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

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MICHAEL J. SKOPOS, B. SC.
CONSULTING GEOLOGIST
G.A.C., C.I.M.M., A.I.M.E.
5901 Moss Creek Circle
Fair Oaks, Ca., 95628

GEOLOGICAL REPORT

of

Bubby's Mine
Catclaw Placer Claims #1-7
Mohave County, Arizona
April 17, 1982

Table of Contents

GEOLOGICAL REPORT
Mohave County, Arizona

April 17, 1982

Introduction

At the request of Vincent P. Orlando, the writer was retained to examine and sample the Catclaw Placer Claims #1-7, Mohave County, Arizona. The writer examined, sampled and processed the placer material during the period April 5 through 8th, 1982. The writer wishes to thank Ray Corner, Christ Christenson, Vincent P. Orlando and Jim Pappas for their assistance during the Geological evaluation.

Property

The property consists of 7 placer claims, Catclaw #1-7, each placer claims containing 160 acres, for a total acreage of 1120. Please see Claim Map, showing all the claims. The Catclaw Claims #1-7 are located in Sections 1, 11, 12 and 14, Township 19 N. and Range 21 W., Mohave County, Arizona and in the San Francisco Mining District. The placer claims are owned by Ray Corner, Box 5, Oatman, Arizona. The claims are in good standing with the Mohave County, recording office and are recorded in the Bureau of Land Management Office.

Location

The Catclaw Claims are located seven miles due east of the Colorado River, by the Southern most corner of Nevada, adjoining California and Arizona. The property is located 10 miles west of the town of Oatman, Arizona, via a fair gravel road. The small town of Oatman, has a population of 125. The second access is from Bullhead, Arizona, a much larger town with a population of 45,000, is located 15 miles northwest of the property. The claims can be reached via a good gravel road.

The property lies on the west flank of the Black Mountains at an elevation of 1,500 to 2,500 feet. During the rainy season the run off from the sides of the mountains are carried westward to

to the Colorado River, which borders the three states Arizona, California and Nevada.

Climate

The area has an excellent dry climate, with no snow, which can be worked year around. The annual rainfall averages from 7 to 9 inches. In April, when the property was examined, the gulches were dry. The only run off occurs during the rainy season.

Water

Other than the run off during the rainy season, there is only one water well, shown on Sketch Map Area 3 & 4. This well produces approximately 1,000 gallons per day. Additional water will be necessary and a deeper well will have to be drilled, in order that ample water will be available. Vegetation consists principally of small desert shrubs and abundant Yucca or Joshua trees.

History

In the 1800's gold placers were the main source for gold mined in Arizona until after the Civil War period; their yield continued to be considerable until about 1885, but thereafter it was of very minor importance except during periods of depression in the base-metal markets. Placers have accounted for approximately $11,240,000.00 of the total gold production in Arizona, at the old prices. After 1885 siliceous lode deposits led the output with the immediate Oatman district of Arizona accounting for over 36 million dollars production, at an average gold price of $20.00 per oz. A total of 1,800,400 ounces of gold were produced. The surrounding area of the placer claims, has had many gold producers.

Geology

The Black Mountains lie to the east of the Catclaw Claims and are ruggedly dissected, gently eastward-dipping block of Tertiary

volcanic rocks which rest upon a basement of pre-Cambrian gneiss and granite.

The Oatman district is in a belt of rugged foothills at the western base of the mountains, mainly between altitudes of 1,500 and 3,200 feet. Eastward, the range rises with deeply dissected, steplike cliffs to a maximum elevation of about 5,000 feet above sea level or 4,500 feet above the Colorado River. The gulches which are dry except during rainy seasons carry the run off from this side of the mountains westward to the Colorado River.

The principal formations, consist of a few patches of gneiss and granite on the west, overlain by a thick series of trachytes, andesite, latite, tuffs, rhyolite, and basalt. Intrusive into parts of this series are monzonite, granitic and rhyolitic porphyrys.

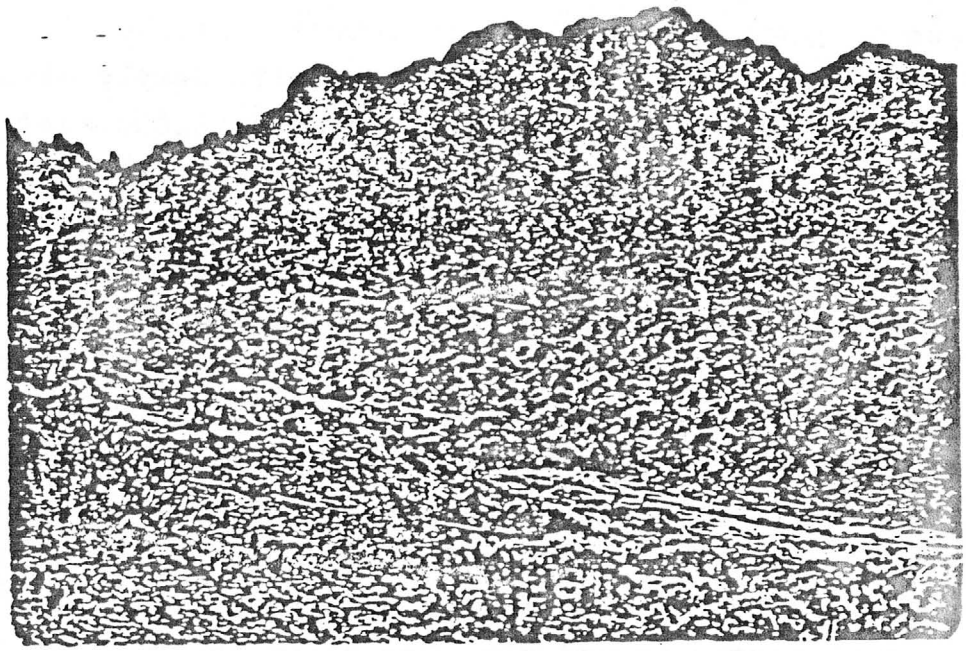
The most important ore-bearing formation is the Oatman Andesite which has been termed the "green chloritic andesite." These formations are cut by numerous faults of prevailingly northwestward strike and steep northeastward dip. The veins occur within fissures along which faulting has taken place, as a rule before, during and after the period of vein formation. The veins in the Oatman area have averaged from a few stringers up to 50 feet in width.

The main rock type noted on the property, consists of a volcanic rhyolite, which is well fractured and should not present any problems when the bedrock is ripped. The rhyolite is fractured in areas and brecciated with some cementing.

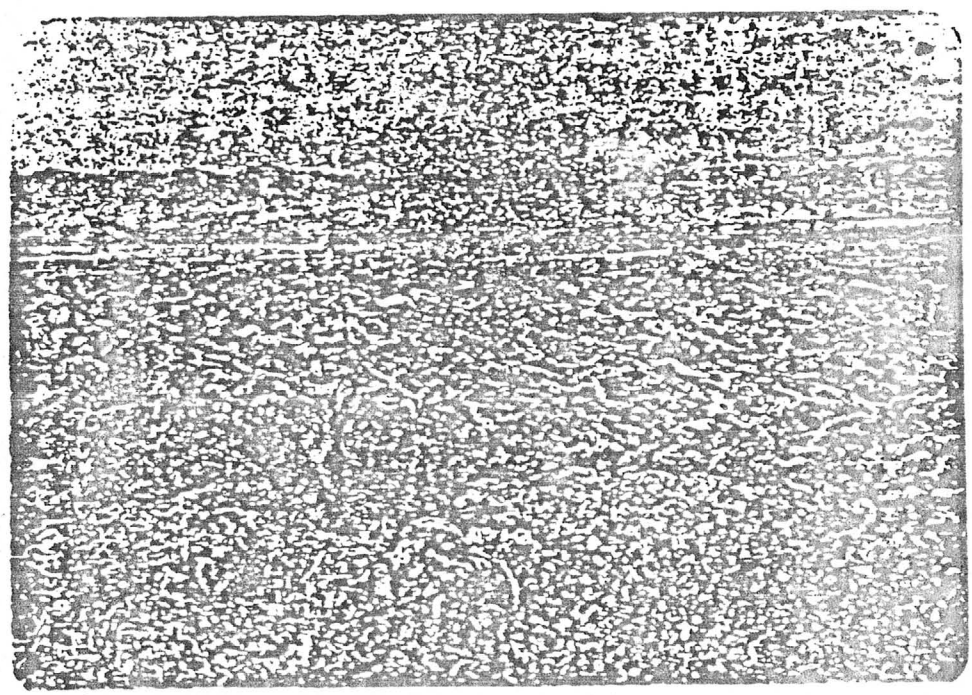
There are two shafts located on the Catclaw Claims. One is on a quartz vein which carries gold and the second shaft is down 75 feet but in the thick gravel Area #4, shown on the Sketch Map showing Areas 3 & 4.

The alluvium, on the Catclaw Claims, is made up predominantly of basin-fill deposits of gravel, sand and silts, locally cemented by caliche a calcium carbonate. The gold bearing gravels occur principally in arroyos and gulches, between the elevations of 1,500 feet to 2,500 feet. Heaviest gravel deposition appears to be located in the ravines, forming long -slender gravel deposits averaging 100 to

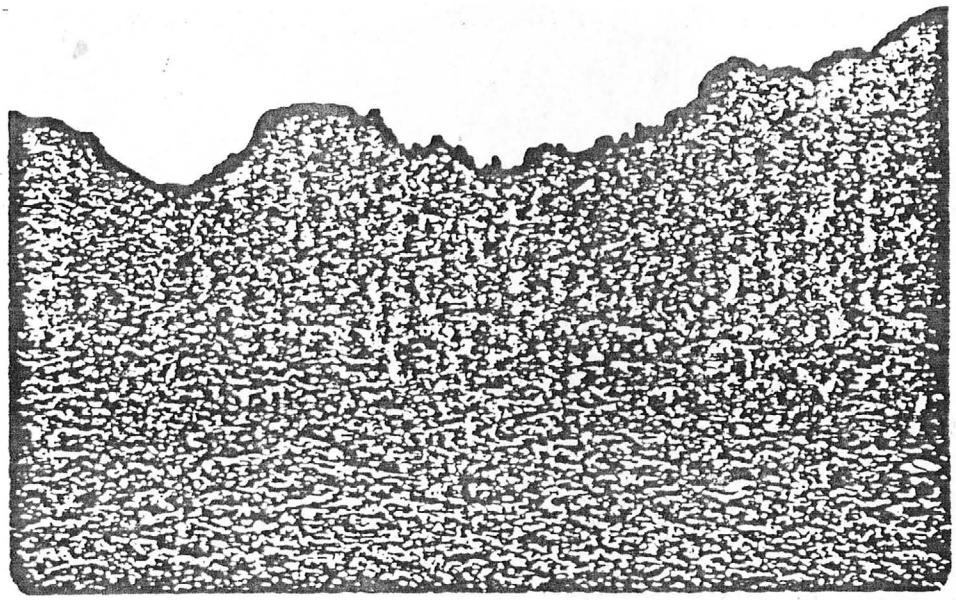
300 feet in width. Please see photographs, showing Areas #1,2,3 & 4.



Gold bearing gravels, Area #1 &
part of #3



Backhoe trenches, Area #2

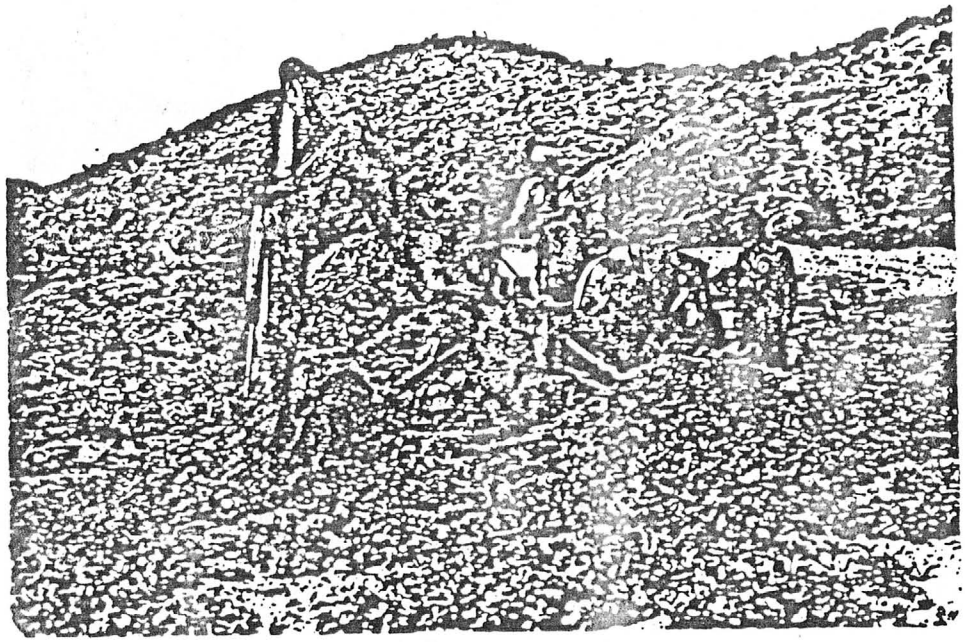


Thick gravels in Area #4

The gravels average from a few feet in thickness to over 75 feet and rest upon caliche-cemented gravels. Gold, being heavier than most materials tends to settle and sink to bedrock. Depressions in the bedrock generally hold rich pockets of gold, while bedrock that is soft, fissured and shattered, acts as a good riffle and may hold good gold values. Crevices and potholes usually yield good gold values and may extend for several feet in depth. Very noticable, is the lack of large boulders in the gravels. The largest pieces encountered while running the bulk sample test, 5 to 6 inches in diameter.

Detailed Sampling Program

A Ford backhoe, with a ¼ yard bucket was used to cut 45 trenches. Please see photograph showing Ford Backhoe used to cut the trenches in the gravel. These trenches varied from 3 to 20 feet in depth. Several of these trenches didn't reach bottom at 20 feet. The trenches were cut systematically to determine precious metal values, continuity, trends and volume available for production.

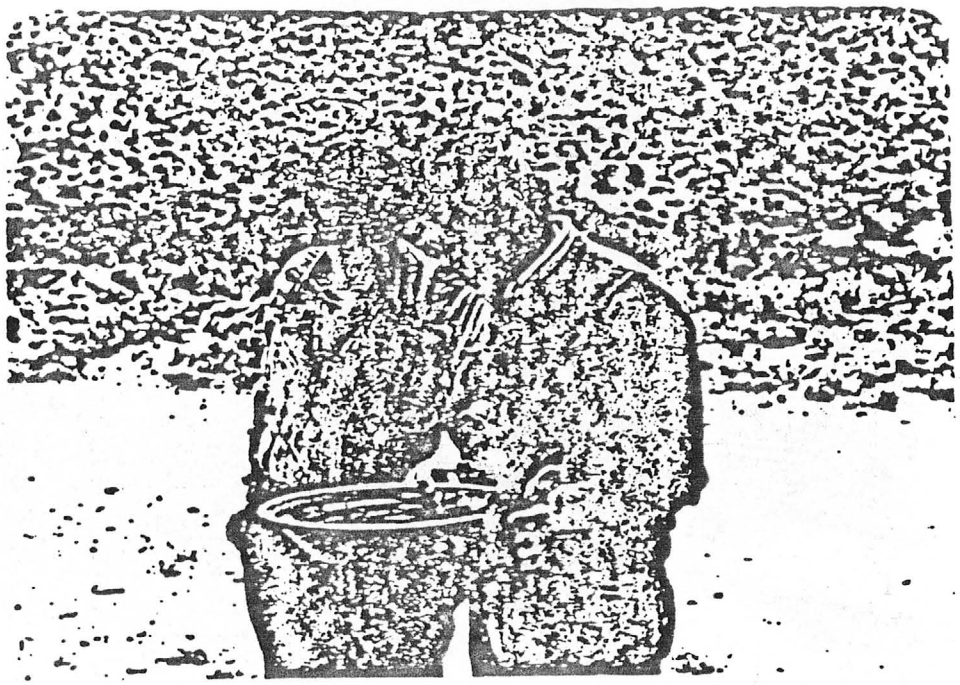


Ford Backhoe, with ¾ yard bucket

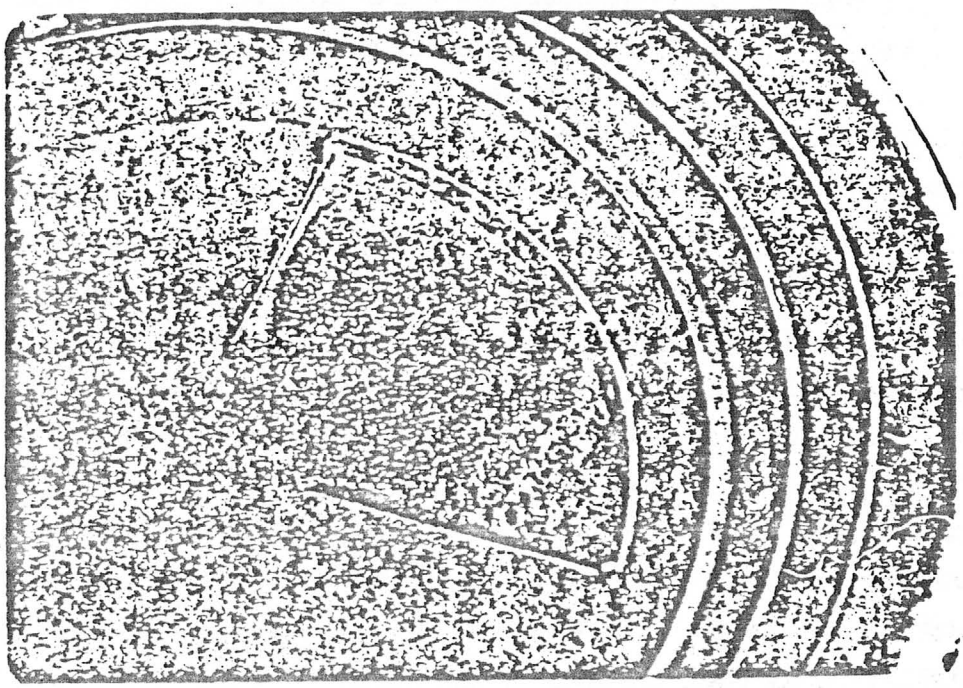
Please see Sketch Maps showing trenches in red in Areas #1,2,3 and 4.

Eighteen test samples were taken at the property from the different trenches using both the gold pan method and the small oil drum trommel built by Ray Corner. Only one sample didn't show visible gold, but black heavy sands were recovered in every test. Please see photographs showing gold pan method and gold recovered in the blue gold pan, and the trommel built by Ray Corner. Six 100 pound tests were run through the small trommel and every test showed good gold. These crude tests proved that most of the gold can be easly extracted.

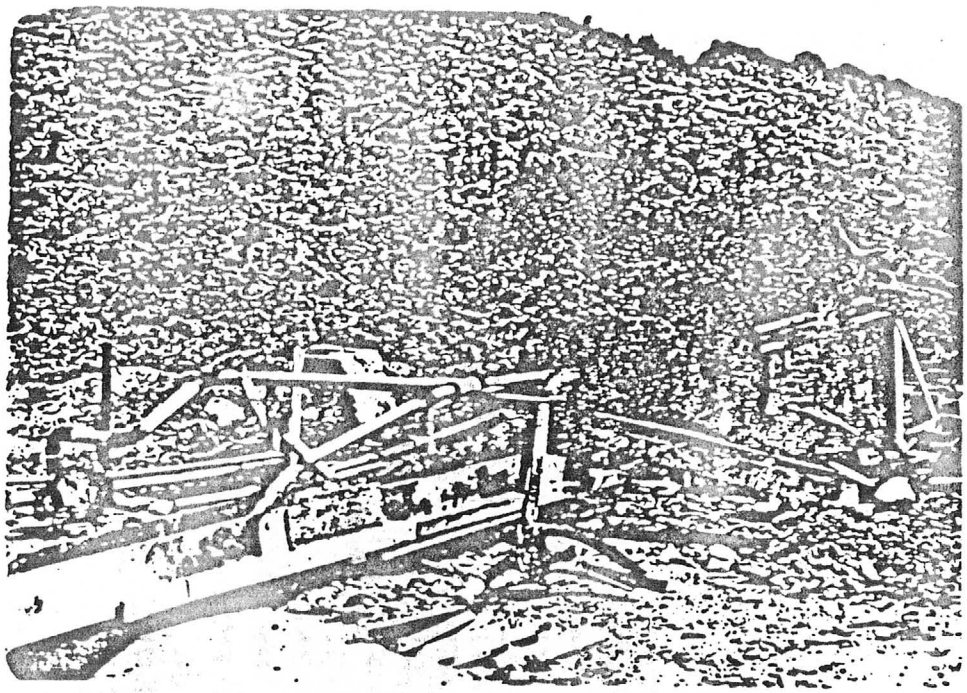
In addition bulk sampling was completed in four separate areas. Forty 100 pound sacks were filled and tagged from the different trenches cut and hauled to Steve Dukes Mfg. Co. in Reno, Nevada for processing. The "Knudsen Bowl Centrifugal Concentrator" was used. This method is excellent for recovering fine gold and heavy metals. Please see photograph of sampling plant. Approximately 100 pounds of concentrate was recovered from the 4,000 pounds of material processed. The writer used the gold pan, on the concentrate, to check on the gold recovery and all four samples showed good gold.



Christ Christenson and the writer panning gold.



Visible gold recovered with gold pan.

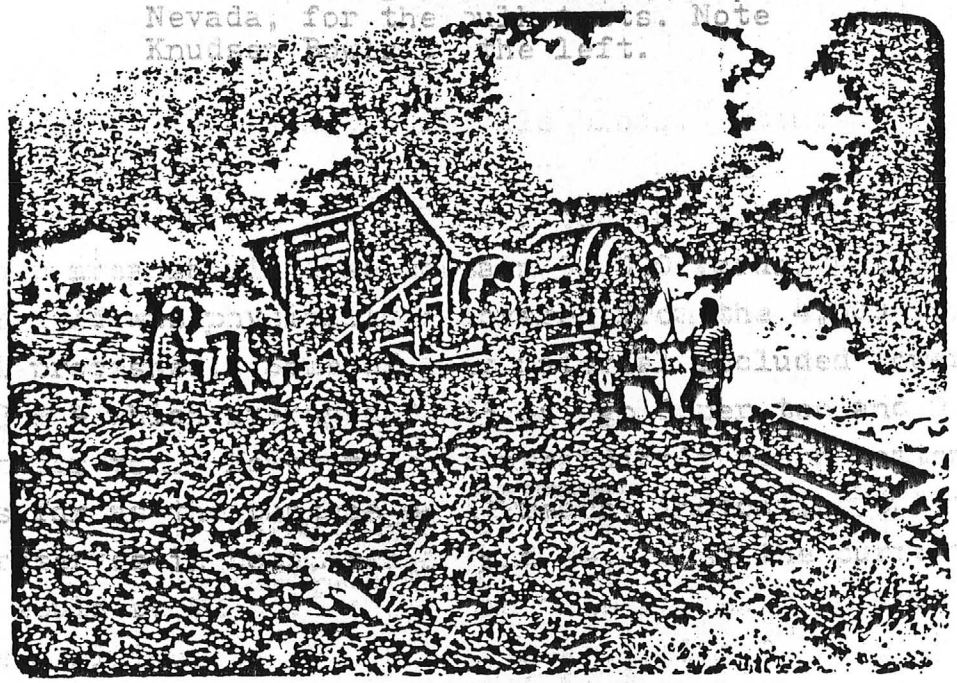


Small oil drum trommel, built by Ray Corner, used to recover gold at the property.

All the samples of concentrate were tagged, plus tailings and delivered to R. Blackler, in Sacramento for analysis. The results are attached. Samples 5-C, 9-A, 9-B and 9-C, 10-A and 10-B, 11-A and 11-B and tailings represent the bulk sampling program, while 2-C, 3-C, 4-C, 6-C, 7-C and 8-A represent the gold pan method. The writer asked Mr. Blackler to crush the 100 lbs. to 80 mesh prior to analysis. Considerable additional gold was recovered, that was not seen by the writer in Reno and at the property. This proved that some of the gold was tied up in the quartz and in the caliche. An impact type of crushing will probably be needed to recover the additional gold values. It should be pointed out that Mr. R. Blackler commented on the easy concentration of the gold. This is extremely important, that most of the gold has weight to it, in the form of nuggets and not the fine powder gold. This form of nugget gold showed up under the microscope.

Ore Reserves

The bulk sample test from Area #1, returned the highest assays of 0.385 oz. gold per ton and 0.68 oz. platinum per ton. 50,000



Concentrating Plant used in Reno, Nevada, for the bulk tests. Note Knudsen Bowls to the left.

yards of gravel is available in this block. Please see Sketch Map showing the area and trenches cut. The bulk sample test from Area #2 returned 0.285 oz. gold per ton and 0.645 oz. platinum per ton. This area should also contain 50,000 yards. A third of an ounce of gold was physically recovered from the 4,000 lbs. of material processed. Some of this material included lower grade Areas #3 & 4 which averaged 0.065 oz. gold per ton and 0.065 oz. platinum per ton. However, both areas didn't reach bottom at twenty feet, as far as the backhoe could reach, indicating substantial gravel reserves in both Area #3 and #4. Just the current values in gold would be $23.60 per ton in this gravel. In Area 1 and 2, there is a minimum of 100,000 yards averaging 0.37 oz. gold per ton. With gold at $363.00 per ounce and a 75% recovery, the gross value is $10,500,000.00. Additional values in the platinum group were recovered, averaging 0.62 oz. per ton. Even though a button of platinum was recovered, it is felt additional testing will be necessary to determine the platinum group of precious metals present. Minor values in silver will also be recovered. Another button of rare earth metals was also recovered of cesium, bismuth, and gallium. Other elements present: chromite, titanium, columbite, copper and rare earths of lanthanium, neodymium and zirconium.

Conclusion

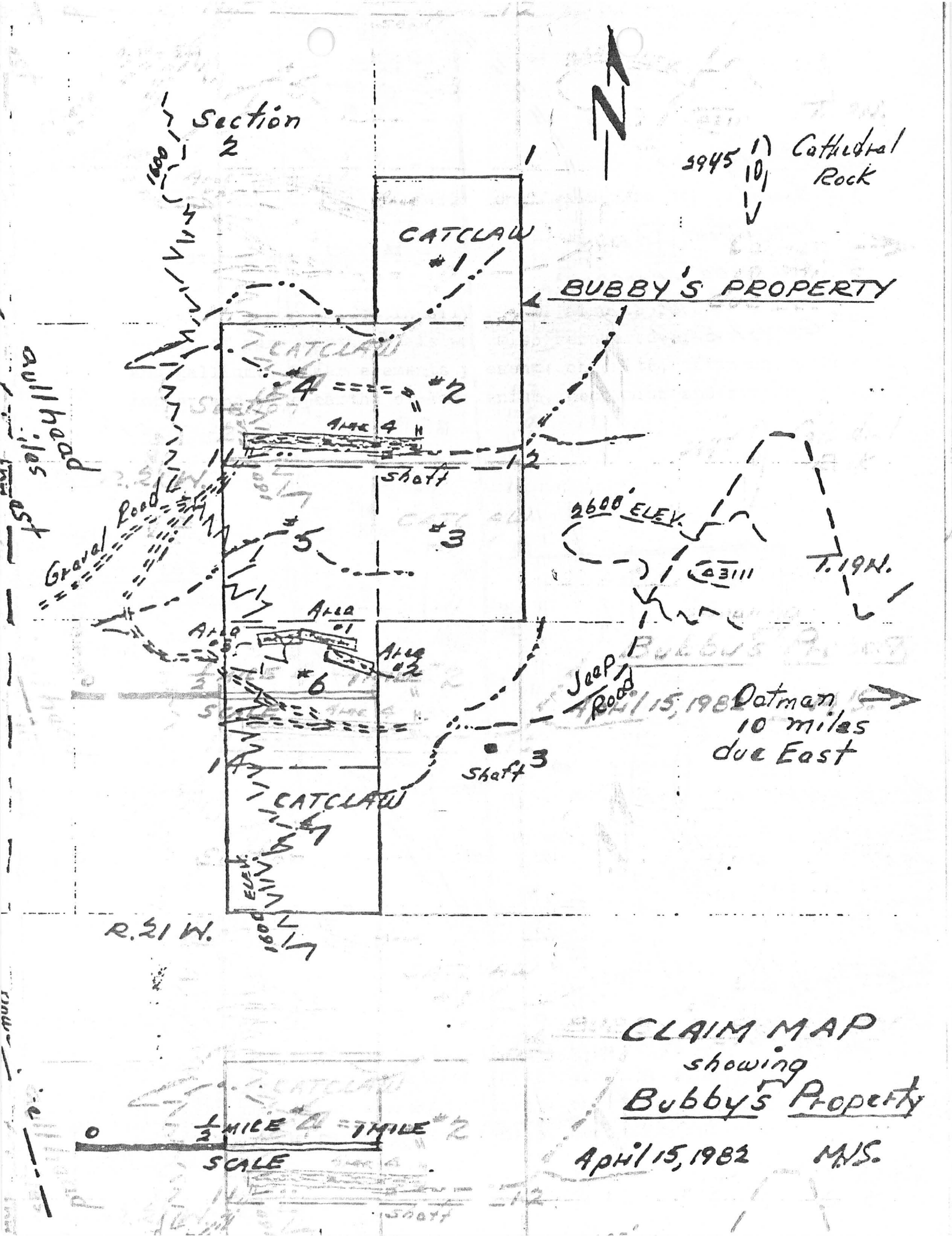
Based on the following:

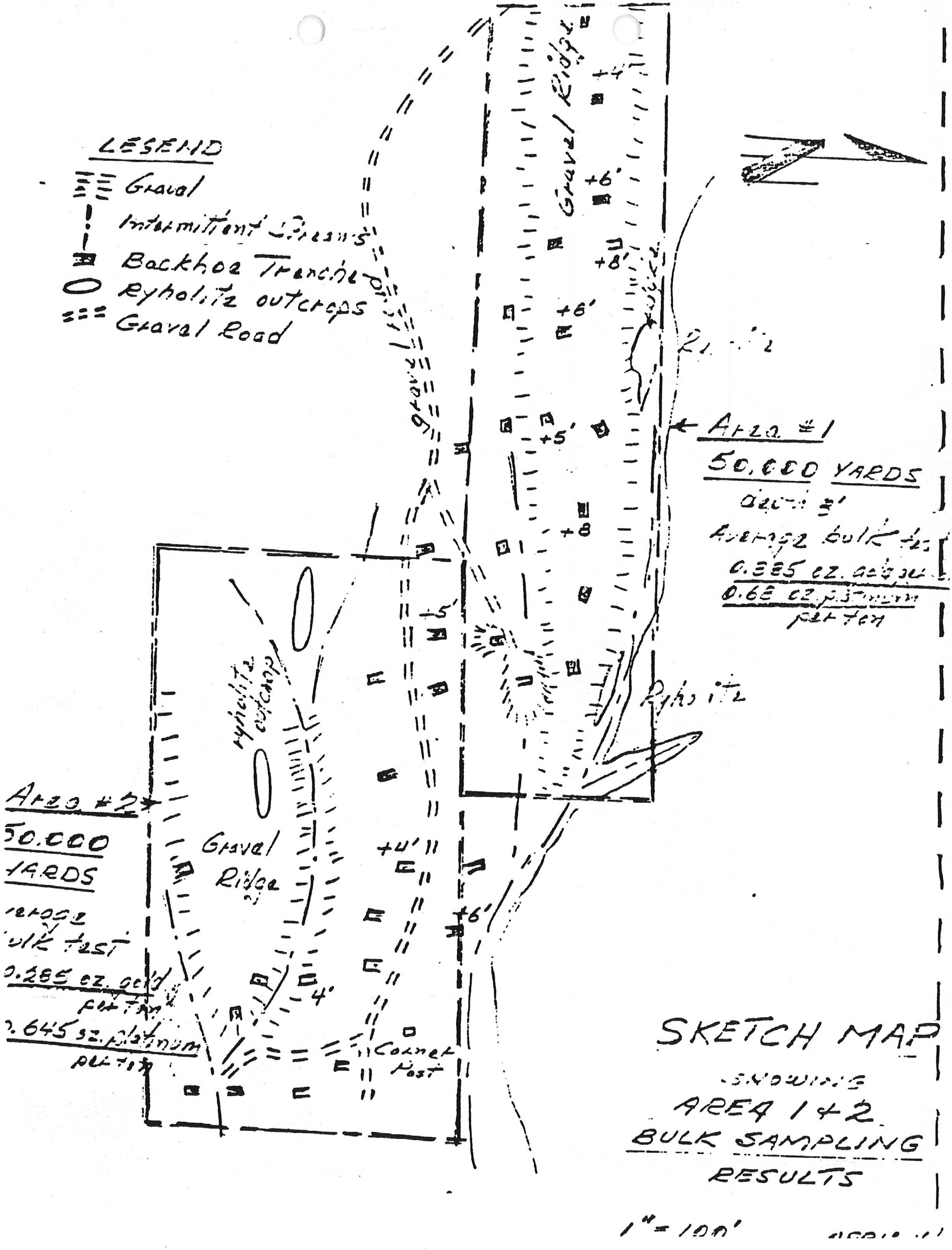
1. Excellent gold and platinum recoveries.
2. Outlined minimum reserves of 100,000 yards, with a gross value of gold only, of $10,500,000.00.
3. Substantial additional potential reserves in Areas #3 & 4. Will need to be drilled.
4. Only 60 acres of the total 1120 acres explored.
5. Production of over 36 million dollars at an average price of $20.00 per oz. in the surrounding Oatman district.
6. Excellent fine and coarse gold and heavy metal recoveries, using the Knudsen Bowl Concentrating Method.
7. Two lode gold showings on the property and two shafts.
8. Location of the placer claims, on the foothills of the Black Mountains, draining pattern of the Oatman District gold lode deposits.

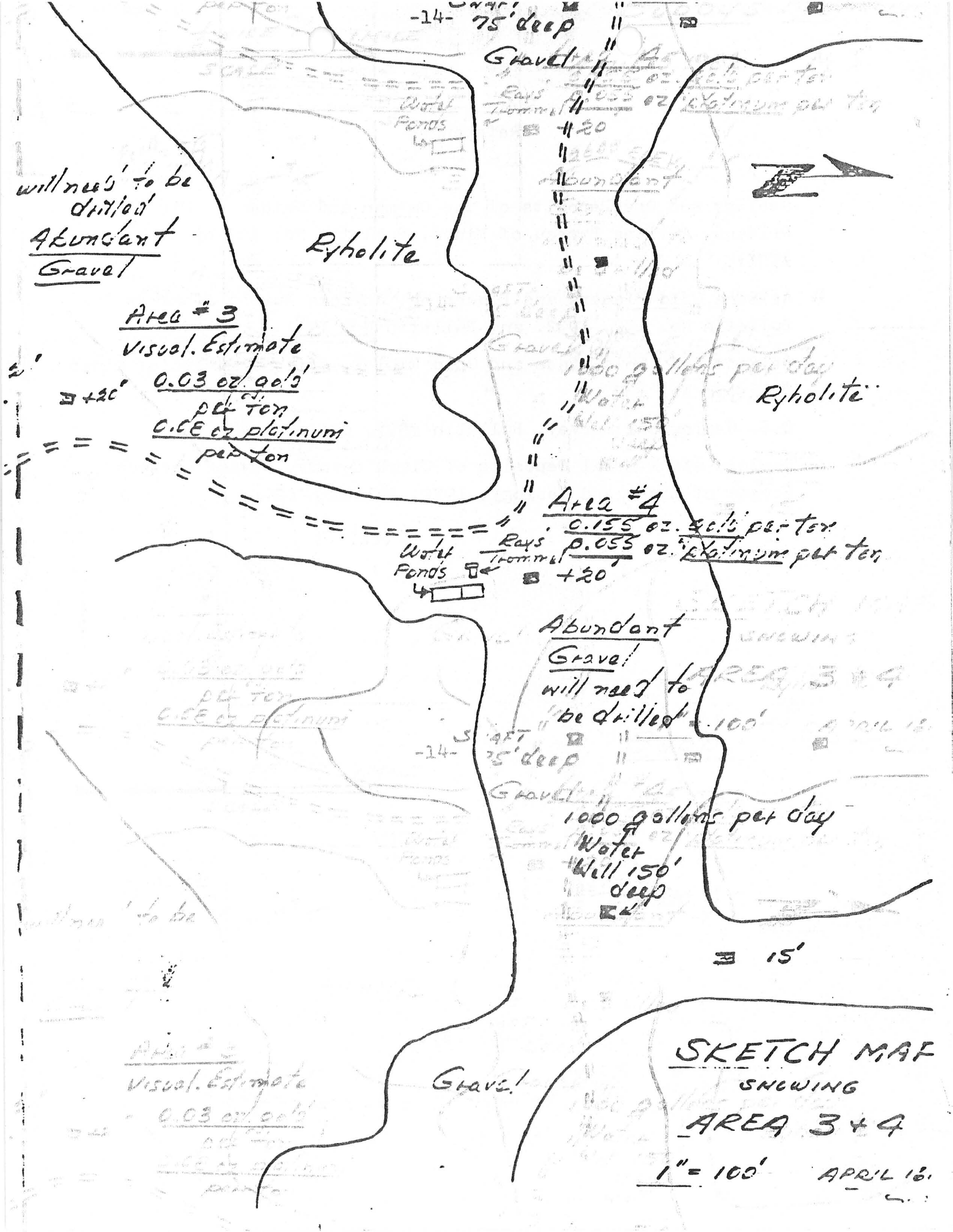
The writer recommends the Bubby Mine be placed into production. A profitable mining and milling operation can be attained, for under a million dollars, depending on the capacity of the plant and percentage of recovery for both the gold and platinum.

Respectfully submitted

Michael J. Skopos
Geologist


Section 2
1600
N
3945
Cathedral Rock
CATCLAW #1
BUBBY'S PROPERTY
#4
#2
ADIT 4
Shaft
#5
#3
2600' ELEV.
T. 19N.
Gravel Road
ADIT #1
ADIT #2
#6
Jeep Road
Datman 10 miles due East
Shaft 3
CATCLAW
1600' ELEV.
R. 21 W.
CLAIM MAP
showing
Bubby's Property
April 15, 1982 M.S.
0 1/2 MILE 1 MILE
SCALE


LEGEND
Gravel
Backhoe Trenches
Ryholite outcrops
Gravel Road
Gravel Ridge
+4'
+6'
+8'
+6'
+5'
+8
-5'
Area #1
50,000 YARDS
0.385 oz. gold
0.63 oz. platinum
per ton
Ryholite
ryholite outcrop
Area #2
50,000
YARDS
bulk test
0.285 oz. gold
per ton
0.645 oz. platinum
per ton
Gravel
Ridge
+4'
+6'
4'
Corner
Post
SKETCH MAP
AREA 1 & 2
BULK SAMPLING
RESULTS
1" = 100'



-14- 75' deep
Gravel
will need to be drilled
Abundant Gravel
Ryholite
Area #3
Visual. Estimate
0.03 oz gold per ton
0.CE oz platinum per ton
+20'
Area #4
0.155 oz. gold per ton
0.055 oz. platinum per ton
Water Ponds
Rays Trommel
+20'
Abundant Gravel
will need to be drilled
-100'
Shaft
-14- 75' deep
Gravel
1000 gallons per day
Water Well 150' deep
Ryholite
15'
Gravel
SKETCH MAP
SHOWING
AREA 3 + 4
1" = 100'
APRIL 16.

References

Geology and Ore Deposits of the Oatman and Katherine Districts, Arizona, Arizona Bureau of Mines, Bulletin No. 131 by Carl Lausen, 1931.

Arizona Gold Placers and Placering, Arizona Bureau of Mines, Bulletin No. 132, 1932. and Bulletin No. 135.

Arizona Lode Gold Mines and Gold Mining, Arizona Bureau of Mines. Bulletin No. 137.

U.S. Geological Survey, Bulletin #397, 625 and 743.

Geology and Mineral Deposits of Clark County, Nevada, Nevada Bureau of Mines and Geology, 1979, Bulletin 62.

MEMBER W.M.C.
NO. 16,645

457-7612

R. BLACKLER
1150 58TH STREET
SACRAMENTO, CALIF. 95819

#3468

4-15-82

M.Skopos
V.Orlando
5901 Moss Creek Circle
Fair Oaks, Calif.95628

Your Placer samples submitted to me for analysis & recovery of the precious metals,including Gold,Silver & the Platinum group elements only.

This report is based in ounces Per Ton taken from your mine run material.

An over-all average of Gold recovery is approx.37 oz Per Ton with the Platinum group at .62 oz including Silver at about .20 oz.

The following percentage have been determined.

# 11-A	# 11-B
AU ---- .14 oz P.T.	AU -- .17 oz P.T.
AG ---- .08 oz P.T.	AG -- .03 oz P.T.
PT ---- .36 oz P.T.	PT -- .52 oz P.T.

# 10-A	# 10 B
AU -- .26 oz P.T.	AU -- .32 oz P.T.
AG -- .08 oz P.T.	AG -- .03 oz P.T.
PT -- .62 oz P.T.	PT -- .67 oz P.T.

# 9-A	# 9 -B
AU - .26 oz P.T.	AU - .35 oz P.T.
AG - .05 oz P.T.	AG - .18 oz P.T.
PT - .60 oz P.T.	PT - .66 oz P.T.

9-C
AU -- .42 oz P.T.
AG -- .23 oz P.T.
PT -.72 oz P.T.

MEMBER W.M.C.
NO. 16,645

457-7612

R. BLACKLER
1150 58TH STREET
SACRAMENTO, CALIF. 95819

COIL'T

# 8-A	# 8-B	# 7-C
AU -- .18 oz P.T.	AU-- T.	AU - .05 oz P.T.
AG ---.07 oz P.T.	AG - T.	AG - T.
PT -- .38 oz P.T.	PT - T.	PT - T.

# 6-C	# 5-C
AU -- .07 oz P.T.	AU -- T.
AG -- T.	AG -- T.
PT -- T.	PT -- .08 oz P.T.

# 4-C	# 3-C
AU -- .02 oz P.T.	AU -- T.
AG -- T.	AG -- T.
PT -- .05 oz P.T.	PT -- T.

# 2-C	Tailings
AU -- .03 oz P.T.	AU -- T.
AG -- T.	AG -- T.
PT -- .05 oz P.T.	PT -- T.

As other elements exist such as Chromite, Titanium, Columbite, & Copper with added values in the Rare Earths as Cesium, Lanthanium, Neodymium, & Zirconium, these elements are possible for marketing as a by-product from the precious metals recovery.

Sincerely;
R. Blackler

R. Blackler

Resume

Michael J. Skopos
Consulting Geologist

Education

Kent State University, B.Sc. Degree in Geology, graduated in Spring 1957.

Service

Marine Corps, Aug. 1952 - Aug. 1954, Corporal in the Intelligence Section, 2nd Marine Division. Security cleared to handle classified maps, aerial photographs and typist.

Foreign Languages

Speak, read and write Greek and some Spanish.

Personal

Age 49, excellent health, U.S. Citizen. Married with two children, boy 19 and girl 11 years of age, residing at 5901 Moss Creek Circle, Fair Oaks, Ca. 95628. Phone 916 966 1803.

Professional Associations

Geological Association of Canada, American Institute of Mining Engineers, and Canadian Institute of Mining and Metallurgy, also California Mining Association.

Resume

Michael J. Skopos
Consulting Geologist

Summary -

My past twenty five years of mining experience has been with the emphases on the exploration and production of precious and base metals in North America.

Consulting Mining Geologist

March 1972 to the present. Currently in the initial research, acquisition and exploration stages of the following properties:

Sierra Buttes, Buttes Saddle and Phoenix, Sierra City, Ca. these are all old lode gold deposits, todate approximately $100,000.00 has been expended.

Big Comstock Mine and Dumps, Virginia City, Nevada and Mesquite Lake, Ca., near Las Vegas. Feasibility stage on these gold-platinum group placer deposits.

Instrumental in placing the following mines into production, right from the initial research and acquisition stages through the sampling, drilling, planning, mine evaluation, cost estimates, construction and mine development:

Paragon Placer Mine, Foresthill, Ca., managed and placed this placer deposit into production at 150 to 200 yards per day, at a cost of $500,000.00.

American Bar Quartz Mining Co., American River, Foresthill, Ca., Cost $100,000.00. Introduced new concept for recovering placer gold in the U.S., averaging 1,500 yards per day. Over a 1,000 oz. goldwere recovered, also re-evaluated gold lode deposit adjoining the placer.

Silver Arrow, Ross River, N.W.T. Sampled and placed into production, a massive stratabound silver, lead and zinc deposit. Had interest and general manager, sold out early 1979.

El Dorado Placer Mine, Foresthill, Ca., Managed and placed a 100 yard per day into production, this was the bulk test. This placer mine is operating today at a much larger rate. A gold-silver placer operation.

Quick Tung, Stillwater Range, near Fallon, Nevada. Sampled, drilled and placed into production this gold deposit.

Flat Top Uranium-Vanadium Mine, Temple Mt., Utah. Sampled, drilled and placed into production this small uranium-vanadium mine.

Jolu Gold Silver Mine, Mallard Lake, Sask., Canada. Help financed, explored, drilled, sampled, constructed and developed this 75 ton per day mine and mill complex. Cost to set up $800,000.00.

Vernal Coal Mine, Vernal, Utah. Brought this coal mine into production and was involved in all phases of exploration, mining and marketing.

Emery Uranium, Emery County, Utah near Ferron, Castledate, Utah. Spearheaded staking, exploration, ground and aerial uranium program covering 6,000claims, including 15 old uranium mines.

Gilson Uranium , Temple Mt., Utah, Superised the uranium exploration and title search of 96,000 acres.
Sampled, explored and evaluated numerous base metal, precious metals, tungsten, uranium and coal properties in Western U.S. and Canada.

Rio Algom-Rio Tinto Sept. 1966 to March 1973

Lornex Mining Corp. Sept. 1969 to March 1973

Chief Geologist, largest base metal open pit operation in Canada. The mine was placed into production at 50,000 tons per day and worked on the computer studies for the expansion to 80,000 tons per day. Was responsible for discovering multi-million tons of base metal ore, placing this mine into the better than a billion ton category.

Anglo Rouyn Mine Sept. 1966 to Sept 1969

Chief Geologist, 1,000 ton per day open pit and underground mine, gold-silver, producer. Found a new ore body along strike.

Discovery Gold Mines, N.W.T., Dec. 1964 to Sept. 1966

Chief Geologist, 250 ton per day gold-silver producer. Involved in all aspects of exploration and mining.

Cochenour Willans Gold Mine, Marcus and Willmar Gold Mines

Geologist, exploration, development, grade control an ore reserves. Jan. 1963 to Dec. 1964. 225 ton per day gold

producer.

McKenzie Red Lake Gold Mine -Oct. 1959 to June 1963.

Chief Geologist. 250 ton per day gold-silver producer.

Simard Knight & Assoc. Geologist on a geophysical and exploration program on a copper-gold producer. Wa Wa, Ontario, Canada.

Mogul Mining, Toronto, Ontario, April 1959 - July 1959

Geologist, geophysical and exploration program in Rankin Inlet area, Hudson Bay, N.W.T.

Tib Exploration, Newboro, Ontario, Resident Engineer, outlined 34 million ton of iron and titanium.

New Mylamaque Exploration, Newboro, Ontario, Assistant Engineer. Bulk sampling program and drilling, outling 50 million tons of iron and titanium.

New Spring Coulee Oil and Minerals, Cedar Lake, Manitoba, Sept. 1958 - Jan.1958. Chief Geologist, outlined 12 million pounds of amber reserves.

Ontario Department of Mines, Toronto, Ontario, July 1957 - Sept. 1957. Geologist, examined and mapped sand and gravel deposits.

Professional References:

Egil Lornstzen	Founder and Chairman of Lornex Corp. Phone - 604 669 4025, Vancouver, B.C.
Charlie Reno	Vice President and General Manager Lornex Mining Corp. Now with Parson of California
Dr. R. Evans	Chief Geologist Dennison Mines, Toronto, Ontario Phone -416 278 8694
Dave Hutton	Manager - Selco Phone - 416 247 3088
J.E.J. Fahlgren	President, Cochenour Willans Gold Mine 152 Cochenour Crescut Cochenour, Ontario, P0V, 1L0

Respectfully submitted

Michael G. Skopos

Batman Placers

MICHAEL J. SKOPOS, B. Sc.

CONSULTING GEOLOGIST
G.A.C., C.I.M.M., A.I.M.E.

5901 Moss Creek Circle
Fair Oaks, Ca., 95628

REVISED GEOLOGICAL REPORT
of
Bubby's Mine
Placer Sections #1, 10, 12, 13 & 14
Mohave County, Arizona
July 22, 1982

Table of Contents

R_.ISED GEOLOGICAL REPORT
Mohave County, Arizona

July 22, 1982

Introduction

At the request of Vincent P. Orlando, the writer was retained, during the period April 5 through April 17th, 1982 to examine, sample and complete a processing study of the placer deposits located on Catclaw Placer Claims #1-7 located in Sections 1, 11, 12 and 14, Township 19 N. and Range 21 W., Mohave County, Arizona and in the San Francisco Mining District.

This study was completed and then followed up by a legal and an independent claim survey by George DeWitt. The survey revealed that the southwestern portion of the placer deposits outlined by the writer is located in Section 11 adjoining Section 12 belonged to Santa Fe Mining Co. When this was realized the writer was retained by Vincent P. Orlando a second time to reexamine the area including the Santa Fe Mining Sections 3, 9, 11, 15, 21 and 23, to determine the feasibility of placing the placer gold bearing gravels into production. This examination follows and was completed during the period July 17th, through July 22nd, 1982. The writer wishes to thank Ray Corner, Christ Christenson, George DeWitt, Vincent P. Orlando and Jim Pappas for their assistance during the Geological evaluation.

Property

The property presently consists of 5 Unpatented Placer Sections #1, 10, 12, 13 and 14, Township 19N. and Range 21 W., Mohave County, Arizona and in the San Francisco Mining District. This acreage has been leased and staked by Vincent P. Orlando. Please see Section Ownership Map.

Location

The Sections are located approximately six miles due east of the Colorado River, in the Southern most corner of Nevada, adjoining California and Arizona. The property is located 10 miles west of the town of Catman, Arizona, via a fair gravel road. The small town of Catman, Arizona, has a population of 125. The second access is from Bullhead, Arizona, a much larger town

with a population of 45,000, is located 15 miles northwest of the property. The claims can be reached via a good gravel road.

The property lies on the west flank of the Black Mountains at an elevation of 1,500 to 2,500 feet. During the rainy season the run off from the sides of the mountains are carried westward to the Colorado River, which borders the three states Arizona, California and Nevada.

Climate

The area has an excellent dry climate, with no snow, which can be worked year around. The annual rainfall averages from 7 to 9 inches. In April, when the property was examined, the gulches were dry. The only run off occurs during the rainy season.

Water

Other than the run off during the rainy season, there are two wells. shown on location map. The well located in Section 12 produces approximately 1,000 gallons per day, while the water well in Section 10 has a casing with an inside diameter of 8 inches. A rock was dropped into the well, taking 10 seconds to hit the water. Considerable water appears to be available from this well, however the gallons available must be checked. Vegetation consists principally of small desert shrubs and abundant Yucca or Joshua trees.

History

In the 1800's, gold placers were the main source for gold mined in Arizona until after the Civil War period. their yield continued to be considerable until about 1885, but thereafter it was of very minor importance except during periods of depression in the base-metal markets. Placers have accounted for approximately $11,240,000.00 of the total gold production in Arizona, at the old prices. After 1885 siliceous lode deposits led the output with the immediate Oatman district of Arizona accounting for over 36 million dollars production, at an average gold price of $20.00 per oz. A total of 1,800,400 ounces of gold were produced. The surrounding area of the placer claims has had many gold producers.

Geology

The Black Mountains lie to the east of the placer claims and are ruggedly dissected, gently eastward-dipping block of Tertiary

Volcanic rocks which rest upon a basement of pre-Cambrian gneiss and granite.

The Oatman district is in a belt of rugged foothills at the western base of the mountains, mainly between altitudes of 1,500 and 3,200 feet. Eastward, the range rises with deeply dissected, steplike cliffs to a maximum elevation of about 5,000 feet above sea level or 4,500 feet above the Colorado River. The gulches which are dry except during rainy seasons carry the run off from this side of the mountains westward to the Colorado River.

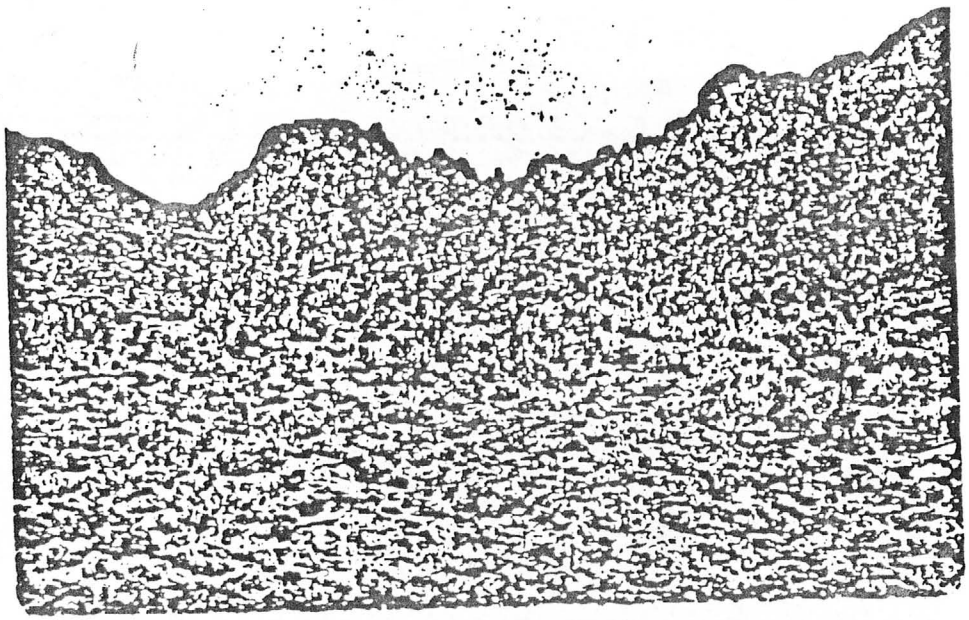
The principal formations, consist of a few patches of gneiss and granite on the west, overlain by a thick series of trachytes, andesite, latite, tuffs, rhyolite and basalt. Intrusive into parts of this series are monzonite, granitic and rhyolitic porphyrys.

The most important ore-bearing formation is the Oatman Andesite which has been termed the "green chloritic andesite." These formations are cut by numerous faults of prevailingly northwestward strike and steep northeastward dip. The veins occur within fissures along which faulting has taken place, as a rule before, during and after the period of vein formation. The veins in the Oatman area have averaged from a few stringers up to 50 feet in width.

The main rock type noted on the property, consists of a volcanic rhyolite, which is well fractured and should not present any problems when the bedrock is ripped. The rhyolite is fractured in areas and brecciated with some cementing.

There are two shafts located on Sections #12 & #13. One is on a quartz vein which carries gold and the second shaft is down 75 feet but in the thick gravel in the Area #4, in section #12.

The alluvium is made up predominantly of basin-fill deposits of gravel, sand and silts, locally cemented by caliche a calcium carbonate. The gold bearing gravels occur principally in arroyos and gulches, between the elevations of 1,500 feet to 2,500 feet. Heaviest gravel deposition appears to be located in the ravines, forming long-slender gravel deposits averaging 100 to 300 feet in width. Please see photographs, showing Areas #1, 2, 3 and 4.

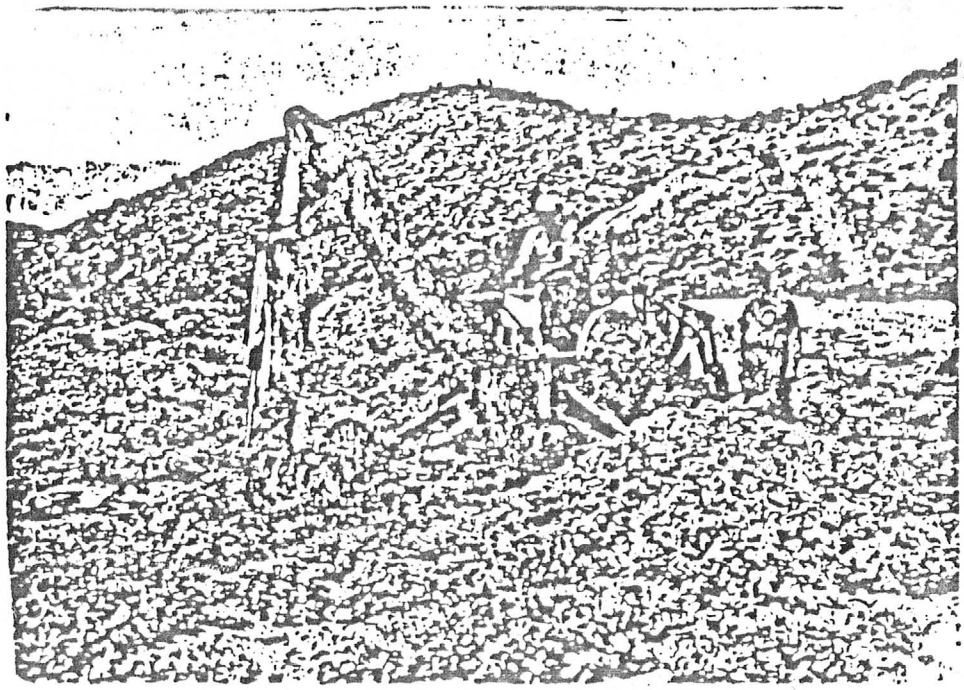


Thick gravels in Area #4, Section 12

The gravels average from a few feet in thickness to over 75 feet and rest upon caliche-cemented gravels. Gold, being heavier than most materials tends to settle and sink to bedrock. Depressions in the bedrock generally hold rich pockets of gold, while bedrock that is soft, fissured and shattered, acts as a good riffle and-may hold good gold values. Crevices and potholes usually yield good gold values and may extend for several feet in depth. Very noticable, is the lack of large boulders in the gravels. The largest pieces encountered while running the bulk sample test, 5 to 6 inches in diameter.

Detailed Sampling Program (Completed April 5 through 17th, 1982)

A Ford backhoe, with a ½ yard bucket was used to cut 45 trenches. Please see photograph showing Ford Backhoe used to cut the trenches in the gravel. These trenches varied from 3 tp 20 feet in depth. Several of these trenches didn't reach bottom at 20 feet. The trenches were cut systematically to determine precious metal values, continuity, trends and volume available for production.

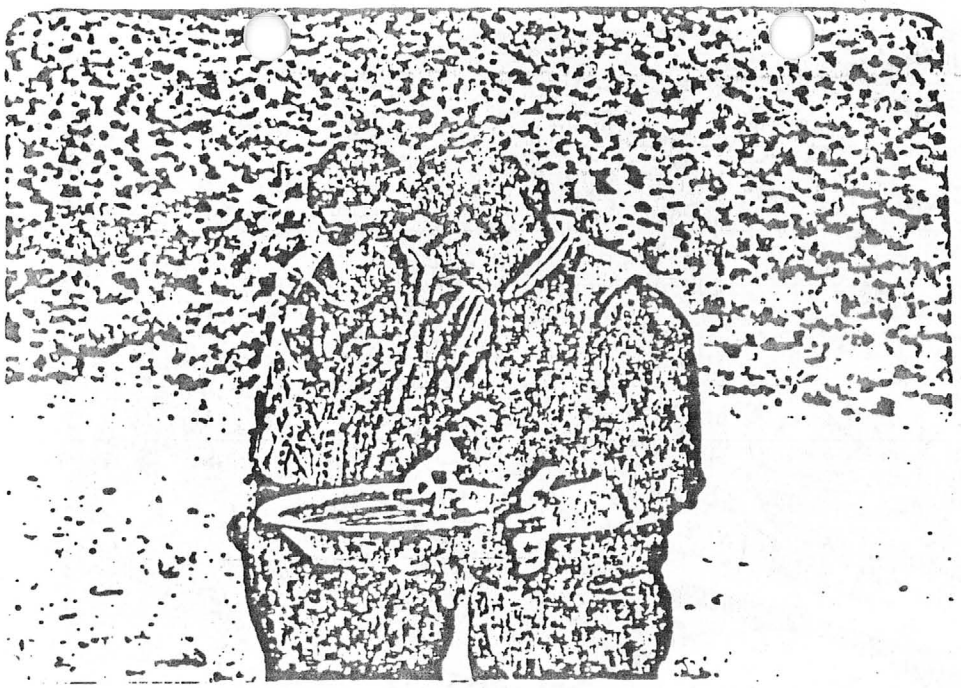


Ford Backhoe, with ¼ yard bucket

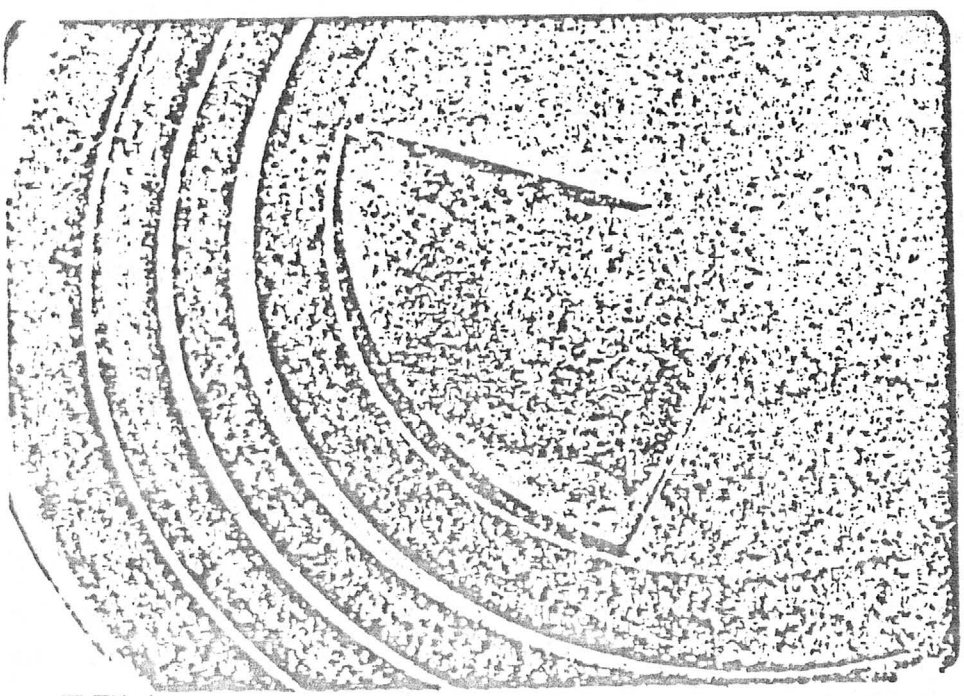
Please see Sketch Maps showing trenches in red in Areas #1, 2, 3 and 4.

Eighteen test samples were taken at the property from the oil drum trommel built by Ray Corner. Only one sample didn't show visible gold, but black heavy sands were recovered in every test. Please see photographs showing gold pan method and gold recovered in the blue gold pan and the trommel built by Ray Corner. Six 100 pound tests were run through the small trommel and every test showed good gold. These crude tests proved that most of the gold can be easly extracted.

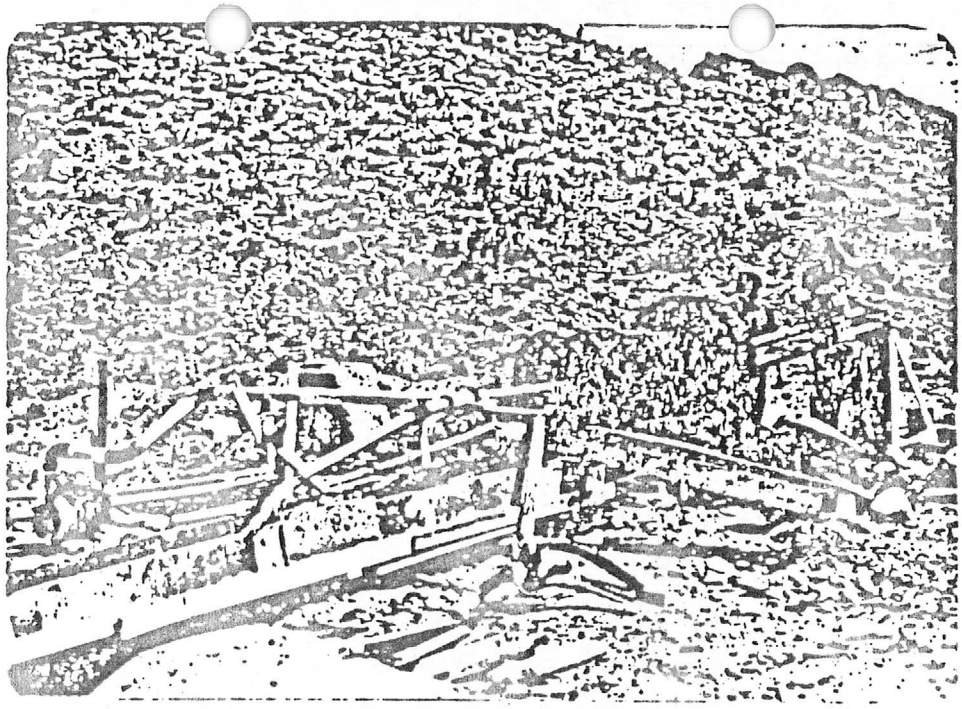
In addition bulk sampling was completed in four separate areas. Forty 100 pound sacks were filled and tagged from the different trenches cut and hauled to Steve Dukes Mfg. Co. in Reno, Nevada for processing. The "Knudsen Bowl Centrifugal Concentrator" was used. This method is excellent for recovering fine gold and heavy metals. Please see photograph of sampling plant. Approximately 100 pounds of concentrate was recovered from the 4,000 pounds of material processed. The writer used the gold pan, on the concentrate, to check on the gold recovery and all four samples showed good gold.



Christ Christenson and the writer panning gold.



Visible gold recovered with gold pan

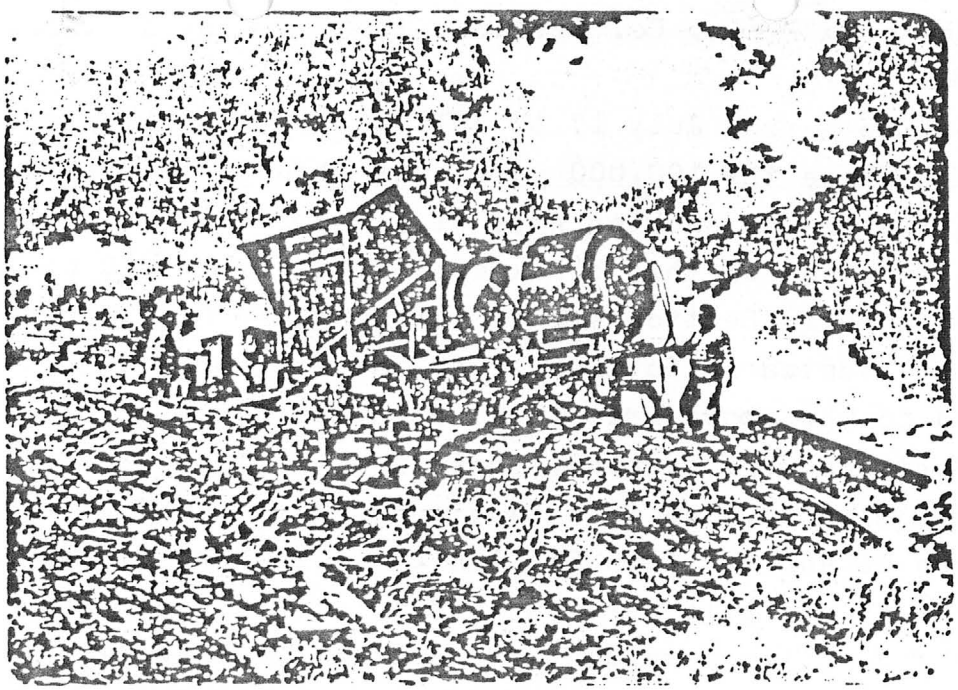


Small oil drum trommel, built by Ray Corner, used to recover gold at the property.

All the samples of concentrate were tagged, plus tailings and delivered to R. Blackler, in Sacramento for analysis. The results are attached. Samples 5-C, 9-A, 9-B and 9-C, 10-A and 10-B, 11-A and 11-B and tailings represent the bulk sampling program, while 2-C, 3-C, 4-C, 6-C, 7-C and 8-A represent the gold pan method. The writer asked Mr. Blackler to crush the 100 lbs. to 80 mesh prior to analysis. Considerable additional gold was recovered, that was not seen by the writer in Reno and at the property. This proved that some of the gold was tied up in the quartz and in the caliche. An impact type of crushing will probably be needed to recover the additional gold values. It should be pointed out that Mr. R. Blackler commented on the easy concentration of the gold. This is extremely important, that most of the gold has weight to it, in the form of nuggets and not fine powder gold. This form of nugget gold showed up under the microscope.

Ore Reserves

The bulk samples test from Area #1, returned the highest assays of 0.385 oz. gold per ton and 0.68 oz. platinum per ton. 50,000



Concentrating Plant used in Reno, Nevada, for the bulk tests. Note Knudsen Bowls to the left.

yards of gravel is available in this block. Please see Sketch Map showing the area and trenches cut. The bulk sample test from Area #2 returned 0.285 oz. gold per ton and 0.645 oz. platinum per ton. This area should also contain 50,000 yards. A third of an ounce of gold was physically recovered from the 4,000 lbs. of material processed. Some of this material included lower grade Areas #3 & #4 which averaged 0.065 oz. gold per ton and 0.065 oz. platinum per ton. However, both areas didn't reach bottom at twenty feet, as far as the backhoe could reach, indicating substantial gravel reserves in both Area #3 and #4, located in Section 12. Just the current values in gold would be $23.60 per ton in this gravel. In Area #1 and 2, there is a minimum of 100,000 yards averaging 0.37 oz. gold per ton. With gold at $363.00 per ounce and a 75% recovery, the gross value is $10,500,000.00 Additional values in the platinum group were recovered, averaging 0.62 oz. per ton. However, even though a button of platinum was recovered, further testing will be necessary to determine the complex platinum group of precious metals present, and recoveries. Minor values in silver will also be recovered. Another button of rare earth metals was also recovered of cesium, bismuth and gallium. Other elements present: chromite, titanium, columbite, copper and rare earths of lanthanium, neodymium and zirconium.

Sampling Santa Fe Mining Co. Sections (period July 17 through July 19th, 1982)

During the period July 17 to July 19th, the writer reexamined Areas #1 & 2 where the 100,000 yards was blocked out in April 1982. Please see Sketch Map showing Area #1 & 2 Bulk Sampling Results. It appears that out of this block approximately 19,000 oz. of gold would be located in Section #11 of the Santa Fe Section and 14,000 oz. would be located in Section 12 of the V.P. Orlando Section. In addition to the above area located in Section #11, five other Santa Fe Sections were sampled. These include two channel samples taken from Section 3, two from Section 9, two from Section 15, two from Section 21 and two from Section 23. These assay results range from 0.04 oz. gold per ton to 0.10 oz. gold per ton with low silver and platinum values. Please see Section Ownership and Assay Map. The 10 assays #1-10 averaged 0.067 oz. gold per ton with a value of $24.22 per ton with gold at $363.00 per oz. Mr. Blackler commented that the gold recovered in these sections was finer than the gold in Area #1 & 2 in Sections #11 & 12, indicating that the deeper gold near bedrock may be coarser and probably increase in value per ton.

Conclusion

Based on the following;

1. Excellent gold and platinum recoveries.
2. Outlined minimum reserves of 100,000 yards, with a gross value of gold only, of $10,500,000.00.
3. Substantial additional potential reserves in Areas #3 & 4, Section 12 and Santa Fe Sections will need to be explored and drilled.
4. Production of over 36 million dollars at an average price of $20.00 per oz. in the surrounding Oatman district.
5. Excellent fine and coarse gold and heavy metal recoveries, using the Knudsen Bowl Concentrating Method.
6. A lode gold showing on the property and two shafts.
7. Location of the placer claims, on the foothills of the Black Mountains, draining pattern of the Oatman District gold lode deposits.

Recommendations

The writer recommends that an agreement be reached with Santa Fe Mining Co. re production of their portion of outlined reserves on Section #11 and acquired reserves on Section #12 shown as Area #1 and 2. Additional exploration work should be completed on the remaining Santa Fe Sections #3, 9, 15, 21 & 23 and acquired Sections #1, 10, 13 & 14 at depth. The writer recommends the above work be completed in view of the large rock outcrops limiting the mineable gravel available in portions of the Sections. It appears also that some of the richer coarser gold bearing gravels may be at depth.

Respectfully submitted

Michael J. Skopos
Geologist

References

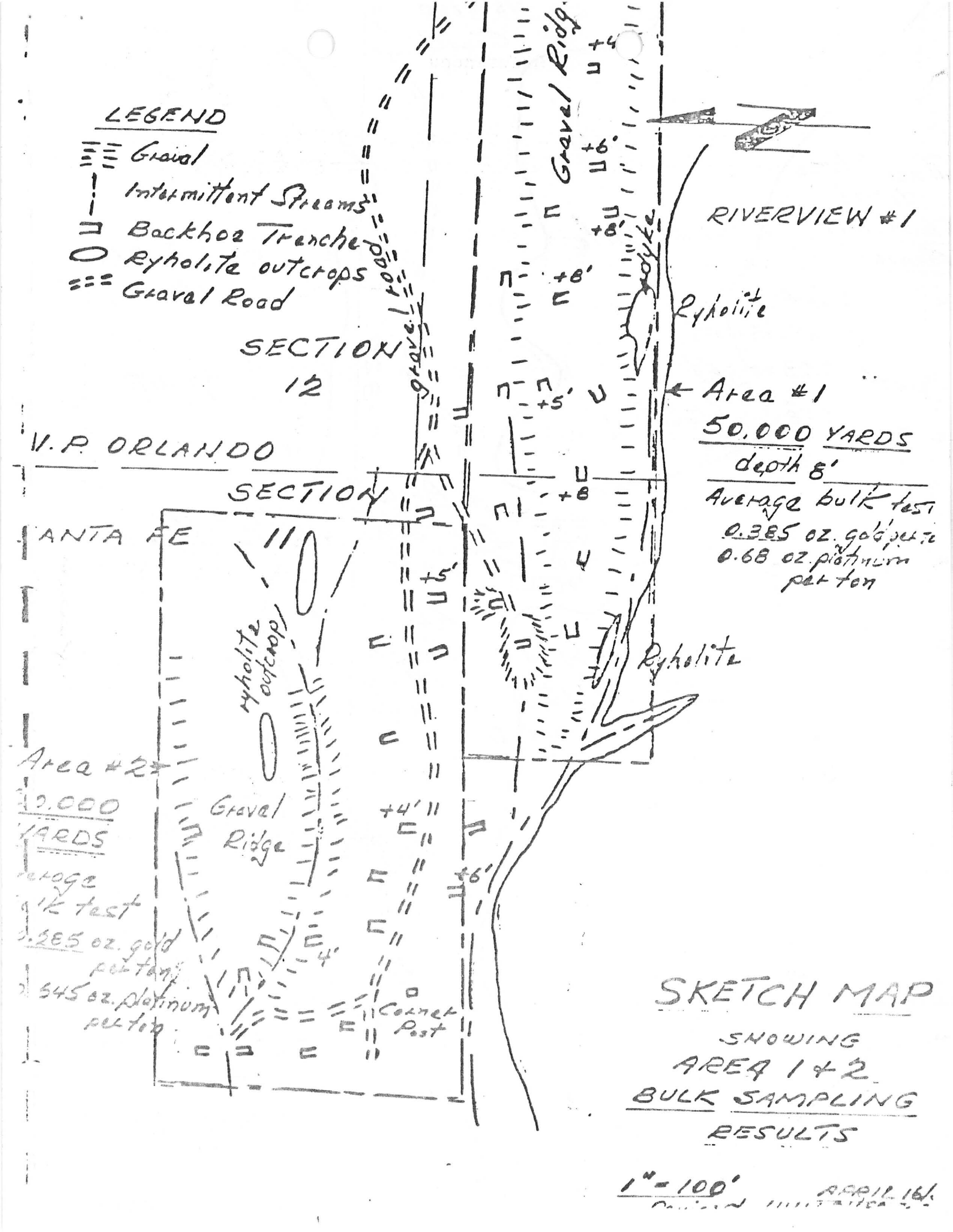
Geology and Ore Deposits of the Oatman and Katherine Districts, Arizona, Arizona Bureau of Mines, Bulletin No. 131 by Carl Lausen, 1931.

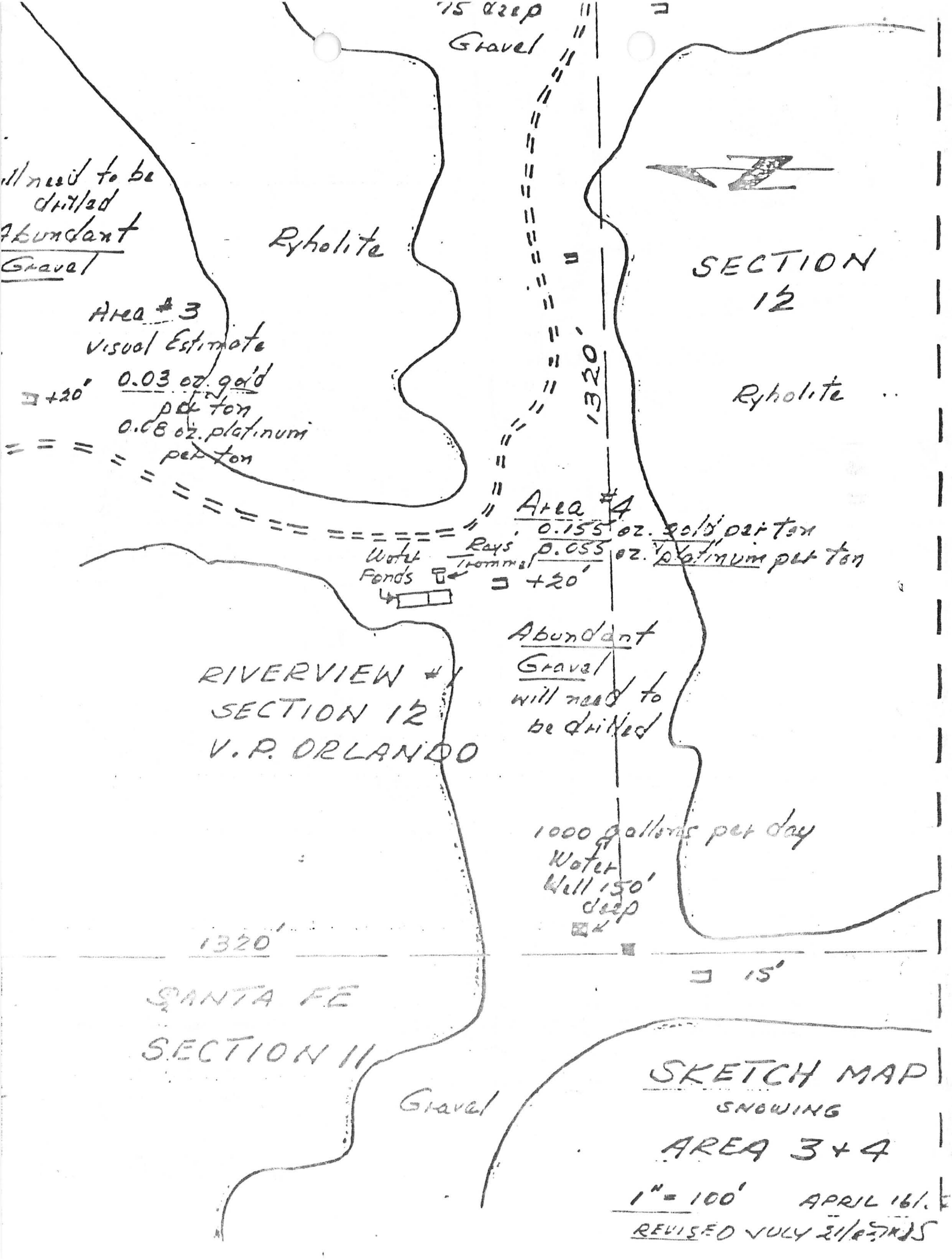
Arizona Gold Placers and Placering, Arizona Bureau of Mines, Bulletin No. 132, 1932. and Bulletin No. 135.

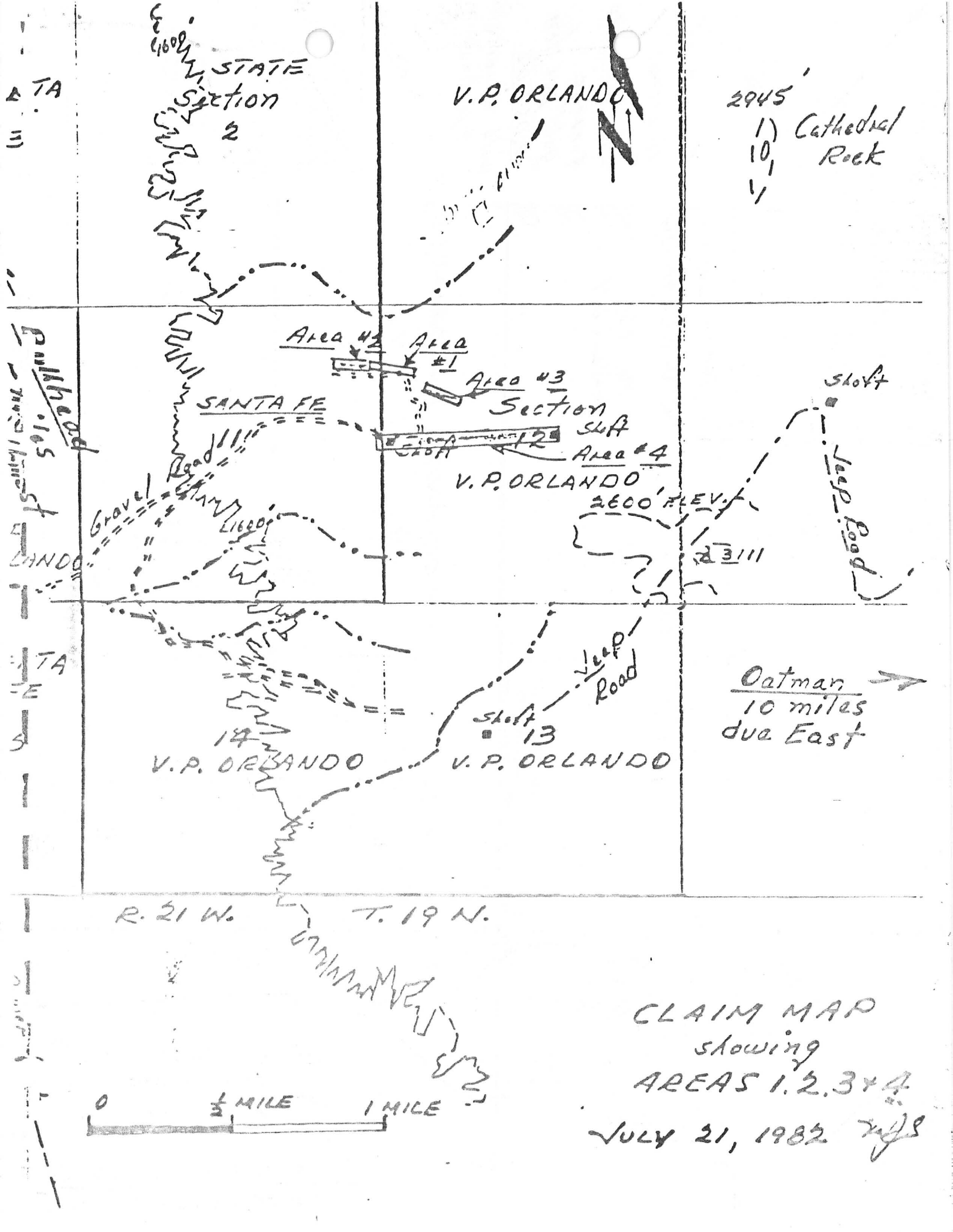
Arizona Lode Gold Mines and Gold Mining, Arizona Bureau of Mines. Bulletin No. 137.

U.S. Geological Survey, Bulletin #397, 625 and 743.

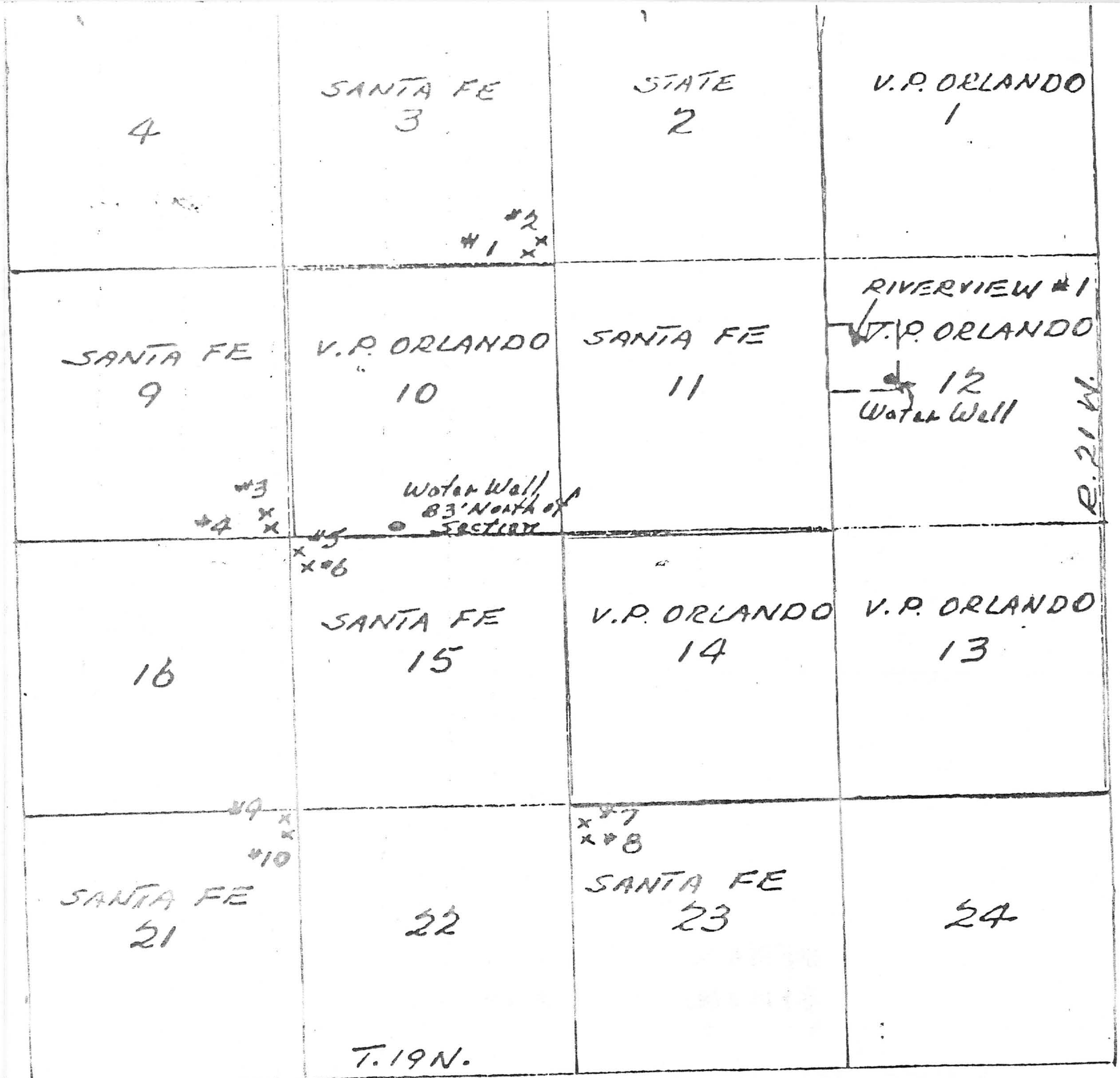
Geology and Mineral Deposits of Clark County, Nevada, Nevada Bureau of Mines and Geology, 1979, Bulletin 62.


LEGEND
Gravel
Intermittent Streams
Backhoe Trenche
Rhyolite outcrops
Gravel Road
SECTION 12
V. P ORLANDO
SECTION
ANTA FE
Gravel Ridge
Gravel Road
RIVERVIEW #1
Rhyolite
Area #1
50,000 YARDS
depth 8'
Average bulk test
0.385 oz. gold per ton
0.68 oz. platinum per ton
Rhyolite
Rhyolite outcrop
Area #2
10,000
YARDS
Average
bulk test
0.285 oz. gold
per ton
.545 oz. Platinum
per ton
Gravel
Ridge
Corner Post
SKETCH MAP
SHOWING
AREA 1 & 2
BULK SAMPLING
RESULTS
1" = 100'
APRIL 16


15 deep
Gravel
ll need to be
drilled
Abundant
Gravel
Rhyolite
Area #3
Visual Estimate
0.03 oz. gold
per ton
0.08 oz. platinum
per ton
+20'
1320'
SECTION
12
Rhyolite
Area #4
0.155 oz. gold per ton
0.055 oz. platinum per ton
Water
Ponds
Rays
Trommel
+20'
Abundant
Gravel
will need to
be drilled
RIVERVIEW #1
SECTION 12
V. P. ORLANDO
1000 gallons per day
Water
Well 150'
deep
1320'
15'
SANTA FE
SECTION 11
Gravel
SKETCH MAP
SHOWING
AREA 3+4
1" = 100'
APRIL 1961
REVISED JULY 21/65



CLAIM MAP
showing
AREAS 1.2.3 & 4.
JULY 21, 1982



N

Average of
10 assays
24.5£ per to[n]
Average
gold per ton
0.067 OZ.
with minor sil[ver]
& platinum

SECTION
OWNERSHI[P]
&
ASSAY MA[P]
SHOWING
SANTA FE
ASSAYS
#1-10

Scale 1" = ½ m[i]
July 21, 195[?]

MEMBER W.M.C.
NO. 16,645

457-7612

R. BLACKLER
1150 58TH STREET
SACRAMENTO, CALIF. 95819

#3468

4-15-82

M.Skopos
V.Orlando
5901 Moss Creek Circle
Fair Oaks, Calif.95628

Your Placer samples submitted to me for analysis & recovery of the precious metals,including Gold,Silver & the Platinum group elements only.

This report is based in ounces Per Ton taken from your mine run material.

An over-all average of Gold recovery is approx.37 oz Per Ton with the Platinum group at .62 oz including Silver at about .20 oz.

The following percentage have been determined.

# 11-A	# 11-B
AU ---- .14 oz P.T.	AU -- .17 oz P.T.
AG ---- .08 oz P.T.	AG -- .03 oz P.T.
PT ---- .36 oz P.T.	PT -- .52 oz P.T.

# 10-A	# 10 B
AU -- .26 oz P.T.	AU -- .32 oz P.T.
AG -- .08 oz P.T.	AG -- .03 oz P.T.
PT -- .62 oz P.T.	PT -- .67 oz P.T.

# 9-A	# 9 -B
AU - .28 oz P.T.	AU - .35 oz P.T.
AG - .05 oz P.T.	AG - .18 oz P.T.
PT - .60 oz P.T.	PT - .66 oz P.T.

9-C
AU -- .42 oz P.T.
AG -- .23 oz P.T.
PT -.72 oz P.T.

MEMBER W.M.C.
NO. 16,645

457-7612

R. BLACKLER
1150 58TH STREET
SACRAMENTO, CALIF. 95819

CON'T

# 8-A	# 8-B	# 7-C
AU -- .18 oz P.T.	AU-- T.	AU - .05 oz P
AG ---.07 oz P.T.	AG - T.	AG - T.
PT -- .38 oz P.T.	PT - T.	PT - T.

# 6-C	# 5-C
AU -- .07 oz P.T.	AU -- T.
AG -- T.	AG -- T.
PT -- T.	PT -- .08 oz P.T.

# 4-C	# 3-C
AU -- .02 oz P.T.	AU -- T.
AG -- T.	AG -- T.
PT -- .05 oz P.T.	PT -- T.

# 2-C	Tailings
AU -- .03 oz P.T.	AU -- T.
AG -- T.	AG -- T.
PT -- .05 oz P.T.	PT -- T.

As other elements exist such as Chromite Titanium, Columbite, & Copper with added values in the Rare Earths as Cesium, Lanthanium, Neodymium, & Zirconium, these elements are possible for marketing as a by-product from the precious metals recovery

Sincerely;
R. Blackler

R. Blackler

QUALITATIVE AND QUANTITATIVE ANALYSIS
GEOLOGICAL SURVEYING

MEMBER W.M.C.
NO. 16,645

457-7612

R. BLACKLER
1150 58TH STREET
SACRAMENTO, CALIF. 95819

7-12-82

M. Skopos
5901 Rose Cr. Cir.
Fair Oaks, Calif.95628

Oatman,Ariz.
Santa Fe Mining Dist.

Dear Sir;
Your ten ore samples submitted to me for analysis & recovery of the precious metals has been determined as follows;

#1 Sec. 3
AU ---- .06 oz P.T.
AG ---- .12 oz P.T.
PT ---- T.

#2 Sec. 3
AU ---- .05 oz P.T.
AG ---- .16 oz P.T.
PT ---- T.

#3 Sec. 9
AU ---- .04 oz P.T.
AG ---- .03 oz P.T.
PT ---- T.

#4 Sec. 9
AU ---- .05 oz P.T.
AG ---- .03 oz P.T.
PT ---- T.

#5 Sec. 15
AU ---- .08 oz P.T.
AG ---- .14 oz P.T.
PT ---- .02 oz P.T.

#6 Sec. 15
AU ---- .07 oz P.T.
AG ---- .04 oz P.T.
PT ---- .02 oz P.T.

QUALITATIVE AND QUANTITATIVE ANALYSIS
GEOLOGICAL SURVEYING

MEMBER W.M.C.
NO. 16,645

457-7612

R. BLACKLER
1150 58TH STREET
SACRAMENTO, CALIF. 95819

#7 Sec. 23
AU ---- .06 oz P.T.
AG ---- .02 oz P.T.
PT ---- .01 oz P.T.

#8 Sec. 23
AU ---- .07 oz P.T.
AG ---- .04 oz P.T.
PT ---- .01 oz P.T.

#9 Sec. 21
AU ---- .09 oz P.T.
AG ---- .02 oz P.T.
PT ---- .02 oz P.T.

#10 Sec. 21
AU ---- .10 oz P.T.
AG ---- .04 oz P.T.
PT ---- .02 oz P.T.

As many other metals of lesser values exist in the samples listed,a report of these elements will be given upon your request.

Thanking you
Sincerely,
R. Blackler

R. Blackler

QUALITATIVE AND QUANTITATIVE ANALYSIS
GEOLOGICAL SURVEYING

Oatman Placer

Mr. Alfred Leonpacker

October 25, 1982

President

Interstate Minerals Corporation

P.O. Box 52005

Lafayette, LA 70505

Dear Mr. Leonpacker:

As requested, Mr. Vincent Orlando, Mr. James Papas and I made a study of the company's holdings, namely the NW/4 section 12 and the NE/4 section 14 T 19 N, R 21 W of the Arizona coordinate system.

Various samples were submitted for testing by a total of five agencies. The results are: Section 12 contains approximately 1,600,000 tons of material which averages approximately 0.031 ounces of gold, which at a price of $425 an ounce has the value of $13.19 per ton.

Section 14 contains approximately 3,000,000 tons of material which averages approximately 0.0462 ounces per ton of gold, for a value at current prices of $19.62 per ton. These values indicate that the area owned by the company is extremely valuable as a placer.

The material is inter-fingered with bands of calechi which carry valuable metal and must be broken down to a size of 100 mesh to insure the liberation of the entrapped gold.

The stream beds do not carry values near the surface but appear to start carrying values at a depth of ten feet, and the values appear to increase as the bed rock is approached.

The areas owned by the company but which have not been tested appear to be physically and geologically the same, so the conclusion could be drawn that they parallel the tested areas in recoverable values and that the method of production could be similar. This does not mean that they do not need to be tested and explored.

Further testing is necessary to determine the best method of liberating the gold from the calechi, clays, etc.

It appears that the production choice is between the Richer cone and heap leaching methods, but further tests are required to see which of them or if a combination of concentration methods is most applicable.

Respectfully submitted,

H. F. Buchholtz

H. F. Buchholtz
Chief Engineer

INDEX

LOCATION:

The Interstate Minerals Corporation's mining claims are located in the state of Arizona on the western slope of the Black Mountains near the Colorado River. All of the sections claimed are located in T 19 N, R 21 W of the Arizona coordinate systems. The sections claimed from the BLM are sections 1, 4, 12, 13, 14, 22, 24, and from the state of Arizona section 16.

ACCESS:

The property is reached by traveling south on Arizona route 95 for a distance of 13.8 miles from the junction of Arizona 95 and 66, or 10.4 miles from Bullhead City, thence 6 miles east on a dirt road until a power line road is reached. On this road travel 2.5 miles northward until another dirt road is reached. Travel 2.2 miles along this dirt road until you reach the center of section 12. This area has been used as the focal point for the investigations. From here the other areas under claim can be reached either by dirt roads or by cross-country jeep travel.

CLIMATE AND TOPOGRAPHY:

The claims are in the Oatman Mining district and are located on the western slope of the Black Mountains. Many of the gold veins of the Oatman district are located in these mountains; particularly the Gold Road vein, the Midnight vein, and several others. The western drainage from these mountains is the source of the alluvial gold.

The majority of the property is on the alluvial fan or outwash plain of these mountains. The area closed to the mountains has igneous rocks protruding from the alluvial fan. The fan itself has been dissected by numerous dry gulches which drain the area westward in the direction of the Colorado River. The Times gulch is the major drainage system and dominates the southern portion of the claims. Although it is normally dry, it evidently on occasion carries

a large volume of water.

The climate is extremely arid with little rain, which does occur in late summer or early fall. The summer temperatures are extremely hot but the remaining yearly temperatures are warm but not uncomfortable.

It is estimated that the annual rainfall is between 7 and 9 inches. There is no snow to impede operations. However, some rainstorms are so severe that they may halt operations for a day.

WATER:

It is not feasible to count on any water except that which can be developed by wells. It is not practical to impound any runoff water, as evaporation would negate any long-range storage facilities. However, all possible reuse of water must be planned for. At present there are two wells in the claimed area. One is located in section 12 and is reported to produce approximately 1,000 gallons per day. In section 10 there is a well with 8-inch casing. It is stated that this well is 1,100 feet deep and reported to have considerable flow; however, no data is available and pump tests will have to be performed on the well to determine its yield. Local knowledgeable sources claim that well water is available throughout the area.

HISTORY:

Gold was first discovered in the Oatman area in about 1864 and some small mining was done. It was not until 1902 that any real production took place. Mining then progressed and slackened until the early 1930's, when most of the mines were closed. There has been some leasing in the area. The main veins were the Gold Road, Tom Reed, Pasadena, Mallery, American, Esperanza, Crown Point, Midnight, Hardy, among others. It is highly probable that more will be found by using modern techniques.

In spite of the mining history of the district, little investigation has been made as to the potential of placer mining in the drainage areas of the district.

GEOLOGY:

The rocks of the Oatman district comprise a closely related series of Tertiary volcanic flows, with associated tuffs and some subordinate beds of conglomerate or breccia, sandstone, shale and limestone. The volcanic flows rests as a whole on Precambrian crystalline rocks chiefly granitic, and have been invaded and displaced in part by masses of porphyry that are closely related in composition to some of the flows and probably came from the same molten magma. They also are cut by numerous dikes and small irregular intrusive bodies of rhyolite and quartz. The main ore-bearing formation is the Oatman Andersite called the "green chloritic andersite;" the veins occur within fissures caused by pre-mineralization faulting. There has also been post-mineral faulting. The last of the igneous rocks was a thin flow of olivine basalt.

Following the eruption of this basalt the region was faulted and tilted. This was followed by a long period of erosion lasting to the present time. The result is the presence of alluvial fans which are dissected with dry stream beds, gravel capped ridges. These ridges contain well bedded fluvial deposits interbedded with bands of calechi.

OCCURENCE OF GOLD:

Gold is to be found within the whole alluvial area, as the present veins undoubtably were eroded at the same time as the surrounding rocks.

A sand and gravel operation at Bullhead City, 6 to 7 miles from the parent mountains, is recovering placer gold at present in its operations and is doing so very profitably.

There are two distinct areas within the alluvial fan. One is close to the parent igneous rocks and therefore the parent veins. The other is at a distance from these sources.

The area close to the sources has igneous rocks protruding through the alluvial fans and are bisected by dry stream beds which apparently are quite deep and are filled with alluvium. Test holes were dug in these stream beds with a backhoe. The material in the holes was panned at intervals from top to bottom. The top material carried no values; however, at 12 feet, the limit of the backhoe's capability, there was the beginning of measurable values. One can only assume that the values had migrated to depth through the porous alluvium which made up the stream beds.

These stream beds are flanked by igneous rocks which obviously carry no placer values. However, they may carry small stringers with minor values. In section 12 there is a vein, on which a shaft has been sunk. This vein carries values.

The areas not having exposed igneous rock outcrops contain well bedded fluvial deposits interbedded with calechi. These fluvial deposits have been dissected by dry stream beds probably of large depth and filled with alluvium. In testing it was found that these dry stream beds also did not have appreciable values near the surface, but at moderate depth values started to show.

The ridges between the stream beds are a different story. The calechi and minor clays held the gold particles in what appears to be a more or less stationary position, for there are values not only at depth but also at the surface. In panning the test holes dug by the backhoe, no discernible difference was observed in the value content with depth.

The actual gold varies in size from very flat pieces about 1 millimeter round to extremely fine flour gold. It has been reported that some wire gold

has been found but I have not seen it. There is an unusual amount of black sands in the deposits, and in tabling some of the material there sometimes occured a thin strip of zircon.

SAMPLING:

From September 14 until September 20, 1982, Mr. Orlando, Mr. Corner and myself were at the Bullhead deposit where we collected six separate groups of samples from the NW/4 section 12 and the NE/4 section 14. These samples were to be submitted to Mr. Blackler of Sacramento, California, Colorado School of Mines Research Institute, and Hazen Research Company for their independent evaluation.

Upon completion of our sampling program on September 20, we went to Reno, Nevada to have the samples concentrated. This was accomplished by Mr. Duke Fleckenstein, who ran the samples individually through his trommell and then through two Knudsen Bowls. The tailings from the Knudsen Bowls was passed over a sluice box to form midlings.

As the individual samples were rather small in comparison to a production run (each took from six to eight minutes to run), it was impossible to verify the calibration of the Knudsen Bowls. (Their efficiency is dependent on revolutions per minute and the particle size distribution of the material being processed.)

Six individual concentrates were obtained as well as six midlings. Two of the concentrate samples and two midlings were delivered to Mr. Blackler. Those from section 12 were labeled BA cons and BA tails; those from section 14 were labeled B2 cons and B2 tails. Leaving Mr. Blackler, we returned to Bullhead City to obtain more samples. These were to be tested as raw ore. They were to be tested by two other independent testers--one being the Advanced Construction Corporation of Carson City, Nevada. They sent their samples to Fisher & Associates, a consulting firm that does all their testing

attempt was made to determine, by crushing or digesting the calechi, if the gold was unobtainable by virtue of its being tied up in the calichi. The results of his investigation showed 0.022 ounces per ton of precious metal, an increase of 22%. From the appearance it was by far mostly ± 85% gold.

The result of Mr. Spiller's diligence indicated that much of the values were lost in the Knudsen Bowl.

Hazen Research

The results from Hazen were the most discouraging of all the tests. They came up with the concentrate and midlings of section 12 to be 0.21 ounces per ton. Since this concentrate was the result of a 50 to 1 concentration, it indicated that the gold in the raw ore was apparently only 0.0042 ounces per ton. In section 14 the concentrate contained 0.67 ounces per ton which would be 0.0134 ounces per ton in the raw ore.

Hazen concentrated the concentrate using a laboratory shaking table. They did dissolve the calechi with dilute nitric acid.

The tabling produced a concentrate, midling, tailing and slime product.

Departing from normal procedure the Hazen laboratory assayed only table concentrate. Since a metallurgical balance was not possible without assaying all products, the total amount of precious metal in the initial concentrate is not possible to determine.

It is probably safe to assume that the Hazen tabling was performed relatively well and that here again the values were lost in Reno by the Knudsen Bowl. But as has been stated there could have been large values in the midlings or tails all tied up in the clays or undissolved calichi.

Hazen reported a substance that they could not identify. As one of the investigators reported platinum in their sample, Hazen decided to test for platinum. Instead of parting the assay bead in nitric acid to dissolve any silver present, they attempted to dissolve it in aqua-regia (a mixture of

for them. The Advanced Construction Company manufactures a jig that is reported to be an excellent jig for placer deposits. The other company is Metal Engineering Corporation of Philipsburg, Montana. They do their own testing and are reported to be experts in the leaching of precious metals.

It was felt that by knowing the capability of the respective methods of treatment and the efficiency of each, we could further evaluate the best equipment for production. We also felt that they could give a true industrial opinion as to the value of the material submitted.

Four of the remaining samples were delivered to the Colorado School of Mines Research Institute. Two of these were the concentrate and the midlings from section 12. They were combined and labeled MA1. The other two were the concentrate and midlings from section 14. They were also combined and labeled MA2.

The remaining four samples were delivered to Hazen Research Inc., and were labeled H-1 concentrate and H-1 midlings. These were from section 12 and were combined and relabeled H-1. The other samples were labeled H-2 concentrate and H-2 midlings. These were all from section 14 and were combined and relabeled H-2.

THE INVESTIGATORS:

Colorado School of Mines Research Institute (CSMRI)

CSMRI amalgamated the samples and fire assayed the residue as well as the tails. They found section 12 to be barely commercial at 0.011 ounces per ton but found section 14 to be commercial at 0.018 ounces per ton. This was at such variance with the results of the other investigators, with the exception of Hazen Research, that Mr. Erik Spiller felt uneasy and took a sample of the raw ore from section 14 and concentrated it by hand feeding about 70 pounds through a Knelson Hydrostatic Concentrator to see if it were possible that the values were lost in the concentration by the Knudsen Bowl of Reno. No

hydrochloric and nitric acids) which will dissolve silver, gold and the platinum metals, and then use atomic absorption to determine the precious metal substances and their values. However, a portion of the bead did not dissolve and could not be identified.

Mr. R. Blackler

Mr. Blackler basically used electrolytic deposition as a method of determining the values present. It appears to be a valid method of assaying; however, it will show the amount of precious metal present but not the amount of precious metal that can be extracted profitably, as the tests by the other investigators have indicated. However, this does not explain the large discrepancy between Blacker and Hazen or the CSMRI, since all three were supplied concentrates from the sample areas. Mr. Blackler reported gold in section 12 as 0.05 ounces per ton, and 0.30 ounces of silver. In section 14 he reported 0.09 ounces per ton in gold, and 0.28 ounces of silver.

It was stated earlier in this report that each sample of 1,000 pounds was run separately through the Knudsen Bowl and that the runs were of such short duration (± 8 minutes) that little adjustments were possible. However, Mr. Fleckenstein, the operator of the Bowl, appeared to be doing some adjusting. The only plausible explanation is that Blackler's samples were the last ones run and he may have finally gotten the Bowl into proper adjustment.

Blackler also reported twice on the samples submitted to him. One was on the 12th of October, when he reported section 12 to contain 0.03 ounces per ton of gold and 0.08 ounces of silver. In section 14 he reported gold to be 0.07 ounces and silver 0.10. He then further ground the material down to 90-100 mesh and reported from section 12 a total of 0.05 ounces per ton of gold and 0.30 ounces of silver. From section 14 he reported a total of 0.09 ounces per ton of gold and 0.28 ounces of silver.

In section 12 this is an increase of 67% of gold and in section 14 an increase of 28%. This is a strong indication that there are values which are tied up in calechi, clays or other materials, and that some form of liberation of these golds must be considered, such as a log washer or even an impact mill.

Mr. Blackler also reported platinum present in a rather substantial amount. No other investigator has found any platinum. However, Hazen did report a metal that they could not identify, even as platinum. It could be that this material, having some of the characteristics of platinum, could have been called platinum by Mr. Blackler.

Fisher & Associates

This firm does the testing for the company which manufactures the jig, in which we were interested. The sample submitted to the jig manufacturer, Advanced Construction Corporation, was raw ore from section 14. It was jigged and Fisher & Associates recovered 0.0397 ounces of gold per ton of ore at a value of $425 per ounce of gold. This yields $16.87. Jigs in general are known for their inability to capture very fine gold so some of the gold in the sample must have been lost. However, in spite of this apparent loss, the jig recovered more than sufficient gold to show that the project is valuable. Even Fisher & Associates cautioned about the operation of a jig with our fine gold.

Metals Engineering

This firm specializes in precious metal recovery by leaching. They have one of the few successful heap leaching operations now in operation. Their testing has caused us to consider the possibility of leaching the material of these placers.

Six samples of the ore were delivered to Metals Engineering labeled 12 H, 12 M, 12 H Calechi, 12 M Calechi, 14 H, and 14 M. They were so labeled as it was our intention to deliver the M-labeled samples to CSMRI and the H-labeled

ones to Hazen. The 12 and 14 indicate the sections these samples were taken from. The Calechi samples were samples of the typical calechi so common in the deposit. The H & M samples were identical.

Metals Engineering leached the 12 H, 14 H and 12 M calechi samples without crushing them. The results were 12 H 0.03 ounces per ton gold. At current prices this is valued at $12.75 per ton. 14 H 0.05 ounces per ton for a value of $21.25 and 12 M Calechi 0.02 ounces per ton for a value of $8.50.

They then crushed the remaining samples 12 M, 12 H Calechi and 14 M. After crushing them to -35 mesh they then leached each sample, obtaining the following results: 12 M yielded 0.06 ounces per ton, an increase of 100% over 12 M, for a total value of $25.50 per ton. 14 M for a value of 0.09 ounces per ton, a gain of 80% over 14 H, for a total value of $48.25 per ton. The 12 H Calechi showed a value of 0.09, an increase of 350% over 12 M Calechi, for a total value of $38.25 per ton.

Further testing by the Metals Engineering company determined that the gold values in the calechi were tied up in the calechi itself and not in the enclosed rocks which made up a large portion of the total calechi. In testing the gold content of the calechi and the testing of the ore in both the raw state and a ground state, they proved, as did Mr. Blacker, that there are indeed valuable metals tied up in the calechi and that some type of liberation of that gold is necessary.

SUMMARY OF INFORMATION GATHERED BY TEST RESULTS:

In examining the results of the various tests that have been performed on the material from the Bullhead deposits, it seems very clear that the following conclusions are important:

1. The discrepancy between the various testing agencies was due to

   A. The contentration process using the Knudsen Bowl was too short in

time duration to adequately adjust the Bowls, causing the loss of much of the value.

B. Adequate testing of the materials is not possible without proper reduction of the clay and calechi materials to minus 100 mesh so as to liberate the numerous gold particles held by these materials.

2. The deposits tested definitely contain sufficient gold to make a placer type operation feasible in the areas sampled and tested.

3. The location and make up (both physical and geological) of the remaining untested areas is such that they would parallel the tested areas in value as well as in physical characteristics.

4. Due to the high values tied up in the clays and in particular the calechi, some type of breakup equipment must be installed. I believe that a heavy-duty log washer will do the job very nicely.

5. Large portions of the mined material will be able to be eliminated from the actual concentration process by the installation of the proper screening system between the proposed log washer and the rest of the concentration system.

6. It might be desirable to install a Hammer mill at the end of the screen to further disintegrate the calechi particles to liberate all the gold from incrustation by the calechi at minus 100 mesh.

7. The actual concentration will be performed by either a Richer cone or an ACC Jig, depending on further production tests to be performed before the actual purchase of equipment.

8. Serious consideration must be given to the possibility of heap leaching the material. The advantage of heap leaching, if done properly, is that it has a better chance of recovering the very fine flour gold that will be lost in both the Richer cone or the jig. The difference in the recovery

of the jig results and the recovery by leaching performed by Mr. Larkin is undoubtedly due to the flour gold lost by the jig. Another plus for heap leaching is the extreme low operating cost as well as a relatively low capital cost for equipment. However, one must remember heap leaching is generally not over 75% efficient. This must be balanced against the efficiency of the jig or Richer cone.

TONNAGE CALCULATIONS:

In making tonnage calculations it is necessary to make certain assumptions, which are:

1. One ton of the material to be mined occupies 18 cubic feet.
2. The mining pit sides will have a 1 to 1 slope.
3. No tonnage will be assigned to a depth lower than the base contour of the area. In section 12 it will be 1,800 feet. In section 14 it will be 1,560 feet.

On the enclosed maps the proposed mining areas, which have been sampled, are shown as the shaded areas. The cross sections were taken at 300 feet intervals with the exception of the end sections.

NW/4 Section 12

	Cross sectional area Feet Sq.
Cross section 1	0
Cross section 1A (sec 1 + 40 ft.)	23,400
Cross section 2 (sec 1A + 260 ft.)	24,300
Cross section 3 (sec 2 + 300 ft.)	22,500
Cross section 4 (sec 3 + 300 ft.)	18,900
Cross section 5 (sec 4 + 300 ft.)	21,600
Cross section 6 (sec 5 + 300 ft.)	4,500

		TONS	CUBIC YARDS
Cross section 1-1A $\frac{\frac{0 + 23400}{2}}{18}$	X 40	26,000	17,300
Cross section 1A-2 $\frac{\frac{23400 + 24300}{2}}{18}$	X 260	344,500	229,600
Cross section 2-3 $\frac{\frac{24300 + 22500}{2}}{18}$	X 300	390,000	260,000
Cross section 3-4 $\frac{\frac{22500 + 18900}{2}}{18}$	X 300	345,000	230,000
Cross section 4-5 $\frac{\frac{18900 + 21600}{2}}{18}$	X 300	337,500	225,000

		TONS	CUBIC YARDS
Cross section 5-6 $\frac{\frac{21600 + 35100}{2}}{18}$	X 300	217,500	145,000
TOTAL		1,660,500	1,105,000
USE		1,600,000	1,070,000

NE/4 sec. 14

	Cross Sec. area SQ. FT.
Cross section 1	0
Cross section 1A (sec 1 + 40ft)	21,600
Cross section 2 (sec 1A + 260ft)	31,500
Cross section 3 (sec 2 + 300ft)	39,600
Cross section 4 (sec 3 + 300ft)	32,400
Cross section 5 (sec 4 + 300ft)	21,600
Cross section 6 (sec 5 + 300ft)	35,100
Cross section 7 (sec 6 + 300ft)	21,600
Cross section 7A (sec 7 + 120ft)	

		TONS	CUBIC YARDS
Cross section 1-1A $\frac{\frac{0 + 21600}{2}}{18}$	X 40	24,000	16,000
Cross section 1A-2 $\frac{\frac{21600 + 31500}{2}}{18}$	X 260	383,500	255,600
Cross section 2-3 $\frac{\frac{31500 + 39600}{2}}{18}$	X 300	592,500	395,000
Cross section 3-4 $\frac{\frac{39600 + 32400}{2}}{18}$	X 300	600,000	400,000
Cross section 4-5 $\frac{\frac{32400 + 21600}{2}}{18}$	X 300	450,000	300,000
Cross section 5-6 $\frac{\frac{21600 + 35100}{2}}{18}$	X 300	472,500	315,000
Cross section 6-7 $\frac{\frac{31500 + 21600}{2}}{18}$	X 300	472,500	315,000
Cross section 7-7A $\frac{\frac{21600 + 0}{2}}{18}$	X120	72,000	48,000
TOTAL		3,068,000	2,008,600
USE		3,000,000	2,000,000

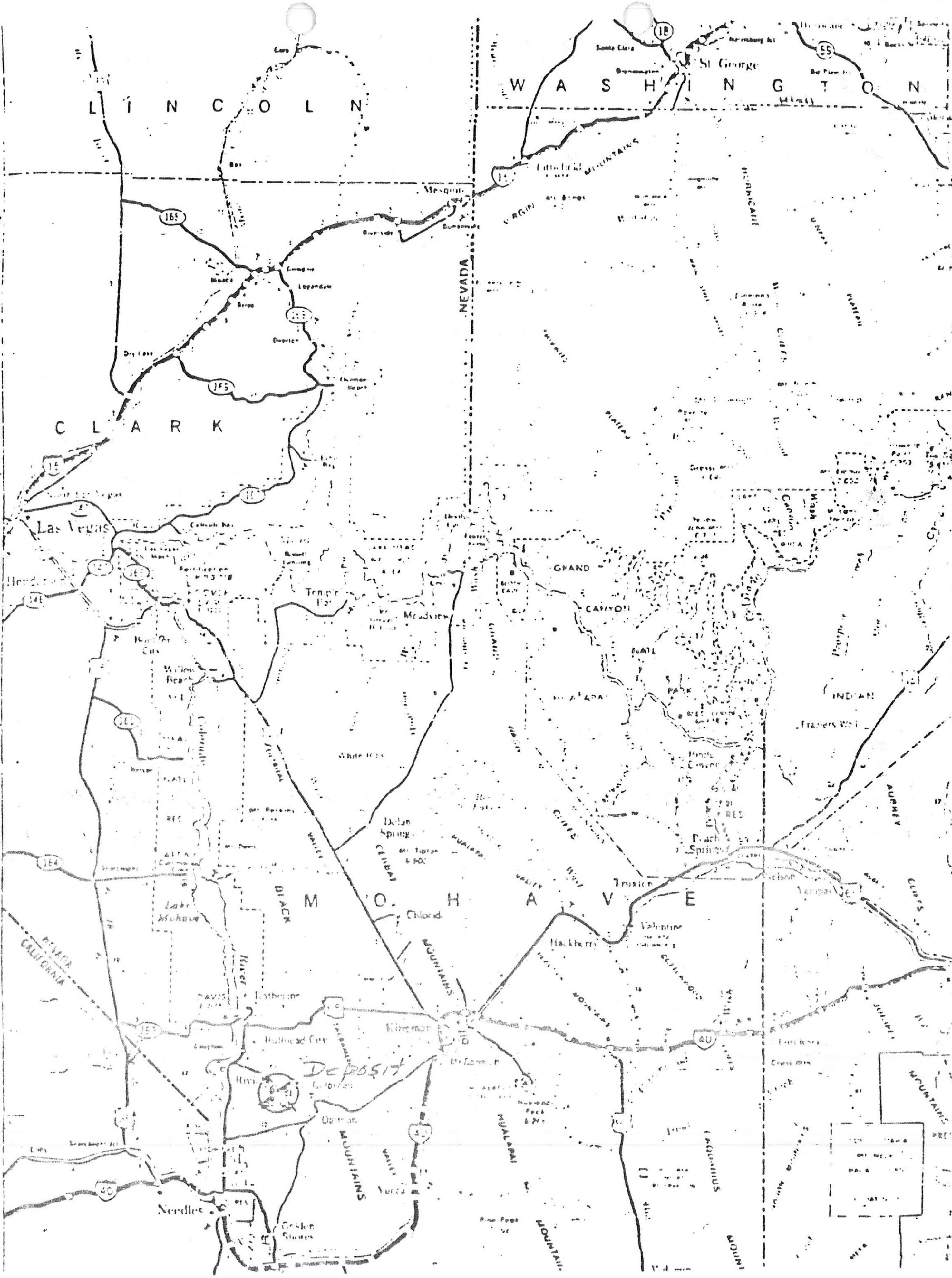
CONCLUSIONS:

From the information above, it seems that a series of conclusions can be drawn. They are:

1. Section 12 appears to contain approximately 1,600,000 tons of material that averages approximately 0.031 ounces of gold per ton, which at a price of $425 per ounce has the value of $13.19 per ton. Section 14 contains about 3,000,000 tons of material, which averages approximately 0.0462 ounces of gold per ton. At the value of $425 per ounce, it has the value of $19.62 per ton.
2. The material is interfingered with bands of calechi which carry valuable metals and must be broken down to a size of minus 100 mesh to insure liberation of the entrapped gold.
3. The stream beds do not carry values near the surface but appear to start carrying values at a depth of 10 feet and the values appear to increase as bed rock is approached.
4. The areas owned by the company but which have not been tested appear to be both physically and geologically the same. The conclusion could be drawn that they parallel the tested areas in recoverable values and that the method of production could be similar. This does not mean that they do not need to be tested and explored.
5. It appears that the production choice is between the Richer cone and heap leaching methods but further tests are required to see which of them, or, if a combination of concentration methods is most applicable.

SUMMARY OF RESULTS

Testing agency	Section	Gold oz./tn	Value @425	Silver oz/tn	Value @9/oz	Total value
Hazen Research	12	0.0042	1.78	0.0020	0.02	1.80
CSMRI	12	0.011	4.76			[illegible]
R. Blackley	12	0.05	21.25	0.30	2.70	[illegible]
Metals Engineering	12	0.03	12.75	1.11	9.99	22.74
	12	0.06	25.50	0.98	8.82	[illegible].32
AVERAGE	12	0.031	13.19	0.476	4.31	[illegible].50
Hazen Research	14	0.0134	5.70	0.0048	0.04	[illegible]
CSMRI	14	0.018	7.65			7.[illegible]
	14	0.022	9.35			9.35
R. Blackler	14	0.09	38.25	0.28	2.52	[illegible]
Metals Engineering	14	0.05	21.25	0.71	6.39	[illegible].64
	14	0.09	38.25	1.57	14.13	[illegible].38
Fisher & Assoc.	14	0.0397	16.87			16.[illegible]
AVERAGE		0.0462	19.62	0.142	1.28	[illegible].90
Metals Engineering	calechi	0.09	38.25	0.65	5.85	44.10
	calechi	0.02	8.50	0.119	4.41	12.91
AVERAGE		0.055	23.37	0.57	5.13	28.50
R. Blackler	12	0.03	12.75	0.08	0.72	13.47
Not crushed	14	0.07	29.75	0.10	0.90	30.65



LINCOLN
WASHINGTON
St George
Santa Clara
Mesquite
VIRGIN
MOUNTAINS
NEVADA
CLARK
Las Vegas
Overton
Temple Bar
Meadview
GRAND
CANYON
PARK
Willow Beach
Dolan Springs
Peach Springs
Truxton
INDIAN
BLACK
MOHAVE
Lake Mohave
NEVADA
CALIFORNIA
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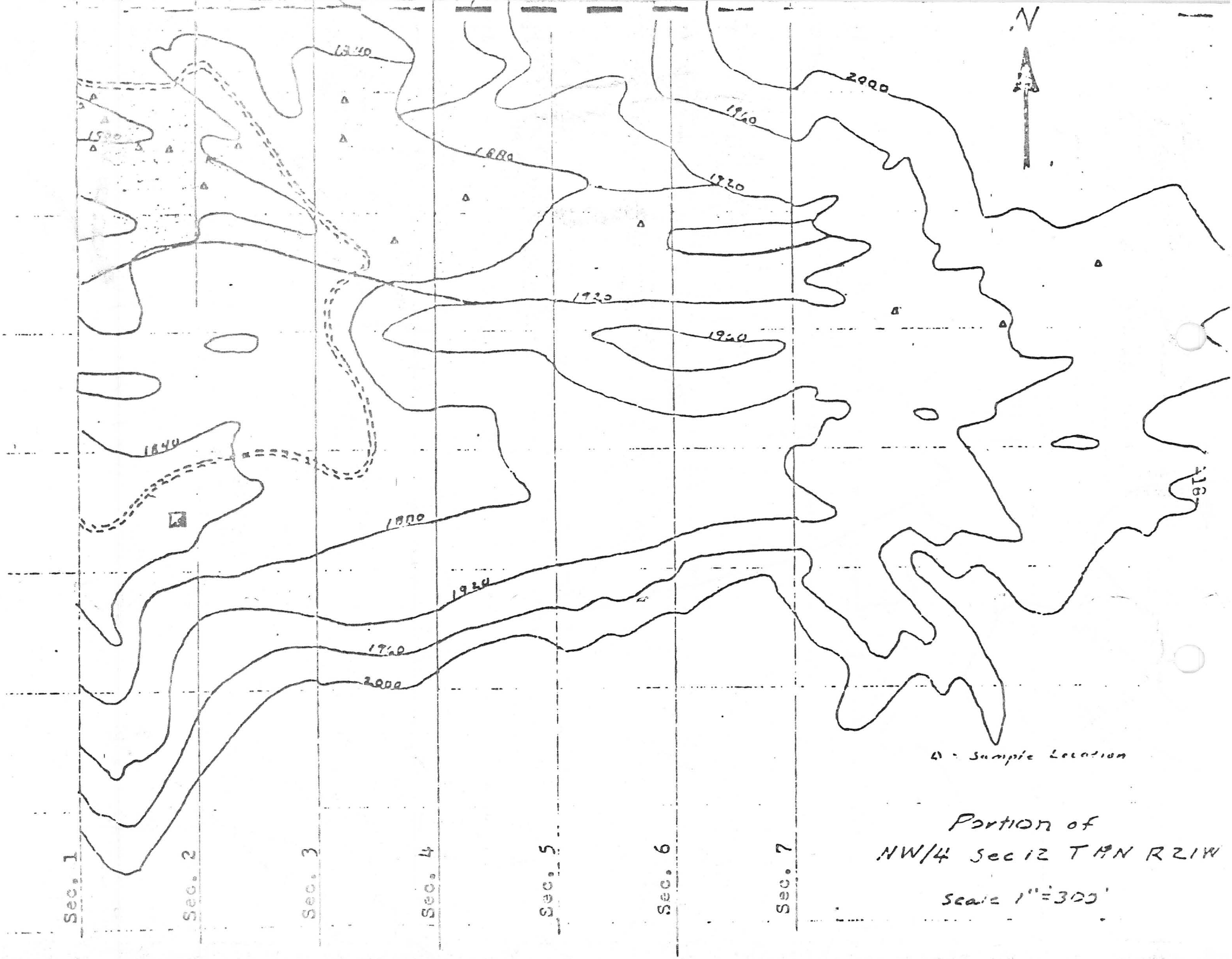
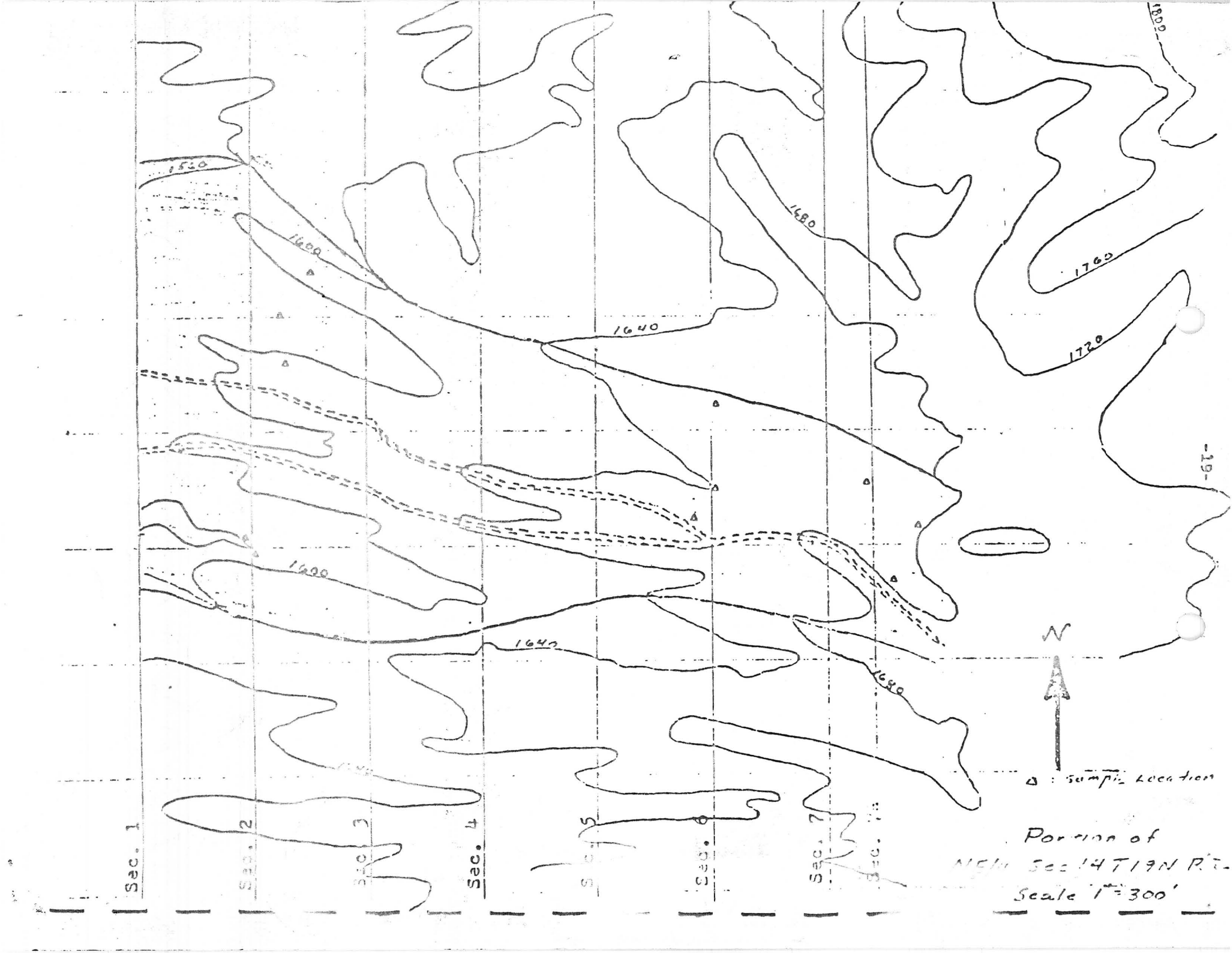
Yucca
Needles
Golden Shores
HUALAPAI


N
2000
1960
1920
1880
1840
1800
Sec. 1
Sec. 2
Sec. 3
Sec. 4
Sec. 5
Sec. 6
Sec. 7
Δ - Sample Location
Portion of
NW/4 Sec 12 T4N R21W
Scale 1" = 300'


1560
1600
1640
1680
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1800
1600
1640
1680
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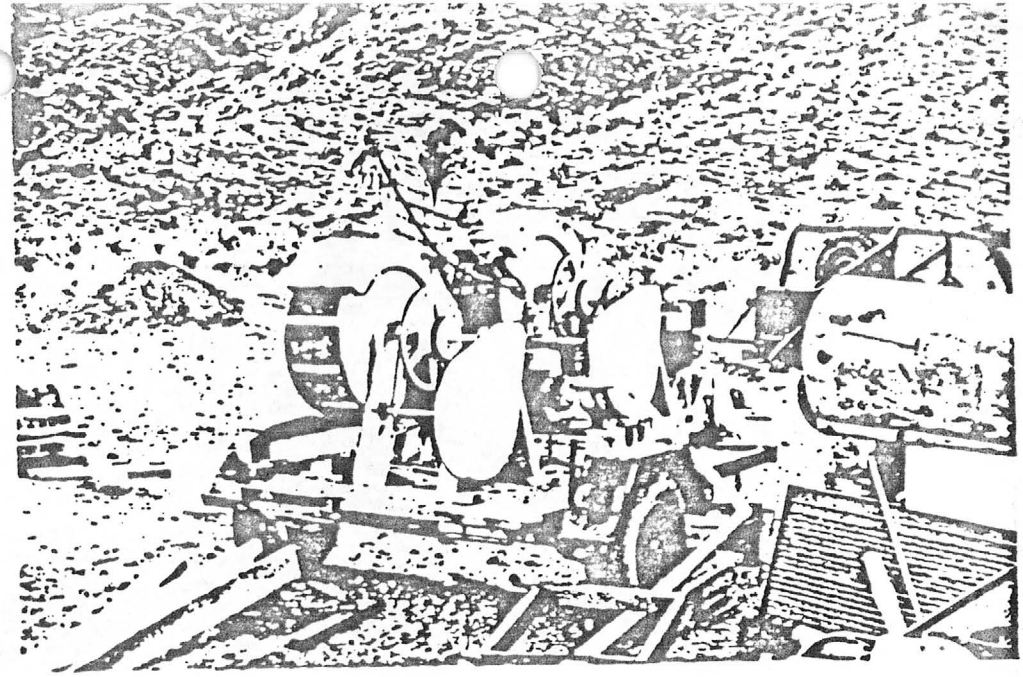
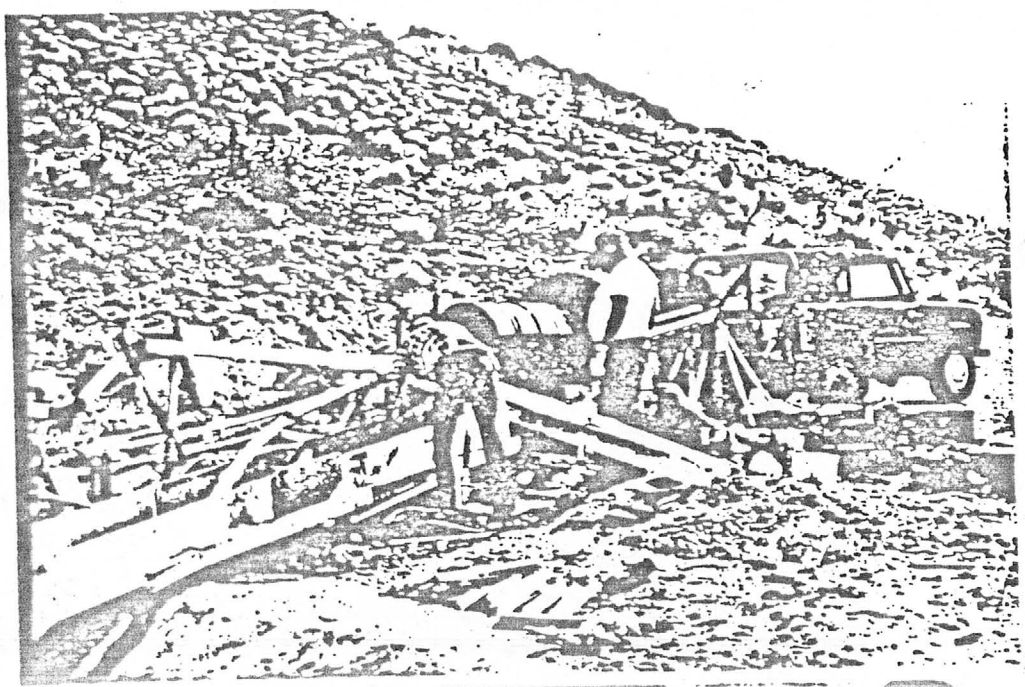
Δ : Sample Location
Sec. 1
Sec. 2
Sec. 3
Sec. 4
Sec. 5
Sec. 6
Sec. 7
Sec. 8
Portion of
NE¼ Sec 14 T 19 N R 1-
Scale 1" = 300'
-29-

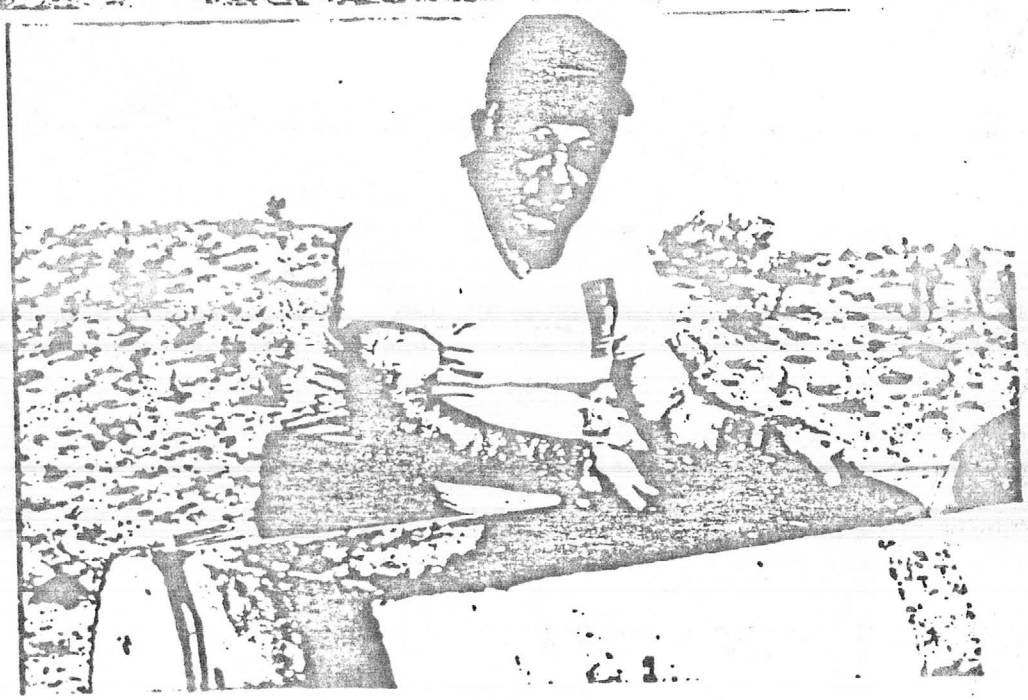
Mr. Corner, with cully machine used to grind calechi



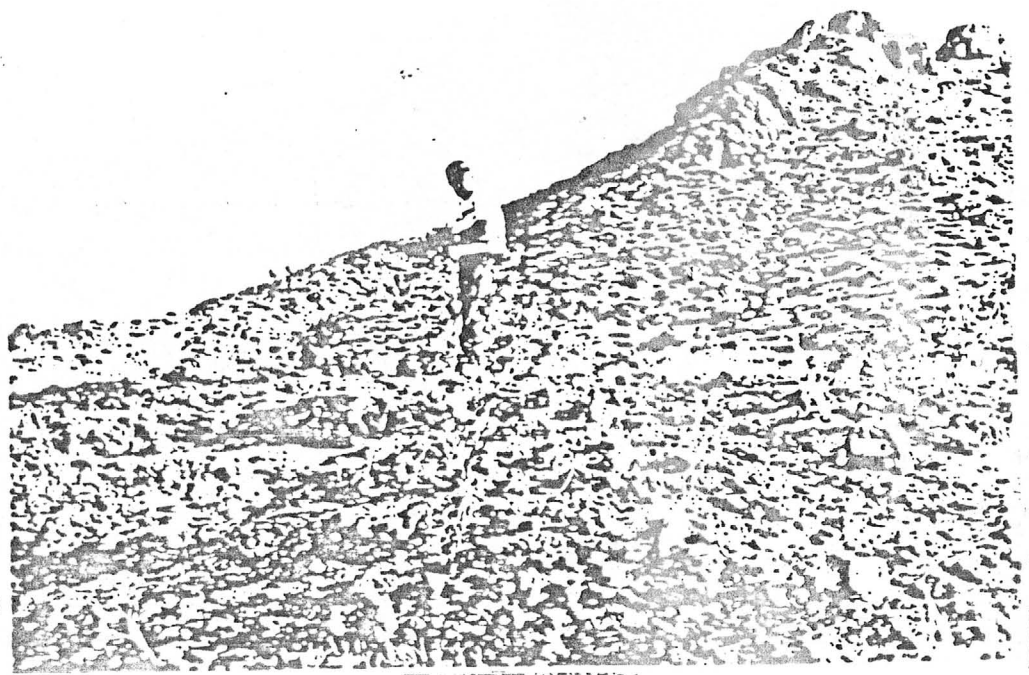


Author at Mr. Corner's trommel

Author panning

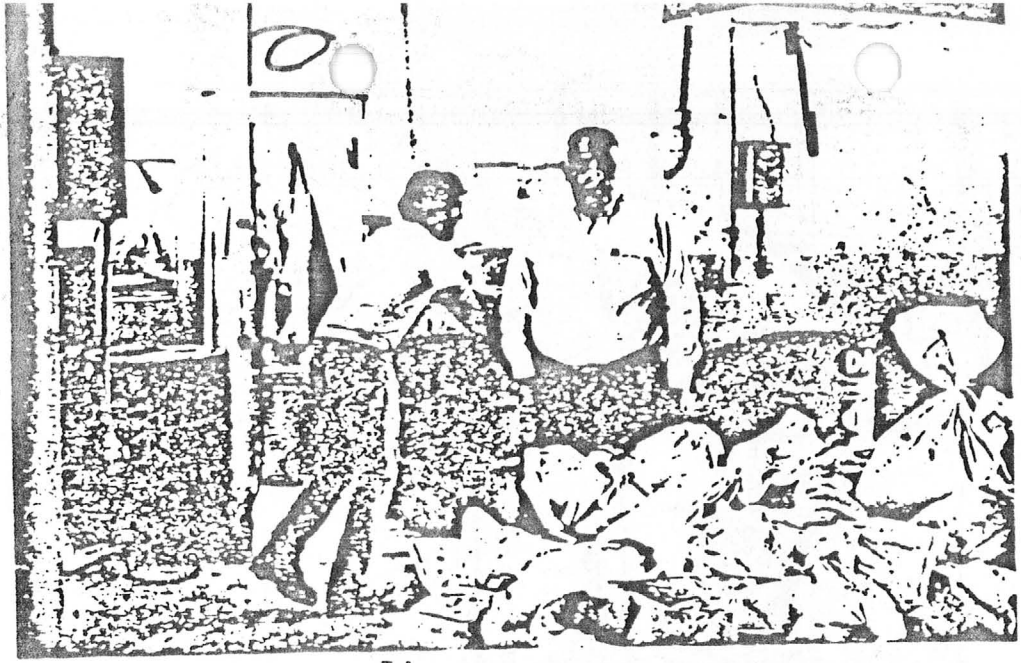


Mr. Pappas
Mr. Corner &
Author Sampling

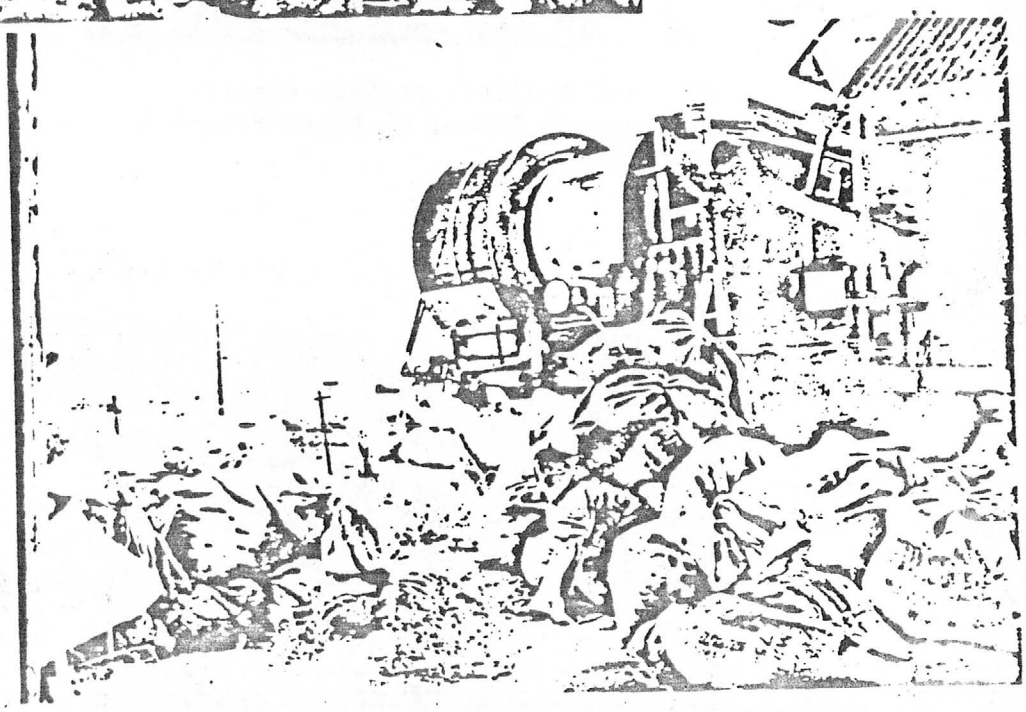


Author on
Calechi bank

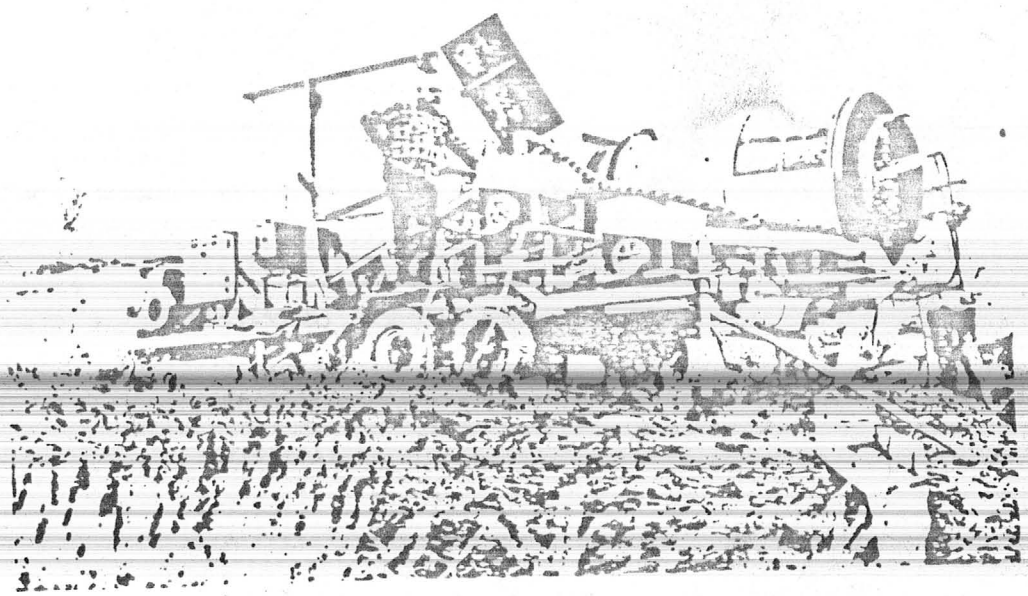
Mr. Orlando,
Mr. Corner,
backhoe operator
& Author with
backhoe



Author with samples at Colorado School of Mines Research Institute

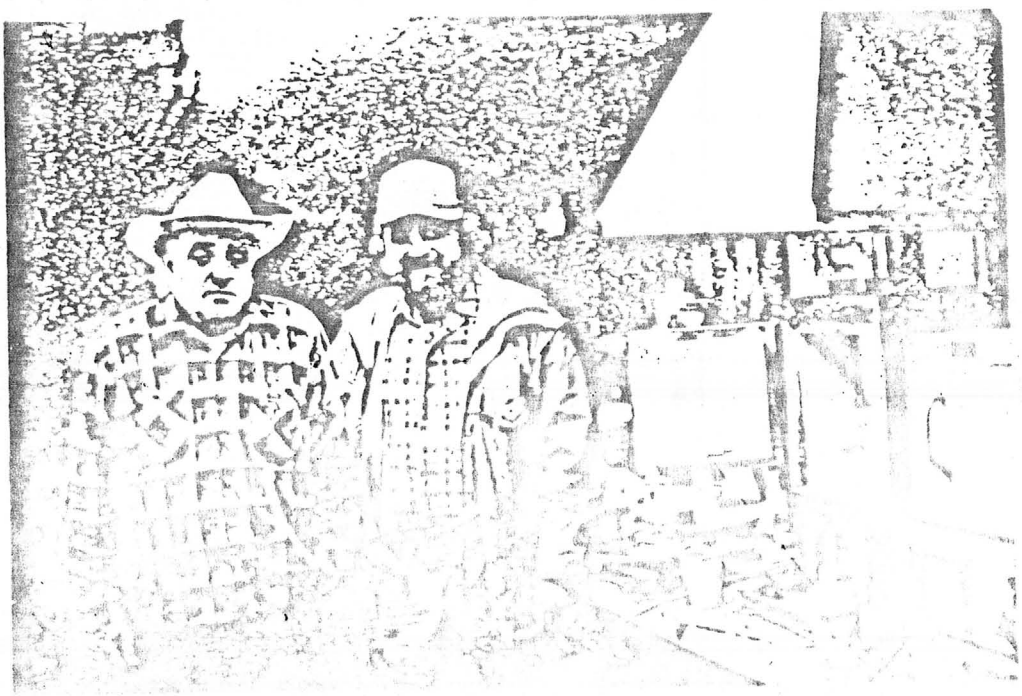


Samples waiting to be run through Knudsen Bowl



Author with Mr. Fleckenstein and his trommel and Knudsen Bowl

Mr. Erik Spiller, project director
at Colorado School of Mines Research
Institute



Mr. Becker of Metals Engineering
with author

LENARD E. LARKIN

Oatman One placer
Mohave Co
K 148

ARIZONA DEPT. OF MINES & MINERAL RESOURCES
STATE OFFICE BUILDING
416 W. CONGRESS, ROOM 161
TUCSON, ARIZONA 85701

10 Dec 86

Dear Rose:

Sorry I didn't get this to you before. I thought I'd better get off my duff and get it out to you.

Anything interesting happening in your area? There is not much activity here. Oatman One personnel are still in the area but with no results that I am aware of.

I received some assays from the investors that they had received from Oatman One. They appear within the parameters of what I had found, i.e., .006 opt. They were reported in

ppm. Apparently they have a a chemical and electrolitic process set up on the property.

I understand that a Alvin C. Johnson Jr. PhD from Tempe is in charge of it. They had the assays done by J.B. Sabs of Phoenix and a Donald McCauly? They appeared to be proper for the material and concentration of the samples. The big problem I had with it is the way ~~the~~ Oatman One worded the letter to the investors and some statements made by Dr. Johnson, as for him. If you know anything about him please drop me a line.

You and your family have a good Christmas Season.

Sincerely,

Don Jordan Reg Ass
ExPD Mem

[signature]