLAIMS EXTEND INTO SEC. 20 & 30
ADMMR SHELDON MINE COLVO FILE

ARIZONA DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA

October 2, 1958

To the Owner or Operator of the Arizona Mining Property named below:

French-Sheldon Mine (Yavapai County) copper, silver, gold, lead
(Property) (ore)

We have an old listing of the above property which we would like to have brought up to date.

Please fill out the enclosed Mine Owner's Report form with as complete detail as possible and attach copies of reports, maps, assay returns, shipment returns or other data which you have not sent us before and which might interest a prospective buyer in looking at the property.

Frank P. Knight

FRANK P. KNIGHT,
Director.

Mr. George French
316 W. Montebello Ave.
Phoenix, Arizona

Enc: Mine Owner's Report

You must have the wrong French as this is not my property.

Gordon R. French
316 W. Montebello Ave.
Phoenix, Arizona

May 1, 1957

M. Gemmill reported:

French-Sheldon IDLE

✓

George French
316 W. Montebello Ave.
Phoenix, Arizona

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
304 HOME BUILDERS BUILDING
PHOENIX, ARIZONA

PHOENIX
JUN 11
2 7:30 PM
1945
ARIZ.

Sheldon Mng. Co.
Try
George French
Rt. 4, Box 230
Phx.

Mr. French-Sheldon,
Prescott, Ariz.

name of mine

23 JUN

SHELDON MINE AND MUDHOLE MINE

YAVAPAI COUNTY
WALKER DIST.

FRENCH-SHELDON MINE (file)

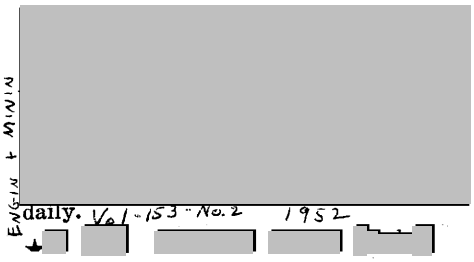
DESCRIBED IN:

A.BM. Bull. #137, p. 34

W. Lindgren-U.S.G.S. Bull. 782, pp.109-112,4,21,29,48 49,53,113

Production to 1930 $1,075,000 copper - J.W.Still's figures (correspondence file)

ABM Bull. 125, pp. 70, 71.
ABM BULL. 129, pp. 59, 60, 63, 64, 78.
ABM BULL. 140, p. 102



FRENCH-SHELDON MINE YAVAPAI

Mr. Ernie Felix, Prescott National Forest, requested information on the French-Sheldon Mine which is the subject of an experimental reclamation project. KAP WR 4/7/76

WR GW 9-15-77 - Mr. Ernie Felix at the U. S. Forest Service office, has directed the reclamation of the Sheldon mine tailings and dump for the past 3 years. However, their efforts to get a stand of vegetation on the tailings has been unsuccessful due to the high acid content, which an attempt at neutralizing it by the application of lime to the surface has been to no avail. It was suggested he try boring +6" holes thru the tails and filling them with lime. 9-21-77 bh

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NJN WR 9/11/81: Lee Yeager of the State Land Department called seeking a legal description for the French Sheldon Mine. They saw it mentioned in a Forest Service Surface Environment and Mining Restoration Program. Apparently the restoration is complete and they wanted to visit the property to evaluate it with respect to Arizona's restoration program.

RRB WR 6/10/83: Bud and Jeannie Tims brought in a sample from the American Flag Claim in the NE¼, Sec. 30, T12½N R1W. This is a patented claim of 5± acres that is a part of the Sheldon Mine on Lynx Creek. Sample was mica rather than gold.

NJN WR 3/22/85: George D. French, 12802 N. 2nd St., Phoenix, Az. 85022 visited and reported he and his sister Dorothy Criley (c) own the French Sheldon Mine (f) Yavapai County. In some areas they have sold the surface but retained the mineral rights. Currently Gold Reserve Corp., 801 W. Riverside Avenue., Suite 400, Spokane, Washington 99201 is interested in the property. Mr. French's father was manager when the mine operated in the 1920's and 30's. His sister has 2 reports not in our files, one by date 1929 by a Prescott engineer named Bora and another by an Eastern Engineer plus some additional paper records. They both have copies of a recent report not in our file. That one is by Mason Coggin Consulting Engineer in Phoenix. Mr. French is putting together an information package for Gold Reserve Corp. and when that is done he will send us a copy as well.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine French-Sheldon (or Sheldon) Date April 8, 1976

District Walker (Yavapai County) Engineer Ken A. Phillips

Subject: Current Status

The above named mine is the subject of an agreement between the owner, Mrs. Dorothy Criley, 113 - 24th Place, Manhattan Beach, California and the Prescott National Forest. The agreement on the patented property gives the Forest Service permission to carry on a surface reclaimation program. The agreement, which will remain in effect for five years, is financed under the U. S. Department of Agriculture, Forest Service Surface Environment and Mining (SEAM) program. The demonstration project on the mine will consist of two phases. The first phase, now nearly complete, consisted of contouring, soil treatment and revegetation of the highly acidic mill dump. The second phase, to begin this June (1976) will consist of filling surface openings, contouring surface features, preparing a soil cover over dump and revegetation. Prescott National Forest Ranger, Ernie Felix, is supervising the project. At the end of the five year agreement the property owner would be free to develop the property. A detailed report including pictures is to be completed as part of the demonstration project and a copy will be provided the department.

REFERENCES: Previous report by K. A. Phillips, September 24, 1975

Previous report by A. C. Nebeker, September 18, 1942

MS 231
M-S-23

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Date Oct. 12, 1939

Mine SHELDON — Engineer

District Walker — Location 16 miles from Prescott via Black Canon & Walker Roads

Former name Same

Owner Sheldon Mining Co. — Address Prescott

Operator — Address

President Lathrop — Gen. Mgr. George French

Mine Supt. — Mill Supt.

Principal Metals Gold, silver, copper — Men Employed

Production Rate — Mill: Type & Cap.

Power: Amt. & Type Purchased elecrric - 100 HP

Operations: Present Leasers allowing water to rise

Operations Planned

Number Claims, Title, etc. Reported 60 patented.

Description: Topog. & Geog. Southern end of valley of Lynx Creek. Timbered slopes.

Mine Workings: Amt. & Condition 1200' shaft unwatered to 400' level. Exposed drifts accessible.

(over)

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DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Date Oct. 12, 1939

Mine Sheldon

Engineer ~~Carl G Barth Jr~~

District Walker

Location 16 miles from Prescott via Black Canon & Walker Roads.

Former name Same

Owner Sheldon Mining Co.

Address Prescott

Operator

Address

President Lathrop

Gen. Mgr. George ~~Lathrop~~ French

Mine Supt.

Mill Supt.

Principal Metals Gold, Silver, Copper

Men Employed

Production Rate

Mill: Type & Cap.

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Operations: Present

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Allowing water to rise

Operations Planned

Number Claims, Title, etc.

Reported 60 Patented

Description: Topog. & Geog.

Southern end of valley of Lynx Creek.
Timbered slopes

Mine Workings: Amt. & Condition

1200' shaft unwatered to 400' level.
exposed drifts accessible

(over)

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine French-Sheldon | Date September 18, 1942

District Walker | Engineer A. C. Nebeker

Subject: Production Possibility

This mine has been a shipper of both crude ore and copper concentrates for several years, and at the present time is producing 4 cars (200 tons) of crude copper ore, which also carries good values in gold, per month.

The ores average around 3.0% copper, 5 to 6 ozs. silver, and $3.50 gold, with a smaller amount of lead.

This is the same property as has been known as the Sheldon Mining and Smelting Company. The geology and past production and operations have been written up by several people and is quite well known in the mining world as a worth while producer.

Mr. George French is now working six men, four of them in the Sheldon and two in the old Mudhole Mine. The two men working in the Mudhole are cleaning up the works so some production in lead-zinc ore can be made. The four men working in the Sheldon are working on the 400 ft. level, mining gold-copper-silver ores and these ores are shipped as crude ore to Clarkdale Smelter.

The mine did furnish enough water to run a 300 ton flotation mill, most of the water coming from the 600 level, and about 45 gals. per min. from the 1200 ft. level. The water is now kept below the 400 ft. level by an electric pump.

The property is well equipped with mining and hoisting machinery, and also a 50 ton flotation mill which can be stepped up to 100 tons by adding a crusher.

Mr. French informs me the vein is from 3 to 7 feet thick and that above the present water, south and north of the old stopes, there are potential ore bodies from which he can produce 200 tons per day, if he can get them blocked out and developed.

To open the present workings so production can be stepped up to the maximum a larger pump would be needed which would cost around $2,500.

Mr. French's problem is the lack of money and a shortage of man power. He thinks he can over come the manpower if he can only get the money to develop and open the mine.

The Copper Branch of the W. P. B. has written French asking what he needs to get his plant up to capacity and French told them he would need a quarter of million dollars. He has not received any reply so far as to his answer.

French does not expect the Government to loan so much money on the showings he has, so he is going ahead the best he can until the mine produces enough to take care of its own development. However, he is waiting to hear from the Copper Branch before he makes other plans.

His problem is too big for the "C" loan and not developed enough for the "A" and Mr. French is of the opinion that the "B" loan is not quite large enough to carry him over the hump, by reason of the fact it will not allow any dewatering.

I suggested that he go ahead and get the "B" loan for the first $20,000 and then carry on for the next $20,000 which should block out enough ore so he could then go after the "A" loan for as much as he saw he would need.

With the "B" loan he could develop the ores above the 400 level, above the water, which will probably give tonnage enough for the "A" loan.

COMMENTS: Here is a case where a different type of loan is needed, one which will allow dewatering and development and mining and other types of needed development out of the same funds and which will allow buying of a few pieces of mill equipment.

I think if the French-Sheldon could get what it needs, it will be a 200 tons per day producer in less than a year.

(Signed) A. C. Nebeker

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine: French- Sheldon
Date: Sept, 18th, I942.
District: Walker
Engineer: A. C. Nebeker
Subject: Production Possibility,

This mine has been a shipper of both crude ore and copper concentrates for several years, and at the present time is producing 4 cars(200 tons) of crude copper ore,which also carries good values in gold, per month.

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The mine did furnish enough water to run a 300 ton flotation mill, most of the water coming from the 600 level, and about 45 gals per min. from the I200 ft level. The water is now kept below the 400 ft level by an electrict pump.

The property is well equiped with mining and hoisting machinery, and also a 50 ton flotation mill which can be stepped up to I00 tons by adding a crusher.

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To open the present workings so production can be stepped up to the maximum a larger pump would be needed which would cost around$$2500.

Mr French's problem is the lack of money and a shortage of man power. He thinks he can over come the man power if he can only get the money to develope and open the mine.

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His problem is too big for the "C" loan and not developed enough for the "A"

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine French-Sheldon

Date Sept.,18th 1942

District Walker

Engineer A. C. Nebeker

Subject: Production Possibility

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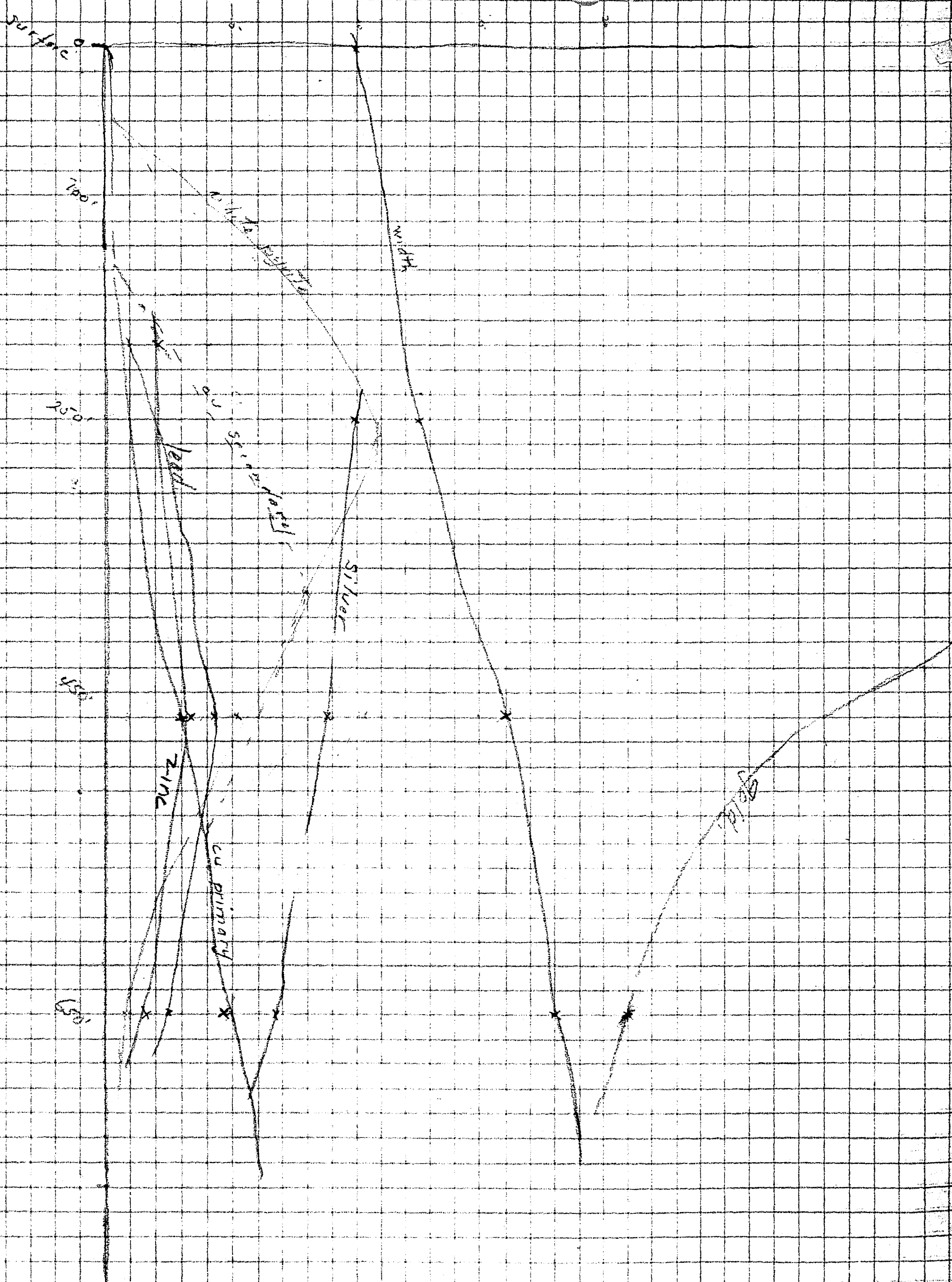
A. C. Nebeker


surface 0'
100'
250'
450'
650'
width
lead
silver
zinc
cu primary
gold

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine: French-Sheldon (or Sheldon) Date: September 24, 1975

District: Walker Engineer: Ken Phillips

Subject: Current status and Ownership

The above named mine is presently owned by Mrs. Dorothy Criley, 113 24th Place, Manhatton Beach, California, 90266. In a telephone conversation with Mrs. Criley she said that the property had been all sold over the years except for that portion containing surface workings. The mineral rights had apparently been reserved, but the surface acreage sold has been developed.

There have been reports of some surface caving in the immediate area of old shaft collars. Mrs. Criley is to meet with Deputy Mine Inspector, Roy Dunivan, to inspect the situation and determine a course of action.

The property is presently available for option, lease, sale or whatever. The mine was a producer of copper well into the WWII era. Total copper production has been in excess of $1,000,000. Based on past history the property should be thoroughly investigated for mineral potential before being sold as real estate.

References: See previous reports by A.C. Nebeker of Sept. 18, 1942

YM 7-13

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Date May 2Ist I942

Mine French-Sheldon

Engineer A.C.Nebeker

District Walker

Location Prescott, Arizona.

Former name Sheldon Mining and Smelting CO.

Owner Sheldon Mining and Smelting Co

Address Prescott, Arizona

Operator Fren ch-Sheldon CO

Address Walker,

President George F. French

Gen. Mgr. Geo Fren ch

Mine Supt. George French Jr.

Mill Supt.

Principal Metals Copper, Gold, Silver, Lead Zinc

Men Employed 5

Production Rate 25 tons daily at present

Mill: Type & Cap. 50-75 tons per day Flotation, ball mill type.

Power: Amt. & Type Electrict

Operations: Present Underhand stoping

Hoisting through an incline shaft of aboutn 75 degrees.

Operations Planned

Expect to have new capital in a couple of weeks, then it is planed to get deeper and open ores from lower levels and to increase production to the capacity of the mining plant.

Number Claims, Title, etc.

Claims are all patented , I am told and consist of about 400 acres

Description: Topog. & Geog.

The property is at the head of Lynch Creek. The mountains are steep and well covered with timber.

Mine Workings: Amt. & Condition There are several thousand feet of drifting, raises, winzes and cross-cuts. The condition of mine in the levels being worked are good, but the lower levels, having been idle for some time are very apt to be in poor condition. The property was opened up by a I280 foot incline shaft, two compartment and manway.

(over)

Geology & Mineralization The veins are in a granodiorite dyke which intrudes the Yavapai schists. The veins are from 4 ft to 20 ft thich having a strike N 30 E and a dip of about 75 degrees SE.

Ore: Positive & Probable, Ore Dumps, Tailings

Mr French was in Phoenix the day I was there, so I got no line up on the Positive or probable ore.

Mine, Mill Equipment & Flow Sheet

The mill is of the simple Ball Mill, Flotation type.

Road Conditions, Route

Very good roads to the mine, and I6 miles out from Prescott

Water Supply Plenty water coming from the mine, which is pumped.

Brief History The property has been a shipper of copper, gold, silver, lead ores for a great many years, and is only partly developed.

Special Problems, Reports Filed

The special problems now seem to be, raising enough money to dewater the lower levels and get machinery for larger production.

Remarks Mr French, the Pres and Manager of the Operating Company was in Phoenix, so I was unable to get fuller details.

Mr French will write in an owners report which will give fuller data.

If property for sale: Price, terms and address to negotiate.

Signed A. P. Tucker

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

French-Sheldon

Walker

Production Possibility

September 18, 1942

A. C. Nebeker

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(Signed) A. C. Nebeker

EXAMPLES OF POTENTIAL MINE WASTE CANDIDATE DEMONSTRATION PROJECTS FOR DOIT COMMITTEE CONSIDERATION (10/18/93)

SITE	SPONSORS	ISSUE	FUNDING	OPPORTUNITIES
Midnite Mine (WA)	U.S. Bureau Mines	open technology "test off" for remedy selection (water contamination)	FY 94 funding available (DOI)	·Develop/test tribal stakeholder involvement ·stakeholder involvement in tech selection ·liability waiver evaluation
Lilly-Orphan Boy Mine (MT)	EPA/DOE (MWTPP)/MT	innovative technology demonstration (bacteria for metals mine drainage)	funded for FY 94 (EPA)	·multi-state tech. review/market identification possible
Triumph Mine (ID)	DOE (INEL)/Univ. of ID/ID	integrated site characterization for cost-effective remedy selection (metals contamination of air, soil, water)	no funding	·evaluate Superfund listing ·stakeholder involvement in characterization/remedy selection
Pennsylvania Mine (CO)	CO/EPA/univ/volunteers	low-cost innovative technology (acid drainage at high alpine, inaccessible site)	funding for FY 94 pending (EPA -CWA 319)	·stakeholder support/involvement ·liability waiver evaluation possible ·multi-state tech review/market identification possible
site undetermined	EPA/DOE (MWTPP)	innovative tech. demo (cyanide contamination of water)	funded for FY 94 (EPA/DOE)	·stakeholder involvement in site selection/tech. review ·multi-state tech review/market identification possible ·tech transfer
French Sheldon Mine (AZ)	AZ/Forest Serv./ASARCO	evaluate long term results of tailings reclamation	partially funded FY 94/additional funds needed	·multi-state tech review/tech transfer
Nelson Tunnel (CO)	BLM/CO/USGS/USBoM/Univ	low cost innovative tech. demo/remediation (acid drainage, sealing, closure)	in-kind staff & travel donated/funding needed for construction & peer review	·stakeholder involvement in how clean is clean enough and at what cost ·multi-agency cooperation ·multi-state tech review/market
Coeur d'Alene Basin (ID)	ID/EPA/tribe	innovative technology matching to site problem & demo (drainage in steep canyon)	funding needed for tech review & demo	·stakeholder involvement in tech review & remedy selection multi-state tech review/market identification possible
Blackbird Mine (ID)	Univ. of ID/Water Resources Research Inst	univ. developed innovative tech demonstration/basin restoration (acid drainage, sealing, closure)	$5-$10 million needed over five years	·multi-state tech review/market identification possible

f \files\r&d\mine prj

July 29, 1941

Mr. George French
Prescott, Arizona

Dear Mr. French:

E. Robertson, 108 Hazel Avenue, East St. Louis, Illinois, has written us for your name and address and more information regarding your mining property that is listed as MS-23 on our list of mines available.

Because of the veto of the department appropriations by the Governor, we do not now have the facilities for making many copies of all reports and data which we have on hand and could not possibly fulfill all the requests that are made. Therefore, we are going to be forced to refer the inquiries directly to the owners or leasers of properties and permit them to deal directly with each other. It might prove more satisfactory handled in that manner.

We have sent Mr. Robertson your name and address and told him that he can get full information regarding your property from you, and we presume that you will hear from him shortly. You do not, however, need to wait until you hear from him but you might desire to communicate with him directly. He is evidently interested.

If you should do business with him we certainly would appreciate being advised, as we want to keep a record of the contacts made through Department of Mineral Resources' efforts and the results of the same.

Thanking you, and hoping that you and Mr. Robertson can get together, I am

Yours very truly,

Chairman, Board of Governors
Arizona Department of Mineral Resources

CFW:LP

Sheldon Gr

Mr. H. R. Lathrop, President,
The Sheldon Mining Company,
Walker Arizona.

Dear Sir:-

Pursuant to your request I will give you herewith brief report on the surface conditions on the eleven mining claims which constitute the Sheldon Group of Mines.

The Group as a Whole.

The eleven claims comprising the group are situated in the Walker Mining District, Yavapai County, Arizona. The claims are contiguous in one group and contain the outcropping of three main vein systems, each system in turn consisting of three or more veins. These vein systems and the claims through which they trend are as follows:

(1) The Sheldon Vein System, consisting of three veins, the outcrop of which follows in a continuous line through the American Flag Claim, the Sheldon Claim, the Short Cut Claim, the Champion Claim, The Link Claim and the Fortune Claim.

(2) The Capital Vein System, consisting of three veins and paralleling the Sgeldon System and outcropping on the Capital and Capital Extension Claims.

(3) The Eureka Vein System , consisting of five veins paralleling the other two systems and outcropping on the Eureka, Mid-night Snap and White House Claims.

The surface condition on each claim is briefly as follows:

CHAMPION CLAIM.

Most of the development of the Sheldon Mine has been confined to the ~~no~~ southern half of the Champion Claim. In this development ore to the gross value of $1,344,000. has been placed in sight to a depth of 650 feet. The northern half of the claim presents the same opportunity for ore development as the southern half and headings are being driven in that direction from the present underground workings and are in excellent ore at this time. These underground conditions are taken up in a separate report so will not be gone into here.

SHORT CUT and LINK CLAIMS.

These are two small claims, the former on the south, and the latter on the north of the Champion Claim. They contain the extensions of the same vein system, the same surface showings, and considering their size, the same possibilities for ore as the ~~Sheldon~~ Champion Claim.

FORTUNE CLAIM.

Mr. H. R. Lathrop,
President, The Sheldon Mines Company,
Walker, Arizona.

Dear Sir:

In view of the fact that the present development in the Sheldon Mine places in sight nearly one and one-half million dollars worth of ore to a depth of 650 feet, and that this development is confined solely to the southern half of the Champion Claim, I have made an examination of the surface conditions on the other half of this claim, and on the other ten claims, and submit herewith my opinion in regard to these undeveloped areas.

THE GROUP AS A WHOLE:

The eleven claims comprising the Sheldon Group are contiguous in one group, and contain the outcropping of three main vein systems, each system in turn consisting of three or more veins. These vein systems, and the claims through which they trend, are as follows:

1. The Sheldon Vein System, consisting of three veins, the outcrop of which follows in a continuous line through the American Flag Claim, Sheldon, Short Cut, Champion, Link, and Fortune Claim.

2. The Capital Vein System, consisting of three veins, paralleling the Sheldon System, and outcropping on the Capital and Capital Extension Claims.

3. The Eureka Vein System, consisting of five veins,

paralleling the other two systems, and outcropping on the Eureka, Midnight Snap, and White House Claims.

The surface condition on each claim is briefly as follows:

CHAMPION CLAIM:

Most of the development of the Sheldon mine has been confined to the southern half of the Champion Claim. In this development ore to the gross value of $1,344,000.00 has been placed in sight to a depth of 650 feet. In this connection it must be borne in mind that the important mineralization was encountered below the 250 level, in fact is much stronger on the 650 than elsewhere, and as nowhere else on the group has a depth of 250 feet been reached, the results of deeper development on the Champion must be used as somewhat of a precedent in anticipating the results under similar surface showings on the other claims. The northern half of the claim presents the same opportunities for ore development as the southern half, and headings are being driven in that direction from the present underground workings and are continuing in excellent ore at this time. These underground conditions were taken up in a separate report so will not be gone into here.

SHORT CUT AND LINK CLAIMS:

These are two small claims, the former on the south, and the latter on the north of the Champion Claim. They contain the extensions of the same vein system, the same surface showings, and considering their size, have

the same possibilities for ore as the Champion Claim.

FORTUNE CLAIM:

The Fortune Claim is the most northerly on the Sheldon Vein System, and had been quite extensively worked in the early days, and later by leasers for its high grade ores. There are four shafts on the claim, the deepest of which is 150 feet, at which point it is probable that sulphide ore was encountered, which could not be worked by the early day methods. It is not known just how much money was taken out in these operations, but from the amount of work done, it is evident that the operations must have been quite profitable. Deeper work should encounter the same intense sulphide mineralization as has been encountered on the lower levels of the Champion Claim.

SHELDON CLAIM:

This claim contains the southerly extension of the Sheldon Vein System, and was successfully worked for about 250 feet in length near its northern end, in the early days. Southerly drifts from the present underground workings, are now getting under this old work, and it can be expected that important ore bodies will be encountered. There is also a very fine surface showing near the southern end of this claim, but there is a strong possibility that there may be an area near the center of this claim, where the formation was too tight to allow of sufficient mineralization. At least half of the claim, however, presents attractive possibilities.

CAPITAL CLAIM:

The Capital Claim contains the southerly end of the Capital Vein System. Toward the southern end of the claim the veins are rather vague, but are well defined and well mineralized throughout the northern half. A cross cut is being run toward this condition from the 650 foot level of the present underground workings, and possibilities of encountering important ore shoots seem very favorable.

CAPITAL EXTENSION:CLAIM:

The Capital Extension adjoins the Capital Claim on the north, and contains the northerly extension of the Capital Vein System. Like the Northern half of the Capital the veins are strong, well defined, and well mineralized, throughout the 1500 feet in length of this claim. In one place these veins were quite extensively worked by leasers, to a shallow depth for surface ore. Something over $40,000. was taken out in these operations, and the ore ran in the neighborhood of $50.00 per ton in gold and silver.

EUREKA CLAIM:

This claim is on the Eureka Vein System, and was very extensively worked by shaft and crosscut tunnel by leasers. It is evident that a large amount of ore was taken from these workings. It has never been developed to sufficient depth to encounter the continuity of mineralization that has been developed on the lower levels of the Champion Claim, but surface conditions are excellent, and it can be anticipated that similar conditions will be encountered when a similar depth is reached.

MIDNIGHT SNAP AND WHITE HOUSE CLAIMS:

These claims adjoin the Eureka Claim on the north, and contain the north extension of the same vein system. On these claims some of the three veins of the Eureka System have split, forming five or six parallel veins in places. These will no doubt come together again with depth. The same conditions apply to these claims as to the Eureka, and they have also been quite extensively worked in the early days. Copper mineralization does not seem to be as great on this northern end of the group, as it is in the southern part, but on the whole the two above claims are very valuable, and present attractive possibilities.

AMERICAN FLAG CLAIM:

The American Flag is the most southerly of the whole group, and contains the south extension of the Sheldon Vein System. The claim is small in acreage, but very large in potential possibilities. On this claim the three veins of the Sheldon System have come together, forming one solid vein 30 to 40 feet wide. Mineralization is very intense, vein filling of the right character, and values excellent. On the whole, this may be considered as the most attractive surface showing, not only of the whole Sheldon Group, but of the entire District.

SUMMARY:

The surface conditions on the southern half of the Champion Claim, under which there has been developed nearly one and one half million dollars worth of ore,

is no more attractive than the average surface showing on the remaining part of this vein system, and on the other two vein systems. There are, as mentioned, some areas that are not so attractive, but there are other areas that seem to have even greater possibilities. And while the above development has been confined to a length of 750 feet, on the one vein system, the remaining combined length is 9750 feet, or thirteen times as much. It can be seen, therefore, that even should some of this territory prove disappointing, that the possibilities for lateral extension are very large, to which must be added of course, the almost certain possibilities of extension to much greater depth.

It is also a noteworthy fact that these vein systems dip toward each other, and very likely will come together at some future depth, like an upright hand with fingers outstretched. This condition would of course, make cheaper development, and cheaper mining and probably richer ore bodies.

_____

Mining Engineer.

Jean Joy

Mr. H. C. Carlisle,
Sonora, Calif.

Dear Sir :-

Complying with your wire of the 20th inst I have made a brief examination of the Jean Joy group of claims in the Walker District and beg to submit herewith thenresults of this examination.

The Jean Joy group consists of five unpatented mining claims located in the Walker Mining District, Yavapai County, Arizona, about two miles in a southwesterly direction from Walker Postoffice.

Development on the group is limited to a few shallow shafts and open cuts, so that a description of the general geology of the district and the results of development on nearby properties, namely the Sheldon, Cavanaugh, and Victory groups, becomes an important factor in determining the possibilites of the Jean Joy group. These matters will be taken up first before attempting a description of the Jean Joy itself.

GENERAL GEOLOGY OF THE DISTRICT.

The oldest rocks in this section of Yavapai County are schists which were originally sedimentary beds, volcanic flows, and possibly some intrusives. While the lower layers of this strata were still far below the surface they were invaded by magmas which crystallized into large masses of granite, in its various phases, and smaller stocks and dikes of granite and diorite. The main body of Bradshaw Granite which covers a large area of this county belongs to this intrusion.

After this period and marking a different period of eruption, intrusions of quartz-diorite filled fissures in schist, granite, and diorite. Metalliferous veins were formed in abundance throughout the district, at or near the quartz-diorite contacts, showing that this intrusion brought with it solutions carrying metal and silica. At the closing stages of the quartz-diorite intrusions, acid dikes associated with the quartz-diorite magmas were intruded into the quartz-diorite itself or into other rocks near its contact. Such dikes were probably formed at the same time or only slightly previous to the general mineralization, were largely responsible for the mineralization, and often carry a mineral vein on one or both sides. Such a dike occurs on the Jean Joy property and will be described later.

There is also a system of older dikes in the district, usually basic, that were associated with the previous main granite intrusions, and while they often carry mineral veins, they do so because they were lines of weakness along which veins were developed during the later quartz-diorite intrusions.

All the vein mines in this section of this county occur at or near contacts of quartz-diorite or its related dikes, and usually in the quartz-diorite itself.

In all the mines in the Walker district there appears to be a pronounced zoning of the mineral constituents of the ore. On the surface is the oxidized outcrop of quartz containing gold, silver, oxidized iron, and the voids of leached sulphide, probably white pyrite. This oxidized zone extends to a depth of from five to one hundred fifty feet when sulphides begin to appear as white pyrite. Fifty feet or so below the white pyrite zone zinc and lead sulphides begin to appear with a slight increase in gold and silver and a decrease in the quantity of white pyrite. The zinc lead zone continues for a hundred feet or so but no development in the district has yet been deep enough to run entirely out of zinc although in the deeper poperties the amount of zinc on the lower levels is very small. As the zinc declines copper sulphides begin to appear and probably continue to considerable depth. It seems probable that the copper zone never reached the present surface as there is no evidence of copper in any of the surface outcrops. The sketch below shows graphically an average ideal zoning condition in this district and the enclosed sketch map shows the relative locations of the various properties and an outline of the general geology.

(3)

The Sheldon Mine.

The Sheldon Group is the most important property in the Walker district, in fact the most important new property that has been developed in Northern Arizona for several years.

The main mineral condition on the Sheldon is a mineralized fault fracture in quartz-diorite. This fracture is generally considered as a fissure vein, but while in places on the vein there has been a distinct opening that has been completely filled by mineral solutions, the typical condition is an area from two to eight feet wide of brecciated quartz-diorite, the broken particles cemented by silica and sulphides. The particles of quartz-diorite have been attacked and altered and replaced to such an extent by the mineralizing solutions that the original brecciated condition is seldom visible.

I am familiar with several fault planes of this type in this county and they all have certain characteristics in common. Owing to the manner in which they were formed and the physical character of the quartz-diorite they are subject to frequent and often very sudden changes in the character and mineral content. However the orebodies are persistant and reliable when considered in a broad way over along length, forming long ore shoots of high average quality, although there may be many short lean or barren spots within the shoot. The above is typical of the condition at the Sheldon.

The Sheldon is developed by shaft and drafts to a depth of 650 feet, drifting having been done on the 150, 250, 450, and 650 levels. Very little work has been done on the 150 level except old stoping in the early days for the oxidized gold silver ore. The vein is narrow on this upper level and on the surface, often being less than one foot and seldom more than three feet in width. The ore is oxidized and probably averaged in the neighborhood of $20.00 in gold and silver. There is evidence of much leached sulphide in this surface ore but no evidence whatever that any of this sulphide was copper. There is no copper stain or no oxidized copper minerals. Below the 150 the ore begins to get basic in character, developing zinc, lead and white iron sulphides. The gold no longer being free, mining was abandoned by the old timers and the mine remained in this condition for many years.

On the 250 level the ore contains much zinc, small amounts of copper sulphide and native copper, and a decreasing amoun of white pyrite. This level might be considered as being in the centre of the zinc zone, on the bottom of the white iron zone, and on the top of the copper zone. The vein is slightly wider that above but still quite narrow.

On the 450 level the cross cut from the shaft cut the vein through six feet of high grade copper silver gold ore. Some zinc is still in evidence but much less than on the 250. Drifts were run on the vein both north and south. The north drift has been continued for 450 feet, the ore continuing the entire distance (with local variations) and is still very strong in the face. To the south the ore continued for a short distance when a broken zone was entered. No further work has been done here as the drift has been damed up and is being used as a sump for the pumps on that level. The ore shoot of 500 feet or more in length which has been developed on this level will average four feet wide, 7.5% copper, 25.0 oz silver and .5 oz gold, or about $50.00 per ton.

On the 650 level the results of drifting to the north are almost identical with the 450. The zinc content however is very low on this level. More drifting has been done to the south and after passing through about 150 feet of broken ground the south drift now appears to be entering another ore shoot, which according to surface conditions should exist.

In addition to the drifting on this level a cross cut has been run for about 200 feet to the east, cutting through a zone about 100 feet wide of blocky quartz-diorite mineralized with chalcopyrite on the seams only. While this is not commercial ore the development is interesting and may lead to something well worth while.

A few special features regarding the Sheldon are interesting:

It is the only quartz-diorite vein mine in the county that has an important copper value.

The copper zone probably never reached the present surface.

There are no intrusives in evidence on the property or very near the vein.

A limited amount of development work has placed in sight about 40,000 tons of an average value of $50.00 per ton or $2,000,000.

With one exception it is the only mine in the Walker district that has gone deep enough to penetrate a copper zone provided such a zone always existed underneath the zinc zone. This exception is the old Mudhole Mine about one mile east of the Sheldon. This mine was worked to a depth of 750. It is a differemt type of formation and was worked for gold and silver, copper and zinc occuring only in small quantaties.

Sheldon Tunnel.

The Sheldon Company have bought the old Poland Tunnel which was run several years ago from Walker to the railroad at Poland for transportation purposes. The tunnel is being retimbered and put in shape and the Sheldon Company will be able to ship ore

through it by the first of December.

Freight from B land tothe smelter at Humbolt is about eighty cents per ton. The Sheldon company will arrange to transport ore for any other producers in the district through the tunnel at a cost between $2.00 and $4.00 per ton depending on quantity. This will allow of ore being shipped from any property near Walker to the Humbolt smelter for a total cost of about $6.00 per ton.

The Victory Grouup.

The Victory Group adjoins the Sheldon on the south and contains the south extension of the Sheldon vein. Development consists of a shaft 90 feet deep. Surface conditions are similar to the Sheldon and although the shaft is nearly full of water the dump indicates that similar conditions were encountered underground, although apparently at shallower depth than in the Sheldon. From such evidence as is obtainable it appears that the shaft was sunk about 30 feet in the oxidized zone. At this point the white pyrite zone was entered, the dump showing considerable quartz with large cube white pyrite crystals. This condition existed to about the 60 foot level when zinc sulphide began to come in and the white pyrite began to play out. From 60 to 90 feet the zinc is very heavy and toward the last there is some little chalcopyrite coming in - the very last muck containing sufficient to be called copper ore. The zinc in the ore from the bottom of the shaft also shows a coating of chalcocite, probably a precipitation of copper contained in the area for a few feet immediately above it. The vein in this shaft is reported to be about four feet wide, and the ore to run about 20.0 oz silver and .5 oz gold.

The Cavanaugh Group.

The Cavanaugh Group adjoins the Jean Joy on the north and contains the north extension of the Jean Joy veins. Development is by shaft 100 feet deep and ore is being stoped and milled from the zinc lead zone. Development is limited and the vein is narrow but the values are high, running between $50.00 and $250.00. The property is equipped with a five stamp mill, plates and concentrators. It is being worked in a very hand to mouth manner, the same men working alternately at development, stoping and milling. Extraction is probably very poor and operations are liable to be unsuccessful unless the ore is more persistant than is usual in the upper levels of these veins. The character of the ore and the zoning characteristics are apparently similar to the Sheldon.

The McLeod claim which adjoins the Cavanaugh and contains the further extension of the Jean Joy vein is being worked

FORTUNE CLAIM.

The Fortune Claim is the most northerly on the Sheldon Vein System and has been quite extensively ~~developed~~ worked in the early days and later by leasers for its high grade ores. There are four shafts on the claim the deepest of which is 150 feet, at which point it is probable that sulphide ore was encountered, which could not be worked by the early day methods. It is not known just how much money was taken out in these operations but from the amount of work done it is evident that the operations must have been quite profitable. Deeper work should encounter the same intense sulphide mineralization as has been encountered on the Champion Claim on the lower levels.

SHELDON CLAIM.

This claim contains the southerly extension of the Sheldon Vein System and was succesfully worked for about 250 feet in length near its northern end in the early days. Southerly drifts from the present underground workings are now getting under this old work and it can be expected that important orebodies will be encountered. There is also a very fine surface showing near the southern end of this claim, but there is a strong possibility that there may be an area near the centre of this claim where the formation was so tight that it did not allow of an extensive mineralizatb At least half of the claim however presents attractive possibilities.

CAPITAL CLAIM.

The Capital Claim contains the ~~northerly~~ southerly end of the Capital Vein System. ~~On the Northern~~ Towards the southern end of the claim the veins are rather vague, but are well defined and well mineralized throughout the ~~southern~~ northern half. A crosscut is being run towards this condition from the 650 foot level of the present underground workings and the possibiliyies of encountering important ore shoots seem very favorable.

CAPITAL EXTENSION.

The Capital Extension adjoins the Capital Claim on the north and contains the northerly extension of the capital vein system. Like the northern half of the capital the veins are strong, well defined and well mineralized throughout the 1500 feet in length of the claim. In one place these veins were quite extensively worked by leasers, to a shellow depth for surface ores. Something over $40,000 was taken out in these operations and the ore ran in the neighborhood of $50.00 per ton in gold and silver.

Furthermore it is a noteworthy fact that these vein systems dip toward each other and likely will come together at some future depth, like an upright hand with fingers outstretched. This condition would of course, make cheaper development and cheaper mining and probably richer orebodies

<u>FRENCH-SHELDON MINE</u>, Yavapai County, Arizona. George French, Operator. Walker, Arizona.

The current production from this mine is about 200 tons per month of 3.0% copper ore. The 50 ton mill (which can treat 100 tons with the addition of a crusher) is not in operation.

The mine is developed to the 1200 foot level, but is being worked only above the 400 foot level at the present time. There are large potential reserves of mill ore laterally from the present stopes yet to be developed.

The Preliminary Development Loan, being limited in amount to $5000.00, would not be sufficient to make accessible the workings between the 400 and 1200 foot levels. The Development Loan, limited to $20,000.00 cannot be applied to making old workings accessible. An intermediate loan of some kind is needed in this case so all workings could be examined and a development program intelligently pursued; as opposed to the present necessity of basing the development program upon the information available from the upper 1/3 of the workings.

If the mine were unwatered there would no doubt be found sufficient stoping faces to put the mill into operation and to produce 75,000 pounds of copper (50 tons @ 2.5% recoverable) per month in addition to shipments of crude ore.

Labor and machinery priorities would be the problems in executing such a plan.

Report by Earl F. Hastings, October 9, 1942, to Copper Branch, War Production Board.

TECHNICAL REPORT on the SHELDON MINE

by

CHARLES H. DUNNING, E. M.

May 21, 1925.

TO MR. H. R. LATHROP, PRESIDENT,
THE SHELDON MINING COMPANY
WALKER, ARIZONA;

Pursuant to request of the management I have made an examination of the Sheldon Mining Company's property, and have placed my findings in two reports. The first report goes into details and technicalities, and is designed for the mining engineer or those who care to study the details. The second report avoids technicalities, as far as possible, and is designed for the business man who does not care to go into the more technical details. The former report follows, herewith;

LOCATION

The Sheldon Mine consists of eleven patented mining claims, a total of one hundred and sixty acres, situated in the Walker Mining District, Yavapai County, Arizona, at an altitude of 6,500 feet.

TITLE

The title to the group is vested solely in the Sheldon Mining Company by U. S. patent and by purchase, and has been recently searched and abstracted by the Prescott Title Company, and found to be excellent.

GENERAL GEOLOGY OF THE DISTRICT

The oldest rocks in this section of Yavapai County are schists which were originally sedimentary beds, volcanic flows, and probably some intrusive. While the lower layers of this strata were still far below the surface, they were invaded by magmas which crystallized into large masses of granite, in its various phases, and smaller stocks and dikes of granite and diorite. The main body of Bradshaw granite which covers a large area of this county belongs to this intrusion.

After this period and marking a different period of eruption, intrusions of quartz-diorite filled fissures in schist, granite and diorite. Metalliferous veins were formed in abundance at or near the quartz-diorite contacts, showing that this intrusion brought with it solutions carrying metals and silica. All the important vein mines in this section of the county occur at or near contacts of quartz-diorite or its related dikes, and usually as fault planes within the quartz-diorite itself.

pronounced zoning of the mineral constituents of the ore. The zoning of the Sheldong ores is taken up in detail under the more detailed geology of that mine, and is quite typical of the district as a whole.

GEOLOGY OF THE SHELDON MINE

The main mineral condition on the Sheldon Claims is a mineralized fault fracture in quartz-diorite. This fracture is generally considered as a fissure vein, but while in places in the fractured zone there has been a distinct opening between the walls that has been completely filled by mineral solutions, the more typical condition is an area from two to eight feet wide of brecciated quartz-diorite, the broken particles cemented by silica and mineral sulphides. The particles of quartz-diorite themselves have been attacked and altered and replaced to such and extent by the mineralizing solution, that the original brecciated condition is seldom visible. The walls, however, show the results of considerable movement, and spots in the vein where the alteration has been less complete, show the brecciated particles of quartz-diorite cemented by silica and mineral. This type of vein forms, from a geological standpoint, one of the very best formations for a permenent mine. Such extensive movement in the quartz-diorite mass, shows that the fractures must extend to very great depths, instead of consisting of a mere surface crack or opening as is often the case with the plain fissure. Development in length and depth has well proven the above theory, there being no sigh of diminuation in vein matter or in mineralization, for long lengths laterally and vertically. Furthermore, it is evident that the mineral deposition took place under deep-seated conditions, this being a further reason why no diminuation in mineralization need be expected with further depth.

Fault zones of this type in this section of Arizona have certain characteristics in common. Owing to the manner in which they were formed, and the physical character of the quartz-diorite, they are subject to frequent, and often very sudden, changes in charagter and mineral content. However, the ore bodies are consistent and reliable, when considered in a broad way, over a long length or depth, forming large ore shoots of high average quality, although there may be many small, lean or barren spots within the shoot. These poor spots have, however, been taken into consideration in the calculation of averages, in spite of the fact that in actual mining it will often be possible to leave them undisturbed, thus maintaining the production of an ore somewhat higher than the calculated average.

The Sheldon vein strikes slightly west of south and dips about 70 degrees to the east. Several other similar and parallel veins outcrop on the surface of the Sheldon claims, and while they have not been developed they give promise of containing important ore bodies.

Mineralization in the vein consists of iron, gold, silver, copper, lead and zinc. Oxidation extends to from fifty to one hundred fifty feet, below which permanent and primary sulphides are encountered. There is only a slight zone of secondary enrichment as the zone of the leachable metals probably did not reach much above the present oxidized or leached zone.

regularity.

Gold is richer at or near the surface and steadily declining as depth is reached. Silver is also declining but at a lower rate. Lead and zinc increased at first, but are declining with further depth. Primary copper values are steadily increasing with depth, although a shallow secondary copper values are steadily increasing with depth, although a shallow secondary copper zone near the 450 level might give the impression that copper was decreasing alsel

From the above zoning observations, and from development results in other properties in this section, it can be expected in further depth that the gold values will decrease to about $3.00 per ton, where they should remain to considerable depth. Silver can be expected to extend to greater depths, with an average of five to six ounces per ton. Lead and zinc will probably decrease to very small amounts, while copper can be expected to increase consistently, so that the total average value should remain at least as good as on the present levels. It can also be expected that the width of the vein and continuity of the ore shoots will improve as further depth is attained.

In addition to the drifting on this level, a crosscut has been run for about 200 feet to the east, cutting through a zone 100 feet wide of blocky quartz-diorite, mineralized with chalcopyrite on the seams only. While this is not commercial ore, the development is interesting, and may lead to something well worth while. Another crosscut to the east, has been started at a point further north, designed in particular to crosscut a parallel vein, and to prospect the ground in general.

A winze has also been started from this level with the intention of going directly to the 650 level, where drifts will be run on the vein in both directions.

Raises are being run in the ore from the 650 to the 450, and from 450 to 250. In both these raise the has been strong and continuous, with average values considerably higher than any of the drifts. In calculating general averages, this higher grade ore has been taken into consideration, as a small factor only. The existence, however, of commercial ore for at least 100 feet above the 450 level has been proven.

The above work develops blocks of ground on two to four sides, totalling 750 feet in length, 300 feet in depth, and 3.6 feet in width, making a total of 810,000 cubic feet, or 60,000 tons. Taking off 20 per cent for spots that are below commercial grade, there remains 56,000 tons of commercial ore developed to date, without considering any additional ore laterally, or below the 650 level. As the gross value of this ore is $24 per ton, the gross value developed is $1,344,000. Additional development, laterally, and to depth, will no doubt quickly and cheaply add to this tonnage.

Development on other veins, and on other claims, has only been done in a small way to date. However, there are many attractive possibilities among these, and they will eventually be prospected and developed, largely from the present underground workings. In this connection, there is one place in particular that warrants special mention. That is the surface showing on the American Flag Claim, the furthest claim south in the group. This claim contains the south extension of the main vein and for some distance the outcrop is from 30 to 40 feet wide, withgeneral mineralization very intense. In fact his would be considered the most attractive surface showing in the entire district, much more attractive than the surface outcrop above the present developed ore body.

The above averages were obtained by groove samples taken as the drifting progressed. Usually three samples were taken after each round, at the top, center and bottom. Check results are obtained by occasional samples in the back of the drift, and whenever stopes were started.

OPERATING FACILITIES

The Sheldon is well situated for economical operation. The mine furnishes plenty of water for all purposes, including a large mill, and there is plenty of good water easily available for domestic purposes. The surrounding country is well timbered, and plenty of lumber for mill and mine can be sawed in the district. There is an abundance of wood for heating purposes. Power is obtained from The Arizona Power Company, at reasonable rates, the mine being located only slightly over a mile from one of

their sub-stations. A fairly good road leads from Prescott to the mine, and the Forest Service is planning to rebuild the road, cutting down the timber and surfacing it with material that will stand up better during wet weather. The climate is healthful and agreeable, especially in summer, and the best class of lavor is always anxious to settle down in the camp. Shipping facilities are especially good, the Sheldon Company having bought and reconstructed the Poland Tunnel, which starts at a point one mile from the mine, and runs two miles through the mountain, and connects with the Santa Fe Railroad at Poland. The tunnel is equipped with a gasoline motor, and these facilities allow the ore or concentrates to be gotten to the railroad at a cost of a few cents per ton. This equipment is adequate to handle two hundred tons per day, through the tunnel. As this is more than the Sheldon will produce in concentrates, and as there is other activity in the district, other custom ore can be transported from the district at a reasonable price and profit. This profit should pay all tunnel operating expenses, but no deductions have been made on this account from the costs below.

ORE TREATMENT

The Sheldon Company has had metallurgical tests made by the General Engineering Company, at Salt Lake City, and herewith is a brief summary of their test No. 8, which gave the best results.

Ore crushed to 35-mesh and tabled for lead. Table tailings, ground to 100 mesh, with 1-10 lb. thio carbanilid and floated, using 1-2- lb. aldol per ton. Flotation concentrates tabled making a lead concentrate and a copper concentrate. This lead concentrate combined with the original table lead concentrate. The flotation tailing was tabled making an iron concentrate No. 1, and an iron concentrate No. 2.

Case 1, shows the table iron conventrate No. 1 combined with the lead concentrate, and the table iron concentrate No. 2 combined with the copper conventrate. Case No. 2, shows both table iron concentrates combined with the copper concentrate.

TREATMENT PRODUCTS	TONS PER 100	ASSAY AU.	AG.	PB.	CU.	ZN.
Heads.....		.241	11.60	2.47	3.25	3.5
Lead Conc.....	7.30	2.488	54.45	27.33	.94	.76
Case 1 Cu. Con.	26.50	.166	23.62	1.28	11.08	13.41
Tails.....	65.70	.006	2.10	tr.	.364	.30
Lead Conc.....	4.60	3.68	80.6	44.3	1.31	.95
Case 2 Cu. con..	29.70	.206	22.89	1.[illegible]	9.93	12.0
Tails.....	69.70	.006	2.10	tr.	.364	.30
Extraction works out to be		98.6%	98.8%	99.6%	92.8%	

The average extraction in per cent of dollars, taking into consideration the proportion of each metal, works out to be 92.63 per cent.

As the sample tested was slightly heavier mineralised than the general mine average, a ratio of concentration of 4-1 would probably work out in practice.

However, the Sheldon management realizes that this is an uneconomical procedure; that the cost of shipping ore direct is much greater than the cost of milling and shipping the concentrates would be, and that while the mill could eventually be built from the profits of shipments, that it would be more economical to build this mill immediately out of capital, and avoid wasting several dollars on each ton of ore necessitated by the present method of shipping direct. Furthermore, if the company attempts to build a mill, and carry out the more extensive development program required by same, out of profits, it would be some time before any return could be made to the stockholders; whereas, if this work is done immediately from capital, returns can be made to the stockholders in the very near future.

FUTURE OPERATING RESULTS EXPECTED

With a 200-ton mill and the mine developed and equipped to easily maintain this production, operating costs and profits should be as follows:

Metal

	Quanity per ton	Market Price	Value per ton
Gold.....	.27 oz.	$20.00	$5.40
Silver....	8. 58 oz.	.65	5.58
Copper....2.75% or55.2 lbs.		.15½	8.55
Lead.....3.43% or68.6 lbs.		.07½	5.14
Total gross average value per ton.....			$24.67

MILL WORK

ITEM	GOLD	SILVER	COPPER	LEAD	TOTAL
Quanitity.....	.27	8.58	55.2	68.6	
Per ton ratio of con.	4	4	4	4	
In con. at 100% ext.	1.08	34.32	220.8	274.4	
Actual extraction%	98.5	88.00	92.8	99.5	
Actual quantity per ton conc.	1.06	30.10	205.0	273.0	
Market price	20.00	.65	15.5	7.05	
Gross value per average ton conc.	21.20	19.56	39.75	20.47	$100.98

COST of HANDLING and MARKETING CONCENTRATES

Cost of haulage and railroad freight, average	$5.94
Treatment, average	4.25
Treatment	$8.59

Copper	5% of quantity	1.55
Copper	3c per lb	6.00
Lead	10%of quantity	2.00
Lead	2½c per lb	6.25
	Total deductions	$17.68

Total cost and deductions per average ton cons.... $22.77

Total cost of handling and marketing concentrates per ton of original ore..... $ 5.69

Cost of handling and marketing cons	$ 5.69
Cost of mining and development	3.00
Milling	1.75
General and overhead	.75
Total operating cost per ton of ore	$11.19

Gross value per ton, less tailings loss	$22.82
Total cost and deductions	11.19
Net profit per ton	$ 11.63
Net profit per day	$ 2,326.00
Net profit per year	750,000.00

Net profit per share per year, Fifty Cents (50c).

With production on a schedule larger than 200 tons per day, cost per ton would be slightly reduced, so that on a 500-ton daily basis profits should amount to $1.75 per share per year.

Equipment and development necessary, so that the mine can produce and mill 200 tons per day without strain, are as follows:

New hoist and equipment for shaft.
Additional houses and equipment for camp.
Additional equipment underground.
Prospect American Flag Claim, and other important surface showings.
Two hundred-ton mill, complete.
Tramway from mill to tunnel.
Winze from 650 to 850.
Fifteen hundred feet of drifting on the 450, 650 and 850-foot levels.
Completion of raises from 450 to 250 and from 650 to 450-foot levels.
Crosscuts to parallel veins, and prospect surrounding territory.
Raise to surface for ventilation.

In addition to sufficient capital to cover the above work, it is well to have plenty of capital on hand when starting production. The completion of the above development should place in sight and available for mining approximately 250,000 tons, or four years' life. The gross value developed would be 2,000 linear feet, from which it is evident [illegible] could be economically and complet-

DEVELOPMENT

The mine is developed by shaft and drifts to a depth of 650 feet, drifting having been done on the 250, 450, and 650 levels. There is also a little work done in the early days on about the 150 level, from which oxidised gold and silver ores were taken by the old-timers.

The vein is narrow on the surface, and in the old workings, seldom being more than three feet in width. The ore is oxidised, and probably averaged in the neighborhood of $30 per ton, in gold and silver. There is evidence of much leached sulphide in this surface ore, but no evidence that any of this sulphide was copper. There is no copper stain and no oxidised copper minerals. Below the 150 the ore begins to get basic in character, developing zinco, lead, and white iron sulphides. The gold no longer being free, mining was abandoned by the old-timers, and the mine remained in this condition for many years.

On the 250 level the ore contains much zinc, small amounts of copper sulphides, and oxidised copper minerals, and a decreasingo amount of white iron pyrites. This level might be considered as being in the center of the zinc zone, near the bottom of the white pyrite zone, and at the top of the copper zone. The vein is slightly wider than above, but stillquite narrow.

On the 450 level the crosscut from the shaft cut the vein through four feet of excellent copper, silver, gold ore. Some zinc is still in evidence, but less than on the 250. Drifts were run on the vein both north and south. To the south the ore continued for a short distance, when a broken zone was entered. No further work has been done here, as the drift has been dammed up, and is b eing used as a sump for the pumps, on that level, but surface indications are that more ore will be encountered at some further distance south, where the drift will run under on of the old surface stopes. The drift to the north on this level has been driven for 650 feet, the ore continuing the entire distance (with local variations and lean spots), and is somewhat stronger in the face than the average of the drift. The ore shoot of 700 feet in length, which has been developed in this level, will average 2.6 per cent copper; 8.90 ounces silver; .33 ounces of gold; 4.20 per cent lead; or a total of $24.34 per ton.

On the 650 level the drift to the south, after running in ore about fifty feet, encountered the same broken zone, containing only occasional small lenzes of ore, which was encountered on the 450. The drift has been continued throughthis zone for about 450 feet, and now appears to be entering a separate ore shoot, which outcrops on the surface and which was quite extensively worked in its oxidised zone by the old-timers. On this level a drift has been run for 700 feet, to the north, with results similiar to those on the 450, that is almost continuous ore, except that the vein is slightly wider than above, and that there is no secondary copper enrichment. The ore shoot for 700 feet in length on this level averages as follows:

Copper 2.33 per cent; silver 6.88 ounces; gold .81 ounces; lead 2.65 per cent. Zinc is somewhat lower than on the 450. Average values on this level are $20.13.

Surface outcrop and conditions indicate that this ore shoot, which has been developed by these two north drifts, will still extend several

and economically to the good development of the property.

It is strongly recommended that sufficient capital be raised to develop and equip the mine to produce and mill 200 tons of average ore per day, and that direct shipping be stopped, before a point is reached where it would be detrimental to the future of the mine to continue shipping selected ore. While shipping at the present rate may easily be kept up for some months to come, in the long run it would be detrimental to the mine, both because the selection of ore of sufficient grade to ship makes uneconomical mining, and because the cost of shipping is much greater per ton than the cost of milling, and also because in selecting the ore it would later on be found necessary to waste some lower grade ore, which would otherwise be profitable milling material.

In conclusion it can be stated that as an investment the company can be considered as giving the surety of a good return on money invested, and an excellent chance of a return in the future amounting each year to more than the original investment, as mill and production are increased.

Mining Engineer.


Map of Sheldon Superior Mining Co.
Hassayampa Mining District
Yavapai County Arizona
Scale 300 feet = 1 inch
1289 Skylight
1458 Gold Dust
962 Cherry
40 Senator South Ext.
975 West Point
964 Snoozer
Senator Tunnel
Senator
Ten Spot
1288
1288 Boomerang
Smith
1291 Lewis
965
Cascade
Hassayampa Creek
1839
Maxton
Edna May 1461
Senator No 2 1460 A.
1460 B
Inspiration No 1
Millsite
1290 Jersey
Lyon
Cash
H.I. Glenn 901
Yavapai
1802 Wellington
1461 "96"
Sacramento 394
900 Snow Clad
1461
Homestake M.B.
McKinley
Paw Paw 320
288 Black
Big Four 2481
Jenny 1660
Dakota
Cracker
Hoot Owl
1660
Anaconda
Anaconda No 1
Anaconda No 2
Anaconda No 3
Ginger 1660
Abbie 1660
Parintha 1660
St. Cloud
1660
Storm Cloud
1660 2110 Trapezoid
1660 2109 Palmetto
38
1660 2105 Betsey Ann
Vanderbilt
Dunlap
Lucky Boy
Trend of Conglomerate
De Vernon
Dead Shot
De Veras
January
Ellie Wick
Evergreen 1588
646 Delaware
1588 Par Value
Blind Tom 1588
1588 Premium
644 Tremont
Porto Rico
Santiago 2349
Manilla 2349
Havana 2349
645 Grovenor
1996 Malino
1558 Hassayampa
1558 Ranche
1556 Waterfall
1996 Surprise
1996 Jumbo
1996 Comstock
1996 Lion
1996 Brooklyn
1996 Treasury
1996 Granite
1996 Porphyry
1631 Ninety Seven
Propose Ore Railroad to Walker
Proposed Railroad
Ninety Seven 1631
Dyson
Radio
Victory Group
Lovekin
New Strike
Ellinor
Florence
Willetts
Sheldon Mining Co. Group
McLeod Group
Monroe
New State
Eagle
Hidden Treasure 1653
Eberhart
Yuma Co. Arizona
Topog & Drill Map