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Lake Havasu
Steamboat Rock
CHEMEHUEVI VALLEY INDIAN RES.
Carsons Well
TURTLE MOUNTAINS
Danby Lake (Dry)
Vidal Junction
Vidal
Rice
W. Riverside 2660
RIVERSIDE MTNS.
SAND DUNES
Colorado River Aqueduct
Monument Pk. 2602
Parker Dam
Cross Roads
Earp
Larned Landing
WILLIAMS
Mohave Wash
Mc Cracken Peak 3524
Aubrey Peak
Potts Mtn. 3377
RAWHIDE MTNS.
Signal
Greenwood Peak
Arrastra Mtn.
Artillery Peaks
Santa Maria River
ALAMO DAM SITE
ALAMO CROSSING
DAM SITE
Bill Williams River
PARKER DAM
BUCKSKIN MTNS.
Planet Ranch
Planet Pk.
Swansea
Parker
EL. 420
Black Pk. 1656
CACTUS PLAIN
MOUNTAINS
Buffalo
Battleship Peak
Smith Peak
Wash
VALLEY
MOUNTAINS
Poston
COLORADO RIVER INDIAN RESERVATION
Moon Mtn.
Bouse
EL. 945
BOUSE HILLS
Cunningham Wash
BUTLER VALLEY
HARCUVAR MTNS.
Harcuvar Peak 4700
Cunningham Pass
Salome Peak
MC MULLEN VALLEY
Midland
MARIA MTNS.
LITTLE MARIA MTNS.
RIVERSIDE
Colorado River
PLAIN
PLOMOSA
LA POSA PLAIN
Bouse Wash
RANEGRAS
McVay
Salome
Wenden
Ibex Peak
Vicksburg
Harcuvar
PHOENIX
392 Miles
LOS ANGELES, CALIF.
Hope
EL. 1521
Granite Wash Pass
HARQUAHALA
LITTLE HARQUAHALA MTNS.
Lone Mtn.
Mc COY MTNS.
EL. 265
Blythe
La Paz (Ruins)
HI JOLLY MONUMENT
Quartzsite
EL. 875
NEW WATER MTNS.
Ehrenberg
Cunningham Mtn. 3314
DOME ROCK MTNS.
Tyson Wash
Ripley
MTNS.
CALIFORNIA
Palo Verde
MULE MTNS.
PALO VERDE MTNS.
Milpitas Wash
KOFA
KOFA NATIONAL
EAGLE TAIL MTNS.
CEMETERY RIDGE
Anvil Mtn.
LITTLE HORN
Virgin Peak
Weaver
To Los Angeles
F
G
34°
95
96
72
60
70
172
13
38

① FLAT ORE BED

±40

~~31~~ holes & 65 samples

364,000 @ 2.09%

of which 185,000 @ 2.25

---

② Copper above & below ore bed

692,000 @ 1.37%

---

③ SE extn to Spanish workings

212,000 tons

@ ?

④ Ls - Tactite on NW

59,000 @ 1.31%

---

⑤ NORMA FLT - ORE

138,000 @ 2.20%

30' wide x backing to 100' depth

NW - Sq.

---

⑥ NORMA FLT - ORE

SE - Sq.

69,000 @ ?

6 x 1000 x 150

FLAT ORE BED TOTAL

364,000 @ 2.088

692,000 @ 1.373

212,000 @ ?

1,268,000 @ ± 1.25 - 1.50 ?

± 4:1 Stripping ratio.

$5.10 gross

1.00 to strip.

.50 to mine

1.00 to leach

.50 overhead

3.00 Cost

IRON ORE

3,356,000 @ 45 - to 50%
in the two horizons
- Separated by
5 - 10^6 tons siliceous
hematite -

EXPLORATION POSSIBILITIES
MINERAL HILL, YUMA COUNTY, ARIZONA

December, 1961

TELEPHONE 945-8352 CODE
RESIDENCE 945-6968

E. N. PENNEBAKER
CONSULTANT GEOLOGIST
P. O. BOX 817
SCOTTSDALE, ARIZONA

RETURN
TO

Office: 23 East First St

E. N. PENNEBAKER
CONSULTING GEOLOGIST
SCOTTSDALE, ARIZONA

EXPLORATION POSSIBILITIES

AT

MINERAL HILL, BILL WILLIAMS DISTRICT

YUMA COUNTY, ARIZONA

Submitted to Homestake Mining Company

December 2, 1961

By E. N. Pennebaker

E. N. Pennebaker

61

SUMMARY

The Mineral Hill ore body is a shallow blanket of oxidized copper ore sitting upon a substantial deposit of medium-grade specularite-hematite. It is planned to leach and precipitate the copper in vats, and such an operation should be moderately successful; nevertheless, the writer does not recommend that Homestake participate in this enterprise because of the small size of the operation and its relatively high cost.

On the other hand, it is speculated that substantial mineralization might occur at depth, and attention is drawn to a proposal to test this possibility.

INTRODUCTION

On November 27, 28 and 29, 1961, the writer examined the Mineral Hill and Continental claim groups in the Bill Williams mining district of northwestern Yuma County, Arizona. These are situated in a beeline about 17 miles northeast of the town of Parker and about 2 miles south of the Williams River.

This area is of interest because of the occurrence in it of substantial bodies of oxidized copper ore and associated iron deposits. The Mineral Hill and Continental occurrences have been mapped in detail by Louis W. Cramer of Salt Lake City, and references should be made to his reports and maps dated

December 1, 1960; April 1, 1961; and June 1961, In these he discusses geology, exploration by drilling, and reserves of copper and iron ores.

The property is reported to consist of 15 patented lode mining claims, 14 unpatented lode mining claims, and 2 placer mining claims.

The topography in and near the mineralized area is rugged in detail, and road building to serve drilling sites is expensive.

GEOLOGICAL SETTING

The region along both sides of the Williams River just east of its confluence with the Colorado displays a Precambrian complex of gneisses, schists and other rock types; various undifferentiated Paleozoic sediments, including limestone; Tertiary lavas of several ages; Cretaceous and Tertiary sediments; and Quaternary and Tertiary sands and gravels.

Recent mapping by the Arizona Bureau of Mines reveals that great thrust plates and large fragments of such plates occur on both sides of the Williams River, where Paleozoic and younger rock slices rest upon the Precambrian basement. The junction of the upper rocks with the basement is either flat or moderately inclined, and it has been considered to be an unconformity by some and a plane of thrust faulting by others. The writer prefers the latter interpretation.

The feature of unusual interest is that throughout an area of over 100 square miles the thrust fault segments are sporadically mineralized by substantial amounts of copper and iron with some silica, but sulfur is sparse in amount so that most of the iron occurs as specularite and hematite instead of pyrite. Such occurrences have been mined at near by Swansea and Planet, and smaller deposits are described at numerous other localities. The Planet ore body is credited with a production of about 50,000 tons averaging about 10 per cent of copper in association with substantial bodies of unmined iron ore. No production figures are available to the writer for the Swansea area, but a railroad and smelter were constructed to serve its deposits.

Altogether there is a big display of copper and iron mineralization in this region, although no great ore body has been found to date; however, recent drilling in the Mineral Hill area has demonstrated the presence of over 1 million tons of low-grade copper ore at shallow depth associated with several million tons of medium-grade iron ore. This ground was examined by the writer particularly to see if there might be a chance for near-surface mineralization to lead down to a substantial deposit at depth.

LOCAL GEOLOGY

The Mineral Hill-Continental area consists in large part of a plate of partly metamorphosed Paleozoic sediments sitting upon a Precambrian complex. The upper plate consists of argillite, schist, quartzite and limestone. Where the basement is exposed it displays chlorite schist and somewhat blocky serpentine-looking rocks. The plane of junction is judged to be a flat thrust fault, and in its near vicinity the upper plate shows several closely-spaced horizons of mineralization. It should be noted that the near-vicinity of the thrust fault is not everywhere well-mineralized, but only in certain areas. It is not mineralized in much of the Continental area. (Please refer to Cramer's report and maps for further details) The Mineral Hill area constitutes the northern, better mineralized part of the property, the Continental claims the southern.

A feature of particular interest is the occurrence of small bodies of intrusive porphyry of acid to intermediate composition in the mineralized zone of the upper plate. Drilling suggests that one of these may be an inclined sill, but in other nearby areas they may be transgressive. The porphyry is fractured, somewhat altered and mineralized. In places it is cut by north-south veinlets carrying primary specularite, and sampling of drill holes revealed a few tenths of one per cent of copper. The larger exposures are a few hundred feet, and less, in extent and occur

near the junction of the Greater Jerome, Apex and Mohave Chief claims. Well-altered very small bodies are displayed near the common side-line of the Mohave Chief and Apex claims.

The upper thrust plate in the Mineral Hill and Continental areas is rifted by several north-south faults, some of moderate throw. In places these carry copper and iron and have the appearance of mineralized fissures. On the other hand, this mineralization is supergene in origin, and therefore a pre-mineral age for these faults cannot be assumed; nevertheless, they may well be feeding conduits along parts of their courses, particularly toward the north in the Mineral Hill area.

Copper mineralization occurs as malachite and chrysocolla and is definitely secondary in nature. On the other hand, the main ore bed shows a few specks of chalcopyrite boxwork and relief limonite after chalcocite, so that it is clear that the oxidized minerals were derived from earlier sulfides. Many of these oxidized copper minerals occupy tiny steep fractures that cross the ore horizon. Thus there has been a downward percolation of secondary copper-bearing solutions with probably a moderate enrichment of the original, primary values.

The iron minerals consist of primary, sparkling specularite with hematite. Some of the hematite is definitely an alteration product of the specularite and may be a hydrated iron oxide.

The primary deposition was apparently a specularite-hematite mixture carrying minor amounts of a chalcopyrite and pyrite.

MINERAL DEPOSITS

During the 1961 drilling campaign reported by Cramer some 40 exploration holes were put down by wagon drill, and the dry cuttings from this work were sampled. Most of the holes ranged in depth from about 40 to 100 feet, and a few reached 125 feet or better. Most of these cut a copper-bearing horizon and an upper iron zone immediately below the copper. Some of them also reached a lower iron horizon some 30 to 75 feet below the upper iron. On the north the two iron zones were found to be joined together. (See the section at the end of this report.)

Oxidized ore is also found in the form of steep bodies along some of the faults, and a reserve tonnage has been assigned to the Norma fault on the east.

Based on the holes and some surface sampling, Cramer estimated the following reserves:

(1) The main ore bed:

364,000 tons @ 2.088% Cu- (10 ft. average thickness)

(2) Copper in rocks above and below the main ore bed:

692,000 tons @ 1.373% Cu- (19 ft. average thickness)

(3) Southeast extension, not yet drilled:

212,000 tons @ ? % Cu- (10 ft. assumed thickness, partly associated with limestone)

(4) Limestone-tactite contact ore:

59,000 tons @ 1.31% Cu- (24 ft. average thickness)

(5) Norma fault ore
(NW. segment:
138,000 tons @ 2.20% Cu- (30 ft. average width)
SE. segment:
69,000 tons @ 0.69% Cu- (6 ft. average width))

This gives a grand total of about 1.5 million tons. Of this about 1 million tons are in, above, and below the main ore bed with an average grade of about 1.6% of copper and constitute the chief asset for cheap mining and acid leaching. The stripping ratio above this tonnage is estimated at 2.15 to 1. The stripping ratio above the main richer ore horizon is about 4:1.

(6) The total iron ore in the upper and lower beds is estimated at 3,356,000 tons (short?) @ 45.1% Fe

(7) The upper and lower beds are separated by siliceous hematite material amounting to:

5,033,000 tons.

The Continental area on the south has no established ore reserves and the prospects here are not promising.

PROPOSED OPERATIONS

The present operators of the property, Mr. Fleming and associates, are planning an acid leaching operation to recover cement copper. This will involve stripping, mining, crushing, leaching in vats, and precipitation of copper. Preliminary metallurgical tests are reported to be favorable, with low acid consumption. A plant with a daily capacity of 200 to 400 tons intake

is now being considered.

The writer does not have the details of the economics of such an operation, but it should prove to be moderately profitable. The drilling results of the ore body appear to be reliable, but it should be noted that past production and surface sampling indicate a higher grade of around 3.5% of copper whereas the drilling gave about 1.6%. This is understandable because early production would come from the richer spots. It appears that future profits from leaching will be modest because of the small scale of the proposed operations, the low average tenor of the ore body, a relatively high cost of amortization, and a moderate stripping cost.

The mining of the copper deposit will expose the upper iron ore bed, but most of the lower horizon will remain buried.

The writer does not recommend that Homestake Mining Company join in the financing of the leaching operation.

POSSIBLE EXTENSIONS OF THE COPPER ORE BODY

In addition to the southeastern extension mentioned by Cramer, the main copper ore horizon can probably be extended southerly into the Apex and Mohave Chief claims. This would probably yield a very few hundred thousand tons with a workable stripping ratio.

To constitute a really large ore body of great economic importance, the copper mineralization would have to escape to

depth and form an ore deposit different from that now exposed in Mineral Hill and nearby areas. There is the very speculative possibility that this might take place in the porphyry area, and, considering the strength and widespread occurrence of the known mineralization, this possibility has some merit.

Therefore deep drilling near the common side-line of the Mohave Chief and Apex claims would test the possibility of the porphyry swelling at depth and becoming well-mineralized where it transgresses the Precambrian rocks in the basement.

Exploration at depth is also proposed near the Norma fault to determine if it might have fed a deep buried ore body of importance.

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61

Scottsdale, Arizona
December 2, 1961

EXPLORATION POSSIBILITIES

MINERAL HILL, YUMA COUNTY, ARIZONA

December, 1961

E. N. PENNEBAKER
CONSULTING GEOLOGIST
SCOTTSDALE, ARIZONA

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Scottsdale, Arizona
December 2, 1961

MINERAL HILL MINE

YUMA CO. ARIZONA

T 10N - R 17W - G. & S.R MERIDIAN

1 in = 200 ft Oct 28 Nov 13 incl, 1960

Louis W Cramer
Charles A Mauldin Jr

Drill Hole

Fault Fissure

Copper mineralization

Iron mineralization specularite

Granite Porphyry

Silica & silicified limestones argillites

Sericitic tactitic argillites quartzitic argillites, limestones

Limestone

Schist

Flat Structure

Basic dikes (chloritic in part)

Basic Dike

Pre Cambrian

Cambrian

7000N

6500N

6000N

5500N

5000 N

4500 N

4000 N

3500N

3000N

5500E

5000E

4500E

4000E

3500E

3000E

2785

788

778

793

Lower Tunnel

Argillites in Tunnel

NORTH Fault

113 Fault

ST

Norma Shaft

NORMA

CHIEF

Spanish Workings

Silica Br

Grey Sch

TUNNEL 180?

CONTINENTAL FAULT

31 C Shaft

31 A Tunnel

COPPER PRINCE

GLANCE

BESSIE

BELLE

GREATER DISBEE

Quartz

Ang. frags a few partly rounded. No fee no Cu

BASIC DIKE

ROAD

N65E to Trailer

Felds on Tiny fractures N65E to Fe stained area across wash

To Inspect

Claims Located see table sheet 4 190

Mineral Survey No. 2675

L.O.T. No.

Land District.

PLAT

OF THE CLAIM OF

KNOWN AS THE

LV MINING DISTRICT,

COUNTY.

Containing an Area of Acres.

Scale of 400 Feet to the inch.

Variation

SURVEYED 190 BY

U.S. Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of known as the

from which this plat has been made under my direction, have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimant or grantors, and that said improvements consist of

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office.

U.S. Surveyor General for

190

Sheet No. 2

Approx.

T. 11 N., R. 15 W.

Uns.

10 N. 17 W.

AHONIKA

ASHLEY

PLANET

SENTINEL

LA MEXICANA

COMET

BYRON

PARTRIDGE

BOSTON

MARK HANNA

Planet No. 2

Ella Belle

Smelter Gulch

Orange

Bunker Hill

Bill Williams

New York

Mesa

U.S.M.M. No. 2675

Road

Area 9-22-1916

Serial No. 015345 (Act 1918)

Sheet No 1
Approx.
T. 11 N., R. 15 W.
Uns.
10 N. 17 W.

Am't deposited $ 1170.00
Cost of O.W.&S. 900.50
Am't to be refunded $ 269.50

9-22-1916
546585 (except 7)
015345

Claims Located see table sheet 4 190

Mineral Survey No 2675

L·O·T· No
Arizona Land District.

PLAT

OF THE CLAIM OF
Planet Copper Mining Company

KNOWN AS THE

Planet, Planet No 2, Planet No 3, Planet No 4, Planet No 5, Iron Hill, Iron Hill No 2, Copper Hill, Copper Hill No 2, Ella Belle, Ella Belle No 2, Ahonika, Mark Hanna, La Mexicana, Comet, Byron, Sentinel, Palmetto, Ashley, Orange, Wisconsin, Kimball, Boston, Crompton, Odora, Oddoletta, Nickerson, Barton, Blue Bird, Otis, Opal, Brookeville, New York, Mesa, Smelter Gulch, Bill Williams, Partridge, Bunker Hill, McCarn

IN Harcuvar MINING DISTRICT,
Yuma COUNTY, Arizona
Containing an Area of 659.293 Acres.
Scale of 400 Feet to the inch.
Variation 15°30' E
SURVEYED June 16 - September 8, 1909 BY
E.C. Babbitt,
U.S. Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of Planet Copper Mining Company known as the Planet, Planet No 2, Planet No 3, Planet No 4, Planet No 5, Iron Hill, Iron Hill No 2, Copper Hill, Copper Hill No 2, Ella Belle, Ella Belle No 2, Ahonika, Mark Hanna, La Mexicana, Comet, Byron, Sentinel, Palmetto, Ashley, Orange, Wisconsin, Kimball, Boston, Crompton, Odora, Oddoletta, Nickerson, Barton, Blue Bird, Otis, Opal, Brookeville, New York, Mesa, Smelter Gulch, Bill Williams, Partridge, Bunker Hill, McCarn,

from which this plat has been made under my direction, have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that less than Five Hundred Dollars worth of labor has been expended or improvements made upon each of said Mining Claims by claimant or its grantors, and that said improvements consist of 33 cuts, 25 tunnels, 19 shafts and 2 drifts total value $64,850.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office
Phoenix, Arizona
October 14, 1910

Frank S. Ingalls
U.S. Surveyor General for
Arizona

CONTINENTAL GROUP

YUMA CO. ARIZONA

T 10N - R 17W - G & S R. MERIDIAN

1 IN. = 200 FT.

FEBRUARY 1961

Louis A. Cramer

Continental Fault

Continental Tunnel

Brown L S

SILICEOUS

33G Tunnel

Fe sample Cu trace % ±

Sample of schist Zn 200% ±

Fe-Cemented Silica Br

Amphib schists & chlor. schists

GN & AMPHIB

Chlorite schist

CONTINENTAL No 11

CONTINENTAL No 10

CANYON

ANNEX No 1

ANNEX No 2

ANNEX No 3

ANNEX No 4

EXTENSION No 1

EXTENSION No 2

EXTENSION No 3

EXTENSION No 4

NORMA FAULT

Norma Fault

Trail U/D Wash

Basic Dike

Granite Porphyry

Mineral

Granite Porphyry Dike

Conglomerate

silicified gray schist

red sandstone

Sec 11

Sec 14

2500N

2000N

1500N

1000N

500N

500S

500E

1000E

1500E

2000E

Continental - SE.

CAVERN

Gray Sch

CONTINENTAL No 1

E-W Quartz Zone

CONTINENTAL No 2

CONTINENTAL No 9

SCHISTS & SILICEOUS QUARTZITES

CAMBRIAN GRAY

Osborne Mine

3500 E

4000 E

4500 E

5000 E

E. N. PENNEBAKER
POST OFFICE BOX 817
SCOTTSDALE, ARIZONA
85252

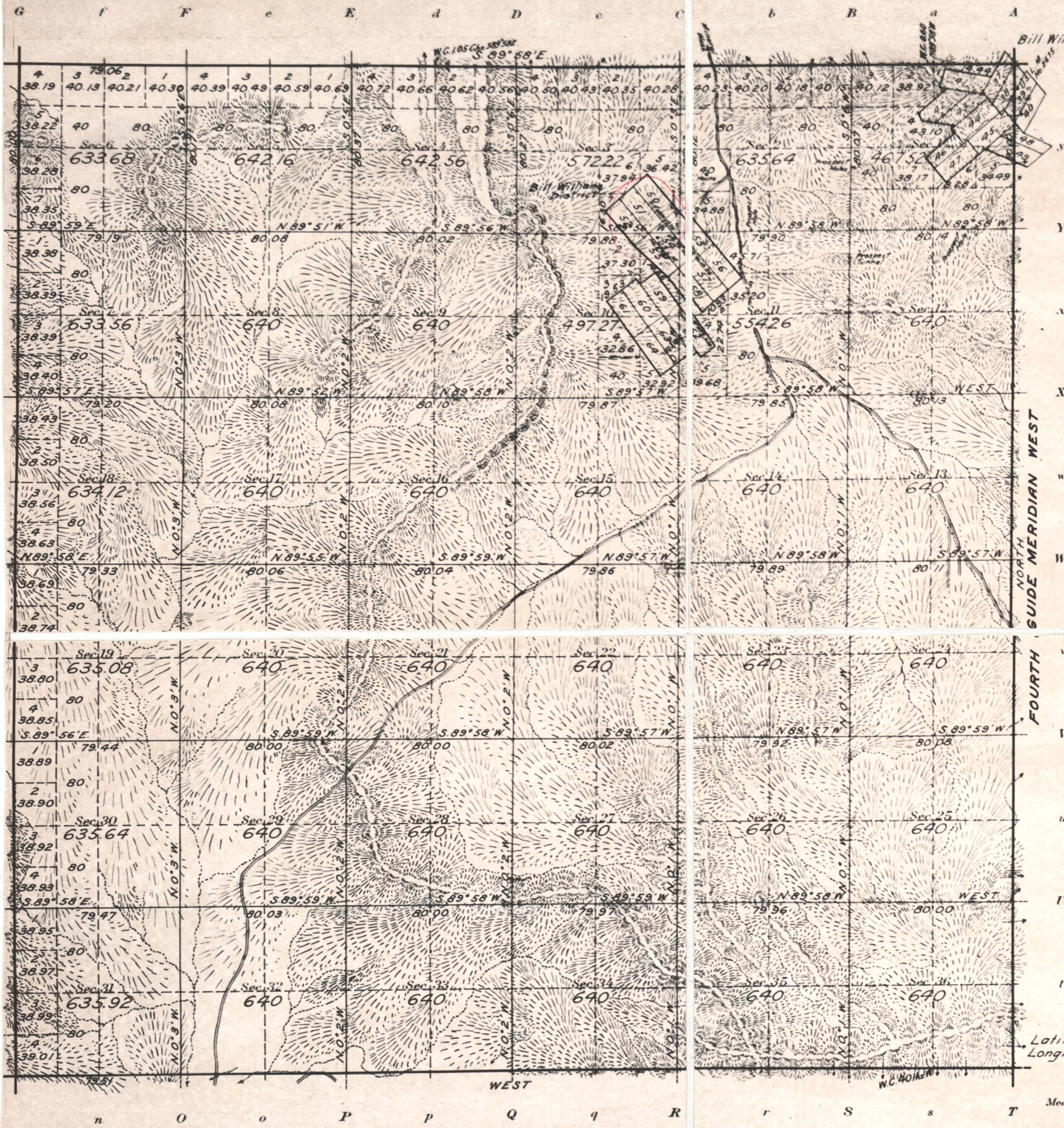
Continental - SW

Continental - SW.

Survey accepted March 29, 1919 - G.L.O.

Township No. 10 North Range No. 17 West, Gila and Salt River Meridian, Arizona

2895



Bill Williams District

Name of Claim	Sur No	Acres	Inde
BARTON	2675	16.119	37
ORANGE	2675	14.287	38
BUNKER HILL	2675	16.321	39
BILL WILLIAMS	2675	15.204	40
BROOKEVILLE	2675	20.661	41
OPAL	2675	19.674	42
OTIS	2675	17.446	43
WISCONSIN	2675	20.571	44
McCARN	2675	20.661	45
ODDOLETTA	2675	13.288	46
ODORA	2675	19.369	47
NEW YORK	2675	12.886	48
KIMBALL	2675	20.658	49
QUEEN OF COPPER	2785	20.661	50
COPPER KING	2785	20.661	51
GREATER JEROME	2785	20.661	52
NORMA	2785	20.661	53
MOHAVE CHIEF	2785	20.661	54
APEX	2785	18.080	55
COPPER GLANCE	2785	20.661	56
COPPER PRINCE	2785	20.661	57
GREATER BISBEE	2785	16.255	58
CAVERN	2981	20.661	59
CONTINENTAL No 1	2981	20.661	60
CONTINENTAL No 2	2981	20.661	61
CONTINENTAL No 11	2981	20.661	62
CONTINENTAL No 10	2981	20.661	63
CONTINENTAL No 9	2981	20.661	64

Net area of mineral lands, exclusive of conflicts, 475.69 acres.

Areas in Acres	
Public Land	22,539.63
Indian Reservation	
Indian Allotments	
Mineral Claims	475.69
Water Surface	
Total Area	23,015.32

TRUE MERIDIAN

Latitude 34°9'36" N
Longitude 113°59'01" W

0 10 20 40 80

Scale 40 Chains to an inch

Mean Magnetic Declination 15°0' E

rveys Designated	By Whom Surveyed	Group		Amount of Surveys			When Surveyed	
		No.	Date	Mls.	chs.	lks.	Begun	Completed
Guide Meridian West	Alexander T. Harris	48	Feb. 13, 1915	Complete			Oct. 30, 1915	Nov. 3, 1915
Boundary		"	"	"			Nov. 3, 1915	Nov. 19, 1915
"	and	"	"	"			Nov. 15, 1915	Nov. 19, 1915
"		"	"	"			Nov. 4, 1915	Nov. 15, 1915
ivisions	John Gonin	"	"	"			Nov. 4, 1915	Nov. 19, 1915
	U.S. Transitmen							

The above map of Township No. 10 North Range No. 17 West of the Gila and Salt River Meridian Arizona is strictly conformable to the field notes of the survey thereof on file in this office, which have been examined and approved

U.S. Surveyor General's Office.
Phoenix, Ariz. May 17, 1918.

Frank P. Trott
Surveyor General.

T10N
R17W

T10N
R17W

E. N. PENNEBAKER
POST OFFICE BOX 817
SCOTTSDALE, ARIZONA
85252

COBRE No 1

COBRE No 4

COPPER KING

QUEEN OF COPPER Surv. No 2785

GREATER JEROME 2785

2785

Massive LS

This strip?

No Cu on This Strip

CHLORITE SCH-4 GN-

S-HIST

Sec 3

Sec 10

SANDY ARGILLITES WITH INTBD-LS. ALTERED TO SCH

SOME ARE

Schist

Schist

BOBBIE

COBRE No 2

APEX 2785

Silic Bed

COBRE No 5

COBRE No 3

COBRE FRACTION

Silic Bed

2500E

3000E

3500E

4000E

4500E

5000E

E. N. PENNEBAKER
POST OFFICE BOX 617
SCOTTSDALE, ARIZONA
85252

Mineral Hill - NW.

Mineral Hill - NW.

Mineral Hill- NE

Mineral Hill- NE

CONTINENTAL GROUP

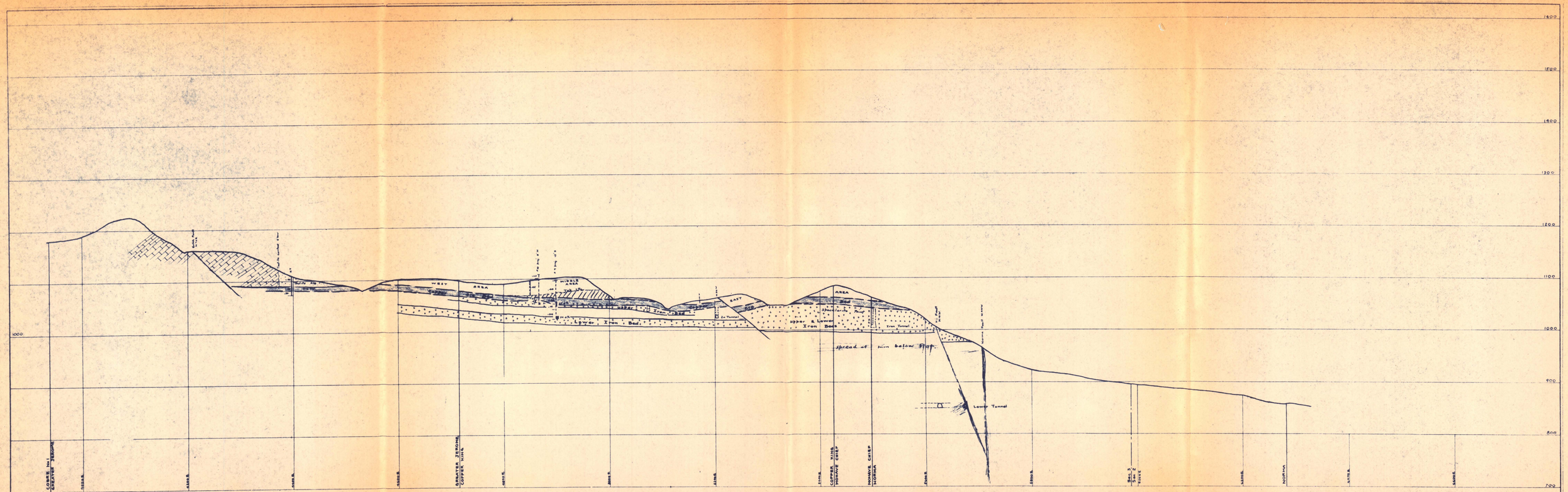
YUMA CO. ARIZONA

T10N-R17W - G & SR MERIDIAN

MINERAL HILL MINE

YUMA CO. ARIZONA

T10N-R17W - G & SR MERIDIAN



SECTION 5350 N

1" = 30' / 100 Louis W. Cramer 6/61

N 2350 SECTION

1" = 100' Louis M Cramer 1961

Sheet No 2
Approx.
T. 10 N., R. 16 W.
Uns

COPPER KING
Sur No 2785

QUEEN COPPER
Sur No 2785

GREATER JEROME
Sur No 2785

MOHAVE CHIEF
U.S.L.M. No 2785
Area 20.661 Acres

APEX
Area 18080 Acres
1507.49 F.

NORMA
Area 20.661 Acres

COPPER PRINCE
Area 20.661 Acres

GREATER BISBEE
Area 16255 Acres

COPPER GLANCE
Area 20.661 Acres

New Year Uns.

Excelsior Uns

Alturo U.S. No 1 Uns

Continental No 13 Uns

Continental No 12 Uns

Continental No 14 Uns

Bronco Uns

Gulch

Presumed course of ledge

Cor No 1 … Cor No 4

600 ft

1500 ft

S 50°35' W

S 39°25' E

N 39°25' W

N 50°35' E

S 45°7' E

S 37°44' E

N 39°19' W 1257.23 ft

N 39°25' W 1257.97 ft

S 39°25' E 1500 E.

N 39°25' W 1500 ft

N 50°35' E 450.1 ft

S 50°35' W 450.1 ft

N 50°35' E 494.1 ft

N 50°35' E 600 ft

S 50°35' W 600 ft

S 39°25' E 1500 ft

N 39°25' W 1500 ft

N 50°35' E 600 ft

N 50°35' E 600 ft

N

S

Date 6-1-1912
No. 270 727
Roll No. 011 717

Claim Located 190

Mineral Survey No. 2785

L.O.T. No.

Land District.

PLAT

OF THE CLAIM OF

KNOWN AS THE

IN MINING DISTRICT,

COUNTY,

Containing an Area of Acres.

Scale of 300 Feet to the inch.

Variation 15°30'E.

SURVEYED 190 BY

U.S. Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of known as the

from which this plat has been made under my direction, have been examined and approved, and are on file in this office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimant or grantors, and that said improvements consist of

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office.

U.S. Surveyor General for

, 190

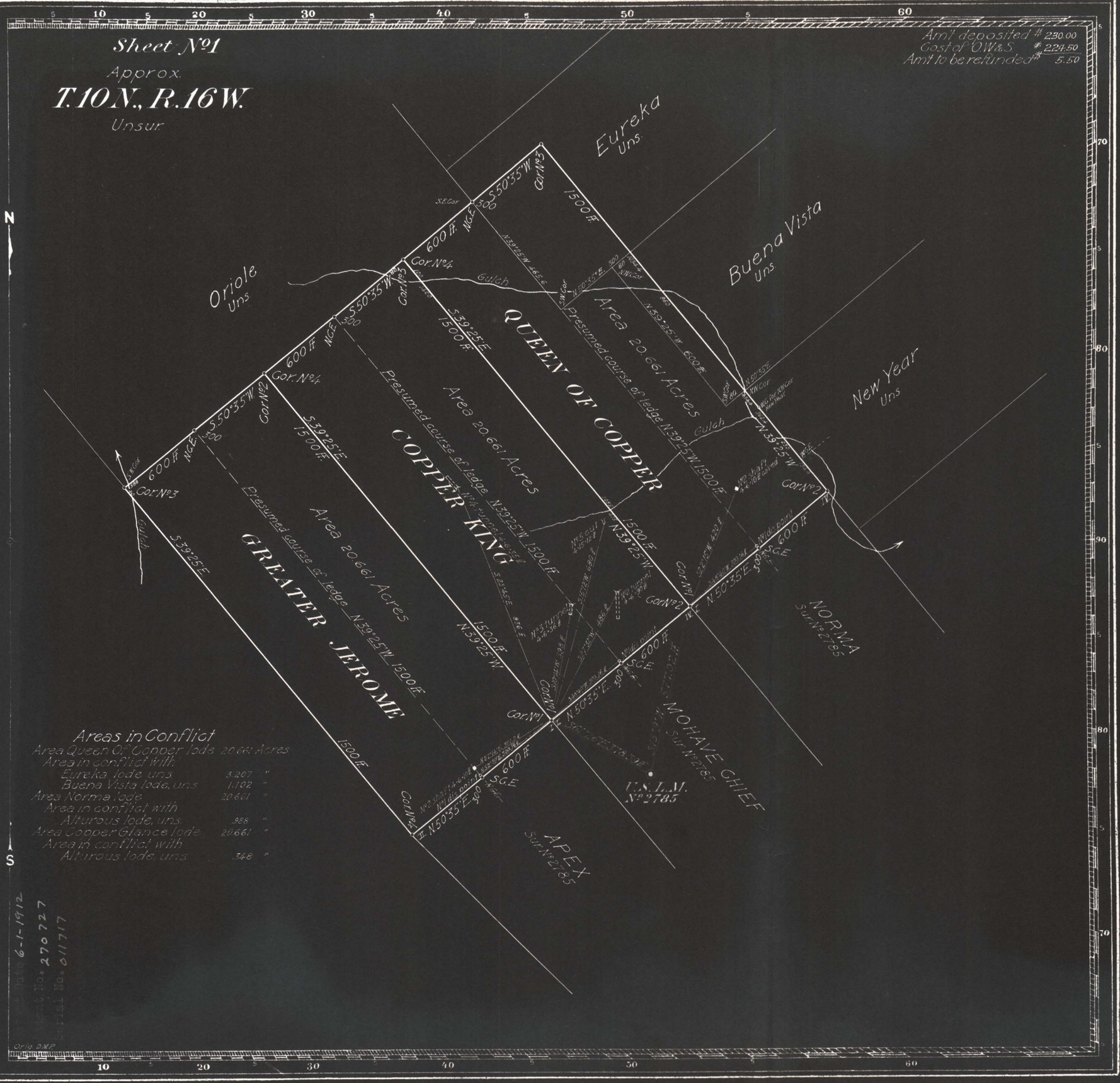
Sheet No 1

Approx.

T. 10 N., R. 16 W.

Unsur

Amt deposited $ 230.00
Cost of O.W.& S. $ 224.50
Amt to be refunded $ 5.50



Patented 6-1-1912
Serial No. 270727
Final Cert. No. 011717

Orig. D.M.P.

236

Claims Located A'pril February 26, 1910

Mineral Survey No. 2785

Lot No.

Arizona Land District.

PLAT

OF THE CLAIM OF

A.J. Pickrell

KNOWN AS THE

Queen Of Copper, Copper King, Greater Jerome, Apex, Mohave Chief, Norma, Copper Glance Greater Bisbee, and Copper Prince

IN Bill Williams MINING DISTRICT,

Yuma COUNTY, Arizona

Containing an Area of 183.368 Acres.

Scale of 300 Feet to the inch.

Variation 15°30' E.

SURVEYED March 24-31 1910 BY

Herbert G. Shotwell

U.S. Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of

A.J. Pickrell

known as the

Queen Of Copper, Copper King, Greater Jerome, Apex, Mohave Chief, Norma, Copper Glance, Greater Bisbee and Copper Prince

from which this plat has been made under my direction, have been examined and approved, and are on file in this office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

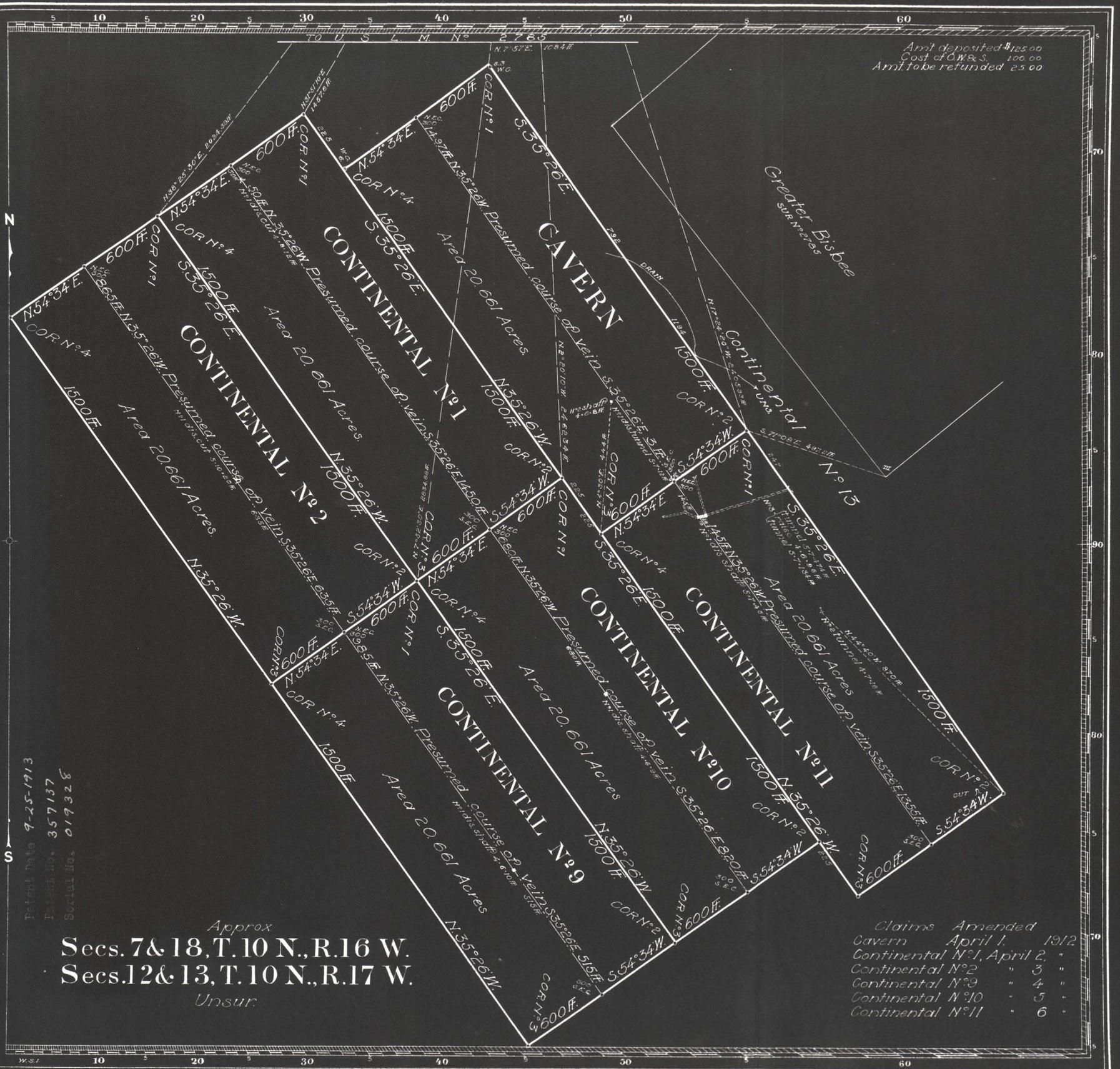
I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claims by claimant or his grantors, and that said improvements consist of 1 tunnel, 1 shafts, 3 cuts, 3 across cuts and 12 drifts total value $22,332.00 Tunnel No 4 and shaft, and drifts No 7 on the Norma lode being common improvements for the benefit and development of this entire group undivided 1/9 interests therein, value $ 526.00 and $ 175.00, respectively are credited to each of the nine claims in this survey.

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office Phoenix, Arizona June 22, 1910

Frank Ingalls
U.S. Surveyor General for Arizona



Claims Amended

Cavern	April 1.	1912
Continental No 1,	April 2.	"
Continental No 2	" 3	"
Continental No 9	" 4	"
Continental No 10	" 5	"
Continental No 11	" 6	"

Claims Located see table

248

191

Mineral Survey No. 2981

Lot No.

Arizona Land District.

PLAT

OF THE CLAIM OF

The Continental Copper & Gold Mining Company

KNOWN AS THE

Cavern, Continental No 1, Continental No 2, Continental No 9, Continental No 10, Continental No 11.

In Bill Williams Mining District, Yuma County, Arizona

Containing an Area of 123.966 Acres.

Scale of 300 Feet to the inch.

Variation 14° 30' E.

Surveyed May 15-21, 1912 by

C. C. Thompson,

U.S. Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of The Continental Copper & Gold Mining Company known as the Cavern, Continental No 1, Continental No 2, Continental No 9, Continental No 10, Continental No 11

from which this plat has been made under my direction, have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claims by claimant or its grantors, and that said improvements consist of 4 tunnels, 4 shafts, 2 cuts and 1 raise, total value $1040.00 An undivided ½ interest value $1560.66 in improvement No 3 on the Continental No 11 lode is credited to each of the claims in this survey

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. Grant Hodgson

Phoenix, Arizona. U.S. Surveyor General for

August 8, 1912. Arizona.

Claims Located see table sheet 4 190

Mineral Survey No. 2675

Lot No.

Land District.

PLAT

OF THE CLAIM OF

KNOWN AS THE

In Mining District,

County.

Containing an Area of Acres.

Scale of 400 Feet to the inch.

Variation

Surveyed 190 By

U.S. Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of known as the

from which this plat has been made under my direction, have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimant or grantors, and that said improvements consist of

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office.

U.S. Surveyor General for

, 190

Sheet No. 3
Approx.
T. 11 N., R. 15 W.
Uns.

PLANET No. 5
PLANET No. 4
PLANET No. 3
PLANET No. 2
ELLA BELLE No. 2
IRON HILL No. 2
IRON HILL
COPPER HILL
ELLA BELLE
PLANET
SMELTER GULCH
BLUE BIRD
PALMETTO
NICKERSON
COPPER HILL
Ashley
Planet
Sentinel
La Mexicana

Patent Data: 9-22-1916
Patent No. 546585
Serial No. 015345
Deputy: Planets 2-3-4-5, Iron Hill No. 2, Ella Belle No. 2, Copper Hill No. 2