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John Rothermel  
3016 West Mercer Lane  
Phoenix, Arizona 85029

Mr. Cannaday  
Nuclear Dynamics, Inc.  
Post Office Box 20766  
Phoenix, Arizona 85036

3016 West Mercer Lane  
Phoenix, Arizona 85029  
December 12, 1975

942-4470

Nuclear Dynamics, Inc.  
Post Office Box 20766  
Phoenix, Arizona 85036

Dear Mr. Cannaday:

I am enclosing some information on the Copper Chief Mines near Quartzsite, Arizona. The mine is in sections 28, 33 and 34, T5N, R20W on the north end of the Done Rock Mountains at an altitude of about 950 feet. The property was located in 1909 to 1910 by Richard Darling and considerable development work was later done. There are two main fault contacts on the property. Large bodies of epidote have formed at the contact between the limestone and schist.

As it is customary in contact-metamorphic deposits, the limestone and schist adjacent to the intrusive contact are extensively epidotized and garnetized and carry other common contact-metamorphic minerals such as wollastonite and idocrase. The quartz-epidote schist is believed to have been derived from an intrusive igneous rock, probably a quartz monzonite or quartz diorite porphyry.

As is also customary, the limestone beyond the zone of contact-metamorphism is crystallized to marble. Tactite has formed as a result of the product of contact-metamorphism. The tactite is obvious in the mine area because of its dark black color. The tactite comprises various combinations of dark calc-silicate minerals together with magnetite and some quartz and calcite.

The contact deposit of copper, gold, and silver ore on the Copper Chief 1, Copper Chief 2, Copper Chief 3 and Uncle Sam 1 is marked by extensive black and maroon iron outcrops. This contact deposit dips at 35°. The gangue of this ore consists mainly of iron oxide, magnetite, calcite, some quartz and epidote. The ore bodies formed at the contact are approximately 40' wide on the Copper Chief No. 2 and Copper Chief No. 3 Patented claims and the area of influence extends over hundred and fifty feet on the Copper Chief No. 1 and Uncle Sam No. 1. Assays taken from a channel sample across the Copper Chief No. 2, 60' deep shaft .026 Au, 7.41 ozs Ag and 2.21% copper. Just north of this contact zone is a large east-west zone which is 100' to 200' wide and consists of large epidote bodies. The outcrops of this contact can be traced on the surface over 6,000 feet by its extensive iron outcrops.

Scheelite has been discovered on the mine property occurs as straw-color to white crystals in epidote, with minor amounts of quartz, calcite and biotete.

There exists at this time property every apparent geological similarity with the other productive mines of the State, such as the silicated limestone formed by contact-metamorphism, the lime-silicate alteration, the replacement of the limestone beds by copper sulfide mineralization and extensive iron cappings.

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Nuclear Dynamics Inc.

Nuclear Dynamics, Inc.  
December 12, 1975  
Page Two

The area of influence relating to the iron outcrops and epidote zones is at places several hundred feet wide and the area of influence extends (trends) 6,000 feet to the end of the claim group.

The property consists of five patented claims and nine unpatented lode claims.

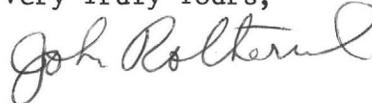
The main contact zone trends  $N81^{\circ}03'W$  and another fault zone trends  $N15^{\circ}W$  and dips  $69^{\circ}SW$ .

This claim group is the only patented land in the immediate area.

The district has a healthful climate with mild winters and hot summers which permits working conditions the year round. The 650 foot shaft on the Copper Chief No. 4 claim hits the water level at 636 feet.

I hope this short geological report and the attachments will be helpful to you. We are willing to take you to the mine and let you complete your evaluation on your own. Our residence telephone number is 942-4470.

Very Truly Yours,



John Rothermel

Enclosures

July 20, 1945

Mr. W. G. Hokett  
2322 North 9th St.  
Phoenix, Arizona

Dear Mr. Hokett:

We have your request for information regarding the Copper Chief Mines in Yuma County, Arizona

Our field engineer, Mr. Macfarlane, made a brief inspection of this property last month but failed to render a report before he left the employ of this department on June 30th.

We find that Weed's Mines Handbook for 1922 gives some description of the property from which we quote as follows:

Inc. 1910, in Arizona. Cap. \$5,000,000; \$1 par; outstanding 3,000,000.

Property: 28 claims, patented, 560 acres, in Plomosa district, Yuma County, 20 miles S.W. of Bouse, shows schist and greenstone with a contact deposit dipping at 35° and containing copper and gold ore that assays 1.3% to 20% copper. Gold runs from \$1 to \$12.80 per ton.

Development: by 2-compartment 650' vertical shaft, which has passed through greenstone into a replacement body of copper ore in limestone. Shaft is down to water-level, and crosscutting has reached 490' on the 648' level, 165' on the 420' level and 100' on the 250' level, in ore said to assay 6-20% copper.

Examined by L. A. Dunham, who reported that the remarkably favorable iron outcrops on all the claims of this company would probably be underlain by high-grade copper ore.

Equipment: includes a 25 h.p. gasoline hoist, a small compressor, 50 h.p. engine, triplex pump, two 20 k.w. generators, 20 h.p. motor, auto-trucks, and complete camp site.

We understand, however, that the statement above that there are 28 patented claims is in error but that there are 5 claims patented, the balance were unpatented.

Trusting the above information will be of value to you.

Yours very truly,

*Chas. H. Dunning*  
Chas. H. Dunning, Director

CHD:LP

ARIZ. MINERAL  
RESOURCE BUREAU

White Tail Deer  
Arizona.

W. of Bisbee.  
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6 the output was

#### ARIZONA

ardwick, sec.  
shares in treasury  
e at Planet, Yuma  
ed veins, carrying  
copper per ton

#### BLACK GIANT MINES CO.

Mine office: Salome, Ariz.

#### ARIZONA

Officers: P. J. Lyons, pres., Mobile, Ala. D. W. Hall, v. pres.-mgr., Salome, Ariz.; C. R. Hall, sec.-treas.; preceding officers, G. S. Leatherbury, J. B. Davis and H. H. Smith, directors, all of Mobile, Ala.

Inc. April 3, 1917, in Ariz. Cap., \$1,500,000; shares \$1 par; 750,000 shares outstanding. No bonds. Annual meeting, first Monday in January. Transfer office, Mobile, Ala.

Property: 11 claims, 220 acres, located in the Harcuvar Mountains, about 18 miles N. E. of Salome, in Cunningham Pass. Work was started, 1917, on a vertical shaft down 100', but planned to sink to 500'. Orebody reported to be from 25-100' long, nearly vertical, and running N. W.-S. E. It is a fissure, with iron gossan. Values are in copper and gold.

Equipment: 25 h. p. Fairbanks-Morse gasoline hoist and 2-drill Ingersoll compressor. Work begun in 1916.

#### BLUE BELL MINING & REDUCTION CO.

#### ARIZONA

Mine P. O.: Swansea, Yuma Co., Ariz. W. P. Martin, pres.; E. T. Miner, v. p. and supt.; K. E. Newcomb, sec.

Property: 23 claims, about 5 miles from Swansea, just across the Bill Wilham's Fork River from the Swansea pumping plant.

Development: 200' two-compartment shaft and several hundred feet of tunnels, showing ore carrying up to 10% copper, with fair gold and silver values.

No recent returns.

#### BOWYER GOLD & COPPER CO.

#### ARIZONA

Office: Quartzite, Ariz. Mine office: Bouse, Yuma Co., Ariz. Jos. Bowyer, pres.; E. N. Jenkins, v. p. and sec.; with E. E. Northrop, E. B. White and Geo. Mee, directors. Phoenix National Bank, treas.

Inc. July 15, 1909, in Ariz. Cap., \$5,000,000; shares \$5 par, non-assessable. Annual meeting, first Monday after first Tuesday in July.

Property: 7 claims, known as the Bowyer group, also 160 acres miscellaneous lands, in the Plomosa district, on the western slope of the Dome Rock Mountains, about 20 miles west of Bouse. Property has 3 contact deposits, between schist hanging and limestone foot, showing 50 to 200' gossans and carrying malachite and chalcocite, estimated to average 2 to 10% copper and \$1 to \$10 gold per ton. Company has sunk a 50' shaft near the hanging wall, all in ore, and has reached the sulphide ore beneath the leached zone. Management plans development work and the installation of hoist and air drills in 1917.

#### CLARA CONS. GOLD & COPPER MNG. CO.

#### ARIZONA

Declared bankrupt, Jan. 27, 1912. Reorganized as the Swansea Consolidated Gold & Copper Mining Co., receiving 1,500,000 shares of the total of 2,000,000 shares for the transfer of the property with its indebtedness and liabilities. A suit was filed against the Clara Consolidated in Oct., 1912, by George Mitchell, former president, for \$75,000, and by Mary Mitchell for ejectment from several mining claims valued at \$25,000 and the recovery of \$200 month rental therefrom. At last accounts, this suit had not been settled. The Swansea Cons. is also bankrupt.

Property leased in 1916 to W. A. Clarke interests for 10 years.

#### COPPER CHIEF MINES CO.

#### ARIZONA

Office: Wm. J. Coughlin, fiscal agent, 381 Main St., Bristol, Conn.  
Mine address: Bouse, Ariz.

Officers: Richard Darling, pres. and treas.; Quartzite, Ariz.; Richard Darling, Jr., v. p.; B. A. Darling, sec.

Inc. 1910, in Ariz. Cap., \$5,000,000; shares \$1 par; outstanding, \$3,000,000.

1916

**Property:** 28 claims, patented, 560 acres, 20 miles S. W. of Bouse, shows schist and greenstone with a contact deposit dipping at 35° and containing copper and gold ore that assays 1.3% to 20% copper.

Developed by 2-compartment 304' vertical shaft, which has passed through greenstone into a replacement body of copper ore in limestone. Shaft will be continued to water level, as ore deposit is leached above it.

Examined by L. A. Dunham, E.M., in 1910, who reported that the remarkably favorable iron outcrops on all the claims of this company would probably be underlain by high-grade copper ore.

**Equipment:** includes a 25 h. p. gasoline hoist, a small compressor and 50 h. p. engine.

#### EXCELSIOR GOLD & COPPER CO.

ARIZONA

Gus Mudersbach, pres., Bouse, Yuma Co., Ariz.

**Inc.** Aug. 1, 1902, in Ariz. **Cap.**, \$2,000,000; \$1 par; stock owned by two Flagstaff men and the president. Is the successor of the Record Mines Co.

**Property:** the Mudersbach mine, with 31 claims, 8 miles S. of Bouse, on the main road to Quartzite, in the foothills of the Palomas Mountains. The property covers the strike of a mineralized contact metamorphic zone showing gossan of specular hematite, underlain by oxidized ores to shallow depth, succeeded by copper sulphides, an average sampling said to have given 4.5% copper.

**Ore:** occurs as bornite, chalcopryite, pyrite and hematite in a garnet-epidote gangue; it is an irregular bunchy replacement, a few inches to a few feet thick, of limestone resting on schist and altered by quartz monzonite.

**Development:** by the 150' Excelsior shaft, with drifts at 50', 100' and 130', and the 200' Mammoth shaft, with 600' of drifts and crosscuts.

**Equipment:** includes two 15 h. p. gasoline hoists, a gas engine and air compressor. The mine is developing, with a small force.

**Production:** 48 tons of 12% ore shipped in 1916, and a carload of 4.25% copper ore with 50% iron and another of 6% ore. 1917 work consisted of a level at 50' depth of No. 2 shaft; sulphide ore has been cut in the 200' level of the No. 1 shaft.

#### GOLDZONA-SCOTCHMAN MINING CO.

ARIZONA

**Address:** Bouse, Yuma Co., Ariz.

**Inc.** by R. King, W. C. Miller, B. A. Kipp and others, of Los Angeles, Cal.

**Property:** 600 acres, on which \$100,000 has been spent. **Equipment:** gasoline hoist, compressor, drills, buildings.

#### GREATER AJO COPPER CO.

ARIZONA

Miami, Ariz. **Officers:** G. F. Senner, pres.; A. E. Soderman, v. p.; J. Considine, sec.-treas.; preceding, with A. B. Saling, R. L. Payne, E. Becher and B. S. Garcia, directors.

**Cap.**, \$5,000,000.

**Property:** at Palomas, Yuma Co., Ariz.

The prospectus—if it can be called such—of this company is unique. It talks of nearly everything, the property receiving small space. One engineer predicts the Greater Ajo to be "The biggest mine in the State of Arizona."

#### INLAND COPPER CO.

ARIZONA

Idle. Letters to 1017 Commerce Bldg., Kansas City, Mo., and to the mine at Planet, Yuma Co., Ariz., unanswered. L. E. Corbin, pres.; A. W. Bork, v. p.; S. D. Dodson, sec.-treas.

**Inc.** in Arizona. **Cap.**, \$5,000,000; shares \$1 par; non-assessable.

**Property:** 40 claims, including 2 groups of about 15 claims each, in the Bill Williams range, near the Bill Williams Fork River, with a mill site, smelter site and water rights. The mine has 2 tunnels, and a 2-compartment shaft equipped with an 18 h. p. gasoline hoist. Company advertised for copper

ores, presumably to show of its own. Is not re:  
**MOHICAN COPPER**

**Office:** 340 Wilcox  
Bouse, Ariz.

**Officers:** W. C. Mi  
G. M. Swindell and A. I  
Inc. Mar., 1914. Ca  
issued.

**Property:** 30 claims  
said to show copper sul

**Development:** by sh  
1,000'. New shaft to be

**Equipment:** include  
flotation plant ordered, 1

**MUDERSBACH MINI**  
See Excelsior Gold

**NEW LA PAZ GOLD**

**Office:** 930 Merchant  
**Officers:** O. L. Grin

sec.; G. A. Scroggs, treas  
**Inc.** May 2, 1910, in

able; 933,282 issued. Ope  
**Property:** 14 claims

Co., Ariz., 55 miles W. S  
bearing gravel 6 to 40'

There are reported to be  
Operations to be by hydr  
12 in. pipe line from Colo

Property reported on  
E. A. Rasor. If \$2 per y

this company.  
**NEW PLANET COPP**

**Office:** 61 Broadway,  
**Officers:** Alex. Rae, p

with Julius H. Susmann, S  
directors.

**Inc.** July 13, 1909, in  
assessable; issued 342,905 s

ing Co., stock of which  
Planet stock. Farmers' L

ing, third Wednesday in J  
**Property:** the Planet

claims, 800 acres, in the  
Williams Fork River, 21½

6 miles from Swansea.  
**Geology:** copper occu

of sulphides mixed with  
The orebodies are replace

Planet shaft lying on the co  
deposit is 3 to 20' thick a

shipped from other parts  
or shells, about impure he

bolitic rock now altered to  
not improbable source of

1918

oxidized and silicate ores at and near surface could be mined economically and cheaply.

**Equipment:** includes a 60-h. p. steam plant and several buildings. There is considerable shipping ore in the old workings, which can be profitably mined. Property is a puzzle, needing drilling to determine possible deep ore occurrence, since experience shows that the rich silicate ores are often surficial. Existing workings give an unduly favorable aspect to the ground, which is considered promising.

**COPPER BUTTE MINING CO.**

UTAH

Idle. **Office:** Richfield, Sevier Co., Utah. Wm. Johnston, pres.; George H. Ogden, sec.-treas. Property is a copper prospect on Gold mountain, in the Kimberly district, Piute Co., Utah. **Development:** by a short tunnel, showing a 6' vein of low-grade silver-bearing copper ore.

**COPPER BUTTE MINING CO.**

WASHINGTON

Orient, Ferry Co., Wash. J. D. Gumpper, pres.; H. J. Miller, sec.; Willis Townsend, gen. mgr. **Inc. Dec., 1905, in Washington. Cap., \$1,000,000; shares \$1 par. Property:** 4 claims, patented, in the Pierre Lake district, south of Orient, shows 2 veins in open cuts, 14' and 15' wide, respectively. **Development:** by 300' shaft with drifts on the 100' level shows copper-gold ores, but not in commercial quantity. No recent returns.

**COPPER CANYON MINE**

ARIZONA

Owned by the Leviathan Mines Co., which see.

**COPPER CHIEF MINES CO.**

ARIZONA

**Office:** room 814, No. 60 State St., Boston, Mass., and Bouse, Ariz. **Officers:** Richard Darling, pres. and treas., 925 W. 49th St., Los Angeles, Cal.; Richard Darling, Jr., v. p.; B. A. Darling, sec. **Inc. 1910, in Ariz. Cap., \$5,000,000, shares \$1 par, outstanding \$3,000,000.**

**Property:** 28 claims, unpatented, 560 acres, 20 miles S. W. of Bouse, is said to show a contact deposit containing copper and gold ore that assays 1.3% to 20% copper. Little work has been done on the property to date. Management plans adding a 25-h. p. gasoline hoist and a small compressor and doing development work.

**COPPER CHIEF MINING CO.**

ARIZONA

Jerome, Yavapai Co., Ariz. Owned by the Hayden and Midgeon estates, Torrington, Conn., Franklin Brooks, Colorado Springs, Colo., and Arthur Hendey. Reported 1915 to have been taken over by the Guggenheim interests.

**Property:** 23 claims, 11 patented, adjoining Senator Clark's Iron King mine in the Black Hills range, just outside the Verde district proper. The orebody is 60 to 100' wide, and consists of copper-bearing iron oxide carrying gold, silver and a little copper, the total value being about \$6 per ton. Sulphide ores occur at and below 280'.

**Development:** by 400' shaft, 2,225' of work on the 100', 160', 220' and 280' levels. A crosscut tunnel, now 900' long, is being driven to connect with the bottom of the shaft. Mine reported to have a large tonnage of low-grade oxidized ore, which cannot stand transportation to a distance. Future of the property depends upon development of sulphide ore in quantity.

Management claims 400,000 tons of oxidized ore and 100,000 tons of sulphide ore blocked out, with oxides averaging about 1% copper and \$10 gold and silver, and sulphides assaying 3% copper with gold and silver, giving gross values of \$11 per ton. **Equipment:** includes a 200-ton cyanide mill, erected in 1915, electric power, air compressor and hoist. Employs 35 men.

**COPPER CHIEF MINE**

**Office:** Wallace, Ida. Taylor, sec.-treas. **Cap.,** ment (No. 4) of 2½ mi claims, in the St. Joe di to be an extension of the the copper. Property ha and management planne being driven 2,500' by the

**COPPER CLIFF COPPE**

**Office:** 724 Peyton Stevens Co., Wash. T. F. v. p.; L. C. Dougherty, 1912, in Washington. Ca

**Property:** 60 acres lease, in the Chewelah granite and limestone. **Development:** by shafts o depth of 1,000'. Propert in Spring of 1915.

**COPPER CROWN MIN**

**Inc. July 18, 1902, in** to \$3,000,000; shares \$25 July, 1916, to have sold i shares of latter company's

**Property:** 2,500 acres north of Matchwood. Ont cludes a number of old and Norwich mines. The for \$14,000.

The first work of the 602' tunnel was driven and of 602' securing a back of drift boulder in sandstone. next to the Victoria, is the west of the Ontonagon river of drifts that give an enced worked 1850 to 1865, produ native metal up to 10 tons siderable promising stamp-r prehistoric pits along the o bed, up to 25' in width, with

**COPPER GIANT MINE**

Idle since 1907, and rep **Hackberry, Mohave Co in 1913, by United Verde Co**

**COPPER HILL MINE**

Jackson, Amador Co., 2,500 acres, patented, on th dike of 500 to 600' width, wi rite, associated with pyrrhot on a 50' vein east of and par a 2 to 4' paystreak of fine 30% copper, with appreciabl

shares for the transfer of the property with its indebtedness and liabilities. A suit was filed against the Clara Consolidated in Oct., 1912, by George Mitchell, former president, for \$75,000, and by Mary Mitchell for ejectment from several mining claims valued at \$25,000 and the recovery of \$200 a month rental therefrom.

Property leased in 1917, for 10 years, to the Swansea Lease, Inc., which see.

**COBRITA MINES CO.**

ARIZONA

Address: Salome, Ariz.

Inc. 1916. In Jan., 1918, bond and lease was given to the Cobrita Verde Co., which see.

Property: 14 claims, 295 acres, with vein developed by 390' tunnel and 200' vertical, two-compartment shaft with 40' crosscut at 100' and 300' drifting at 200' level.

A level driven from winze, at 100' below tunnel is on vein and shows several oreshoots. Mine has yielded car load shipments of 20% copper ore containing \$7 to \$15 gold per ton. Sixty thousand dollars spent on equipment of property. This was a promotion of "Dick Wick Hall," which caught many small investors.

**COBRITA VERDE COPPER CO.**

ARIZONA

Mine address: Salome, Ariz.

Address: G. J. Kahn, pres., 1707 Leighton Ave., Los Angeles, Cal., or J. W. Whittington, 51 E. 42nd St., New York City.

Officers: Judge W. M. McCrea, v. p.; J. W. Whittington, sec.; above with C. A. Wilson, P. E. Parentean, directors. Parentean & Co., brokers, New York, fiscal agents.

Inc. Nov. 13, 1916, in Utah. Cap., \$2,500,000; \$1 par; increased 1918 from \$1,000,000; 1,400,000 issued; 500,000 pooled. In January, 1918, company took lease and bond on property of Cobrita Mines Co., described below, and relinquished Leatherby bond and lease on Vindicator and Little Grant Mines.

Property: 5 claims, Easy Money, Mochette and Mache, Nos. 1, 2, 3, about 100 acres, in Harcuvar mountains, 9 miles N. of Salome, Yuma county, on the Santa Fé R. R. Claims lie in basin on the Butler Valley (or north) side of range; elevation 2,200' to 4,000', between Tank and Cunningham passes. Rocks are diabase schist, and greenish porphyritic andesite and on the Mache claims gneiss cut by rhyolite dikes, and "iron stained dacite."

Black reefs of "diorite" 40' to 50' across, occur and are cut by mineral veins. Ore occurs in quartz veins and in iron veins, both carrying copper as oxides and sulphides, with glance in places.

Development: 160' shaft begun in Dec., 1916, on strong 5' vein exposed at surface with 8" ore; also cut veins at 30', 58' and 81' in shaft. Company plans sinking 500' shaft. Main vein said to be 3½' to 5' wide with ore. Shipments have run 8% to 18% copper and \$8 to \$12 gold per ton.

**CONTINENTAL COPPER & GOLD MINING CO.**

ARIZONA

Out of existence. Described in Vol. XIII.

**COPPER CHIEF MINES CO.**

ARIZONA

Offices: C. A. Post, 20 W. 34th St., New York. Mine at Quartzite, Yuma county, Ariz.

Officers: Richard Darling, pres.-treas.-mgr., Quartzite, Ariz.; Richard Darling, Jr., v. p.; B. A. Darling, sec.

Inc. 1910, in Arizona. Cap., \$5,000,000; \$1 par; outstanding, 3,000,000.

Property: 28 claims, patented, 560 acres, 20 miles S. W. of Bouse, shows schist and greenstone with a contact deposit dipping at 35° and containing copper and gold ore that assays 1.3% to 20% copper. Gold runs from \$1 to \$5 per ton.

Development: by 2-compartment 650' vertical shaft, which has passed through greenstone into a replacement body of copper ore in limestone. Shaft is down to water-level, and crosscutting is proceeding. A pump is to be installed.

Examined by L. A. Dunham, who reported that the remarkably favorable iron outcrops on all the claims of this company would probably be underlain by high-grade copper ore.

Equipment: includes a 25 h. p. gasoline hoist, a small compressor, 50 h. p. engine, triplex pump, 20 k. w. generator, 20 h. p. motor, auto-trucks, and complete camp site.

No recent news available.

**CRITIC MINE**

ARIZONA

Joseph Nolachek, lessee, Wenden, Ariz. Geo. B. Layton, New York, owner. Property located in Cunningham Pass, Yuma county, developed to depth of 440'.

Ore contains gold, silver and copper. Has been operated by leasers during recent years who have made regular shipments assaying from \$15 to \$75 gold, 10 to 25% copper, with a few ounces of silver. Calaverite, a telluride of gold reported from 400' level. Equipped with 15 h. p. hoist.

Production said to total about \$700,000.

**CUPRITE INVESTMENT CO.**

ARIZONA

Address: Wenden, Ariz.

Property: the Wilkinson mine, 9 miles north of Wenden, Yuma county, Adjoins the Little Giant on the S. W. Developed by shallow tunnels and a 100' shaft. At 50' depth, report vein 18" wide. Shipments in 1918 said to have run better than \$50 gold and 10 to 20% copper.

**DESERT MINING & DEVELOPMENT CO.**

ARIZONA

Robt. W. Hollis, mgr.-cons. engr. Cap., 500,000 shares; \$1 par. Stricken from New York Curb, April, 1918. A prospect.

Property: 16 claims in Cunningham Pass, 9 miles N. of Wenden, and 27 claims at Wenden, total 540 acres.

Development: by 2 shafts, 200' and 325' deep on the Copper Hill claim, said to show a large body of disseminated ore.

**DUTCHMAN MINE**

ARIZONA

Owners: Tom Bouse and Mr. McMahon, Bouse, Yuma county.

Property: 5 miles west of Bouse, operated in 1918.

**EXCELSIOR GOLD & COPPER CO.**

ARIZONA

Address: Gus Mudersbach, pres., Bouse, Yuma county, Ariz.

Inc. Aug. 1, 1902, in Arizona. Cap., \$2,000,000; \$1 par; stock owned by two Flagstaff men and the president. Is the successor of the Record Mines Co.

Property: the Mudersbach mine, with 34 claims, 8 miles S. of Bouse, on the main road to Quartzite, in the foothills of the Palomas mountains. The property covers the strike of a mineralized contact metamorphic zone showing gossan of specular hematite, underlain by oxidized ores to shallow depth, succeeded by copper sulphides, an average sampling said to have given 4.5% copper.

Geology: ore occurs as bornite, chalcopyrite, pyrite and hematite in a garnet-epidote gangue; it is an irregular bunchy replacement, a few inches to a few feet thick, of limestone resting on schist and altered by quartz monzonite.

Development: by the 150' Excelsior shaft, with drifts at 50', 100' and 130', and the 200' Mammoth shaft, with 600' of drifts and crosscuts.

Equipment: includes two 15 h. p. gasoline hoists, a gas engine and air compressor.

Production: 48 tons of 12% ore shipped in 1916, and a carload of 4.25% copper ore with 50% iron and another of 6% ore. Work in 1917 consisted of a level at 50' depth of No. 2 shaft; sulphide ore was cut in the 200' level of the No. 1 shaft. No recent news is available.

**FORTUNA MINES CORPORATION**

ARIZONA

Presumably idle.

Office: 31 State St., Boston, Mass., and F. G. Hobbs, sec.-treas.; Sharon Bldg., San Francisco, Calif.

Officers: F. E. Boland, pres.; Frank G. Hobbs, Thos. Pascoe, J. E. Manders, directors; T. C. Woodworth, cons. engr.; W. H. Enderton, supt.; F. B. Keever, mgr.

Inc. 1913, in California. Cap., \$500,000; \$1 par; 423,960 issued. Listed on Boston Curb. Federal Trust Co., Boston, depository.

Property: the Fortuna mine, 7 patented, 11 unpatented claims, 3587 acres, 15 miles S. of Blaisdell station on the S. P. R. R., and 22 miles S. E.

1922

**COPPER BUTTE MINES CO.****ARIZONA**

Offices: 906 New York Life Bldg., Minneapolis, Minn. and Phoenix, Ariz.

Officers: Ace. P. Abell, pres.; Wm. H. Lucia, v. p.; E. B. Crabtree, sec.-treas.

Inc. 1904, in Arizona. Cap. \$6,000,000; shares \$10 par.

Property: 16 claims, 8 patented, 4 miles N. W. of the Ray Cons.

The ore deposit is a mineralized breccia, consisting of schistose rock with fragments of quartz, diabase, granite and limestone; the ores are the oxides and silicates of copper. Mine is fully described in Vol. XII.

Development: by several shafts, deepest 300', and 6 tunnels, said to open orebody 85' wide at depth of 185' containing 4 to 7% copper.

Property reported taken over by American Ore Corporation in 1921 and active development under way.

**COPPER CHIEF MINES CO.****ARIZONA**

Offices: Chas. W. Chubbuck, 20 W. 34th St., New York. Mine at Quartzite, Yuma county, Ariz.

Officers: Richard Darling, pres.treas.-mgr. Quartzite, Ariz.; Richard Darling, Jr., v. p.; B. A. Darling, sec.

Inc. 1910, in Arizona. Cap. \$5,000,000; \$1 par; outstanding, 3,000,000.

Property: 28 claims, patented, 560 acres, in Plomosa district, Yuma county, 20 miles S. W. of Bouse, shows schist and greenstone with a contact deposit dipping at 35° and containing copper and gold ore that assays 1.3% to 20% copper. Gold runs from \$1 to \$12.80 per ton.

Development: by 2-compartment 650' vertical shaft, which has passed through greenstone into a replacement body of copper ore in limestone. Shaft is down to water-level, and crosscutting has reached 490' on the 648' level, 165' on the 420' level and 100' on the 250' level, in ore said to assay 6-20% copper.

Examined by L. A. Dunham, who reported that the remarkably favorable iron outcrops on all the claims of this company would probably be underlain by high-grade copper ore.

Equipment: includes a 25 h. p. gasoline hoist, a small compressor, 50 h. p. engine, triplex pump, two 20 k. w. generators, 20 h. p. motor, auto-trucks, and complete camp site.

**COPPER CHIEF MINING CO.****ARIZONA**

Address: J. T. Matson, gen. mgr., Clarkdale, Ariz.

Officers: J. T. Matson, pres.-treas.; W. S. Fulton, v. p.; W. J. Wolf, asst. treas.-sec.; G. W. Bierbauer, asst. sec., with M. K. Hayden, R. H. Fulton, R. W. Gordon, Thos. B. Stearns and N. P. Rathvon, directors.

Cap. \$1,500,000; \$1 par; 649,897 shares issued.

Property: 21 claims, 11 patented, adjoining Senator Clark's Iron King mine in the Black Hills range, 3½ miles S. E. of Jerome, and a mill site. The claims are in the belt of metamorphosed igneous rocks and schists forming the southern extension of the United Verde or Jerome schist area. The Copper Chief-Iron King ore-body, is a boat shaped mass which runs across 3 of the claims, is 60 to 95' wide, and consists of copper-bearing iron oxide carrying gold, silver and a little copper, the total value being from \$8 to \$13 per ton. Was under lease to Hayden Dev. Co., 1916 to 1918.

Development work on this deposit shows that it extends downward about 315' below the outcrop. Material composing this lens is completely oxidized from the surface down to a depth of 226'. The bottom of the lens consists of massive pyrite with about 5' of enriched ore between the sulphide and the overlying oxidized material. Less than half of the ore has been payable ore in the oxidized zone and about 15% of the lower lying sulphides can be mined at a profit.

Development: by 350' shaft, 2,225' of work on the 100', 160', 220' and 280' levels. The Wonderful shaft is 200' deep with 250' of drifts. A cross-cut tunnel is being driven to connect with the bottom of the shaft. Mine

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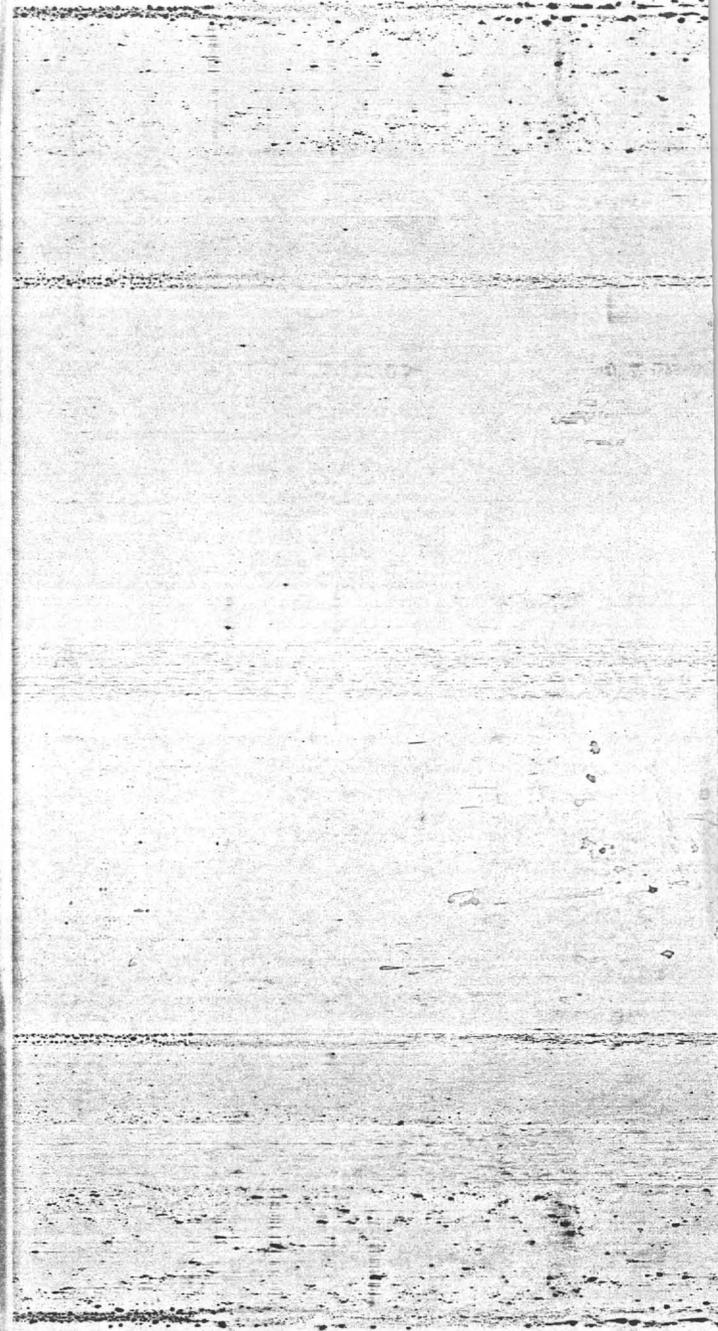
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# PURCHASE STATEMENT, Tungsten Ore Concentrate

June 30, 1955

Harms and Duncan, Quartzsite, Arizona

Seller

Material 177 lbs. 2 Producer's Lot or Delivery Number.

Assay: Tungstic Oxide 73.69 % WO<sub>3</sub> \$ \_\_\_\_\_ Penalty for under 60% WO<sub>3</sub>

Phosphorous 03 % P \_\_\_\_\_ P Penalty for Excess

Sulphur \_\_\_\_\_ % S \_\_\_\_\_ S " " "

Copper \_\_\_\_\_ % Cu \_\_\_\_\_ Cu " " "

Lead 03 % Pb \_\_\_\_\_ Pb " " "

Zinc \_\_\_\_\_ % Zn \_\_\_\_\_ Zn " " "

\_\_\_\_\_ % \_\_\_\_\_ " " "

\$ \_\_\_\_\_ Total Deductions per Unit

Pay per Unit \$ 60.00 less \$ \_\_\_\_\_ Net pay per Unit 60.00

Total Units, WO<sub>3</sub>: 6.522 @ \$ 60.00 \$ 392.32

Charges: Freight \$ \_\_\_\_\_ Screening \$ \_\_\_\_\_

Upgrading \$ 9.07, Sampling \$ 2.50, Assaying \$ 7.00 \$ 18.57

Net to Seller \$ 372.75

Advance Payment: June 25, 1955 \$250.00

\$ 250.00

To Seller: Bal. Provisional \_\_\_\_\_ Final X Chk. No. 6932 \$ 122.75

Acceptance of Final Settlement Payment closes this Sales-Purchase Transaction. Seller Warrants unencumbered ownership and right to assign, sell and transfer to the undersigned Consignee and/or Buyer.

**Harms & Duncan**

Owner or Authorized Agent, Seller

C. W. JONES

Consignee and/or Buyer

NOTICE: On acceptance of final Settlement, please sign and return one copy to Consignee and/or Buyer.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES  
REGION III

SOUTHWEST  
EXPERIMENT STATION

P. O. BOX 4097  
UNIVERSITY STATION  
TUCSON, ARIZONA  
December 27, 1957

Mr. Joseph Treuer  
P. O. Box 15211  
Phoenix, Arizona

Dear Mr. Treuer:

The United States Bureau of Mines is presently investigating tungsten deposits in Yuma County, Arizona.

Our field engineer was told by residents of Quartzsite that you own the old Darling mine in Secs. 28 and 33, T. 5 N., R. 20W. about 10 miles northwest of Quartzsite. A discovery of scheelite ore has been made on this property recently.

If you own this property may we have your residence address in Phoenix so that our field engineer may discuss with you the tungsten occurrence?

Sincerely yours,

*Walter R. Storms*

Walter R. Storms, Superintendent  
Southwest Experiment Station

*Replied 3-21-58  
Mr Vernon Oak called  
3-21-58*

U. S. BUREAU OF MINES  
SOUTHWEST EXPERIMENT STATION  
DEC 30 1957  
TUCSON, ARIZONA