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02/26/87

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: TUNGSTEN KING MINE

ALTERNATE NAMES:

BLACK ROCK GROUP

COCHISE COUNTY MILS NUMBER: 70

LOCATION: TOWNSHIP 16 S RANGE 22 E SECTION 6 QUARTER NW
LATITUDE: N 32DEG 04MIN 25SEC LONGITUDE: W 110DEG 08MIN 36SEC
TOPO MAP NAME: DRAGOON - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

TUNGSTEN
COPPER SULFIDE
LEAD SULFIDE
MOLYBDENUM
BISMUTH
BERYLLIUM

BIBLIOGRAPHY:

KEITH, S.B., 1973, AZBM BULL. 187, P. 60
ADMMR TUNGSTEN KING MINE FILE

SEE: ABM # 148 p. 43

USBM RI 5650 pp 43-45

USGS PP # 318 p. 97

USGS PP # 416 p. 188-189

USBM RI 6828 p. 16

ABM Bul. 180 p. 105, 110

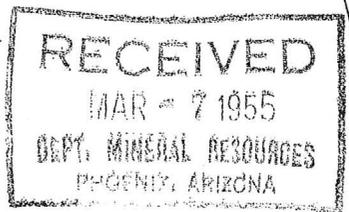
TUNGSTEN KING MINE

COCHISE COUNTY

KAP WR 1/29/82: Warren Croyle, 480 N. Delaware, Chandler, phone 963-8122 was in and discussed his tungsten prospecting efforts in the Little Dragoon Mountains. He has located a group of claims, the Tungsten King on the old Tungsten King Mine in the NW $\frac{1}{4}$, Sec. 6, T16S R22E.

NJN WR 6/7/85: Warren Croyle, (c) visited and reported that his new address is 239 W. Boston, Chandler, Arizona 85224, phone 963-7645. He continues to have claims that cover the Tungsten King (f) and Little Fanny Extension (f) both in Cochise County. From one of these areas he has recovered a 6 lb huebnerite crystal specimen. He is interested in locating some custom mills to process some of his ore. He is also interested in joint venturing or taking on a partner to assist in developing the claims.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT



Mine Tungsten King Mine

Date Mar. 2, 1955.

District Cochise District ----Cochise Co.

Engineer Axel L. Johnson

Subject: Present Status.

Location 11 miles NE of Pomerene. For legal description, see my report of Dec. 11, 1953.

Number of Claims 5 unpat. claims.

Owners Standard Tungsten Corp., 75 West Street, New York 6, N.Y.

Officers See my report on this property under date of Dec. 11, 1953.

Principal Minerals Tungsten ore in the form of scheelits.

Number of Men Employed None. Mine is idle.

Production None.

Present Status Mine was closed down about Jan. 1, 1955 for an indefinite period. The general impression seems to be that the mine and mill was closed down pending the outcome of a law suit entered in New York City against Dr. S. C. Hu, the President of the company. No information available as to what time the mine and mill will be reopened, or if they will be reopened. Considerable mining equipment, including an air compressor, and some trucks are being stored at the Sherman Scott place, about 1 1/2 miles south of Pomerene.

Visited Stand Tungsten mine, evidence of assessment work only. GWI WR 5/9/70

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Tungsten King Mine

Date Mar. 2, 1955.

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Subject: Present Status.

Location 11 miles NE of Pomerene. For legal description, see my report of Dec. 11, 1953.

Number of Claims 5 unpat. claims.

Owners Standard Tungsten Corp., 75 West Street, New York 6, N.Y.

Officers See my report on this property under date of Dec. 11, 1953.

Principal Minerals Tungsten ore in the form of scheelite.

Number of Men Employed None. Mine is idle.

Production None.

Present Status Mine was closed down about Jan. 1, 1955 for an indefinite period. The general impression seems to be that the mine and mill was closed down pending the outcome of a law suit entered in New York City against Dr. S. C. Hu, the President of the company. No information available as to what time the mine and mill will be reopened, or if they will be reopened. Considerable mining equipment, including an air compressor, and some trucks are being stored at the Sherman Scott place, about 1 1/2 miles south of Pomerene.

FIELD ENGINEERS REPORT

MINE - Standard Tungsten Corp. Date Aug. 13, 1953

District - California, Cochise & Dragoon Dists. Engineer - Axel L. Johnson
Cochise County

Subject: Report of Mining Operations - Information from Henry G. Grundstedt,
Arizona Manager of Standard Tungsten Corp.

The Standard Tungsten Corp., 75 West Street, New York 6, N. Y.
Dr. S. C. Hu, President, address above.
Henry G. Grundstedt, Arizona Manager, 935 West Calle Lerdo,
Tucson, Ariz.

The Standard Tungsten Corp. holds leases and options on the following tungsten properties:

(1) Silver Hill Mine (See my report of Silver Hill Mine under date of 5/14/53) This mine was leased from E. F. Epley of Portal, Ariz. Company is now working 2 men on this property, and is putting up a raise from the lower--2600 ft. tunnel. This raise is now up 35 ft. Mining machinery has been installed & the road has been repaired.

(2) Ward Property, 8 miles north of Portal, is being explored by the company. A crew of 3 men is doing this exploration work.

(3) Kries Mine (See my report on Kries Mine under date of Sept. 13, 1951) This mine is leased from John F. Kries, Warren, Ariz. Mine is located 17 miles north of Tombstone in the foothills of Dragoon Mts. Company expects to start exploration work on this property in about a month.

(4) Black Rock Mine (See my report on this property under date of 10/29/52) This mine is located 11 miles NE of Pomerene in the Little Dragoons. The Standard Tungsten Corp. has a 30 day option to purchase this mill from S. C. Kramer, Benson, Ariz. together with Mr. Kramer's mill at Pomerene. Option expires on Sept. 4. The Standard Tungsten Corp. is now running a test on the ore mined at this mine, testing same in Kramer's mill at Pomerene. 4 men are at present working the mine, getting out about 15 tons of ore per day.

(5) Kramer's Mill at Pomerene. Company has 30 day option to purchase the mill together with the mine. Option expires on Sept. 4. The manager, Mr. Grundstedt, seemed quite confident that the deal would go through. Mill is located on the San Pedro River, 3/4 miles west of Pomerene. Mill has jaw crusher, screens, 3 jigs, 2 tables, and ore bins. No flotation is provided for. 2 men are now operating the mill, and Mr. Grundstedt is having mill tests made of the ore from all their mines at this mill mine.

Company plans on milling the ore from all their mines at this mill --- Silver Hill Mine, Ward property, Kries Mine, Black Rock Mine, and any other mines that the company should acquire and operate within a 100 mile radius.

Mr. Grundstedt believes, from mill tests that have been made so far, that it will be necessary to install flotation units at the mill in order to remove some of the impurities from the ore from the Black Rock Mine, as the ore contains

COPY

pyrite, galena, molybdenite, limonite, arsenopyrite, and apatite, in varying small amounts.

State of Arizona

Company intends to modernize the milling equipment, and very likely add flotation units.

Mr. Grundstedt reports that stock originally was sold to 7 N. Y. Bankers, but that no stock is being sold now.

MINE - Standard Tungsten Corp.

District - California, Goobise & Tucson States. Engineer - Axel I. Johnson
Goobise County

Subject: Report of Mining Operations - Information from Henry G. Grundstedt, Arizona Manager of Standard Tungsten Corp.

Tucson, Ariz.
Henry G. Grundstedt, Arizona Manager, 235 West Calle Larga,
Dr. S. C. Hu, President, address above.
The Standard Tungsten Corp., 72 West Street, New York 6, N. Y.

The Standard Tungsten Corp. holds leases and options on the following tungsten properties:

(1) Silver Hill Mine (See my report of Silver Hill Mine under date of 2/11/23) This mine was leased from E. W. Rely of Portal, Ariz. Company is now working 2 men on this property, and is putting up a raise from the lower-2600 ft. tunnel. This raise is now up 32 ft. Mining machinery has been installed & the road has been repaired.

(2) Ward Property, 8 miles north of Portal, is being explored by the company. A crew of 3 men is doing this exploration work.

(3) Kries Mine (See my report on Kries Mine under date of Sept. 13, 1921) This mine is leased from John F. Kries, Warren, Ariz. Mine is located 17 miles north of Tombstone in the foothills of Tucson Mts. Company expects to start exploration work on this property in about a month.

(4) Black Rock Mine (See my report on this property under date of 10/29/22) This mine is located 11 miles NE of Pomerene in the Little Tucson. The Standard Tungsten Corp. has a 30 day option to purchase this mill from S. C. Kramer, Benson, Ariz. together with Mr. Kramer's mill at Pomerene. Option expires on Sept. 1. The Standard Tungsten Corp. is now running a test on the ore mined at this mine, testing same in Kramer's mill at Pomerene. 4 men are at present working the mine, getting out about 15 tons of ore per day.

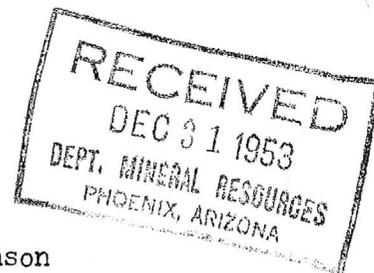
(5) Kramer's Mill at Pomerene. Company has 30 day option to purchase the mill together with the mine. Option expires on Sept. 1. The manager, Mr. Grundstedt, seemed quite confident that the deal would go through. Mill is located on the San Pedro River, 3 1/2 miles west of Pomerene. Mill has jaw crusher, screens, 3 jigs, 2 tables, and ore bins. No flotation is provided for. 2 men are now operating the mill, and Mr. Grundstedt is having mill tests made of the ore from all these mines at this mine.

Company plans on milling the ore from all their mines at this mill - Silver Hill Mine, Ward property, Kries Mine, Black Rock Mine, and any other mines that the company should acquire and operate within a 100 mile radius.

Mr. Grundstedt believes, from mill tests that have been made so far, that it will be necessary to install flotation units at the mill in order to remove some of the impurities from the ore from the Black Rock Mine, as the ore contains over

COPY

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT



Mine Tungsten King Mine
~~Black Rock~~ (formerly called Black Rock Mine)
District Cochise District -- Cochise Co.

Date Dec. 11, 1953
Engineer Axel L. Johnson

Subject: Report of Mining Operations

Location Sec. 6 -- T 16 S -- R 22 E (also Sec. 1 -- T 16 S -- R 21 E and
Sec. 31 -- T 15 S -- R 22 E)
11 miles NE of Pomerene. Road is good except for last mile, which is on
steep grade.

Number of Claims 5 unpatented claims.

Owners Standard Tungsten Corp., 75 West Street, New York 6, N. Y.
Purchased property from S. C. Kramer, et. al. on Sept. 4, 1953.

Operators Same as above.

Officers Dr. S. C. Hu, President, 75 West Street, New York 6, N. Y.
Local address --- Congress Hotel, Tucson, Ariz.
Henry G. Grundstedt, Arizona Manager, 935 West Calle Lerdo, Tucson, Ariz.

Principal Minerals Tungsten ore in the form of scheelite.

Number of Men Employed 2 men on development.

Production Rate No production ~~yet~~ at present time. Development being done in
order to block out ore for mining later. Development work is drifting.

Milling and Marketing Facilities Ore mined will be trucked 11 miles to the Pomerene
Mill, which is being re-constructed and improved upon by the Standard Tungsten Corp.

Proposed Plans Operators expect to start mining ore for milling at their mill
shortly after Jan. 1. They expect to employ 5 men on this, and produce about 30
tons of ore per day.

A government DMEA loan is being applied for on the South End of the
ore body. Loan will call for the sinking of a 100 ft. inclined shaft, and for doing
100 ft. of drifting.

References For Geology, Ore Values, Old Mine Workings, and Past History see my
report on this property under date of Oct. 17, and Oct. 29, 1952.

Note --- At ~~this~~ that time, the property was called the Black Rock Mine
by former operator. Now, ~~the~~ the new owners, ~~the~~ Standard Tungsten Corp., has
changed the name back to the Tungsten King Mine, which name was used prior to 1951.

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

Date..... Oct. 17, 1952 --- Inspection
Oct. 29, 1952 --- Reported.

1. Mine:..... Black Rock Mine.....
2. Location: Sec..... 6..... Twp..... 16 S..... Range..... 22 E..... Nearest Town..... Pomerene.....
(also Sec. 1--T 16 S--R 21 E and Sec. 31--T 15 S--R22 E)
Distance..... 11 mi..... Direction..... NE..... Road Condition..... Good, except last mile is steep.
3. Mining District & County:..... Cochise District ---- Cochise County.....
4. Former Name of Mine:..... Tungsten King.....
5. Owners..... S. C. Kramer, et. al. doing business as Kramer Mining and Milling Co.,
Address:..... Box 247, Benson, Arizona.....
6. Operator:s..... Same as above.....
Address:.....
7. Principal Minerals:..... Tungsten ores in form of Scheelite.....
8. Number of Claims:..... 5..... Lode..... yes..... Placer.....
Patented..... no..... Unpatented..... yes.....
Relocated in summer of 1951 by Bill Shaw.
9. Type of Surrounding Terrain:.....
Mountainous. The mine is on the slopes of a mountain,
near the top of the Little Dragons. It is on the western slopes of the
Little Dragon Mts.

- (from Ariz. Bureau of Mines Bull. #148, & Personal Inspection)
10. Geology & Mineralization:..... Scheelite found in a quartz vein from 6 inches to about
3 ft, in thickness. The vein strikes approximately North and South, and dips
about 45 degrees to the East. The footwall is granite, and the hanging wall is
Schist, evidently pre-Cambrian in age. The scheelite bearing quartz veins have
been found cropping out intermittently for approximately 4000 ft. along this
granite-schist contact. In a few places the main quartz vein has been offset by
faults. The quartz vein contains dull white crystalline quartz, with a little
pyrite, mica, garnet, limonite, and apatite. The scheelite occurs as irregular
distributed small particles, in bunches and in stringers in the quartz vein itself,
11. Dimension & Value of Ore Body:..... and also in the soft black mica schist which is found
along the contact between the quartz vein and the Pinal Schist of the hanging wall,
being a few inches to a foot in thickness.

A tunnel has been driven into the mountain, intersecting
the vein on one of the claims. Vein was followed southward ~~for~~ for about 100 ft.
and a faulted segment of the vein was followed northward for more than 100 ft. The
crosscut to the south was open for inspection for about 60 ft. in length, but the
crosscut and workings to the north was found to be caved.

Operators expect the ore to average 0.5 % of WO_3 ,
without doing any appreciable amount of hand sorting.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Report by:
A. Dredie Campbell

Date May 12, 1942

- 1. Mine Tungsten King
- 2. Mining District & County
- 3. Former name
- 4. Location 14 miles east of Pomerene
- 5. Owner C. L. Clark
- 6. Address (Owner) Gold, Silver, Tungsten Corp. Colorado Springs, Colo.
- 7. Operator Louis Schmidt, Leasee
- 8. Address (Operator) Same
- 9. President C. L. Clark
- 10. Gen. Mgr.
- 11. Mine Supt.
- 12. Mill Supt.
- 13. Principal Metals Scheelite, garnet, ironsulphides and oxides
- 14. Men Employed 5
- 15. Production Rate 25 tons per week
- 16. Mill: Type & Cap. Gravity 1 ton/hr
- 17. Power: Amt. & Type 45 Diesel - Auxil. gas
- 18. Operations: Present Mining & Milling
- 19. Operations Planned Mine, mill & develop
- 20. Number Claims, Title, etc. 12 claims held by location
- 21. Description: Topography & Geography Very rugged and mountainous. 4500' elevation. Fair amount of precipitation .
- 22. Mine Workings: Amt. & Condition 400' of adits and drifts. Small amount of stoping. considerable surface trenching. Bad ground along the vein. Partly caved, due to careless planning.

23. Geology & Mineralization. Iron veins along granite schist contact. Some limestone overlying contact zone. Mineralization occurs as schoelite, pyrite ferric, ferrous and manganese oxide. Some garnet and augite present. Schoelite is finely disseminated through vein. Vein varies from 12" to 4" in width. Vein is traceable for nearly a mile on the surface. Direction N 10° E Dip 30° to E

24. Ore: Positive & Probable, Ore Dumps, Tailings. There are probably 500 tons of positive ore with a grade about 0.3% Fe. There is a large tonnage of possible ore.

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

25. Mine, Mill Equipment & Flow Sheet. Mine has 500 cu ft portable air compressor; 2 jackhammers; small and vertical bar set-up; small amount of drilling steel; mill flow sheet; mine run to California type crusher; undersize to vibrating screens; screen undersize (8 mesh) to table; screen 3" size returned to mill section of crusher; table mine three products; conc; dried; tails reject; mill on ground; Diesel power on line shaft for / mill; aux. gas power

26. Road Conditions, Route. Go to Pecos from Rosqui. Go east 14 miles toward Dragon Mine from Rosqui. Mine can be seen from just outside Rosqui. Very poor road; would be hard to keep up if a good road were put in.

27. Water Supply. Enough for present small operation from underground. If any depth is obtained underground water might be a problem.

28. Brief History. Might have produced 500 units of WSS since 1915. More or less idle until 1939. Then operated by M. M. Carpenter.

29. Special Problems, Reports Filed. Tungsten Deposits of Arizona, Wilson, 1942

30. Remarks. There is a good possibility that this property could be a small steady tungsten producer. Care will have to be taken in mine planning. The ground is prone to be heavy if allowed to stand unsupported any time. The mill flow sheet will have to be revised. The ore is too complex for a straight gravity mill. Needs flotation followed by magnetic separation.

31. If property for sale: Price, terms and address to negotiate. Yes. See Judge Fred W. Pickett, Tucson, Arizona.

32. Signed.....

33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date June 10, 1941

Mine Tungsten King

Mining District and County Johnson Location 10 miles east from Pomerene
(Little Dragoon Dist.) Cochise Co.

Former name "Tungsten Queen" - "Jess Wien
Tungsten"

Owner Gold, Silver & Tungsten, Inc. Address (Owner) Boulder, Colorado

Operator (Lessee) M. M. Carpenter Address (Operator) Box 841, Tucson,
Arizona

President No corporation Gen. Mgr.

Mine Supt. Mill Supt.

Principal Metals Tungsten (Scheelite) Men Employed 3

Production Rate 100 lbs 60% WO₃ per day Mill: Type & Cap.

Power: Amt. & Type 45 HP single cyl tops burning
3 HP single cyl gasoline burning
6 HP single cyl gasoline burning

Operations: Present Developing No. 1 ore body and treating about six tons of
ore daily in the mill at mouth of tunnel.

Operations Planned - Continue development of No. 1 ore shoot; increase production
as more water is developed to run the mill longer hours.

Number Claims, Title, etc. - Eleven unpatented lode claims mainly on public domain.
A state land selection encroaches on some of the ground as located but no
conflict exists at Ore Body No. 1 where present work is centered, and no
adverse rights have been asserted to the use and occupation of any of the
ground claimed.

Description: Topography & Geography - On west slope of Little Dragoon mountains.
Vein is parallel to base and about 1000 ft. up the steep side, vein dipping
into the mountain. The main working, a cross-cut tunnel, is near the
center of the property in rather broad canyon. Drifts will gain depth in
both directions.

Mine Workings: Amt. & Condition - Cross-cut tunnel 400 ft. with drift south 125 ft.
The drift to north is caved. Adit tunnel 125 ft., adit tunnel 75 ft.
Incline shaft 125 ft. with 100 ft. of drift. Twenty or more surface work-
ings, 10 ft. to 40 ft.

(over)

Geology & Mineralization - Contact vein with footwall of granitic porphyry and hanging wall of Pinal schist. Strike is N-S locally variable, and dip is E at 40 to 60 degrees into the mountain. Vein matter is replacement of both wall rocks with heavy development of Sericite and filling of white quartz. Scheelite is the mineral of value and it occurs both in the quartz and the altered schist.

Ore: Positive & Probable, Ore Dumps, Tailings - There is no ore blocked out on four sides. The block of ore indicated by the south drift on the main tunnel level and the outcrop about 150 ft. above is about 15,000 tons. Fair's preliminary estimate of probable ore in No. 1 ore body to a vertical depth of 425 ft. exceeds 150,000 tons. (See attached extract) No tailing.

Vein Width, Length, Value, etc. - Vein can be traced for more than two miles. This property covers 8,800 feet of the vein in length. The average width where opened is more than 4 feet. Hubbard estimates the surface and shallow workings to carry 2% WO₃. Collins and Fair estimate 1% WO₃, and lessee figures 0.5% of recoverable WO₃.

Mine, Mill Equipment & Flow Sheet - Nime equipment: 2 drill air compressor driven from lineshaft actuated by a 45 HP engine, air receiver, pipe line to face, two jackhammer drills (one mounted), track and ore car; Mill equipment: No. 2 - 1/2 Wheeling force feed crusher, bucket elevator, trommel screen, two compartment ore bin, ore feeder, No. B-1 Ellis mill, Overstrom Universal table, water tanks, settling tank, return pump, etc.

Road Conditions, Route - From Benson, highway and paved county road to Pomerene 6 miles, slightly improved natural road to mine, 10 miles. Steady up-grade from Pomerene to base of mountain (high and second gear). The last quarter mile to tunnel and mill is steep, needing compound gears to climb.

Water Supply - Water comes from a winze 30 ft. deep sunk from the main tunnel level and is pumped directly into mill tank. Drift makes a little water which drains into winze. Water stands in the 125 ft. shaft which is about 900 ft. west and 400 ft. below the mill. With return system, water supply believed ample to handle 10 tons per day. A larger water supply could be developed at considerable expense.

Brief History - Property was located in 1915 and during the world war period is said to have produced about 11,000 lbs. of scheelite concentrate, much of it assaying above 70% WO₃. Purchased in 1929 by present owner who started development checked by depression. Cross-cut driven to vein 400 ft. and drifts started north and south. Present lease executed in 1937. Only test runs have been made.

Special Problems, Reports Filed - Report by James R. Hubbard, dated September 12, 1916. Extracts from reports of a reconnaissance by George E. Collins, E. M. Dated 1928 and report by Miles M. Carpenter, E. M., dated 1939. A general and geological report by Fred A. Fair, dated 1931.

Remarks - It will be noted that the reports of Hubbard, Collins and Fair indicate an average tungsten tri-oxide content of 1% or more. The tests of Lessee indicate about 10 lbs. of recoverable WO₃ per ton of ore. The year 1938 was lost under arrangements to have the ore milled at Pomerene on contract, but mill was never completed. When present plant was completed price was only \$13 per unit, so production was postponed. Lessee has recently reconditioned plant and is putting it into production.

If property for sale: Price, terms and address to negotiate - Lease, which carries to August 26, 1942 and equipment is for sale for \$11,500 with \$500 cash, \$5,000 in 30 days and balance \$500 per month. Estimated to require about \$2500 for labor, equipment and working capital to place property in production at the rate of 30 tons per day. Lessee is authorized to negotiate a sale of the property, and it is probable that a purchase could be arranged in connection with the lease.

SIGNED: M. M. Carpenter

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date

July 10, 1941
~~July 10, 1940~~

1. Mine **Tungsten King**
2. Mining District & County **Johnson (Little Dragoon) Cochise County**
3. Former name **"Tungsten Queen", "Jess Wien Tungsten"**
4. Location **10 miles east from Pomerene.**
5. Owner **Gold, Silver & Tungsten, Inc.**
6. Address (Owner) **Boulder, Colorado.**
7. Operator ~~Operator~~ **Lessee: M. M. Carpenter**
8. Address (Operator) **Box 841, Tucson, Arizona**
9. President **No corporation**
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals **Tungsten (Scheelite)**
14. Men Employed **Three**
15. Production Rate **100 lbs 60% WO₃ per day**
16. Mill: Type & Cap.
17. Power: Amt. & Type **45 HP single cyl tops burning
3 HP " " gasoline burning**
18. Operations: Present
~~Developing No. 1 ore body and treating about six tons of ore daily in the mill at mouth of tunnel.~~
67' " " " "
Developing No 1 ore body and treating about six tons of ore daily in the mill at mouth of tunnel.
19. Operations Planned **increase production**
~~Continue development of No. 1 ore shoot; ~~production on a larger scale as water will permit.~~~~
as more water is developed to run the mill longer hours.
20. Number Claims, Title, etc. **Eleven unpatented lode claims mainly on public domain. A state land selection encroaches on some of the ground as located but no conflict exists at Ore Body No. 1 where present work is centered, and no adverse rights have been asserted to the use and occupation of any of the ground claimed.**
21. Description: Topography & Geography **On west slope of Little Dragoon mountains. Vein is parallel to base and about 1000 ft. up the steep side, vein dipping into the mountain. The main working, a cross-cut tunnel is near the center of the property in rather broad canyon. Drifts will gain depth in both directions.**
22. Mine Workings: Amt. & Condition **Cross-cut tunnel 400 ft. with drift south 125 ft. The drift to north is caved. Adit tunnel 125 ft., Adit tunnel 75 ft. Incline shaft 125 ft. with 100 ft. of drift. Twenty or more surface workings, 10 ft. to 40 ft.**

23. Geology & Mineralization ~~of Pinal schist.~~ ^{not vein with to wall of gra. is porphyry and hanging wall} Strike is N-S locally variable, and dip is E at 40 to 60 degrees into the mountain. Vein matter is replacement of both wall rocks with heavy development of Sericite and filling of white quartz. Scheelite is the mineral of value and it occurs both in the quartz and the altered ~~wall rock.~~ ^{schist.}
24. Ore: Positive & Probable, Ore Dumps, Tailings There is no ore blocked out on four sides, ~~in short intervals.~~ The block of ore indicated by the south drift on the main tunnel level and the outcrop about 150 ft. above it about 15,000 tons. Fair's preliminary estimate of probable ore in No. 1 ore body to a vertical depth of 425 ft. exceeds 150,000 tons. (See attached extract) No tailing.
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25. Mine, Mill Equipment & Flow Sheet Mine equipment: 2 drill air compressor driven from lineshaft actuated by a 45 HP engine, air receiver, pipe line to face, two jackhammer drills (one mounted), track and ore car, Mill equipment: No. 2 1/2 Wheeling force feed crusher, bucket elevator, trommel ~~with double~~ screen, two compartment ore bin, ~~ore~~ ^{ore} ~~bank~~ feeder, Overstrom Universal table, water tank, settling tank, return pump, etc. No B-1 Ellis mill, paved
26. Road Conditions, Route From Benson, highway and graded county road to Pomerene 6 miles, slightly improved natural road to mine, 10 miles. Steady up grade from Pomerene to base of mountain (high and second gear). The last quarter mile to tunnel and mill is steep, needing compound gears to climb.
27. Water Supply Water comes from a winze 30 ft. deep sunk from the main tunnel level and is pumped directly into mill tank. Drift makes a little water which drains into winze. Water stands in the 125 ft. shaft which is about 900 ft. west and 400 ft. below the mill. With return system, water supply believed ample to handle 10 tons per day. A larger water supply could be developed at considerable expense.
28. Brief History Property was located in 1915 and during the world war period is said to have produced about 11,000 lbs. of scheelite concentrate, much of it assaying above 70% WO₃. Purchased in 1929 by present owner who started development checked by depression. Cross-cut driven to vein 400 ft. and drifts started north and south. Present lease executed in 1937. Only test runs have been made.
29. Special Problems, Reports Filed Report by James H. Hubbard, dated September 12, 1916. Extracts from reports of a reconnaissance by George H. Collins, E.M. dated 1928 and a general and geological report by Fred A. Fair, dated 1931. Report by Miles M. Carpenter, E. M. dated 1939.
30. Remarks It will be noted that the reports of Hubbard, Collins and Fair indicate an average tungsten tri-oxide content of 1% or more. The tests of Lessee indicate about 10 lbs. of recoverable WO₃ per ton of ore. The year 1938 was lost under arrangements to have the ore milled at Pomerene on contract, but mill was never completed. When present plant was completed price was only \$15.00 per unit, so production was postponed. Lessee KH has recently reconditioned plant and is putting it into production.
31. If property for sale: Price, terms and address to negotiate. Lease, which carries to August 26, 1942 and equipment is for sale for \$7500 cash, or would make working arrangement with responsible parties. Estimated to require about \$2500 for labor, equipment and working capital to place property in production at the rate of 30 tons per day. Lessee is ~~not~~ ^{be} authorized to negotiate a sale of the property, and it is probable that a purchase could be arranged in connection with the lease. Signed M.M. Carpenter

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date July 20, 1940

- MT-24
1. Mine Tungsten King
 2. Mining District & County Johnson (Little Dragoon) Cochise County
 3. Former name "Tungsten Queen", "Jess Wien Tungsten"
 4. Location 10 miles east from Pomerene
 5. Owner Gold, silver & Tungsten, Inc.,
 6. Address (Owner) Boulder, Colorado
 7. Operator Lessee: M. M. Carpenter
 8. Address (Operator) Box 841, Tucson, Ariz.
 9. President No corporation
 10. Gen. Mgr.
 11. Mine Supt.
 12. Mill Supt.
 13. Principal Metals Tungsten Scheelite
 14. Men Employed Two
 15. Production Rate Not established
 16. Mill: Type & Cap.
 17. Power: Amt. & Type 45 HP single cyl tops burning
3 HP " " gaso "
 18. Operations: Present
Maintenance and development.
 19. Operations Planned Continue development of No. 1 ore shoot; put property into production on as large a scale as water will permit.
 20. Number Claims, Title, etc. Eleven unpatented lode claims mainly on public domain. A State land selection encroaches on some of the ground as located, but no conflict exists at ore body No. 1, where present work is centered, and no adverse rights have been asserted to the use and occupation of any of the ground claimed.
 21. Description: Topography & Geography On west slope of Little Dragoon mountains. Vein is parallel to base and about 1000 ft. up the steep side, vein dipping into the mountain. The main working, a cross-cut tunnel is near the center of the property in rather broad canyon. Drifts will gain depth in both directions.
 22. Mine Workings: Amt. & Condition Cross-cut tunnel 400 ft. with drift south 125 ft. The drift to north is caved. Adit tunnel 125 ft. Adit tunnel 75 ft. Incline shaft 135 ft. with 100 ft. of drift. Twenty or more surface workings, 10 ft. to 40 ft.

23. **Geology & Mineralization** Contact vein with footwall of granitic porphyry and hanging wall of Pinal schist. Strike is N-S, locally variable, and dip is E at 40 to 60 deg. into the mountain. Vein matter is replacement of both wall rocks with heavy development of Sericite and filling of white quartz. Scheelite is the mineral of value and it occurs both in the quartz and the altered wall rock.
24. **Ore: Positive & Probable, Ore Dumps, Tailings** There is no ore blocked out on four sides in short intervals. The block of ore indicated by the south drift on the main tunnel level and the outcrop about 200 ft. above is about 15,000 tons. Fair's preliminary estimate of probable ore in No. 1 ore body to a vertical depth of 425 ft. exceeds 150,000 tons. See attached extract.
- 24-A Vein Width, Length, Value, etc.
25. **Mine, Mill Equipment & Flow Sheet** Mine equipment: 2 drill air compressor driven from lineshaft actuated by a 45 hp engine, air receiver, pipe line to face, two jackhammer drills (one mounted), track and ore care.
Mill equipment: No. 2-1/2 wheeling force feed crusher, bucket elevator, trommel with double screen, two compartment ore bin, belt feeder, Overstrom Universal table, water tank, settling tank, return pump etc.
26. **Road Conditions, Route**
Highway and graded county road to Pomerene 6 miles, slightly improved natural road to mine, 10 miles. Steady up grade from Pomerene to base of mountain (high and second gear). The last quarter mile to tunnel and mill is steep, needing compound gears to climb.
27. **Water Supply** Water comes from a winze 30 ft. deep sunk from the maintunnel level and is pumped directly into mill tank. Drift makes a little water which drains into winze. Water stands in the 125 ft. shaft which is about 900 ft. west and 400 ft. below the mill. With return system, water supply believed ample to handle 10 tons per day. A larger water supply could be developed at
28. **Brief History** Property was located in 1915 and during the world war (considerable expense. period is said to have produced about 11,000 lbs. of Scheelite concentrate, much of it assaying about 70% WO_3 . Purchased in 1929 by present owner who started development checked by depression. Cross-cut driven to vein 400 ft. and drifts started north and south. Present lease executed in 1937. Only test runs have been made.
29. **Special Problems, Reports Filed** Report by James R. Hubbard, dated September 12, 1916. Extracts from reports of a reconnaissance by George E. Collins, E.M. dated 1928 and a general and geological report by Fred A. Fair, dated 1931. Report by Miles M. Carpenter, E.M. dated 1939.
30. **Remarks** It will be noted that the reports of Hubbard, Collins and Fair indicate an average tungsten tri-oxide content of 1% or more. The tests of Lessee indicate about 10-lbs. of recoverable WO_3 per ton of ore. The year 1938 was lost under arrangements to have the ore milled at Pomerene on contract, but mill was never completed. When present plant was completed price was only \$13.00 per unit.
31. **If property for sale: Price, terms and address to negotiate.** Lease, which carries to August 26, 1942 and equipment is for sale for \$7500 cash, or would make working arrangement with responsible parties. Estimated to require about \$2500 for labor, equipment and working capital to place property in production at the rate of 10 tons per day. Lessee is not authorized to negotiate a sale of the property, but it is probable that a purchase could be arranged in connection with the
32. Signed..... lease.
33. Use additional sheets if necessary. /sd/ M. M. Carpenter.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date July 20, 1940.

Mine TUNGSTEN KING

District Johnson (Little Dragoon), Cochise Co location 10 miles east from Pomerene.

Former name "Tungsten Queen", "Jess Wien Tungsten"

Owner Gold, Silver & Tungsten, Inc Address Boulder, Colorado.

Operator Lessee: M. M. Carpenter Address Box 841, Tucson, Ariz.

President No corporation. Gen. Mgr.

Mine Supt. Mill Supt.

Principal Metals Tungsten Scheelite Men Employed Two

Production Rate Not established Mill: Type & Cap.

Power: Amt. & Type 45 HP single cyl tops burning
3-HP " " gaso "

Operations: Present Maintenance and development.

Operations Planned Continue development of No 1 ore shoot; put property into production on as large a scale as water will permit.

Number Claims, Title, etc. Eleven unpatented lode claims mainly on public domain. A State land selection encroaches on some of the ground as located, but no conflict exists at Ore Body No 1 where present work is centered, and no adverse rights have been asserted to the use and occupation of any of the ground claimed.

Description: Topog. & Geog. On west slope of Little Dragoon mountains. Vein is parallel to base and about 1000 ft up the steep side, vein dipping into the mountain. The main working, a cross-cut tunnel is near the center of the property in rather broad canyon. Drifts will gain depth in both directions.

Mine Workings: Amt. & Condition Cross-cut tunnel 400 ft with drift south 125 ft. The drift to north is gaved. Adit tunnel 125 ft, Adit tunnel 75 ft, Incline shaft 125 ft with 100 ft of drift. Twenty or more surface workings, 10 ft to 40 ft.

Geology & Mineralization Contact vein with footwall of granitic porphyry and hanging wall of Pinal schist. Strike is N-3, locally variable, and dip is E at 40 to 60 deg. into the mountain. Vein matter is replacement of both wall rocks with heavy development of Sericite and filling of white quartz. Scheelite is the mineral of value and it occurs both in the quartz and the altered wall rock.

Ore: Positive & Probable, Ore Dumps, Tailings There is no ore blocked out on four sides in short intervals. The block of ore indicated by the south drift on the main tunnel level and the outcrop about 200 ft above is about 15,000 tons. Fair's preliminary estimate of probable ore in No 1 ore body to a vertical depth of 425 ft exceeds 150,000 tons. See attached extract.

Mine, Mill Equipment & Flow Sheet Mine equipment 2 drill air compressor driven from lineshaft actuated by a 45 hp engine, air receiver, pipe line to face, two jackhammer drills (one mounted), track and ore car. Mill equipment No 2-1/2 wheeling force feed crusher, bucket elevator, trommel with double screen, two compartment ore bin, belt feeder, Overstrom Universal table, water tank, settling tank, return pump, etc.

Road Conditions, Route Highway and graded county road to Pomerene 6 miles, slightly improved natural road to mine, 10 miles. Steady up grade from Pomerene to base of mountain (high and second gear). The last quarter mile to tunnel and mill is steep, needing compound gears to climb.

Water Supply Water comes from a winze 30 ft deep sunk from the main tunnel level and is pumped directly into mill tank. Drift makes a little water which drains into winze. Water stands in the 125 ft shaft which is about 900 ft west and 400 ft below the mill. With return system, water supply believed ample to handle 10 tons per day. A larger water supply could be developed at considerable expense.

Brief History Property was located in 1915 and during the world war period is said to have produced about 11,000 lbs of scheelite concentrate, much of it assaying above 70% WO₃. Purchased in 1929 by present owner who started development checked by depression. Cross-cut driven to vein 400 ft and drifts started north and south. Present lease executed in 1937. Only test runs have been made.

Special Problems, Reports Filed Report by James R. Hubbard, dated September 12, 1916. Extracts from reports of a reconnaissance by George E. Collins, E. M. dated 1928 and a general and geological report by Fred A. Fair, dated 1931. Report by Miles M. Carpenter, E. M. dated 1939.

Remarks It will be noted that the reports of Hubbard, Collins and Fair indicate an average tungsten tri-oxide content of 1% or more. The tests of Lessee indicate about 10 lbs of recoverable WO₃ per ton of ore. The year 1938 was lost under arrangements to have the ore milled at Pomerene on contract, but mill was never completed. When present plant was completed price was only \$13.00 per sale: Price, terms and address to negotiate. unit.

If property for Lease, which carries to August 26, 1942 and equipment is for sale for \$7500 cash, or would make working arrangement with responsible parties. Estimated to require about \$2500 for labor, equipment and working capital to place property in production at the rate of 10 tons per day. Lessee is not authorized to negotiate a sale of the property, but it is probable that a purchase could be arranged in connection with the lease.

Signed M. M. Carpenter

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORTReport by :
A. Brodie Campbell

Date May 12, 1942

1. Mine Tungsten King
2. Mining District & County Little Dragoon Dist., Cochise Co.
3. Former name
4. Location 14 miles east of Pomerene
5. Owner C. L. Clark
6. Address (Owner) Gold, Silver, Tungsten Corp. Colorado Springs, Colo.
7. Operator Louis Schmidt, Leasee
8. Address (Operator) Same
9. President C. L. Clark
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals Scheelite, garnet, iron sulphides and oxides.
14. Men Employed 5
15. Production Rate 25 tons per week
16. Mill: Type & Cap. Gravity - 1ton / hr
17. Power: Amt. & Type 45 Diesel - Auxiliary gas
18. Operations: Present Mining and milling
19. Operations Planned Mine, mill and develop.
20. Number Claims, Title, etc. 12 claims held by location.
21. Description: Topography & Geography Very rugged and mountainous. 4500' elevation. Fair amount of precipitation.
22. Mine Workings: Amt. & Condition 400' of adits and drifts. Small amount of stoping. Considerable surface trenching. Bad ground along vein. Partly caved, due to careless planning.

23. Geology & Mineralization Quartz veins along granite schist contact. Some limestone overlying contact zone. Mineralization occurs as scheelite, pyrite ferric, ferrous and manganese oxide. Some garnet and augite present/ Scheelite is finely disseminated through vein. Vein varies from 18' to 4' in width. Vein is traceable for nearly a mile on the surface. Direction N 10° E; dip 30° to E
24. Ore: Positive & Probable, Ore Dumps, Tailings There are probably 300 tons of positive ore with a grade about 0.5% WO₃. There is a large tonnage of possible ore.

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

25. Mine, Mill Equipment & Flow Sheet Mine has 240 cu ft portable IR compressor; 2 jackhammers; shell and vertical bar set-up; small amount of drilling steel; mill flow sheet; mine run to California type crusher; undersize to vibrating screen; screen undersize (8 mesh) to table; screen oversize returned to roll section of crusher; table make three products; cone; dried; tails reject; midds re-ground; Diesel power on line shaft for mill; aux. gas power
26. Road Conditions, Route

Go to Pomerene from Benson. Go east 14 miles toward Dragoon Mtns from Pomerene. Mine can be seen from just outside Pomerene. Very poor road; would be hard to keep up if a good road were put in.

27. Water Supply

Enough for present small operation from underground. If any depth is attained underground water might be a problem.

28. Brief History

Might have produced 500 units of WO₃ since 1916. More or less idle until 1939. Then operated by M. M. Carpenter.

29. Special Problems, Reports Filed

Tungsten Deposits of Arizona, Wilson, 1942

30. Remarks

There is a good possibility that this property could be a small steady tungsten producer. Care will have to be taken in mine planning. The ground is prone to be heavy if allowed to stand unsupported any time. The mill flow sheet will have to be revised. The ore is too complex for a straight gravity mill. Needs flotation followed by magnetic separation.

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

Yes. See Judge Fred W. Fickett, Tucson, Arizona.

32. Signed.....

33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date June 10, 1941

Mine Tungsten King

Mining District and County Johnson
(Little Dragoon Dist.) Cochise Co.
Former name "Tungsten Queen" - "Jess Wien
Tungsten"

Location 10 miles east from Pomerene

Owner Gold, Silver & Tungsten, Inc.

Address (Owner) Boulder, Colorado

Operator (Lessee) M. M. Carpenter

Address (Operator) Box 841, Tucson,
Arizona

President No corporation

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals Tungsten (Scheelite)

Men Employed 3

Production Rate 100 lbs 60% WO₃ per day

Mill: Type & Cap.

Power: Amt. & Type 45 HP single cyl tops burning
3 HP single cyl gasoline burning
6 HP single cyl gasoline burning

Operations: Present Developing No. 1 ore body and treating about six tons of
ore daily in the mill at mouth of tunnel.

Operations Planned - Continue development of No. 1 ore shoot; increase production
as more water is developed to run the mill longer hours.

Number Claims, Title, etc. - Eleven unpatented lode claims mainly on public domain.
A state land selection encroaches on some of the ground as located but no
conflict exists at Ore Body No. 1 where present work is centered, and no
adverse rights have been asserted to the use and occupation of any of the
ground claimed.

Description: Topography & Geography - On west slope of Little Dragoon mountains.
Vein is parallel to base and about 1000 ft. up the steep side, vein dipping
into the mountain. The main working, a cross-cut tunnel, is near the
center of the property in rather broad canyon. Drifts will gain depth in
both directions.

Mine Workings: Amt. & Condition - Cross-cut tunnel 400 ft. with drift south 125 ft.
The drift to north is caved. Adit tunnel 125 ft., adit tunnel 75 ft.
Incline shaft 125 ft. with 100 ft. of drift. Twenty or more surface work-
ings, 10 ft. to 40 ft.

(over)

Geology & Mineralization - Contact vein with footwall of granitic porphyry and hanging wall of Pinal schist. Strike is N-S locally variable, and dip is E at 40 to 60 degrees into the mountain. Vein matter is replacement of both wall rocks with heavy development of Sericite and filling of white quartz. Scheelite is the mineral of value and it occurs both in the quartz and the altered schist.

Ore: Positive & Probable, Ore Dumps, Tailings - There is no ore blocked out on four sides. The block of ore indicated by the south drift on the main tunnel level and the outcrop about 150 ft. above is about 15,000 tons. Fair's preliminary estimate of probable ore in No. 1 ore body to a vertical depth of 425 ft. exceeds 150,000 tons. (See attached extract) No tailing.

Vein Width, Length, Value, etc. - Vein can be traced for more than two miles. This property covers 8,800 feet of the vein in length. The average width where opened is more than 4 feet. Hubbard estimates the surface and shallow workings to carry 2% WO_3 . Collins and Fair estimate 1% WO_3 , and lessee figures 0.5% of recoverable WO_3 .

Mine, Mill Equipment & Flow Sheet - Nime equipment: 2 drill air compressor driven from lineshaft actuated by a 45 HP engine, air receiver, pipe line to face, two jackhammer drills (one mounted), track and ore car; Mill equipment: No. 2 - 1/2 Wheeling force feed crusher, bucket elevator, trommel screen, two compartment ore bin, ore feeder, No. B-1 Ellis mill, Overstrom Universal table, water tanks, settling tank, return pump, etc.

Road Conditions, Route - From Benson, highway and paved county road to Pomerene 6 miles, slightly improved natural road to mine, 10 miles. Steady up-grade from Pomerene to base of mountain (high and second gear). The last quarter mile to tunnel and mill is steep, needing compound gears to climb.

Water Supply - Water comes from a winze 30 ft. deep sunk from the main tunnel level and is pumped directly into mill tank. Drift makes a little water which drains into winze. Water stands in the 125 ft. shaft which is about 900 ft. west and 400 ft. below the mill. With return system, water supply believed ample to handle 10 tons per day. A larger water supply could be developed at considerable expense.

Brief History - Property was located in 1915 and during the world war period is said to have produced about 11,000 lbs. of scheelite concentrate, much of it assaying above 70% WO_3 . Purchased in 1929 by present owner who started development checked by depression. Cross-cut driven to vein 400 ft. and drifts started north and south. Present lease executed in 1937. Only test runs have been made.

Special Problems, Reports Filed - Report by James R. Hubbard, dated September 12, 1916. Extracts from reports of a reconnaissance by George E. Collins, E. M. Dated 1928 and report by Miles M. Carpenter, E. M., dated 1939. A general and geological report by Fred A. Fair, dated 1931.

Remarks - It will be noted that the reports of Hubbard, Collins and Fair indicate an average tungsten tri-oxide content of 1% or more. The tests of Lessee indicate about 10 lbs. of recoverable WO_3 per ton of ore. The year 1938 was lost under arrangements to have the ore milled at Pomerene on contract, but mill was never completed. When present plant was completed price was only \$13 per unit, so production was postponed. Lessee has recently reconditioned plant and is putting it into production.

If property for sale: Price, terms and address to negotiate - Lease, which carries to August 26, 1942 and equipment is for sale for \$11,500 with \$500 cash, \$5,000 in 30 days and balance \$500 per month. Estimated to require about \$2500 for labor, equipment and working capital to place property in production at the rate of 30 tons per day. Lessee is authorized to negotiate a sale of the property, and it is probable that a purchase could be arranged in connection with the lease.

SIGNED: M. M. Carpenter

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Report by :
A. Brodie Campbell

May 12, 1942

Date

1. Mine **Tungsten King**
2. Mining District & County **Little Dragoon Dist., Cochise Co.**
3. Former name
4. Location **14 miles east of Pomerene**
5. Owner **C. L. Clark**
6. Address (Owner) **Gold, Silver, Tungsten Corp. Colorado Springs, Colo.**
7. Operator **Louis Schmidt, Lessee**
8. Address (Operator) **Same**
9. President **C. L. Clark**
10. Gen. Mgr.
11. Mine Supt.
12. Mill Supt.
13. Principal Metals **Scheelite, garnet, iron sulphides and oxides.**
14. Men Employed **5**
15. Production Rate **25 tons per week**
16. Mill: Type & Cap. **Gravity - 1ton / hr**
17. Power: Amt. & Type **45 Diesel - Auxiliary gas**
18. Operations: Present **Mining and milling**
19. Operations Planned **Mine, mill and develop.**
20. Number Claims, Title, etc. **12 claims held by location.**
21. Description: Topography & Geography **Very rugged and mountainous. 4500' elevation. fair amount of precipitation.**
22. Mine Workings: Amt. & Condition **400' of adits and drifts. Small amount of stoping. Considerable surface trenching. Bad ground along vein. Partly caved, due to careless planning.**

23. ~~Geology & Mineralization~~ ~~lying contact zone.~~ ~~2 veins along granite schist of contact.~~ Some limestone over-
mineralization occurs as scheelite, pyrite ferric, ferrous and manganese oxide. Some garnet and augite present/ Scheelite is finely disseminated through vein. Vein varies from 18' to 4' in width. Vein is traceable for nearly a mile on the surface. Direction N 10° E; dip 30° to E

24. ~~On a grade about 0.5% Wt. There is a large tonnage of possible ore.~~ There are probably 300 tons of positive ore

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

25. ~~Mine Mill Equipment & Flow Sheet~~ Mine has 240 cu ft portable IR compressor; 2 jackhammers; shell and vertical bar set-up; small amount of drilling steel; mill flow sheet; mine run to California type crusher; undersize to vibrating screen; screen undersize (8 mesh) to table; screen 3' size returned to roll section of crusher; table make three products; cone; dried; tails reject; midds re-ground; Diesel power on line shaft for mill; aux. gas power

26. Road Conditions, Route Go to Pomerene from Benson. Go east 14 miles toward Dragon Mtns from Pomerene. Mine can be seen from just outside Pomerene. Very poor road; would be hard to keep up if a good road were put in.

27. Water Supply Enough for present small operation from underground. If any depth is attained underground water might be a problem.

28. Brief History Might have produced 500 units of WGS since 1916. More or less idle until 1939. Then operated by M. M. Carpenter.

29. Special Problems, Reports Filed Tungsten Deposits of Arizona, Wilson, 1942

30. Remarks There is a good possibility that this property could be a small steady tungsten producer. Care will have to be taken in mine planning. The ground is prone to be heavy if allowed to stand unsupported any time. The mill flow sheet will have to be revised. The ore is too complex for a straight gravity mill. Needs flotation followed by magnetic separation.

31. If property for sale: Price, terms and address to negotiate Yes. See Judge Fred W. Fickett, Tucson, Arizona.

32. Signed.....

33. Use additional sheets if necessary.

ENGINEER'S REPORT

Tungsten Queen Group of Mines

Dragoon, Ariz., Sept. 12, 1916.

Mr. J. J. Wein,
Johnson, Arizona.

Dear Sir:-

According to your request I have made an examination of The Tungsten Queen Group of Mines and herewith submit to you my report.

Respectfully yours,

(signed) James R. Hubbard

Mining Engineer

TUNGSTEN QUEEN GROUP OF MINES

LOCATION.

The Tungsten Queen Group of Mines is located in the Little Dragoon Mountains, Cochise Mining District, Cochise County, Arizona, about twelve miles easterly from the town of Benson.

This group comprises ten mining claims of twenty acres each, or a total of 200 acres. The claims are named the Johnny Nos. 1 and 2, the Queen Nos. 1, 2, 3 and 4, and the Jack Nos. 1, 2, 3 and 4. The first six claims or the Johnny and Queen claims are located along 6000 feet of a Granite-Schist contact in which the known mineralization occurs while the Jack claims are located to cover the contact where it dips to depth.

GEOLOGY OF THE DISTRICT.

The Little Dragoon Mountains have for many years been one of the chief sources of tungsten in the United States. During these years the mining of tungsten has been carried on constantly, the magnitude of operations being dependent on the market value of tungsten.

A mass of granite, rising to the height of 500 feet, occupies nearly the central part of the district, being the core of an anticline. This granite core has a north and south length of about ten miles and a width of five miles. Masses of Pinal schist are found intimately associated with the granite, sometimes overlying it and sometimes entirely imbedded in it. The lines of separation between the schist and the granite are in places very intricate, due to the irregular invasion of the schist by the granite while in other places this line of separation is a distinct granite-schist contact of several miles in length.

On the eastern flank of the granite the schist series is, for the most part, very thin varying from entire absence to a few feet in thickness, while on the west flank of the granite the schist series reaches a thickness of several thousand feet. If mapped the granite-schist contact would represent an irregular ellipse with its length from north to south.

EXTRACTS FROM ENGINEER' REPORTS ON TUNGSTEN KING PROPERTY.

George E. Collins, E. M. Reconnaissance Report, 1928.

"This group of unpatented mining claims (eleven) is situated on the westerly slope of the Little Dragoon Mountain, about 13 miles in an east-north-easterly direction from Benson."

"The average assay of all samples taken was just under 1% over an average width of 58 inches." Note: 18 samples were reported the lowest being 0.47% over 30 inches, the highest 2.0% over 50 inches."

I have not attempted to describe the workings in detail, because many of the most important are now caved, or otherwise inaccessible. There are, however, sufficient accessible openings to indicate the probability of a large tonnage of 1% ore, if the assays and panning tests can be trusted, and if some commercial method of treatment can be devised, to treat such ore. Of the quantity of higher grade ore, containing coarse scheelite, no useful estimate of tonnage is now possible."

Fred A. Fair, A General and Geological Report, 1931.

"The King vein is a true contact vein in which there has been subsequent slipping and infiltration of typical contact minerals, including quartz, crystalized mica, small quantities of pyroxene, epidote, hematite crystals, blue tourmaline, wolframite and scheelite. Iron pyrite and chalcopyrite also occur in places, both in the vein filling and in the wall rock. The King vein north of King No 1 Fault has an average strike of N 10 W and a dip of 40 easterly, and south of the fault has a more northerly course and a more vertical dip."...."The average width of the pay streak of the King vein is 48 inches, although there is evidence of vein infiltration into the walls for several feet more, so the vein could be said to be six feet wide." The total length of the contact vein is not stated in the report but scales 8,800 feet on the accompanying map."

"SAMPLING:- The mine was quite thoroughly sampled by George E. Collins, E. M. of Denver, Colorado, who reported on same September 4, 1928." "The main crosscut and drifts were run since the Collins report was made."

"The sampling done by Mr. Collins and the further sampling done by myself as herein reported would indicate that within this zone the average assay value of 1% and the average width of 58 inches as reported by Mr. Collins is substantially correct and this, together with the geological features which I have hereinbefore stated and shown on the sheets from C-1 - 6, warrant a very careful and extensive development program as herein outlined.

"Therefore, for development purposes only, I estimate the following:"

"Probable Ore Shoot No 1, above elevation 4835, See sheet 5-C)"

"Length 800 feet, Average vertical height 425 feet. Average height on dip of vein 676.6 feet. Average width of ore 4.833 feet, Average value 1%."

"800x 425 x 4.833 1,645,320 cu. ft. Allowing 12 cu ft to the ton gives 156,935 tons. 1% scheelite gives 20 pounds WO_3 per ton or 2,738,600 pounds of WO_3 . On the basis of an 80% saving, this gives 2,190,880 pounds of WO_3 ."

Resting upon the ragged edges of the schists, unconformably, is a belt of quartzite of varying thickness. This quartzite is similar in appearance and occurrence to that at Bisbee and is the Bolsa quartzite of Cambrian Geological age. Resting upon this quartzite are beds of dark gray limestone, which changes in its upper part to a white granular limestone. These are the Devonian and Carboniferous limestones commonly found in all of the mountain systems of south-eastern Arizona.

Such a geological condition as above described, is a granite intrusive in a Pinal schist, in the latter overlain unconformably by quartzite - limestone series of great thickness, is the common one of nearly all of the mining regions of south eastern Arizona. The granite mass is always more or less mineralized, such mineralization occurring in small fractions which have been filled with quartz and accompanying minerals. As a rule such veins and veinlets are of no economic worth when the mineral content is gold, silver, copper, lead or zinc. But in some cases the mineralization consists of the tungsten minerals and such veins then become of great economic worth.

Such a condition exists in the granite mass of the Little Dagon mountains. When this mass cooled, countless fissures occurred which were afterward filled with quartz accompanied with the tungsten minerals, hubnerite, wolframite and a very small amount of scheelite. Until recently the known zone of mineralization was a belt about two miles in length from north to south near the eastern edge of the granitic mass. The greater part of this belt has been owned jointly for years by the Primos Chemical and the Chrome Steel Companies. From it has been produced great quantities of hubnerite ores at one time holding first place among the tungsten producing regions of the United States.

During the recent high prices paid for tungsten, prospectors opened up tungsten ores in the granite hills further west and finally, sometime during the month of January last, scheelite was found in the schist by J. J. Wein and associates, in the west part of the granite-schist contact. At the time the discovery was made, a quartz vein was noticed in the schist-granite contact but no attention was then paid to it. A small amount of scheelite was mined from the schist, which shipped in small lots of poorly cleaned stuff, gave returns as high as 74% tungstic acid.

This scheelite derived from the schist was of small amount but sufficient to justify Mr. Wein and his associates in thoroughly exploring the ground which they had located. Quite by accident one day in July last, one of the owners discovered that the quartz along the schist-granite contact carried scheelite. Development work was started in the quartz which now shows the loci of the tungsten to be in the quartz along the schist-granite contact and also that the scheelite previously found in the schist near the contact was merely an enrichment from the contact.

DEVELOPMENT.

The development work done so far consists of several open cuts, shallow shafts, a tunnel and one shaft which was sunk to the depth of 30 feet at the time of my examination but which is now at a greater depth. This work is confined chiefly to the Queen 2, 3, and 4, lodes.

On the Queen No. 1 lode, a location shaft has been sunk which shows the quartz to have a thickness of four feet. This quartz carries some scheelite. On the north end of Queen No. 2 lode, an incline shaft has been sunk to the depth of 20 feet, with a ten foot drift run southerly from the bottom. This shows the quartz to have a thickness of five feet. Pannings of the quartz show scheelite and vanadium. A sample of the concentrated scheelite assayed 60.4% tungstic acid. To the south of this shaft and on the Queen No. 2 lode a series of open cuts 50 feet in length, and from 8 to 10 feet in depth, have been made along the contact. These show a width of six feet of quartz which is well impregnated with scheelite. Shallow open cuts on Queen No. 3 lode show a narrower quartz filling but what there is pans well in tungsten.

Near the south end of Queen No. 3 lode a tunnel has been run from a gulch, following the contact for a distance of 70 feet. In places in this tunnel the quartz has a thickness of three feet. The dump material from this tunnel pans some scheelite and is a milling ore of rather low grade.

On the Queen No. 4 lode, a main working shaft has been sunk in the schist-granite contact and has reached a depth of about 35 feet. This shows the quartz as having a thickness of from five to six feet. The strike of the contact at this point is nearly north-south dipping 45 degrees east. All of the material taken from this shaft carries well in scheelite, some of it being very rich. A large portion of it will average 8% tungsten acid. From this shaft southerly the quartz outcrop is very strong for a distance of 600 feet. All of the quartz of this outcrop is strongly impregnated with scheelite. Several open cuts have been made in this quartz, all of which have developed good scheelite bearing ore. On the Johnny Nos. 2 and 3 lodes location holes have been sunk near the contact.

The above described development work shows at least 400 feet of the schist-granite contact to be well impregnated with scheelite. The surface quartz of one thousand feet of this part of the contact has a thickness of from four to six feet and further development will undoubtedly show it to be of greater length.

CHARACTER OF THE ORE.

The greater part of the ore is a white granular quartz. It is very friable and contains scheelite varying from minute crystals to those large aggregates of a pound weight. The scheelite on the quartz is granular, friable and has a deep cream color. In places the quartz surrounds lenses of schist which has been partly silicified as well as enriched with tungsten. Also in the hanging wall the quartz has entered and filled weak places in the schist, enriching it with scheelite. Such enriched schist is more or less silicified. The mica of the schist ore has resisted alteration so this ore appears as a mass of both black and white mica in which fine crystals are imbedded. Throughout the mass are scattered crystals of scheelite. Some of the scheelite is white but the greater part has a cream color of a slightly lighter shade than the scheelite of the quartz ore.

In the hanging wall, next to the schist is a gouge. In this gouge are found small nuggets of lead which carry considerable silver. This lead ore is of some worth when mines as an accessory of the tungsten. In mining care must be taken to keep the gouge separate from the scheelite ores but this can be easily done. I judge that this lead ore is of a later geological occurrence than the scheelite and is superficial and need not be expected to occur at depth.

ORE RESERVES.

Only a small amount of ore can be said at the present time to be actually blocked out. A certain amount can be taken as surely indicated by taking that opened up by the 35 foot shaft as one side of a wedge, the surface as the other side, this giving a wedge with two sides showing, is a block or rather one half a block 35 feet x 35 feet x 6 feet or 3675 cu. feet or 283 tons of ore. Two such wedges are blocked or 566 tons. Estimating this as carrying 2% scheelite, which estimate is low, we have a total content of 11.6 tons of scheelite or better than 60% tungstic acid, worth at the present market \$900.00 per ton, or a total of \$10170.00. Or figuring this ore to extend on each side of the shaft a distance equal to its depth, a total of 70 feet, the above figures can be doubled giving 70 feet of the quartz vein as having a value of \$20,340.00 at a depth of 35 feet. This strong body of quartz impregnated with scheelite is exposed for a distance of 600 feet south of the shaft and a short distance to the north. If this quartz is of equal value to that exposed by the shaft and continuous to the depth of 35 feet it would have a gross worth of ten times the last estimate or \$203,400.00.

This would give each foot depth, a width of six feet and a length of 700 feet of the body of ore exposed on the Queen No. 4 lode, a value of \$5,811.

Figures comparable to these can be derived from the body of ore exposed on the Queen Nos. 2 and 3 lodes.

The above estimates are more or less hypothetical but at the same they are extremely probable.

The value of the ore up or down, is greatly influenced by the prevailing market price of the metal and the demand for ore.

MILLING.

The scheelite cleaves from the quartz beautifully. Both the quartz and the scheelite are granular and friable and are easy to crush. Coarse crushing will free the greater part of the scheelite from the quartz when the scheelite, on account of its high specific gravity, can be easily concentrated by any simple form of wet concentration. Probably wet tables of the Wilfley type would be the most suitable.

Some loss in scheelite cannot be avoided as when finely powdered it will color the water milky and become impossible to save, therefore great care should be used in crushing the ore.

MINING.

No great problem will be encountered in mining the ore. The ground is easy to drill and breaks well. The hanging wall schist stands well and in stoping only a few stulls will be needed for its support.

The vein, being confined to the granite-schist contact, is easy to follow, thus allowing a definite system of development to be planned and carried out.

TRANSPORTATION.

A wagon road connects the mine with Benson, the nearest feasible railroad point. This road is of easy grade but at the present time needs some repair to put it into good shape.

WATER.

The Tungsten Queen Company have located the Coyote Mill Site, covering a natural spring which is located one half mile east of the mining property. This spring never goes dry and will furnish some water throughout the entire year. Water also runs from several springs in the schist-granite contact during six months of the year. Hughes Canyon, one mile to the north and Sheep Canyon, one mile to the east of the property, together with the water from the above mentioned springs, will furnish water for milling operations on a good scale.

The cost of a pumping plant from either Hughes or Sheep Canyons, which will furnish sufficient water for a twenty ton plant, will amount to approximately \$4000000. Pumping plants and pipe lines from both canyons will cost double this amount but sufficient water can then be obtained for a 40 or 50 ton plant.

WOOD AND TIMBER.

Good mining stull timber can be had from adjacent mountains within a mile of the property. There is also plenty of firewood. Dimension timber can be landed on the property at a cost not to exceed \$45.00 per 1000 feet.

CONCLUSION.

A TWENTY TON CONCENTRATION PLANT, together with a pumping plant and pipe line from one of the canyons will cost about \$3000.00. Sufficient ore is in sight to warrant the erection of such a plant. If lacking sufficient money for this plant, a plant of hand jags can be put in and with this earn enough money for the larger plant.

I consider this property to be of exceptional merit as a tungsten mine. The scheelite seems to be evenly distributed throughout all of the quartz and does not occur only in bunches and pockets as does the hubnerite ores in the eastern part of the district, the quartz vein is large for tungsten deposits, and the ore is exceedingly easy to mine and mill.

Respectfully submitted,

(signed) James R. Hubbard.

ENGINEERS REPORT.

Tungsten Queen Group of Mines.

Dragoon, Ariz., Sept. 12, 1916.

Mr. J. J. Wien,

Johnson, Ariz.

Dear Sir:-

According to your request I have made an examination of the Tungsten Queen Group of Mines and herewith submit to you my report.

Respectfully yours,

(Signed) James R. Hubbard.

Mining Engineer.

TUNGSTEN QUEEN GROUP OF MINES.

LOCATION.

The Tungsten Queen Group of Mines is located in the Little Dragoon Mountains, Cochise Mining District, Cochise County, Arizona, about twelve miles easterly from the town of Benson.

This group comprises ten mining claims of twenty acres each, or a total of 200 acres. The claims are named the Johnney Nos. 1 and 2, the Queen Nos. 1, 2, 3 and 4, and the Jack Nos. 1, 2, 3 and 4. The first six claims or the Johnney and Queen claims are located along 6000 feet of a Granite-Schist contact in which the known mineralization occurs while the Jack claims are located to cover the contact where it dips to depth.

GEOLOGY OF THE DISTRICT.

The Little Dragoon Mountains have for many years been one of the chief sources of tungsten in the United States. During these years the mining of tungsten has been carried on constantly, the magnitude of operations being dependent on the market value of tungsten.

A mass of granite, rising to the height of 500 feet, occupies nearly the central part of the district, being the core of an anticline. This granitic core has a north and south length of about ten miles and a width of five miles. Masses of Pinal schist are found

intimately associated with the granite, sometimes overlying it and sometimes entirely imbedded in it. The lines of separation between the schist and the granite are in places very intricate, due to the irregular invasion of the schist by the granite while in other places this line of separation is a distinct granite-schist contact of several miles in length.

On the eastern flank of the granite the schist series is, for the most part, very thin, varying from entire absence to a few feet in thickness, while on the west flank of the granite the schist series reaches a thickness of several thousand feet. If mapped the granite-schist contact would represent an irregular ellipse with its length from north to south.

Resting upon the ragged edges of the schists, unconformably, is a belt of quartzite of varying thickness. This quartzite is similar in appearance and occurrence to that at Bisbee and is the Bolsa quartzite of Cambrian Geological age. Resting upon this quartzite are beds of dark gray limestone, which changes in its upper part to a white granular limestone. These are the Devonian and Carboniferous limestones commonly found in all of the mountain systems of south eastern Arizona.

Such a geological condition as above described, is a granite intrusive in Pinal schist, the latter overlain unconformably by quartzite - limestone series of great thickness, is the common one of nearly all of the mining regions of south eastern Arizona. The granite mass is always more or less mineralized, such mineralization occurring in small fractions which have been filled with quartz and accompanying minerals. As a rule such veins and veinlets are of no economic worth when the mineral content is gold, silver, copper, lead or zinc. But in some cases the mineralization consists of the tungsten minerals and such veins then become of great economic worth.

Such a condition exists in the granite mass of the Little Dragon mountains. When this mass cooled, countless fissures occurred

which were afterward filled with quartz accompanied with the tungsten minerals, hubnerite, wolframite and a very small amount of scheelite. Until recently the known zone of mineralization was a belt about two miles in length from north to south near the eastern edge of the granitic mass. The greater part of this belt has been owned jointly for years by the Primos Chemical and the Chrome Steel Companies. From it has been produced great quantities of hubnerite ores at one time holding first place among the tungsten producing regions of the United States.

During the recent high prices paid for tungsten, prospectors opened up tungsten ores in the granite hills further west and finally, sometime during the month of January last, scheelite was found in the schist by J. J. Wien and associates, in the west part of the granite-schist contact. At the time the discovery was made, a quartz vein was noticed in the schist-granite contact but no attention was then paid to it. A small amount of scheelite was mined from the schist, which shipped in small lots of poorly cleaned stuff, gave returns as high as 74% tungstic acid.

This scheelite derived from the schist was of small amount but sufficient to justify Mr. Wien and his associates in thoroughly exploring the ground which they had located. Quite by accident one day in July last, one of the owners discovered that the quartz along the schist - granite contact carried scheelite. Development work was started in the quartz which now shows the loci of the tungsten to be in the quartz along the schist-granite contact and also that the scheelite previously found in the schist near the contact was merely an enrichment from the contact.

DEVELOPMENT.

The development work so far done consists of several open cuts, shallow shafts, a tunnel and one shaft which was sunk to the depth of 30 feet at the time of my examination but which is now at a greater depth. This work is confined chiefly to the Queen Nos. 2, 3, and 4,

lodes.

On the Queen No. 1 lode, a location shaft has been sunk which shows the quartz to have a thickness of four feet. This quartz carries some scheelite. On the north end of Queen No. 2 lode, an incline shaft has been sunk to the depth of 20 feet, with a ten foot drift run southerly from the bottom. This shows the quartz to have a thickness of five feet. Pannings of the quartz show scheelite and vanadium. A sample of the concentrated scheelite assayed 60.4% tungstic acid. To the south of this shaft and on the Queen No. 2 lode a series of open cuts 50 feet in length, and from 8 to 10 feet in depth, have been made along the contact. These show a width of six feet of quartz which is well impregnated with scheelite. Shallow open cuts on Queen No. 3 lode show a narrower quartz filling but what there is pans well in tungsten. Near the south end of Queen No. 3 lode a tunnel has been run from a gulch, following the contact for a distance of 70 feet. In places in this tunnel the quartz has a thickness of three feet. The dump material from this tunnel pans some scheelite and is a milling ore of rather low grade.

On the Queen No. 4 lode, a main working shaft has been sunk in the schist-granite contact and has reached a depth of about 35 feet. This shows the quartz as having a thickness of from five to six feet. The strike of the contact at this point is nearly north-south, dipping 45 degrees east. All of the material taken from this shaft carries well in scheelite, some of it being very rich. A large portion of it will average 8% tungstic acid. From this shaft southerly the quartz outcrop is very strong for a distance of 600 feet. All of the quartz of this outcrop is strongly impregnated with scheelite. Several open cuts have been made in this quartz, all of which have developed good scheelite bearing ore. On the Johnney Nos. 2 and 3 lodes location holes have been sunk near the contact.

The above described development work shows at least 4000 feet of the schist-granite contact to be well impregnated with scheelite. The surface quartz of one thousand feet of this part of the contact

has a thickness of from four to six feet and further development will undoubtedly show it to be of greater length.

CHARACTER OF THE ORE.

The greater part of the ore is a white granular quartz. It is very friable and contains scheelite varying from minute crystals to those large aggregates of a pound weight. The scheelite in the quartz is granular, friable and has a deep cream color. In places the quartz surrounds lenses of schist which has been partly silicified as well as enriched with tungsten. Also in the hanging wall the quartz has entered and filled weak places in the schist, enriching it with scheelite. Such enriched schist is more or less silicified. The mica of the schist ore has resisted alteration so this ore appears as a mass of both black and white mica in which fine crystals of quartz are imbedded. Throughout the mass are scattered crystals of scheelite. Some of the scheelite is white but the greater part has a cream color of a slightly lighter shade than the scheelite of the quartz ore.

In the hanging wall, next to the schist is a gouge. In this gouge are found small nuggets of lead which carry considerable silver. This lead ore is of some worth when mined as an accessory of the tungsten. In mining care must be taken to keep the gouge separate from the scheelite ores but this can be easily done. I judge that this lead ore is of a later geological occurrence than the scheelite and is superficial and need not be expected to occur at depth.

ORE RESERVES.

Only a small amount of ore can be said at the present time to be actually blocked out. A certain amount can be taken as surely indicated by taking that opened up by the 35 foot shaft as one side of a wedge, the surface as the other side, thus giving a wedge with two sides showing, ie a block or rather one half a block 35ft X 35 ft X 6 ft or 3675 cu. feet or 283 tons of ore. Two such wedges are blocked or 566 tons. Estimating this as carrying 2% scheelite, which

estimate is low, we have a total content of 11.6 tons of scheelite of better than 60% tungstic acid, worth at the present market \$900.00 per ton, or a total of \$10170.00. Or figuring this ore to extend on each side of the shaft a distance equal to its depth, a total of 70 feet, the above figures can be doubled giving 70 feet of the quartz vein as having a value of \$20,340.00 at a depth of 35 feet. This strong body of quartz impregnated with scheelite is exposed for a distance of 600 feet south of the shaft and a short distance to the north. If this quartz is of equal value to that exposed by the shaft and continuous to the depth of 35 feet it would have a gross worth of ten times the last estimate or \$203,400.00. This would give each foot depth, a width of six feet and a length of 700 feet of the body of ore exposed on the Queen No. 4 lode, a value of \$5,811.

Figures comparable to these can be derived from the body of ore exposed on the Queen Nos. 2 and 3 lodes.

The above estimates are more or less hypothetical but at the same time they are extremely probable.

The value of the ore up or down, is greatly influenced by the prevailing market price of the metal and the demand for-ore.

MILLING.

The scheelite cleaves from the quartz beautifully. Both the quartz and the scheelite are granular and friable and are easy to crush. Coarse crushing will free the greater part of the scheelite from the quartz when the scheelite, on account of its high specific gravity, can be easily concentrated by any simple form of wet concentration. Probably wet tables of the Wilfley type would be the most suitable.

Some loss in scheelite cannot be avoided as when finely powdered it will color the water milky and become impossible to save, therefore great care should be used in crushing the ore.

MINING.

No great problem will be encountered in mining the ore. The

ground is easy to drill and breaks well. The hanging wall schist stands well and in stoping only a few stulls will be needed for its support.

The vein, being confined to the granite-schist contact, is easy to follow, thus allowing a definite system of development to be planned and carried out.

TRANSPORTATION.

A wagon road connects the mine with Benson, the nearest feasible railroad point. This road is of easy grade but at the present time needs some repair to put it into good shape.

WATER.

The Tungsten Queen Company have located the Coyote Mill Site, covering a natural spring which is located one half mile east of the mining property. This spring never goes dry and will furnish some water throughout the entire year. Water also runs from several springs in schist-granite contact during six months of the year. Hughes Canyon, one mile to the north and Sheep Canyon, one mile to the east of the property, together with the water from the above mentioned springs, will furnish water for milling operations on a good scale.

The cost of a pumping plant from either Hughes or Sheep Canyons, which will furnish sufficient water for a twenty ton plant, will amount to approximately \$4000.00. Pumping plants and pipe lines from both canyons will cost double this amount but sufficient water can then be obtained for a 40 or 50 ton plant.

WOOD AND TIMBER.

Good mining stull timber can be had from the adjacent mountains within a mile of the property. There is also plenty of firewood. Dimension timber can be landed on the property at a cost not to exceed \$45.00 per 1000 feet.

CONCLUSION.

A TWENTY TON CONCENTRATION PLANT together with a pumping plant and pipe line from one of the canyons will cost about \$8000.00. Sufficient ore is in sight to warrant the erection of such a plant. If lacking sufficient money for this plant, a plant of hand jigs can be put in and with this earn enough money for the larger plant.

I consider this property to be of exceptional merit as a tungsten mine. The scheelite seems to be evenly distributed throughout all of the quartz and does not occur only in bunches and pockets as does the hubnerite ores in the eastern part of the district, the quartz vein is large for tungsten deposits, and the ore is exceedingly easy to mine and mill.

Respectfully submitted,

(Signed) James R. Hubbard.

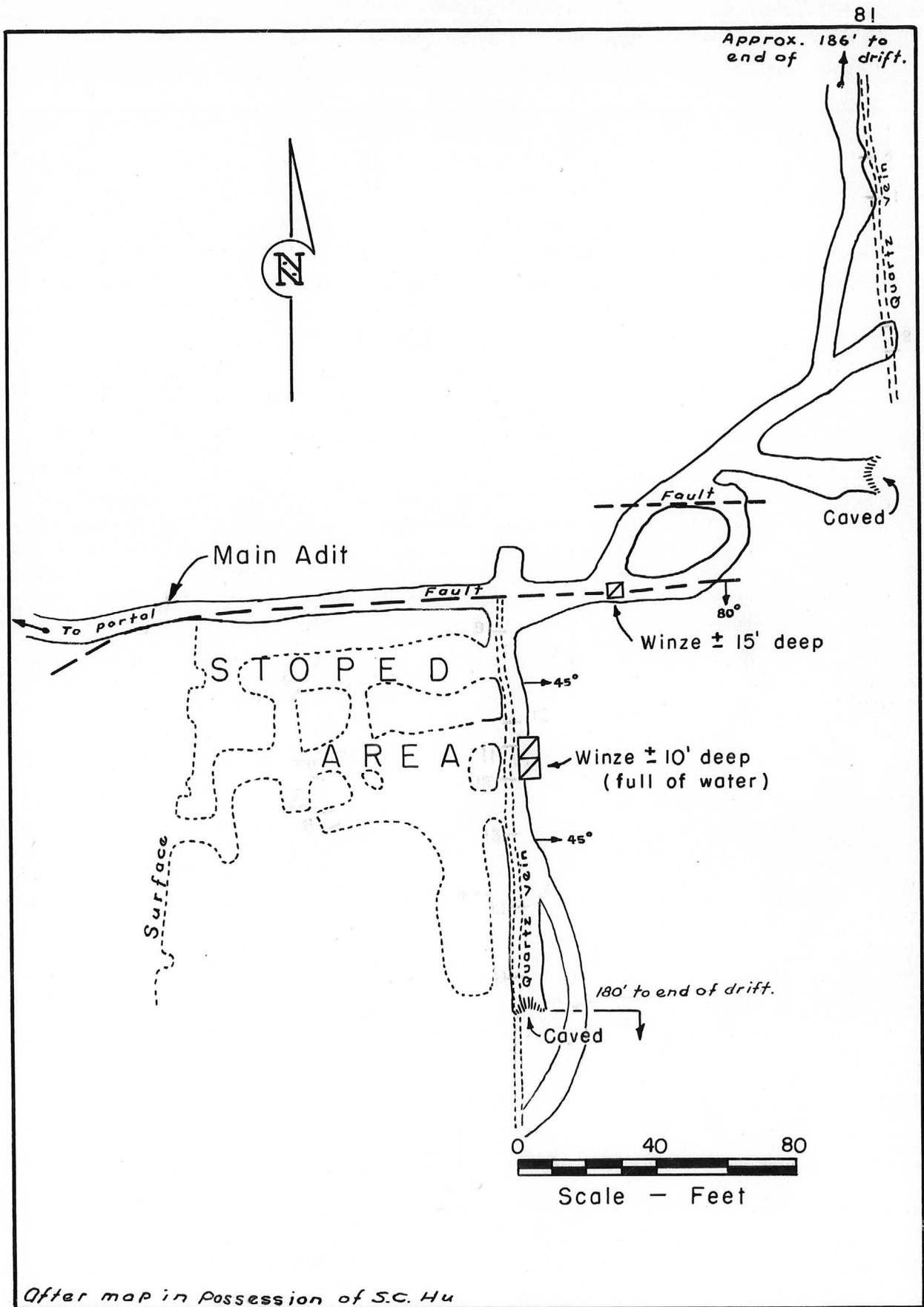


Fig. 16-Tungsten King Mine, Little Dragoon Mts., Arizona

quartz vein

after map in possession of S.C. Hu.

-N veins

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