



CONTACT INFORMATION

Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

PRINTED: 12-29-2009

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: IRON TRAIL

ALTERNATE NAMES:

DREISSER
STAR NO. 2 AND 3
TREASURE HILL

LA PAZ COUNTY MILS NUMBER: 228

LOCATION: TOWNSHIP 5 N RANGE 11 W SECTION 16 QUARTER NW
LATITUDE: N 33DEG 46MIN 42SEC LONGITUDE: W 113DEG 24MIN 57SEC
TOPO MAP NAME: GLADDEN - 15 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:

GOLD LODE
MANGANESE
TUNGSTEN SCHEELITE
CALCIUM MARBLE
STONE MARBLE

BIBLIOGRAPHY:

FARNHAM, L.L., & STEWART, L.A., 1958, USBM
IC 7843, P. 83-84
ADDITIONAL WORKINGS SEC. 15-NW
ADMMR IRON TRAIL FILE

Date Printed: 10/23/96

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

INFORMATION SUMMARY

Information from: **Don Pelham**

Company:

Address: P.O. Box 1406
City, State ZIP: Buckeye, Arizona 85326
Phone: 602-386-7061

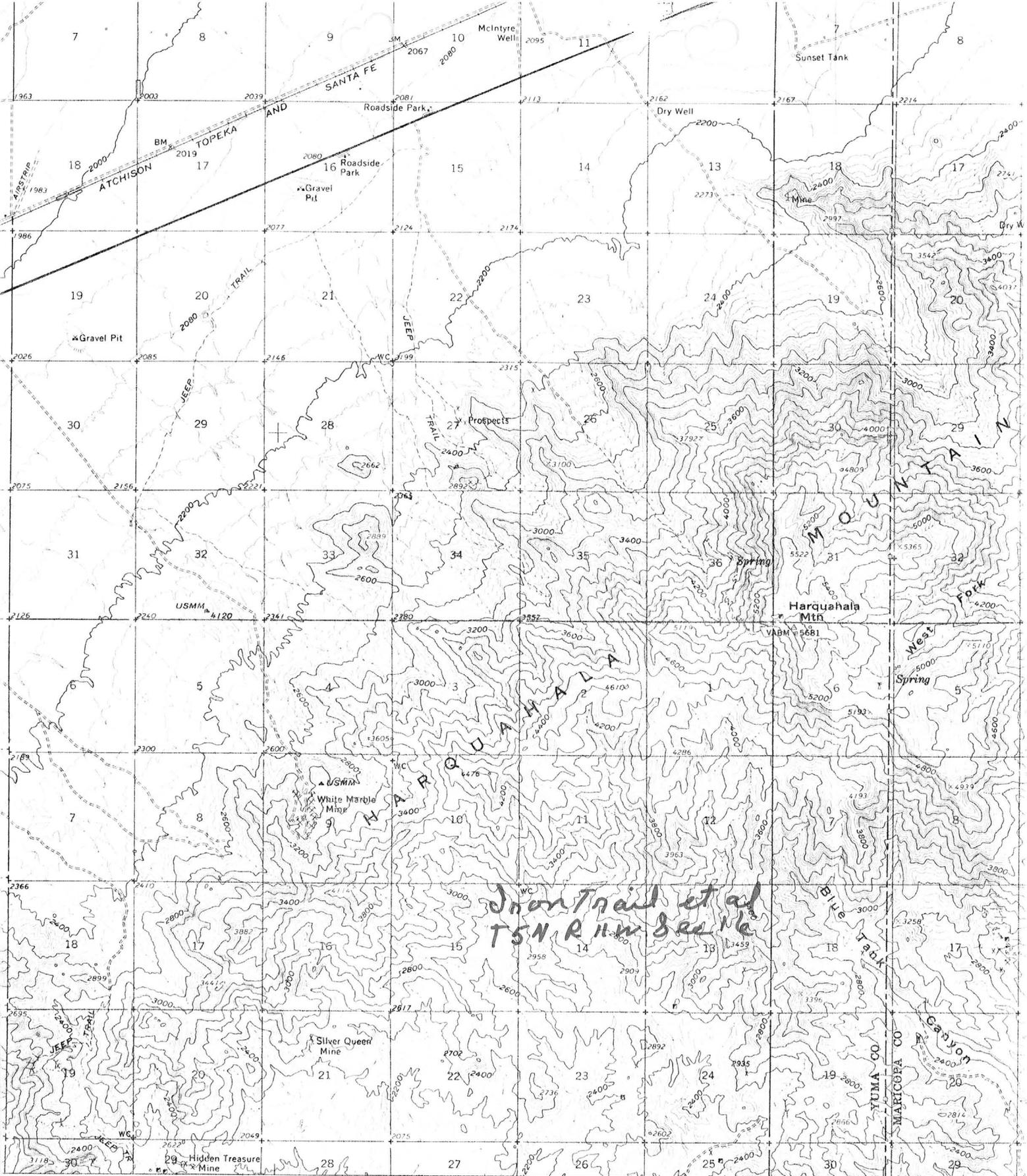
MINE: Iron Trail

ADMMR Mine File: Iron Trail
County: La Paz
AzMILS Number: 228

SUMMARY

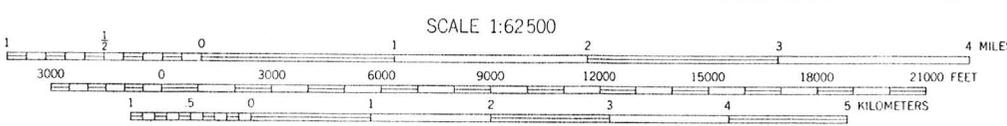
Don Pelham reported that he together with his wife Teresa have acquired the Iron Trail patented mine property in the Harquahala Mountains (La Paz AZMILS 228). He hopes to develop marble on the property for lapidary and decorative uses. He expects his biggest difficulty will be obtaining permission to build an access road across a $\frac{1}{4}$ mile State Trust Land and about $\frac{1}{2}$ mile of BLM land. The Iron Trail patented property consists of Iron Trail No. One, Star No. 1, Star No. 2, and Dreiser Spring Millsite patented properties.

Ken A. Phillips, Chief Engineer Date: October 17, 1996 ✓

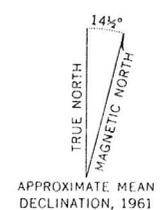


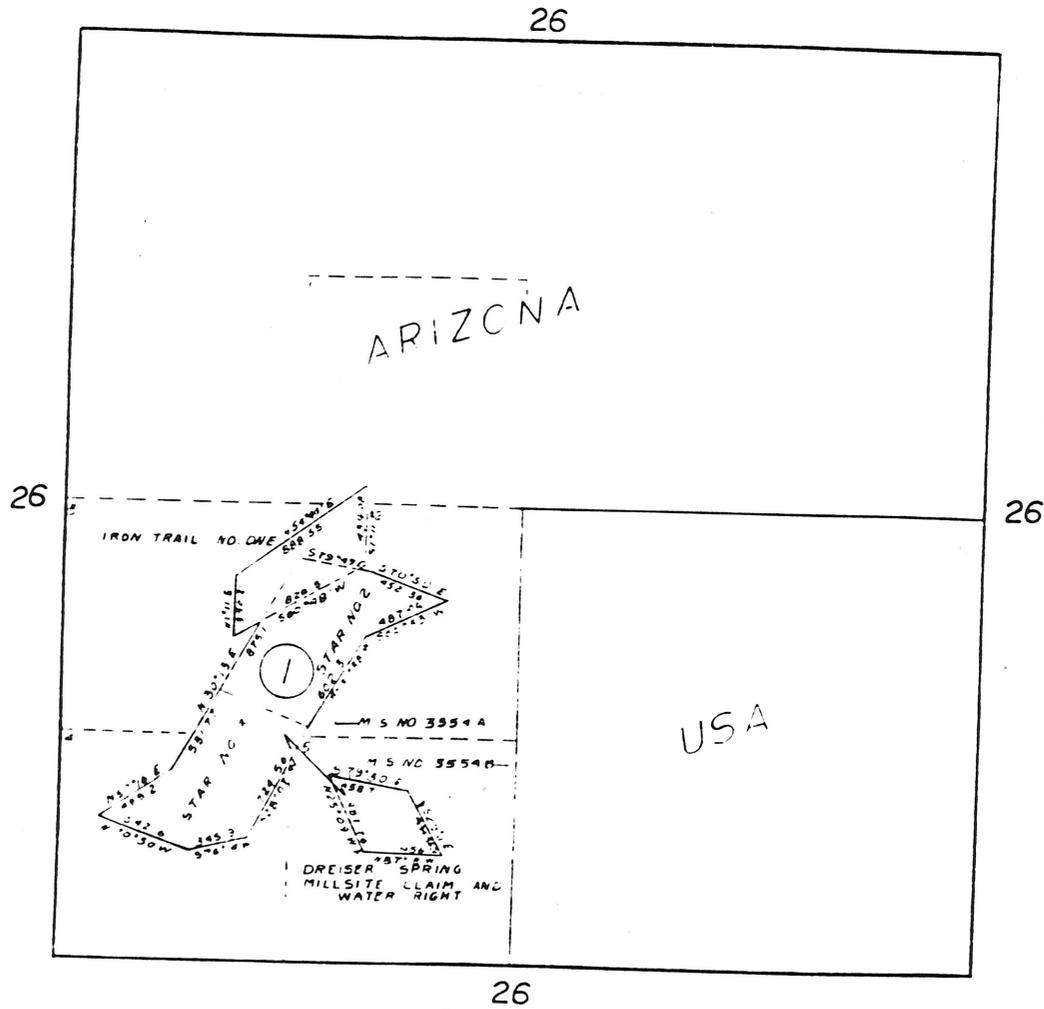
*Don Trail et al
TSN R.H.W. Sec 15*

Bladder 15'



CONTOUR INTERVAL 40 FEET
 DOTTED LINES REPRESENT 20-FOOT CONTOURS
 DATUM IS MEAN SEA LEVEL





BOOK	MAP		
304	27		
T	N	R	W SEC
5	11	16	
SECTION DETAIL:			
SUBDIVISION:			
AREA CODE: 1900			

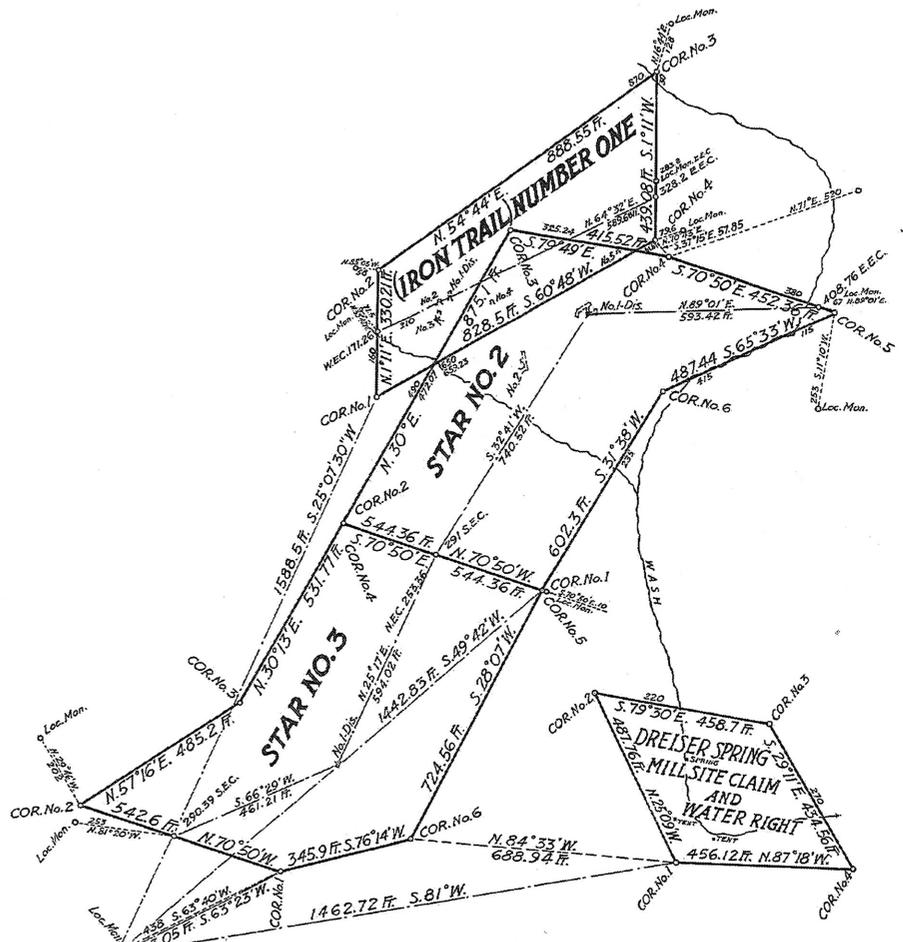


REVISION	
DATE:	
SCALE:	0 300' 600'
LA PAZ COUNTY	
GEORGE NAULT	
ASSESSOR	
ASSESSOR MAP FOR INFORMATION ONLY NO LIABILITY ASSUMED	

Iron Trail Mine file

Am't deposited, \$5.00
 Cost of Oil, 65¢
 Unearned Am't, \$12.00

Sec. 16
 T.5N.-R.11W.
 UNS.



U.S.L.M. No. 3554 A & B

PATENT DATE 7-6-1921
 Patent No. 813 312
 Serial No. 844310

Claims Located Star No. 2 and Star No. 3 - March 12, 1907;
 (Iron Trail) Number One - Jan. 20, 1914; Dreiser Spring M.S. & W.R. - Dec. 8, 1918
 Mineral Survey No. **3554 A & B**
 Lot No. Land District.
PLAT
 OF THE CLAIM OF
P. B. Dreiser
 KNOWN AS THE
 (IRON TRAIL) NUMBER ONE, STAR No. 2,
 STAR No. 3 Lodes, and the DREISER
 SPRING MILL SITE CLAIM AND WATER RIGHT,
 IN ELLSWORTH MINING DISTRICT,
 YUMA COUNTY, ARIZONA
 Containing an Area of _____ Acres.
 Scale of 300 feet to the inch.
 Variation 14° 30' E.
 SURVEYED DEC. 17-25, 1918 BY
 Harry E. Jones
 U.S. Deputy Mineral Surveyor,
 The Original Field Notes of the Survey of the Mining Claim of
 P. B. Dreiser
 known as the
 (IRON TRAIL) NUMBER ONE, STAR No. 2,
 STAR No. 3 Lodes, and the DREISER
 SPRING MILL SITE CLAIM AND WATER RIGHT
 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 7 cuts, 3 tunnels, 2 shafts, 2 drifts,
 3 crosscuts, 1 station & 1 wing, total value \$4650.00
 that the location of said improvements is correctly shown
 upon this plat, and that no portion of said labor or im-
 provements has been included in the estimate of expendi-
 tures 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. *Frank D. Pratt*
 Phoenix, Arizona, U.S. Surveyor General for
 June 12, 1919. **ARIZONA.**

TREASURE HILL TUNGSTEN PROSPECT

LA PAZ COUNTY

NJN WR 1/4/85: George Campbell Jr. (c) reported he still maintains claims on the Treasure Hill Tungsten Prospect (f), La Paz County. Access roads are in poor shape now and one can only drive within 2 or 3 miles of the property. Mr. Campbell believes the property has merit due to its estimated reserves of plus 5 million tons of disseminated scheelite.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Iron Trail, Star 2 and Star 3, and Drieser Spring Millsite (Survey No. 3554) Date Oct. 11, 1962
District Engineer Lewis A. Smith
Subject: Ellsworth (Harquahala) Dist., Yuma Co.

Interview with Lester Huthmacher 10-5-62 and the Bureau of Land Management 10-9-62.

Location: S-16, T5N, R11W, 3 miles NE of the Hidden Treasure Mine. (Originally located by P. B. Drieser) (Information from Bur. of Land Management). Claims were recorded 7-14-42.

Owners up to Sept., 1959: Arthur H. & Elizabeth Drieser, 237 Penn St., Pasadena 6, California.

Lester Huthmacher, Box 83, Wenden said he had visited the mine and that it had some limonitic ore which was said to have assayed about 40-45 percent iron. Some of the limonite is black and stalagitic in character. He also said that it is at about 3 miles NE of the old Hidden Treasure Mine. Huthmacher is of the opinion that the limonite was derived from massive pyrite, which had originally replaced limestone, the principal host rock. He had a clipping which stated that the claims had been advertised for sale as of September 18, 1959. A letter was written October 11th to Vernon Wright, County Recorder, Yuma County, for the present status of these claims.

Iron Trail, Star 2, Star 3, and Drieser Spring Millsite
Sec. 16, T. 5 N., R. 11 W.

Yuma County

Reference: Arizona Dept. of Mineral Resources

Iron Trail, Star 2, Star 3, and Drieser Spring Millsite (file)

Present owners:

minerals: manganese, gold

History of the area

the property was originally located by

P. B. Drieser in 1942. Until 1959 the

property was owned by Arthur H. and

Elizabeth Drieser of Pasadena, Cal.

Geology:

limonitic ore supposedly assayed 40-45% iron,
some of the limonite is black and stalagmitic.

reference: Manganese Deposits of Western Arizona

by L. L. Farnham and L. A. Steward

Bureau of Mines Information Circular 7843

U.S. Dept. of the Interior 1958

History:

claims located in 1916 as a gold prospect. They
were patented in 1920. Property was dormant
for many years. No records of manganese or gold
shipments.

Geology:

several disconnected bodies of iron and bodies

Iron Trail, Star 2 and Star 3, and
Drieser Spring Millsite

Yuma County

See: I.C. 7843 - Manganese Deposits of Western Arizona

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Iron Trail, Star 2 and Star 3, and Date Oct. 11, 1962
 Dreiser Spring Millsite (Survey No.
District 3554) Engineer Lewis A. Smith

Subject: Ellsworth (Harquahala) Dist., Yuma Co.

Interview with Lester Huthmacher 10-5-62 and the Bureau of Land Management 10-9-62.

Location: S-16, T5N, R11W, 3 miles NE of the Hidden Treasure Mine. (Originally located by P. B. Dreiser) (Information from Bur. of Land Management). Claims were recorded 7-14-42.

Owners up to Sept., 1959: Arthur H. & Elizabeth Drieser, 237 Penn St., Pasadena 6, California.

Lester Huthmacher, Box 83, Wenden said he had visited the mine and that it had some limonitic ore which was said to have assayed about 40-45 percent iron. Some of the limonite is black and stalagtitic in character. He also said that it is at about 3 miles NE of the old Hidden Treasure Mine. Huthmacher is of the opinion that the limonite was derived from massive pyrite, which had originally replaced limestone, the principal host rock. He had a clipping which stated that the claims had been advertised for sale as of September 18, 1959. A letter was written October 11th to Vernon Wright, County Recorder, Yuma County, for the present status of these claims.

THOMAS C. KING**ENGINEERING**

FLORENCE, ARIZONA 85232

Phone: (602) 868-3922, 868-4405

RT. 2, BOX 7A

Sections 16, 17, 20 & 21
 Township 5 N, Range 11 W
 Yuma County, Arizona
 Elevation \approx 2,800 ft
 Sheelite in Dolomite

TREASURE HILL TUNGSTEN PROSPECT - SOCORRO REEF**POTENTIAL**

5 to 10 million tons estimated 0.2 to 0.5% WO_3 - open pit
 May be pre-concentrated by heavy media at minus 2 inch size.
 Concentrates or higher grade ore may be burned in lime kiln
 to quick lime, slacked, and de-grited to recover crude
 Sheelite, followed with HCl wash to clean out residual lime,
 followed by HCl solution (hot) to leave tungsten trioxide.
 The ore contains little or no impurities which would follow
 the sheelite through the above steps.

Precipitous terrain requiring much rock work to build roads
 to integrate ore pods into efficient mining operation. New
 discovery, undeveloped, partially explored with no previous
 excavation. No accessory minerals such as sulphides or tactite.

Close to good roads, natural gas line, power lines, water,
 and the Santa Fe R. R.

PROPERTY

A composite along 11,000 feet strike length of sheelite
 mineralization as follows:

12 unpatented lode claims known as the Treasure Hill Group,
 located and work done by George Campbell, Jr., Frank A. Sayre,
 and Robert K. Barritt in April and August of 1969.

4 unpatented lode claims known as the White Eagle Group located
 and work done by George Campbell, Sr., and Hayden S. Brown.

3 patented lode claims and 1 patented mill site and water right,
 known as the Dreisser Group, M. S. 3554 A & B, owned by
 Thomas C. King.

166 acres of State Land in Section 16, T 5 N, R 11 W, leased
 from the State of Arizona by Frank A. Sayre and Larry Reiner.

ACCESS

From Salome, Arizona, thence 11.8 miles southeasterly on the
 Buckeye road (part paved), thence turn left and travel 3.5 mi.
 northeasterly on graded road, thence turn right on dim road
 easterly and northerly into mouth of canyon. From here UV
 lights, water and supplies must be packed about a mile and a
 half up the canyon either left or right into the steep dolomite
 cliffs. If the last turn is not made and progress continued
 northerly into and through the Hidden Treasure Mine property
 and northwesterly up the main canyon in the middle of section
 19, access to the west end of the White Eagle group may be had.

ACCESS

(continued) From Wendon, Arizona, take U. S. 60-70 easterly $1\frac{1}{2}$ miles to El Paso Natural Gas pipeline, turn right or south through gate, proceed southerly down pipe line 2 miles, turn left or easterly down old graded road, proceed past corrals and circle mountains on north side proceeding easterly and southeasterly on main traveled road about 4 miles circling small hill, then proceed southerly on jeep road another $\frac{1}{2}$ mile to clearing and old camp, turn off main road on dim track proceeding up left canyon fork $1/4$ mile to end of dozer work. Then pack $\frac{1}{2}$ mile through pass near N $\frac{1}{4}$ corner of S 20, T5N, R11W, thence left or right $\frac{1}{2}$ mile into dolomite cliffs.

GEOLOGY

meager as yet. Scheelite replacement in crushed or sheared carbonate rocks in metamorphosed Mesozoic series. Shearing related to intense folding along a line resembling a crater rim. Axis of folds N 60° E in this area with shearing in many directions, most of which related to mineralization approximately at right angles or N 30° W. Some blocks of carbonate rocks shoved completely over other sections by thrust forces. Scheelite seems to have come from under sedimentary series as mineralization seems strongest near foot wall and fades into hanging wall of dolomite members several hundred feet thick, suggesting mineralizing solutions attacked or were neutralized by first favorable beds. Scheelite assumes color and texture of rock replaced and is invisible except under short wave ultra violet lamp in darkness, where it shines an intense blue-white. About the only distinguishing feature of the mineralized dolomite is its tough massive appearance, resistance to weathering, and its extreme hardness so that sampling with ordinary tools such as prospecting picks or moils is nearly impossible. Generally speaking, if a sample can be chipped from it, it does not contain Scheelite. The mineralized dolomite usually stands as massive cliffs in the highest portions of the fold, throws a little high grade slide rock immediately below it, and no placer Scheelite in ravines below. Lack of placer Scheelite, due probably to its sliming in a hostile environment of tough, hard boulders, makes prospecting difficult, and requires that all favorable beds in extremely difficult terrain be traversed and lamped in place at night. This is of course preferable to dewatering or robbing pillars in some old mine or sinking shafts in search of ore, but this work in the cliffs at night without a light takes a bit of getting used to. About 5% of the favorable beds in the area staked have been lamped at this writing.

SAMPLING AND ASSAYING In an attempt to determine the assay grade of the average outcrop a sampling procedure was tried as follows:

1. An area about 500 ft. long on Treasure Hill #1 claim was prospected at night with ultra violet lights along the foot wall of the dolomite.
2. One zone about 100 feet square and three zones about 25 x 50 ft. were found to show ore grade fluorescence estimated to average about $\frac{1}{2}\%$ Scheelite. These areas were flagged.
3. Each area was chipped sampled at random without the aid of the ultra violet lamp, using flashlights only for illumination, so as to avoid chipping at high grade.
4. The composite sample from the mineralized zones was 0.41% WO_3 , assayed by the gravimetric method using HF to fume off the last traces of silica. The assayer noted that almost the entire sample dissolved readily in HCl, and suggested that concentrates could easily be upgraded by dissolving the carbonate rocks out of them in this way.

METALLURGY The concentration problem here is somewhat analagous to the concentration of Tri-State Zinc ores, where the author was employed for several years as metallurgist for the Eagle-Picher Co's 15,000 ton/day Central Mill where Heavy Media was used to pre-concentrate the low grade ores. Examination of the Scheelite mineralization reveals that a great deal of the valuable material is concentrated in patches, streaks, or pockets along veins in the orebodies with much barren or sparsely disseminated dolomite in between. There is sufficient difference in the specific gravity of Scheelite at 6.00 from the dolomite at 2.85 to suggest Heavy Media as a preconcentration method, so as to eliminate as much barren material as soon as possible.

By using an Akins separatory vessel an effective density of 0.03 above the density of the float product can be maintained. Thus if the float density overflow is 2.87 or 2.88, then all rocks having over 1% Scheelite will report in the concentrate or sink, and 100 to 200 relatively barren rocks for every mineralized rock having about 1% Scheelite or less will report in the overflow. Thus the Heavy Media tailing may run less than 0.08% WO_3 and the concentrate should run from 2 to 5% WO_3 . A higher concentration ratio than this would result in a higher tailing loss and be economically unsound.

METALLURGY (continued) It is therefore suggested that heavy liquid tests be run on the ore as soon as representative as-mined material is available.

The recovery of Scheelite (Calcium Tungstate) from dolomite (Calcium Magnesium Carbonate) by froth flotation is difficult since the usual reagents which recover the Scheelite react with the Calcium in both the valuable mineral and the gangue.

Another method of recovery from either the ore or Heavy Media concentrates was suggested, however, which seems to be very promising. This involves roasting or burning the dolomite to quick lime so that it can be slacked and washed from the Scheelite which remains as the original relatively coarse crystals unaffected by the roasting. The "grit" which remains is easily concentrated by gravity to pure Scheelite with a minimum of sliming. A vertical shaft lime kiln is recommended to avoid abrasion which would slime Scheelite. Preliminary tests roasting the ore in a forge indicated that the slacked dolomite crumbled away easily from the Scheelite.

A by-product lime may be recovered which should be saleable for pH control to the many porphyry copper concentrators in the state.

EXTENT OF DISCOVERY Scheelite mineralization has been lamped on structure beginning at the northeasterly end of the sedimentary series where the fold either terminates against a fault or passes under other rocks roughly in the center of section 16, T5N, R11W, to nearly the center of section 19, a distance of over 10,000 feet on an approximate S 30° W course. Specifically it was found in one trip into the Dreisser group both in place and in slide rock. On another trip it was found in a variety of rocks, including dolomite, marble and amphibole around and below U.S.M. M. 3554 in the SW corner of S 16 on Treasure Hill #2 and #3 claims. Again slide rock with very high grade material in white marble was found under the Matterhorn, so named for obvious reasons, in the NE of S 20, and in dolomite westerly into Treasure Hill #1 along the footwall for nearly 1000 feet. This last lamped in several trips. Again it was picked up by accident in daylight sampling from another dolomite fold about 900 feet S-SE of the N $\frac{1}{4}$ cor of S 20 on Treasure Hill #12. Considerable Scheelite, some highgrade was lamped all through the area 1200 to 2000 ft S-SE to due south of the NW cor of S 20 on Treasure Hill #8 and #11 claims and on the White Eagle #6 and #1 claims, this on two separate trips at night. Open pits can probably be developed in several of these areas.

EXPLORATION Reasonable access to all these zones of Scheelite mineralization can best be obtained by rebuilding and extending the jeep road from the Wendon side south-easterly into the mountains by the SE cor Sec 7, thence S-SE up a canyon and through the low pass near the N 1/4 cor of Sec 20. A camp may be established here with perhaps as little as a weeks dozer work. From this camp jeep roads can be extended in several directions with another weeks dozer work so that the favorable beds are within a few hundred feet of the end of a road.

Once access is obtained sampling may be facilitated by drilling and blasting the massive dolomite with the aid of a gasoline jackhammer suspended on a rope. We purchased one of the new Japanese types to assist in the discovery work. Incidentally the dolomite drilled easily with this tool using carbide bits and fragmentation was excellent. After the blasts in ore in the discovery hole on Treasure Hill #1 claim plastered Scheelite all over everything for a hundred feet in every direction^{sp} the remaining discovery holes were dug off the better[^] ore to avoid this problem, since lamping to trace the ore became useless in the vicinity of the blast.

Additional roads to reach other areas of mineralization may be built up the first canyon east of the Silver Queen mine to reach the Dreisser group and top out on the Matterhorn in the SW corner of section 16. Another mining and haul road may be built up the first canyon west of the Silver Queen mine to reach the center of the Treasure Hill group. Another can pass clear through the range in the middle of sec 19 following an old road already cut through the pass here.

DRILLING AND BLOCKING RESERVES Once drilling targets have been adequately outlined by lamping at night it is suggested that a heavy equipment team be organized to include a maximum of 5 men to operate a Trac-Air drill, +600 cfm compressor, track loader about 2 yard (deisel), and a dozer from D-6 to D-8 in size. The crew to consist of driller, swamper, operator for track eqpt., and a surveyor (not necessarily an engineer); each of which man should be able to double up on other jobs. For example the surveyor should be able to tie in drill holes, set grades, map roads and flags on outcrops plus haul fuel and water to crew and equipment. The driller should be able to run the dozer or loader if necessary and the loader or dozer operator should be able to run the drill or sack samples, etc. More men than this would be in each others way. These men should be presided over by the exploration superintendent, who may be a mining engineer, geologist or other trained man, responsible to management.

DRILLING (continued) Procedure is to build roads to ore faces through solid rock by using the Trac-Air drill for horizontal long hole drilling 40 ft holes with sectional steel, blasting, cleaning face with dozer and loader and repeat. A good crew can average 150 feet per day in this manner. When an ore face is reached the dust collecting and sampling equipment is assembled and the Trac-Air is then used as an exploration tool fanning holes from 100 to 200 feet deep into the ore face to block open pit reserves. This initial drilling can thus be accomplished at a very reasonable cost, usually at about \$2.00/ft excluding road building. If deeper diamond drilling is called for the above equipment is still needed to build diamond drilling platforms.

When mining starts, the faces are opened up, roads are out, and a crew is trained.

PERSONNEL A number of good construction men live in the immediate area. For example one of the claim owners and discoverer of the deposit, George Campbell, Jr., lives in Salome, and regularly is labor forman or air track driller for road construction jobs. He could probably put together a good crew and may be available himself. Fred McDaniels was borrowed from the local State Highway crew to help survey the claims.

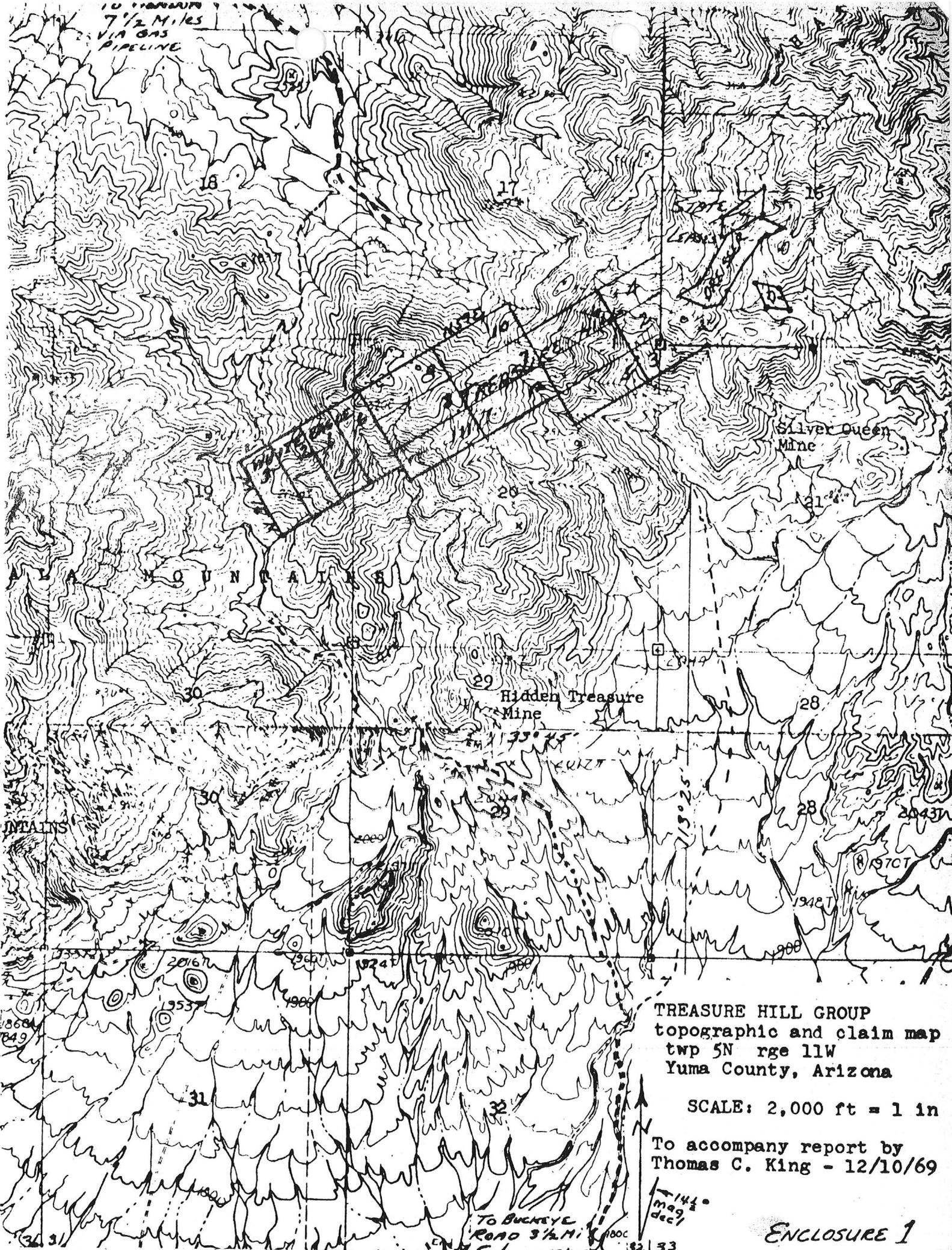
ENCLOSURES

1. Topographic and claim map at 2,000 ft = 1 inch scale.
2. Road map showing location of prospect.
3. Portions of plane table sheets showing claims and topography at 500 ft = 1 inch. Labeled Work Sheet 1 & 2
4. Map of Mineral Survey 3554 A & B, labeled Work Sheet 3

Respectfully submitted,


Thomas C. King

10 1/2 MILES
VIA GAS
PIPELINE



Silver Queen Mine

Hidden Treasure Mine

TREASURE HILL GROUP
topographic and claim map
Twp 5N Rge 11W
Yuma County, Arizona

SCALE: 2,000 ft = 1 in

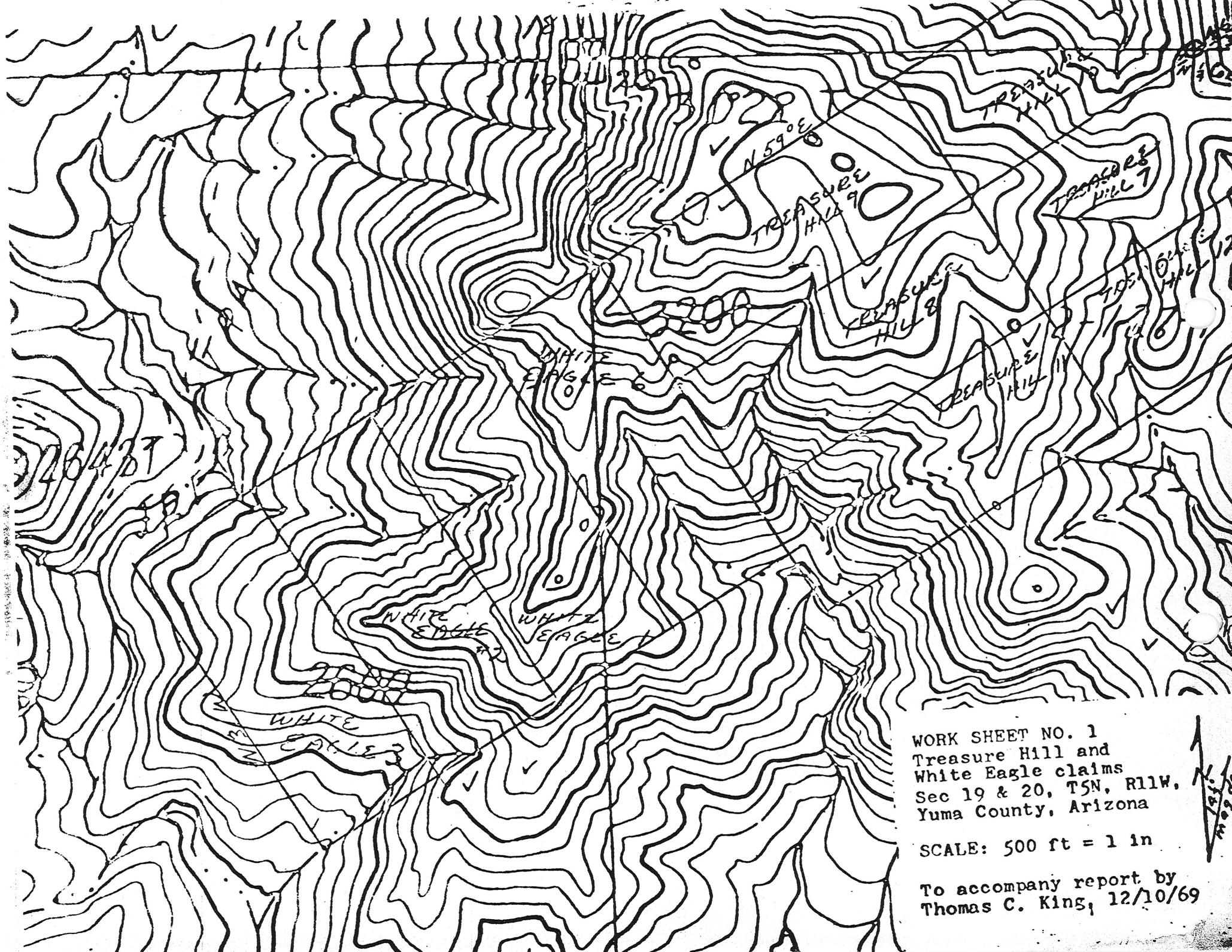
To accompany report by
Thomas C. King - 12/10/69

TO BUCKEYE
ROAD 3 1/2 MI

ENCLOSURE 1

1440
mag
dec

32 33

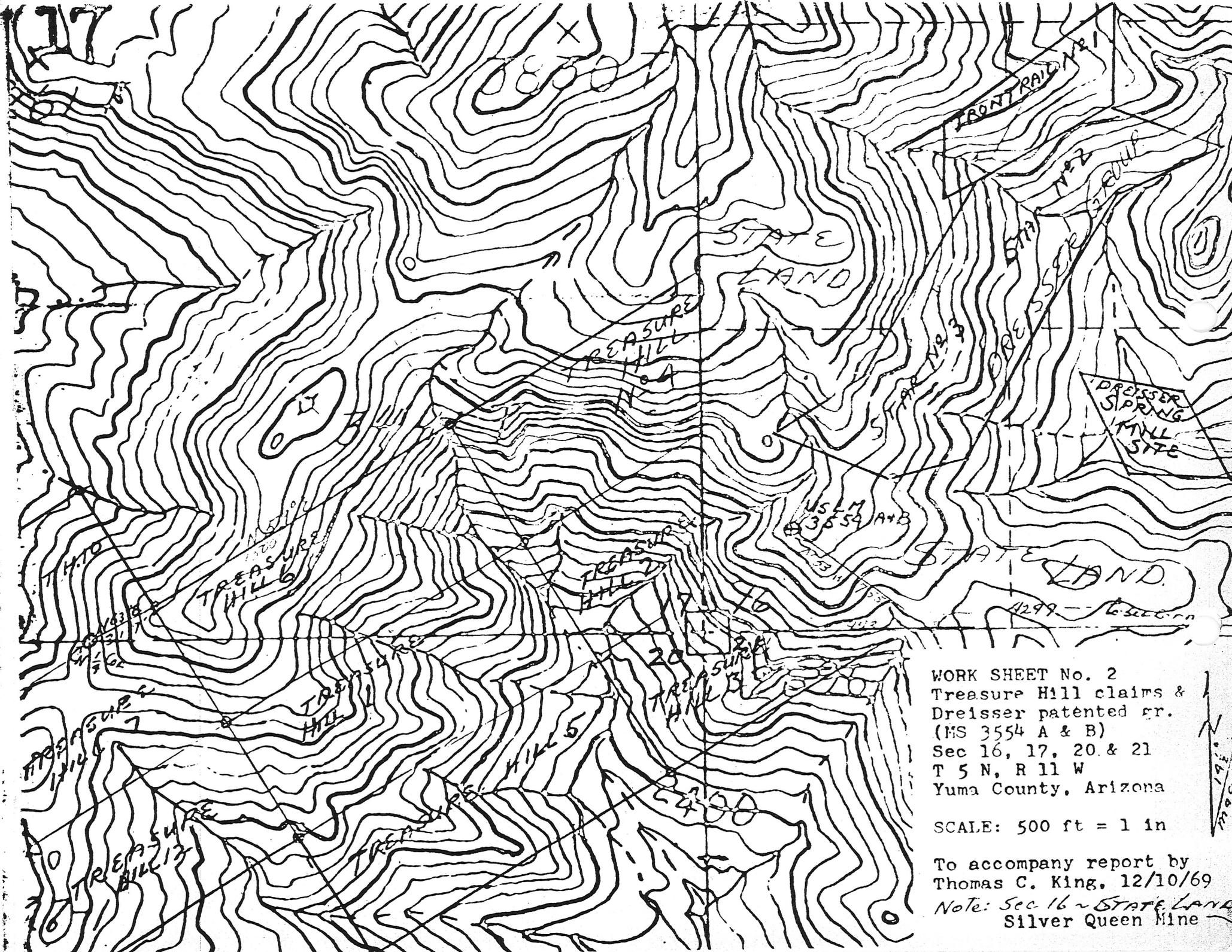


WORK SHEET NO. 1
Treasure Hill and
White Eagle claims
Sec 19 & 20, T5N, R11W,
Yuma County, Arizona

SCALE: 500 ft = 1 in

To accompany report by
Thomas C. King, 12/10/69

17



WORK SHEET No. 2
 Treasure Hill claims &
 Dreisser patented gr.
 (MS 3554 A & B)
 Sec 16, 17, 20 & 21
 T 5 N, R 11 W
 Yuma County, Arizona

SCALE: 500 ft = 1 in

To accompany report by
 Thomas C. King, 12/10/69

Note: Sec 16 ~ STATE LAND
 Silver Queen Mine

1969 Dec

STATE
LAND

STATE
LAND

IRON TRAIL NUMBER ONE

STAR NO. 2

STAR NO. 3

DREISSER SPRING
MILL SITE CLAIM
AND
WATER RIGHT

SLM. No. 3554 A & B

WORK SHEET No. 3
Plat of Mineral Survey "
No. 3554 A & B for
Dreisser patented
claims. Patent record
Book 52 of Deeds page
203, Yuma County, Ariz.
SCALE: 300 ft = 1 in

SPUR (see survey
notes - SLM file
page 43)

ENCLOSURE 4

17
16
20
21

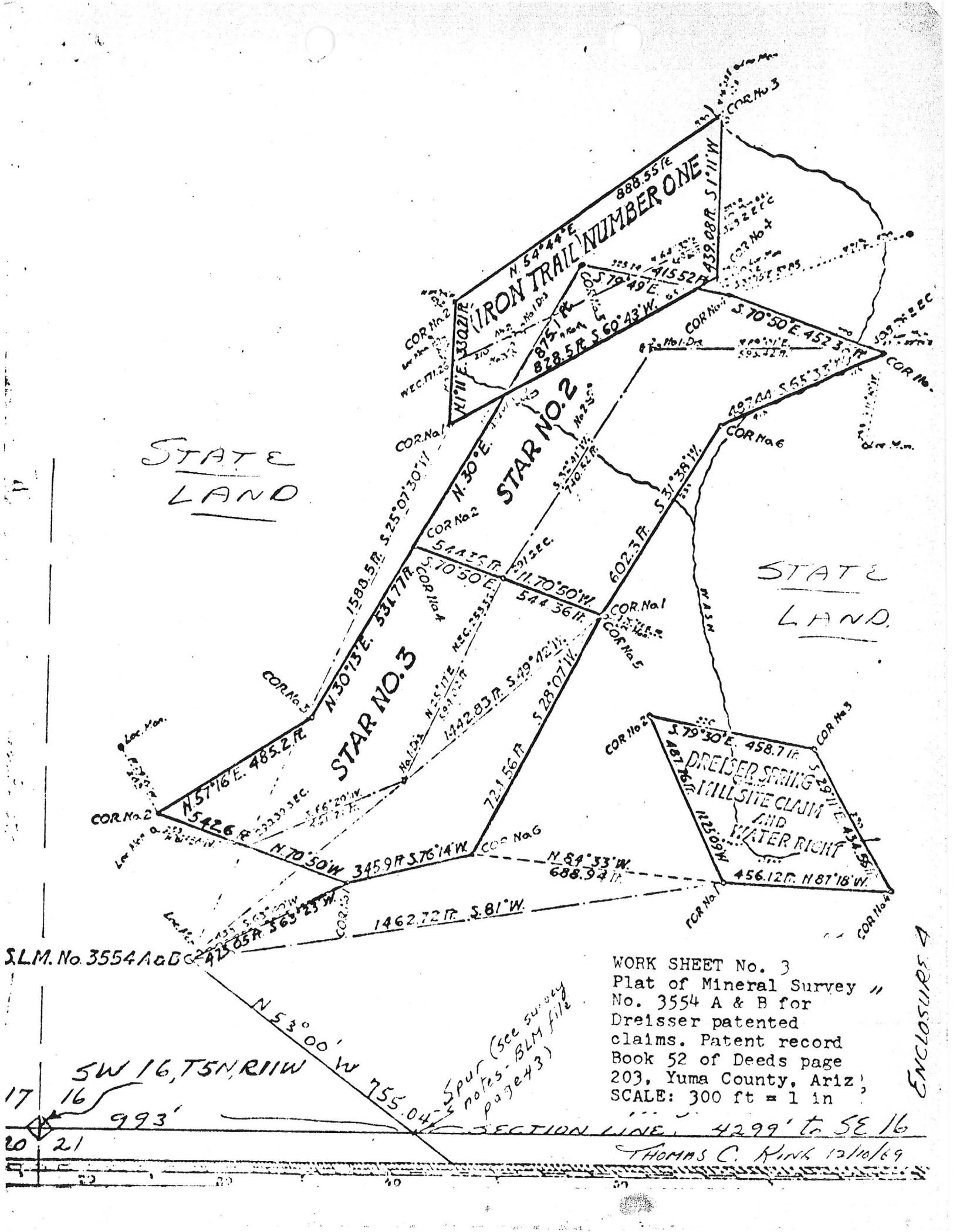
SW 16, T5N, R11W

993'

755.04'

SECTION LINE 4299' to SE 16

THOMAS C. KING 12/10/69



Iron Trail, Star 2, Star 3, and Drieser Spring Millsite
Sec. 16, T. 5 N., R. 11 W.

Yuma County

reference: Arizona Dept. of Mineral Resources

Iron Trail, Star 2, Star 3, and Drieser Spring Millsite (file)

present owners:

minerals: manganese, gold

history of the area

the property was originally located by

P. B. Drieser in 1942. Until 1959 the

property was owned by Arthur H. and

Elizabeth Drieser of Pasadena, Cal.

geology:

limonitic ore supposedly assayed 40-45% iron;
some of the limonite is black and stalagmitic.

reference: Manganese Deposits of Western Arizona

by L. L. Farnham and L. A. Stewart

Bureau of Mines Information Circular 7843

U.S. Dept. of the Interior 1958

history:

claims located in 1916 as a gold prospect. They
were patented in 1920. Property was dormant
for many years. No records of manganese or gold
shipments.

geology:

several disconnected bodies of iron and bodies

THOMAS C. KING
ENGINEERING

Phone: (602) 868-9922, 868-4405

FLORENCE, ARIZONA 85232

RT. 2, BOX 7A

Sections 16, 17, 20 & 21
 Township 5 N, Range 11 W
 Yuma County, Arizona
 Elevation \approx 2,800 ft
 Sheelite in Dolomite

TREASURE HILL TUNGSTEN PROSPECT - SOCORRO REEF

POTENTIAL

5 to 10 million tons estimated 0.2 to 0.5% WO_3 - open pit
 May be pre-concentrated by heavy media at minus 2 inch size.
 Concentrates or higher grade ore may be burned in lime kiln
 to quick lime, slacked, and de-grited to recover crude
 Sheelite, followed with HCl wash to clean out residual lime,
 followed by HCl solution (hot) to leave tungsten trioxide.
 The ore contains little or no impurities which would follow
 the sheelite through the above steps.

Precipitous terrain requiring much rock work to build roads
 to integrate ore pods into efficient mining operation. New
 discovery, undeveloped, partially explored with no previous
 excavation. No accessory minerals such as sulphides or tactite.

Close to good roads, natural gas line, power lines, water,
 and the Santa Fe R. R.

PROPERTY

A composite along 11,000 feet strike length of sheelite
 mineralization as follows:

12 unpatented lode claims known as the Treasure Hill Group,
 located and work done by George Campbell, Jr., Frank A. Sayre,
 and Robert K. Barritt in April and August of 1969.

4 unpatented lode claims known as the White Eagle Group located
 and work done by George Campbell, Sr., and Hayden S. Brown.

3 patented lode claims and 1 patented mill site and water right,
 known as the Dreisser Group, M. S. 3554 A & B, owned by
 Thomas C. King.

166 acres of State Land in Section 16, T 5 N, R 11 W, leased
 from the State of Arizona by Frank A. Sayre and Larry Reiner.

ACCESS

From Salome, Arizona, thence 11.8 miles southeasterly on the
 Buckeye road (part paved), thence turn left and travel 3.5 mi.
 northeasterly on graded road, thence turn right on dim road
 easterly and northerly into mouth of canyon. From here UV
 lights, water and supplies must be packed about a mile and a
 half up the canyon either left or right into the steep dolomite
 cliffs. If the last turn is not made and progress continued
 northerly into and through the Hidden Treasure Mine property
 and northwesterly up the main canyon in the middle of section
 19, access to the west end of the White Eagle group may be had.

ACCESS

(continued) From Wendon, Arizona, take U. S. 60-70 easterly $1\frac{1}{2}$ miles to El Paso Natural Gas pipeline, turn right or south through gate, proceed southerly down pipe line 2 miles, turn left or easterly down old graded road, proceed past corrals and circle mountains on north side proceeding easterly and southeasterly on main traveled road about 4 miles circling small hill, then proceed southerly on jeep road another $\frac{1}{2}$ mile to clearing and old camp, turn off main road on dirt track proceeding up left canyon fork $1/4$ mile to end of dozer work. Then pack $\frac{1}{2}$ mile through pass near N $\frac{1}{4}$ corner of S 20, T5N, R11W, thence left or right $\frac{1}{2}$ mile into dolomite cliffs.

GEOLOGY

meager as yet, Scheelite replacement in crushed or sheared carbonate rocks in metamorphosed Mesozoic series. Shearing related to intense folding along a line resembling a crater rim. Axis of folds N 60° E in this area with shearing in many directions, most of which related to mineralization approximately at right angles or N 30° W. Some blocks of carbonate rocks shoved completely over other sections by thrust forces. Scheelite seems to have come from under sedimentary series as mineralization seems strongest near foot wall and fades into hanging wall of dolomite members several hundred feet thick, suggesting mineralizing solutions attacked or were neutralized by first favorable beds. Scheelite assumes color and texture of rock replaced and is invisible except under short wave ultra violet lamp in darkness, where it shines an intense blue-white. About the only distinguishing feature of the mineralized dolomite is its tough massive appearance, resistance to weathering, and its extreme hardness so that sampling with ordinary tools such as prospecting picks or moils is nearly impossible. Generally speaking, if a sample can be chipped from it, it does not contain Scheelite. The mineralized dolomite usually stands as massive cliffs in the highest portions of the fold, throws a little high grade slide rock immediately below it, and no placer Scheelite in ravines below. Lack of placer Scheelite, due probably to its sliming in a hostile environment of tough, hard boulders, makes prospecting difficult, and requires that all favorable beds in extremely difficult terrain be traversed and lamped in place at night. This is of course preferable to dewatering or robbing pillars in some old mine or sinking shafts in search of ore, but this work in the cliffs at night without a light takes a bit of getting used to. About 5% of the favorable beds in the area staked have been lamped at this writing.

SAMPLING AND ASSAYING In an attempt to determine the assay grade of the average outcrop a sampling procedure was tried as follows:

1. An area about 500 ft. long on Treasure Hill #1 claim was prospected at night with ultra violet lights along the foot wall of the dolomite.
2. One zone about 100 feet square and three zones about 25 x 50 ft. were found to show ore grade fluorescence estimated to average about $\frac{1}{2}$ % Scheelite. These areas were flagged.
3. Each area was chipped sampled at random without the aid of the ultra violet lamp, using flashlights only for illumination, so as to avoid chipping at high grade.
4. The composite sample from the mineralized zones was 0.41% WO_3 , assayed by the gravimetric method using HF to fume off the last traces of silica. The assayer noted that almost the entire sample dissolved readily in HCl, and suggested that concentrates could easily be upgraded by dissolving the carbonate rocks out of them in this way.

METALLURGY The concentration problem here is somewhat analagous to the concentration of Tri-State Zinc ores, where the author was employed for several years as metallurgist for the Eagle-Picher Co's 15,000 ton/day Central Mill where Heavy Media was used to pre-concentrate the low grade ores. Examination of the Scheelite mineralization reveals that a great deal of the valuable material is concentrated in patches, streaks, or pockets along veins in the orebodies with much barren or sparsely disseminated dolomite in between. There is sufficient difference in the specific gravity of Scheelite at 6.00 from the dolomite at 2.85 to suggest Heavy Media as a preconcentration method, so as to eliminate as much barren material as soon as possible.

By using an Akins seperatory vessel an effective density of 0.03 above the density of the float product can be maintained. Thus if the float density overflow is 2.87 or 2.88, then all rocks having over 1% Scheelite will report in the concentrate or sink, and 100 to 200 relatively barren rocks for every mineralized rock having about 1% Scheelite or less will report in the overflow. Thus the Heavy Media tailing may run less than 0.08% WO_3 and the concentrate should run from 2 to 5% WO_3 . A higher concentration ratio than this would result in a higher tailing loss and be economically unsound.

METALLURGY (continued) It is therefore suggested that heavy liquid tests be run on the ore as soon as representative as-mined material is available.

The recovery of Scheelite (Calcium Tungstate) from dolomite (Calcium Magnesium Carbonate) by froth flotation is difficult since the usual reagents which recover the Scheelite react with the Calcium in both the valuable mineral and the gangue.

Another method of recovery from either the ore or Heavy Media concentrates was suggested, however, which seems to be very promising. This involves roasting or burning the dolomite to quick lime so that it can be slacked and washed from the Scheelite which remains as the original relatively coarse crystals unaffected by the roasting. The "grit" which remains is easily concentrated by gravity to pure Scheelite with a minimum of sliming. A vertical shaft lime kiln is recommended to avoid abrasion which would slime Scheelite. Preliminary tests roasting the ore in a forge indicated that the slacked dolomite crumbled away easily from the Scheelite.

A by-product lime may be recovered which should be saleable for pH control to the many porphyry copper concentrators in the state.

EXTENT OF DISCOVERY Scheelite mineralization has been lamped on structure beginning at the northeasterly end of the sedimentary series where the fold either terminates against a fault or passes under other rocks roughly in the center of section 16, T5N, R11W, to nearly the center of section 19, a distance of over 10,000 feet on an approximate S 50° W course. Specifically it was found in one trip into the Dreisser group both in place and in slide rock. On another trip it was found in a variety of rocks, including dolomite, marble and amphibole around and below U.S.M. M. 3554 in the SW corner of S 16 on Treasure Hill #2 and #3 claims. Again slide rock with very high grade material in white marble was found under the Matterhorn, so named for obvious reasons, in the NE of S 20, and in dolomite westerly into Treasure Hill #1 along the footwall for nearly 1000 feet. This last lamped in several trips. Again it was picked up by accident in daylight sampling from another dolomite fold about 900 feet S-SE of the N $\frac{1}{4}$ cor of S 20 on Treasure Hill #12. Considerable Scheelite, some highgrade was lamped all through the area 1200 to 2000 ft S-SE to due south of the NW cor of S 20 on Treasure Hill #8 and #11 claims and on the White Eagle #6 and #1 claims, this on two separate trips at night. Open pits can probably be developed in several of these areas.

EXPLORATION Reasonable access to all these zones of Scheelite mineralization can best be obtained by rebuilding and extending the jeep road from the Wendon side south-easterly into the mountains by the SE cor Sec 7, thence S-SE up a canyon and through the low pass near the N 1/4 cor of Sec 20. A camp may be established here with perhaps as little as a weeks dozer work. From this camp jeep roads can be extended in several directions with another weeks dozer work so that the favorable beds are within a few hundred feet of the end of a road.

Once access is obtained sampling may be facilitated by drilling and blasting the massive dolomite with the aid of a gasoline jackhammer suspended on a rope. We purchased one of the new Japanese types to assist in the discovery work. Incidentally the dolomite drilled easily with this tool using carbide bits and fragmentation was excellent. After the blasts in ore in the discovery hole on Treasure Hill #1 claim plastered Scheelite all over everything for a hundred feet in every direction[^] the remaining discovery holes were dug off the better ore to avoid this problem, since lamping to trace the ore became useless in the vicinity of the blast.

Additional roads to reach other areas of mineralization may be built up the first canyon east of the Silver Queen mine to reach the Dreisser group and top out on the Matterhorn in the SW corner of section 16. Another mining and haul road may be built up the first canyon west of the Silver Queen mine to reach the center of the Treasure Hill group. Another can pass clear through the range in the middle of sec 19 following an old road already cut through the pass here.

DRILLING AND BLOCKING RESERVES Once drilling targets have been adequately outlined by lamping at night it is suggested that a heavy equipment team be organized to include a maximum of 5 men to operate a Trac-Air drill, +600 cfm compressor, track loader about 2 yard (deisel), and a dozer from D-6 to D-8 in size. The crew to consist of driller, swamper, operator for track eqpt., and a surveyor (not necessarily an engineer); each of which man should be able to double up on other jobs. For example the surveyor should be able to tie in drill holes, set grades, map roads and flags on outcrops plus haul fuel and water to crew and equipment. The driller should be able to run the dozer or loader if necessary and the loader or dozer operator should be able to run the drill or sack samples, etc. More men than this would be in each others way. These men should be presided over by the exploration superintendent, who may be a mining engineer, geologist or other trained man, responsible to management.

DRILLING (continued) Procedure is to build roads to ore faces through solid rock by using the Trac-Air drill for horizontal long hole drilling 40 ft holes with sectional steel, blasting, cleaning face with dozer and loader and repeat. A good crew can average 150 feet per day in this manner. When an ore face is reached the dust collecting and sampling equipment is assembled and the Trac-Air is then used as an exploration tool fanning holes from 100 to 200 feet deep into the ore face to block open pit reserves. This initial drilling can thus be accomplished at a very reasonable cost, usually at about \$2.00/ft excluding road building. If deeper diamond drilling is called for the above equipment is still needed to build diamond drilling platforms.

When mining starts, the faces are opened up, roads are out, and a crew is trained.

PERSONNEL A number of good construction men live in the immediate area. For example one of the claim owners and discoverer of the deposit, George Campbell, Jr., lives in Salome, and regularly is labor forman or air track driller for road construction jobs. He could probably put together a good crew and may be available himself. Fred McDaniels was borrowed from the local State Highway crew to help survey the claims.

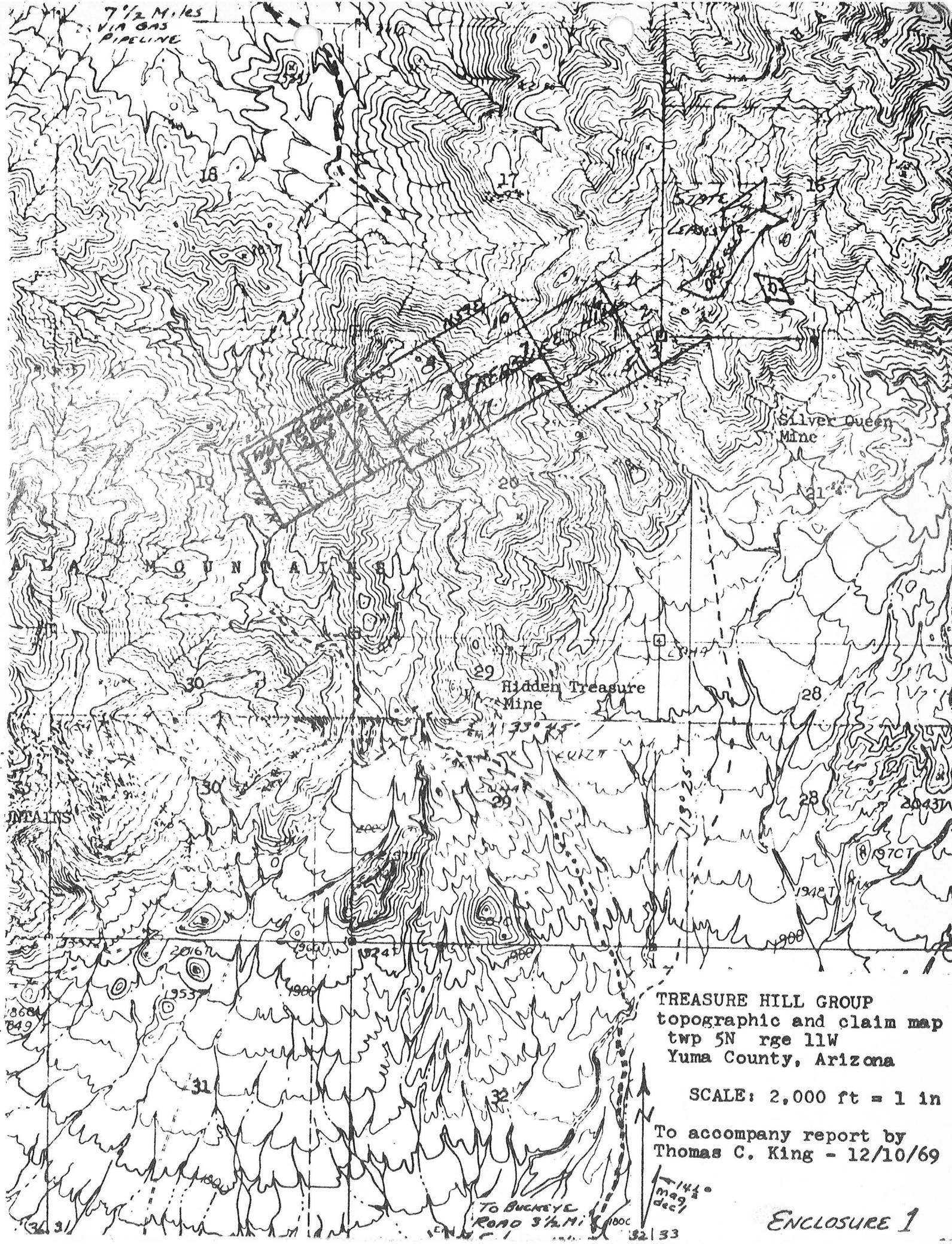
ENCLOSURES

1. Topographic and claim map at 2,000 ft = 1 inch scale.
2. Road map showing location of prospect.
3. Portions of plane table sheets showing claims and topography at 500 ft = 1 inch. Labeled Work Sheet 1 & 2
4. Map of Mineral Survey 3554 A & B, labeled Work Sheet 3

Respectfully submitted,


Thomas C. King

7 1/2 Miles
VIA GAS
PIPELINE

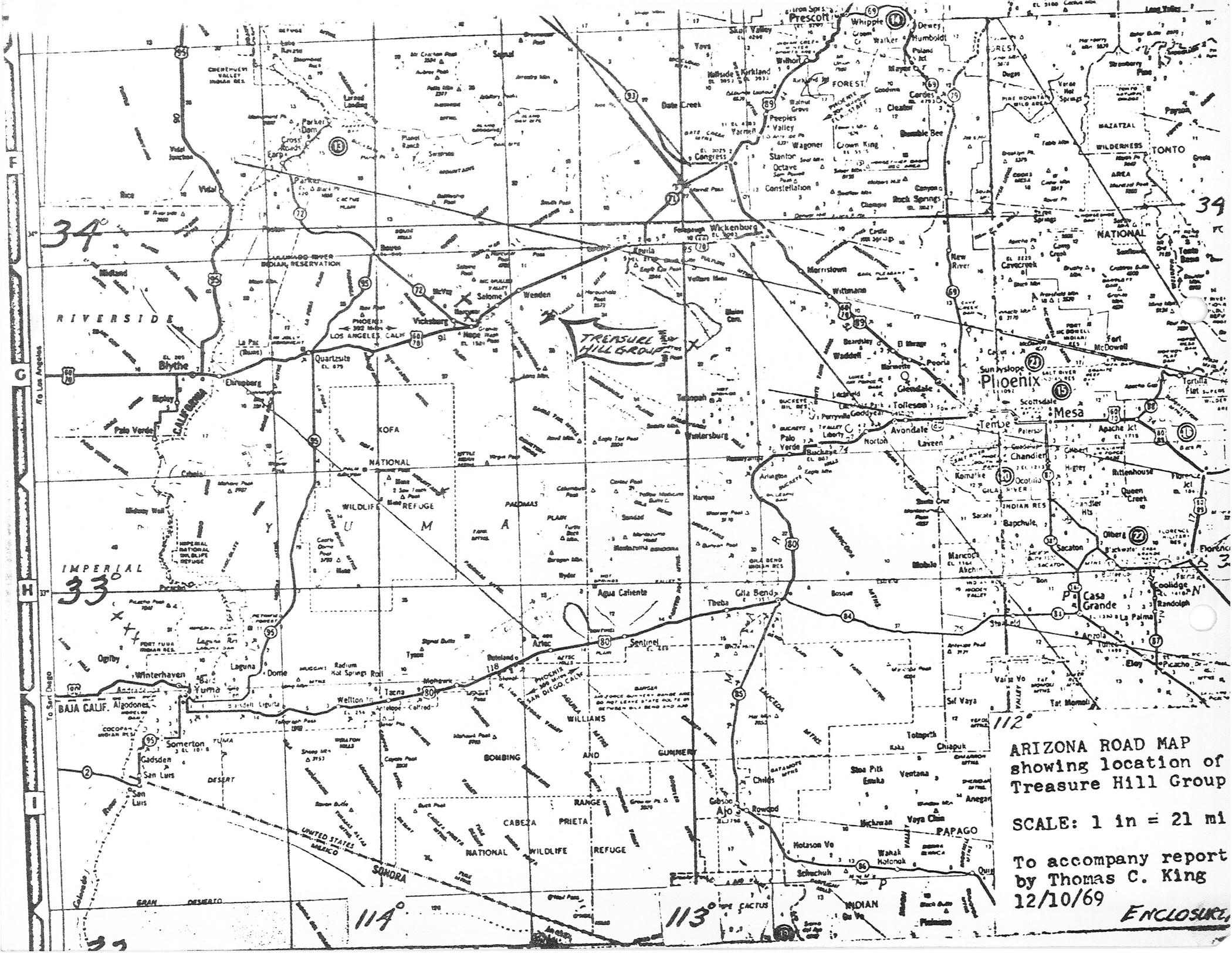


TREASURE HILL GROUP
topographic and claim map
twp 5N rge 11W
Yuma County, Arizona

SCALE: 2,000 ft = 1 in

To accompany report by
Thomas C. King - 12/10/69

ENCLOSURE 1



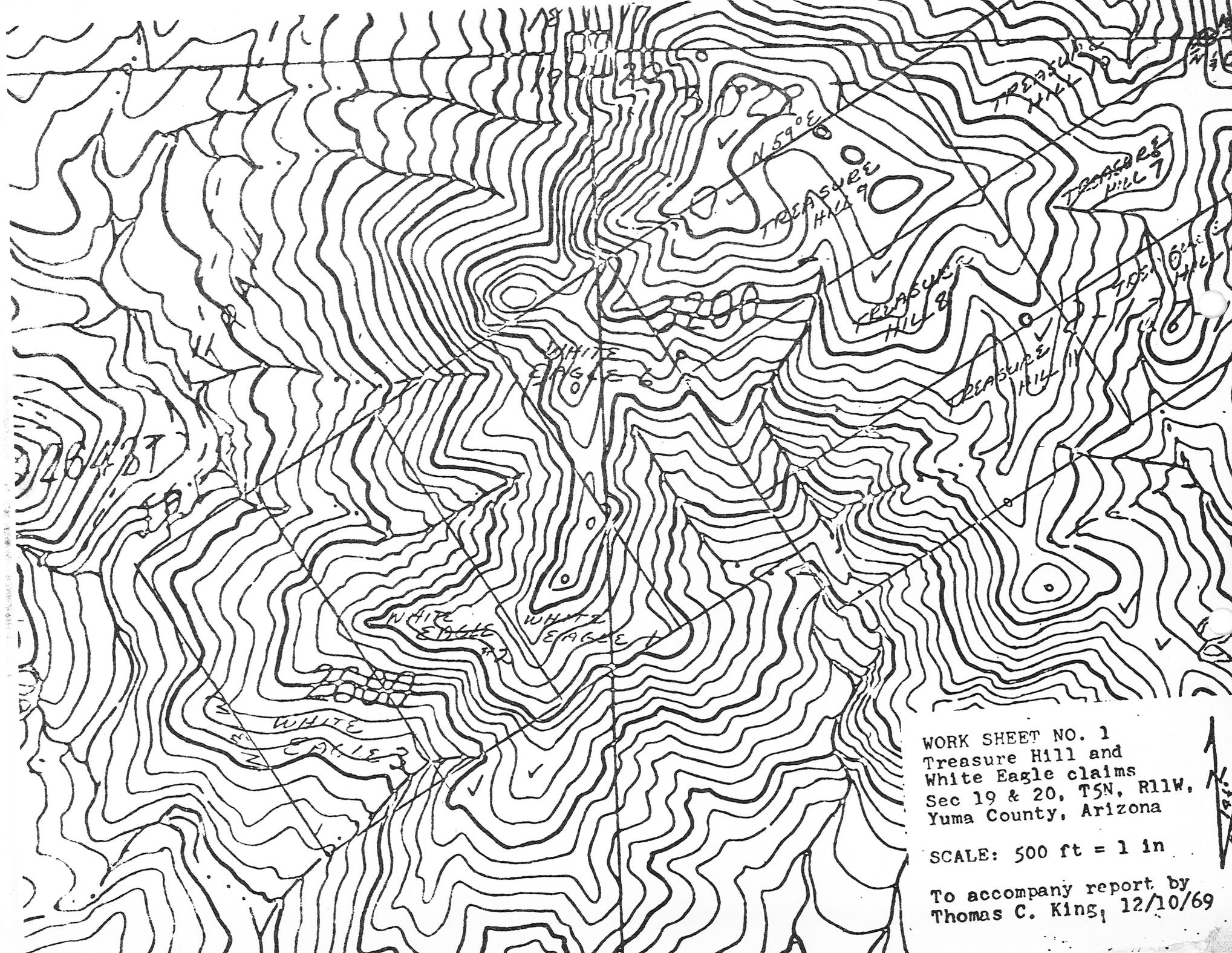
TREASURE HILL GROUP

ARIZONA ROAD MAP
showing location of
Treasure Hill Group

SCALE: 1 in = 21 mi

To accompany report
by Thomas C. King
12/10/69

ENCLOSURE

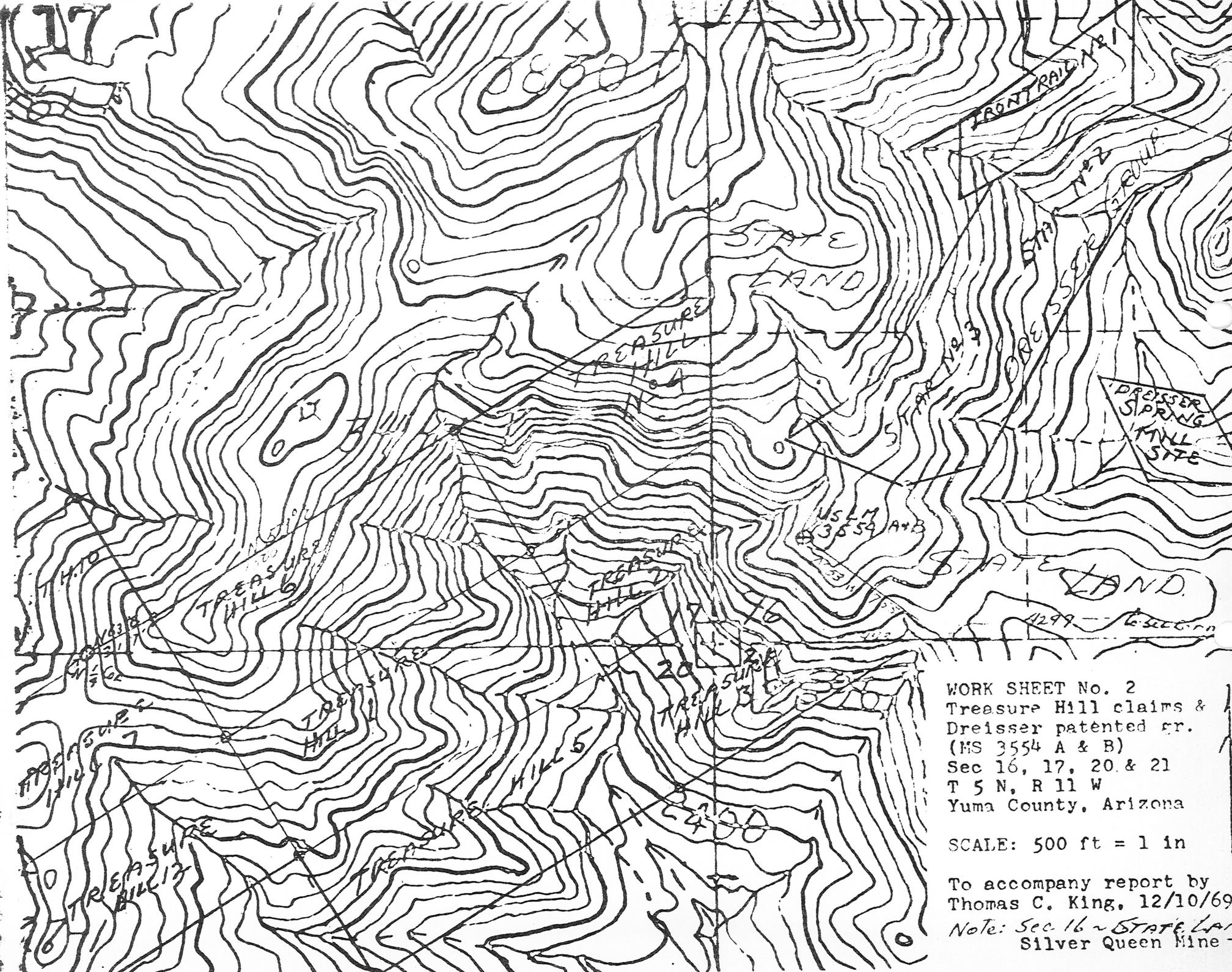


WORK SHEET NO. 1
Treasure Hill and
White Eagle claims
Sec 19 & 20, T5N, R11W,
Yuma County, Arizona

SCALE: 500 ft = 1 in

To accompany report by
Thomas C. King, 12/10/69

17



WORK SHEET No. 2
 Treasure Hill claims &
 Dreisser patented gr.
 (MS 3554 A & B)
 Sec 16, 17, 20 & 21
 T 5 N, R 11 W
 Yuma County, Arizona

SCALE: 500 ft = 1 in

To accompany report by
 Thomas C. King, 12/10/69

Note: Sec 16 ~ STATE LAND
 Silver Queen Mine

STATE
LAND

STATE
LAND

IRON TRAIL NUMBER ONE

STAR NO. 2

STAR NO. 3

DREISSER SPRING
MILL SITE CLAIM
AND
WATER RIGHT

SLM. No. 3554 A & B

WORK SHEET No. 3
Plat of Mineral Survey "
No. 3554 A & B for
Dreisser patented
claims. Patent record
Book 52 of Deeds page
203, Yuma County, Ariz.
SCALE: 300 ft = 1 in

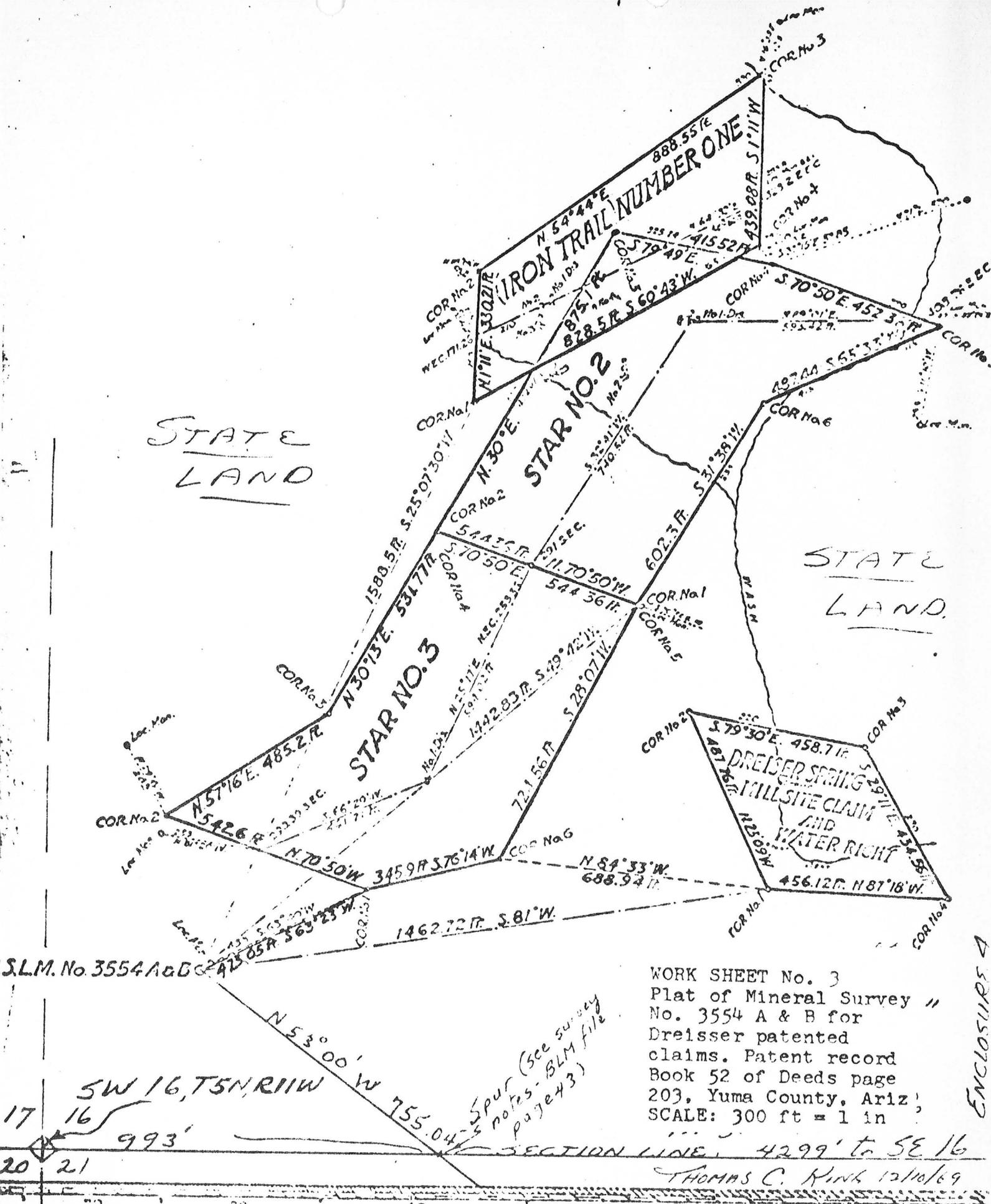
ENCLOSURE A

17 16
20 21
993'
SW 16, T5N, R11W
755.04'

SPUR (see survey
notes - SLM file
page 43)

SECTION LINE 4299' to SE 16

THOMAS C. Rink 12/10/69



DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Iron Trail, Star 2 and Star 3, and Dreiser Spring Millsite (Survey No. 3554) Date Oct. 11, 1962
District 3554) Engineer Lewis A. Smith
Subject: Ellsworth (Harquahala) Dist., Yuma Co.

Interview with Lester Huthmacher 10-5-62 and the Bureau of Land Management 10-9-62.

Location: S-16, T5N, R11W, 3 miles NE of the Hidden Treasure Mine. (Originally located by P. B. Dreiser) (Information from Bur. of Land Management). Claims were recorded 7-14-42.

Owners up to Sept., 1959: Arthur H. & Elizabeth Drieser, 237 Penn St., Pasadena 6, California.

Lester Huthmacher, Box 83, Wenden said he had visited the mine and that it had some limonitic ore which was said to have assayed about 40-45 percent iron. Some of the limonite is black and stalagitic in character. He also said that it is at about 3 miles NE of the old Hidden Treasure Mine. Huthmacher is of the opinion that the limonite was derived from massive pyrite, which had originally replaced limestone, the principal host rock. He had a clipping which stated that the claims had been advertised for sale as of September 18, 1959. A letter was written October 11th to Vernon Wright, County Recorder, Yuma County, for the present status of these claims.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Iron Trail, Star 2 and Star 3, and Dreiser Spring Millsite (Survey No. 3554) Date Oct. 11, 1962
District 3554 Engineer Lewis A. Smith
Subject: Ellsworth (Harquahala) Dist., Yuma Co.

Interview with Lester Huthmacher 10-5-62 and the Bureau of Land Management 10-9-62.

Location: S-16, T5N, R11W, 3 miles NE of the Hidden Treasure Mine. (Originally located by P. B. Dreiser) (Information from Bur. of Land Management). Claims were recorded 7-14-42.

Owners up to Sept., 1959: Arthur H. & Elizabeth Drieser, 237 Penn St., Pasadena 6, California.

Lester Huthmacher, Box 83, Wenden said he had visited the mine and that it had some limonitic ore which was said to have assayed about 40-45 percent iron. Some of the limonite is black and stalagtitic in character. He also said that it is at about 3 miles NE of the old Hidden Treasure Mine. Huthmacher is of the opinion that the limonite was derived from massive pyrite, which had originally replaced limestone, the principal host rock. He had a clipping which stated that the claims had been advertised for sale as of September 18, 1959. A letter was written October 11th to Vernon Wright, County Recorder, Yuma County, for the present status of these claims.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Iron Trail, Star 2 and Star 3, and Dreiser Spring Millsite (Survey No. 3554) Date Oct. 11, 1962
District 3554) Engineer Lewis A. Smith
Subject: Ellsworth (Marquahala) Dist., Yuma Co.

Interview with Lester Huthmacher 10-5-62 and the Bureau of Land Management 10-9-62.

Location: S-16, T5N, R11W, 3 miles NE of the Hidden Treasure Mine. (Originally located by P. B. Dreiser) (Information from Bur. of Land Management). Claims were recorded 7-14-42.

Owners up to Sept., 1959: Arthur H. & Elizabeth Drieser, 237 Penn St., Pasadena 6, California.

Lester Huthmacher, Box 83, Wenden said he had visited the mine and that it had some limonitic ore which was said to have assayed about 40-45 percent iron. Some of the limonite is black and stalagtitic in character. He also said that it is at about 3 miles NE of the old Hidden Treasure Mine. Huthmacher is of the opinion that the limonite was derived from massive pyrite, which had originally replaced limestone, the principal host rock. He had a clipping which stated that the claims had been advertised for sale as of September 18, 1959. A letter was written October 11th to Vernon Wright, County Recorder, Yuma County, for the present status of these claims.