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08/07/91

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: DUNDEE-ARIZONA

ALTERNATE NAMES:

YAVAPAI COUNTY MILS NUMBER: 553

LOCATION: TOWNSHIP 16 N RANGE 2 E SECTION 23 QUARTER S2
LATITUDE: N 34DEG 45MIN 05SEC LONGITUDE: W 112DEG 06MIN 03SEC
TOPO MAP NAME: CLARKDALE - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
COPPER

BIBLIOGRAPHY:

USGS CLARKDALE QUAD
ADMMR DUNDEE-ARIZONA FILE
LINDGREN, W. ORE DPTS OF JEROME AND BRADSHAW MTS QUADS USGS BULL 782 1926 P 90
BLM MINING DISTRICT SHEET 57
ADMMR PROD. POSS. OF MARGINAL COPPER MINES IN AZ 1941 P 67-69
ADMMR DUNDEE-ARIZONA COPPER CO COLVO FILE

THE DUNDEE-ARIZONA COPPER CO.

YAVAPAI COUNTY

USGS Bull. 782 p. 90
USGS P.P. 308 p. 153

Production Possibilities of the Marginal Copper Mines, 1941, p. 67-69

Arizona Mining Journal Dec. 15, 1921 p. 23

Mark Gemmill reported:

Dundee-Arizona Copper Co. - idle. - 2 patented claims. 5-1-57

DUNDEE-ARIZONA COPPER CO.

Cu

Yavapai 13 - 3 T 16 N, R2 E

Mark Gemmill, 423 Perry St., Prescott '45

NAME OF MINE: DUNDEE ARIZONA

COUNTY: YAVAPAI
DISTRICT: JEROME
METALS: CU

OPERATOR AND ADDRESS: DATE:		MINE STATUS DATE:	
1/44	Mark Gemmill, 132 S. Pleasant St, Prescott	5/1/44	Shipping
4/10/44	Cut 50% to 500 tons per month due to Clarkdale shutdown.		

DUNDEE-ARIZONA MINES

Carlos Aguilar
Box 865
Jerome, Ariz.
5/16-1st

arthur J. Smith
518 Security Bldg.
Phoenix
complete

4-7-42

423 Perry Street

Gemmill, Mark ~~132 So. Pleasant~~
~~Yarnell, Arizona~~ Prescott, Arizona

See G File
Re - payment of premium prices on copper properties

See YARNELL - Re Field Engineers Report (Owner-Held by Norris Estate of Prescott) 10-10-39

~~132 South Pleasant, Prescott~~

See YARNELL - Re filing claim 11-11-42

See BINGHAMPTON - Re "C" loan application 12-17042

See DUNDEE COPPER MINE - Re increased copper price 5-10-43
See DUNDEE - re gas application 2-28-45
See VENUS - re " " 4-21-45

Arizona Dundee 6/12.
Mark Gemmell

Granted a 8.1 + added Cu
5. — +1 "
12. — base
25.1 + suspended

Min Jnl 3-30-42

Dundee - Arizona Copper Co.
Yavapai Co.

REPORT ON THE PROPERTY OF THE

DUNDEE-ARIZONA COPPER COMPANY

JEROME, ARIZONA

January 8, 1923,

Morris J. Kluing, E. M.

REPORT ON THE PROPERTY OF THE

DUNDEE-ARIZONA COPPER COMPANY - JEROME, ARIZONA

January 8, 1923 Morris J. Eloing, E. M.

OBJECT:

The object and purpose of this examination was, first, to show the tonnage of ore in sight in the Carbonate Tunnel workings of the property; and, second, to estimate the probable cost per ton of mining.

CONCLUSIONS:

Based upon the observation of the thickness of the carbonate orebody in 381 different places, I have calculated an average thickness of the deposit as varying from 4 to 6 feet. Allowing 12 cubic feet in place for one ton and a factor of 40% for waste, I calculate that there is in sight approximately 35,000 tons of conglomerate ore.

From my experience in mining and my knowledge of the mining costs of similar orebodies, I place $3.50 per ton as an absolute minimum cost for the mining of this orebody.

ORE BLOCKED OUT:

The carbonate orebody of the Runcco-Arizona Copper Company consists of a flat blanket of ore in conglomerate lying on the limestone or a few feet above it. The method of determining the average thickness of this conglomerate ore blanket was as follows: On a map of the working at ten-foot intervals, on each side of every drift in the orebody, an estimate was made of the thickness of the ore, which was recorded. In this way a total of 381 vertical thicknesses of the ore were determined. The orebody was roughly divided into two parts. The average of all measurements of thickness on the main area was found to be 5 feet, and in the secondary area 3 feet. In some cases there was ore in the floor and ore in the roof. The actual thickness in such cases could not be determined, but in order to compensate and allow for this increased thickness, the average thickness of the main area was arbitrarily increased from 5 feet to 6 feet, and of the secondary area from 3 feet to 4 feet.

In tabulated form this is as follows:

MAIN AREA. 190 ft. x 320 ft. = 60,800 sq. ft.
100 ft. x 400 ft. = 40,000 sq. ft.
This area was given an average thickness of 6 ft.

SECONDARY AREA. 100 ft. x 200 ft. = 20,000 sq. ft.
This area was given an average thickness of 4 ft.

190 x 320 x 6	=	364,800 cu. ft.
100 x 400 x 6	=	240,000 "
100 x 200 x 4	=	80,000 "
	Total,	684,800 cu. ft.

Dividing the above 684,800 cu. ft. by 12 cu. ft. per ton of material in place, we have 57,066 tons of material. The ore contains a very large amount of waste boulders, which in the course of mining will have to be sorted out. It is extremely difficult

to determine a satisfactory factor for waste allowance. In some cases certainly 50% of the orebody will be rejected as waste. In other cases all will be ore. In most cases careful sorting pays, and in order to be on the safe side 40% has been allowed for waste. Therefore, there will be a recovery of 60%. Applying this factor, we have in round numbers 35,000 tons of ore blocked out and in sight. No deduction has been made for the ore extracted by workings already opened up in the orebody because of the fact that all of this ore is in the dump at the portal of the Carbonate Tunnel.

CHECK ON ORE ESTIMATE:

The accuracy of the above ore estimate can be roughly checked by considering the ore actually on the dump of the Carbonate Tunnel and the amount of drifting done in ore in the mine workings.

Calculations show about 2500 tons of ore in the Carbonate Tunnel ore dump. The ore in this dump came from 1650 feet of drifts actually in the orebody. Estimating the drifts to be 5 feet wide and the ore 6 feet thick, we have 49,500 cubic feet of material removed. Dividing this by 12 to convert into tons, we have 4125 tons of material, and allowing 40% for waste we find we have 2475 tons of ore, which checks very closely with the estimated tonnage in the dump.

PROBABLE ORE:

There is no doubt that further development work will show up a considerable additional tonnage of ore. There is no reason to believe that the absolute limits of the ore have been

reached in any given direction. With 35,000 tons of ore blocked out, it is conservative to estimate that further work would produce 35,000 tons additional ore.

COST OF MINING:

The cost of mining is made up of various factors. In the case of this particular orebody, the cost of the development work necessary for the extraction of the ore will be high. The cost of driving extraction drifts and raises on the tunnel level will be about $1.00 per ton of ore extracted. Based upon the cost of mining of various types of orebodies, both large and small, if a cost of $3.50 per ton can be attained, extremely efficient work is being done.

The method of mining to be used in mining of the Dundee-Arizona orebody would be somewhat similar to that used at Santa Rosalia, Lower California. The orebody at Santa Rosalia is a more or less flat blanket and varies in thickness from 2 to 5 feet. The following is copied from notes taken during a visit to these mines in April, 1921.

"COST PER TON FOR MINING

"No exact cost of mining was given us but sufficient information was obtained to state that the mining costs are high. The cost of timber per metric ton is $1.00 U. S. Cy., without the cost of erecting it.

"The production per man shift in the stopes is about 1500 kilos of ore. With day's pay work it was 1200 kilos. The production per man shift for all men in the mining division is about 500 kilos. The average wage paid in the mining division is $1.75 U. S. Cy. per day.

"Mining and delivering ore to the smelter probably costs at least $5 to $6.00 U. S. Cy. per ton of 2200 pounds.

"Estimated Cost of Mining

Labor	$3.50 U. S. Cy.
Timber	1.00
Power	.15
Mule Haulage	.05
Supplies	.25
Overhead	.40
R. R. Haul	.15
	$5.50

"Estimating 75 pounds of copper recovered per ton of ore mined, the mining cost per pound of copper is, at least 7.5 cents."

The cost of mining for several copper mining companies is herewith given:

The average cost of mining copper ore for the year 1919 for the Greene Cananea Copper Company was $3.64 per ton. This figure is taken from the Company's annual report. The cost for 1921 was $3.33 per ton. While the Calumet & Arizona, Copper Queen, Old Dominion, Detroit Copper Company, and several other companies of like character do not publish their cost of mining, it is a well-known fact that their costs vary from $3.00 to $5.00 per ton.

The cost of mining of Boras Leasing Company, which ships 75 tons per day, is about $4.00 per ton. The Irish Mag Leasing Company, which ships about 1000 tons per month, has a cost of about $5.00 per ton. The Night Hawk Leasing Company has a cost of about $5.00 per ton on a monthly production of 2000 tons.

A flat thin blanket deposit of this type is a most difficult kind of ore deposit to mine. In addition to a high cost for extraction drifts and raises, eventually considerable timber will

have to be used. While at the present time little or no timber is used in the drifts in ore, when ore is being extracted over a considerable area, there is no question that practically all stopes will have to be timbered.

The sorting of waste will be another source of expense. In all probability, enough waste will be sorted out of the ore to gob the stopes.

The mining of a flat ore deposit of this type will necessitate an excessive amount of wheelbarrow work, which is expensive.

In places where the thickness of the orebody narrows to less than 4 feet, in order to extract it, a portion of the waste in the floor or roof will have to be removed. It is self-evident that when the ore is three feet thick, a man cannot work to remove it unless two or three feet of additional height is attained. This can only be done by the removing of waste rock above or below the ore. This, again, adds considerably to the cost.

In general, it may be said that practically all of the factors to be considered in the mining of this type of ore deposit are unfavorable to a low cost of mining.

I consider a cost of $3.50 per ton for the mining of the Dundee-Arizona carbonate orebody is an absolute minimum. In all probability the mining cost will be higher than this figure.

Respectfully submitted,

Mining Engineer.

DUNDEE CO. MAY BU[ILD] LEACHING PLANT THIS FALL

Jerome 7/21/22

That work on the proposed leaching plant of the Dundee Arizona Copper company will not commence before fall, at the earliest, is the word brought by W. E. Defty, consulting engineer, who returned today to his headquarters in Phoenix after a stay of several days on the property.

"I am not informed as to the immediate plans of the directors but understand that they will soon reach a decision regarding the leaching plant for the treatment of our big deposit of surface ores," stated Engineer Defty.

Five men are still engaged, under the direction of Superintendent Jack Martin, in developing the surface ore on the tunnel level. More ore is constantly being exposed and Defty says that the Dundee now has enough in sight to repay all the money that has been expended in development of the property.

The idea of continuing development at depth has by no means been abandoned, though the last campaign resulted in the discovery of no ore whatever. Engineers and geologists still believe that the Dundee might prove to be a big mine if the shaft were sunk 500 feet deeper and explorations conducted on that level.

DUNDEE-ARIZONA

(Jerome)

Verde Copper News reports July 5:

"The cross-cut to the west of the Dundee mine is making fair progress through some of the hardest greenstone that has ever been cut in the mine. It is probable that it will take ten days or two weeks more to reach the contact which is the objective point of the working."

DUNDEE-ARIZONA

(Jerome) July 1921

The process being employed by the experimental plant of the Dundee-Arizona for the treatment of its carbonate ores is a very simple one. First, the ore is crushed quite fine. These fines are mixed with dilute sulphuric acid in two big tanks. After the acid has worked on the ore a certain length of time a "copper water" results. This water is drawn off into tanks filled with scrap iron, in which the copper is precipitated.

DUNDEE-ARIZONA TO RESUME FIRST OF JAN.

Jerome

Resumption of operations by the Dundee-Arizona Copper company about January 1 is believed to be foreshadowed by the impending visit of the officers of the corporation, following closely upon the granting, by the Arizona corporation commission, of a permit to sell 61,120 shares at $1 each.

Fred S. Stephen and Alexander Mackay, the Scotch capitalists who have kept the Dundee going so long, are due to arrive at Ash Fork tomorrow morning. It is reported that they are accompanied by several other Scotch investors. They will go from Ash Fork to Phoenix and next week will come to Jerome with Treasurer Arthur J. Smith and Engineer W. E. Defty. Nov 25-21

It is understood that it is practically settled that development shall be resumed about January 1. Recently the corporation commission authorized the Dundee company to sell 61,120 shares. The stock was to be placed in New York and probably has been disposed of already.

Operations were suspended at the Dundee some weeks ago, after more than 2700 feet of drifting and crosscutting had been done on the 960-foot level. The pumps and tracks were pulled and the workings are now filled with water.

The most promising showing encountered on the 960 was a streak of gouge, from one to six feet wide, which was intersected northwest of the shaft toward the new school site. This gouge carried traces of copper and indicated, according to mining authorities, that the Dundee people might find a real ore body by going deeper. Engineer Defty proposes to sink a winze 500 feet on this gouge and then start drifting, providing ore is not struck in the winze itself.

Nothing is known regarding the plans of the company for treating the surface carbonates at the Dundee. It is known that the experimental leaching plant proved to be a success and it is possible, now that copper is once more in demand, that the company will put in a large plant to recover the metal from the low grade ore on the surface.

DUNDEE CO. MAY BUILD LEACHING PLANT THIS FALL

Jerome 7/21/22

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MINING MEN HERE—Alexander McKay and Fred S. Stephen, directors of the Dundee Copper company, paid a flying visit to the district late last week in company with Engineer W. E. Defty. The party were the guests of James S. Douglas at dinner on the day of their stay here and left immediately afterwards for Prescott. No announcement of policy has been made as yet. 11-21-22 Jerome

Yavapai County

DUNDEE-ARIZONA (Jerome)—Start extension of tunnel workings past shaft 120 level, to cut sheared zone, expecting develop body of carbonates and oxides. Planning for treatment plant, if ore found warrants expense.

PRESIDENT OF DUNDEE COPPER CO. VISITS PROPERTY

Jerome 11/24/19

A party headed by President Alexander Mackay, who comes direct from his home in Dundee, Scotland, is today inspecting the property of the Dundee-Arizona Copper company.

With President Mackay are his son, Captain F. B. Mackay, also of Dundee and late of the British army; James Wright, a former Dundee man who is now located in New York and is associated with Mr. Mackay in various ventures; Treasurer Arthur J. Smith and Consulting Engineer W. E. Defty, who make their headquarters in Phoenix.

The visitors found all proceeding smoothly at the Dundee property, and Superintendent Jack Martin confident that he will be able to resume sinking by the first of December. A station is being cut at a depth of 780 feet in the shaft where an Aldrich pump, capable of handling 250 gallons a minute is to be installed. This and a smaller pump, also ready for installation, will end the Dundee's water troubles. The plan is to start sinking and continue sinking as soon as they are in operation.

Tomorrow the party will proceed to Humboldt, there to inspect a plant being constructed by the Consolidated Arizona Smelting company for the recovery of copper from carbonate ores. A ten-ton unit is now almost finished and a larger plant is to be constructed if it proves successful., of which there is little doubt.

The expectation is that the Humboldt plant will treat ore from the Dundee's big surface deposit. If, the Consolidated Arizona company will agree to handle the Dundee product, it can all be shipped at a profit, according to Engineer Defty. In case arrangements along this line are not made, the Dundee company will probably put in its own reduction works.

DUNDEE-ARIZONA

Jerome District Dec. 1920

Verde Copper News reports Dec. 1st.: Alexander Mackay and F. S. Stephen, principals in the Dundee-Arizona Copper company, are expected to arrive tomorrow to join Consulting Engineer W. E. Defty, who has been here since Monday. The three will then decide definitely regarding future development plans for the Dundee. In all probability it will be decided to cut a station and continue sinking the shaft, at the same time, perhaps, doing a little lateral prospecting. The shaft is now down to a depth of 929 feet, almost to the U. S. Extension tunnel level. The tunnel has so well drained the country that the shaft is making only about ninety gallons of water a minute.

AT DUNDEE MINE — Work on the carbonate reef at the Dundee is progressing steadily and satisfactorily. It is stated that the process for treating these ores which has been developed at the Humboldt smelter is proving completely satisfactory and that from 85 to 90 per cent of the values are being recovered. It is understood that a 100-ton plant is to be built immediately at Humboldt and that it is more than possible that a similar plant will be built on the Dundee, a face of 12 feet of eight per cent ore has been opened and active blocking out of the carbonate bodies is proceeding.

BABY MOVES — Johnny Hud

DUNDEE CO. TO BEGIN SHIPMENTS TO HUMBOLDT

Jerome

Heavy shipments of lime carbonate ore will soon be moving forward from the Dundee-Arizona mine to the Humboldt smelter. This is practically assured as a result of an inspection of the Dundee property made today by W. W. DeCamp, engineer for the Consolidated Arizona Smelting company. Engineer DeCamp, accompanied by his wife, arrived in Jerome last night and will leave tomorrow. 1918

The Consolidated company is looking for a big, dependable supply of lime carbonates and DeCamp was amazed this morning when he went through the Dundee workings with W. E. Defty, Dundee engineer. He certainly saw plenty of ore and now all that remains is for the mining company and smelter corporation to get together on terms. It is not expected that there will be any difficulty on this score.

The Dundee lime carbonate deposit has been proven for a length of 300 feet and a width of sixty feet. How deep the deposit goes, no one knows, but the shaft is all in the ore for sixty feet. An average sample taken by Engineer Defty ran right close to seven per cent copper.

No shipments have been made for some time from the Dundee's surface deposit of conglomerate ore, but two processes for the treatment of ore of that character are now being tried out in other parts of the state. It is expected that at least one of them will be perfected soon and then the Dundee company will install a plant of its own.

After Defty and DeCamp visited the Dundee this morning a report was made to Defty of an important showing in the bottom of the shaft. He is investigating this afternoon.

It is announced that sinking will shortly be resumed at the Dundee-Arizona, perhaps as soon as the first of September. It is believed that the country has been drained to such an extent that the company will no longer be troubled greatly by the flow of water which forced the suspension of sinking last winter, when the shaft had reached a depth of 810 ft. When the pumps were stopped the water rose to within 25 ft. of the main station on the 450-ft. level. In the last two months it has subsided fully 150 ft. Development of the Dundee's surface deposit of carbonate ore continues. As yet no decision has been reached regarding the character

DUNDEE ARIZONA (Jerome)—W. E. Defty, consulting engineer, of Phoenix, making plans for small leaching plant for surface carbonate ores estimated at 50,000 tons, sampling above 3% copper. Sinking 600-ft. shaft will be resumed; country now drained by Extension tunnel. Owns about only level land in Jerome, and laying off a townsite on which $150,000 school will be placed.

DUNDEE TO SHIP CARBONATE ORES

(From Wednesday's Daily.)

One carload of ore from the Dundee-Arizona's surface deposit of carbonates is to be tested in the new leaching unit being built at the Humboldt smelter.

It is expected that the leaching plant will be ready for operation soon after October 1 and the shipment from the Dundee will go forward about that time. All the necessary ore has been piled out on the dump, ready for loading. No attempt has been made to pick high grade for this test; on the contrary every effort has been put forward to pick average ore from the whole deposit.

Whether the Dundee resumes shipping regularly to Humboldt depends entirely upon the result of this test in the leaching plant. When copper was high the Dundee shipped to Humboldt and the ore was smelted, but after the price of the red metal dropped this was no longer a paying proposition. It is hoped that by leaching a more complete recovery of values can be made from the carbonates.

Since shipments were suspended the road from the lower end of the Hogback up to the Dundee property has been badly washed out. Superintendent Jack Martin and a gang of Mexicans are now making it passable for the ore wagons.

DUNDEE-ARIZONA COPPER CO.
(Verde District)

Secretary Arthur J. Smith reports Oct. 1:

"Operations on the Dundee shaft were resumed September 7. The shaft is now practically unwatered and sinking will be started in a day or two. The present depth is 830 feet. We will sink to 1000 feet and prospect at that depth.

"Over 2200 feet of work has now been done on the carbonate ore. There is now in sight approximately 150,000 tons of this ore. Recent assays showed values of from 4 per cent to 12 per cent copper. Work on this level has been stopped in the meantime and many of the workings show a full face of ore."

BROKEN DOWN—Both the compressors at the Dundee-Arizona are now out of commission and operations are suspended, except for pumping, until parts can be received. Though wate rris coming in at the rate of 100 gallons a minute it is not gaining any on the pumps.

* * *

— ... Bower.

RETURNS FROM THE DUNDEE CARBONATE ORES SATISFACTORY

F. S. Stephen, vice-president of the Dundee Copper Mining company, and W. E. Defty, consulting engineer for the same corporation, left on the noon train today for Phoenix, after spending yesterday at the mine.

Mr. Defty states that the experimental shipment of carbonate ores made to the Humboldt plant has resulted in the development of a satisfactory treatment process and that operations are now directed entirely to blocking out the carbonate deposits on the upper levels of the property preparatory to extraction on a larger scale than has heretofore been attempted.

No plans for the immediate construction of a mill have been made, but it is probable that something will be done in that direction as soon as all the details of treatment have been worked out. The ore thus far shipped shows a copper content of 5.14 per cent and the tonnage available is large.

Vice-President Stephen is greatly pleased with the results obtained to date and will carry good news of the property's outlook to his home in Dundee, Scotland, where he will go after completing his present trip of inspection over the company's properties.

JEROME
5/5/21

INSPECTING DUNDEE-ARIZONA.

JEROME, Nov. 29.—A party headed by President Alexander Mackay, who comes direct from his home in Dundee, Scotland, is today inspecting the property of the Dundee-Arizona Copper company.

With President Mackay are his son, Captain F. B. Mackay, also of Dundee and late of the British army; James Wright, a former Dundee man who is now located in New York, and is associated with Mr. Mackay in various ventures; Treasurer Arthur J. Smith, and Consulting Engineer W. E. Defty, who make their headquarters in Phoenix.

Bisbee, Dec 30, 1919

DUNDEE-ARIZONA. — Alexander Mackay and F. S. Stephen, principals in the Dundee-Arizona Copper company, are expected to arrive tomorrow to join Consulting Engineer W. E. Defty, who has been here since Monday. The three will then decide definitely regarding future development plans for the Dundee. In all probability it will be decided to cut a station and continue sinking the shaft, at the same time, perhaps, doing a little lateral prospecting. The shaft is now doing to a depth of 929 feet, almost to the U. V. Extension tunnel level. The tunnel has so well drained the country that the shaft is making only about ninety gallons of water a minute.

JEROME

Dundee Closes Down

Dundee has closed down at Jerome pending completion of arrangement by which it will use the new Verde Extension traffic tunnel to gain entrance and make upraise from around the 900 level to the shaft it has been sinking. Costs of pumping and hoisting will be dispensed with under this plan. Jerome Victor Extension is expecting to recover the 1200 level from the water and resume development there at early date. The 1200 has been opened but slightly, but showing there is very promising to the small extent that it has been possible to follow it. Water increases, pump troubles and machinery breakdowns have interfered at several times when it was thought development was to be enabled over an indefinite period. Verde Extension new blower has greatly improved conditions underground. The fire area has been disposed of. Progress with the smelter of this company is going on well. Verde Combination ore find on the 600 is near the Gadsden line and encouraging, although more depth is considered requisite to establish individual value for the strike. Calumet Jerome is in the same situation, it is considered, requirng more depth to enable deductions of value. Del Monte closing down is apparently for indefinite period, although additional equipment was received and in course of installation when the closing order came, while a year's stock of general supplies is on hand at the camp and an abundant sum of money in the treasury for another year's work. Labor is plenty in the district, a surplus having been on hand for some time. Demand for increase of $1 the day both above and below ground will probably be adjusted by Administrator Meyers. I. W. W. disturbing elements are held to be responsible for the demands. Costs of living in the district are asserted at this time to be no higher than when the present wage scale was agreed upon in June. The administrator is now investigating the costs of living, upon alleged increase in which the demand for higher pay is based. Present wages are $5.15 the day.

1-25-15

THREE CARS FROM DUNDEE SHIPPED

MAY 11 1917

Three carloads of the Dundee-Arizona's surface ore have been shipped to the Humboldt smelter. The first shipment ran 7.22 percent copper. Returns have not been received on the other two but it is presumed that they ran equally high.

Getting out the ore is a simpler and less expensive matter now. The new road down to the Jerome-Clarkdale highway has been completed and Tuesday it was accepted by Engineer

pression in this country. This was immediately succeeded by a period of unexampled prosperity. The established motor companies could not supply the demand for cars and motor stocks became favorites with speculators and investors.

SHAFT SINKING AT DUNDEE SUSPENDED

Machinery Inadequate To Handle Water; Electric Pump Ordered.

MAR 13 1917

JEROME, April 13.—Pending the arrival of an electric pump, the shaft crew at the Dundee-Arizona was dismissed Wednesday. No further attempt is to be made to handle the water with the present machinery.

Since last September the Dundee company has been fighting a losing battle with water. One gasoline engine would not work at all. Later an 80-horsepower engine was installed but it cannot supply enough power to handle the water whih flows into the bottom of the shaft.

It is understood that an electric pump of a capacity to handle the flow has been ordered. The Arizona Power company has promised to run a line over from the transformer house at the Gadsden. In all probability, however, two months or so must pass before shaft sinking is resumed.

This will not interfere with the extraction and shipment of surface ores. It is planned to ship at least one car load of surface ore a week.

DUNDEE-ARIZONA WETTER, WETTER

FOUND NECESSARY TO INSTALL ANOTHER PUMP ON 400-FOOT LEVEL

FEB 12 1917

Operations at the Dundee-Arizona were resumed last Friday night, and hardly was the first round of shots fired before it became necessary to install another pump.

The Dundee became a wet mine last August, when a heavy flow of water was struck in the shaft just below the 400-foot level. No more work was done in the shaft till Friday night. In the meantime an 80-horsepower gasoline engine had been installed and a No. 5 Cameron sinking pummp installed just above the 400.

Now a No. 7 Cameron has been placed in the station at the 400-foot level. The sinker will be moved down the shaft to pump the water up to the sump on the 400, and the station pump will lift the water to the surface.

The ground around and below the 400-foot level is badly shattered. There is a crack which allows water to flow from mthe sump into the shaft below. This crack is to be cemented to make the sump hold water.

DUNDEE-ARIZONA SHIPPING SURFACE ORE TO SMELTER

MAY 11 1917

Three carloads of the Dundee-Arizona's surface ore have been shipped to the Humboldt smelter. The first shipment ran 7.22 per cent copper. Returns have not been received on the other two, but it is presumed that they ran equally high.

Getting out the ore is a simpler and less expensive matter now. The new road down to the Jerome-Clarkdale highway has been completed and Tuesday it was accepted by Engineer W. E. Defty.

Engineer Defty hopes to resume sinking the shaft in about six weeks. An electric pump is on the way and the 50-horse power motor which is to drive it is being assembled on the ground.

When the pump is operating the present gasoline hoisting engine will still be used. Arrangements have been made to secure enough current for hoisting as soon as the Arizona Power company's new plant, above Clarkdale, is completed.

TRY AIR LIFT AT DUNDEE-ARIZONA

Preparations are being made to rig an air lift at the Dundee-Arizona to assist the new electric pump in keeping the shaft free of water. The flow is more than the pump alone can handle.

SEP 11 1917

The old 8x12 compressor, which was tried out before the present big compressor was installed, is now being placed on a concrete foundation. It is to be driven by a 50-horsepower electric motor, and within a few days will be supplying air for the new lift.

When the new electric pump was installed it was thought that itwould be sufficient to handle the water, but the flow was far heavier than anyone had supposed it would be. It was installed first with a four-inch column to the tunnel level. Then a three-inch column was added, but still the pump could not keep the shaft dry for any length of time. Now the air lift plan is to be tried.

SEP 11 1917

CONTROLLING WATER AT DUNDEE-ARIZONA

LEVEL BEING BROUGHT DOWN AND NEW COMPRESSOR IS AT CLARKDALE

FEB 23 1917

Although the new compressor has not been installed, the water in the Dundee-Arizona shaft is being brought under control. The two pumps continue to lift approximately 4200 gallons an hour, and the water level has been lowering steadily for several days.

The 500-foot compressor is at Clarkdale and will be on the ground in two or three days. With the present 350-foot machine, this will give ample air capacity.

In getting this new machine, the Dundee-Arizona people nearly broke a record. It was ordered by wire from Chicago only two weeks ago and rushed to Clarkdale by fast freight.

Engineer W. E. Defty has been at the Dundee most of this week. He says that the water will be easily controlled when the sinking pump is equipped with a larger intake. A three-inch intake has been used because it was impossible to get a larger one, but a four-inch intake is now on the way.

The Dundee has a new superintendent. James W. Hubbard, who has directed the work at the Dundee since the organization of the company last spring, recently tendered his resignation. His successor, John Martin, took charge Monday.

Mr. Martin has had wide experience in mining. He was for some time in charge of the Copper Queen company's Sacramento shaft, at Bisbee. He came from Bisbee and took a place as shift boss at the United Verde Extension. Here he was for a long time one of Dave Morgan's most dependable lieutenants. Of late he has been with Morgan at the Verde Combination.

GOOD PROGRESS AT DUNDEE ARIZONA

OCT 25 1917

With the water problem finally solved, sinking is going forward steadily in the Dundee-Arizona shaft. An average speed of two and a half feet a day is being maintained. Though this is not fast work with three shifts employed, it is as fast as could be expected under the circumstances.

The shaft is one of the wettest in the district. A young river is being lifted by the new electric pump and the No. 7 Cameron sinker. The lift is only to the tunnel level and from there the water flows out into Walnut gulch.

Limestone seamed with iron is the formation in the bottom of the shaft.

TOO MUCH WATER DUNDEE-ARIZONA

COMPRESSOR ORDERED TO OPERATE PUMPS AT THEIR FULL CAPACITY

Owing to the heavy flow of water, the work of sinking the Dundee-Arizona shaft to depth cannot be resumed till a new compressor is received and installed.

FEB 12 1917

A pump at the 400-foot station and a sinking pump in the shaft just below are lifting 4200 gallons of water an hour, but are making no impression on the flow. They are working only to half capacity, and cannot be worked to full capacity with the present 350-foot compressor.

Superintendent James W. Hubbard informed the directors of the state of affairs as soon as he became convinced that the flow was heavier than had been expected and they replied that a 500-foot machine had been ordered by wire. This, it is believed, will be sufficient to operate the pumps and also the drills when the shaft is dry.

The flow of water is through the shattered lime formation and across the shaft. When the pumps are stopped the water rises only a foot or so.

DUNDEE-ARIZONA

The management reports under date of November 18:

"Sinking was resumed in the Dundee-Arizona shaft, after a cessation of two days, occasioned by the striking of another heavy flow of water. The water rose seven feet, and it was necessary to operate the pumps at greater speed. The flow has been brought under control.

"Two sinkers and two lifting pumps are in use, and they are handling 450 gallons a minute. If necessary they can handle from 500 to 600 gallons.

"The present depth of the shaft is 505 feet. It will be sunk at least 950 feet before any cross-cuts or drifts are run. It is at this depth that the United Verde Extension haulage tunnel will pass along the south side of the Dundee property.

"At present the ore is being extracted from a face 30 feet high. This seems to be the greatest depth of the reef. The shipments made to date, however, have hardly made a dent in the visible supply.

"A 100-horsepower electric motor, which will be used to drive the big 512-foot Ingersoll-Rand compressor, has been delivered at Clarkdale immediately, and will be installed. This compressor is at present being operated by the 80-horsepower gasoline engine.

DUNDEE-ARIZONA

A statement to the stockholders, dated April 25th, says:

"We have closed a contract with the Arizona Power company for a supply of electric power, sufficient to equip our shaft with an electric-driven pump of a minimum capacity of 250 gallons per minute, which can be materially increased, thus insuring the handling of the water with ease.

"Our present pumping equipment is driven by air from our 500-foot compressor, which in turn is driven by an 80-horsepower gasoline engine. At the time of the installation of this equipment, it was the best we could obtain, as no electric power was then available. It has not proven adequate, however, and we have decided to add the electrical pumping equipment with the least possible delay.

"This new equipment will consist of a 50-horsepower Westinghouse motor, and an Aldrich vertical triplex pump, both of which will be installed on the 450-foot station. Delivery is promised within sixty days.

"The present water situation is not serious, but with inadequate pumping facilities we are unable to make the progress we should. We are now in a very much fractured zone, and more or less water will be encountered until we are through the fractures.

"In the meantime, as sinking progresses, the shaft, which is a two-compartment below the 450-foot station, will be cemented and the water channels closed, thus eliminating the presnt flow of watr.

"The trial shipment of ore to the Consolidated Arizona Smelting company proved very satisfactory, averaging 7.22 percent copper and netting the company approximately $20 per ton. We have entered into a contract for shipments of one car per week with the promise of the acceptance of additional tonnage in the very near future.

"We have built a wagon road from our ore dumps to the main road to transportation.

"The work of blocking out the ore continues satisfactorily and a very large tonnage is now in sight."

THREE CARS SHIPPED FROM DUNDEE-ARIZONA

Jerome, Ariz., May 12.—Three carloads of the Dundee-Arizona's surface ore have been shipped to the Humboldt smelter. The first shipment ran 7.22 per cent copper. Returns have not been received on the other two, but it is presumed that they ran equally high.

Getting out the ore is a simpler and less expensive matter now. The new road down to the Jerome-Clarkdale highway has been completed and accepted.

MAY 11 1917

Engineer Defty hopes to resume sinking the shaft in about six weeks. An electric pump is on the way and the 50-horsepower motor which is to drive it is being assembled on the ground.

When the pump is operating the present gasoline hoisting engine will still be used. Arrangements have been made to secure enough current for hoisting as soon as the Arizona Power company's new plant, above Clarkdale, is completed.

Dundee-Arizona Copper Co., (Jerome)—Organized in March 1916, with capital stock of $500,000 d[illegible]d into shares of $1 each and purchased two claims, on the outskirts of Jerome, that are surrounded by the lands of the United Verde Extension and the Jerome Verde Copper Co. At the annual meeting of the stockholders on March 12th, the directors submitted a report from which we extract as follows. "During the past nine months of active operations many difficulties have been encountered but all have been surmounted and the company is now on fine footing for good progress. Surface improvements comprise office building, two connected machinery buildings, smith shop, change room, tankage, pipe connections, etc. Our main shaft is down to a depth of 460 feet with two stations one at the 300-foot level and the other at the 450-foot level. At the last named station a No. 7 Cameron pump has been installed and a No. 6 Cameron sinker hangs in the shaft. The power plant includes an 80-horsepower Fairbanks-Morse gasoline engine and an Ingersoll-Rand compressor capable of generating 500 cubic feet of air per minute. This equipment provides capacity to drive the shaft to a 1000 foot depth. Our main tunnel is 220 feet long and intersects the shaft at about 100 feet from the surface and with other minor workings the total development to date aggregates about 984 feet.

The working on the conglomerate ore on the 65 foot level was discontinued and work commenced on the ore reef on the surface by open stripping, uncovering a body of ore 900 feet long with an average width of 5 feet. One continuous stripping 100 feet in length, at the northeast end, exposes a body of ore averaging better than 6 per cent. The ore at the south end of the reef and in the drifts will average about 4 per cent . There is at least a thousand tons of this ore on the dump ready for shipment and arrangements have been completed with the Humboldt smelter to treat a trial shipment with the understanding that if found satisfactory, arrangements will be concluded for the shipment of a stated number of cars monthly. A large tonnage of this ore can be extracted at a comparatively small cost. A contract has been entered into for the purchase of a half interest in the Jerome Tunnel company which owns five mining claims and valuable tunnel rights. We regard this purchase a valuable addition to original holdings.

Disbursements to January 31, 1917, have been as follows: Mine development $26,375.45, buildings and machinery $13,087.80, organization and administration expense $3,204.30, Jerome Tunnel company, $5,833. The company's resources on January 31 were: Cash balance, $55,408.95, due Sept. 20, 1917, on sales of donated terasury stock $40,875.00 and 75,000 shares of donated stock now held in the treasury of the company.

Alex. Mackay is president, W. C. Foster is vice president, A. J. Smith is secretary-treasurer and these with F. S. Stephen and L. H. Chalmers comprise the directory.

APR 19 1917

DUNDEE-ARIZONA COPPER COMPANY

Jerome, Ariz.—The D[illegible]ee-Arizona Copper Co. was organized in March, 1916, with capital stock of $500,000 divided into shares of $1 each and purchased two claims, on the outskirts of Jerome, that are surrounded by the lands of the United Verde Extensoin and the Jerome Verde Copper Co. At the annual meeting of the stockholders on March 12th the directors submitted a report, from which we extract as follows: "During the past nine months of active operations many difficulties have been encountered, but all have been surmounted and the company is now on fine footing for good progress. Surface improvements comprise office building, two connected machinery buildings, smith shop, change room, tankage, pipe connections, etc. Our main shaft is down to a depth of 460 feet with two stations, one at the 300-foot level and the other at the 450-foot level. At the last-named station a No. 7 Cameron pump has been installed and a No. 6 Cameron sinker hangs in the shaft. The power plant includes an 80-horsepower Fairbanks-Morse gasoline engine and an Ingersoll-Rand compressor capable of generating 500 cubic feet of air per minute. This equipment provides capacity to drive the shaft to a 1,000-foot depth. Our main tunnel is 220 feet long and intersects the shaft at about 100 feet from the surface, and with other minor workings the total development to date aggregates about 984 feet.

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MAR 11 1917

DUNDEE-ARIZONA

ELECTRIC PUMP SOON TO BE INSTALLED TO HANDLE WATER

The following statement has been sent out to stockholders in the Dundee-Arizona Copper company under date of April 25:

"In keeping with the policy of your directors to inform stockholders of the progress made in the development of our property, we wish to advise at this time, that we have closed a contract with the Arizona Power company for a supply of electric power, sufficient to equip our shaft with an electric-driven pump of a minimum capacity of 250 gallons per minute, which can be materially increased, thus insuring the handling of the water with ease.

"Our present pumping equipment is driven by air from our 500-foot compressor, which in turn is driven by an 80-horsepower gasoline engine. At the time of the installation of this equipment, it was the best we could obtain, as no electric power was then available. It has not proven adequate, however, and we have decided to add the electrical pumping equipment with the least possible delay.

"This new equipment will consist of a 50-horsepower Westinghouse motor, and an Aldrich vertical triplex pump, both of which will be installed on the 450-foot station. Delivery is promised within sixty days.

"The present water situation is not serious, but with inadequate pumping facilities we are unable to make the progress we should. We are now in a very much fractured zone, and more or less water will be encountered until we are through the fractures.

"In the meantime, as sinking progresses, the shaft, which is a two-compartment below the 450-foot station, will be cemented and the water channels closed, thus eliminating the present flow of water.

"The trial shipment of ore to the Consolidated Arizona Smelting company proved very satisfactory, averaging 7.22 percent copper and netting the company approximately $20 per ton. We have entered into a contract for shipments of one car per week with the promise of the acceptance of additional tonnage in the very near future.

"We have built a wagon road from our ore dumps to the main road to Clarkdale and this will facilitate transportation.

"The work of blocking out the ore continues satisfactorily and a very large tonnage is now in sight."

DUNDEE-ARIZONA FOURTH REGULAR VERDE PRODUCER

WILL SHIP CARLOAD A WEEK HEREAFTER TO HUMBOLDT SMELTER

ORE AVERAGES ABOVE 7.6 PER CENT COPPER; NETS $500 A CAR

The Verde district's fourth regular producer is the Dundee-Arizona.

Regular shipments are to be made hereafter from the Dundee to the Humboldt smelter. Arrangements have been made to market at least one carload of ore a week at Humboldt, and it is understood on the best authority that even higher rate of production may be maintained.

Each coarload is expected to net the company in excess of $500.

About three weeks ago a test shipment of 23 tons was made to Humboldt. It averaged 7.6 per cent copperf, nearly two per cent higher than the officers of the company had estimated. That shipment, it is believed, was a fair sample from the 1,500 tons that the Dundee has on the dump.

The total return was approximately $1,000, but about $500 was deducted for mining, shipping and treatment. The heaviest part of the expense was for treatment, for the cost of picking and shoveling ore from the Dundee's surface reef is very low.

A contract was let last week to Fleming & Stitzer for the building of 2,000 feet of road from the Dundee down to the wagon road to Clarkdale. This is to facilitate the freighting of the ore to Clarkdale for shipment.

The Dundee's surface blanket of carbonate ores is about 1,200 feet long and 300 feet wide, and all on the Dundee property. Its depth is from eight to ten feet. Heretofore it has been estimated that it would average more than six per cent copper but through the mass are scattered boulders of copper glance and some cuprite which bring up the copper content.

One man can pick out three or four tons in an eight-hour shift without any trouble. If necessary the Dundee could produce ore at the rate of 300 or 350 tons a day.

SELLING MACHINERY—Henry K. Behn, of Phoenix; agent for a number of the biggest machinery houses in the country, arrived in Jerome Wednesday and will remain several days. Mr. Behn specializes in road-making machinery and says that the products he sells could be

DUNDEE SHAFT WAITS COMPLETION OF TUNNEL

(From Saturday's Daily)

No definite prediction as to when shaft sinking will be resumed at the Dundee-Arizona can be made by Consulting Engineer W. E. Defty, who is in Jerome today.

Sinking was suspended months ago because of the heavy flow of water encountered and it is hoped that the Dundee ground will be drained by the U. V. Extension haulage tunnel. That tunnel has advanced about 500 feet west from the Texas shaft, along the south line of the Dundee, but it must be driven 1,000 or 1,100 feet farther before it comes opposite the Dundee shaft. The water makes progress in the tunnel extremely slow.

"The experience of the Extension in driving the haulage tunnel proves that it would have been absolutely impossible for us to develop our ground by sinking and pumping," stated Engineer Defty.

A few men are employed in stripping the overburden from the Dundee's surface reef of carbonate ore. It is possible that shipments from that reef, suspended over a month ago, will be resumed soon.

DUNDEE-ARIZONA

The management reports under date of November 18:

"Sinking was resumed in the Dundee-Arizona shaft, after a cessation of two days, occasioned by the striking of another heavy flow of water. The water rose seven feet, and it was necessary to operate the pumps at greater speed. The flow has been brought under control.

"Two sinkers and two lifting pumps are in use, and they are handling 450 gallons a minute. If necessary they can handle from 500 to 600 gallons.

"The present depth of the shaft is 505 feet. It will be sunk at least 950 feet before any cross-cuts or drifts are run. It is at this depth that the United Verde Extension haulage tunnel will pass along the south side of the Dundee property.

"At present the ore is being extracted from a face 30 feet high. This seems to be the greatest depth of the reef. The shipments made to date, however, have hardly made a dent in the visible supply.

"A 100-horsepower electric motor, which will be used to drive the big 512-foot Ingersoll-Rand compressor, has been delivered at Clarkdale immediately, and will be installed. This compressor is at present being operated by the 80-horsepower gasoline engine.

ANOTHER PRODUCER FOR VERDE

Dundee-Arizona Fourth to Enter Producing Class. Will Ship Carload Weekly to the Smelter. Ore Nets $500 a Car.

1917

Jerome, Ariz., April 26.—The Verde district's fourth regular producer is the Dundee-Arizona. Regular shipments are to be made hereafter from the Dundee to the Humboldt smelter. Arrangements have been made to market at least one carload of ore a week at Humboldt, and it is understood on the best authority that even higher rate of production may be maintained. Each carload is expected to net the company in excess of $500.

About three weeks ago a test shipment of 23 tons was made to Humboldt. It averaged 7.6 per cent copper, nearly two per cent higher than the officers of the company had estimated. That shipment, it is believed, was a fair sample from the 1,500 tons that the Dundee has on the dump.

The total return was approximately $1,000, but about $500 was deducted for mining, shipping and treatment. The heaviest part of the expense was for treatment, for the cost of picking and shoveling ore from the Dundee's surface reef is very low.

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One man can pick out three or four tons in an eight-hour shift without any trouble. If necessary the Dundee could produce ore at the rate of 300 or 350 tons a day.

RESUME SINKING AT DUNDEE - ARIZONA

(From Wednesday's Daily)

Sinking was resumed in the Dundee-Arizona shaft last night, after a cessation of some two days, occasioned by the striking of another heavy flow of water. The water rose seven feet, and it was necessary to operate the pumps at greater speed. Tuesday afternoon the flow was brought under control.

Two sinkers and two lifting pumps are in use, and they are handling 450 gallons a minute. If necessary they can handle from 500 to 600 gallons, but Consulting Engineer Defty is hopeful that the shaft will soon pass out of the fractured limestone, and that no more underground creeks will be encountered.

The present depth of the shaft is 505 feet. It will be sunk at least 950 feet before any crosscuts or drifts are run. It is at this depth that the U. V. Ext. haulage tunnel will pass along the south side of the Dundee property.

Shipments from the Dundee's surface reef of carbonate ore are still going forward to the Humboldt smelter at the rate of 12 carloads a month. The ore averages 5 1-2 per cent copper. Although each ton contains from 50 to 60 units of silica, and each such unit means a penalty of 7 cents, the company is making a little money.

At present the ore is being extracted from a face 30 feet high. This seems to be the greatest depth of the reef. The shipments made to date, however, have hardly made a dent in the visible supply.

A 100-horsepower electric motor, which will be used to drive the big 512-foot Ingersoll-Rand compressor, was delivered at Clarkdale yesterday and will be installed before the end of the week. This compressor is at present being operated by the 80-horsepower gasoline engine.

NOV 27 1917

DUNDEE-ARIZONA SHAFT ALMOST DRAINED

(From Tuesday's Daily)

Only ten inches of water remain in the Dundee-Arizona shaft. It has been drained by the U. V. Extension haulage tunnel and sinking can be resumed in from thirty to sixty days.

When the Dundee-Arizona company suspended sinking last fall owing to the heavy flow of water encountered, the shaft was 500 feet deep. When the pumps were stopped the water rose something over 70 feet.

JUN 23 1918

Early in May, W. F. Defty, consulting engineer of the Dundee-Arizona, paid a visit to the property and noted that the water level had begun to drop. He attributed the drop to the dry spring, thinking that the tunnel was still too far away to affect the Dundee ground.

The water continued to lower, however, and of late has been going down at the rate of nine feet a week. It fell nine and a half feet last week and this morning a measurement showed only ten inches in the bottom.

Were sinking resumed immediately the shaft might catch up with the water, but it is estimated that in 60 days, at the most, the Dundee company will have perfectly dry ground down to a depth of 956 feet. It is at that depth below the collar of the shaft that the tunnel is to pass along the south line of the Dundee claims.

A perfect river is being pumped from the Texas shaft, from which tunnel headings are being drawn two ways, and it is not surprising that the drainage is affecting the Dundee shaft.

DUNDEE DELIVERS

JAN 1 1916

EIGHT-HORSEPOWER MACHINE AT CLARKDALE READY FOR HAULING TO PROPERTY

The Dundee-Arizona company's 80-horsepower gasoline engine was delivered at Clarkdale Tuesday night and it will be freighted up to the property, on the hogback just east of Jerome, as soon as the road dries up enough to be passable. Superintendent Jim Hubbard hopes to have it operating within two weeks.

News that operations have been resumed at the Dundee will be more than welcome to the stockholders of that company. Little has been accomplished there since a heavy flow of water was struck at 450 feet in the shaft late last August. A 60-horsepower engine, compressor and Cameron pump were then ordered and delivered, but the engine failed to work properly. It was necessary to get a new one from Chicago, which was rushed through in almost record time.

When the engine is operating the Dundee shaft will be continued to greater depth at the rate of three or four feet a day. It is planned to sink to at least 1,000 feet.

While in the city yesterday, F. S. Stephen, a principal of the newly organized Dundee-Arizona Mining Co., stated that operations had been inaugurated on the Green Flower claim situated on what is commonly known as the hogback at Jerome. Mr. Stephen said that financial arrangements closed will permit of permanent development on a deep development basis. J. W. Hubbard is to be in charge as superintendent. Previously a tunnel had been run to ascertain geological conditions, and from these bodies determined sinking will be the future method of operating. Machinery is being placed.

DUNDEE-ARIZONA

MAY 1 1916

F. S. Stephen arrived Wednesday from Phoenix after an absence of a couple of weeks. Mr. Stephen reports the arrival of part of the machinery for the Dundee-Arizona in Clarkdale, including a compressor and air drill which were delivered at the mine Thursday. A Fairbanks-Morse 25 h. p. engine has also come for the mine and will be on the ground Monday. The installation of the new mining machinery will be effected at once and more rapid progress can be expected to follow immediately at the Dundee-Arizona.

PHOENIX, Ariz., April 13.—With the taking over of 225,000 shares at $1 a share by a syndicate of Phoenix business men, the financing of the Dundee-Arizona Mining company is complete.

The Dundee-Arizona company was formed for the express purpose of taking over and developing two patented claims in the heart of the Jerome district, owned by F. S. Stevens and William Mackay. These claims are entirely surrounded by the United Verde Extension and Jerome Verde.

The company is capitalized for $500,000. Of the 500,000 shares, Mackay and Stevens received 275000 for their property. The remaining 225,000 shares of capital stock were subscribed for by the local syndicate.

Herbert B. Atha, L. H. Chalmers and several other investors identified with the Phoenix National bank compose the syndicate. They have already disposed of 100,000 shares to friends in Bisbee, Phoenix, Prescott and Jerome. All these shares went at par, $1. Plans are now under way to list the stock on the Boston curb.

The surface indications of the Dundee claims are practically the same as on the United Verde Extension group, but the collar of the main shaft is on ground 200 feet lower than the collar of the U. V. extension shaft. In addition it has been proved that the lime capping is 100 feet less in thickness than the lime that overlies the extension. The U. V. Extension struck values at 900 feet, and it is believed that the Dundee-Arizona will enter the zone of enrichment at 600 feet. It is now down over 200 feet and is being sunk at the rate of three or four feet a day.

APR 17 1916

JEROME, June 17.—With all the new machinery and equipment including a 25-horse power hoist and an 8x8 Sullivan compressor, installed, the Dundee-Arizona company started yesterday sinking its shaft from the present 200-foot level to a depth of 1,000 feet.

That this work is started in earnest is evidenced by the fact that all other development work has been stopped to concentrate on shaft sinking. It is expected that when the 1,000 level is reached it will be possible to find a high grade sulphide body.

Gasoline power is being used by the Dundee people. Their property consists of two claims on the hog-back at Jerome. The property became active but a little over a month ago but since that time considerable exterior development work has been done. Scotch mining men are the heads of the corporation.

The Dundee and Arizona Copper Company, has been incorporated with a capitalization of $500,000. A small portion of the stock, ten thousand shares, was allotted for sale in Jerome and this is being readily subscribed to by local people.

The property is the Stephen and McKay group known as the "Greenflower," on the hog back, from which some very fine ore has recently been exhibited. The owners are Scotch capitalists, MacKay having large mining and cattle interests in different parts of the country, and extensive mining interests in South America.

That these men should consider this particular spot worthy of serious attention is significant of the recognized value of the district, and it is men of their calibre who substantially increase the importance of the field in which they operate. The Greenflower" is a strip lying between the properties of the Jerome-Verde and the United Verde Extension Companies and is believed by its owners to have very attractive possibilities.

APR 17 1916

FROM THE 900-FOOT LEVEL

JUN 7 1916

Special Correspondence.

JEROME, June 13.—Marked progress is being made by the Dundee-Arizona people in the development of their property on the hog-back near here. The shaft has been sunk to a depth of more than 200 feet and the new hoist has been put in operation. A compressor has also been installed on the property and will be put to use shortly.

It is the plan of the operators to sink their shaft to the 900-foot level and then drift into the ore. It is their belief that a good grade of commercial ore will be found at that level as the 900 level is in about the same strata as the ore bearing bodies of the United Verde extension on the other side of the gulch.

While drifting from several levels in the present shaft conglomerate ore abounds. A freak of the volcanic eruption which made the geological formation was discovered by workmen who state that the hog-back is vertical porphyry.

Special Correspondence.

JEROME, June 22.—W. E. Defty, consulting engineer of the Dundee-Arizona Copper Company, has just made his monthly report to the stockholders. According to the engineer, rapid progress is being made in developing the Dundee-Arizona, which is on the hog-back just east of Jerome, adjoining the Jerome-Verde and only a short distance from the main workings of the United Verde Extension.

"Continuous sinking of the shaft has commenced by hand drilling and this will be continued until sufficient depth is attained clear of the timbering to insure safety in the use of air drills," says Engineer Defty in his report. "The shaft for 202 feet is in limestone and three feet in red sandstone, with slips and gouges in the latter mainly charged with spar.

"The intended shipment of ores to the Humboldt smelter is delayed at least 60 days on account of the destruction of the sampling works there. However, all energy will be concentrated on the sinking of the shaft."

A station has been cut and timbered 65 feet from the collar of the shaft. "This station," says Engineer Defty, "is at the point of the upper strata of conglomerate ore. A drift has been continued from the station eight feet west and six feet in width. Both in the sides of the station and drift, and in the face of the latter, the conglomerate ore shows an average width of five feet, with ore showing in the roof and floor at the face. The ore extracted from this working is on the dump. The ore is larger and of better appearance at this point than at any other."

In reviewing the improvements made during the last 30 days the engineer mentions the installation of a main gasoline storage tank; completion of a substantial gallows frame that will be able to serve a second compartment if it is found necessary to enlarge the shaft; installation of a 25-horse power gasoline hoist on a solid concrete foundation; compressor bolted into position on a concrete foundation; drain ditches around the works; all shaft timbering completed; bucket guides bolted in place from head frame to bottom of shaft; air pipe strung from compressor to bottom of shaft.

DUNDEE.

JUN 1 91916

Special Correspondence.

JEROME, June 19.—In order to prove the progress of the Dundee-Arizona mine, Superintendent J. W. Hubbard escorted a group of visitors including mining men, investors, and the Journal-Miner representative through the tunnels on the Dundee property, Sunday afternoon.

The shaft was being deepened, for as the party reached the shaft, the powder smoke was belching forth from a shot just fired. The new machinery, as previously described in these columns, was working and it was plainly evident that the work of sinking the shaft was going on at full speed.

The tunnel entering the property from the hillside is on the 100-foot level of the shaft. In the tunnel, outcroppings of azurite formations are found, while some ore running as high as 50 per cent is found in the upraise at 65 feet.

It is the intention of the company, however, to sink their shaft to the 1,000-foot level immediately, where they believe a sulphide ore will be found. The shaft is now down 210 feet.

W. E. Defty, consulting engineer for the Dundee-Arizona Copper company, in his monthly report to the company, dated July 10, reports the following surface improvements made during the preceding month: timber framing shed, frame and corrugated iron change room, power house, with open cut entrance. The surface work has been completed, and all the force is now engaged in actual mining.

Continuing, the report states: The compressor is working satisfactorily, and the machine drills are also operating effectively. Since the last report the shaft has been sunk to a depth of 291 feet, or 75 feet for the month. The working is fully timbered to within 16 feet of the bottom. At this date three shifts are engaged in sinking the shaft and it is expected the working will gain a depth of 5 feet daily.

One shift has been started on the 65-foot level, drifting on the conglomerate ore to the west. The surveyor has received the official survey notes from the land office and expects to complete the surface survey this month. There is a sufficient supply of lumber on hand to last for two months. All conditions at the properety are very satisfactory.

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[illegible]ery no longer surrounds the plans of the Dundee-Arizona company. New and heavier machinery is to be installed at the hogback property in September.

The new compressor is to be twelve by fourteen feet in size and will be driven by a sixty-horsepower engine. The present compressor is eight by eight feet and is driven by a 25-horsepower engine.

Superintendent James A. Hubbard made another trip to Prescott this week and brought back an engine and suction blower, which are now being installed. Pipe has been down to the 300-foot station for some time.

The work of cutting a station at the 300 was completed last week and since then the work of sinking the shaft down through the blue lime has been proceeding at the rate of five feet a day. The formation is extremely hard but it breaks up when the blasts are set off. Holes are drilled to a depth of six or seven feet and jammed full of powder. One round of shots the other day loosened 86 buckets of muck. All this came from the bottom of the shaft, none from the sides.

Superintendent Hubbard does not think that he will be able to continue sinking at the rate of five feet a day till the new machinery is in but expects to get the shaft down 500 or 600 feet before the change is made. After that an extensive line of drifting and crosscutting, as well as sinking, will be carried on. The present lack of air capacity practically precludes all development except sinking.

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ing Started From the Sixty-Five Foot Level.

JUL 2 1916

PRESCOTT, July 22.—Surface work on the Dundee-Arizona property at Jerome has been completed and the entire force of men is now employed in actual mining, according to Consulting Engineer W. E. Defty. The gland stuffing hose on the compressor broke recently and for 12 days all drilling in the shaft was done by hand, until new parts were received. The compressor and machine drills are now in good shape, reports Defty.

During the last month the shaft on the property has been sunk 75 feet, to a total depth of 291 feet and the working is fully timbered to within 16 feet of the bottom. Twenty feet of the ground encountered during the last sinking was red sandstone and the remainder blue lime, intesely fractured.

Three shifts are now engaged in sinking operations in the shaft and as this proceeds Defty anticipates the working will attain a depth of 5 feet daily, including timbering. One shift has been started on the 65-foot level, drifting on the conglomerate ore to the west.

To handle this ore a 500-foot tramway will probably be constructed direct from the dump to the ore bin. The surveyor for the company expects to complete the surface survey of the property this month. During

Better ventilation of the Dundee-Arizona workings is the principal object of a raise that has been started from the tunnel level to connect with the end of a 40-foot drift run westward from the 65-foot point in the shaft. Between 70 and 75 feet of raising must be done.

The 65-foot station is where a rich shoot of carbonate and glance, several feet wide, was cut two or three months ago. A drift was run westward on it 40 feet and it is this drift which is to be connected with the tunnel level, 40 feet below. The shaft is approximately 40 feet east of the main tunnel.

When the rise is completed there will be a steady circulation of air through all the workings except that part of the shaft below the 65-foot station. This will not be the only object accomplished, however. All the ore taken out of the drift can be dropped down the raise and trammed out to the dump through the tunnel. The shaft is down about 380 feet.

Dundee-Arizona, one of the recent arirvals in the Jerome, Ariz., group on the Curb, was active throughout the week. Under a turnover of 5,520 shares it sold up to a high of $1 3-4 and had a final at $1 5-8, a gain of 1-8 over the previous week's close.

The proximity of the Dundee-Arizona property in the Jerome camp to the bonanza orebody of the United Verde Extension, in conjunction with the strong outcrop which crosses the propeerty, has attracted a great deal of attention to this issue. Within the last three weeks encouraging developments have been reported from the property and an announcement of a strike of rich ore would not be unexpected. In fact, favorable indications of copper ore have been encountered in the bottom of the shaft, which is said to be only ten to fifteen feet away from the ledge.

...ations will probably be suspended at the Dundee-Arizona within the next three or four days and the mine on the hogback will remain idle until heavy pumps can be installed.

Wednesday night at 7 o'clock the Dundee-Arizona shaft was perfectly dry. At 8 o'clock it was making 200 gallons of water an hour, and the water is still flowing in at that rate.

So far the water has been kept under control by bailing, but it is impossible to continue sinking. The shaft had reached a depth of 450 feet when the water was encountered.

Superintendent James W. Hubbard thinks it possible that merely a pocket of water has been entered and that it can all be bailed out in a few days. He believed, however, that the permanent water level has been reached and that he will be forced to close down. His plan is to continue bailing three or four days and then, if the flow of water is as strong as ever, inform the board of directors that he must have pumps.

The stsiking of water at the Dundee is nothing remarkable. It was realized that the shaft must get down to water level sooner or later but it was hoped that it could be continued downward a considerable distance farther before installing pumps.

Machinery with a capacity six times greater than is needed in the immediate future is on the way for the Dundee-Arizona.

This is the news given out by W. E. Defty, consulting engineer of the Dundee-Arizona company, who arrived from Phoenix Wednesday night. Moreover, the machinery will be delivered shortly. It has already been shipped from several different points.

No manufacturer of mining pumps or machinery will accept an order for delivery in less than three months, but after his last trip to Jerome, week before last, Engineer Defty began firing wires all over the country in a frantic search for a hoist, compressor and pump of the types required by the Dundee. The bottom of the shaft was filled with water and he did not want to see the property closed down for three or four months.

Finally Defty located a Cameron sinking pump in one place, a 60-horsepower hoist in another and a 12x10 compressor in a third. They were ordered immediately and are now on the way. Their arrival will find the concrete foundations ready for them as the engineer arrived armed with a bundle of blue prints. According to Superintendent James W. Hubbard, little additional grading is necessary.

The sinker has a capacity of 3600 gallons an hour, just six times as much water as the Dundee shaft is

Not only has the Dundee-Arizona com...y purchased pumps of sufficient capacity to take care of any flow of water that is likely to be developed in the shaft, but a new hoist, compressor and other equipment are now on the way. The machinery was purchased in Phoenix and but for the recent floods which delayed railroad traffic in the Salt river valley, it would have been delivered before this time.

The new hoist is a 60-horsepower machine and will replace the present 25-horsepower engine. The present compressor is 8x8 feet in size, far too small for the sinking of a 1000-foot shaft. Superintendent J. W. Hubbard has not been informed regarding the capacity of the new compressor but has been given to understand that it is large enough for any development contemplated at the Dundee.

The Dundee shaft is now making 600 gallons of water an hour. It is understood that the new pumps are to have a capacity of approximately 2000 gallons an hour. It is expected, of course, that the flow of water will increase steadily as the shaft goes downward.

No work has been done in the shaft since water was struck a week ago last Wednesday. The Dundee is far from being an idle property, however. Superintendent Hubbard, seized this opportunity to complete the raise from the tunnel level to the crosscut that was run westward from the 65-foot point in the shaft. Connection was made Tuesday and now the raise is being squared. It is only 36 feet long and it struck the end of the crosscut 40 feet from the shaft.

The crosscut is now to be continued westward and drifts are to be run northeast and southwest on the ore. The ore itself, as well as the waste, will be dropped down the raise and trammed out through the tunnel to the dump. It is expected that several carloads can be shipped shortly.

JEROME, Oct. 14.—Dundee-Arizona is now in the spotlight, its stock having almost doubled in market value within the past two weeks.

The tip was out two weeks ago to get aboard but no one knew any particular reason why there should be an advance as there had been no unusual developments at the mine to justify it.

Now the news comes from New York that a deal has been consummated with the Verde Extension for a joint tunnel which will develop both properties. Alexander Mackay, a British capitalist arrived from Europe on Monday and the deal was closed. He is one of the heaviest stockholders, being associated with Fred S. Stephen who bought the property long before the United Verde Extension made its phenomenal strike on the same fault about 1000 feet northwest of Dundee.

The Dundee tunnel and shaft have already developed a blanket of carbonate ore over the property and a zone of rich conglomerate ore has been encountered near the surface. The water level was tapped in the shaft at 450 feet and pumps have been installed and it is believed that the sulphide zone will be struck at a depth of 850 feet.

The company is capitalized for 500,000 shares, par value $1, with 425,000 shares issued, leaving 75,000 shares in the treasury with a working capital of $143,500. The president is Alexander Mackay of Dundee, Scotland, who is interested in mining and other enterprises in various parts of the world, while the directors are W. C. Foster, secretary of the Phoenix Savings Bank & Trust Company, Fred S. Stephen of Dundee and Phoenix, Chas. M. Shannon, former owner of the Shannon Copper Company, and L. H. Chalmers, attorney, of Phoenix. J. W. Hubbard, who has been in the Jerome district for 25 years, is the superintendent.

vided there are no further delays in securing fittings, the new hoist, compressor and pumps at the Dundee-Arizona will be in operation by November 1. With the exception of some work in the west crosscut from the 65-foot level there has ben no development at the Dundee since water was struck in the shaft, about September 1.

All the machinery is in place and it would be running today but for the absence of some necessary fittings. A highly important circulating pump is still missing. Superintendent James W. Hubbard and Engineer W. E. Defty have been keeping the wires hot and expect to have everything they need within a day or two.

It is probable that a station will be cut at 450 feet the present depth of the shaft. The bottom is in a swift running stream of water flowing from east to west Until this watercourse was entered little moisture was encountered in the Dundee shaft.

10/27/11

MACHINERY FOR THE DUNDEE NOW READY FOR MINE PLACING

Shipment Arrives at Property and Will Be Installed As Soon as Possible—All Concrete Foundations Finished.

JEROME, Oct. 14.—Machinery ordered by the Dundee-Arizona company has arrived at the mine, which is located on the south side of the hogback just out of Jerome. The machinery has been at Clarkdale several days. It would have been hauled up early in the week had not the Pittsburg-Jerome company requisitioned all the available teams.

Included in the shipment are a 60-horsepower hoist, 12x10 compressor and Cameron sinking pump with a lifting capacity of 3600 gallons an hour. This machinery, it is estimated, has a capacity six times as great as is immediately necessary at the Dundee.

All the necessary concrete foundations are in for the new surface equipment and it is expected that the machinery will be in operation by the first of next month. The sinking of the shaft, which was down 450 feet when water forced a suspension of operations, will then be resumed.

(Boston Financial News)

The Dundee Arizona Copper company has only $500,000 stock (par $1) and no bonded debt. The property is located at Jerome, Arizona, near the United Verde copper mines, controlled by Senator W. A. Clark, and adjoining the United Verde Extension, where phenomenal discoveries of high-grade copper ores have recently been made. The Dundee Arizona claims are believed by geologists and engineers to lie along the North Fault which contains the above-mentioned ore bodies. The claims were sold and patented twenty years ago by a mining man and geologist who selected the location because it had the best surface showing of any claims in the district. Alexander Mackay, a British capitalist, with his associate, Frederick S. Stephen, of Dundee, Scotland, bought the property long before the United Verde Extension made its phenomenal strike on the North Fault, about 1000 feet northwest of Dundee, and on a direct line with United Verde on the same fault. One hundred thousand shares of treasury stock were then sold at par, one dollar, by public subscription, producing what was considered ample working capital. These shares were mostly taken by Phoenix bankers and business men.

The shaft is already down 450 feet and has reached the permanent water level. The installation of a pumping plant, well in excess of the present requirements, is being completed. Sinking if the shaft will then be continued at the rate of about five feet a day. The rich sulphides discovered by the United Verde Extension are never found except below permanent water level, according to geologists. The collar of the Dundee shaft is about 200 feet below that of the United Verde Extension, and this may account for the striking of water at 450 feet. Ore enrichment is therefore to be expected at 500 to 600 feet. The Dundee tunnel and shaft have already developed a blanket of carbonate ore, and a zone of rich conglomerate has been encountered near the surface. This can be mined at an excellent profit, while the possibility of reaching rich sulphides at depth gives the stock unusual speculative possibilities.

Dundee Arizona copper stock is listed on the New York Curb exchange as a prospect, because no ores have as yet been shipped. Since its listing last May, it has sold up to $3. The principal owners of Dundee Arizona Copper are among the largest and most successful British operators in the American southwest. They have built a reputation for successful development of natural resources, and they have never been interested in manipulation of shares. The capital stock issue is relatively small, only $500,000, and the management has a world-wide reputation for doing big things.

rumors have referred

Within the next day or two the machinery ordered by the Dundee-Arizona company will be at the mine, which is located on the south side of the hogback just out of Jerome. The machinery has been at Clarkdale several days. It would have been hauled up early in the week had not the Pittsburg-Jerome company requisitioned all the available teams.

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Monday morning Engineer W. E. Defty, who is now personally in charge of operations at the Dundee, started men to work running drifts north and south from the west crosscut. This crosscut was started west from the 70-foot point in the shaft on an underground blanket of ore that is five or six feet thick. The drifts are started from the 40-foot point in the crosscut, where there is a raise connecting with the tunnel level below. The crosscut is also being continued and its face is more than 50 feet from the shaft.

Crosscut and both drifts are in ore which carries six or seven per-cent copper. This ore is dropped down the raise and trammed out to the dump, for shipment later.

Dundee-Arizona which has recently undergone a raise in the price of its stock, is now in a position to ship from 100 to 200 tons of ore a day, according to superintendent James W. Hubbard.

Mr. Hubard has contended that the Dundee is an immense steam shovel proposition, regardless of what the shaft discloses at depth. Very little work has been done to determine the tonnage of the Dundee's surface blanket of carbonate-silicate ore, but it is said by Hubbard that it is tremendous.

Providing that Engineer Defty can find a smelter which can use ore of this kind, there is a possibility that the ore will soon be marketed.

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tion of operations at the Dundee-Arizona were abandoned early this week when the 60-horsepower gasoline engine that was being installed blew a piston. Another engine, this time an 80-horsepower machine, has been ordered and the machinery company promises delivery in three weeks.

Superintendent Jim Hubbard and his assistants never were able to get the 60-horsepower engine to work. It was on an antiquated pattern and had more things the matter with it at one time than a nervous woman. Several times they were able to make it run a few hours but a fit of temperament was inevitable. When the piston blew out they threw up their hands and quit.

An 80-horsepower engine is a little heavier than the Dundee-Arizona needs just now but early delivery could be secured on a machine of that capacity and the company undoubtedly will be able to use it when levels are run at depth.

JAN 27 1917

Sinking of the shaft at the Dundee mine will commence within a few days. The 80-horsepower engine which the operators have been waiting for was delivered at the mine Thursday and work of installing the machine has been commenced. The concrete foundations were in place before the machine arrived. The engine is the latest thing in gasoline engines and is the largest machine of its kind made. A large tonnage of ore is al-

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The new 80-horsepower engine of the Dundee-Arizona company was delivered at the mine Thursday evening. Concrete foundations had been prepared prior to the arrival of the engine so the machine can be put in commission in short order and the sinking of the shaft renewed. Work was suspended at the Dundee when a heavy flow of water was encountered at the 450-foot level. This necessitated the installation of a sinking pump and heavier engine.

This new engine is the latest creation of the Fairbanks-Morse company in gasoline power. It is the latest engine of this capacity to be turned out of the Fairbanks-Morse factory with up-to-date improvements.

Great energy is being exerted by the Dundee-Arizona people to push work in every direction. A large tonnage of ore is already on the dump and the future of the property looks to be very bright.

Recent surface developments at the Dundee-Arizona and the fact that the property has been put in shape to produce ore at the rate of from 100 to 200 tons a day, are responsible for the rise in the price of Dundee shares.

The contention of Superintendent James W. Hubbard and others familiar with the ground that the Dundee is an immense steam-shovel proposition, regardless of what the shaft discloses at depth, has now been proven. Not enough work has been done to determine the total tonnage of the Dundee's surface blanket of carbonate-silicate ore but it is certainly tremendous.

Today the Dundee has on the dump 350 tons of ore running a little over six per cent copper. It has enough five per cent and four per cent ore to bring the total marketable tonnage above 500.

There is a possibility that the ore will soon be marketed. Engineer Defty is endeavoring to find a smelter that needs ore of that character. It is not difficult to smelt when plenty of iron is used as flux.

On the surface the blanket is 1200 feet long and approximately 300 feet wide. It is all on Dundee ground. There is not much overburden and in many places the ore crops right out on the surface. At such places vegetation will not grow, owing to the copper.

The existence of this blanket has been known for years. Superintendent Hubbard has long desired to prove that it really amounted to something. When President Fred S. Stephen was here, about a month ago, he gave his permission for the commencement of surface work.

Hubbard put three men at work 750 feet east of the shaft and about five hundred feet from the east end line of the property. Those men have worked one shift a day ever since and have taken out, with pick and shovel 350 tons of ore. They are now averaging from three to four tons a day each.

At the point where the open cut was commenced the blanket is eight feet thick. It appears to be increasing in thickness as the miners work up the hill, to the north.

This ore is mostly silica but it carries a great deal of lime. It averages a little better than six per cent copper.

Through the mass are scattered chunks of copper glance, some as large as a man's head. These chunks, many of which are covered with lime and look like ordinary stones, average 40 per cent copper.

Several boulders of cuprite have been discovered. The cuprite runs about 60 per cent copper.

A little work has been done about 300 feet from the shaft. Here there is much more glance than at the east end and the general average of the ore is seven or eight per cent.

Where the Dundee's surface blanket came from is a geological puzzle. There is excellent reason for believing, however, that the copper was forced up from below through the broken lime. There is not a sign of copper on the surface in the unbroken lime to the north and west so the overflow could not possibly have been from the United Verde.

The Dundee shaft, now down 450 feet, was started right in the edge of the broken lime, a little distance up the hill from the northern edge of the copper blanket. It caught the ore at 65 feet and had ore to 185 feet. Most of it, down to 100 feet averaged around five per cent copper. From there on down, till it dipped over into the lime, it ran about four per cent.

Superintendent Hubbard admits that he could produce 50 tons of ore a day from the shaft and says that with a large force of pick-and-shovel men it would be no trick to take 100 tons a day from the surface. "At a pinch we could produce 200 tons a day," he said. "The way to handle this is with a steam-shovel," he added.

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Work in the shaft has been suspended since September 1, when a heavy flow of water was encountered at a depth of 450 feet. A Cameron sinking pump has since been installed and the new 80-horsepower gasoline engine would be in operation but for the lack of shafting. Just as soon as the shafting is received, which may be any day, three shifts will be put to work. In the meantime surface work will be continued.

NABERS NEW RESIDENT DIRECTOR OF SCOTCH COPPER CO. PROPERTY

Retires From Employment of Clarke Interests to Accept New Position

MAR 9 1919 Review

JEROME, March 8.—Announcement has been made of the retirement of C. L. Nabers from the employ of the Clark interests to become resident director of the F. S. Stephen-Alexander Mackay interests in Arizona.

Nabers has practically completed the work which the Clarks employed him to do some two years ago. That work had largely to do with the Hull Copper Company, Cleopatra Copper Company and other interests, which the Clarks acquired by purchase from the late George W. Hull. The Hull litigation has been disposed of; the somewhat tangled accounts of the companies have been put in order and for some time to come there will be little to do in connection therewith.

Nabers has served officially as assistant secretary of the Hull and Cleopatra. He will be succeeded in those offices by H. V. Young, secretary to Robert E. Tally, who is president of those companies and assistant general manager of the United Verde.

F. S. Stephen and Alexander Mackay of Dundee, Scotland, control the Dundee-Arizona and Queen Creep Copper Companies. The Dundee property is at Jerome and the Queen Creek is at Superior. Both are good mines with immense possibilities. Aside from the Dundee and Queen Creek, Stephen and Mackay have various other mining interests and own farm land in the Salt River valley.

Nabers is in Phoenix taking over the duties of his new position. He will return to the Verde district shortly for the purpose of winding up his affairs here and removing his household effects from Clarkdale to Phoenix, as that city will be his headquarters hereafter. Though he is to live in Phoenix he will be in Jerome frequently on business connected with the Dundee Arizona company.

SECRETARY HERE—A. J. Smith, secretary of the Dundee-Arizona Copper company, arrived in the city yesterday afternoon in company with W. E. Defty, consulting engineer for the property. The officials are in Jerome with reference to the proposed sale of a tract of ground to the city, located on the Hogback. They are also arranging to devise a system to bring about the development of the carbonate ore bodies of the Dundee.

DUNDEE-ARIZONA CORRECTS REPORT

MAR 17 1919

Arthur J. Smith, secretary and treasurer of the Dundee-Arizona and Queen Creek Copper companies, has requested the Verde Copper News to publish th e following correction of the statement made in a recent issue that C. L. Nabers had been appointed resident director of the Mackay-Stephen interests:

"I beg to contradict the report published in a recent issue of the Verde Copper News that Mr. C. L. Nabers has been appointed resident director of the 'Mackay-Stephen' interests which include the Dundee-Arizona and Queen Creek Copper companies.

"Mr. Dundee has been appointed agent for the Dundee Townsite by the Dundee-Arizona company, but is in no other way connected with these interests."

LEACHING PLANT WILL BE BUILT BY DUNDEE ARIZONA

Jerome 4-8-19

That the great carbonate reef at the Dundee Arizona is to be worked just as soon as a completely satisfactory method of treatment can be devised was the cheering statement made by A. J. Smith, secretary of the company, yesterday.

Mr. Smith came to Jerome with W. E. Defty, the consulting engineer of the company, to make arrangements for an early resumption of sinking, to inspect the plans for the new townsite and to examine the work already done in developing the carbonate deposit and preparing it for speedy extraction.

He states that more than 50,000 tons of carbonates are now available for treatment and the extent of the deposit is not yet finally determined.

The method of treatment is practically decided upon and it will be by leaching. The government is now making exhaustive experiments along this line, with the aid and co-operation of mines in the state, and the work done to date indicates a high percentage of recovery—much high-

DUNDEE ARIZONA TO BUILD A LEACHING PLANT AT BIG REEF

More Than 50,000 Tons of Carbonates Now Available for Treatment

Review

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He states that more than 50,000 tons of carbonates are now available for treatment and the extent of the deposit is not yet finally determined.

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In Main Shaft

It is the opinion of Engineer Defty that the country has been drained through the Extension tunnel to an extent that warrants immediate resumption of sinking in the main shaft and the plans of the company call for early work in this direction. The shaft is now down about 600 feet and all indications point to the making of a mine.

Great difficulty was experienced from water until the Extension tunnel began to drain the surrounding country and, with this obstacle removed, it is the plan of the company to continue sinking and to proceed with development at depth. No date has been set for the recommencement of operations but it is not likely that they will be long delayed.

Townsite

Engineer Colwell has completed the surveys for the townsite which will extend easterly on the Hogback below the site chosen by the school trustees for the new high school building and also will run along two sides of the loop in the Clarkdale road which surrounds the school site on three sides.

C. L. Nabers is in charge of the sale of the lots and reports a large number of inquiries even before the plat has been recorded and made public. It is pointed out that the site affords advantages for residential purposes hardly to be found elsewhere in the camp and it is expected that the new subdivision will attract a highly desirable class of home builders. Moderate building restrictions will be placed on the lots so that the new townsite will be made a place of comfortable and well de-

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ANNUAL REPORTS OF DIRECTOR AND CONSULTING ENGINEER OF DUNDEE-ARIZONA COPPER CO.

MAR 14 1919

The Dundee-Arizona Copper company has just made public the report presented to the annual stockholders' meeting held at Phoenix on March 3.

The report shows that the company is in splendid financial condition, that it intends to continue the development of the property to depth and that the great carbonate reef on the claims will be worked this season. In the reef there are now exposed some 30,000 tons of ore that run from three to five per cent in copper.

The reports of Director F. S. Stephen and Consulting Engineer W. E. Defty follow:

Stephen Report

Since the last report, issued to the stockholders on October 25, 1918, the shaft has been sunk from 545 feet to a depth of 750 feet, but water was again encountered, and the directors decided to close down operations until the completion of the United Verde Extension tunnel. It is expected that this tunnel will be completed within the next sixty days, and after that time sinking can be resumed under dry conditions.

Carbonate Ore

As will be seen from the report of the company engineer, considerable development has been done during the past few months on the carbonate ore bodies in the surface workings, and in the tunnel at the 100-foot level. I have always considered these ore bodies to be of very great value to the company, and the work recently done has proved up to my expectations, there being a considerable tonnage exposed in the various workings. As reported by the company's engineer, this ore is suitable to a profitable treatment under a new leaching process, and as soon as this new process is available the company intends to adopt same.

In March, 1918, owing to the high cost of mining, the ore shipments to the smelter were stopped and up to that date, according to the treasurer's report, the company shipped 2,729 dry tons, yielding approximately 250,000 pounds of copper, and netting the company $7,615.01, after charging all operating and overhead expense.

Townsite

With regard to the valuable townsite, this has now been independent-

advances with interest at 6 per cent per annum shall, at the option of the company, be paid either in cash or by the issue of treasury stock at a price of not less than $1 per share to the company.

In regard to finances, the company is in the fortunate position that although the proceeds of the 150,000 shares of treasury stock sold have been expended in the development of the property and fighting the water situation, it is expected that a comparatively small sum of money will be required to attain the main objective—to sink the shaft further and to crosscut to the contact. It must also be kept in mind that the company expects to realize a fair, if not substantial profit from the treatment of the carbonate ore bodies. The company has in its treasury 75,000 shares to be disposed of, if the directors think it advisable, and when conditions are favorable, but no portion of this stock will be marketed until such time.

In Conclusion

I have given very careful consideration to the reports of the consulting engineer, also the opinions expressed by other experts, regarding the prospects of the Dundee-Arizona property. I would further state that I have been in close personal touch with the mining situation in the Jerome distrtict for many years and have observed intently the various developments, and I consider that the prospects of developing a sulphide ore body at depth in Dundee-Arizona ground are most favorable.

(Signed) F. R. STEPHEN,
Director.

Phoenix, February 28, 1919.

Engineer's Report

I beg to report on the development of the property covering the operations since the date of my previous report on September 30, 1918, as follows:

Main Shaft

On September 22, 1918, work was resumed in the shaft from the depth of 545 feet with one shift and later with two shifts. During this latter period five feet in depth was gained daily, including timbering until another heavy flow of water interfered extremely with sinking operations, when it was again deemed advisable

15,000 tons of carbonate ore, averaging from three to five per cent in copper contents.

In addition to the above tonnage can be added an equal tonnage of possible ore, besides a considerable tonnage of carbonate ore in shattered limestone.

Work will be continued to demonstrate the extension of the conglomerate ore body.

Treatment

A general run of the conglomerate ore has been tested under a new process for the treatment of carbonate ores and has proven to be perfectly amenable to the treatment, as high results were obtained.

The copper contents of the ore treated were 5.19 per cent. A recovery of 90 per cent was the result of the test, and it is expected that a still larger saving can be effected.

The conclusions are that 2 per cent ore can be treated at a profit.

It is possible that the body of carbonate ore in the limestone, underlying the conglomerate ore, can also be treated successfully by this process.

(Signed) W. E. DEFTY.

Phoenix, February 18, 1919.

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Townsite

With regard to the valuable townsite, this has now been independently surveyed and is ready for staking. Several applications have been made for lots, and it is the intention of the directors to enter immediately into negotiations for leasing the surface rights. After consultation with well-informed valuators, I consider $100,000 to be a conservative valuation of the surface rights on the property when leased.

Tunnel Site Claims

I would remind the stockholders that the company holds a half interest along with the United Verde Extension company in five tunnel site claims, lying to the east of the Dundee-Arizona, which cost the company $12,500. Apart from any mineral value, and their importance as a tunnel site, the surface rights on these claims may prove of considerable value in the future.

Finances

You will observe from the treasurer's statement that the cost of sinking the shaft to the present depth of 750 feet has been $108.81 per foot. Of this sum, $42.04 per foot represents the actual cost of pumping the water and $66.77 per foot the actual cost of sinking. The cost of sinking 205 feet during the past year has been $63.19 per foot, being $3.92 for pumping and $59.27 per foot for actual sinking.

On referring to the treasurer's report, it will be observed that the sum of $5,000 has been advanced by the directors for the temporary requirements of the company. It may be, in view of the present state of the market and the unsettled copper situation, that further advances will require to be made to finance the development of the property. In this connection, I have to advise stockholders that an agreement has been entered into between the president, myself and the company, that such

(Continued on Page Three)

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After cessation of pumping, water rose very rapidly in the shaft, but on January 11 the shaft was again dry. However, it was considered economic policy not to renew sinking until connection with the haulage tunnel of the United Verde Extension company had been effected.

Geological Conditions

The sedimentary formations in the shaft were passed through at a depth of 595 feet. At this point quartz-porphyry was entered and continued to bottom of shaft. This formation has shown slight variation, and is intensely shattered and fractured. It shows soft plastic gouges and occasionally veinlets and seams of quartz, with iron and manganese oxide.

Developments during the last few months have proven the previously stablished conclusion—that the contact of the schist and quartz-porphyry passes through the Dundee ground. This is a geological condition that is considered of great importance and future development work will be centered in sinking the shaft deeper, probably to the 1,200 level, and crosscutting north to the contact in anticipation of very interesting developments.

Carbonate Ore

During the stoppage of work in the shaft, work has been centered on development of the conglomerate carbonate ore. Over 500 feet of tunnel, drift and raise work has been accomplished proving the ore reef to be continuous for over 600 feet in length and 200 feet in width. In addition to this, there is considerable open stripping also proving the continuity of the reef.

This work has proven up about

DUNDEE PUMPS WORKING AGAIN

Nov. 29, 1918

(From Friday's Daily)

Pumping has been resumed at the Dundee-Arizona, according to Consulting Engineer W. E. Defty, who was here from Phoenix yesterday for an inspection of the property.

When sinking was recommenced in the shaft it was entirely dry, the country having been partially drained by the U. V. Extension haulage tunnel. About a week ago enough water to be troublesome began to make its appearance. At first the bailer was sufficient to handle this flow but now the pump is lifting forty gallons a minute.

The present depth of the shaft is 705 feet. It is bottomed in intensely shattered quartz porphyry carrying much iron and manganese oxide.

It is expected that the haulage tunnel will still further lower the water level soon. It passes along the south side of the Dundee property about 1,000 feet from the shaft at a depth of 960 feet.

DUNDEE PLANS TO DEVELOPE CARBONATE DEPOSIT

Dec 1, 1918

Further development of the carbonate deposit at the Dundee-Arizona is to be undertaken at once. The old tunnel, which strikes the shaft 120 feet below the collar, is to be extended 100 feet or so northeastward into the zone of fractured limestone known to be at least partially impregnated with copper.

Decision to extend this tunnel was reached yesterday by Consulting Engineer W. E. Defty and Director Fred S. Stephen, who arrived from Phoenix Monday night and spent all of Tuesday on the property with Superintendent Jack Martin. They directed Martin to put a shift to work in the tunnel at once and authorized him to employ a second shift there if such a course seems advisable. Because of the rapidity with which the flow of water is increasing in the shaft, he was instructed to cut his shaft force down to one shift.

Ore Deposits

That the Dundee has an immense blanket of carbonate ores on the surface has long been known but not until recently have the officials of the company realized the possibilities of the fractured limestone zone lying just away from the shaft. This zone may increase the ore reserves of the Dundee enormously, and it is expected that any ore found even at superficial depth will be vastly richer than the surface material which has been exposed to the weather.

Only thirty-five feet below the collar, a little work was done in the limestone a few feet away from the shaft and several tons of beautiful ore were taken out. It was all carbonate, of course, but much richer than the ore found directly on the surface. Forty feet below the tunnel level the carbonate is slightly exposed and indications there are much better than they are above.

No attempt has been made to prove the extent of the ore in the shattered limestone but it is entirely within the bounds of possibility that big bodies will be found there. High-grade streaks and lenses are also within the bounds of possibility.

DUNDEE PLANS TO DEVELOP ITS CARBONATE ORES

Further Operations Looking to This End Will Be Started at Once; Shift Will Be Worked

JEROME, Ariz., Dec. 28.—Further development of the carbonate deposits at the Dundee-Arizona is to be undertaken at once. The old tunnel, which strikes the shaft 120 feet below the collar, is to be extended 100 feet or so northeastward into the zone of fractured limestone known to be at least partially impregnated with copper.

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Only 35 feet below the collar, a little work was done in the limestone a few feet away from the shaft and several tons of beautiful ore were taken out. It was all carbonate, of course, but much richer than the ore found directly on the surface. Forty feet below the tunnel level the carbonate is slightly exposed and indications there are much better than they are above.

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Treatment Plant

It is rumored that the Dundee company has in view some means of treating its carbonates on a big scale. No announcement has been made along this line but the fact that steps are being taken to develop carbonates below the surface and that plans to measure the surface deposit are under way, lends color to the rumors.

The present depth of the shaft is 750 feet and fifty gallons of water are being pumped every minute. Every foot of depth gained means a little more water. In order to avoid increasing pumping expenses as far as possible, Engineer Defty decided to eliminate one of the two shifts that have been working in the shaft.

The U. V. Extension haulage tunnel passes along the south side of the Dundee property, 960 feet below the shaft collar. This tunnel has already drained that country to a large extent and when sinking of the Dundee tunnel was resumed a few weeks ago there was no water at all in the bottom. It is expected that when the portal end of the tunnel is connected with the mine end the country will be entirely drained down to the tunnel.

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1-25-18

DUNDEE ARIZONA

J. Q. Martin, Superintendent, reports in the Weekly News Letter of Jerome under date of December 15:

"The water problem at this property has been solved and they are now able to make some headway in the sinking of the drift. It has now attained a depth of over 470 feet and has passed out of the limestone into the sandstone.

"It is possible that arrangements will be made with the United Verde Extension to drain the shaft of Dundee through the extraction tunnel. The line of the tunnel runs but short distance from the shaft, and, should such an arrangement be made, the connection can be effected with but very little work and expense when the proper depth has been attained in the shaft.

"Shipments have been going forward at the rate of twelve carloads a month to Humboldt and a smelter at Tacoma, Washington. Tacoma is several thousand miles from Jerome and the freight rates are high but that smelter pays a premium for the fifty or sixty units of silica in each ton of Dundee ore. Humboldt penalizes heavily for that very silica, so the Dundee company is able to get practically as much for its ore by shipping to Tacoma as by marketing the product at Humboldt.

"The Dundee ore shipped to date averaged around five and a half per cent copper."

After a suspension for half a year, development has been resumed at the Dundee-Arizona.

SEP 30 1918

DUNDEE-ARIZONA

A report to the stockholders dated April 30 says:

"It is the belief of the contractors in charge of the U.V.X. extraction tunnel, as well as those who are familiar with underground conditions in the Jerome District, that the tunnel will, to a very large extent at least, drain the whole district. Your Directors therefore have finally decided to await developments in the construction of this tunnel and thereafter be guided in future operations by the results obtained.

"In the meantime the Jerome-Verde Copper Company is approaching the Dundee-Arizona property on the North and West with deep drifts which we understand are making much water.

"The formation encountered in the Verde Extension tunnel and in the Jerome Verde drifts show very strong indications of mineralization.

"The bottom of the Dundee-Arizona shaft presents an unusual and very interesting condition. The formation is calcareous sandstone, with uniformally patterned straws or pipes and irregular bunches of red iron oxides. This iron has been altered from its original form of sulphide by the downward percolation of circulating waters. What this interesting condition may lead to can only be determined by deeper work.

MAY 22 1918

"During the year ending January 31st, 1918, the Company has shipped to various smelters 2,200 dry tons of its surface carbonate ore yielding a fair net profit. The surface ore continues to be developed and your Directors consider that in course of

2-20-18

The Weekly News Letter of Jerome reports under date of January 5:

"Due to the fact that much water has retarded work in sinking the shaft to such an extent as to make the costs out of reason, it has been decided by the management to cease work for a short period. Arrangements have practically been completed with the U. V. Ext. for the making of a connection between the long Extraction Tunnel and the Dundee shaft, thus making it possible to drain the shaft with but little expense. The connection will be made at a depth of 969 feet below the collar of the shaft and will take a drift about 300 feet long to make the connection. The drift will probably be run as soon as the extraction tunnel reaches the point opposite the shaft and it is anticipated that this will be some time in May. After the drift is run an upraise will be made some 445 feet to connect with the present level of the shaft.

"The United Verde Extension people will also consummate a deal whereby surface rights will be granted them by Dundee-Arizona for a townsite, all of which has been practically approved by the officials of both companies.

"According to W. E. Defty, consulting engineer for Dundee, the last shipments of ore from the reef to the Tacoma smelter averaged 7½ per cent copper and the Tacoma smelter as well as the Copper Queen smelter at Douglas is ready to receive further shipments. However, it is expected that increased shipments will be made to the smelter at Humboldt, it being the present plan to mine and ship 300 tons of ore per month.

"The bottom of the Dundee shaft is in a gray sedimentary with considerable iron oxide showing in the formation.

"The directors of the company will soon issue a full report dealing with the future development of the property."

DUNDEE ARIZONA ANNUAL MEETING

MAR 11 1918

(Special to R. Allyn Lewis, by [illegible] F. Hutton Leased Wire)

PHOENIX, March 7.—At the annual meeting of the Dundee-Arizona Copper company, held here today, the concern was shown to be in a very satisfactory condition, especially from a strategical standpoint.

The property is being developed for practically its entire length and at depth on one side by the Verde Extension haulage tunnel. On the other side the Dundee is being developed by the Jerome Verde.

All the old directors were re-elected.

Strong financial backing is assured for any work that seems advisable.

$4.14

WORKING FORCE AT DUNDEE TO BE DOUBLED

Verde Copper News

In all probability a second shift will be put to work in the Dundee-Arizona shaft tomorrow. Consulting Engineer W. E. Defty arrived last night from Phoenix and is making a general survey of the property for the purpose of mapping out a future course of action.

Since development was resumed at the Dundee the shaft has been put down 23 feet, giving it a total depth of 573 feet. It is bottomed in red quartz-porphyry, which is regarded as an extremely favorable indication for copper.

No water has been encountered and Engineer Defty feels confident that there will be no trouble with water until the U. V. Extension haulage tunnel level is reached. That tunnel is passing along the south side of the Dundee property at a depth of 960 feet below the shaft collar. Should the Extension company have move trouble at the Texas shaft and be forced to suspend pumping there, the Dundee shaft might be flooded again. As the east Texas shaft heading of the tunnel is only 420 feet from breaking through to the portal heading, Defty has about decided to put a second shift to wark and prosecute Development vigorously.

RESUME SINKING IN SHAFT AT DUNDEE

Jerome

After a suspension of more than half a year, development has been resumed at the Dundee-Arizona.

One shift is working in the shaft, which was down 500 feet at the time of the suspension last January. If conditions continue favorable, a second shift will be put to work. It is possible that Superintendent Jack Martin will eventually decide that he can work three shifts to advantage.

SEP 30 1918

Sinking of the Dundee shaft was suspended because of the heavy flow of water encountered. An underground river was tapped. Now, how-

JEROME MINE INSTALLING MACHINERY

JAN 27 1917

Dundee-Arizona Company Purchases New 80 h. p. Engine. Victor Extension Looks Promising. News of Other Mines in the District

Jerome, Ariz., Jan. 20.—The new 80-horse power engine of the Dundee Arizona company was delivered at the mine last week. Concrete foundations had been prepared prior to the arrival of the engine so that machine can be put in commission in short order and the sinking of the shaft renewed. Work was suspended at the Dundee when a heavy flow of water was encountered at the 450-foot level. This necessitated the installation of a sinking pump and heavier engine.

This new engine is the latest creation of the Fairbanks-Morse company in gasoline power. It is the latest engine of this capacity to be turned out of the Fairbanks-Morse factory with up-to-date improvements.

Great energy is being exerted by the Dundee-Arizona people to push work in every direction. A large tonnage of ore is already on the dump and the future of the property looks to be very bright.

Development work at the Jerome Victor Extension property has been very gratifying, according to a recent report issued by J. A. Minnear & Company.

In practically all the work carried out on the 1,200-foot level during the past two months more or less iron pyrites was encountered and traces of galena and chalcopyrite also showed up. The formation in the northwest drift recently changed from quartz diorite to a soft schist carrying more or less pyrites and iron sulphide. This is considered as a very good indication of an ore body in the vicinity and there is probability that the rich body, recently found at Clark's United Verde and which runs in the direction of the Jerome Victor property will be found.

Three very promising water courses have been found and one of these is being followed at the present time. According to mining engineers acquainted with this vicinity the presence of water courses are the very best indications of an ore body.

Additional equipment has been bought at an expense of about $25,000 and is now on the way to the property. This consists of three 200-horse power oil feed boilers, an engine and generator complete, and two electric pumps, either one of which is capable of han-

JEROME MINE INSTALLING MACHINERY

(Continued from Page One.)

been caused by the electric company stating that they could not furnish any more power after plans had been made for electric equipment. This necessitated the installation of the company's own power plant. The oil feed boilers will not only aid work at the property but will create a large saving in coal as the present prices paid for fuel are quite prohibitive.

Many of the largest mining interests in the country are becoming interested in the Jerome district and all the territory to the north and west of Jerome Victor has recently been taken over by new companies. The value of the district is fast being realized.

The Calumet & Jerome company's Jeffrey Quad truck was delivered last week and is now a familiar sight on the streets of Jerome and Clarkdale. It is one of the most powerful trucks ever seen in the district and the way it climbs hills is a caution for snakes. Bob Kelly is doing the honors on the driver's seat.

The work of sinking the 1,000-foot three-compartment shaft on the property of the Gadsden Copper company, backed by the Calumet & Arizona, began the middle of last week. All the heavy machinery for the shaft is either at Clarkdale or on the way from Bisbee.

The east crosscut from the 1,540-foot level of the Arkansas & Arizona shaft is now about fifty feet into a body of quartz porphyry. Though this formation does not carry any copper it is regarded as an excellent indication in this district.

The United Verde Copper company of ex-Senator W. A. Clarks, the historic mine of this district, is now handling about 2,300 tons of ore daily. The Clarksdale smelter of Senator Clark is turning out about 5,400,000 pounds of copper per month, which would show a return of about 75 pounds copper per ton after allowing for small tonnages of outside ore handled at the smelter. It is not generally known that the United Verde mine is worked on a single lens of sulphide ore 1,900 feet long, and up to 600 feet wide, proved to 2,000 feet depth, and estimated to contain nearly 50,000,000 tons of ore down to this depth. This ore tonnage will last a 4,000-ton works nearly 40 years, or longer than the developed ore of Utah Copper company. The United Verde contemplates handling about 4,000 tons of United Verde ore daily at the Clarkdale smelter beginning in the summer of 1917, and will soon begin handling 3,000 tons. The smelter capacity of 5,000 to 6,000 tons at Clarkdale will be filled out by other mines, chiefly useful for fluxing purposes with United Verde ore. United Verde production in 1916 was 59,360,000 pounds copper.

DUNDEE IS BUYER OF INTEREST IN BIG TUNNEL PROJECT

Dundee-Arizona Company is Owner of Half Interest in Project Which Will Unwater Much Ground Near Jerome.

DIRECTORS' STATEMENT IS VERY ENLIGHTENING

Test Shipment of Ore From Company's Ground, Running About Six Per Cent, Is Now Being Treated at Humboldt.

MAR 2 1917

JEROME, Mar. 24.—Two important announcements were made in the report of the directors of the Dundee-Arizona Copper company, submitted to the stockholders at the annual meeting held in Phoenix last Monday.

One of these announcements was that the Dundee company has bought a half-interest in the Jerome Tunnel company. The other was that a test shipment of the Dundee's surface ore, running about six per cent copper, is being made to the Humboldt smelter. If satisfactory arrangements with the smelter can be reached, regular shipments will be made and the Dundee will become the fourth producer of the Verde district.

Following is the report of the directors in full:

Directors' Statement

"About nine months ago we began active operations for the systematic development of our property, and since that time have not ceased our efforts to crowd teh work in every possible way.

"That we have encountered many difficulties, causing disappointment and delap in the progress of development, must be admitted, but these difficulties and delaps are always coincident with the development of new properties.

"At this time we are very much gratified to advise stockholders that we have surmounted all apparent obstacles in the way of deep shaft work and unless some unforseen new difficulty arises, we shall be in position to make most rapi dprogress.

Machinery.

"Our new equipment consists of one

In
out
past two months more or less in
pyrites was encountered and traces
galena and chalcopyrite also showed
up. The formation in the northwest
drift recently changed from quartz
diorite to a soft schist carrying more
or less pyrites and iron sulphide. This
is considered as a very good indication
of an ore body in the vicinity and
there is probability that the rich body,
recently found at Clark's United Verde
and which runs in the direction of the
Jerome Victor property will be found.

Three very promising water courses
have been found and one of these is
being followed at the present time.
According to mining engineers ac-
quainted with this vicinity the pres-
ence of water courses are the very
best indications of an ore body.

Additional equipment has been bought
at an expense of about $25,000 and is
now on the way to the property. This
consists of three 200-horse power oil
feed boilers, an engine and generator
complete, and two electric pumps,
either one of which is capable of han-
dling the entire flow of water. In addi-
tion to this equipment the company
has purchased an electrical hoisting
engine and when all this equipment is
installed work at the property will
progress more rapidly. A delay has

depth. This ore tonnage will last a
4,000-ton works nearly 40 years,
longer than the developed ore of U
Copper company. The United Ve
contemplates handling about 4,000 tons
of United Verde ore daily at the Clark-
dale smelter beginning in the summer
of 1917, and will soon begin handling
3,000 tons. The smelter capacity of
5,000 to 6,000 tons at Clarkdale will be
filled out by other mines, chiefly useful
for fluxing purposes with United Verde
ore. United Verde production in 1916
was 59,360,000 pounds copper.

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vide ample reserve power for operat-
ing pumps and all necessary air drills.
A No. 7 Cameron lift pump has been
installed in an 8x8x12 foot station at
the 450-foot level to lift the water from
a sump on this level to a discharge
on the tunnel level. A No. 6 Cam-
eron sinking pump hangs to this shaft
for use in lifting the water encounter-
ed in sinking to the sump on the 450-
foot level.

"These pumps are believed to be of
ample capacity to easily handle all
the water we may expect to encounter
at a depth of from 800 to 1,000 feet.
Our hoisting machinery is deemed
efficient to carry us to a depth of at
least 1,000 feet if we should find it
necessary to sink our shaft to that
depth in order to strike our perman-
ent ore body.

"Surface improvements comprise
office building, two machinery build-
ings, now connected, blacksmith shop
and change room, besides all neces-
sary tankage and pipe connections.
Our whole equipment is now in the
highest state of efficiency and should
meet all requirements without diffi-
culty.

"Our main shaft is 450 feet deep
and contains two 8x8x12 foot stations,
one at our 300-foot levels and one at
the 450-foot level. Our main tunnel
is 220 feet long and intersects the
shaft at about 100 feet from the sur-
face. Numerous short drifts and
other workings have been made from
this main tunnel, the whole develop-
ment to date aggregating about 984
feet.

"The bottom of our main shaft is
in cherty limestone, a sure indica-
tion that the working will soon en-
ter the underlying sandstone, which
is estimated to be from 40 to 75 feet
thick. Below this limestone we shall
encounter the underlying structure in
which our permanent ore bodies are

(Continued on Page Two)

DUNDEE MAY BE NEXT PRODUCER

TEST SHIPMENT SENT TO HUMBOLDT SMELTER AND ARRANGEMENT MAY BE MADE TO SHIP NUMBER OF CARS MONTHLY—DUNDEE-ARIZONA NOW OWNS HALF INTEREST IN JEROME TUNNEL COMPANY—U. V. EXTENSION OWNS OTHER HALF BUT NO JOINT TUNNEL CONTEMPLATED—DIRECTORS SUBMIT HIGHLY SATISFACTORY REPORT TO STOCKHOLDERS AT ANNUAL MEETING.

Two important announcements were made in the report of the directors of the Dundee-Arizona Copper company, submitted to the stockholders at the annual meeting held in Phoenix last Monday

One of these announcements was that the Dundee company has bought a half-interest in the Jerome Tunnel company. The other was that a test shipment of the Dundee's surface ore, running about six per cent copper, is being made to the Humboldt smelter. If satisfactory arrangements with the smelter can be reached, regular shipments will be made and the Dundee will become the fourth producer of the Verde district.

Following is the report of the directors in full:

Directors' Statement

"About nine months ago we began active operations for the systematic development of our property, and since that time have not ceased our efforts to crowd the work in every possible way.

"That we have encountered many difficulties, causing disappointment and delay in the progress of development, must be admitted, but these difficulties and delays are always coincident with the development of new properties.

"At this time we are very much gratified to advise stockholders that we have surmounted all apparent obstacles in the way of deep shaft work and unless some unforseen new difficulty arises, we shall be in position to make most rapid progress.

Machinery.

"Our new equipment consists of one 80-H. P. latest type Fairbanks-Morse gasoline engine and one new Ingersoll-Rand double phase compressor, capable of generating 500 cubic feet of air per minute, both of which provide ample reserve power for operating pumps and all necessary air drills. A No. 7 Cameron lift pump has been installed in an 8 8x12 foot station at the 450-foot ore on the 65-foot level was discontinued and work commenced on the ore reef on the surface by open stripping, uncovering a body of ore 900 feet long with an average width of five feet. One continuous stripping, 100 feet in length, at the northeast end, exposes a body of ore averaging better than six per cent. The ore at the south end of the reef and in the drifts will average about four per cent.

"We have at least 1,000 tons of this ore on the dump ready for shipment, but owing to its high silicious contents and the fact that all smelters have been crowded to their full capacity with their own ores of similar character, we have been unable to market any portion of the ore. However, we now have completed an arrangement with the Consolidated Arizona Smelting company at Humboldt to accept a trial shipment with the understanding that if it is found satisfactory arrangements will be concluded for the shipment of a stated number of cars per month. The trial shipment is now being loaded and should reach the smelter early next week.

"A very large tonnage of ore can easily be extracted from these open workings, so that if we are successful in finding a market for the ore, we shall continue shipments indefinitely.

May Be Next Producer.

"In this connection it may be of interest to stockholders to learn that, should we be successful in our efforts to dispose of surface ores, the Dundee will be the fourth producing mine in the Jerome district.

"A partial joint survey by the United Verde Extension Mining company and the Dundee has been made for a townsite on the surface of our own and adjoining claims, and locations for various important improvements have already been determined upon.

"A contract has been entered into made a tentative arrangement for the driving of a branch from the Extension's proposed main tunnel. Such is not the case.

Last fall W. E. Defty, consulting engineer for the Dundee, paid Mr. and Mrs. George W. Hull, Mr. and Mrs. R. Rothermel, S. F. Denison, Mrs. A. H. Lyons and Francis Lyons, $25,000 for their stock in the Jerome Tunnel company. They were the sole stockholders.

Since then Mr. Defty has sold a half interest in the Tunnel company to the Dundee, and the other half to the U. V. Extension. Those companies are joint owners of the tunnel proposition, including five claims lying between the United Verde Extension and Jerome Verde on the west, and Clarkdale on the east. The claims themselves may be valuable mining property, aside from their value as tunnel sites.

No arrangement for a joint tunnel is being considered. It is probable that in the end two separate tunnels will be driven, one to tap the Dundee at a depth of 800 feet, the other to tap the Jerome Verde and U. V. Extension.

Surveys made for the Dundee company show that less than a mile of tunnel will be necessary to tap the Dundee. Walter Fitch, Jr., a well known mining man of Utah, was recently here to figure on driving the tunnel for the Dundee but no contract has been awarded. In fact he has submitted no complete bid. The Extension has not even progressed this far toward driving its tunnel.

Dundee Development.

Development work is again in full swing at the Dundee, after a delay of some weeks occasioned by the heavy flow of water. The new pumps are in operation and the water is under control. A round of holes was put in the bottom om the shaft last Monday night and work has continued without serious interruption since.

The carload shipment to the Humboldt smelter, mentioned in the report of the directors, left Clarkdale Tuesday.

we have surmounted all apparent obstacles in the way of deep shaft work and unless some unforseen [illegible] difficulty arises, we shall be in position to make most rapid progress.

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"These pumps are believed to be of ample capacity to easily handle all the water we may expect to encounter at a depth of from 800 to 1,000 feet. Our hoisting machinery is deemed efficient to carry us to a depth of at least 1,000 fet if we should find it necessary to sink our shaft to that depth in order to strike our permanent ore body.

"Surface improvements comprise office building, two machinery buildings, now connected, blacksmith shop and change room, besides all necessary tankage and pipe connections. Our whole equipment is now in the highest state of efficiency and should meet all requirements without difficulty.

"Our main shaft is 450 feet deep and contains two 8x8x12 foot stations, one at our 300-foot level and one at the 450-foot level. Our main tunnel is 220 feet long and intersects the shaft at about 100 feet from the surface Numerous short drifts and other workings have been made from this main tunnel, the whole development to date aggregating about 984 feet.

"The bottom of our main shaft is in cherty limestone, a sure indication that the working will soon enter the underlying sandstone, which is estimated to be from 40 to 75 feet thick. Below this limestone we shall encounter the underlying structure in which our permanent ore bodies are expected to be found.

"Our engineer reports present conditions to be exceedingly favorable and very encouraging for our ultimate success.

Surface Ore.

"The working on the conglomerate

May Be Next Producer.

"In this connection it may be interest to stockholders to lea[illegible] that, should we be successful in our efforts to dispose of surface ores, the Dundee will be the fourth producing mine in the Jerome district.

"A partial joint survey by the United Verde Extension Mining company and the Dundee has been made for a townsite on the surface of our own and adjoining claims, and locations for various important improvements have already been determined upon.

"A contract has been entered into for the purchase of a one-half interest in the Jerome Tunnel company, owning five mining claims and valuable tunnel rights. We believe this purchase will prove to be a valuable addition to our original holdings. Substantial payments have already been made for the property

"Your directors will continue every effort to develop our property in the most expeditious, efficient and economical manner."

Dundee Finances.

A financial statement submitted by Treasurer Arthur J. Smith, upon order of the board of directors, showed the receipts of the company to have been $603,904.50, $102,875 being from the sale of treasury stock. Disbursements were as follows:

Purchase of property, $499,995; payments to Jerome Tunnel company, $5,833; buildings, machinery and equipment, $13,087.80; preliminary and organization expense, $1,755; mine development, $26,375.45; administration and office expense, $1,448.50.

In addition to a bank balance of $55,408.95, the Dundee has sold $40,875 worth of treasury stock that is to be paid for on or before September 1, next, making the company's total resources $96,283.95.

At Monday's meeting the following directors were elected: Alexander Mackay, W. C. Foster, Arthur J. Smith, F. S. Stephen, L. H. Chalmers.

The directors organized as follows: President, Alexander Mackay; vice-president, W. C. Foster; secretary-treasurer, Arthur J. Smith; attorneys, Chalmers, Kent & Stahl.

That Tunnel Proposition.

It has been supposed locally that the Jerome Tunnel company was bought by the United Verde Extension and that the Dundee-Arizona

DIRECTORS OF DUNDEE ARIZONA MAKE REPORT

JER 5/25/12

The following annual reports by the directors and consulting engineer of the Dundee Arizona Copper company have been received by the Verde Copper News. The outstanding feature of the reports is the fact that a satisfactory method has been worked out for the recovery of the values in the immense deposits of carbonate ore known to exist on the Dundee ground. It is understood that the extraction of these ores will be undertaken on a large scale and that the coming summer will see much activity at the property.

The directors' report says:

Sinking Shaft

In the last annual report, stockholders were advised that operations in the shaft had been suspended pending the completion by the United Verde Extension Mining company of their haulage tunnel, which was expected to drain the ground of the Dundee-Arizona.

In July of last year the Dundee shaft had been drained entirely dry and sinking operations were resumed in August. Good progress was made until a depth of 808 feet was attained, when it was deemed advisable to close down for a short period owing to the prevalence of severe rain and electric storms, which were constantly causing the electric power to be cut off, thereby considerably interfering with operations.

Water Troubles

Operations were again resumed in November. Very heavy rains had occurred before and continued after resumption, causing the ground to become saturated, but the company's engineer recommended that since this water was simply surface seepage, an effort should be made to control it by the pumps. A pumping station and sump were constructed at the 780-foot level and pumping operations were continued throughout the month of December. The water was controlled and sinking was continued, but since little progress was then being made, an additional electric pump was purchased, to be installed in the 780-foot station, to pump the water to the 450-foot level pumping station. The men were engaged in installing the pipes, when a very heavy flow of surface water emerged from the fractured sandstone at the 600-foot level and soon filled the shaft to the

feet of development work has been done, of which 597 feet was done during the past year.

The carbonate ore blocked out on the 100-foot level amounts, according to a conservative estimate by the company's engineer, to fully 30,000 tons. It will also be seen that the engineer states that "at least another 15,000 tons can be easily blocked out, with "still considerable further extensions and continuation of the ore-body." Average samples

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The water has since risen above the 600-foot level, and remains practically stationary at that point. It is entirely surface water, due to the abnormal rainfall last year. Operations will be resumed as soon as dry weather sets in and the water recedes. The present depth of the shaft is 830 feet. After the new pump has been installed in the 780-foot station, the total pumping capacity from the bottom will be 270 gallons per minute, which should be ample to handle the seepage from heavy rains in the future.

It is the intention to sink the shaft to a depth of at least 950 feet and to develop the property at that level.

The attention of the stockholders is particularly called to the very promising geological conditions that have been exposed in the station at the 780-foot level as reported by the company's engineer. When the 950-foot level is reached a drift will be run north following the contact of the schist and quartz-porphyry to our main objective, which is the contact of the quartz-porphyry and greenstones.

Seventeen hundred and fifty-one feet of development work has been done, of which 597 feet was done during the past year.

The carbonate ore blocked out on the 100-foot level amounts, according to a conservative estimate by the company's engineer, to fully 30,000 tons. It will also be seen that the engineer states that "at least another 15,000 tons can be easily blocked out, with "still considerable further extensions and continuation of the ore-body." Average samples taken from all workings show four to five per cent copper.

Considerable attention has been given recently by mining interests in the west to the working out of a process that will satisfactorily and profitably treat low-grade carbonate ores. The Consolidated Arizona Smelting company of Humboldt has been experimenting on a volatilization process which is regarded as highly promising. Satisfactory tests have been carried out recently with Dundee-Arizona carbonate ores and further tests are in progress. In this connection the directors call the attention of the stockholders to the large tonnage of this ore already available for treatment.

Owing to the unsatisfactory condition of the copper market, it was considered inadvisable to ship any of the carbonate ore to the smelter during the past year.

Dundee Townsite

The directors have to report that in November last the company disposed of the surface rights of approximately 2 2-3 acres of ground on the Dundee townsite for $15,825 to the trustees of the school board of Jerome. The price was fixed by a board of three arbitrators, men of standing and repute in the state. An attractive high school building will shortly be erected on this site, which should enhance the value of the company's townsite.

Owing to the very quiet conditions prevailing in Jerome recently, the directors have not endeavored to sell lots on the townsite.

Finances

The report of the treasurer, which is submitted herewith, shows that as at December 31, 1919, the company has borrowed sums amounting, with interest at the rate of six per cent, to $23,403.75, to finance the development of the property. The lenders are Mr. Mackay, president of the company, and Mr. Stephen,

east along the company's claims, a distance of over 900 feet. At the east end of these croppings there are open cuts from which the ore was formerly extracted and shipped to the smelter. Between the portal and these strippings three separate headings have been driven, comprising above 325 feet of drifting, all in ore.

The main development on this ore body has been done from the tunnel level, 116 feet from the collar of the shaft, by drifts, crosscuts and raises, and by drifts running from the head of these raises. Altogether there has been 1751 feet of development work done in the tunnel and other workings, practically all in carbonate ore, made up as follows:

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By order of the board of directors.

(Signed) ARTHUR J. SMITH,
Secretary.

Engineer's Report

For the information of the stock...holders, there is submitted herewith ...the following extracts from the an...nual report of the consulting engi...neer:

The formation passed through in the shaft continued to be shattered quartz-porphyry heavy in iron oxides, and the present bottom is still in this material.

A tongue of chloritic schist projected into the quartz-porphyry at a depth of 745 feet.

The cutting of the station at 780 feet developed a contact of schist and quartz-porphyry with a course N.W., S.E. and a dip west. This contact is separated by two to three feet of crushed attritive material and includes brecciated quartz and fragments of chalcopyrite (copper sulphide) as well as copper corbonate stain.

It is the intention to sink a shaft to a depth of 950 feet, and from this level to run a drift north following the course of the schist-porphyry contact which is of sufficient importance to warrant thorough exploration in expectation of developing commercial sulphide ore bodies. This contact will be followed north to the east-west contact of the greenstones and quartz-porphyry, which is our main objective.

The fact of the N.S. contact being distinctly mineralized, is exceedingly promising that sulphide ores will be opened up in our development at the 950-foot level.

Carbonate Ore

The croppings of the carbonate ore extend from the tunnel portal

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Work done previous to formation of company:

	Ft.	Ft.
Drifts and crosscuts	422	
Raises and winzes	62	
		484
Work done by company:		
Drifts and crosscuts	919	
Raises	348	
		1267
Total		1751

The most important recent developments in the carbonate ore are at the head of raises No. 3 and No. 5A. The drift from No. 3 exposes a face of ore 10 feet with its further dimensions undetermined. No. 5 raise exposes a face of 12 feet of ore. When these two workings are connected they will prove a face of at least 25 feet of ore.

These developments demonstrate considerable extension of the ore-body W. and N.W., and also that the width in this direction appears to be increasing.

Test Shipment

Samples taken across the face of all workings average between four and five per cent copper. A carload of general run of the ore taken from the open workings without sorting and sent recently to Humboldt for testing purposes, averaged 5.15 per cent in copper contents.

An additional 15,000 tons of carbonate ore has been developed this year, giving a total of 30,000 tons blocked out. With the extension of the headings from the present ore faces, it would be reasonable to estimate that at least another 15,000 tons can be easily blocked out, with still considerable further extensions and continuation of the ore-body in both directions beyond these points.

A plat of the underground workings in the tunnel level is appended to this report.

Treatment

The Consolidated Arizona Smelting company has made several tests with the volitization treatment on our carbonate ore and all so far have proven satisfactory.

Further treatment of the ores remains in abeyance until the construction of the 100-ton working plant at Humboldt.

(Signed) W. E. DEFTY,
Consulting geologist and engineer.

THE DUNDEE-ARIZONA COPPER CO.

PHOENIX, ARIZONA

MINES AT JEROME, ARIZ.

OFFICES OF THE COMPANY
404 NATIONAL BANK OF ARIZONA BUILDING

DIRECTORS' REPORT

TO THE STOCKHOLDERS OF
THE DUNDEE-ARIZONA COPPER CO.:

Sinking Shaft—

In the Annual Report issued to the Stockholders on February 28th last, the Directors explained very fully the state of development of the Property and the main objective which they then had in view, namely—to sink the shaft to the level corresponding with the level of the haulage tunnel of the United Verde Extension Mining Company which level corresponds in depth with the 1300-foot level of the United Verde Extension Mine. The work was greatly delayed on account of the difficulty in handling the water, but the Directors are now pleased to inform the Stockholders that the shaft has been de-watered and upon December 10th the sinking was completed successfully to the desired depth. The influx of water at this depth is easily controlled by the pumps

In their Report, the Directors further advised that it was the intention on the completion of the shaft, to push forward exploration work by crosscutting. and drifting from this level, and instructions have been given to prosecute this work with all dispatch.

To enable the Stockholders to fully understand the position of the Mine and its development, it should be explained that the large ore-bodies found in adjoining territory, lie in association with Schist and Quartz-Porphyry and along the line of fissuring. Surface indications show fissuring and crossbreaks on the Dundee-Arizona Property and it is with a view to thoroughly exploring these at the present level, that exploration is now being carried on. It will be seen from the Engineer's Report appended hereto that the conditions are of a promising character. The Directors are satisfied that the present work when completed will give such indications of the character of the ground as may enable them to continue with more certainty future operations.

It will be noticed from the Engineer's Report, the 780-foot level in the shaft discloses a contact of Schist and Quartz-Porphyry with a seam of Quartz carrying nodules of Copper Sulphide. The bottom of the shaft is in a shattered and oxidized Quartz-Porphyry showing a seam of fine granular Quartz carrying a trace of mineral. These conditions are regarded by those familiar with the District as highly promising.

Carbonate Ore Development—

Since issuing the last report to Stockholders, 979 feet of development work has been done on the Carbonate Ore on the 100-foot level, by drifts, crosscuts and upraises. This gives a total development to date of 2,730 feet

which is practically all in ore. It will be noted from the Engineer's Report that a safe estimate of the ore now in sight amounts to approximately 69,000 tons and that the recent developments have shown a gratifying increase in both the thickness and the value of the ore.

Owing to the present unsatisfactory state of the Copper Market, the Directors consider it inadvisable in the meantime to further prosecute this development and prefer to concentrate all efforts in the deep development of the Property.

Proposed Increase in Capital Stock—

To enable the development at depth to be prosecuted, the Directors are of opinion that the time has now arrived to make an issue of Stock. The development for the past two years has been financed by loans made by two of the Directors under an Agreement already explained to the Stockholders. The Directors think that an issue of Stock should be made sufficient to pay off the advances which amount approximately to $100,000.00, and to provide funds to carry out the developments which are contemplated. The present Capital of the Company is 500,000 shares of $1.00 par, of which 425,000 shares are issued and outstanding, and 75,000 shares remain in the Treasury. It is proposed to increase the Capital Stock of the Company from $500,000 to $1,000,000 and to offer to the present Stockholders at par, 212,500 shares, being 1 share for every 2 shares presently held by them. This will yield a sum of $212,500, leaving 75,000 shares in the Treasury and 287,500 shares unissued.

The Directors regard the present position of the Mine as extremely interesting. They have endeavored to lay before the Stockholders, as fully as they themselves know, the position and outlook and they leave the Stockholders to judge for themselves whether the prospects warrant their subscribing to this Issue. The Directors are sufficiently satisfied however with these prospects and are prepared either for themselves or their friends to subscribe for any Stock not taken up by present Stockholders. If any stockholder desires to subscribe for more shares than the number fixed by his present holding, the Directors will consider such applications when apportioning Stock not applied for by present holders.

There is enclosed herewith notice calling a Special Meeting of Stockholders for the purpose of amending the Articles of Incorporation to increase the Capital Stock of the Company from $500,000 to $1,000,000 and to provide that the Board of Directors shall consist of not less than five nor more than seven. After the increase in Capital has been authorized, Stockholders will then be advised of a subsequent date to have their holdings recorded to entitle them to a subscription privilege.

By Order of the Board of Directors,
ARTHUR J. SMITH,
Secretary.

December 21st, 1920

REPORT BY THE CONSULTING GEOLOGIST AND ENGINEER.

Sinking Shaft—

After dewatering the shaft, sinking operations were resumed and continued in similar conditions of Quartz-Porphyry, the formation being intensely crushed and considerably stained with Iron and Manganese Oxide. At a depth of 837 feet the formation shows innumerable slips with iron sulphides as disseminations and seams in the slips. At 950 feet where a station is now being cut, the Quartz-Porphyry shows strong oxidization. At this point a white seam courses across the shaft about 8 inches wide consisting of fine granular Quartz and is slightly mineralized.

After completing the station at 950 feet or the 4th level, a crosscut will be driven South to the South line of the claim and another North to the North line of the claim. The latter heading will be expressly driven to cut and follow along the main contact of Schist and Quartz-Porphyry and to the intersection of this contact with the East-West fissure.

In the last Annual Report, mention was made that a contact of Chloritic Schist and Quartz-Porphyry was developed in the station on the 780-foot level. This contact is separated by two to three feet of crushed attritive material and includes brecciated Quartz and fragments of Chalcopyrite (Copper Sulphide) as well as Copper Carbonate stain. This development and the favorable conditions in the shaft are exceedingly encouraging and it is likely that mineralization of special significance will be encountered in the work that is now planned.

It is well understood in this District that it is along the lines of faulting and in association with altered conditions of the Quartz-Porphyry and Schist that the orebodies are found. Such conditions are already proven to exist in Dundee-Arizona ground.

Carbonate Ore Development—

During the compulsory cessation of work in the shaft, work was resumed with a small force on the carbonate ore bodies and 979 feet of development work was accomplished by drifts, raises and crosscuts. This work has blocked out 6,118 additional tons of conglomerate ore. There has also been developed on three sides 18,750 tons of carbonate copper ore in fractured limestone, giving a total developed during the present year of 24,868 tons. The following shows the total tonnage developed to date:

Estimated tonnage as at December 31, 1919	30,000
Tonnage developed during 1920 as above	24,868
Total to date	54,868

A safe estimate of the probable ore to be developed in extending the present faces can be computed at about 14,000 tons. This would afford available for treatment a total of about 69,000 tons of ore.

All the headings in the recent developments have been driven from the main tunnel level in directions North and West and about 125 feet beyond the main shaft. The ore is continuous in all these workings and has gradually increased in thickness and value to the present faces which are all in ore from 10 feet to 12 feet in thickness. General samples taken for test purposes from the conglomerate and limestone ore gave in excess of 7 per cent and 9 per cent Copper, respectively.

The higher grade material could be shipped to the smelter when a favorable Copper Market is established, the lower grade awaiting treatment by other processes now being perfected.

W. E. DEFTY,
Consulting Engineer.

December 14, 1920.

Dundee - Verde Antique Copper Mine

Jerome, Ariz

Shipped 800 Tons above 4% Copper.

Many thousand tons developed.

Ground stands well, conglomerate on limestone footwall, ore body flat from 4 to 30 feet thick.

Major problem is sorting and disposing of large tonnage available.

Present shipments confined to two cars weekly, or about 100 tons.

Please ask Mr Holt to call at mine, 200 yds back of Jerome Motor Company garage, in east part of Jerome.

Roy Arnett

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... Dundee-Arizona Copper Co.

Location... Jerome, Arizona

Ownership... The Dundee-Arizona Copper Co.

Name of Manager... Carlos Aguilar (Lessee)

Post Office address... Box 865, Jerome, Arizona

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

1936... None ... 1937... None ... 1938... None

1939... None ... 1940... None

1941 rate of copper production based upon first four months... 123,170 pounds

How much copper could this property produce annually

on a 14 cent price? ... 3,600 tons of copper

on a 16 cent price? ...

on an 18 cent price? ...

on a 20 cent price? ...

What price copper is necessary for this property? ... 14 ... 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? ... Compressor, mining machines, cars, drill steel, hose, air and water lines - to cost $50,000

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? ... Three years

(Over)

How long would it take, after financing has been provided for, before production on the above basis could be reached? 6 months

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? Yes

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? No

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

Get us the funds for machinery and we will deliver the copper. Ore is already developed and needs only to be mined and treated.

What would be your ideas on financing and carrying out such a plan as is indicated by these questions? Let the R.F.S. make loan through local bank and arrange repayment by 33-1/3% deduction of net returns.

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

Date May 19, 1941 Signed Carlos Aguilar

COPY

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..Dundee-Arizona Copper Co.....

Location.....Jerome, Arizona.....

Ownership.....Dundee-Arizona Copper Co.....

Name of Manager.....Carlos Aguilar (Lessee).....

Post Office address.....Jerome, Arizona.....

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

1936.....None..... 1937.....None..... 1938.....None.....

1939.....None..... 1940.....None.....

1941 rate of copper production based upon first four months.....12 tons.....

How much copper could this property produce annually

on a 14 cent price? ...3,600 tons - 7,200,000 lbs.

on a 16 cent price? ...4,000 tons - 8,000,000 "

on an 18 cent price?...4,600 tons - 9,200,000 "

on a 20 cent price?....5,000 tons - 10,000,000 "

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? Complete mining machinery, cars, rails, etc. This includes Diesel compressor.

a 16 cent price could be assured? $60,000 for larger plant to handle greater tonnage.

18 cent price? $75,000 - to handle larger tonnage install larger plant.

20 cent price? $100,000 - In addition to shipping ore, install leaching plant to treat ore of less than 3% cu.

For what length of time would assurance of price and sale of full production be necessary? .....5 years.....

(Over)

How long would it take, after financing has been provided, before production on the above basis could be reached? Six months

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? Yes

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? No

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

Let the government get us "the tools" (necessary financial aid for equipment).

We will deliver the copper. The ore is already blocked out ready to be mined.

What would be your ideas on financing and carrying out such a plan as is indicated by these questions? Let R.F.C. provide necessary funds to be repaid by deducting 20% of net proceeds.

Kindly list names and addresses of other potential copper producers in Arizona whose operations should be included within this survey. Brindle Pup and Mingus Mountain Mine now combined and owned by F. H. Lyons of Jerome. For description see Weed's Handbook under Mingus Mountain Mining Co.

Date May 28, 1941 Signed Carlos Aguilar

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 Dundee - Arizona Copper Co.

Location Jerome Arizona

Ownership Dundee - Arizona Copper Co.

Name of Manager Carlos Aguilar (Lessee)

Post Office address Jerome Arizona

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

1936 None 1937 None 1938 None

1939 None 1940 None

1941 rate of copper production based upon first four months 12 Tons

How much copper could this property produce annually

on a 14 cent price? 3600 Tons

on a 16 cent price? 4,000 "

on an 18 cent price? 4,600

on a 20 cent price? 5,000

What price copper is necessary for this property? 16 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? Complete mining machinery, Cars, rails etc. This includes Diesel compressor

a 16 cent price could be assured? 60,000 for larger plant to handle greater tonnage

18 cent price? $75,000: To handle larger tonnage install larger plant

20 cent price? $100,000: In addition to shipping ore, install leaching plant to treat ore of less than 3½% cu

For what length of time would assurance of price and sale of full production be necessary? 5 years

(over)

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

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? ....Yes.....

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? ....No.....

Please let us have your comments on the probability or possibility of your organization participating in such a program for national defense purposes. Let the Government get us "the tools [necessary financial aid for equipment] we will deliver the copper. There is already blocked out ready to be mined.....

What would be your ideas on financing and carrying out such a plan as is indicated by these questions? Let R.F.C. provide necessary funds to be repaid by deducting 20% of net proceeds.

Kindly list names and addresses of other potential copper producers in Arizona whose operations should be included within this survey. Brindle Pup and Mingus Mountain Mine now combined and owned by F.H. Lyons of Jerome. For description see Weed's Hand-book under Mingus Mountain Mining Co.

Date May 28 1941 Signed Carlos Aguilar

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... Dundee - Arizona Copper Co.....

Location... Jerome, Arizona.....

Ownership. The Dundee - Arizona Copper Co.....

Name of Manager.. Carlos Aguilar (Lessee).....

Post Office address. Box 565 Jerome, Arizona.....

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

1936... None..... 1937.... None..... 1938.... None.....

1939... None..... 1940.... None.....

1941 rate of copper production based upon first four months.. 123,170 pounds

How much copper could this property produce annually

on a 14 cent price? 3,600 tons of copper

on a 16 cent price? .....

on an 18 cent price?.....

on a 20 cent price? .....

What price copper is necessary for this property? .....14.....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? Compressor, Mining machines, cars, drill steel, hoses, air and water lines to cost $50,000.

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? Three years.....

(over)

How long would it take, after financing has been provided for, before production on the above basis could be reached? 6 months

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? Yes

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? No

Please let us have your comments on the probability or possibility of your organization participating in such a program for national defense purposes. Get us the funds for machinery and we will deliver the copper - ore is already developed and needs only to be mined and treated.

What would be your ideas on financing and carrying out such a plan as is indicated by these questions? Let the R.F.C. make loan through local bank and arrange repayment by 33⅓% deduction of net returns

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

Date May 19, 1941 Signed Carlos V. Aguilar

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Capitol Building, Phoenix, Arizona

Name of property. Dundee-Arizona Copper Company

Location and accessibility of property.

Jerome, Arizona, and near to Clarkdale Smelter of the Phelps Dodge Corporation, which smelter is now treating ore being mined by a lessor on the Property.

History of ownership.

Arizona Corporation formed in 1916 - has been inactive for many years - Lease recently granted to Carlos Aguilar, Jerome, Arizona for 5 years on royalty based upon net smelter returns

Production history.

Produced about 250,000 pounds of copper in 1917 shipments made to Humboldt smelter - shipments stopped owing to excessive freight and smelter charges. This was followed by leaching expermient but no further mining done.

General geology (brief)

See over

Ore occurrence.

Ore occurs as a blanket formation in limestone and conglomerate beds near the surface and consists of carbonates and silicates averaging about 3½% copper with no precious metals. Is developed by tunnel with drifts, crosscuts, raises and winzes.

Ore reserve (quantities and values).

Proven about 150,000 tons 3½% copper

At least additional 150,000 tons estimated to be available by further development since all headings are in ore.

Accessory metals of value.

none

Development work done.

As mentioned above

Plants (with capacity) already on property.

Present lessor has compressor on the ground. Ore is sent down chute to orebin and from there hauled to smelter.

Nominee - Arizona Copper Co

Date May 28 1941 Signed [signature] Secretary

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

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? .....Yes.....

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? .....No.....

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

This Company will gladly co-operate in any plan for national defense purposes

What would be your ideas on financing and carrying out such a plan as is indicated by these questions? Since the Company is practically without funds it cannot undertake any plant financing

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

.....

.....

.....

.....

.....

.....

Hunter - Arizona Copper Co

(over)

Date .....May 28th 1941..... Signed.....Secretary

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 DUNDEE-ARIZONA COPPER COMPANY

Location JEROME ARIZONA

Ownership DUNDEE-ARIZONA COPPER COMPANY

Name of Manager ARTHUR J. SMITH

Post Office address 518 SECURITY BUILDING PHOENIX ARIZONA

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

1936 NIL 1937 NIL 1938 NIL

NIL 1939 NIL 1940 NIL

1941 rate of copper production based upon first four months 200,000 pounds

How much copper could this property produce annually

on a 14 cent price? 6,000,000 pounds

on a 16 cent price? 8,000,000 pounds

on an 18 cent price? 9,000,000 pounds

on a 20 cent price? 10,000,000 pounds

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? Complete mining machinery, cars, rails etc to cost $50,000.00 this includes Diesel Compressor

a 16 cent price could be assured? $60,000.00 for larger Plant to handle greater tonnage

18 cent price? $75,000.00 to handle greater tonnage and install larger Plant

20 cent price? $100,000.00 In addition to shipping ore, install leaching Plant to treat ore of less than 3½% copper.

For what length of time would assurance of price and sale of full production be necessary? 5 years

(Over)

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Capitol Building, Phoenix, Arizona

Name of property. Dundee, Arizona Copper Co.

Location and accessibility of property. Between Jerome-Verde and United Verde Extension mines about a mile east of and below the town of Jerome, Arizona. The portal to main workings are only a few hundred feet from highway 89.

History of ownership. Developed by the Dundee-Arizona Copper Co., probably about the years 1916 to 1922. Abandoned work about time of slump in copper prices in 1922.

Production history. 35,000 to 50,000 tons ore reported shipped several years ago. Probably ran 5% to 7% copper after sorting.

General geology (brief) A gravel bed of Tertiary age cemented to form a conglomerate by acid forming copper-bearing solutions, depositing ore as chrysolla, a little malachite and chalcocite is also present. The malachite in limestone which forms the bed-rock on which the conglomerate lies.

Ore occurrence.

Chiefly chrysocolla replacing a lime and basalt conglomerate.

Ore reserve (quantities and values).

150,000 tons of 4% to 5% copper ore. About the same amount (150,000) from 1% to 3½% Copper.

Accessory metals of value. .40 ozs silver; .005 gold.

Development work done.

Shaft sunk 950 feet; 2,750 feet lateral developments at this depth.
Several thousand feet drifts, raises, winzes (within 200 ft of surface) opening ore body 1,000 feet by 200 ft and from 5 feet to 30 feet thick.

Plants (with capacity) already on property.

Small compressor, ore bin, chute, mine car, rails. Can mine 20 tons in an 8 hour shift.

Date May 30-1941 Signed Carlos Aguilera.

ARIZONA DEPARTMENT OF MINERAL RESOURCES
Capitol Building, Phoenix, Arizona

Name of property. Dundee-Arizona Copper Co.

Location and accessibility of property. Between Jerome - Verde and United Verde Extension mines about a mile east of and below the town of Jerome, Arizona. The portals to main workings are only a few hundred feet from Highway 89.

History of ownership. Developed by the Dundee-Arizona Copper Company, probably about the years 1916 to 1922. Abandoned work about time of slump in copper prices in 1922.

Production history. 35,000 to 50,000 tons ore reported shipped several years ago. Probably ran 5% to 7% copper after sorting.

General geology (brief) A gravel bed of Tertiary age cemented to form a conglomerate by acid copper-bearing solutions, depositing ore as chrysocella; a little malachite and chalcocite is also present; the malachite in limestone which forms the bedrock on which the conglomerate lies.

C O P Y

Ore occurrence. Chiefly chrysocolla replacing a lime and basalt conglomerate.

Ore reserve (quantities and values). 150,000 tons of 4% to 5% copper ore.
About the same amount (150,000) from 1% to 3½% copper.

Accessory metals of value. .40 ozs silver; .005 gold

Development work done.

Shafts sunk 950 feet, 2,750 feet lateral developments at this depth.

Several thousand feet drifts, raises, winzes (within 200 ft. of surface) opening ore body 1,000 feet by 200 ft. and from 5 ft. to 30 ft. thick.

Plants (with capacity) already on property.

Small compressor, ore bin, chutes, mine car, rails. Can mine 20 tons in an 8-hour shift.

Date May 30, 1941 **Signed** Carlos Aguilar

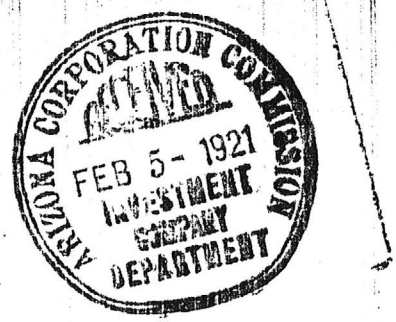
Exhibit A

The Dundee-Arizona Copper Co.

DIRECTORS' REPORT
TO
STOCKHOLDERS

December 21, 1920

See page 3. Engineer's Report



The Dundee-Arizona Copper Co.

DIRECTORS' REPORT

December 21, 1920

May 29, 1941

Mr. Arthur J. Smith
518 Security Building
Phoenix, Arizona

Dear Mr. Smith:

I want to thank you for the data that you sent us regarding the Dundee-Arizona Copper Company. It is just the information that we want and we appreciate the opportunity of including it in our report.

A copy of the report will be sent you when it is completed. The job, however, is probably going to take us a couple of months as it is developing much larger than we anticipated.

Thanking you again, and with kindest personal regards, I am

Yours very truly,

Chairman, Board of Governors
Arizona Department of Mineral Resources

CFW:LP

Memorandum - Dundee - Arizona Ore

At		At connecticut	Locally
14 cts.	5% ore	90% recovery = $12.60 ps	(Less 2.5 pts) = $10.10 per ton
16 cts	4.5% "	" " = 12.96	" " = 10.46 " "
18 cts	4.0% "	" " = 12.96	" " = 10.46 " "
20 cts	3.5% "	" " = 12.60	" " = 10.10 " "

Approximate Mining Cost.

Mining	$3.00 per ton
Smelting	3.00 " "
Hauling	0.75 " "
Sales Tax	0.10
Supervision ~~& Office~~	0.50 " "
Insurance	0.10 " "
Social Security	0.03 " "
Repaymt $60,000 loan	1.40 " "
Royalty	0.07 " "
	$8.95

Interest
Depletion

May 23, 1941

Mr. Carlos Aguilar
Box 865
Jerome, Arizona

Dear Mr. Aguilar:

I want to thank you for sending in the questionnaire by Mrs. Cornett. I suggested to her that you did not answer the question as to the potential production of the Dundee on 16¢, 18¢ or 20¢ copper. Furthermore, you did not answer what plant facilities would be required to get the production at those prices. She took back another copy of the questionnaire with the view of getting it filled out further.

It would appear that your property will qualify to be included in this survey, and, therefore, we would like to get some additional information as we hope to include a brief statement regarding each property that is being reported upon.

I am enclosing another questionnaire which will give us the data that we want for this brief statement. We would appreciate your making it concise.

Trusting we will hear from you soon, I am

Yours very truly,

Chairman, Board of Governors
Arizona Department of Mineral Resources

CFW:LP
Enc.

P.O. Box 865
Jerome, Arizona.

Mr. Charles F. Willis
Phoenix Arizona.

Dear Mr. Willis, Enclosed herewith please find data requested on Quadee Arizona mine which I hope will help your efforts along the road to better prices for marginal mines, —

Wishing you every success in your splendid efforts to help the mining industry,

Yours very truly
Carlos Aguilar.

June 2, 1941

Mr. Carlos Aguilar
P. O. Box 865
Jerome, Arizona

Dear Mr. Aguilar:

Many thanks for yours of recent date sending us the data of the Dundee-Arizona Mine. We greatly appreciate having the complete story.

With kindest regards, I am

Yours very truly,

Chairman, Board of Governors
Arizona Department of Mineral Resources

CFW:LP

Washington, D.C.
May 10, 1943

SUBJECT Dundee Copper Mine

You can tell Mark Gemmill that we have had his Dundee at Jerome set up for an increased copper price. I hope we will be able to get 27¢ for his output.

I sent a notice to him in Scrughams name.

Bill Broadgate

May 14, 1943

Mr. Mark Gemmill
Crown King, Arizona

Dear Mark:

I have just had the following memorandum from Bill Broadgate: "You can tell Mark Gemmill that we have his Dundee at Jerome set up for an increased copper price. I hope we will be able to get a 27 cent price for his output."

With best wishes and kindest regards, I am

Very truly yours,

J. S. Coupal, Director

JSC:kk

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date Nov 25 - 1944

Name of Mine Dunlap

Owner or Operator Marc Mining Co

Address Box 661 Jerome

Mine Location Jerome

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	1500
Approx. present rate per 3 months	
Anticipated rate next 3 months	1500
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	40	156	266
Other Mine or Mill Eqpt.			

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Copper

REMARKS:

This operation has been a producer of Copper for 3 years. Recommend the allowance of the requested quantity.

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By A C Tebbetts

Field Engineer D of M R

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date Feb 25 - 1945

Filing Information

File System.....

File No.....

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

Name of Mine Dundee Mine Mining Co

Owner or Operator Mark Gammill

Address Box 866 Jerome

Mine Location Jerome

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	1000
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	40		900
Other Mine or Mill Eqpt.			

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Copper ore

REMARKS:

Thank you for your prompt attention

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By [illegible]

DEPARTMENT OF MINERAL RESOURCES

REPORT TO OPA ON ACTIVE MINING PROJECT

Date June 7 - 1945

Name of Mine Lawrence Dam

Owner or Operator Mine Mgmt Co

Address Box 21 Jerome

Mine Location Jerome

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	150
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	40	100	300
Other Mine or Mill Eqpt.			

PRODUCT PRODUCED OR CONTEMPLATED: Name metals or minerals.

Copper ore

REMARKS:

Ed Lopez Mine Foreman
for Mr Hayes
Operation Suspended

ARIZONA DEPARTMENT OF MINERAL RESOURCES

By [illegible]

Field Eng Dawson D