Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMA 1304X

Date received 5-29-51

Participation

SHATTUCK DENN MINING CORPORATION
120 Broadway
New York 5, N. Y.

Name and address of applicant

Date May 24, 1951

FILL IN THIS BLOCK

Date of application May 24, 1951

Estimated cost $158,984

Mineral or metal Copper

Percentage of Government participation 50

Location of mine Yavapai County, Arizona

Date of filing MF-100

DMA Docket Number, if available 1304X

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

SHATTUCK DENN MINING CORPORATION
(Name of company)

By Thomas Gordon
(Signature of authorized official)

May 24, 1951
(Date)

President
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

NEW YORK BERN MINING CORPORATION
120 BROADWAY
NEW YORK 5, N. Y.

May 24, 1951

Mr. Justin B. Gowen, Chief, Copper Branch
Defense Minerals Administration
Room 1423 New Interior Building
Washington 25, D. C.

Dear Mr. Gowen:

We are sending you today, under separate cover, our Application on Form MF-103 in reference to the Kay Mine, a copper property, in Yavapai County, Arizona.

If there is any further information you wish to have about this property, please so advise me at the above address.

Yours very truly,

Thomas Barden

Thomas Barden
President

TB:op

SHATTUCK DENN MINING CORPORATION

ANNUAL REPORT

FOR THE YEAR

1950

SHATTUCK DENN MINING CORPORATION

INCORPORATED UNDER THE LAWS OF DELAWARE, MAY 20, 1925

CAPITAL STOCK

AUTHORIZED	1,000,000 SHARES, PAR VALUE $5 EACH
ISSUED	799,416 SHARES, PAR VALUE $5 EACH

DIRECTORS

THOMAS BARDON	NEW YORK, N. Y.
WARREN BICKNELL, JR	CLEVELAND, O.
R. J. HIGGINS	DULUTH, MINN.
AUSTIN JENNER	CHICAGO, ILL.
NORMAN E. LA MOND	NEW YORK, N. Y.
ANDREW OLIVER	NEW YORK, N. Y.
S. S. SHATTUCK	BISBEE, ARIZ.

OFFICERS AND STAFF

THOMAS BARDON	*President*
S. S. SHATTUCK	*Vice President*
R. J. HIGGINS	*Assistant Vice President*
NORMAN E. LA MOND	*Secretary and Treasurer*
R. H. COCHRAN, JR	*Assistant Secretary*
H. F. MILLS	*Manager, Iron King Branch*
G. A. WARNER	*Manager, Zuni Milling Co.*
T. W. NEWELL	*Superintendent, Denn Branch*

TRANSFER AGENT

GUARANTY TRUST COMPANY OF NEW YORK

REGISTRAR

BANKERS TRUST COMPANY, NEW YORK

GENERAL OFFICE

120 BROADWAY, NEW YORK 5, N. Y.

MINE OFFICES

DENN BRANCH	BISBEE, ARIZONA
IRON KING BRANCH	HUMBOLDT, ARIZONA
ZUNI MILLING COMPANY	ALBUQUERQUE, NEW MEXICO

SHATTUCK DENN MINING CORPORATION

120 BROADWAY

NEW YORK 5, N. Y.

DIRECTORS' REPORT

To the Stockholders:

In 1950, 221,701 tons of ore were treated at the Company's plants from ores produced at its mines and purchased for processing. Production of metals and minerals was 6,163,967 pounds of lead, 16,862,255 pounds of zinc, 213,052 pounds of copper, 19,431 ounces of gold, 697,482 ounces of silver and 9,556 tons of fluorspar.

Net income of the Company and wholly-owned subsidiaries in 1950 was $627,658.30 after all charges including depletion and estimated income taxes.

Three distributions totalling $399,409.50 were paid to stockholders during 1950, as follows:

May 10, 1950 — 10¢ per share
October 20, 1950 — 15¢ per share
December 20, 1950 — 25¢ per share

The Company's financial statements, certified by Messrs. Pogson, Peloubet & Co., independent Certified Public Accountants, are being submitted herewith. Supplementary to such statements we present the following figures:

INCOME from —	
Lead, zinc, copper, gold, silver and fluorspar	$4,881,474.76
Rents, royalties and fees	3,013.50
Sales of surplus supplies and equipment, less cost thereof	19,563.03
Dividends and interest	7,406.28
Miscellaneous	13,970.29
	$4,925,427.86
COSTS of —	
Smelting, refining and transportation of ores and concentrates	$1,736,908.51
Purchased ores	48,199.29
Supplies	497,830.94
Power, water, etc.	127,873.60
Wages	925,213.90
Severance pay	44,475.86
Salaries—staff and clerical	66,025.61
Salaries—President, Vice President and Secretary-Treasurer	31,700.00
Miscellaneous taxes and insurance	175,681.25
Exploration and experimentation	77,087.68
Legal and auditing	12,025.07
Rents and royalties	43,098.52
Decrease in inventories	63,291.50
Federal and State income taxes—estimated	250,000.00
Miscellaneous	43,592.34
	$4,143,004.07

Not included in the foregoing tabulation are 1950 expenditures for plant and equipment, amounting to $89,629.11, or an additional $500,000.00 invested in U. S. Government securities.

The Company's principal mine, the Iron King, situated at Humboldt, Arizona, was operated without major interruptions and the tonnage of ore handled exceeded that of any previous year. Operating earnings were higher than in 1949. Metal prices in 1950 were approximately the same as in the previous year. The average market price of lead in 1950 was 13.296¢ per pound compared with 15.364¢ in 1949, and the corresponding zinc prices were 13.866¢ and 12.144¢. Gold and silver prices were unchanged. The ore extracted came principally from the tenth and eleventh levels of the mine. The main shaft was sunk 243 additional feet to a depth of 1,713 feet. The twelfth and thirteenth levels are being prepared for stoping and stations have been cut on the fourteenth and fifteenth levels.

With qualifications of a minor nature, it can be said that each succeeding level of the Iron King mine has produced more ore than any of the higher levels. The grade of the ore has remained much the same but on the whole has shown slight improvement with depth.

The demand for acid grade fluorspar improved in 1950 and there was a moderate rise in the market price of that commodity. The output of the Company's fluorspar subsidiary, Zuni Milling Company, with mine and mill located in New Mexico, was increased. The mill used by Zuni is rented from Shattuck Denn Mining Corporation which acquired it from the Government, completing payment of the purchase price in 1950. The Munitions Board, the governmental agency in charge of the stockpiling of strategic and critical materials, has authorized purchases of acid grade fluorspar for stockpiling, and at this writing negotiations are under way for the sale of a part of Zuni's production for that purpose. Orders from other purchasers have increased also and it now appears that Zuni's business in 1951 should be larger than in any recent years. It might be mentioned here that acid grade fluorspar, through its derivatives such as hydrofluoric acid, is used principally in the manufacture of aluminum, refrigerants and high-octane gasoline, and for that reason the demand is materially affected by the government's defense program.

Disposal of the Company's property in the Bisbee, Arizona, district remaining after the sale of the Denn mine, continued in 1950 and has been largely completed, with the exception of the concentrating mill. This mill was closed in 1949 by reason of the closing of many of the small mines in the vicinity which had been sending their ores to it for sale and treatment. It is hoped that mining activity, under the stimulus of somewhat higher metal prices and governmental programs, may revive sufficiently to justify the resumption of custom milling operations at this plant.

Late in 1950 an option was taken on the Kay mine situated in Arizona about forty miles south of the Iron King mine. The Kay was opened in the 1920's to a depth of 1,500 feet and considerable lateral work was done. Many of the records of this work were lost and scattered during a long period of idleness, but there are indications that the results were not wholly negative and the property is now being unwatered to permit an examination of underground conditions.

The concentration of bastnasite ore for the recovery of its content of rare earths (cerium, gadolinium, lanthanum, etc.) was carried on experimentally to establish the feasibility of such concentration, but no commercial application has been possible because a supply of suitable ore has not been available. In accordance with an arrangement made with the organizers of a Mexican corporation which is planning to develop certain of the resources of the southern part of Lower California, Mexico, we are making a preliminary survey of the mineral possibilities of that area and have also acquired a small interest in the securities of the Mexican corporation. A number of other mining properties were examined. Certain metallurgical processes were investigated and considerable experimental work was done. Particular attention has been given to the possibilities of increasing the recoveries of the five metals — lead, zinc, copper, gold and silver — in the Iron King ores. These efforts will continue, and we hope that improved recoveries will ultimately be attained.

The negotiations for the sale of the assets of the 79 Lead-Copper Company, mentioned in last year's report, were concluded and that company received 92,739 shares of the stock of Vulcan Silver-Lead Corporation in exchange for virtually all of 79's assets. The Vulcan stock is being distributed to the 79 stockholders and, in the latter capacity, Shattuck Denn has received 55,399 shares of such stock, or 3.69% of the outstanding stock of Vulcan, which owns a property in the Coeur d'Alene district of Idaho. This property is being developed from a 2,900-foot shaft and the work, to date, indicates that important ore deposits may be discovered. In the balance sheet and the income account published herewith this transaction is reflected by charging off the difference between all but $1.00 of the cost of the 79 stock and the market value of the Vulcan stock at time of its receipt, resulting in the loss of $51,782.28 shown as a deduction from 1950 income. The market value of the Vulcan stock at time of its receipt was $95,563.28. However, after the Vulcan stock was received its market value increased and on December 31, 1950 was approximately $77,000 more than the value at the time of its receipt.

There were no operations at the Abril mine, situated near Tombstone, Arizona, during the year but on February 1, 1951 the property was leased and it is probable that the lessee will ship ore from the property this year and will also, under the terms of the lease, carry on development work which will further explore that property. The Scales mine near Strawberry Valley, California, was also closed during the year but negotiations to lease it are now in progress and should result in exploratory work during the summer of 1951.

For the Board of Directors,

THOMAS BARDON,
President.

SHATTUCK DENN MIN

CONSOLIDATED BALANCE SH

ASSETS

CURRENT ASSETS:			
Cash		$ 955,462.47	
U. S. Government securities, at par value (at market quotations $802,893.29)		800,000.00	
Accounts receivable		522,150.33	
Ores and concentrates, at lower of cost or market		30,124.99	
Supplies, at cost		200,627.55	
Unexpired insurance and other prepaid expenses		13,538.66	$2,521,904.00
INVESTMENTS:			
In subsidiary company—not consolidated		$ 1.00	
Vulcan Silver-Lead Corporation stock, at cost (at market quotations $173,121.88)		95,563.28	
Other, at cost		58,500.00	154,064.28
PROPERTY, PLANT AND EQUIPMENT (see note A):			
Mines, mining claims and leaseholds	$ 963,499.82		
Less accumulated depletion	414,731.59	$ 548,768.23	
Buildings, machinery and equipment	$1,122,862.46		
Less accumulated depreciation	657,728.16	465,134.30	1,013,902.53
DEFERRED CHARGES:			
Exploration and development			40,504.22
			$3,730,375.03

See explanatory note

IN● CORPORATION

HEET — DECEMBER 31, 1950

LIABILITIES AND CAPITAL

CURRENT LIABILITIES:		
Accounts payable and miscellaneous accrued expenses	$ 120,663.94	
Wages accrued	61,141.04	
Federal and State income taxes accrued	263,332.54	
Other taxes accrued	38,558.27	$ 483,695.79
CAPITAL:		
Capital stock:		
Authorized—1,000,000 shares of $5.00 par value each		
Issued and outstanding—799,416 shares	$3,997,080.00	
Deficit (see note B)—per Statement of Consolidated Deficit	750,400.76	3,246,679.24
		$3,730,375.03

attached hereto.

SHATTUCK DENN MINING CORPORATION

STATEMENT OF CONSOLIDATED INCOME

YEAR ENDED DECEMBER 31, 1950

Income:		
Sales value of metals in concentrates and sales of fluorspar		$4,881,474.76
Less charges for smelting, refining and freight		1,677,943.90
Sales of concentrates and fluorspar		$3,203,530.86
Interest earned and dividends received		7,406.28
		$3,210,937.14
Costs and expenses:		
Operating expenses, development, maintenance, repairs, general and administrative expenses, and taxes other than income taxes	$2,101,425.67	
Deduction for depreciation	93,488.41	
Exploration and experimentation	77,087.68	
Loss on investment in 79 Lead-Copper Company	51,782.28	
Deduction for depletion	9,494.80	2,333,278.84
		$ 877,658.30
Federal and State income taxes—estimated (no excess profits tax indicated)		250,000.00
CONSOLIDATED NET INCOME of the year 1950		$ 627,658.30

STATEMENT OF CONSOLIDATED DEFICIT

YEAR ENDED DECEMBER 31, 1950

Consolidated Deficit December 31, 1949		$ 978,649.56
Reduction of consolidated deficit:		
Consolidated Net Income of the year 1950	$ 627,658.30	
Less distributions to stockholders in the year 1950 ($.50 per share)	399,409.50	228,248.80
CONSOLIDATED DEFICIT December 31, 1950 (see note B), per Consolidated Balance Sheet		$ 750,400.76

See explanatory notes attached hereto.

1. The applicant is a corporation organized under the laws of Delaware and duly qualified to do business in Arizona.

2. Not applicable

3. The names and addresses of the officers are:

President	Thomas Bardon, 120 Broadway New York 5, N. Y.
Vice President	S. S. Shattuck, Bisbee, Arizona
Asst. Vice President	R. J. Higgins, Sellwood Building Duluth, Minnesota
Secretary-Treasurer	Norman E. LaMond, 120 Broadway New York 5, N. Y.

The names and addresses of the directors, in addition to the four officers mentioned above who are also directors, are:

Warren Bicknell, Jr.	3866 Carnegie Avenue Cleveland 15, Ohio
Austin Jenner	First National Bank Chicago, Illinois
Andrew Oliver	120 Broadway New York 5, N. Y.

The names and addresses of the five largest stockholders of record as of April 23, 1951 are:

Thomas Bardon
120 Broadway, New York, N. Y.

Merrill, Lynch, Pierce, Fenner & Beane
70 Pine St., New York, N. Y.

Francis I. duPont & Co.
1 Wall St., New York, N. Y.

S. S. Shattuck, Trustee u/w of
L. C. Shattuck
Box 507, Bisbee, Arizona

Belle Bardon Quayle
c/o Cleveland Trust Co.
Cleveland, Ohio

4. The applicant, with its predecessor companies, has been in the mining business for 47 years and has owned, and has operated or is now operating, copper, lead, zinc and fluorspar mines and mills which have produced and are now producing large quantities of those minerals. The project which is the subject of this application will be managed under the supervision of the above-named corporate officers and will be directly in charge of

SHATTUCK DENN MINING CORPORATION

NOTES TO FINANCIAL STATEMENTS

NOTE A—BASIS OF VALUATION OF MINING PROPERTIES AND PLANT

Mines, mining claims and leaseholds and plant and equipment are carried in the Balance Sheet at cost to the Company or its predecessors. As the cost of the Iron King mine, the principal producing property of the Company, is completely offset by accumulated depletion, the net value of this mine shown in the Balance Sheet is zero.

No representation is made that the amounts included in the Balance Sheet for mining properties and buildings, machinery and equipment, either before or after deducting depletion or depreciation represent current or realizable values.

NOTE B—DEFICIT

The balance of deficit at December 31, 1950 includes the following:

Paid-in surplus October 31, 1925*, as adjusted		$4,318,110.71
Deficit at December 31, 1936 charged paid-in surplus in accordance with resolution of Board of Directors:		
Net Income through 1936, before deducting depletion	$ 54,214.72	
Depletion through 1936	1,126,259.99	1,072,045.27
Paid-in surplus December 31, 1936 (less deficit at that date)		$3,246,065.44
Net Income since 1936, before deducting depletion		4,417,835.08
		$7,663,900.52
Less:		
Depletion since 1936	$2,710,814.02	
Decreases resulting from sale of and from write-off of mining properties	3,686,449.51	
Distributions to stockholders since 1936	2,017,037.75	8,414,301.28
Deficit December 31, 1950, per Consolidated Balance Sheet		$ 750,400.76

*Date of merger of Shattuck Arizona Copper Company and Denn-Arizona Copper Company into Shattuck Denn Mining Corporation.

POGSON, PELOUBET & CO.
CERTIFIED PUBLIC ACCOUNTANTS

NEW YORK
MAURICE E. PELOUBET
LEWIS M. NORTON
SIDNEY W. PELOUBET
HOWARD L. GUYETT
CRAWFORD C. HALSEY
FRANK E. SMALL

EL PASO
PERCY W. POGSON
PERCY W. POGSON, JR.

CABLE ADDRESS "CERTIFIED" NEW YORK

AGENT
EUROPE-KEMP, CHATTERIS & CO.
LONDON

25 BROADWAY, NEW YORK 4, N. Y.

To the Board of Directors,
Shattuck Denn Mining Corporation,
120 Broadway,
New York 5, N. Y.

We have examined the Consolidated Balance Sheet of Shattuck Denn Mining Corporation and its 100 per cent owned subsidiaries as of December 31, 1950 and the related Statements of Consolidated Income and Consolidated Deficit for the year ended that date. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying Consolidated Balance Sheet and Statements of Consolidated Income and Consolidated Deficit, together with the explanatory notes, present fairly the financial position of Shattuck Denn Mining Corporation and its consolidated subsidiaries at December 31, 1950, and the results of their operations for the year ended that date, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

POGSON, PELOUBET & CO.,
Certified Public Accountants.

New York, March 7, 1951.

H. F. Mills, Manager of the applicant's Iron King mine situated at Humboldt, Arizona, about 45 miles distant from the project and currently mining and milling approximately 600 tons per day of lead-zinc-copper-gold-silver ore. Copies of applicant's annual report for 1950 are enclosed herewith.

5. Applicant is the lessee and optionee.

6. Not applicable.

7. Copy of applicant's lease is attached hereto. Also attached is copy of applicant's contract with Black Canyon Copper Company, former lessee of the property. Both agreements are in good standing.

8. Applicant's financial statements will be found in the copies of its annual report submitted herewith.

9. Applicant is prepared to invest $79,492.00 in the proposed project, which is sufficient to pay its part of the cost of the project as estimated in Question 23.

SAY LEASE

10 - Real property consists of 10 contiguous patented claims in Sections 4 and 9, Township 8N R2East, located in Tip Top Mining District.

See enclosed claim map

II - The mine is and has been known as the Ray Copper Mine.

12 - The mine is 40 miles north of Phoenix, less than one mile off the Black Canyon highway, which is paved from Phoenix to a point 20 miles north of the Ray. It is 40 miles south of the Iron King Mine, also on the Black Canyon Highway. Glendale and Phoenix are suitable shipping points. Also the Blue Bell siding at Mayer on the A. T. & S. Fe is 30 miles north of the Ray.

13 - The mine makes over 100 GPM of water suitable for milling. The Agua Fria River crosses the property and excellent domestic water is obtained from the gravels of the stream.

Power is purchased from the Northern Arizona Light and Power Company under the P3 Schedule. At present about 60000 KWH per month is used at a cost of 2.16¢ per KWH. If the load increases to 225 KW power can be purchased under the P4 Schedule at a cost of about 1½¢ per KWH.

14 - Present facilities are as follows:

Buildings - Hoist - compressor house
Small change house at #1 shaft
Small warehouse
3 dwellings

Machinery & Equipment -

Wood headframe at #1 shaft
Steel headframe for #4 shaft
50 HP S. D. hoist at #1
100 HP D. D. hoist at #4
1 25 HP sinking pump
1 50 HP sinking pump
1 100 HP station pump
2 50 HP station pumps
1 75 HP station pump
1 30 HP 4-stage horizontal pump
1 Single drum tugger
1 Stoper
1 Gas hoist powered by Ford motor
1 Wilson electric welder
1 DC generator for mine lamps
2 150 KVA Allis transformers 2200-440V
mine telephones
4 Ventilating fans
1 230 ft. portable compressor
8" steel ventilating pipe
5" water line pipe
3 conductor power cables down #1 and #4 shafts
6 mine cars
2 mine cages

Available: 1 100 HP 600 ft. electric compressor

15 - Only a limited amount of ore could be shipped to smelters or to the American Smelting and Refining mill at Deming. Most of the ore should be milled on the property because of high transportation costs.

A series of 12 tests have been run on a sample of ore obtained from the 5th level which assayed 7.75 Cu.

A grind of 65% minus 200 mesh is indicated as being necessary and mine water gave results as good as fresh water. A recovery of 54% of the gold, 58% of the silver, and 88% of the copper in a concentrate assaying 25.1% copper is indicated. A Pb of 9.0 gave optimum results and this was obtained by use of 1.5# lime per ton.

16 - A. See attached report by John Foss dated March 27, 1937 for past history.

In February of 1949 the Black Canyon Copper Company leased the mine from the owners and unwatered #1 shaft workings down to the 500 level by means of a pump in #4 shaft. The 5th level from #1 shaft was partly reopened and some good copper ore shipped from production from a raise being driven from the 500' to the 350' level. The venture was under-financed and because of exhaustion of funds they entered into a deal with Shattuck Denn whereby Shattuck Denn obtained a new lease from the owners together with certain obligations to be paid by Shattuck Denn to Black Canyon.

B. There are no nearby properties; the nearest past producer, the Grizzly mine, is several miles southeast.

C. See attached reports by:

E. H. Lundquist	Oct. 13, 1920
John Foss	Mar. 20, 1920
John Foss	Apr. 21, 1921
Arthur Jenks	Apr. 4, 1923

Dr. Walter Harvey Weed made a lengthy report in August, 1925; available for inspection but not included in this application.

FOREWARD

The following information is presented herewith as a general compilation of data dealing with the nature and extent of certain Ore Reserves at the Kay Mine, Canon, Arizona.

The reports of five competent Mining Engineers, carefully kept maps, assay records, tonnage estimates and geologic records testify to the presence of an area of Proven Ore of sizeable proportions, available for mining at a good margin of profit with copper at 12 cents per pount or more.

While past history need not be considered in connection with the fact that this proven tonnage now offers an inviting opportunity, some historical explanation may be of interest here.

One and one-half Million dollars have been spent in an ambitious endeavor to make the Kay property one of the big mines of the country. A privately owned railroad, smelter, townsite, etc. were envisioned in the plans of the earlier owners. Over-capitalization, stock market operations, excessive expenditures, a failing copper market and pressing debts, ended a campaign that gained a wide reputation. But, in aiming for tonnages of great magnitude, there was contemporaneously developed a good moderate sized mine which, under properly proportioned scale of operations, can now be worked conservatively at a good profit.

Prior to 1918, the Kay property was attracting attention as a promising prospect. With limited capital it was being slowly developed by its owner, S. J. Tribolet, of Phoenix, Arizona. This may be referred to as the first or initial stage of operation.

Following this, experienced eastern mining interests took over the property, and quietly conducted an intelligent program of exploration and development. It was during this period (the second period) that the now well known #1 Ore Body was developed. It was with this organization that the writer was employed, first as Engineer and Geologist, and later as Superintendent. All of the Proven Ore Reserves of the Kay Mine, and most of the estimated Probable tonnage, was developed during this time. As the company's engineer, the writer personally surveyed all the available workings in what is now known as the #1 shaft, and also systematically sampled and assayed the extensive system of drifting and cross-cutting of #1 Ore Body, as well as #2 Ore Body, and such intervening areas of mineralization as were deemed of importance.

All of the sampling, and assaying, was carefully cross-checked by the writer, and later again checked on two separate occasions respectively by Arthur W. Jenks, and C. H. James, well known mining engineers.

In 1922, after the expenditure of over $600,000, and the

establishment of Kay as a mine of moderate proportions and promising possibilities, by the interests mentioned above, it became advisable to enlist outside capital for the purpose of undertaking actual producing operations.

Under the new operators, the following or third period of operation, against the will of some of the former members of the preceding period who had given up control, instead of entering into production, evolved into an overly ambitious campaign of over-capitalisation, heavy expenditures, stock selling, and attendant difficulties. Some new occurrences of ore were uncovered in the new 3 compartment shaft, southwest of #1 workings, but were not developed sufficiently to warrant estimation of ore reserves in connection therewith, with any degree of accuracy. While occasional new lenses, and possible ore bodies on the 800, 1200 and 1500 levels of #4 Shaft, offer interesting possibilities, no consideration whatever is given them herein, in measuring the actual profits that can now be realized in re-opening the Kay Mine.

We are concerned here, for the present at least, with only Ore Reserves of Proven character, which are available for immediate mining without the necessity of further development, excepting un-watering and reconditioning of the workings.

The third period of operation, just mentioned, ended in an over-capitalized company with dissipated funds, followed by debts, labor liens and tax liens, and accumulating internal difficulties, followed also by the recent period of low metal prices. Operations ceased, and the property has since remained idle.

Eventually the patented mineral claims and improvements thereon, and some of the equipment, were acquired through Sheriff's Sale, and Tax Titles, by the parties now holding title to same.

This brings us down to the present moment, with the copper market back to profitable levels, with well informed opinion and world and market conditions indicating that present prices will be maintained, sufficiently long to cover mining of the presently known ore reserves. With an important amount of gold and silver (now also at a level above old prices) in the ore, and 12 cent copper offering a good margin of profit, and a Proven Ore Reserve available for ready mining operations, the entire enterprise is one of decided merit. On a capital investment of approximately $50,000, the estimated Net Profit on proven tonnage is $323,000 and $556,000 on proven and probable tonnage, copper at 12 cents per pound. An outline of estimated returns, costs, and profits follows at the end of this summary.

PLAN OF OPERATION

It is advisable, in order to take advantage of present market prices that a production schedule be established at the highest economic rate compatible with existing Proven Ore reserves.

Dewatering to the 500 level should be started as early as possible and pushed rapidly to completion. During dewatering operations, some few final mill tests in connection with grinding limits can be completed. Required milling procedure has already been adequately determined through carefully conducted tests.

Installation of necessary hoisting and air equipment can likewise be carried on, and some reconditioning of #1 Shaft will also be required.

It is proposed to use a 50 ton mill as the first unit. This may be increased with mill units of 50 ton rating as conditions warrant and until the economic capacity is reached. All unnecessary expense in mill construction, such as elaborate housing etc. will be eliminated. Most of the grinding equipment will be purchased second hand from a reliable source already arranged. Gravity tables and flotation cells will of course be new.

The first mill unit can be installed and operating within 60 days. Stoping operations can be commenced immediately thereafter.

It is proposed to place the operation of the property under the charge of L. E. Foster, E. M., who is well qualified to direct actual mining and milling operations. Mr. Foster is a graduate of the Michigan College of Mines, 1903, and from 1915 to 1935 acted in the capacity of consulting engineer for the Phelps Dodge Corporation, Copper Queen Branch, Bisbee, Arizona. He was also Chief Engineer and Assistant Superintendent of Chino Copper Company, now a branch of the Nevada Consolidated Copper Corporation, Santa Rita, New Mexico, and otherwise has had considerable experience in mining and milling operations.

Mr. John R. Poss, E. M., who was engineer and geologist and later superintendent of the company during the development of the ore reserves of #1 Shaft, will be consulted during re-opening, production and development operations. Mr. Poss, a graduate of Michigan College of Mines, 1916, was formerly Efficiency Engineer and Geologist for Hancock Consolidated Mining Company of northern Michigan, a property then mining 1200 tons daily, and was later on the staff of Utah Consolidated Mining Company. His intimate knowledge of the ore reserves and nature of the ore occurrence of the Kay Mine will be of assistance here.

Additional Tonnage

In considering this operation only in the light of proven ore preserves, little mention has been given to the many other occurrences of ore which, considering their characteristic habits, should develop additional tonnage of important proportions.

Practically all of the Proven Tonnage occupies the segment north of the fault (see Level Plan). That there is quite a little additional tonnage in the upper levels on the south side of the fault seem

most likely. In fact, the largest part of the #1 ore body seems to be south of the fault, - as testified by an apparent 120 feet of length on the 600 level.

Also, some 30 feet in the footwall of the #1 ore body, there occurs in four separate places, one on the 500 level, and three on the 600 level, another lens approximately 20 feet in width, which where cross-cut averages 3% copper, and $2.50 in gold and silver. This lens is generally referred to as #2 Ore Body. Its exact extent has not been determined. It has not been sufficiently opened up to classify as Proven Ore in the usually accepted sense. Neither has it been included here in estimates of returns. It comes under the heading of Possible Ore, but knowing the characteristics of the Kay mineralization, the writer feels safe in assuring this as an additional source of sizeable tonnage.

On the north side of the #1 Shaft, on the 500 level, in one place only, there has been cut 12½ feet of ore that averages over its width, a little over 3% copper. It should likewise produce some additional tonnage, readily available for immediate steping.

Several other lenses of apparently interesting proportions have been exposed in the workings of the newer 3 compartment vertical Shaft (#4), southwest of the #1 workings, on the 800, 1200, and 1500 levels. Although no systematic development work was done on these lenses, and estimates of tonnages cannot be calculated, they do most likely represent other ore bodies. These later lenses added to the known ore reserves of #1 workings, were apparently the basis for the assertion on the part of operators of the "third period", that the Kay ore reserves had reached a valuation of $26,714,000 (letter to Stockholders under date of March 29, 1927, quoting A. Spencer Cragoe's report, and signed by James J. Godfrey). No inference, however, is made here that any such reserves exist. Insufficient development work has been done on these lenses to justify such computations. However, the occurrence and possibilities of these lenses are worthy of consideration, and will quite likely prove to be sources of new and additional tonnage of an extent as yet undetermined.

Thus, in considering only the possibilities of profit from Proven Tonnage, some importance may be attached to consideration of Probable Tonnage, and Possible Tonnage, for quite certainly some portions of these areas will provide additional tonnage to augment Proven Tonnage estimates.

From the table of estimates of Return, it can be seen that with relatively little initial capital investment, a net profit of $323,000 is assured, considering lowest estimates of tonnage and low metal prices, while with reasonable additions thereto from the Probable Ore area, the net profit can conservatively attain a figure of $556,000 with copper at 12 cents, to $931,000 with copper at 15 cents. That even these figures by no means limit other possibilities of the Kay Mine in other sections of the property where lenses have been exposed,

is an additional feature lending further merit to the enterprise.

Dated March 27, 1937.

(Signed) John R. Foss, E. M.

L. E. FOSTER

Mining Engineer

Aug. 2, 1937.

Mr. John R. Poss
Lake Arrowhead, California.

Dear Mr. Poss:

I note that you did not call attention to the possibility of getting considerable profit from handling the dump material in the old Kay mine shaft dumps, in your report on the Kay Copper. During the operations of the Kay Copper Company and Corporation there was very little ore shipped, - records show a total of about 500 tons, practically all of which was stoped in the #1 shaft area for bulk test sampling. The ore taken out during progress of development work was placed on the mine dumps with very little attempt at segregation as to grades or keeping it clean.

From surveys and preliminary sampling it would appear that there is an indicated tonnage of milling ore available in the dumps as follows:-

#1 Dump -	2,200 Tons	@ 2.10% Copper
#4 Dump -	17,500 "	@ 1.30% "

Samples were taken from small headlings dug into the sides of the dumps and from pot holes in the tops. No trench samples were taken.

Figuring conservatively as to costs with a small mill unit to handle material from dumps, roughing on tables and cleaning with flotation, there should be a net operative profit of over $30,000.00 in them. There are small areas in the #4 dump that will run as high as 5.0% copper, which were not taken into the above figures.

Trench sampling and digging test pits in tops of dumps would soon prove just what the possibilities of profits from dumps are, as a check on original sampling.

Also note that you do not call any attention to the fact that commercial ore was developed on the 1,000, 1,200, and 1,500' levels of the #4 shaft, and that diamond-drill holes driven

#2. Mr. John R. Foss

from the 1,500' level proved ore at a depth of 1,700 to 1,800', demonstrating the continuation of the ore bodies at depth. The ore was strong and showed the most consistent good values of any level showings in the Kay. Copper assays ran up to over 8% on average in sections and in places gold assays ran as high as 1.0 oz. on the 1,500!

Indications point to the possibility of blocking out hundred of thousands of tons of commercial ore at depth in the Kay mine, and in valuing the property this should be taken into consideration.

Considerable stress has been laid on the ore-bodies in the #1 shaft as they in so far as they have been developed show a very profitable venture due to ore actually being blocked out. But in viewing the proposition, sight must not be lost of the fact that it has been demonstrated that the #1 shaft ore-bodies continue downward and other ore-bodies have been shown to exist to a depth of 1,800'. In view of the geologic structure, the fact that the ore-bodies or deposits are mesothermal, and developments all ready made there is no reason why we cannot anticipate that the ore-bodies will continue to a much greater depth than known at this time.

Regards,

Yours sincerely,

Signed: L. E. Foster
L. E. Foster
P. O. Box #776
Phoenix, Arizona

JOHN R. POSS

SUMMARY REPORT

March 20, 1920

SUMMARY REPORT OF THE PROPERTY OF THE KAY COPPER COMPANY.

LOCATION.

The property of the Kay Copper Company is situated on the main road between Phoenix and Prescott, in Yavapai County, Arizona. It lies on the Agua Fria River, three miles north of the Yavapai-Maricopa County line. Turkey, 22 miles away, is the nearest shipping point.

The holdings of the company comprise 41 mining claims aggregating 750 acres and an adjoining tract of land of 670 acres, purchased for townsite and mill purposes. The latter acreage lies in a fertile valley bordered on one side by the Agua Fria River.

GEOLOGY:

The property lies in a Pre-Cambrian schist belt, which extends north and south along the eastern edge of a large granite mass known as the Bradshaw Mountains. Northward, included in this belt, are the mines near Mayer, the Blue Bell Mine, the Arizona Binghampton, the De Soto and still further north the mines of Jerome. Although there are many features of similarity, each represents various types of mineralization.

Two distinct phases of schist are found on the Kay Copper Company's property. A schisted quartz porphyry thus far has proven to be the most favorable phase, although some promising schowings are found in the chloritic or greenstone schists.

Worthy of attention, is the presence of a large diorite mass, younger and less disturbed than the schists, but pre-mineral, the northern edge of which cuts across the quartz porphyry schist at an angle of 30 degrees. This is a favorable structural condition, undoubtedly having some influence on impounding and concentrating the primary mineral solutions.

ORE OCCURANCE.

The ore occurs as a replacement of the quartz porphyry. Primary chalcopyrite and pyrite, banded and disseminated in the schist, form the ore bodies. Some are lenticular in shape, showing increased width as depth is attained, while one explored by the diamond drill has indications of having the shape of a large irregular mass of heavily mineralized schist. Two distinct systems of thrust faulting has resulted in displacement of the ore bodies on a small scale, a fact which limited the development of the ore in the older workings, to one side of the fault, the faulting system at that time not having been worked out.

Post mineral diabase dikes with various dips are found throughout the formation.

DEVELOPMENT.

The main ore tonnage to date has been developed in No. 1 shaft. The main ore body lies entirely on the south side of the shaft, as can be seen by the following description of the various levels.

The Outcrop.

Iron and copper stained gossan, the largest part of which is covered by the river bed, is in a bay probably formed by erosion of the ore body.

100 Level.

Drifted south 25 feet, then crosscutted 18' both in ore.

200 Level.

The drift south extends 120 feet from the shaft.

The northern end of the ore shoot was encountered at 50 feet. From this point to the face, the drift remains in the ore body. At the face the fault was encountered and the work discontinued. Cross-cutting exposed a width of 20 feet of ore.

250, 300, and 350 Levels.

As on the 200 level the south drifts is each case extended to, and then along the ore body until the fault was reached then the work discontinued. Cross sections of the ore body on these levels give an average of 4.8% copper. The south drift on the 350 level was extended across the fault and the displaced ore partially developed, the face remaining in ore.

500 Level.

The south drift encountered the ore body at 60 feet and drifted along it to the fault. Crosscutting showed a width of 30 feet averaging 5.4% copper. Further drifting was done on the opposite side of the fault along the faulted portion, for 60 feet, the face remaining in ore.

600 Level.

The main development work has been done on this level. The ore body was reached by a south drift at 130 feet from the shaft. Crosscutting showed a width of 32 feet, averaging 4% copper. A length of 50 feet was shown on the north side of the fault. 130 feet of drifting was done along the displaced portion south of the fault, thus exposing a total length of 180 feet. The southern end is still undetermined, as the face is still in the ore body. Crosscutting from the drift was done by short diamond drill holes and revealed a width of 40 feet.

At one place on the 500, and at four places on the 600, another ore body 20 feet east and in the footwall of the main ore body was opened by crosscuts. This lens shows an average width of 15 feet of 3% copper. The extreme

north and south crosscuts signify a length of 180 feet. The zone between these ore bodies shows increasing mineralization with depth and it is probable that they may merge to form one ore body.

Considerable work has also been done on the north side of the shaft on the various levels, but mainly on the 600 level. Several smaller but promising lenses were cut, and with further development may yield additional tonnage.

DIAMOND DRILLING.

From the 600 level, 3000 feet of diamond drilling was done, thirteen holes in all were drilled, two of which were inclined at 45° to cut both the main ore body and also the foot lens, 120 feet below the 600 level. The presence of the two ore bodies at that depth was satisfactorily determined.

A flat hole was also drilled 300 feet eastward, across the river, to intersect a promising surface showing. At 250 feet a 60 foot heavily mineralized zone was cut. Several other zones of promising character were shown and practically the entire hole revealed fair mineralization.

An inclined hole from surface was then drilled across this same section, cutting the 60 foot zone at a depth of 300 feet. This hole likewise showed very promising mineralization through its entire depth.

In all, about 3500 feet of drifting and crosscutting and 3000 feet of diamond drilling has been done in No. 1 shaft.

No. 3 shaft, located some 2100 feet north of No. 1 shaft, was sunk to a depth of 530 feet in chloritic schist. About 360 feet of drifting has been done, disclosing from 3 to 4 feet of 3% ore. This zone is but slightly explored and is worthy of attention at a later date.

A new vertical, three compartment shaft called No. 4 is being sunk. It has reached a depth of 130 feet and will continue to the 1000 level. A crosscut from this point will explore the territory cut by the east drill holes and also the lower extension of the two ore bodies from No. 1 shaft.

The shaft is at present, and has been from a depth of 65 feet, in well mineralized quartz porphyry schist.

The equipment of the plant consists of a 25 HP Western Hoist, and two 300 cubic foot Chicago Pneumatic air compressors, and five Ingersoll-Rand-BCR-430 jack hammer drills.

The new shaft is located three quarters of a mile from the fossil Creek power line. A permanent plant, electrically driven, will shortly replace the present equipment.

ORE RESERVES.

Approximately 215,000 tons of 4% ore in the main ore body and a conservative estimate of 81,000 tons of 3% ore in the foot lens, making a total of 296,000 tons are in sight to date. Throughout the ore bodies an average value of $3.00 in gold plus silver (silver @ $1.00 per oz) is found. With copper at 20¢ per pound, the total value of the above tonnage amounts to $5,300,000.

CONCLUSION.

Because of the fact that the mineralization solutions came from moderate to great depth, and that all of the ore is entirely primary in character, depth to the ore bodies is reasonably assured.

The diamond drill holes eastward disclosed a very large area of well mineralized grounds, and it can be confidently expected that a large, although possibly lower grade, tonnage can be developed there. This large area lies close to the diorite mass, and it is in this locality that the most favorable signs of impounding and concentrating of the mineral solutions are found. The new No. 4 shaft, together with crosscuts from it, will test this promising zone.

Respectfully submitted

(Signed) John R. Foss, E. M.

Note: The above figure of 296,000 Tons of ore "in sight" is composed of the following:

PROVEN ORE

Blocks 1, 2, 3, 4, 5 (N. of Fault)	-	60,900 Tons
Blocks "A" & "B" (500 & 600 levels S. of fault)	-	38,400 Tons
Total	-	99,300 Tons

PROBABLE ORE

Lateral extensions of 85,200,300 & 350 Level comparable with one-half the developed length on 600 level.	39,400 Tons

POSSIBLE ORE

Indicated extension 120 feet below 600 level, by diamond drill holes	76,000 Tons
#2 Ore Body (Footwall lens) Xcut on 500 Level and four points on 600 Level.	81,000 Tons
Total	296,700 Tons

JOHN R. POSS

SUPPLEMENTAL REPORT

April 21, 1921

Phoenix, Arizona
April 24, 1921

SUPPLEMENT

to

KAY COPPER COMPANY SUMMARY REPORT.

INSTALLATIONS.

Since my summary report of the property of the Kay Copper Company was submitted on March 20th last year, a branch power line from the main Fossil Creek (or Sycamore) line has been installed. An electrically driven 75 horse-power, 500 foot compressor and a 112 horsepower double drum hoist have also been put in place and are now operating. With the two semi-diesel compressors previously used, the total air capacity is now a little over 1000 feet. A new electrical triplex pump, capacity 200 gallons per minute at a 500 foot head is also to be installed shortly on the 500 level.

DEVELOPMENT.

The new vertical (#4) shaft to date has been sunk to a depth of 426 feet. A constant but low grade mineralization was present in the shaft to a depth of 212 feet. From 135 to 212 feet a parallel fault system was passed through, the block beneath the fault showing but very little mineralization. The condition continued to a depth of 331 feet where a contact of a belt of blue chloritic schist was reached. The contact dips across the shaft at an angle of 76 degrees and for that reason the shaft crosscuts the blue schist very gradually.

The appearance of the blue schist was immediately attended by some mineralization, which as the shaft deepened became stronger.

First of importance was the appearance of fair amounts of gray copper (Tetrahedrite) replacing the schist in the form of small bands parallel to theschistocity, a condition previously rarely seen. Occasional small streaks of chalcopyrite were noticed as the shaft deepened further, until at a depth of 354 feet, a narrow zone of 18 inches showed fairly heavy replacement of the blue schist over that width, averaging 3% copper.

At 383 feet the 18 inch zone widened to 4 feet becoming lower in grade over the wider section assaying 1.52% copper. At 396 feet the zone showed a width of 7 feet, 4 feet of which assays 1.65% and 3 feet, 1.03% copper. The section at 404 feet shows 9 feet in width, 5 feet assaying 1.85%, the remaining 4 feet, 1.0%.

Another new occurrence is the presence of bornite, found along small seams and fractures, as an enrichment, within the chalcopyrite. As the shaft gets deeper, more bornite in this form is noticeable.

The mineralization as a whole has been somewhat stronger on the

south side of the shaft, while on the north side more quartz has been evident. It is of common occurrence with ore bodies in the schist belt to find considerable quartz on the ends of the lenses. It is, therefore, considering other evidence to be mentioned later, quite probable that an ore lens is to be found just south of the shaft at this point. A station will be cut at 458 feet and a drift sump, driven south, to be used as a sump for the new electrical station pump, will help to determine this question. This level (called the 500) will at some later date be connected with the 500 level, #1 shaft. After completion of the station and sump, sinking is to be resumed.

SUMMARY.

Before drawing my conclusions as to the possibilities of the newly encountered blue schist belt, it will enable one to more clearly and accurately consider the question if a general description of the structure and ore occurrence at the Kay be briefly given.

First of prime importance are the proper structural conditions; some sort of a catch basin for the mineralising solutions as they ascend, penetrating the schist from below. This is pre-supposing the previous existence of the mineral solutions, an assumption which is justified by the presence of a large and fairly intensely mineralized area. That the solutions have come from below, given off the large intrusive Bradshaw granite mass and its outlying phases, is generally accepted. The comparatively open, sheared character of the schist render countless channels fo r the circulation of the solutions.

The so called catch basin, in which these solutions have been impounded, at the Kay, is formed by a relatively impervious intrusive diorite mass, itself a part of the pre-Cambrian complex, but less disturbed and more massive, dipping so as to form a hanging-wall to the basin thereby forming a barrier for ascending solutions, and crossing the schist at an angle of 30 degrees tending to dam also lateral solutions.

Replacement has taken place in this basin in the form of roughly elliptical shaped chimney, with its long axis parallel to the strike of the diorite, the chimney itself being of comparatively low grade and composed largely of iron pyrite. In this area occur the copper ore bodies representing a stage of mineralization later than the iron. worthy of notice; as the result of a microscopic examination of various types of mineralization at the Kay, is the absence of high temperature minerals, indicating that the development work thus far is probably in the upper or intermediate zone of deposition. The ore lenses exposed so far also show the tendency to increase in width as depth is attained.

Two types of schist, a schisted quartz-porphyry, or white sericite schist, as it is called, and a blue chloritic schist, are known to have undergone replacement. Most of the work done so far has been in the sericite schist, although some work was done at #3 shaft in the blue schist, which shows indication of being a possible source of additional tonnage, though apparently small, due undoubtedly to not being under the influence of the diorite and its accompanying basin.

Although mineralization on a large and intensive scale sufficient to result in the formation of two known bodies of ore, with indications of others, is found in the white sericite schist, the blue chloritic schist, less siliceous, is undoubtedly more favorable to replacement. As can be seen by the accompanying plan and cross sections sketches, #1 shaft, in which practically all the ore to date has been developed, lies entirely within the white sericite schist zone, which in itself presents ample opportunity to develop a large tonnage of ore of from 3 to 4% grade.

The presence of the adjoining zone of blue schist, in which it is quite probable the main mineral area extends, only lends additional promise and another decidedly attractive field for exploration. As a matter of interest and worthy of notice in this connection, is the mode of occurrence at the United Verde mine at Jerome, at the other end of the Bradshaw range, where structural conditions are practically identical with those found at the Kay, but where all the mineralization of importance is found in a blue to black chloritic schist, only the lower grade and siliceous ore being found in the adjacent schisted quartz-porphyry.

Owing to the fact that the blue chloritic schist belt at the Kay, is almost entirely concealed by old river wash, in drawing conclusions in regard to the possibilities of that belt, one must judge partly by comparison. With the white sericite or quartz-porphyry schist so well mineralized, the blue schist, in the same locality and under the same impounding influence of the diorite, and being of a more easily replaced type, presents decidedly favorable conditions for the extension of the known ore zone, laterally. Any possible outcrops of ore lenses are covered by 30 feet of overburden, which accounts for the fact that little or no work or attention was directed to that area.

In view of the fact that the position of the new shaft, as can be seen by the plan sketch, is, while in one sense in a central position for future exploratory work westward, probably near the north eastern limit of the main mineral area, together with the occurrence of stronger mineralization on the south side, with more quartz on the north side of the shaft, it is reasonable to assume that the mineralization so far encountered is but the northern tip of heavier mineralization, or an ore lens, laying just south of the shaft. Due to the general rake south of the ends of the ore lenses in this locality, it may be expected that as the vertical shaft deepens it will leave entirely the tip of any ore occurrence present to date.

A very attractive oxidized iron outcrop, apparently in the blue schist belt south of the shaft and near the diorite contact, lends additional promise to this belt.

It is felt that the small amount of development to date in the blue schist is quite encouraging, and in view of its favorable location adjacent to a known mineralized zone, the sericite schist belt, and its apparently being a part of the main basin, together with its being of an easily replaceable type, and the usual satisfactory results obtained in this type of schist elsewhere under the same conditions, induces me to urge very strongly that this belt be explored completely.

Respectfully submitted

(Signed) John R. Poss, B. S. E. M.

ARTHUR W. JENKS

REPORT

April 4, 1923

DATA EXTRACTED FROM MY REPORT TO BE USED

IN PROSPECTUS

* * * * * * *

The Kay property is in the southern portion of a broad belt of schists, which extend northerly as far as Jerome, where the United Verde is in this same formation. To the east of the schist belt, there is a series of diorite and other eruptive rocks, while on the west, the granite of the Bradshaw Mountains appears.

The ores occur as lens parallel to the schists and replace portions of these schists. The particular strata at the Kay property most favorable for replacement and ore deposition are the chloritic schists, dark green or black in color. At the Arizona Binghampton, six miles northeast of Mayer, the ore also occurs in dark green schists. They have encountered large lenses of ore and steping has extended to the 6th level. The Blue Bell Mine, south of Mayer, has also produced a large amount of ore, stated to me by their former manager to have been a million tons of about 3-1/4%. The grade in the Arizona Binghampton is similar.

At Jerome, the United Verde ore is chalcopyrite, occuring black chloritic schists. Their ores have been proven to go very deep, in fact, their 16th level is one of the best they have had and much better than the ones immediately above.

The United Verde deposit is a chimney about 12 acres in cross-section of which 3 acres is ore on the 16th level. The ores at the Kay are entirely sulphide, mainly copper pyrites, but with some gray copper. These occur in sheets or lenses parallel to the northerly-southerly direction of the schists; in fact, they themselves are layers of schists replaced by these sulphides.

Extensive investigations have established the primary character of the copper pyrites and gray copper; thus the copper minerals are not a secondary enrichment, which would disappear in depth. There have been several stages of mineralization, the copper pyrite being distinctly later than the iron pyrite. A very favorable feature is the persistence in depth of the lenses of ore so far encountered. They have maintained their length, a good width, and payable values. Gray copper occurs at various depths, but especially at the lower levels. A specimen selected because its principal valuable mineral was gray copper gave:

Copper	10.65%
Gold	0.11 oz. per ton
Silver	6.09 oz. per ton

these assays indicate that the gray copper may be the mineral mainly responsible for the silver content of the ores.

The principal workings are those connected with the inclined #1 shaft,

which the former owners sunk to the 350 feet level, while the Kay Copper Company continued the development from that shaft to the 5th and 6th levels and sunk the vertical #4 shaft to the 8th level and have done crosscutting and drifting therefrom.

Using mainly the assays and measurements given on the maps of the Company, the developed ore reserves of the property are calculated as follows:

POSITIVE ORE

70,793 tons
Averaging 5.01% copper, and $2.34 gold and silver.
The contents thereof are 7,157 pounds of copper with a gross value of $1,002,078 plus $165,963 in gold and silver.

PROBABLE ORE

103,476 tons
Averaging 3.59% copper and $2.00 gold and silver.
The contents thereof are 7,438,080 pounds of copper with a gross value of $1,041,331 plus $206.952 in gold and silver.

The only ores taken into consideration are those reached by the #1 shaft. The downward extension wasassumed to reach 250 feet below the 6th level; as the ore has continued in the form of a lens from near the surface to the 6th level and is wide at the 6th level, the assumption appears safe.

The company's records show 470 tons of shipped; these averaged copper 9.04%, silver 1.14 oz. per ton, gold 0.068 oz per ton. At the present price of silver, the gross precious metal content is $2.50 or 28¢ to each per cent of copper.

No ore has been shipped from below the 350 foot level. In 1917, from that level, a final carload of 31 tons was shipped, which ran copper 13.35%, silver 1.36 oz per ton; gold 0.08 oz per ton. Therefore, this shipment yielded $2.96 in gold and silver, or 22¢ to each per cent of copper.

The diamond drilling so far done has been satisfactory only in the way of locating changes of formation and locating mineralized areas. But due to the fact that many seams were encountered, and to the fact that the rock itself occurs in thin plates, the proportion of core recovered was altogether too small; the sludge and some pieces of core gave very favorable indications.

The Electric Power Sub-station is three quarters of a mile from the new shaft. The cost of power is now excessive, about 3-1/3¢ per kilowatt-hour. With the good auto road, it may now be possible to utilize fuel oil as a source of energy.

For the future, diamond drilling is recommended in various places. At #3 shaft from several points; in the 8th level in shaft #4; and easterly from points near the Agua Fria River to cut beneath the promising irony outcrop near the river.

By means of differential flotation, many properties are now making a separation between iron pyrites and copper pyrites, and there is every reason to suppose that this separation can be made in the case of Kay ores, thus permitting the production of concentrate much higher in copper than would be possible by ordinary wet concentration.

The tonnage of ore shipped from #1 shaft and the good assays thereof, are very encouraging. There is every probability that much similar ore remains exposed below, when that shaft is unwatered.

The general geological similarities between the United Verde, Arizona Binghampton, and Kay are strong; that is there are similar probabilities of ore deposition.

Water abundant for all concentration purposes is flowing in the Agua Fria River, flowing across the property, which river will furnish an ample supply of water, even in the driest seasons.

I have endeavored to give the facts concisely. In conclusion, I will say that I believe the development of the property to be a legitimate mining venture; that it is a very promising property and that it will, upon development, make a mine.

(Signed) Arthur W. Jenks.

New York
April 4, 1923

E. H. LUNDQUIST

REPORT

October 13, 1930

PHOENIX, ARIZONA
October 13, 1930

A COMPARATIVE ESTIMATE OF ORE RESERVES IN THE KAY COPPER MINE, LOCATED AT CANYON, ARIZONA, AS COMPILED FROM MAPS AND AVAILABLE RECORDS.

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At the time the mine closed down 1928-29, the total ore reserves were apparently not estimated or brought up to date, therefore it is necessary to be extremely conservative in accepting the partially completed records of the more recent work.

The accompanying report by Mr. John R. Poss, E. M. can without doubt, be accepted in its entirety as covering what is known as the Number One ore body, extending from the 600 level to the surface and developed from the #1 shaft. Subsequent work included the sinking of three other shafts, one #4 which was sunk to the 1200 level. The 1500 level is reached by a winze sunk from the 1200 level and is the present bottom of the mine. The #2 shaft reached a depth of 180 feet and some ore is reported here though not taken in account in the estimate and not connected with the general workings. #3 shaft is located some 2000 feet north of #1 shaft and is 520 feet in depth. There is ore developed on several levels from this shaft but not considered in estimate nor are these workings connected with main workings as yet, though a drift has been driven from #4 s haft on the 1200 level to a point under them.

The #1 ore body includes 215,000 tons that will average 4% copper and $1.00 gold per ton, and 81,000 tons averaging 3% copper and $1.00 per ton making a total of $2,502,000.00, assuming copper at 10 cents a pound. There is some silver in all the ore but this is not considered in estimate.

As indicated on the accompanying vertical section map, the ore bodies continue down to the 1,000 and beyond. From the 600 to the 1,000 the values shown are somewhat lower than those above the 800 and below the 1,000 level.

In view of this, this block of ore will not be considered.

From the 1,000 to the 1,500 level, a block of ore 60 feet long by 5 feet in width on the 1,000 level by 170 feet long and 5 feet wide on the 1,500 level, this 5' width assumed shows the actual width sampled in drift, although drill holes etc. indicate many times this width. This block will provide 23,500 tons that will average 3.1% copper, and $1.00 per ton, totaling $169,200.00, and each additional foot in width that is given to this block on the above basis will increase the value $33,840.00.

The total value on a basis of 10 cents copper and $1.00 per ton gold is as shown above $2,671,200.00. It may be well to mention that the ore on the 1,500 level and above will probably mine 25 feet instead of 5 feet as assumed, and as indicated on map the drill holes below the 1,500 level show a width and value of 20-25 feet and 6.08% copper respectively, and gold values increasing to $3.00 per ton. Besides this, considerable lead ore is coming in on the lower levels that carries very good silver and gold values. All of this shows a constantly increasing metal content and size of ore bodies as depth is gained.

Respectfully submitted

(Signed) E. H. Lundquist

17 - Mine not in production.

10 - A. The ore as now exposed consists of chalcopyrite in long narrow lenses in Pre-cambrian fissile chloritic and sericite schist.

Three principal ore shoots have been drifted on; the #1 shaft ore shoot, apparently continuous down to the 6th or bottom level, the North west shoot exposed on the 1500 and 1000 ft. levels, and the South ore shoot on the 15th and 1350 levels.

Mr. T. S. Davey in his letters to the management, under date of Sept. 9, 1926, describes the south ore body as then 102 feet long assaying 5.10% copper, $1.00 in gold, and .88 silver, with a width at the cross cut of 15 feet assaying 4.9% copper.

The north ore body, under date of August 9th, showed a length of 165 feet with an average assay of 4.69 copper, with a width at the 1527 W X-cut of 14 feet.

This north ore shoot was diamond drilled in 1928 at greater depth by holes No. 88 and 89. Hole 89 was drilled N 75 W @ 62° dip and showed core assays of:

378-388	5.11% copper	with corresponding sludge sample
388-396	3.30	

Hole 88 was drilled from the same cross cut @ N 75 W dip 49° and showed core assays of 2.92%, 4.34% and 11.96% copper, with no logged distances given.

Drill Hole 81 from the 1515 W X-cut S 35° E dip 45° showed 3% copper from 272-284, a true width of 9 feet of ore.

B. Maps enclosed:

1 Claim map
2 Assay plan of ore shoots on 1500, 1350 and 1000' levels
3 General plan showing workings from #1 shaft with summary of estimates of ore in this shoot
4 Plan of workings from #4 shaft
5 12th level plan
6 15th level plan
7 Mine cross-section

C. No tonnage estimates are made in this application because no development work has been done above or below the levels.

				Ag.	Au.
The 1506 N ore body	length	200 ft.	Aver. Grade 5.71 Cu.	0.6	.03
1506 S ore body	"	150	3.75	negligible	
1350 S ore body	"	120	3.43	"	
1006 N ore body	"	90	3.36	1.0	.14

19 - Shattuck Denn started unwatering and rehabilitating #4 shaft late in October, 1950. The mine is now unwatered to the 12th level. No. 1 shaft has been cleaned out between the 5th and 6th level and the 6th level has been retimbered.

A small amount of natural ventilation is obtained by air descending #1 shaft to the main raise, down this raise to the 8th level, escaping through #4 shaft. When the 12th level is completely unwatered and the 6th level rehabilitated, it is expected that ventilation will be adequate.

The Kay Mine was first opened about the time of World War I. A few years later it was acquired by the Kay Copper Company. The stock of that corporation was widely distributed by promotional methods and large sums of money were obtained from stockholders. While these funds were spent in what now appears to have been an extravagant manner, the expenditures nevertheless accomplished a great deal of underground work. No. 4 shaft, or the main shaft, was sunk to a depth of 1,200 feet. Later a winze was sunk from the 12th level to a depth of 1,500 feet. Much lateral development was done. Apparently very little effort was made in this period to produce or ship ore, perhaps for the reason that those in control of the property were more interested in selling stock than in production. These practices gave the company and the mine a bad name. Following the financial panic of 1929, the company's funds were exhausted and the property was abandoned.

About 1936 the property was examined by Mr. L. E. Foster, a mining engineer now employed by the Kennecott Copper Company at Silver City, New Mexico. Mr. Foster carefully assembled all of the available data and he, with the other present owners and lessors, acquired the mining claims, which had previously been patented, at a tax sale. Later these owners entered into a contract for the sale of the property to the Black Canyon Copper Company. The latter was insufficiently financed and in 1950 entered into a contract with Shattuck Denn Mining Corporation by which Shattuck Denn acquired all Black Canyon's rights in the property. A copy of this contract is submitted herewith. About the same time, Mr. Foster and the other owners entered into a lease and option directly with Shattuck Denn. A copy of this lease is also submitted herewith.

Our investigations of this property and the statements and exhibits submitted herewith indicate that the Kay Mine is very well adapted to the purposes of MO-5. We have unwatered the mine but find that its exploration would involve an expenditure probably in excess of what might be justified on a strictly commercial basis. We were, therefore, in doubt as to whether we would continue the exploration program at the time MO-5 was published. However, with governmental assistance contemplated in MO-5, we are willing to expend 50% of the funds necessary to complete the exploration.

The project may be summarized as follows:

1. Apparently reliable records and reports of competent engineers indicate the existence of orebodies which did not support a stock promotion in 1920's, but which under today's conditions may produce substantial quantities of copper at a reasonable cost.

2. No metallurgical problems are involved. Our tests show that the ore will concentrate readily and there is ample copper smelting capacity in Arizona to treat the concentrates.

3. There are no serious water problems. The mine was partially filled with water during a long period of idleness, but it is now pumped out to a depth of 1,200 feet and the flow of new water is small. It can be handled with ordinary pumping equipment. The mine water is suitable for and may be sufficient for milling purposes, but if more water is needed for milling, it is readily obtainable from the bed of the river crossing the property.

4. No power plant or transmission lines are necessary. Ample power is obtainable from public utilities and the line is already installed.

5. No access or other roads are necessary. The mine is situated less than one-half mile from a paved highway.

6. No special labor problems exist. The mine is less than an hour's drive from Phoenix, and is also near a number of smaller towns in which mining labor is ordinarily available.

7. Services such as supplies, repairs, assaying and accounting will be obtained from our Iron King Mine, which is a well equipped enterprise now mining and milling 600 tons of ore daily. The Iron King is about 45 miles north of the Kay. Driving time, by truck or car, is approximately one hour.

8. The amount of "dead work", such as roads, power lines and shafts, is negligible. The mine is already opened up and adequately equipped for any work short of actual extraction of ore on a commercial scale. Any money spent from now on will go directly to exploratory and development work, such work to consist of checking the existence of ore reserves already reported and a comparatively limited amount of new openings designed to enlarge such orebodies. Overhead expense is negligible.

9. Climate permits all-year operations.

10. Transportation problems are absent. Because water, power, etc. are available at the mine, transportation of the ore would not be necessary, and concentrates can be trucked to railroad at moderate cost.

11. Because of the work already done at the mine by the Kay Copper Company, by Mr. Foster and the other owners, the Black Canyon Copper Company, and by Shattuck Denn Mining Corporation during the past few months, the time necessary to prove the mine is short. One year from the date of this application should be ample, and it is quite possible the program would be concluded somewhat earlier. This time element is highly favorable, in our opinion, and in rather striking contrast to the years which are usually necessary to test the potentialities of any mining prospect.

20 - Chalcopyrite, carrying some precious metals.

Occurrence varies from massive to sheetings and disseminations in the schist.

21 - The proposed exploration is for the purpose of trying to locate the downward extension of #1 shaft ore shoot by driving northward a maximum of 500 feet from the north face of the 500 level. If ore is found here it should be further delineated by a short program of diamond drilling.

No vertical exploratory work has been done in the Kay mine. Vertical prospecting is proposed by means of a raise from the 10th level to the 8th level, and from the 8th level #1 ore body if found, to the 6th level. These raises will also provide ventilation for the north ends of the 10th and 8th levels.

If the 6th level ore proves to be as represented, and ore is found on the 8th level, it is proposed to unwater the mine to the 15th level and raise from the 15th level to the 12th level, to try to block sufficient reserves to justify a mill. The ore shoots on the 15th level, based on the maps, are larger and stronger than those on the upper levels.

See schedule of operations, Page 24

22 -- See enclosed maps.

As stated in 19-C, ore can indicated in plan only on the levels, must be proved by vertical work for estimate of tonnage.

23 - A.	With a miner's base rate of $11.60 per day, the average wage rate is $12.22, plus average shift differential, 32¢, plus 14% overtime. Average 17½ men 12 months	90576.00
B.	Supervisor $500 per month plus car expense	7800.00
C.	Repairs to bunk house	400.00
D.	None	-
E.	Drilling equipment	1500.00
F.	None	-
G.	$1000 per month	12000.00
H.	Timber, powder, welding rods, repairs, etc.	16524.00
I.	Power	17400.00
	Installation of compressor	1000.00
	Comp. insurance, social security taxes	11784.00
		$ 158984.00

24 - See Schedule attached

Schedule + Estimate of Cost - Kay Copper. Arizona

Date	Re-open 600 Level Man	Timb	Expl.	Drift 800 Lev. M	T.	P	Unwater to 1500 L. M.	Tm	P.	Rehabilitate 1500 L. M.	T.	P.	Raise 10 to 8 M	T	P	Raise 8 to 6 M	T	P	Raise 15 to 12 M	T.	P.	Hoist	Mechanic	Electrician	Super	Surface + Sampler	Pumps	Supplies	Power	Force	Payroll	Total
																						Men										
June 51	2	$300	-	2	$100	$250																5	1	1	1	2	2	$1500	1200	16	7000	9700
July	2	300	-	2	100	250																5	1	1	1	2	2	1500	1200	16	7000	9700
Aug		-		2	100	250	3	$300	-				2	300	150							6	1	1	1	2	3	1600	1500	21	9200	12,300
Sept				2	300	250	3	300					2	300	150							6	1	1	1	2	3	1500	1500	21	9200	12 200
Oct				2	300	250		—		2	300	-	2	300	150							6	1	1	1	2	3	1600	1500	20	8800	11900
Nov.										2	300	-	2	300	150							6	1	1	1	2	3	1400	1500	18	8000	10900
Dec.																2	300	150	3	300	150	6	1	1	1	2	3	1300	1500	19	8400	11200
Jan.	Diamond Drill															2	300	150	3	300	150	6	1	1	1	2	3	1300	1500	19	8400	11200
Feb	2	1000														2	300	150	3	300	150	4	1	1	1	2	3	2200	1500	19	8400	12100
Mar	2	1000														2	300	150	3	300	150	4	1	1	1	2	3	2200	1500	19	8400	12100
Apr.	2	1000								2							—		3	300	150	4	1	1	1	2	3	2000	1500	19	8400	11900
May.		-																	3	300	150	4	1	1	1	2	3	1500	1500	15	7000	10000
																												19600	17400	Av. 18	98,200	135,200

Social Security, Unemployment, Comp. Ins 11 784

Rental SD Equipment - 12000

Total $158,984

12 2 2 52

N. T. Mills

A G R E E M E N T

THIS AGREEMENT, made this 14th day of November, 1950, by and between SHATTUCK DENN MINING CORPORATION, a Delaware Corporation, authorized to transact business within the State of Arizona, hereinafter called "First Party" and BLACK CANYON COPPER COMPANY, Inc., an Arizona corporation, hereinafter called "Second party,"

W I T N E S S E T H:

WHEREAS, second party is lessee and optionee from O. W. Judd and Anna May Judd, his wife, of Tempe, Arizona; Lewis Erwin Foster, Sr., and Ysabel C. Foster, his wife, of Silver City, New Mexico; A. W. Amos, Sr., an unmarried man, of Phoenix, Arizona, Sloan Amos and wife, and Albert W. Amos Jr., and wife, as lessors and optionors, of certain patented lode mining claims situate in the Hilltop Mining District, Yavapai County, Arizona, commonly known as "Kay Mine", the United States patents for said property being of record in Book 40 of Deeds, at pages 398 et seq. and in book 137 of Deeds, at page 275 et seq. in the office of the County Recorder of Yavapai County, Arizona, to which reference is hereby made, and

WHEREAS, said lease and option aforesaid, is dated as of February 19, 1949 and contains the terms,conditions and provisions of the agreement aforesaid, and

WHEREAS, first party is desirous of securing all of second party's right, title and interest in and to said mining claims and said lease and option, aforesaid, and

WHEREAS, a preliminary agreement between the parties hereto was made and entered into on the 16th day

of October, 1950.

NOW, THEREFORE, for and in consideration of the sum of TEN ($10.00) dollars, each in hand paid to the other, the receipt whereof being hereby acknowledged, and the faithful and punctual performance of the covenants and agreements hereinafter set forth, IT IS AGREED:

1. Second party does hereby give and grant unto first party the exclusive option to acquire all of second party's right, title and interest, in and to the above described Lease and Option dated February 19, 1949, and all of second party's right, title and interest in and to the mines and mining claims therein and hereinabove described, and all of second party's mining machinery, equipment and supplies situate in and upon said mines and mining claims to, and including January 1, 1951.

2. In consideration of the foregoing option, first party hereby agrees to pay second party, subject to the terms and conditions hereinafter set forth, the following sums of money at or before the following dates, towit:

(a) $2500.00, the receipt whereof being acknowledged hereby, and acknowledged in that certain preliminary agreement dated October 16, 1950, and

(b) $1500.00 on or before November 15, 1950, and

(c) $1000.00 on or before December 15, 1950.

3. Second party covenants and agrees to use said funds set forth in paragraph 2 above, for the purpose of maintaining said mining claims unwatered to its approximate present water level, at its own cost and expense, and to use any balance thereafter for the payment of its outstanding

debts and obligations.

4. First party agrees to notify and advise second party on or before December 31, 1950, whether or not it intends to commence the exploration of said mines and mining claims to determine if possible, the existence of sufficient ore reserves, in its sole discretion, to warrant mining operations in and upon said mines and mining claims on a commercial basis. In the event such notice is given, thereafter first party will assume and hereby agrees to pay all costs of such exploration and the cost of maintaining and operating said mines and mining claims.

5. In the event first party elects as aforesaid, to commence exploratory work, it further agrees to pay to second party the following sums of money on or before the following dates, towit:

(a) $3000.00 on or before January 15, 1951, and

(b) $1000.00 on or before the 15th day of each succeeding month during the year 1951.

Second party covenants and agrees that all such payments aforesaid will be applied by it to the payment of its outstanding accounts payable, until the same are paid in full. In the event first party elects to explore said property as aforesaid, and give said notice to second party, as aforesaid, second party covenants and agrees that thereafter it will incur no debts or obligations in any way applicable to or in connection with, or arising out of, the operation and maintenance of said mines and mining claims.

6. In the event first party, in its sole discretion, elects to commence mining operations in and upon the above described property, first party covenants and agrees to pay second party on or before January 15, 1952, the difference between the payments hereinabove set forth, and the sum of $55,000.00, in cash.

7. In the event first party elects to commence the mining and operation of said mines and mining claims, it agrees to pay to second party, an over-riding royalty of 2½% of the net smelter returns of all ores, minerals and concentrates removed and shipped by it from the hereinabove described property until the full purchase price as set forth in said Lease and Option dated February 19,1949, hereinabove described, has been paid in full to the owners of said mines and mining claims, "Net smelter returns" being taken and understood to mean the value of such ore, minerals and concentrates after deducting therefrom all transportation and smelting charges. Such over-riding royalty payments shall be made at the time and in the manner as set forth in said Lease and Option, dated as of February 19, 1949, hereinabove described.

In the event first party herein acquires title to, and becomes the owner of, said mines and mining claims, it further covenants and agrees to pay second party a royalty of 5% from the date first party acquires title to such mines and mining claims, for a period of 5 years thereafter. Such 5% royalty shall be computed and payable as hereinabove set forth.

8. Second party covenants and agrees to exert its best endeavors to cause the execution and delivery of a

new lease and option from the owners of the hereinabove described mines and mining claims to first party herein as lessee and optionee, in substantially the same form and with substantially the same terms and conditions as said Lease and Option dated as of February 19, 1949, as amended, except that no minimum payments shall be required or due by said new Lease and Option, prior to April 1, 1951. It is further understood and agreed, that in the event said new or substituted lease is procured by second party directly from the owners of said mines and mining claims to first party, that such Lease and Option will replace and be considered in this agreement in lieu of the Lease and Option aforesaid, dated as of February 19, 1949, as amended.

9. In the event second party is unable to secure such new lease and option as provided in paragraph 8 herein, second party agrees to assign, and does hereby and by these presents, assign, transfer and set-over, all of its right, title and interest in and to that certain Lease and Option aforesaid, dated as of February 19, 1949, together with amendments thereto, to first party. First party reserves the right, however, to require such other and further assignment or other instruments as may be reasonably necessary in the opinion of its counsel.

10. The parties hereto agree to make, execute and deliver, one to the other, upon demand, all instruments necessary to effect the meaning and intent of this agreement, and said preliminary agreement of October 16, 1950.

11. It is further agreed that second party may cause itself to be dissolved as provided by law and its stockholders

be substituted herein for second party, provided such stockholders do not exceed five in number and provided further, said stockholders succeed to all right, title and interest of second party and be subject to all second party's duties and obligations. Such dissolution shall be subject to examination by counsel for first party as to form, purpose and effect, and in the event counsel for first party is of the opinion that such dissolution cannot be effected without serious impairment of first party's rights herein, then, in that event, second party agrees to cause itself to remain a corporation in full force and effect and in compliance with the applicable law during the term hereof.

12. Second party argees to furnish first party a list of its outstanding accounts payable and to furnish first party a report each month of payments made on such accounts. Second party agrees that first party may audit second party's accounts payable, together with any payments made thereon by second party from the funds paid first party to second party, and second party further agrees that first party may audit or cause to be audited, second party's books and accounts. First party shall have the right to pay any creditor or creditors of second party directly and deduct such payments from future payments by first party to second party, pursuant to the terms of this agreement. However, first party shall be under no legal duty or obligation to pay any creditor or creditors of second party.

13. Anything to the contrary notwithstanding it is mutually agreed that first party may, at any time prior to the date it acquires title to the mines and min-

ing claims hereinabove described, reserve the right to cancel and withdraw from this agreement and any lease and option then owned and held by it on said mines and mining claims, provided that all payments required by this agreement and said Lease and Option, have been paid to the date first party elects to cancel and withdraw therefrom. In such event, first party herein covenants and agrees to assign, transfer and set-over unto second party, all of its right, title and interest in and to any Lease and Option then held by it on said mines and mining claims aforesaid, to second party.

14. This agreement shall extend to and be binding upon the successors and assigns of the parties hereto.

15. It is further agreed and understood, however, before any forfeiture can be had hereunder for any neglect, failure or breach by first party, except payment of money second party shall be required to give first party ninety days written notice of such intention to forfeit, pointing out in such notice specifically the grounds and reasons claimed for such right to forfeit hereunder and first party shall have the right during the full period of ninety days after receiving such written notice within which to fully comply with the terms and conditions hereof, and to correct any such neglect, failure or breach, and if it shall fully comply with each and all of the terms and conditions hereof, within the said ninety days, then no forfeiture can be had.

16. It is further agreed that this Agreement shall replace and supersede the preliminary agreement between the

parties hereto, dated October 16, 1950.

17. Time is of the essence of this agreement.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be duly executed by their proper officers hereunto duly authorized, the day and year first above written to duplicate copies, each to be deemed an original.

SHATTUCK DENN MINING CORPORATION,

By S. A. Shattuck

Its Vice President

ATTEST:

A H Bochner Jr

Assistant Secretary

First Party

BLACK CANYON COPPER COMPANY, Inc.

By James W. Copeland Jr.

Its President

ATTEST:

Ben S. Sherman

Secretary

26

STATE OF ARIZONA)
)ss
County of Cochise)

Before me, the undersigned Notary Public in and for said Cochise County, Arizona, on this day personally appeared S. S. Shattuck and R. H. Cochran, Jr. known to me to be the persons whose names are subscribed to the foregoing instrument, as Vice President and Assistant Secretary of the said Shattuck Denn Mining Corporation and acknowledged to me that they executed the same for said corporation for the purpose and consideration therein expressed, as its free act and deed and by each of them voluntarily executed.

Given under my hand and seal of office this 17th day of November, 1950.

Eva Cunningham
NOTARY PUBLIC

My commission expires:
December 8, 1952

STATE OF ARIZONA)
) ss
County of Maricopa)

Before me, the undersigned Notary Public in and for said Maricopa County, Arizona, on this day personally appeared James W. England Jr. and Ben Silverman, known to me to be the persons whose names are subscribed to the foregoing instrument as President and Secretary of the said Black Canyon Copper Company, Inc., and acknowledged to me that they executed the same for said corporation for the purpose and consideration therein expressed, as its free act and deed and by each of them voluntarily executed.

Given under my hand and seal of office this 14th day of November, 1950.

Morris Berst
NOTARY PUBLIC

My Commission Expires:
Feb 25, 1953

LEASE AND OPTION

THIS LEASE and OPTION made and entered into as of the 23rd day of October, 1950, by and between O.W. JUDD and ANNA MAY JUDD, his wife, of Tempe, Arizona, LEWIS ERWIN FOSTER, Sr., and YSABEL C. FOSTER, his wife, of Silver City, New Mexico, and A. W. AMOS, Sr., unmarried, all of Phoenix, Arizona, SLOAN AMOS and ZELLA H. AMOS, his wife, of Phoenix, Arizona, and ALBERT W. AMOS, Jr., and VIRGINIA Jo AMOS, his wife, also of Phoenix, Arizona, hereinafter referred to as "parties of the first part", and SHATTUCK DENN MINING CORPORATION, a DELAWARE Corporation, qualified to do business within the State of Arizona, hereinafter referred to as "the party of the second part",

WITNESSETH:

That for and in consideration of the sum of One ($1.00) Dollar paid by party of the second part to parties of the first part, receipt whereof is acknowledged, and in consideration of the mutual and reciprocal covenants and undertakings of the parties hereto, herein set forth, the parties of the first part do hereby lease unto the party of the second part those certain lode mining claims situated in the Hilltop Mining District, Yavapai County, State of Arizona, towit:

> Buckeye, Skuddoo (sometimes known and designated as the Skiddoo), Marietta and South Extension Marietta (sometimes known and designated as the South East Extension of Marietta), comprising 78.839 acres, more or less, as described in the Patent issued by the United States to Kay Copper Company, dated February 27, 1920, and recorded in Book 40 of Deeds at pages 398

et seq., in the office of the County Recorder of Yavapai County, Arizona; and the April, April No. 1, April No. 2, Diorite, Harriet, and the Skiddoo Fraction, comprising 112.078 acres, more or less, as described in the Patent issued by the United States to the Kay Copper Company, dated May 18, 1925, and recorded in Book 137 of Deeds at Pages 275 et seq., in the office of the County Recorder of Yavapai County, Arizona.

Also any and all other claims or interests therein in said Hilltop Mining District held by the parties of the first part, together with all and singular the mines, minerals, lodes and veins, within the lines of said claims and their dips, spurs and angles, and all mine dumps, water and water rights, fixtures, structures, improvements and other rights, privileges and appurtenances thereunto in anywise belonging, but subject to the provisions of agreement of February 17th, 1947, between L. E. Foster and his wife, Ysabel C. Foster, of Silver City, New Mexico; O.W. Judd and his wife, Anna May Judd, of Tempe, Arizona; and A. W. Amos, Sr. unmarried of Phoenix, Arizona, parties of the first part, and D. J. Albins and his wife, Grace O. Albins of Phoenix, Arizona, parties of the second part.

TO HAVE AND TO HOLD the said leased premises unto the party of the second part for the developing and mining of ores, and minerals of all kinds, with the right to remove, ship, treat, sell and dispose of all ores, and minerals taken therefrom for a term of five years and ten days, commencing on the date hereof and ending at midnight on the 1st day of April, 1955 unless sooner terminated as hereinafter provided.

PARTIES OF THE FIRST PART COVENANT AND AGREE:

1. That they have a good and marketable title to said lode mining claims and properties, free from liens and

encumbrances, except as noted herein above.

That if the party of the second part elects to purchase premises and property as provided hereinafter, the parties of the first part will secure an abstract of title covering said premises from patenting of claims to date of agreement for examination by its attorneys and if upon such examination there be disclosed any defect in the title to said premises which may make it unmarketable, they will take any necessary steps as found advisable to cure such defect.

PARTY OF THE SECOND PART COVENANTS AND AGREES:

That upon all ores and minerals extracted, removed and shipped or milled from said premises under this lease, the party of the second part will pay a royalty of ten (10%) percent of the net smelter returns of all such ore, minerals and concentrates,"net smelter returns" being taken and understood to mean the value of such ores, minerals or concentrates, after deducting therefrom all transportation and smelter charges.

Settlement for royalty shall be made on or before the 20th day of each calendar month, or as soon thereafter as data are available for all lots of ores produced, removed and sampled during the preceding calandar month, by depositing the same in the head office, First National Bank of Arizona, Phoenix, Arizona, to the order and credit of parties of the first part, all of such deposits to be accompanied by a duplicate of smelter settlement returns of said, ores, minerals and concentrates, to be held and delivered to parties of the first part.

2. That while this Lease remains in effect, the party of the second party will have paid, or will pay, on or before each of the following dates, r oyalties amounting in the aggregate to not less than the amount set opposite such date, respectively. Any amounts so paid in excess of royalties payable on production shall be advance royalties and shall be applied against future production, and no royalties upon pro duction shall be paid except to the extent that there shall be a balance due upon production after having applied and credited against the said production of royalties previously paid in advance.

April 1, 1951	$ 7,500.00
April 1, 1952	17,500.00
April 1, 1953	27,500.00
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April 1, 1955	57,500.00

Payments hereunder shall be made by depositing the same in the head office, First National Bank of Arizona, Phoenix, Arizona, to the order and credit of the First parties.

3. That the party of the second part will, upon the execution of this Lease and Option, enter in and upon said premises and every part and parcel thereof, and take possession thereof, and unwater the said mine workings to the extent which may be necessary to carry on exploration and development work and to permit extraction of ore if mining operations are carried on by the party of the second part and therein do continuous mining work and development and extract therefrom ores and minerals under the terms and conditions herein contained, "continuous"

to be taken and understood as no cessation of operations for a period of over fifteen days without the written consent of the parties of the first part. It being understood and agreed that mining work shall consist of mining labor of not less than one hundred twenty shifts of eight hours each in and for each calendar month thereafter until termination or cancellation of agreement for any reason, unless relieved from this provision for a stipulated period by parties of the first part. Mining work to consist of any labor work directly applicable to underground mining.

4. That the party of the second part will, upon entering into possession of the leased premises, forthwith post and thereafter keep posted in conspicuous places at entrances to the property, such notice as may be necessary to adequately notify all persons who may come in or upon the leased premises, that the said leased premises are held by the party of the second part under lease from the parties of the first part and that the party of the second part is liable for all labor performed and supplies and/or materials used by him in and upon said leased premises, and that the party of the second part and not the parties of the first part, will be responsible for any and all debts and expenses incurred in his mining operations within the leased premises, all as may be required by the statutes of the State of Arizona in that behalf.

5. That all exploration, development and mining work conducted in the leased premises shall be carried on in a minerlike fashion, but all work shall at all times be under the sole control of and done in accordance with

the exercise of the discretion and judgment of the party of the second part, as to time, place, method and manner of operation.

6. That the party of the second part will furnish and pay for all labor, power, tools, equipment, powder, timber and other materials and supplies that may be used by the party of the second part in the prosecution of said work and will not allow any claim or lien for any such thing to be effectually made or asserted against the leased premises or against the parties of the first part.

7. That the party of the second part will hold the parties of the first part harmless and fully indemnify them against all claims and demands of any kind or nature which may be made upon them or against the leased premises for or on account of any debt or expense contracted or incurred by the party of the second part, as well as from and against any and all acts, transactions or omissions of the party of the second part, its agent or servants. And the party of the second part, its agents or servants will defend and save the parties of the first part harmless and fully indemnify them as to any liability or asserted liability for or on account of injury to any persons or property sustained during the continuance of this Lease alleged to have resulted from the unsafe condition of the leased premises due to any act or omission of the partyof the second part.

8. That the party of the second part will comply with the provisions of the Workmen's Compensation Act of the State of Arizona, the Unemployment Compensation Act of

the State of Arizona, the Federal Unemployment Tax Act, the Federal Insurance Contributions Act, and other legislation, Federal and State, applicable to the working and operation of said premises, and will make all payments, returns and reports required by such acts.

9. That the party of the second part will pay the ad valorem taxes, which are assessed against said premises or become due during the period this lease remains in effect; and will pay any severance, sales or other taxes assessed on ore milled or shipped to smelter by party of the second part hereunder.

10. That the parties of the first part, or their agent authorized in writing, shall have the right at all reasonable times, when accompanied by a representative of the party of the second part but at the party of the first part's risk, to enter into and upon said premises and workings therein for the purpose of examining and inspecting the same, and ascertaining whether the terms and conditions hereof are being carried out and performed by the party of the second part; and the parties of the first, or their agent authorized in writing, shall at all reasonable times have access to records of production from said premises and such other records as will show compliance on the part of the party of the second part with the provisions of this lease.

11. That the party of the second part will if it elects to abandon lease as herein provided give parties of the first part fifteen (15) days written notice of such election and will during such period keep mine un-

watered to same depth as maintained prior to election of abandonment, until parties of the first part can make adequate arrangements for continuance of pumping operations.

12. That the party of the second part will give parties of the first part in the event of the termination of this Agreement for any cause other than fulfillment of the terms hereof copies of all reports, maps of mine workings, assay maps and drill-logs made up or obtained by it pertaining to said premises.

13. That the party of the second part will give parties of the first part a monthly report of development and production operations for each and every month during continuation of this Lease, not later than the 25th day of the month following the month for which report is made.

14. That the party of the second part shall if it elects to locate additional mining claims adjoining or adjacent to the said premises, locate and record such claims in the names of "parties of the first part" and perform the location work thereon, all of such claims becoming a part of premises covered by this agreement, and, the party of the second part shall during each assessment year during the life of lease, perform upon said mining claims all necessary and required annual labor to hold them and shall record a "Proof of Labor" sustaining such fact on or before June 1st of each assessment year in the proper County Records of Yavapai County, Arizona, unless such assessment work is excused by Act of Congress in which case the party of the second part shall file a proper Exemption Claim for such claims.

AND THE PARTIES MUTUALLY COVENANT AND AGREE:

(A) That time is of the essence of this agreement and should the party of the second part fail to make or

cause to be made the royalty payments as herein provided, or any one or any part of any one of them when and as required hereunder, or should it fail in any other particular to do, keep and perform each, all and every of the terms and conditions hereof and by it to be done, kept and performed, then this agreement of lease and option may, and upon the election of parties of the first part shall be terminated and forfeited, and the option and lease herein and hereby given and granted terminated and ended; and upon any such termination and forfeiture any and all payments made or then due as royalties shall be and remain the property of the parties of the first part clear and free of and from any and all claims thereto by the party of the second part, and shall be taken and considered as full payment and settlement of all rentals for the said property during the whole of the possession and use thereof by the party of the second part hereunder, and in full liquidation of any and all damages for all ores extracted and removed from the said premises under the terms hereof.

(B) It is agreed and understood, however, that before any forfeiture can be had hereunder for any neglect, failure or breach by the party of the second part, the parties of the first part shall be required to give to the party of the second part thirty (30) days written notice of such intention of forfeit, pointing out in such notice specifically the grounds and reasons claimed for such right to forfeit hereunder, and the party of the second part may and shall have the right during the full period of thirty days after receiving such written notice within which to

fully comply with the terms and conditions hereof and to correct any such neglect, failure or breach, and if it shall fully comply with each and all of the terms and conditions hereof within the said thirty days, then no forfeiture can be had; but the provisions of this paragraph shall not apply to any failure to make the payments of royalty earned or otherwise as herein required in paragraph "1" and paragraph "2", no right to any extension of time to make such payments being intended hereby.

(C) That it is expressly understood between the parties hereto, anything herein contained to the contrary notwithstanding that continuance of this Lease is optional with the party of the second part and no penalty shall accrue or be asserted against the party of the second part for failure to perform any of the conditions, terms and agreements hereof, and that the party of the second part may terminate this Lease at any time, and thereupon any liabilities of the party of the second part hereunder shall immediately cease and terminate, except liability on account of any obligation arising out of its mining operations in said premises incurred and owing at the time of such termination, or as specified in paragraph 11.

(D) That in case of the expiration or termination of this Lease for any cause, the party of the second part shall have the right within thirty (30) days from the date hereof, to remove from the premises all tools, equipment, machinery, and other property placed thereon by it, excepting buildings and structures, and ties, rails, pipe and timber in place below the surface.

(E) That if the party of the second part is delayed or interrupted in or prevented from performing its

obligations as herein provided by acts of God, fires, floods, strikes or labor troubles, insurrection or mob violence, injunction, regulations, or order or requirements of Government or other disabling cause beyond its reasonable control, then and in all such cases the party of the second part shall, for the time being, and without liability, be excused from performance of its oblitations as herein provided except for payment of royalties for the period of such prevention, delay or disability, and this Lease and all provisions thereof shall again come into full force and effect immediately upon the termination of the period of prevention, delay or disability resulting from any of the causes aforesaid.

(F) That all notices required to be sent under any provisions of this lease, if given by the parties of the first part, shall be given to, or sent by registered mail to Shattuck Denn Mining Corporation, 120 Broadway, New York 5, N.Y. and if given by party of the second part, it shall be given to, or sent by registered mail to Lewis Erwin Foster, 802 Black Street, Silver City, New Mexico, with copies thereof to the Head Office, First National Bank of Arizona, Phoenix, Arizona, and a copy to A. W. Amos, Sr., Box 299, Rt. 3, Phoenix, Arizona.

(G) It is understood and agreed that the party of the second part shall have the exclusive right at any time prior to midnight of April 1, 1955, providing this Lease is in force, to purchase the above described premises and property for the sum and amount of ONE HUNDRED FIFTY THOUSAND ($150,000.00) dollars, lawful money of the United States of America, all royalty payments made theretofore to apply thereon. Parties of the first part further agree to make, execute and deliver their warranty deed to the above described premises and property, conveying good and marketable

title thereto, to the head office, First National Bank of Arizona, Phoenix, Arizona, as Escrow Agent, with instructions to said Escrow Agent, to deliver said deed to party of the second part upon party of the second part's full compliance with the terms of this agreement and payment to parties of the first part of the sum of ONE HUNDRED FIFTY THOUSAND ($150,000.00) dollars, lawful money of the United States of America, aforesaid, otherwise said bank shall hold said deed subject only to the order of parties of the first part.

(H) That it is further understood and agreed that the party of the second part shall have the right to assign this agreement of lease and option in whole or in part and each and all of the rights, privileges and franchises herein granted to any person, firm or corporation at any time without any further consent on the part of the parties of the first part, provided such assignment shall contain a notation of the legal address of the party or parties to whom agreement is assigned and a certified copy of it is given to or sent by registered mail to parties of the first part for their notification of transfer.

Each and every clause, condition, covenant and agreement of this Lease and Option shall inure to the benefit of and be binding upon the parties hereto, their heirs, executors, administrators and assigns.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands, both to quintuplicate originals hereof, the day and year in this agreement first above written, one of which shall be lodged with said Bank as its escrow instructions for the holding and delivery of the documents

herein mentioned.

O.W. Judd
Anna M. Judd
Louis Ivan Fisher Jr.
Isabel C. Fisher
G.W. Amos Sr.
Sloan Amos
Zella H. Amos
Albert W. Amos Jr.
Virginia J. Amos

First Parties

SHATTUCK DENN MINING CORPORATION,
a Delaware Corporation,

By S. S. Shattuck
Its Vice President

ATTEST:

A.V. Bochringer Jr.
Its assistant Secretary

Second Parties

STATE OF ARIZONA)
) ss
County of Maricopa)

The foregoing Lease and Option was acknowledged before me this 26th day of October 1950, by O. W. Judd and Anna May Judd, his wife.

[illegible]
NOTARY PUBLIC

My commission expires:

_____

STATE OF NEW MEXICO)
) ss
County of Grant)

The foregoing Lease and Option was acknowledged before me this 23rd day of October 1950, by Lewis Erwin Foster, Sr., and Ysabel C. Foster, his wife.

Leola C. Price
NOTARY PUBLIC

My commission expires:

Nov. 3-1952

STATE OF ARIZONA)
) ss
County of Maricopa)

The foregoing Lease and Option was acknowledged before me this 25th day of October 1950, by ~~A. W. Amos, Sr.~~, unmarried, Sloan Amos and Zella H. Amos, his wife, and Albert W. Amos, Jr., and Virginia Amos, his wife.

Ralph A. Phillips
NOTARY PUBLIC

My commission expires:

June 23-1951

STATE OF Arizona)
) ss
County of Cochise)

Before me, the undersigned Notary Public in and for said County and State, on this day personally appeared S. S. Shattuck and R. H. Cochran Jr. known to me to be the persons whose names are subscribed to the foregoing instrument, as Vice President and Assistant Secretary respectively of the said Shattuck Denn Mining Corporation, a Delaware Corporation, and acknowledged to me that they executed the same for said corporation for the purpose and consideration therein expressed, as its free act and deed and by each of them voluntarily executed.

Given under my hand and seal of office this 17th day of November 1950.

Eva Cunningham
NOTARY PUBLIC

My commission expires:

December 8, 1952

STATE OF ARIZONA)
County of Maricopa) ss.

The foregoing Lease and Option was acknowledged before me this 14th day of November, 1950, by A. W. AMOS, SR., unmarried.

Morris L. Gerst
MORRIS L. GERST, Notary Public

My Commission Expires
February 25, 1953.

KNOW ALL MEN BY THESE PRESENTS: That in consideration of the execution of the foregoing Lease and Option by the parties of the first part therein named, the undersigned JAMES W. ENGLAND, JR. and BLACK CANYON COPPER CO., INC., an Arizona corporation, do hereby consent to the execution of said agreement in favor of Chattuck Lenn Mining Corporation, a Delaware corporation, and agree that upon the full execution and delivery of the foregoing Lease and Option that all agreements between said parties of the first part and the undersigned covering the Kay Copper Mine shall thereupon be cancelled and terminated; otherwise to remain in full force and effect. Said agreements between the said parties of the first part, or some of them, and the undersigned are more specifically Lease and Option of February 19, 1949 in favor of James W. England, Jr., which was assigned by him to Black Canyon Copper Co., Inc. on July 5, 1949, and amendments of February 10, 1950 and June 1, 1950, between said parties of the first part and Black Canyon Copper Co., Inc.

IN WITNESS WHEREOF, the said James W. England, Jr. has hereunto set his hand and said Black Canyon Copper Co., Inc. has caused these presents to be executed by its proper officials and its corporate seal affixed, as of this 23rd day of October, 1950.

James W. England Jr.
James W. England, Jr.

BLACK CANYON COPPER CO., INC.

By James W. England Jr.
President

ATTEST:

Dew Silverman
Secretary

STATE OF NEW MEXICO,)
: SS.
County of Grant.)

On this 23rd day of October, A. D. 1950, before me personally appeared James W. England, Jr., to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year in this certificate first written.

Ben Chanty
Notary Public

My Commission expires: 10-2-54

STATE OF ARIZONA,)
: SS.
County of Maricopa.)

On this 24th day of October, A. D. 1950, before me appeared James W. England Jr. to me personally known, who, being by me duly sworn, did say: that he is the President of the Black Canyon Copper Co., Inc., a corporation described in and a party to the foregoing instrument; that the seal affixed to said instrument is the corporate seal of said corporation; that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and the said James W. England Jr. acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal, the day and year in this certificate first written.

Naomi [illegible]
Notary Public

My Commission expires:
Feb 25, 1953

359

INDEXED

COMPARED

CERTIFIED

PAGED

Filed and recorded at request of

McDaniel Franklin Woods

Jan 17 A. D. 1951

at 3:25 o'clock P. M.

Book 117 Leases

Pages 25 - 28

Records of Yavapai County, Arizona

Grace Chapman

County Recorder

By Dorothy M. Evans

Deputy Recorder

915

SHATTUCK DENN MINING CORPORATION
120 BROADWAY
NEW YORK 5, N. Y.

MO-5, FORM MF-103
KAY COPPER MINE
COPIES OF LEASES.

LEASE AND OPTION

THIS LEASE and OPTION made and entered into as of the 23rd day of October, 1950, by and between O.W. JUDD and ANNA MAY JUDD, his wife, of Tempe, Arizona, LEWIS ERWIN FOSTER, Sr., and YSABEL C. FOSTER, his wife, of Silver City, New Mexico, and A. W. AMOS, Sr., unmarried, all of Phoenix, Arizona, SLOAN AMOS and ZELLA H. AMOS, his wife, of Phoenix, Arizona, and ALBERT W. AMOS, Jr., and VIRGINIA J. AMOS, his wife, also of Phoenix, Arizona, hereinafter referred to as "parties of the first part", and SHATTUCK DENN MINING CORPORATION, a DELAWARE Corporation, qualified to do business within the State of Arizona, hereinafter referred to as "the party of the second part",

WITNESSETH:

That for and in consideration of the sum of One ($1.00) Dollar paid by party of the second part to parties of the first part, receipt whereof is acknowledged, and in consideration of the mutual and reciprocal covenants and undertakings of the parties hereto, herein set forth, the parties of the first part do hereby lease unto the party of the second part those certain lode mining claims situated in the Hilltop Mining District, Yavapai County, State of Arizona, towit:

> Buckeye, Skuddoo (sometimes known and designated as the Skiddoo), Marietta and South Extension Marietta (sometimes known and designated as the South East Extension of Marietta), comprising 78.839 acres, more or less, as described in the Patent issued by the United States to Kay Copper Company, dated February 27, 1920, and recorded in Book 40 of Deeds at pages 398

et seq., in the office of the County Recorder of Yavapai County, Arizona; and the April, April No. 1, April No. 2, Diorite, Harriet, and the Skiddoo Fraction, comprising 112.078 acres, more or less, as described in the Patent issued by the United States to the Kay Copper Company, dated May 18, 1925, and recorded in Book 137 of Deeds at Pages 275 et seq., in the office of the County Recorder of Yavapai County, Arizona.

Also any and all other claims or interests therein in said Hilltop Mining District held by the parties of the first part, together with all and singular the mines, minerals, lodes and veins, within the lines of said claims and their dips, spurs and angles, and all mine dumps, water and water rights, fixtures, structures, improvements and other rights, privileges and appurtenances thereunto in anywise belonging, but subject to the provisions of agreement of February 17th, 1947, between L. E. Foster and his wife, Ysabel C. Foster, of Silver City, New Mexico; O.W. Judd and his wife, Anna May Judd, of Tempe, Arizona; and A. W. Amos, Sr. unmarried of Phoenix, Arizona, parties of the first part, and D. J. Albins and his wife, Grace O. Albins of Phoenix, Arizona, parties of the second part.

TO HAVE AND TO HOLD the said leased premises unto the party of the second part for the developing and mining of ores, and minerals of all kinds, with the right to remove, ship, treat, sell and dispose of all ores, and minerals taken therefrom for a term of five years and ten days, commencing on the date hereof and ending at midnight on the 1st day of April, 1955 unless sooner terminated as hereinafter provided.

PARTIES OF THE FIRST PART COVENANT AND AGREE:

1. That they have a good and marketable title to said lode mining claims and properties, free from liens and

encumbrances, except as noted herein above.

That if the party of the second part elects to purchase premises and property as provided hereinafter, the parties of the first part will secure an abstract of title covering said premises from patenting of claims to date of agreement for examination by its attorneys and if upon such examination there be disclosed any defect in the title to said premises which may make it unmarketable, they will take any necessary steps as found advisable to cure such defect.

PARTY OF THE SECOND PART COVENANTS AND AGREES:

That upon all ores and minerals extracted, removed and shipped or milled from said premises under this lease, the party of the second part will pay a royalty of ten (10%) percent of the net smelter returns of all such ore, minerals and concentrates,"net smelter returns" being taken and understood to mean the value of such ores, minerals or concentrates, after deducting therefrom all transportation and smelter charges.

Settlement for royalty shall be made on or before the 20th day of each calendar month, or as soon thereafter as data are available for all lots of ores produced, removed and sampled during the preceding calandar month, by depositing the same in the head office, First National Bank of Arizona, Phoenix, Arizona, to the order and credit of parties of the first part, all of such deposits to be accompanied by a duplicate of smelter settlement returns of said, ores, minerals and concentrates, to be held and delivered to parties of the first part.

2. That while this Lease remains in effect, the party of the second party will have paid, or will pay, on or before each of the following dates, royalties amounting in the aggregate to not less than the amount set opposite such date, respectively. Any amounts so paid in excess of royalties payable on production shall be advance royalties and shall be applied against future production, and no royalties upon production shall be paid except to the extent that there shall be a balance due upon production after having applied and credited against the said production of royalties previously paid in advance.

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3. That the party of the second part will, upon the execution of this Lease and Option, enter in and upon said premises and every part and parcel thereof, and take possession thereof, and unwater the said mine workings to the extent which may be necessary to carry on exploration and development work and to permit extraction of ore if mining operations are carried on by the party of the second part and therein do continuous mining work and development and extract therefrom ores and minerals under the terms and conditions herein contained, "continuous"

to be taken and understood as no cessation of operations for a period of over fifteen days without the written consent of the parties of the first part. It being understood and agreed that mining work shall consist of mining labor of not less than one hundred twenty shifts of eight hours each in and for each calendar month thereafter until termination or cancellation of agreement for any reason, unless relieved from this provision for a stipulated period by parties of the first part. Mining work to consist of any labor work directly applicable to underground mining.

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the exercise of the discretion and judgment of the party of the second part, as to time, place, method and manner of operation.

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7. That the party of the second part will hold the parties of the first part harmless and fully indemnify them against all claims and demands of any kind or nature which may be made upon them or against the leased premises for or on account of any debt or expense contracted or incurred by the party of the second part, as well as from and against any and all acts, transactions or omissions of the party of the second part, its agent or servants. And the party of the second part, its agents or servants will defend and save the parties of the first part harmless and fully indemnify them as to any liability or asserted liability for or on account of injury to any persons or property sustained during the continuance of this Lease alleged to have resulted from the unsafe condition of the leased premises due to any act or omission of the partyof the second part.

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12. That the party of the second part will give parties of the first part in the event of the termination of this Agreement for any cause other than fulfillment of the terms hereof copies of all reports, maps of mine workings, assay maps and drill-logs made up or obtained by it pertaining to said premises.

13. That the party of the second part will give parties of the first part a monthly report of development and production operations for each and every month during continuation of this Lease, not later than the 25th day of the month following the month for which report is made.

14. That the party of the second part shall if it elects to locate additional mining claims adjoining or adjacent to the said premises, locate and record such claims in the names of "parties of the first part" and perform the location work thereon, all of such claims becoming a part of premises covered by this agreement, and, the party of the second part shall during each assessment year during the life of lease, perform upon said mining claims all necessary and required annual labor to hold them and shall record a "Proof of Labor" sustaining such fact on or before June 1st of each assessment year in the proper County Records of Yavapai County, Arizona, unless such assessment work is excused by Act of Congress in which case the party of second part shall file a proper Exemption Claim for [illegible] claims.

AND THE PARTIES MUTUALLY COVENANT AND AGREE

(A) That time is of the essence of this agreement and should the party of the second part fail to make or

cause to be made the royalty payments as herein provided, or any one or any part of any one of them when and as required hereunder, or should it fail in any other particular to do, keep and perform each, all and every of the terms and conditions hereof and by it to be done, kept and performed, then this agreement of lease and option may, and upon the election of parties of the first part shall be terminated and forfeited, and the option and lease herein and hereby given and granted terminated and ended; and upon any such termination and forfeiture any and all payments made or then due as royalties shall be and remain the property of the parties of the first part clear and free of and from any and all claims thereto by the party of the second part, and shall be taken and considered as full payment and settlement of all rentals for the said property during the whole of the possession and use thereof by the party of the second part hereunder, and in full liquidation of any and all damages for all ores extracted and removed from the said premises under the terms hereof.

(B) It is agreed and understood, however, that before any forfeiture can be had hereunder for any neglect, failure or breach by the party of the second part, the parties of the first part shall be required to give to the party of the second part thirty (30) days written notice of such intention of forfeit, pointing out in such notice specifically the grounds and reasons claimed for such right to forfeit hereunder, and the party of the second part may and shall have the right during the full period of thirty days after receiving such written notice within which to

fully comply with the terms and conditions hereof and to correct any such neglect, failure or breach, and if it shall fully comply with each and all of the terms and conditions hereof within the said thirty days, then no forfeiture can be had; but the provisions of this paragraph shall not apply to any failure to make the payments of royalty earned or otherwise as herein required in paragraph "1" and paragraph "2", no right to any extension of time to make such payments being intended hereby.

(C) That it is expressly understood between the parties hereto, anything herein contained to the contrary notwithstanding that continuance of this Lease is optional with the party of the second part and no penalty shall accrue or be asserted against the party of the second part for failure to perform any of the conditions, terms and agreements hereof, and that the party of the second part may terminate this Lease at any time, and thereupon any liabilities of the party of the second part hereunder shall immediately cease and terminate, except liability on account of any obligation arising out of its mining operations in said premises incurred and owing at the time of such termination, or as specified in paragraph 11.

(D) That in case of the expiration or termination of this Lease for any cause, the party of the second part shall have the right within thirty (30) days from the date hereof, to remove from the premises all tools, equipment, machinery, and other property placed thereon by it, excepting buildings and structures, and ties, rails, pipe and timber in place below the surface.

(E) That if the party of the second part is delayed or interrupted in or prevented from performing its

obligations as herein provided by acts of God, fires, floods, strikes or labor troubles, insurrection or mob violence, injunction, regulations, or order or requirements of Government or other disabling cause beyond its reasonable control, then and in all such cases the party of the second part shall, for the time being, and without liability, be excused from performance of its oblitations as herein provided except for payment of royalties for the period of such prevention, delay or disability, and this Lease and all provisions thereof shall again come into full force and effect immediately upon the termination of the period of prevention, delay or disability resulting from any of the causes aforesaid.

(F) That all notices required to be sent under any provisions of this lease, if given by the parties of the first part, shall be given to, or sent by registered mail to Shattuck Denn Mining Corporation, 120 Broadway, New York 5, N.Y. and if given by party of the second part, it shall be given to, or sent by registered mail to Lewis Erwin Foster, 802 Black Street, Silver City, New Mexico, with copies thereof to the Head Office, First National Bank of Arizona, Phoenix, Arizona, and a copy to A. W. Amos, Sr., Box 299, Rt. 3, Phoenix, Arizona.

(G) It is understood and agreed that the party of the second part shall have the exclusive right at any time prior to midnight of April 1, 1955, providing this Lease is in force, to purchase the above described premises and property for the sum and amount of ONE HUNDRED FIFTY THOUSAND ($150,000.00) dollars, lawful money of the United States of America, all royalty payments made theretofore to apply thereon. Parties of the first part further agree to make, execute and deliver their warranty deed to the above described premises and property, conveying good and marketable

title thereto, to the head office, First National Bank of Arizona, Phoenix, Arizona, as Escrow Agent, with instructions to said Escrow Agent, to deliver said deed to party of the second part upon party of the second part's full compliance with the terms of this agreement and payment to parties of the first part of the sum of ONE HUNDRED FIFTY THOUSAND ($150,000.00) dollars, lawful money of the United States of America, aforesaid, otherwise said bank shall hold said deed subject only to the order of parties of the first part.

(H) That it is further understood and agreed that the party of the second part shall have the right to assign this agreement of lease and option in whole or in part and each and all of the rights, privileges and franchises herein granted to any person, firm or corporation at any time without any further consent on the part of the parties of the first part, provided such assignment shall contain a notation of the legal address of the party or parties to whom agreement is assigned and a certified copy of it is given to or sent by registered mail to parties of the first part for their notification of transfer.

Each and every clause, condition, covenant and agreement of this Lease and Option shall inure to the benefit of and be binding upon the parties hereto, their heirs, executors, administrators and assigns.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands, both to quintuplicate originals hereof, the day and year in this agreement first above written, one of which shall be lodged with said Bank as its escrow instructions for the holding and delivery of the documents

herein mentioned.

O.W. Judd

Anna M. Judd

Lois Ann Foster

Yabel C. Foster

G.W. Amos Sr

Sloan Amos

Zella H. Amos

Gilbert W. Amos Jr.

Virginia J. Amos

First Parties

SHATTUCK DENN MINING CORPORATION,
a Delaware Corporation,

By S. D. Shattuck
Its Vice President

ATTEST:

A.H. Bochringer Jr.
Its assistant Secretary

Second Parties

STATE OF ARIZONA)
) ss
County of Maricopa)

The foregoing Lease and Option was acknowledged before me this 25th day of October 1950, by O. W. Judd and Anna May Judd, his wife.

Ina A. Smith
NOTARY PUBLIC

My commission expires:

_____

STATE OF NEW MEXICO)
) ss
County of Grant)

The foregoing Lease and Option was acknowledged before me this 23rd day of October 1950, by Lewis Erwin Foster, Sr., and Ysabel C. Foster, his wife.

Leola C. Price
NOTARY PUBLIC

My commission expires:

Nov. 3-1952

STATE OF ARIZONA)
) ss
County of Maricopa)

The foregoing Lease and Option was acknowledged before me this 25th day of October 1950, by ~~A. W. Amos, Sr.~~, unmarried, Sloan Amos and Lucia H. Amos, his wife, and Albert W. Amos, Jr., and Virginia J. Amos, his wife.

Ralph A. Phillips
NOTARY PUBLIC

My commission expires:

June 23-1951

STATE OF Arizona)
) ss
County of Cochise)

Before me, the undersigned Notary Public in and for said County and State, on this day personally appeared S. S. Shattuck and R. H. Cochran Jr. known to me to be the persons whose names are subscribed to the foregoing instrument, as Vice President and Assistant Secretary respectively of the said Shattuck Denn Mining Corporation, a Delaware Corporation, and acknowledged to me that they executed the same for said corporation for the purpose and consideration therein expressed, as its free act and deed and by each of them voluntarily executed.

Given under my hand and seal of office this 17th day of November 1950.

Eva Cunningham
NOTARY PUBLIC

My commission expires:

December 8, 1952

STATE OF ARIZONA)
) ss.
County of Maricopa)

The foregoing Lease and Option was acknowledged before me this 14th day of November, 1950, by A. W. AMOS, SR., unmarried.

MORRIS L. GERST, Notary Public

My Commission Expires
February 25, 1953.

KNOW ALL MEN BY THESE PRESENTS: That in consideration of the execution of the foregoing Lease and Option by the parties of the first part therein named, the undersigned JAMES W. ENGLAND, JR. and BLACK CANYON COPPER CO., INC., an Arizona corporation, do hereby consent to the execution of said agreement in favor of Shattuck Denn Mining Corporation, a Delaware corporation, and agree that upon the full execution and delivery of the foregoing Lease and Option that all agreements between said parties of the first part and the undersigned covering the Kay Copper Mine shall thereupon be cancelled and terminated; otherwise to remain in full force and effect. Said agreements between the said parties of the first part, or some of them, and the undersigned are more specifically Lease and Option of February 19, 1949 in favor of James W. England, Jr., which was assigned by him to Black Canyon Copper Co., Inc. on July 5, 1949, and amendments of February 10, 1950 and June 1, 1950, between said parties of the first part and Black Canyon Copper Co., Inc.

IN WITNESS WHEREOF, the said James W. England, Jr. has hereunto set his hand and said Black Canyon Copper Co., Inc. has caused these presents to be executed by its proper officials and its corporate seal affixed, as of this 23rd day of October, 1950.

James W. England Jr.
James W. England, Jr.

BLACK CANYON COPPER CO., INC.

By James W. England Jr.
President

ATTEST:

Ben Sherman
Secretary

STATE OF NEW MEXICO,)
: SS.
County of Grant.)

On this 23rd day of October, A. D. 1950, before me personally appeared James W. England, Jr., to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year in this certificate first written.

Ben Chantz
Notary Public

My Commission expires: 10-2-54

STATE OF ARIZONA,)
: SS.
County of Maricopa.)

On this 24th day of October, A. D. 1950, before me appeared James W. England Jr. to me personally known, who, being by me duly sworn, did say: that he is the President of the Black Canyon Copper Co., Inc., a corporation described in and a party to the foregoing instrument; that the seal affixed to said instrument is the corporate seal of said corporation; that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and the said James W. England Jr. acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal, the day and year in this certificate first written.

Morris B. Grant
Notary Public

My Commission expires:
Feb 25, 1953

359

INDEXED

COPIED

COMPARED

PAGED

Filed and recorded at request of

McDaniel Fowler & Powell

Jan 17 A. D. 1951

at 3:25 o'clock P. M.

Book 117 Leases

Pages 25 - 28

Records of Navajo County, Arizona

Grace Chapman

County Recorder

By Dorothy M. Evans

Deputy Recorder

915

A G R E E M E N T

THIS AGREEMENT, made this 14th day of November, 1950, by and between SHATTUCK DENN MINING CORPORATION, a Delaware Corporation, authorized to transact business within the State of Arizona, hereinafter called "First Party" and BLACK CANYON COPPER COMPANY, Inc., an Arizona corporation, hereinafter called "Second party,"

W I T N E S S E T H:

WHEREAS, second party is lessee and optionee from O. W. Judd and Anna May Judd, his wife, of Tempe, Arizona; Lewis Erwin Foster, Sr., and Ysabel C. Foster, his wife, of Silver City, New Mexico; A. W. Amos, Sr., an unmarried man, of Phoenix, Arizona, Sloan Amos and wife, and Albert W. Amos Jr., and wife, as lessors and optionors, of certain patented lode mining claims situate in the Hilltop Mining District, Yavapai County, Arizona, commonly known as "Kay Mine", the United States patents for said property being of record in Book 40 of Deeds, at pages 398 et seq. and in book 137 of Deeds, at page 275 et seq. in the office of the County Recorder of Yavapai County, Arizona, to which reference is hereby made, and

WHEREAS, said lease and option aforesaid, is dated as of February 19, 1949 and contains the terms,conditions and provisions of the agreement aforesaid, and

WHEREAS, first party is desirous of securing all of second party's right, title and interest in and to said mining claims and said lease and option, aforesaid, and

WHEREAS, a preliminary agreement between the parties hereto was made and entered into on the 16th day

of October, 1950.

NOW, THEREFORE, for and in consideration of the sum of TEN ($10.00) dollars, each in hand paid to the other, the receipt whereof being hereby acknowledged, and the faithful and punctual performance of the covenants and agreements hereinafter set forth, IT IS AGREED:

1. Second party does hereby give and grant unto first party the exclusive option to acquire all of second party's right, title and interest, in and to the above described Lease and Option dated February 19, 1949, and all of second party's right, title and interest in and to the mines and mining claims therein and hereinabove described, and all of second party's mining machinery, equipment and supplies situate in and upon said mines and mining claims to, and including January 1, 1951.

2. In consideration of the foregoing option, first party hereby agrees to pay second party, subject to the terms and conditions hereinafter set forth, the following sums of money at or before the following dates, towit:

(a) $2500.00, the receipt whereof being acknowledged hereby, and acknowledged in that certain preliminary agreement dated October 16, 1950, and

(b) $1500.00 on or before November 15, 1950, and

(c) $1000.00 on or before December 15, 1950.

3. Second party covenants and agrees to use said funds set forth in paragraph 2 above, for the purpose of maintaining said mining claims unwatered to its approximate present water level, at its own cost and expense, and to use any balance thereafter for the payment of its outstanding

debts and obligations.

4. First party agrees to notify and advise second party on or before December 31, 1950, whether or not it intends to commence the exploration of said mines and mining claims to determine if possible, the existence of sufficient ore reserves, in its sole discretion, to warrant mining operations in and upon said mines and mining claims on a commercial basis. In the event such notice is given, thereafter first party will assume and hereby agrees to pay all costs of such exploration and the cost of maintaining and operating said mines and mining claims.

5. In the event first party elects as aforesaid, to commence exploratory work, it further agrees to pay to second party the following sums of money on or before the following dates, towit:

(a) $3000.00 on or before January 15, 1951, and

(b) $1000.00 on or before the 15th day of each succeeding month during the year 1951.

Second party covenants and agrees that all such payments aforesaid will be applied by it to the payment of its outstanding accounts payable, until the same are paid in full. In the event first party elects to explore said property as aforesaid, and give said notice to second party, as aforesaid, second party covenants and agrees that thereafter it will incur no debts or obligations in any way applicable to or in connection with, or arising out of, the operation and maintenance of said mines and mining claims.

6. In the event first party, in its sole discretion, elects to commence mining operations in and upon the above described property, first party covenants and agrees to pay second party on or before January 15, 1952, the difference between the payments hereinabove set forth, and the sum of $55,000.00, in cash.

7. In the event first party elects to commence the mining and operation of said mines and mining claims, it agrees to pay to second party, an over-riding royalty of 2½% of the net smelter returns of all ores, minerals and concentrates removed and shipped by it from the hereinabove described property until the full purchase price as set forth in said Lease and Option dated February 19,1949, hereinabove described, has been paid in full to the owners of said mines and mining claims, "Net smelter returns" being taken and understood to mean the value of such ore, minerals and concentrates after deducting therefrom all transportation and smelting charges. Such over-riding royalty payments shall be made at the time and in the manner as set forth in said Lease and Option, dated as of February 19, 1949, hereinabove described.

In the event first party herein acquires title to, and becomes the owner of, said mines and mining claims, it further covenants and agrees to pay second party a royalty of 5% from the date first party acquires title to such mines and mining claims, for a period of 5 years thereafter. Such 5% royalty shall be computed and payable as hereinabove set forth.

8. Second party covenants and agrees to exert its best endeavors to cause the execution and delivery of a

new lease and option from the owners of the hereinabove described mines and mining claims to first party herein as lessee and optionee, in substantially the same form and with substantially the same terms and conditions as said Lease and Option dated as of February 19, 1949, as amended, except that no minimum payments shall be required or due by said new Lease and Option, prior to April 1, 1951. It is further understood and agreed, that in the event said new or substituted lease is procured by second party directly from the owners of said mines and mining claims to first party, that such Lease and Option will replace and be considered in this agreement in lieu of the Lease and Option aforesaid, dated as of February 19, 1949, as amended.

9. In the event second party is unable to secure such new lease and option as provided in paragraph 8 herein, second party agrees to assign, and does hereby and by these presents, assign, transfer and set-over, all of its right, title and interest in and to that certain Lease and Option aforesaid, dated as of February 19, 1949, together with amendments thereto, to first party. First party reserves the right, however, to require such other and further assignment or other instruments as may be reasonably necessary in the opinion of its counsel.

10. The parties hereto agree to make, execute and deliver, one to the other, upon demand, all instruments necessary to effect the meaning and intent of this agreement, and said preliminary agreement of October 16, 1950.

11. It is further agreed that second party may cause itself to be dissolved as provided by law and its stockholders

be substituted herein for second party, provided such stockholders do not exceed five in number and provided further, said stockholders succeed to all right, title and interest of second party and be subject to all second party's duties and obligations. Such dissolution shall be subject to examination by counsel for first party as to form, purpose and effect, and in the event counsel for first party is of the opinion that such dissolution cannot be effected without serious impairment of first party's rights herein, then, in that event, second party agrees to cause itself to remain a corporation in full force and effect and in compliance with the applicable law during the term hereof.

12. Second party argees to furnish first party a list of its outstanding accounts payable and to furnish first party a report each month of payments made on such accounts. Second party agrees that first party may audit second party's accounts payable, together with any payments made thereon by second party from the funds paid first party to second party, and second party further agrees that first party may audit or cause to be audited, second party's books and accounts. First party shall have the right to pay any creditor or creditors of second party directly and deduct such payments from future payments by first party to second party, pursuant to the terms of this agreement. However, first party shall be under no legal duty or obligation to pay any creditor or creditors of second party.

13. Anything to the contrary notwithstanding it is mutually agreed that first party may, at any time prior to the date it acquires title to the mines and min-

ing claims hereinabove described, reserve the right to cancel and withdraw from this agreement and any lease and option then owned and held by it on said mines and mining claims, provided that all payments required by this agreement and said Lease and Option, have been paid to the date first party elects to cancel and withdraw therefrom. In such event, first party herein covenants and agrees to assign, transfer and set-over unto second party, all of its right, title and interest in and to any Lease and Option then held by it on said mines and mining claims aforesaid, to second party.

14. This agreement shall extend to and be binding upon the successors and assigns of the parties hereto.

15. It is further agreed and understood, however, before any forfeiture can be had hereunder for any neglect, failure or breach by first party, except payment of money second party shall be required to give first party ninety days written notice of such intention to forfeit, pointing out in such notice specifically the grounds and reasons claimed for such right to forfeit hereunder and first party shall have the right during the full period of ninety days after receiving such written notice within which to fully comply with the terms and conditions hereof, and to correct any such neglect, failure or breach, and if it shall fully comply with each and all of the terms and conditions hereof, within the said ninety days, then no forfeiture can be had.

16. It is further agreed that this Agreement shall replace and supersede the preliminary agreement between the

parties hereto, dated October 16, 1950.

17. Time is of the essence of this agreement.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be duly executed by their proper officers hereunto duly authorized, the day and year first above written to duplicate copies, each to be deemed an original.

SHATTUCK DENN MINING CORPORATION,

By S. D. Shattuck
Its Vice President

ATTEST:

A H Bochner Jr
Assistant Secretary

First Party

BLACK CANYON COPPER COMPANY, Inc.

By James W. England Jr.
Its President

ATTEST:

Ben S. Sperman
Secretary

26

STATE OF ARIZONA)
)ss
County of Cochise)

Before me, the undersigned Notary Public in and for said Cochise County, Arizona, on this day personally appeared S. S. Shattuck and R. H. Cochran, Jr. known to me to be the persons whose names are subscribed to the foregoing instrument, as Vice President and Assistant Secretary of the said Shattuck Denn Mining Corporation and acknowledged to me that they executed the same for said corporation for the purpose and consideration therein expressed, as its free act and deed and by each of them voluntarily executed.

Given under my hand and seal of office this 17th day of November, 1950.

Eva Cunningham
NOTARY PUBLIC

My commission expires:
December 8, 1952

STATE OF ARIZONA)
) ss
County of Maricopa)

Before me, the undersigned Notary Public in and for said Maricopa County, Arizona, on this day personally appeared James W. England Jr. and Ben Silverman, known to me to be the persons whose names are subscribed to the foregoing instrument as President and Secretary of the said Black Canyon Copper Company, Inc., and acknowledged to me that they executed the same for said corporation for the purpose and consideration therein expressed, as its free act and deed and by each of them voluntarily executed.

Given under my hand and seal of office this 14th day of November, 1950.

Morris L. Berst
NOTARY PUBLIC

My Commission Expires:
Feb 25, 1953

27

SHATTUCK DENN MINING CORPORATION
120 BROADWAY
NEW YORK 5, N. Y.

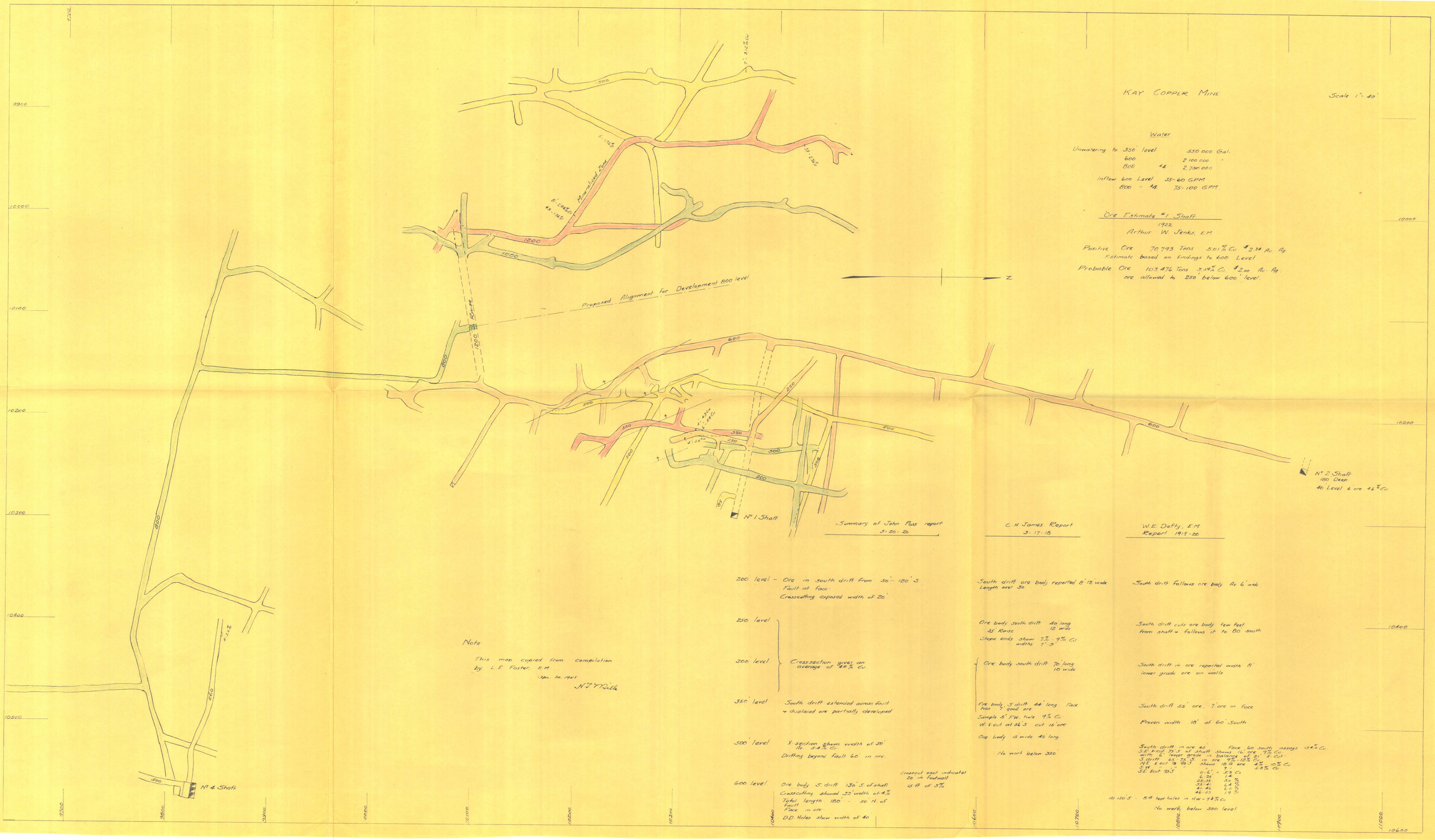
MO-5- FORM MF-103
KAY COPPER MARS

Set #3

Page 1 of 7

KAY COPPER MINE

Scale 1" = 40'



Water

Unwatering to 350' level		550 000 Gal.
600		2 100 000 "
800	"	2 750 000

Inflow 600 Level 35-60 GPM
800 " " 75-100 GPM

Ore Estimate #1 Shaft

1922
Arthur W. Jenks, E.M.

Positive Ore 70 793 Tons 5.01% Cu $3.34 Au. Ag.
Estimate based on findings to 600 Level

Probable Ore 103 476 Tons 3.89% Cu. $2.00 Au. Ag.
ore allowed to 250 below 600' level.

Summary of John Foss report 3-20-26

200' level – Ore in south drift from 30' – 120' S
Fault at face.
Crosscutting exposed width of 26'

250' level
300' level } Crosssection gives an average of 4.8% Cu

350' level South drift extended across fault + displaced ore partially developed

500' level X section shows width of 30' Av. 4.4% Cu.
Drifting beyond Fault 60' in ore.

600' level Ore body S drift 130' S of shaft
Crosscutting showed 32' width of 4%
Total length 180' – so N of Fault
Face in ore.
D.D. Holes show width of 40'

Crosscut east indicates 26' in footwall
15 ft of 3%

C. H. James Report 3-17-18

South drift ore body reported 8'-12' wide
Length over 30'

Ore body south drift 40' long
12' wide
25' Raise
Stope ends show 7% – 9% Cu
widths 7'-9'

Ore body south drift 70' long
10' wide

Ore body S drift 44' long. Face has 7' good ore
Sample 5' F.W. hole 9% Cu
W. X cut at 56' S cut 16' ore

Ore body is wide 45' long

No work below 350'

W.E. Dotty, E.M. Report 1918-20

South drift follows ore body Av 6' wide

South drift cuts ore body few feet from shaft + follows it to 80' south

South drift in ore reported width 8'
lower grade ore on walls

South drift 55' ore, 7' ore in face

Proven width 18' at 60' South

South drift in ore 45' Face 60' south assays 15½% Cu.
S.E. X cut 75' S of shaft shows 16' ore – 9% Cu.
with 6' lower grade in balance of 21' X cut.
S. drift 65' 75' S in ore 9% – 12% Cu.
N.E. X cut @ 90' S shows 18 ft ore 4% 10% Cu
S.W. " " " " 5.8% Cu
S.E. X cut 75' S

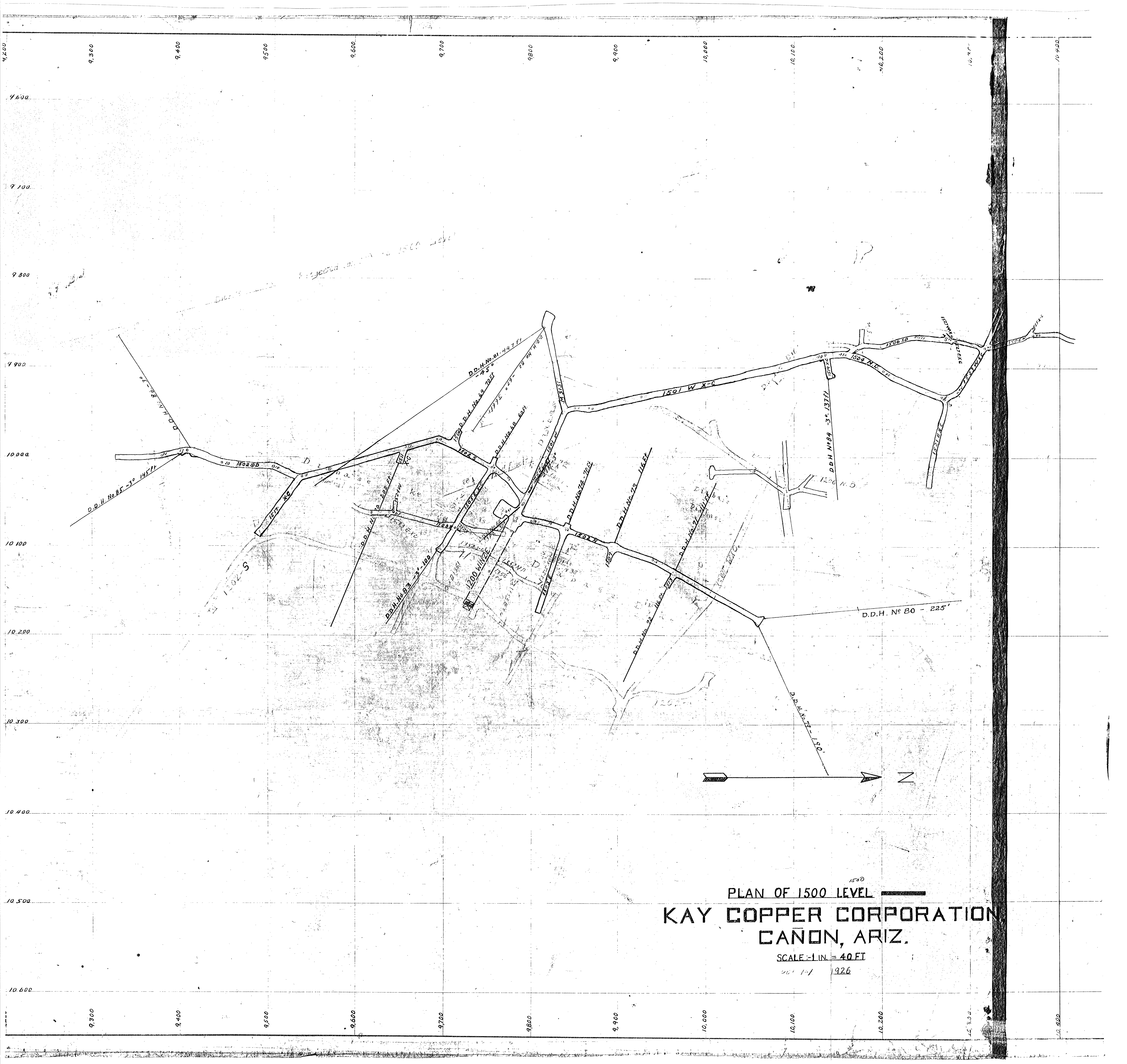
0-6'	.53 Cu
6-25	1.2
25-35	3.0 %
35-41	6.4 %
41-46	6.0 %
46-53	1.9 %

At 150' S – 18 ft test holes in HW – 9½% Cu.

No work below 500 level

Note

This map copied from compilation by L.E. Foster, E.M.
Apr. 20, 1921
N.T. Rich



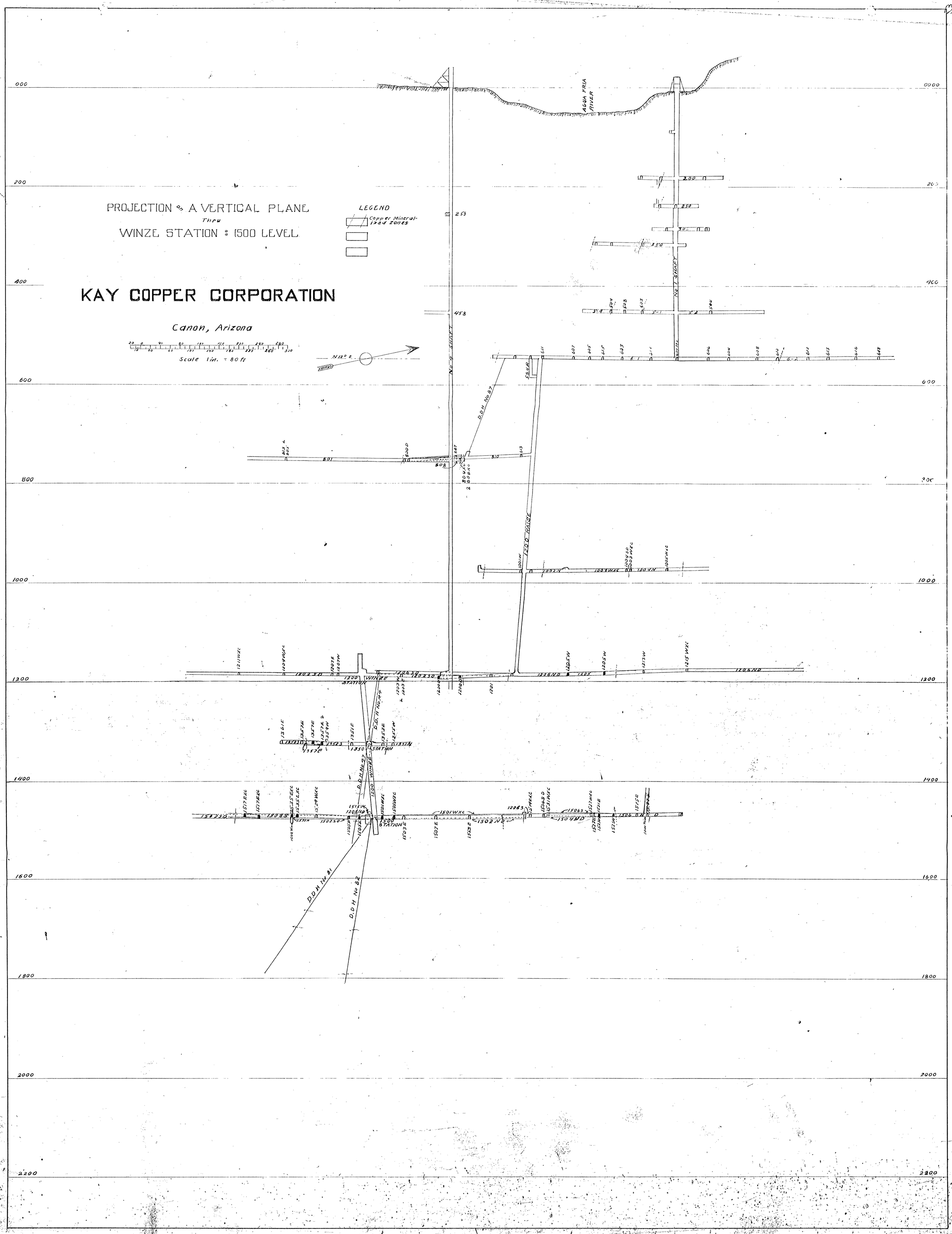
PLAN OF 1500 LEVEL

KAY COPPER CORPORATION,
CAÑON, ARIZ.

SCALE:-1 IN. = 40 FT

1926

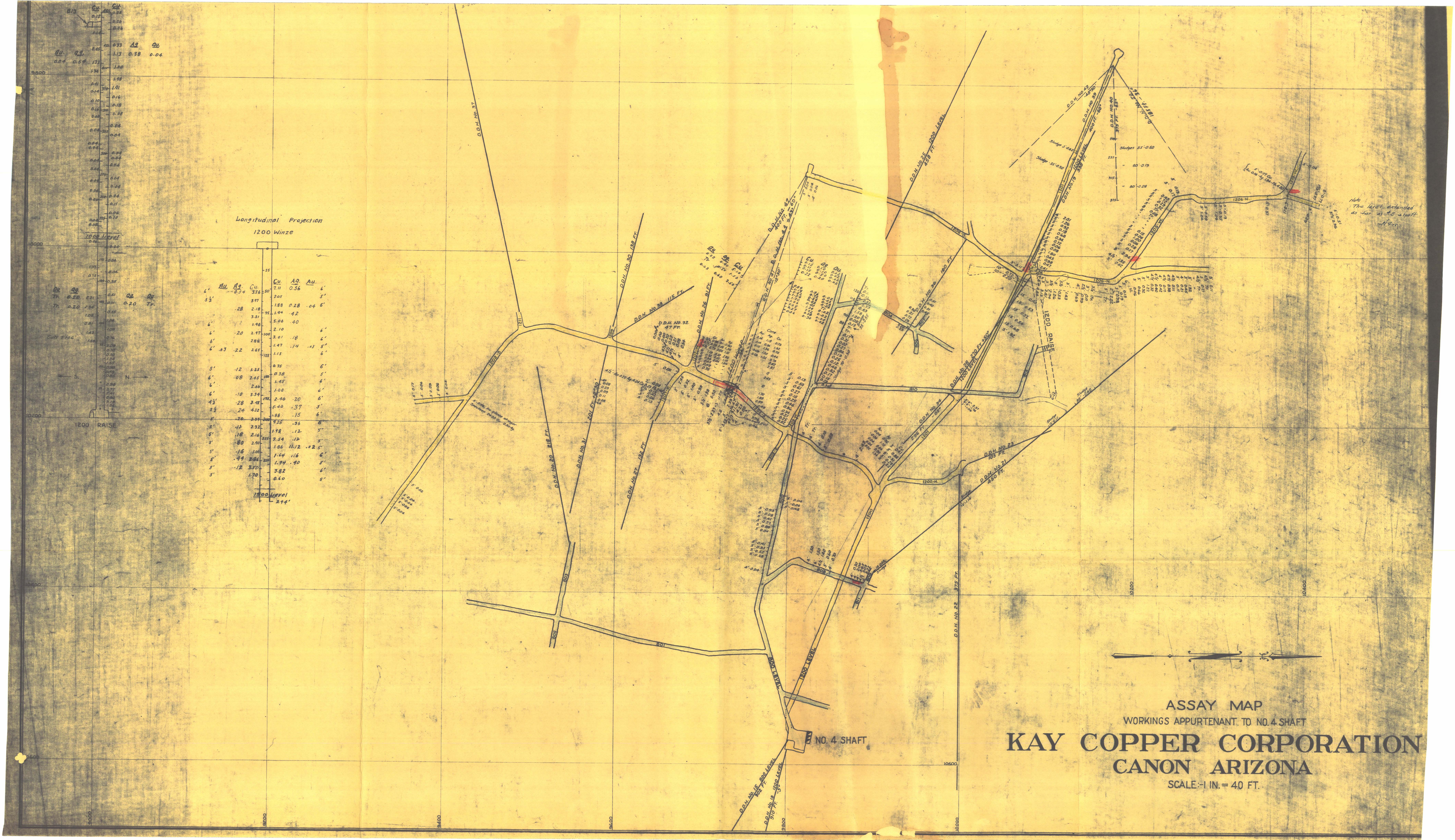
PATENTED CLAIMS
KAY COPPER COMPANY
Scale 1" = 300'
Buckeye
Agua Fria
W.J. Martin Patented
Road
Skidoo
Marietta
#1
#2 Shaft
S.E. Ext. Marietta
Skidoo Fraction
April #1
April
Diorite
Harriet
April #2
T8N R2E
4
9


PROJECTION of A VERTICAL PLANE
Thru
WINZE STATION : 1500 LEVEL
LEGEND
Copper Mineralized zones
KAY COPPER CORPORATION
Canon, Arizona
Scale 1in. = 80 ft
N 12° E
AGUA FRIA RIVER
No 4 SHAFT
No 1 SHAFT
1200 RAISE
1200 WINZE STATION
1350 STATION
1500 STATION
D.D.H. No 87
D.D.H. No 47
D.D.H. No 81
D.D.H. No 82
000
200
400
600
800
1000
1200
1400
1600
1800
2000
2200

ASSAY PLAN

KAY COPPER

Scale 1" = 30' 4/6/61 Atm



ASSAY MAP

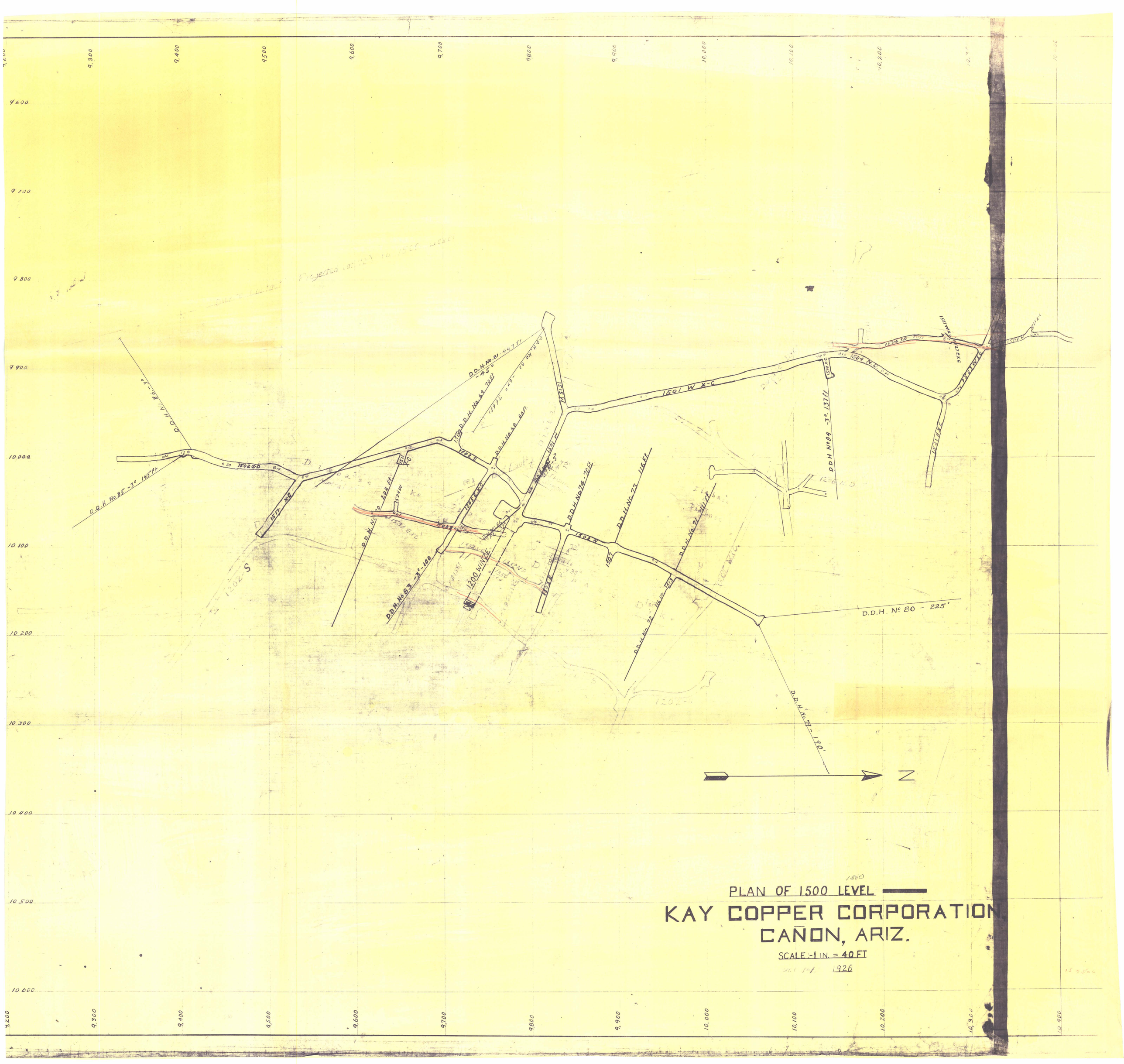
WORKINGS APPURTENANT TO NO. 4 SHAFT

KAY COPPER CORPORATION

CANON ARIZONA

SCALE:-1 IN. = 40 FT.

9800
10000
10200
10400
10600
D.D.H. No. 51. 300 FT. -3°
D.D.H. No. 52. 105 FT. -3°
D.D.H. No. 53. 80 FT. -3°
(South Spur)
Raise 1202-1
D.D.H. NO. 37
4-1-25 131 FT.
1211-W.
D.D.H. NO. 43 135 FT. -3°
D.D.H. NO. 31 201 FT. +2°30'
D.D.H. NO. 30 138 FT.
1209
D.D.H. NO. 33 115 FT.
D.D.H. NO. 27 132 FT.
D.D.H. NO. 32 47 FT.
D.D.H. NO. 26 91 FT.
1207-W.
1207-E.
1202
Raise 1202-2
1200 Winze
400 FT. -60°
D.D.H. 47 -60°
D.D.H. NO. 41 306 FT. -12°30'
D.D.H. 44 367 FT. -43°
D.D.H. NO. 25 498 FT.
1203-W.
1203-E.
D.D.H. NO. 59 115 FT. -3°
D.D.H. NO. 58 165 FT. -3°
D.D.H. NO. 36 160 FT.
1002-S
1206-S
484 FT.
D.D.H. NO. 42 49°30
D.D.H. NO. 39 400 FT. -60°
D.D.H. NO. 40 375 FT. -65°
D.D.H. No. 50 185 FT. -3°
D.D.H. NO. 19 338 FT.
1206-N.
1205-W.
1206-N
1213-W.
1215-E
D.D.H. 45 130 FT. -3°
D.D.H. NO. 56 156 FT. -3°
1002-N.
D.D.H. NO. 57 105 FT. -3°
D.D.H. NO. 60
1200 RAISE
D.D.H. NO. 28 270 FT. +50°
D.D.H. NO. 34 296 FT. -65°
D.D.H. NO. 46 182 FT. -3°
600 LEVEL
D.D.H. NO. 23 103 FT.
1202-N.
1200
NO. 1 SHAFT
NO. 4 SHAFT
NO. 18 810 FT. -5°
D.D.H. NO. 22 375 FT. +5°30'
10200
10400
PLAN OF 1200 LEVEL
KAY COPPER CORPORATION
CANON ARIZONA
SCALE: 1 IN. = 40 FT.

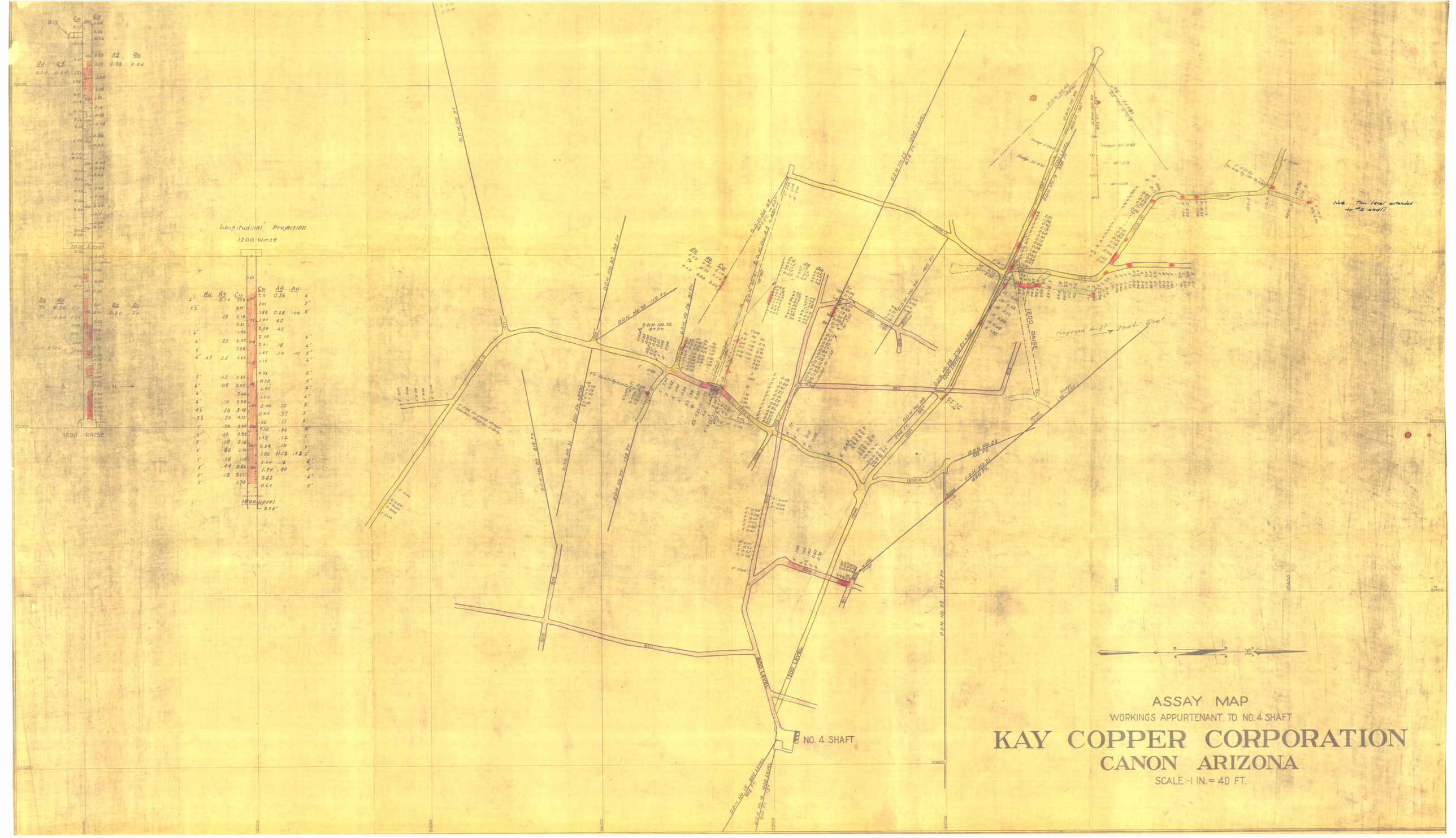


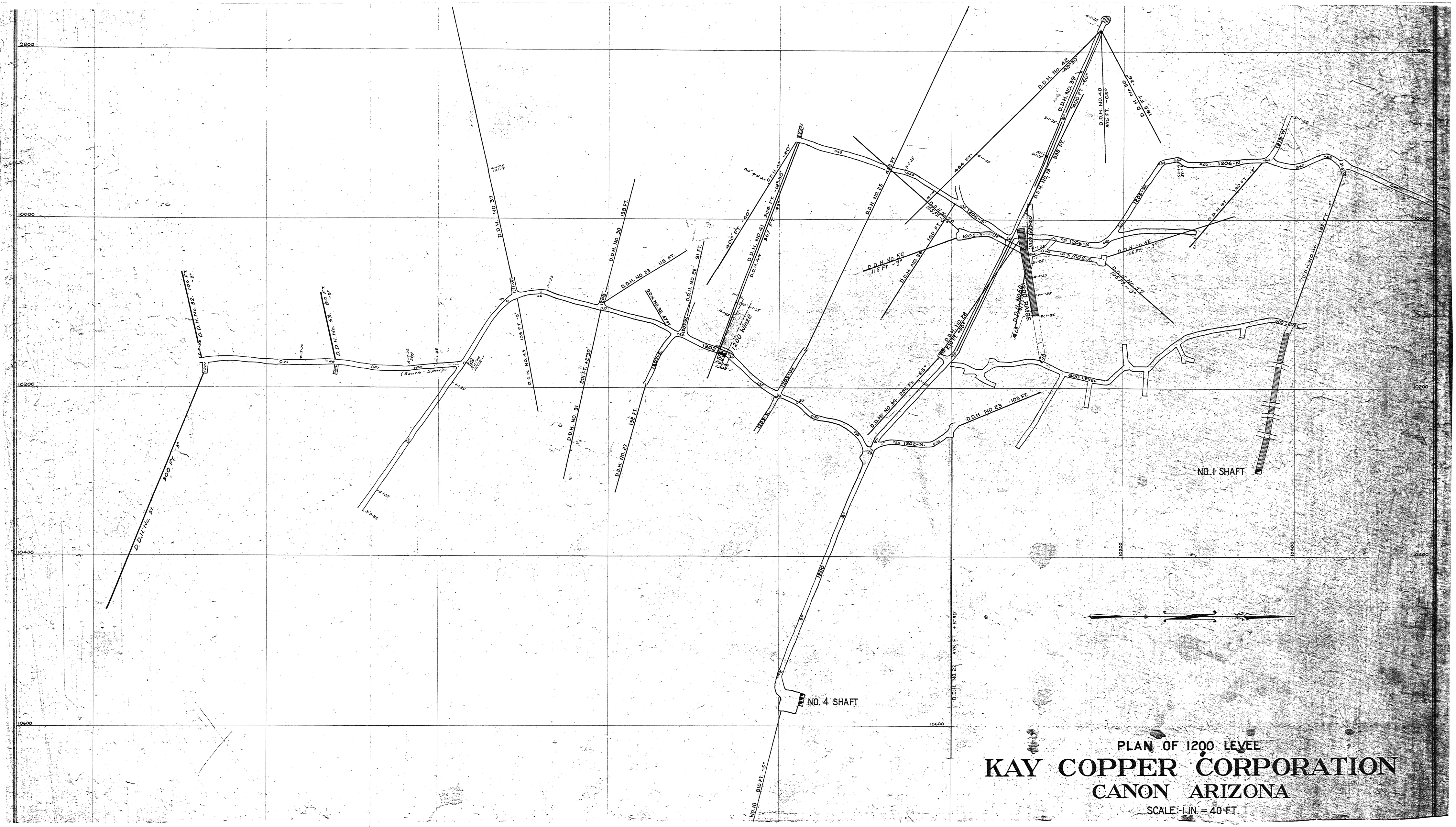
PLAN OF 1500 LEVEL

KAY COPPER CORPORATION
CAÑON, ARIZ.

SCALE:-1 IN. = 40 FT

1926


Longitudinal Projection
1200 Winze
1200 Level
1300 Level
1200 RAISE
Proposed drift → 800L-500'
Note: This level extended to #3 shaft!
NO. 4 SHAFT
ASSAY MAP
WORKINGS APPURTENANT TO NO. 4 SHAFT
KAY COPPER CORPORATION
CANON ARIZONA
SCALE:-1 IN. = 40 FT.

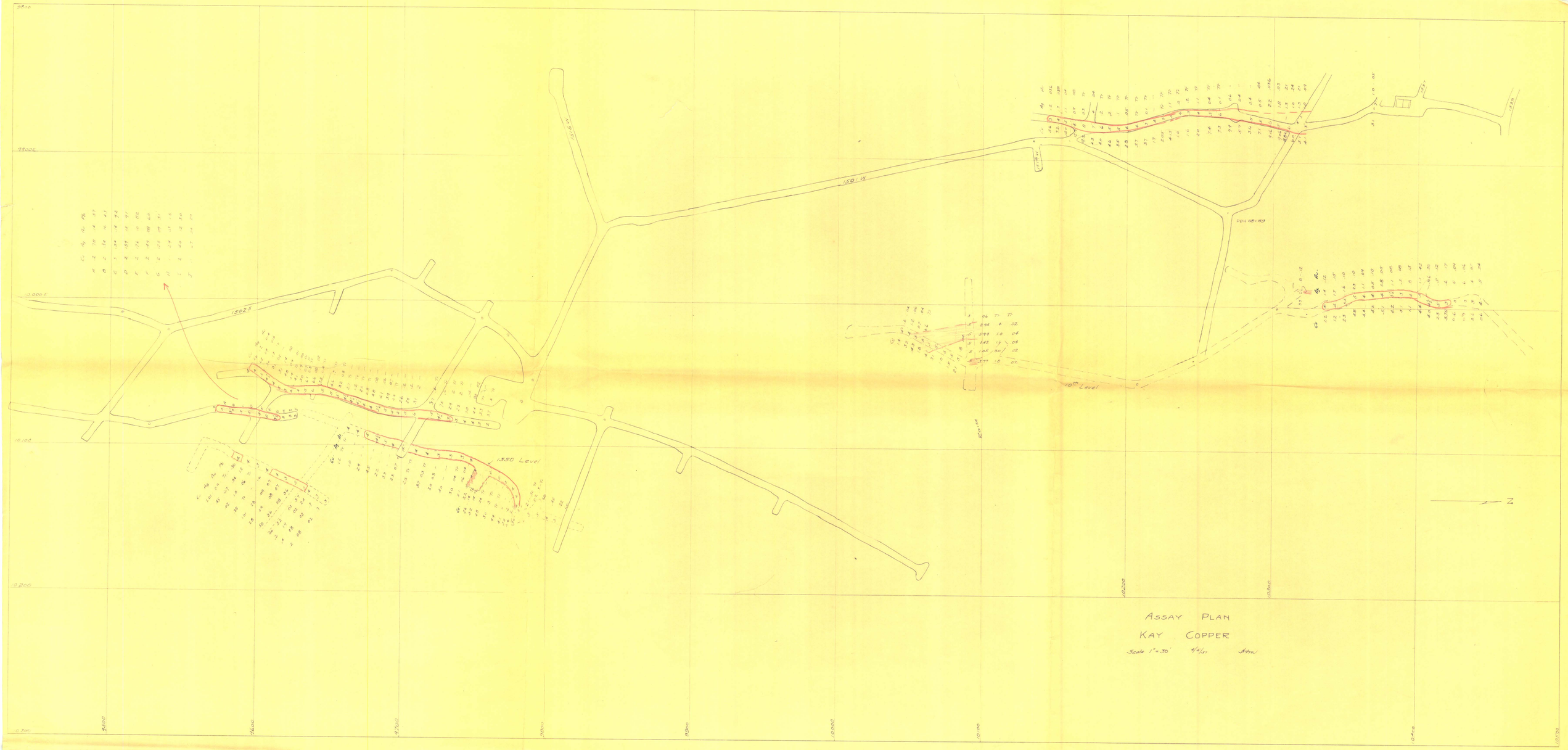


PLAN OF 1200 LEVEL

KAY COPPER CORPORATION

CANON ARIZONA

SCALE:- 1 IN. = 40 FT.



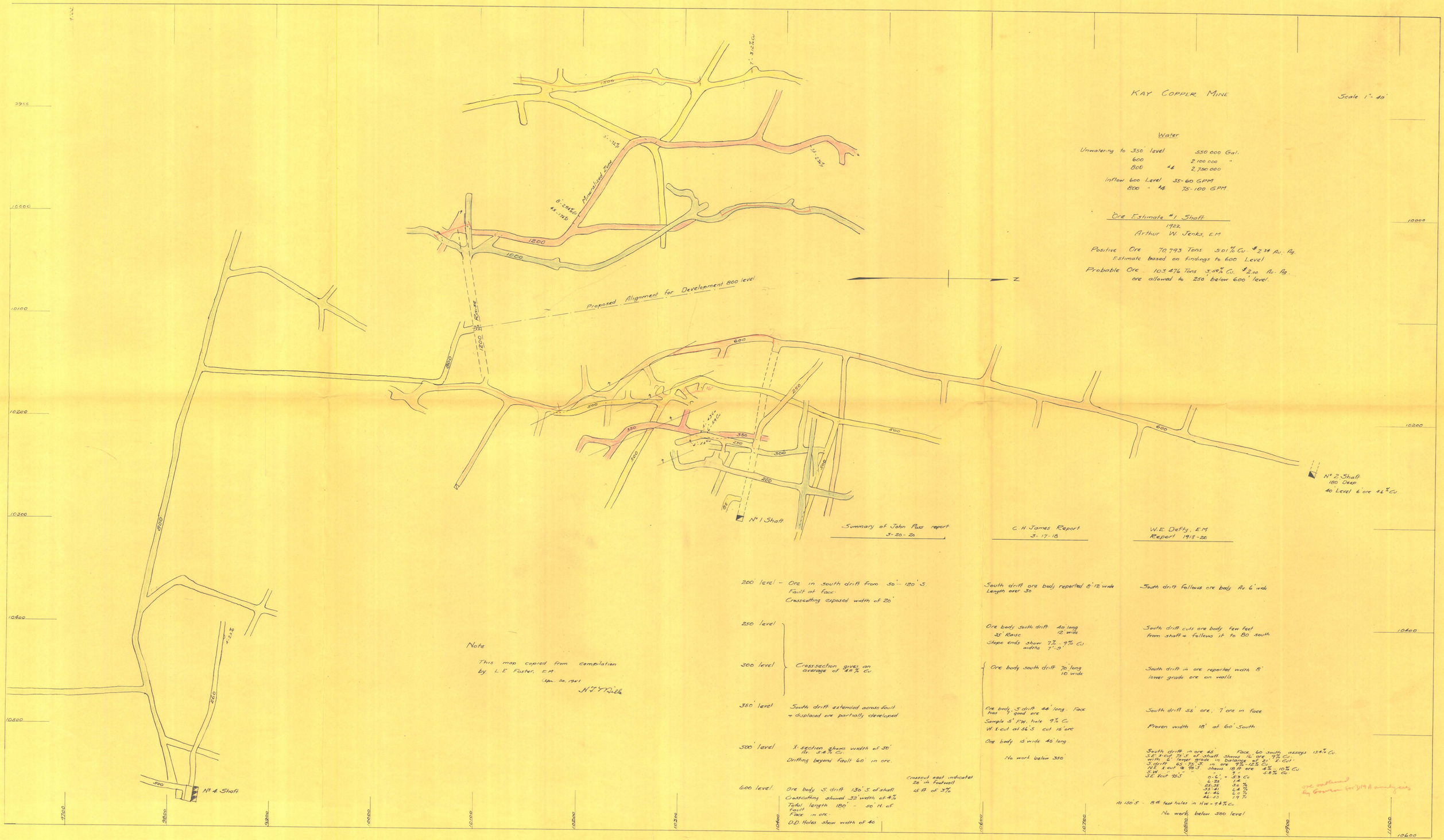
ASSAY PLAN

KAY COPPER

Scale 1" = 30' 4/4/61 JAHm

KAY COPPER MINE

Scale 1" = 40'



Water

Unwatering to 350' level 550 000 Gal.
600 " 2,100 000 "
800 " " 2,750 000

Inflow 600 Level 35-60 GPM
800 " " 75-100 GPM

Ore Estimate #1 Shaft

1922
Arthur W. Jenks, E.M.

Positive Ore 70,793 Tons 5.01% Cu. $2.34 Au. Ag.
Estimate based on findings to 600 Level

Probable Ore 103,476 Tons 3.49% Cu. $2.00 Au. Ag.
ore allowed to 250' below 600' level.

Summary of John Pass report 3-20-26

200' level – Ore in south drift from 50' – 120' S
Fault at face.
Crosscutting exposed width of 20'

250' level
300' level } Crosssection gives an average of 4.8% Cu.

350' level South drift extended across fault
+ displaced ore partially developed

500' level X-section shows width of 30'
Av. 5.4% Cu.
Drifting beyond fault 60' in ore.

600' level Ore body S. drift 130' S of shaft
Crosscutting showed 33' width of 4%
Total length 180' – 50' N of fault
Face in ore.
D.D. Holes show width of 40

Crosscut east indicates 26 in footwall
15 ft of 3%

C. H. James Report 3-17-18

South drift ore body reported 8'-12' wide
Length over 30

Ore body south drift 40' long
35' Raise 12' wide
Stope ends show widths 7'-9' 7% – 9% Cu.

Ore body south drift 70' long
10' wide

Ore body S drift 44' long. Face has 7' good ore
Sample 5' F.W. hole 9% Cu
W. X-cut at 56' S cut 16' ore
Ore body 15' wide 46' long

No work below 350'

W.E. Defty, E.M. Report 1918-20

South drift follows ore body Av 6' wide

South drift cuts ore body few feet from shaft + follows it to 80' south

South drift in ore reported width 8'
lower grade ore on walls

South drift 55' ore; 7' ore in face

Proven width 18' at 60' South.

South drift in ore 45'. Face 60' south assays 13.4% Cu.
S.E. X-cut 75' S of shaft shows 16' ore 7% Cu.
with 6' lower grade in balance of 21' X-Cut
S drift 65' 75' S in ore 9% – 12% Cu.
N.E. X cut @ 98' S shows 18 ft ore 4% – 10% Cu.
S.W. 7' " 5.8% Cu.
S.E. Cut 165' S
0-6' = 5.3% Cu
6-25' 1.4
25-35' 3.6%
35-41 6.4%
41-46 6.0%
46-53 1.9%

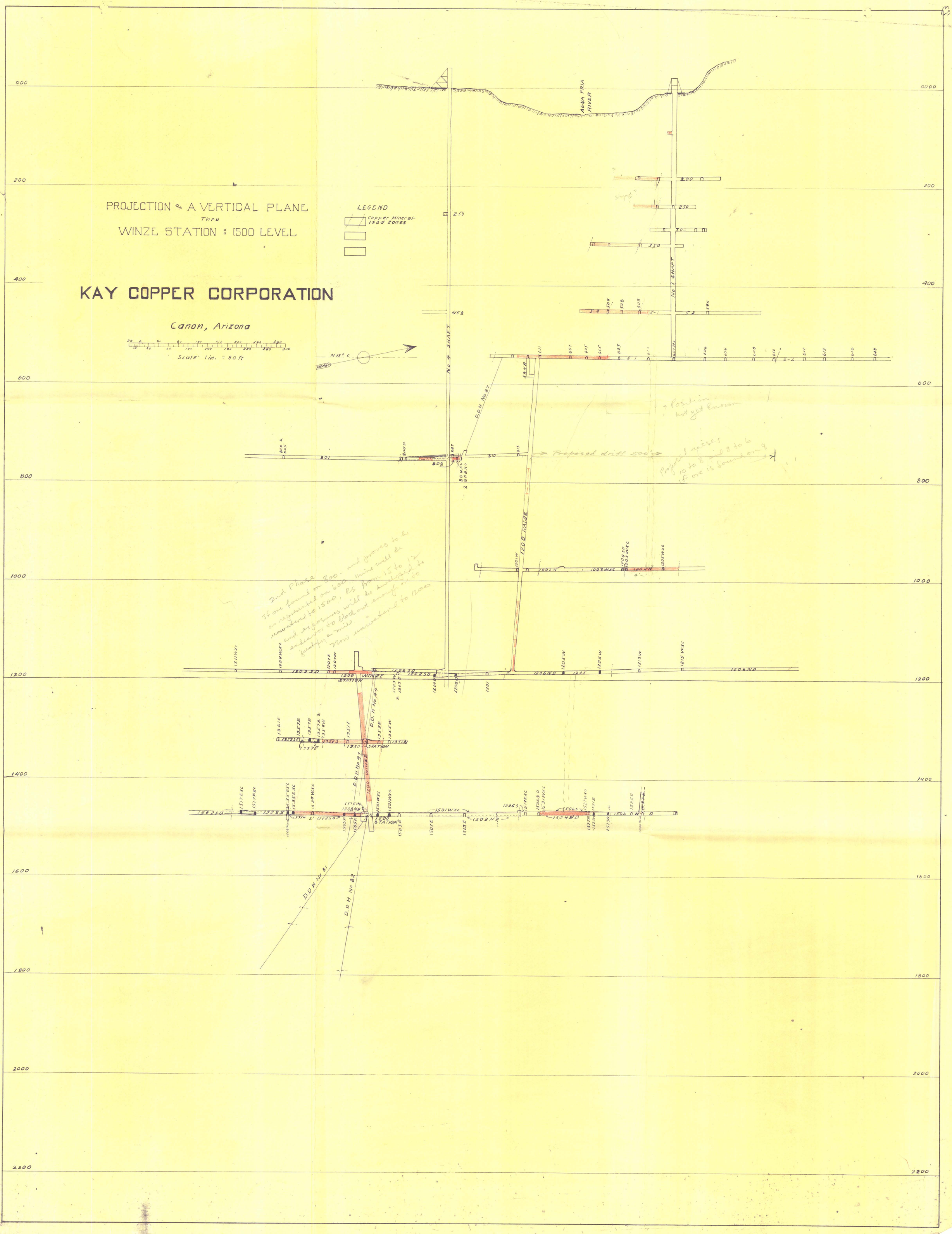
At 150' S – 8 ft test holes in HW – 9.4% Cu.

No work below 300 level

ore outlined by Governor for DMA assay gains

Note

This map copied from compilation by L.E. Foster, E.M.
Apr. 20, 1921
H.T. Rilk


PROJECTION on A VERTICAL PLANE
Thru
WINZE STATION : 1500 LEVEL
KAY COPPER CORPORATION
Canon, Arizona
Scale: 1 in. = 80 ft
LEGEND
Copper Mineralized zones
N 18° E
AGUA FRIA RIVER
No 4 SHAFT
No 1 SHAFT
1200 RAISE
1200 WINZE STATION
1500 WINZE STATION
D.D.H. No 87
D.D.H. No 84
D.D.H. No 81
D.D.H. No 82
Proposed drift 500'
Position not yet known
Proposed raises 10 to 8 and 8 to 6 if ore is found on 8
2nd Phase 800' and proves to be
If ore found on 600, mine will be
as represented on 1500, RS from 15 to 12
and exploring will be undertaken to
endeavor to block out enough ore to
justify a mill
Now uninstalled to 1200