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PRELIMINARY REPORT ON THE
RATTLESNAKE PLACER DEPOSITS
IMPERIAL COUNTY
CALIFORNIA

Prepared by:

Effat S. Botros
Geologist
Dallas, Texas
March, 1975

PRELIMINARY REPORT ON THE
RATTLESNAKE PLACER CLAIMS
IMPERIAL COUNTY
CALIFORNIA

The present report is based on a personal visit to the Rattlesnake area in the Imperial County of California, where the placer claims are located.

Location

The Rattlesnake claims are located in the southeast section of the Chocolate Mountains in the area of Township 13 and 14 South, Range 21 east and noted on the 3050 11 SW Picacho Peak quadrangle map. The Rattlesnake claims are about twelve miles by dirt road from Interstate Highway 8 from Yuma, Arizona. The claims are between Gatuna Wash and Carrigo Wash.

Geology

The oldest rocks known in the area are probably of Pre-Cambrian age. They are commonly flanked by Tertiary or later sediments. The rocks that can most certainly be referred to as the oldest series consist of granite and granite gneiss. In this series probably belongs the granite and schist that compose most of the nearby Cargo Muchacho Range, and the granite, slate and schist that form the basements of the Picacho Hills and the eastern part of the Chocolate Mountains.

The sedimentary beds, believed to be Tertiary in age, occupy extensive areas along the Southwest and Northeast sides of the Salton Basin and presumably underlie practically the entire basin. These sediments consist of soft, poorly consolidated conglomerates, sand and clay containing in place, a large amount of gypsum.

The Tertiary and Quaternary volcanic rocks of this area are mostly tertiary, some of them are quaternary. They occur as flows interbedded with sedimentary beds, being chiefly a mass of andesitic or rhyolitic flows.

The quaternary deposits immediately underlie all of the lowlands and have the largest areal extent of all the rock formations. They underlie the larger part of the Salton Basin and practically all of the Colorado River Valley. The valley fill consists of sand, gravel, and clay washed down from the hills and mountains. From the sample examination, it is indicated that those sediments have only been mechanically transferred for short distances.

Gold mineralization appears to be associated with the quaternary sediments, associated with other minerals in a workable amount as Zircon, Ilmenite, Rutile, Garnet, Hematite, and Magnetite. Gold and the other mentioned minerals could be formed by:

(a) occurrence of these minerals in bedrock to which erosion has had access, (b) separation of gold from bedrock by weathering or abrasion, and (c) transport sorting and deposition of auriferous material derived from erosion. The primary source of placer gold is almost always in auriferous veins, stringers or other ore bodies. At the time of writing this report, very little information is known about the type of distribution of these minerals; whether it is in terraces, bars or evenly distributed in the section. The well that has been drilled for water could be of a value in its vicinity if it had been logged at the time of drilling. However, the gold in the alluvial deposit is evident according to the very preliminary work done in the area in 1973 by others.

To assure large-scale economically workable placer deposits, beside proven gold, large amounts of alluvial material, and an ample water supply are essential. To satisfy the basic requirements:

1. Adequate topographic and/or photogrametric surveys of the claim's area, with detailed outline and measurement of the alluvial deposits.
2. A grid pattern for drilling to determine the bedrock underlying the deposits if present. This grid could initially be on a 100 foot spacing pattern.
3. With the outline of the bedrock topography, the thickness of the deposit and the ultimate volume of workable material should be established. Upon completion of this exploration program, the value of the sediments should become known.

Sampling

Preliminary sampling in the area was done by dry washing the sediments and panning the gravels and sands near the surface. The test materials were gathered at random without locating its place on the map. Although gold flakes and fine gold were observed in some of the panned concentrate, these values need not be considered representative of the whole area. To the best of our knowledge, the lower sections (below 10 feet) have not been tested; also from discussion with the driller who drilled numerous water wells in the area, he indicated the presence of decomposed bedrock at different depths in different places. It is known that gold enrichment is normally found within several feet of the decomposed bedrock underlying the gravel.

The samples which have been assayed confirm the presence of gold in the area. However, to establish the correct gold values in the area, systematic assays should be made of the alluvial material from the surface down, layer by layer. The results of the chemical assays are attached herewith, the highest gold content is .078 oz/T and lowest is .017 oz/T (Table 1).

Mechanical and heavy minerals separation tests have been conducted by the writer on 53.25 pounds representative grab sample off the top of the ground with maximum depth of five feet. The results are attached herewith. The data indicates and reflects the presence of the highest percentage of black sand between 35 and 50 mesh where the gold is normally associated. The preliminary test also shows the degree or particle size needed in the operation for optimum recovery.

A small plant could possibly be used and constructed as part of the full scale plant while the full evaluation program is being carried out.

Mining Method

Surface methods are applications of open-cut work. Placer mining includes the work of excavating and transporting placer gravel.

Economics

Dimensions of the claims 600 feet x 4000 feet x 10 feet = 240,000,000 cubic feet and considering 10 cubic feet per ton, the estimated tonnage in the area within 10 feet depth is 24 million tons of gold bearing material. However, this volume of material is based on 10 feet only and could be increased to ten times as much but for the time being let us consider 10 feet only. (Water well passed through 512 feet of the same semi-consolidated material.) Income is based upon full operation of 2,000 tons per day for 22 days monthly with 90% recovery on ore averaging \$5.60/T. and \$6.35/T. based on gold price of \$150.00 per ounce and \$170.00 per ounce, respectively. Concentrate frequently has values in other minerals in addition to the estimated gold values. Project utilized the flow sheet sketched herewith (Figure No. 1). The anticipated proportions are 1:50 (i.e., two tons of concentrate for every 100 tons of ore through the concentrating plant). The operation is scheduled for two ten hour shifts daily, 22 days per month.

90% Recovery

Based on \$150.00 per ounce

Gross Recovery: 44,000 tons x 5.05
(90% x \$5.61/T) \$222,200

Smelter Expense: 20% of Gross Recovery (44,440)

Freight to Smelter: 2% of Gross Recovery,
Approximately \$5.00/T (4,444)

Net Smelter Returns \$173,316

Mining, Concentration, and Operation Cost

For the 1st Month \$162,146
For the 2nd Month \$134,138
For the following 6 Months \$ 76,638/mo.

Net Profit Before Taxes, Royalties, and
Insurance

For 1st Month \$ 11,170
For 2nd Month \$ 39,178
For the following 6 Months \$ 96,678/mo.

Based on \$170.00 as price of gold per ounce

Profit for 1st Month \$ 34,234
Profit for 2nd Month \$ 62,302
Profit for following 6 Months \$119,742/mo.

(See Page 18)

Table 1

Sample No.	Gold in Mg.	Troy Oz/T	Value of Ton Ore Based on \$170.00 per Ounce	Value of Ton Ore Based on \$150.00 per Ounce
1	2,425.54	.078	\$13.26	\$11.70
2	2,435.56	.078	13.26	11.70
3	1,424.95	.046	7.82	6.90
4	894.50	.029	4.93	4.35
5	1,025.22	.033	5.61	4.95
6	528.45	.017	2.89	2.55
7	521.66	.017	2.89	2.55
8	660.64	.021	3.57	3.15
9	1,042.22	.034	5.78	5.10
10	661.40	.021	3.57	3.15

Mathematical Average of Ore Value is.....\$ 6.358\$ 5.61

Table 2

SIEVE AND HEAVY MINERAL ANALYSES DATA SHEET

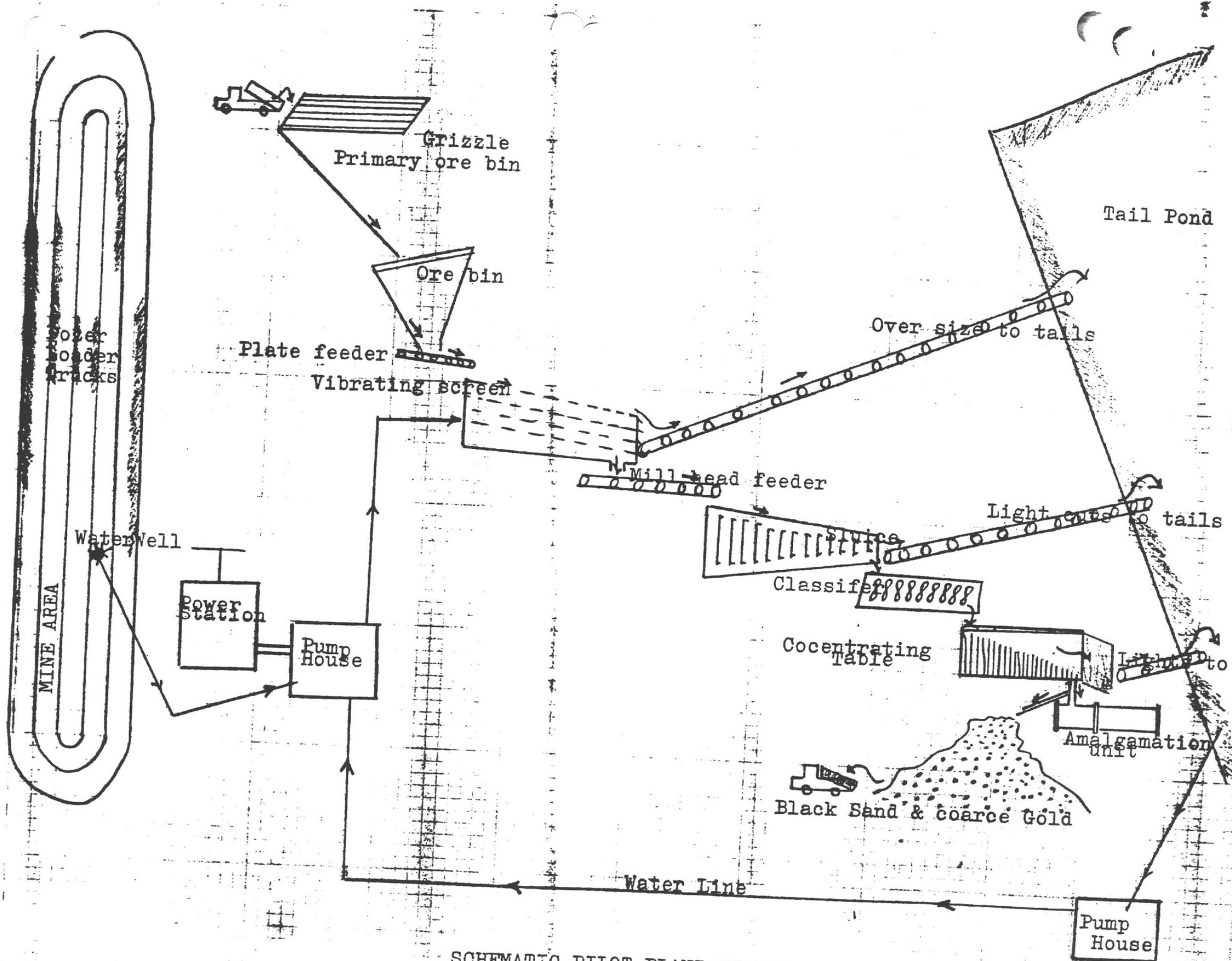
RATTLESNAKE CLAIMS

Sample Description: Bulk "grab sample"

Date: 2-25-75

Total Weight: 24,155 gm.

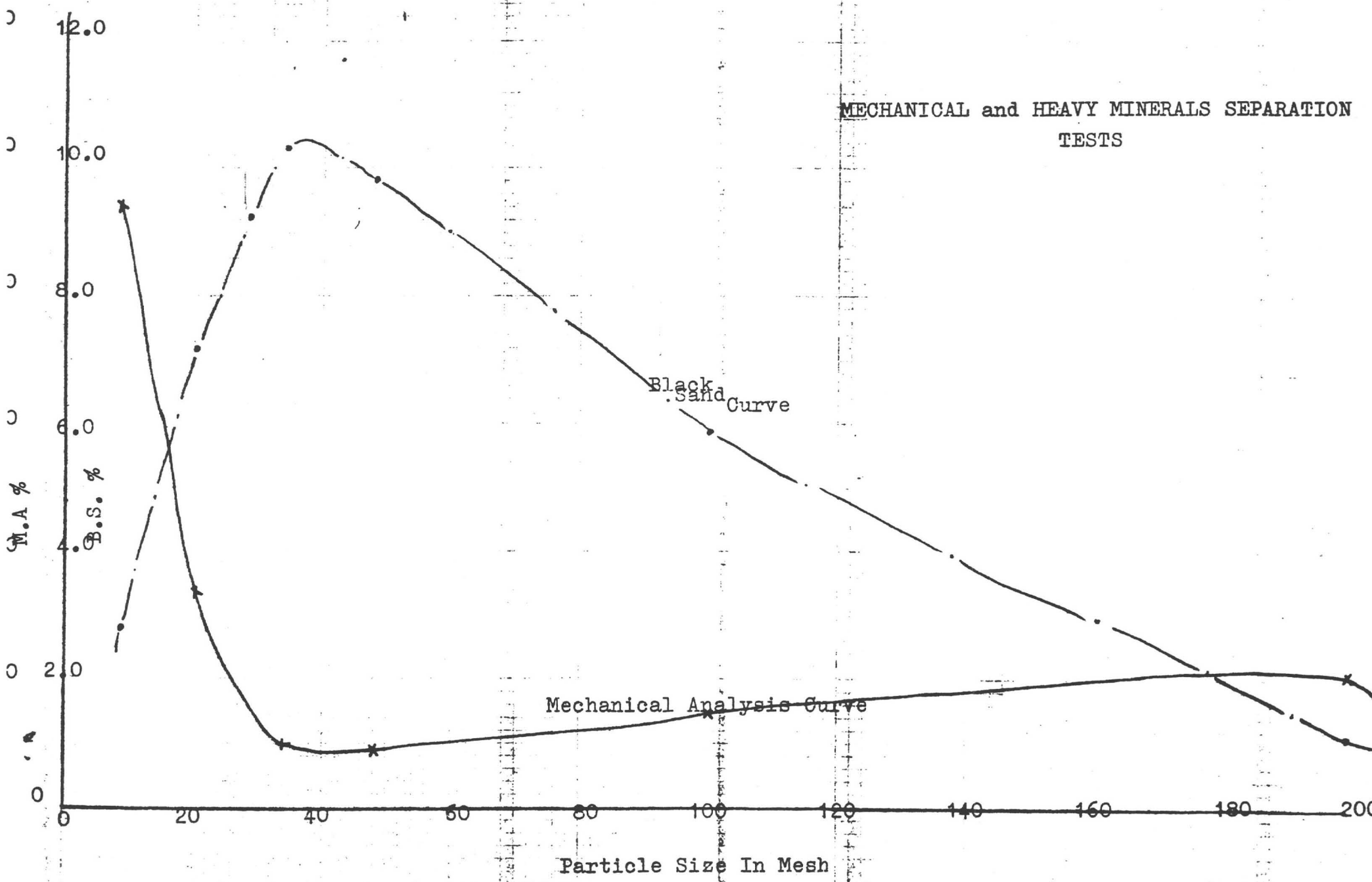
Sieve Size in Mesh	Weight Retained	% Retained	% Black Sand
9	11,391	47.20	3.81
20	4,082	16.89	7.26
28	1,575	6.52	9.51
35	1,233	5.10	10.44
48	1,140	4.72	9.83
100	1,784	7.39	5.94
200	2,580	10.68	1.12
-200	334	1.38	0.19



SCHMATIC PILOT PLANT FLOW SHEET
(Not to Scale)

(Fig No)

MECHANICAL and HEAVY MINERALS SEPARATION TESTS



(Fig . No. 2)

PLACER MINING EQUIPMENT REQUIREMENT

Dozer: 300 to 400 H.P., Semi-U blade, 3 shank ripper
Loaders: 945 with 6 yd. bucket
Trucks: 20 Ton capacity, 4 units
(Loaders and 20 Ton trucks could be replaced
with 3 units of 20 Ton capacity earth mover.)
3/4 Ton 4 WD pickup, 2 units.
Lights: Portable flood lights, 1 unit

OFFICE/SHOP

Building: Combination shop/office 30' x 70'
Shop Equipment: Compressor, welder, hand tools, etc.
Lubrication unit
Office Equipment: Desks, chairs, appliances, etc.
3/4 Ton 4 WD "carry-all"
Fuel Tank: 2 tanks Diesel
1 tank gasoline

CONCENTRATION EQUIPMENT REQUIREMENT

Primary Bin: 250 Ton capacity "open on sloped edge"
Primary Feeder: 5' x 15' Apron Grizzly 1" spacing, on
structural steel frame
Ore Bin: 40 Ton capacity "Feed Hopper"
Ore Feeder: Plate feeder
Screen: Vibrating screen 4' x 10'
Conveyor: 24" x 60' in three sections with motors
Sluice Box:
Spiral Classifier: 54" in Diameter with 5-7 1/2 H.P. drive motor
Concentrating
Table: Minimum 7' x 15' deck size
Amalgamation Unit:

Velvet:

Pumps:

Driving Motor:

Diesel Generator:

Casing Pipe: 3,000'

2½" Pipe: 1,000'

Fittings:

Lights: Portable flood lights, 1 unit

Loader: 745 with 5 yd. bucket

LABORATORY EQUIPMENT REQUIREMENT

Drying Oven: 30" wide x 25" deep x 24" high

Pulverizer: With motor mounting

Splitter: 10" x 18" with riffle width 1"

Jaw Crusher: 3¼" x 4½" of capacity 500 lbs. per hour

Screen Analysis Unit
with Vibra-Pad: 3,4,6,7,10,14,20,28,35,48,65,100,200 mesh

10 Kg. scale:

Electric Assay Furnace: Muffle furnace 25" x 16¼" x 7¾"

Molds:

Crucible and Cupiles:

Sensitive Micro Balance: 1/500 mg

Heavy Duty Hot Plate: 24" x 24"

Glass Ware Equipment:

Furniture:

EQUIPMENT BUDGET

Mine

Dozer.....	\$150,000
Loader.....	110,000
Trucks Hauling.....	120,000
Pickup.....	13,000
Lights.....	<u>1,400</u>

TOTAL..... \$394,400

Office/Shop

Building.....	\$ 20,000
Shop Equipment.....	15,000
Office Furniture.....	3,000
Appliances.....	2,000
Supplies.....	1,000
Carry-all.....	7,500
Fuel Tank, Diesel.....	800
Fuel Tank, Gasoline.....	300

TOTAL..... \$ 49,600

Concentration Plant

Primary Bin.....	\$ 5,000
Primary Feeder.....	3,000
Ore Bin.....	5,000
Ore Feeder.....	2,000
Screen.....	10,000
Conveyor.....	3,000
Sluice.....	3,000
Classifier.....	5,000
Concentrating Table.....	6,000
Amalgamation Unit.....	5,000
Velvet.....	200
Pumps.....	10,000
Driving Motor.....	5,000
Diesel Generator.....	25,000
Casing Pipe.....	5,000
2½" Pipe.....	2,500
Fittings.....	500
Lights.....	1,400
Loader.....	65,000

TOTAL..... \$161,600

Equipment Budget (Continued)

Laboratory

Drying Oven.....	\$ 700
Pulverizer.....	1,700
Splitter.....	150
Jaw Crusher.....	3,000
Screen Analysis Set.....	600
10 Kg. Scale.....	200
Electric Furnace.....	7,000
Molds.....	100
Crucible.....	100
Sensitive Microbalance.....	3,000
Heavy Duty Hot Plate.....	300
Glass Ware and Misc.....	700
Furniture.....	2,000
TOTAL.....	\$ 19,550

Construction Material \$ 25,000

GRAND TOTAL..... \$650,175

Prices listed are preliminary, further details will be submitted after bidding.

CAPITAL LEASE/PURCHASE ITEMS AND TERMS

Mine

Dozer.....	\$ 150,000
Loader.....	110,000
Trucks Hauling.....	120,000
Pickup.....	13,000
Lights.....	1,400

Office/Shop

Carry-all.....	\$ 7,500
Lubrication Unit.....	3,500

Concentration Plant

Screen.....	\$ 10,000
Conveyor.....	3,000
Sluice.....	3,000
Classifier.....	5,000
Concentrating Table.....	6,000
Amalgamation Unit.....	5,000
Pumps.....	10,000
Driving Motor.....	5,000
Diesel Generator.....	25,000
Lights.....	1,400
Loader.....	65,000

Laboratory

Drying Oven.....	\$ 700
Pulverizer.....	1,700
Splitter.....	150
Jaw Crusher.....	3,000
Screen Analysis Set.....	600
10 Kg. Scale.....	200
Electric Furnace.....	7,000
Sensitive Microbalance.....	3,000

GRAND TOTAL..... \$560,150

LEASE TERMS: 10% down \$56,015
5 months @ \$28,007.50
Total 6 month lease obligation \$168,042

CAPITAL PURCHASE ITEMS

Office/Shop

Building.....	\$ 20,000
Shop Equipment.....	11,500
Office Furniture.....	3,000
Appliance.....	2,000
Supplies.....	1,000
Fuel Tank, Diesel.....	800
Fuel Tank, Gasoline.....	300

Concentration Plant

Construction Materials and Labor...	\$ 25,000
Primary Bin.....	5,000
Primary Feeder.....	3,000
Ore Bin.....	5,000
Ore Feeder.....	2,000
Velvet.....	200
Casing Pipe.....	5,000
2½" Pipe.....	2,500
Fittings.....	500
Mill Rights.....	25,000

Laboratory

Mold.....	\$ 100
Crucible.....	100
Hot Plate.....	300
Glass Ware and Misc.....	700
Furniture.....	2,000

TOTAL..... \$115,000

OPERATING BUDGET - 6 MONTHS

Personnel

Supervisors

Mine and Plant Manager @ \$2,000/month.....\$ 12,000
Mine Foreman @ \$1,200/month..... 7,200
Plant Foreman @ \$1,200/month..... 7,200

Office and Laboratory

Clerk @ \$800/month.....\$ 4,800
Lab Tech. @ \$1,000/month..... 6,000

Mine

Operators: Dozer 3 @ \$1,000 ea./month.....\$ 18,000
Loader 3 @ \$1,000 ea./month..... 18,000
Truck 4 @ \$900 ea./month..... 21,600

Shop

Mechanic @ \$1,200/month.....\$ 7,200
Helpers 2 @ \$800 ea./month..... 9,600

Plant

Operators 2 @ \$900 ea./month.....\$ 10,800
Helpers 2 @ \$700/ea./month..... 8,400
Loader @ \$800/month..... 4,800

TOTAL.....\$135,600

Supplies

Fuel: 1,000 gallons per day at 40¢ per
gallon for 150 days.....\$ 60,000

Repairs: @ 20% per annum of capital
equipment cost..... 56,015

Tires: @ 10% per annum of rolling
equipment cost..... 15,775

Office: Paper, phone, travel, etc..... 6,000

TOTAL.....\$137,790

TOTAL OPERATING BUDGET.....\$273,390

MOBILIZATION BUDGET

Salaries.....	\$ 6,500
Travel.....	4,000
Lodging and Food.....	2,500
Office Space.....	1,800
Office Expenses.....	<u>3,600</u>

TOTAL.....\$ 18,400

MINING AND CONCENTRATING BUDGET
FOR SIX MONTHS PERIOD

Capital Lease Items.....	\$168,042
Capital Purchase Items.....	115,000
Operating Budget.....	273,390
Mobilization Budget.....	<u>18,400</u>

GRAND TOTAL.....\$574,832

MINING AND CONCENTRATION BUDGET
 BASED ON 44,000 TONS PER MONTH
 90% RECOVERY AND VALUE OF \$150.00 PER OUNCE

	1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month
Capital Lease Items	\$ 56,015	\$ 28,007	\$ 28,077	\$ 28,077	\$ 28,007	\$ 28,077
Capital Purchase Items	57,500	57,500	-0-	-0-	-0-	-0-
Operating Budget	45,565	45,565	45,565	45,565	45,565	45,565
Freight to Smelter	4,444	4,444	4,444	4,444	4,444	4,444
Smelter Fee	44,440	44,440	44,440	44,440	44,440	44,440
Mobilization Budget	<u>3,066</u>	<u>3,066</u>	<u>3,066</u>	<u>3,066</u>	<u>3,066</u>	<u>3,066</u>
TOTAL	\$211,030	\$183,022	\$125,522	\$125,522	\$125,522	\$ 96,678
Gross Sales	\$222,200	\$222,200	\$222,200	\$222,200	\$222,200	\$222,200
Operating Cost	<u>(211,030)</u>	<u>(183,022)</u>	<u>(125,522)</u>	<u>(125,522)</u>	<u>(125,522)</u>	<u>(125,522)</u>
Taxable Income Before Royalty	\$ 11,170	\$ 39,178	\$ 96,678	\$ 96,678	\$ 96,678	\$ 96,678
90% RECOVERY AND VALUE OF \$170.00 PER OUNCE						
Taxable Income Before Royalty	\$ 34,234	\$ 62,302	\$119,742	\$119,742	\$119,742	\$119,742

Retyped 5-2-83: smc

R E S U M E

NAME: Effat S. Botros

ADDRESS: 4151 Glenwick Lane, #2, Dallas, Texas 75205
Telephone: (214) 528-0409

BIRTHDATE: October 10, 1937

MARITAL STATUS: Married, one child

EDUCATION: B.S. Double Major, Geology and Chemistry, Cairo University, School of Science, May 1960. Graduate Work, University of Texas towards MSc Degree in Geochemistry, its Applications for Mining Exploration

EXPERIENCE:

1974 - Present: Director of Metallurgy and Assay Department, Yukon Mining and Milling Corp. Duties involve supervising and conducting metallurgy and assay tests. Designed and constructed concentration flow sheets for lead, zinc, copper, gold and silver in sulphides ores.

1969 - 1974: Geologist, Mason-Johnson & Associates, Inc., Consultant Geologists, Engineers, Dallas, Texas. Duties involved surface and subsurface investigations, utilizing deep and shallow core drilling programs, different methods of subsurface explorations, for the purpose of foundation engineering and geologic explorations.

1968 - 1969: Research Assistant; Southwest Center for Advance Studies, Dallas, Texas. Duties involved running Geochronology Lab, for age determination and isotope Geology using mass spectrometer. Metal analysis utilizing the atomic absorption spectrophotometric techniques, also petrographic and chemical analysis.

1961 - 1968: Geologist: El-Nasr Phosphate Co., Cairo, Egypt. Duties involved Technical and Administration work for the purpose of operations and supervising Upper Egypt phosphate mining district, regional geology studies, examine and identify cores from the exploratory programs, evaluate different types of reserves, open and under ground mining design, physical and chemical analyses, mixing and matching with the international grades.

1960 - 1961: Well-Site Geologist; The National Oil Organization U.A.R. Duties involved examining samples of drilling (cutting). Lithological description and subsurface correlation and tracing the subsurface structures.

Picacho S/W NW 7 1/2

Picacho Peak 1 NW

R21 E T13 S

R22 E T14 S

County Report #9

Imperial County

Calif. Div. of Mines & Geol.

1416 9th St.

Room 1341

Sacramento, Calif. 95814

CIMARRON EXPLORATION



AUG 01 1983

PIE

CONFIDENTIAL for internal
use only

July 27, 1983

Mr. Ton Netelbeek
Pioneer Nuclear
P.O. BOX 151
Amarillo, Texas 79105

Dear Ton:

Attached is an overview of what is here termed the "Picachotype" deposit - the new gold discoveries in southeast California. This is a file report and I'd appreciate your treating it in some confidence.

We have since learned that the mineral horizons at places like Picacho and Roadside are anomalous in many lithophile elements (U, Li, Be, B as examples), suggesting some genetic connection with the pegmatite phase. The presence of pegmatites is not surprising since these core complexes are all associated with peraluminous granites in some fashion.

The gold is an enigma. One gets the impression that it has been "flooded" into the permeable detachment zones with little or no structural traps other than the mylonitic horizon itself. The low total sulfides, pegmatites, and lithophile geochemistry invite speculation of a genetic connection between a syn-tectonic (?) pegmatitic phase and the gold. The gold is said to occur as free grains on fragment faces usually associated with hematite.

*partially
schistose*

Analogy with Roxby Downs ?

TNW

Bob Holt

Joe Stone

GRC

47th Floor

1100 Milam Bldg

Houston Tex 77002

713-658-0471

Jim Allen

Bob Holt

Cingo - Michucko
Puchko - Mine - 1909

Glenn
2008-09

Bulk 1909

Be G/ment

PICACHO TYPE ORE DEPOSIT

SOUTHWESTERN IMPERIAL COUNTY, CALIFORNIA

By: Dan E. Lewis, Geologist
August 9, 1983

The Picacho Mining District is located in southwestern Imperial County, California, and is bounded on the east by the Colorado River, the south by the Mexican border, and the west by U.S. military reservations.

There are four (4) known groups that are active in the district:

1. Area A - Newmont Exploration. Their activity is centered in the Cargo Muchacho Mountains, particularly along the western to central area of the mountains. Drill sites have been prepared along the western and northern fringe area. They are currently purchasing mining claims and staking additional claims.

2. Area B - Gold Fields Exploration. Their claim holdings are substantial and cover an area from the Chocolate Mountain Aerial Gunnery Range and southeast to Black Mountain.

3. Area C - Copperhead Mining Company. This group is backed by Texas oil money, and they have 8000 acres to the east of the Gold Fields holdings. Their present interest is in placer potential of the area. They are also staking additional mining claims along the northeastern edge of the Cargo Muchacho Mountains. This group is looking for additional funding to carry out their program.

During discussions with Mr. R. Latimer, Manager, it was evident that they have not sufficiently sampled the placer area prior to starting up the gold recovery process. The analysis was by fire assay, which will be misleading for a gravity process. A 1000 ft. water well was not logged during drilling and only sampled after completion at the bottom of the hole. Thus their analysis of 0.20 oz. of gold is an accumulation of the heavy minerals.

4. Area D - Chem Gold (Canadian corporation). Their holdings include the Picacho Mine area and eastward to the Wildlife Refuge along the Colorado River. The report by Harris and Van Nort is an excellent report, and describes the flat lying structural discontinuity between the unaltered metamorphic basement and the overlying Tertiary sediment-volcanic material.

Geology

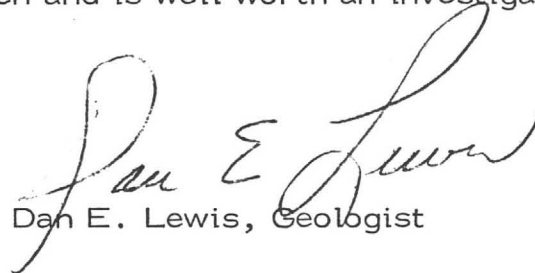
The green areas on the enclosed map are composed of metamorphic rocks mainly schist intruded by a granatoid rock. Mr. Eldren Wilson, in his work in the Laguna Mountains, classified the metamorphics as pre late Cretaceous--and possibly Mesozoic, and the granitic intrusion as Mesozoic. The gold occurs in veins in the metamorphics and in breccia zones in the same rock type.

From the literature available most of the ore in the Cargo Muchacho Mountains was from quartz veins near the granitic-metamorphic contact. In the Picacho Mine area the ore occurs in an intensely brecciated zone of the metamorphics above the unaltered metamorphics. This describes the decollement zone as defined by David Giles.

The ore areas occur in topographic lows. This is probably due to the flat lying decollement where it is traversed by later high angle structures.

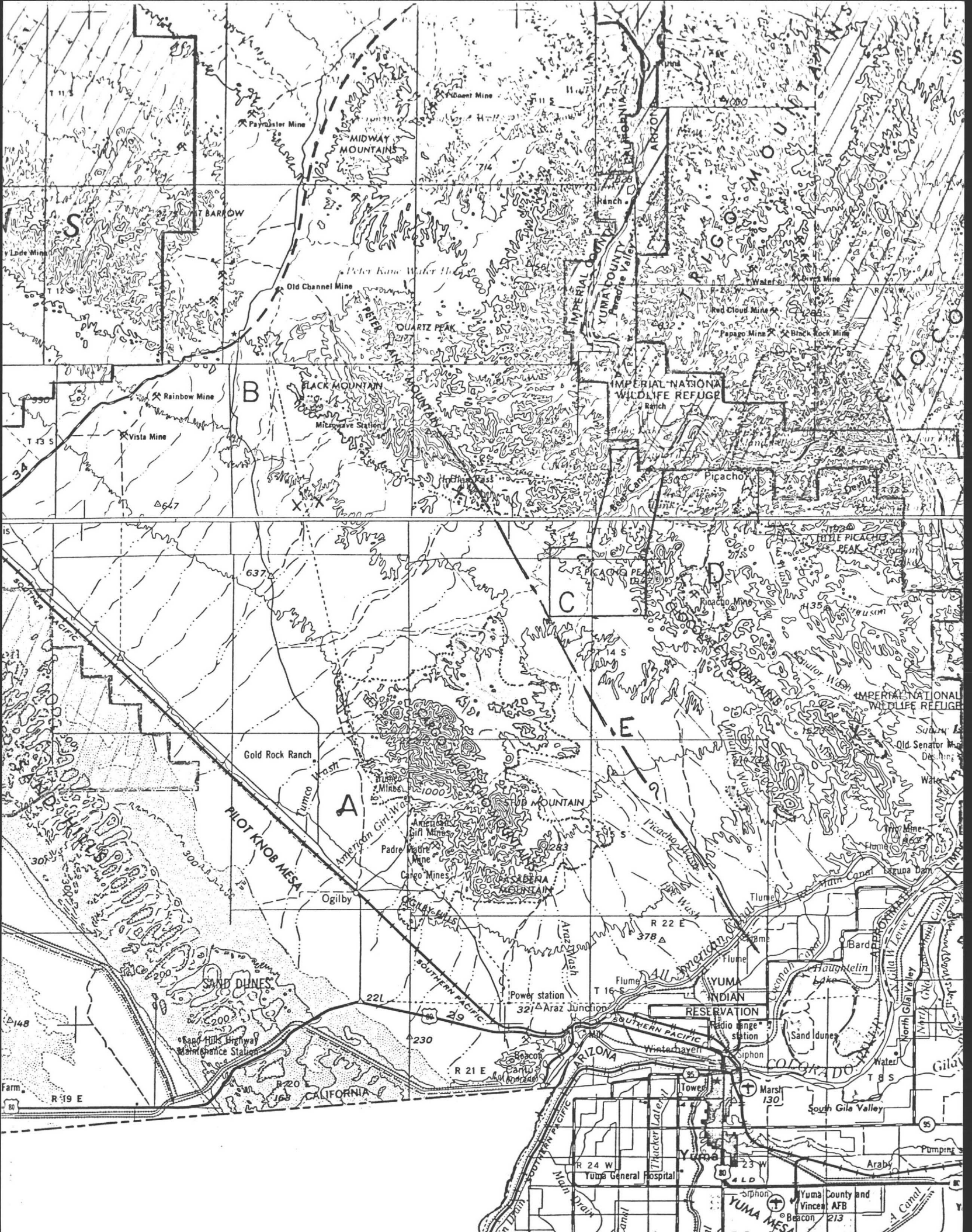
The overlying Tertiary volcanics appear to be unmineralized.

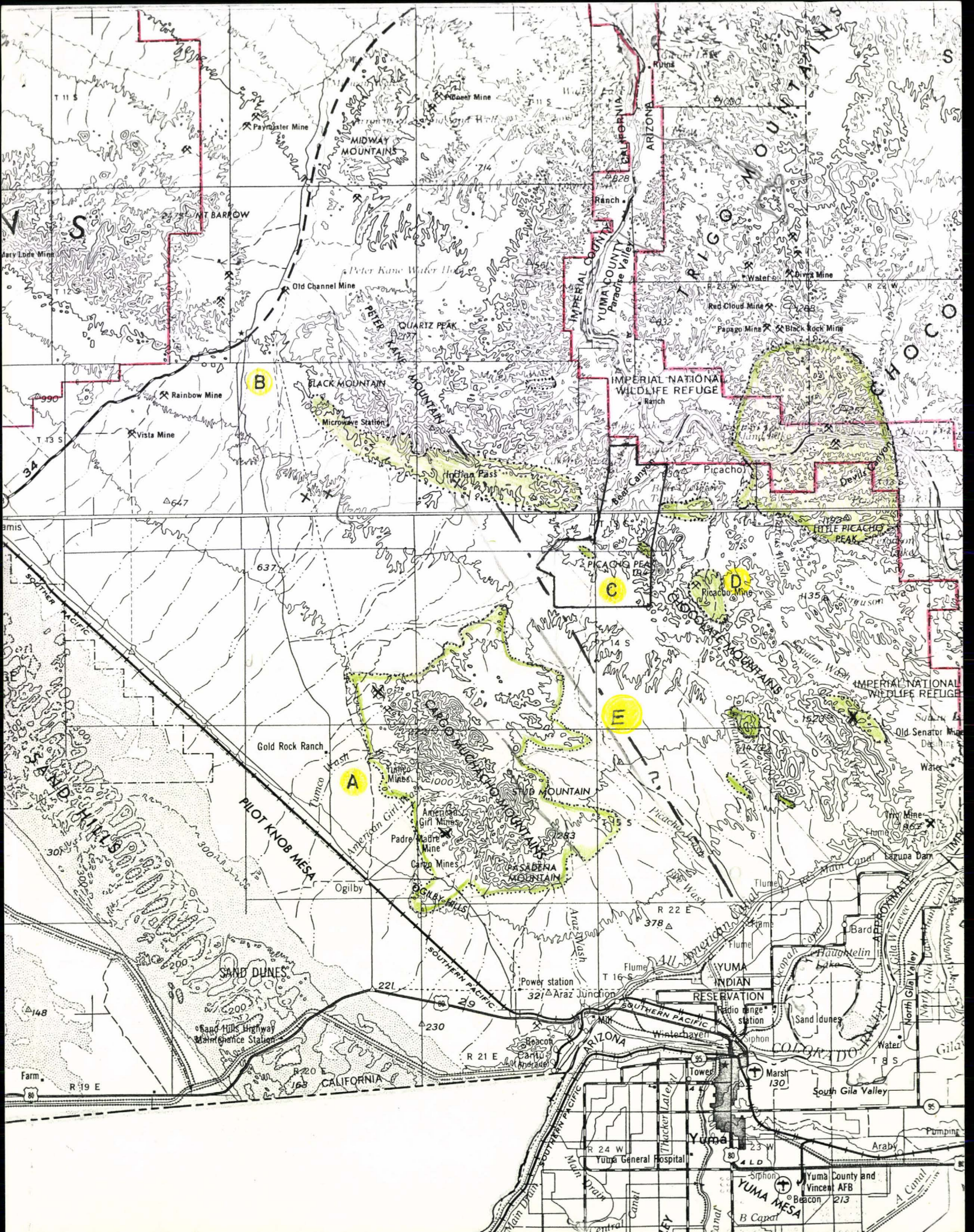
With these guidelines, one area stands out that should be investigated. This area (identified as Area E) lies to the east of the Cargo Muchacho Mountains midway between this range and Picacho Peak. The low area follows Picacho Wash in a NW direction. As indicated on the map, the basement rocks occur on both flanks of the Picacho Wash. This area along a possible fault zone may still be open and is well worth an investigation.



Dan E. Lewis, Geologist

DEL:vh





MEMORANDUM

TO: E. Grover Heinrichs DATE: September 9, 1983
FROM: Dan E. Lewis SUBJECT: Report
 Southeastern Imperial
 County, California

I believe that lode mining claims should be staked to cover an area that may be open.

The North boundary is one mile and a half south of the Copperhead claim group. This is their south boundary during our visit to the area. The Picacho Mine holdings are also north of the boundary I visualize.

As an East boundary I have used a possible fault lying in a NW direction along Picacho Wash.

On the map attached to my report of August 9, 1983, I have drawn in the area of interest bounded in blue. The prime area within this area of interest would be the NE quarter of T15S, R22E, and also the NW quarter of T15S, R23E. If this holding is too large, at least an area two (2) miles on each side of the N-S line as shown hatchured should be covered by claims.

There are two (2) mines along the eastern side, the Old Senator and the Rainbow Mines, and claims are probably valid.

The outcrop shown in the hatchured area are Mesozoic schists and indicated as Mc.

The hatchured area covers 4 x 4 miles or 16 square miles or 10,240 acres. If this is too large, then at least cover the three outcrops as shown and the enclosed ground. This area is 4 miles in a NW direction and 2 miles in width or 5,120 acres.

It appears the brecciated tops of the metamorphics are on the flanks of the Little Chocolate Mountains as evidenced by the outcrop shown on the map. The area to be staked appears to contain the right structural environment for gold mineralization.

DEL:vh

PICACHO TYPE ORE DEPOSIT

SOUTHEASTERN IMPERIAL COUNTY, CALIFORNIA

By: Dan E. Lewis, Geologist
August 9, 1983

The Picacho Mining District is located in southeastern Imperial County, California, and is bounded on the east by the Colorado River, the south by the Mexican border, and the west by U.S. military reservations.

There are four (4) known groups that are active in the district:

1. Area A - Newmont Exploration. Their activity is centered in the Cargo Muchacho Mountains, particularly along the western to central area of the mountains. Drill sites have been prepared along the western and northern fringe area. They are currently purchasing mining claims and staking additional claims.
2. Area B - Gold Fields Exploration. Their claim holdings are substantial and cover an area from the Chocolate Mountain Aerial Gunnery Range and southeast to Black Mountain.
3. Area C - Copperhead Mining Company. This group is backed by Texas oil money, and they have 8000 acres to the east of the Gold Fields holdings. Their present interest is in placer potential of the area. They are also staking additional mining claims along the northeastern edge of the Cargo Muchacho Mountains. This group is looking for additional funding to carry out their program.

During discussions with Mr. R. Latimer, Manager, it was evident that they have not sufficiently sampled the placer area prior to starting up the gold recovery process. The analysis was by fire assay, which will be misleading for a gravity process. A 1000 ft. water well was not logged during drilling and only sampled after completion at the bottom of the hole. Thus their analysis of 0.20 oz. of gold is an accumulation of the heavy minerals.

4. Area D - Chem Gold (Canadian corporation). Their holdings include the Picacho Mine area and eastward to the Wildlife Refuge along the Colorado River. The report by Harris and Van Nort is an excellent report, and describes the flat lying structural discontinuity between the unaltered metamorphic basement and the overlying Tertiary sediment-volcanic material.

T 13S

T 14S

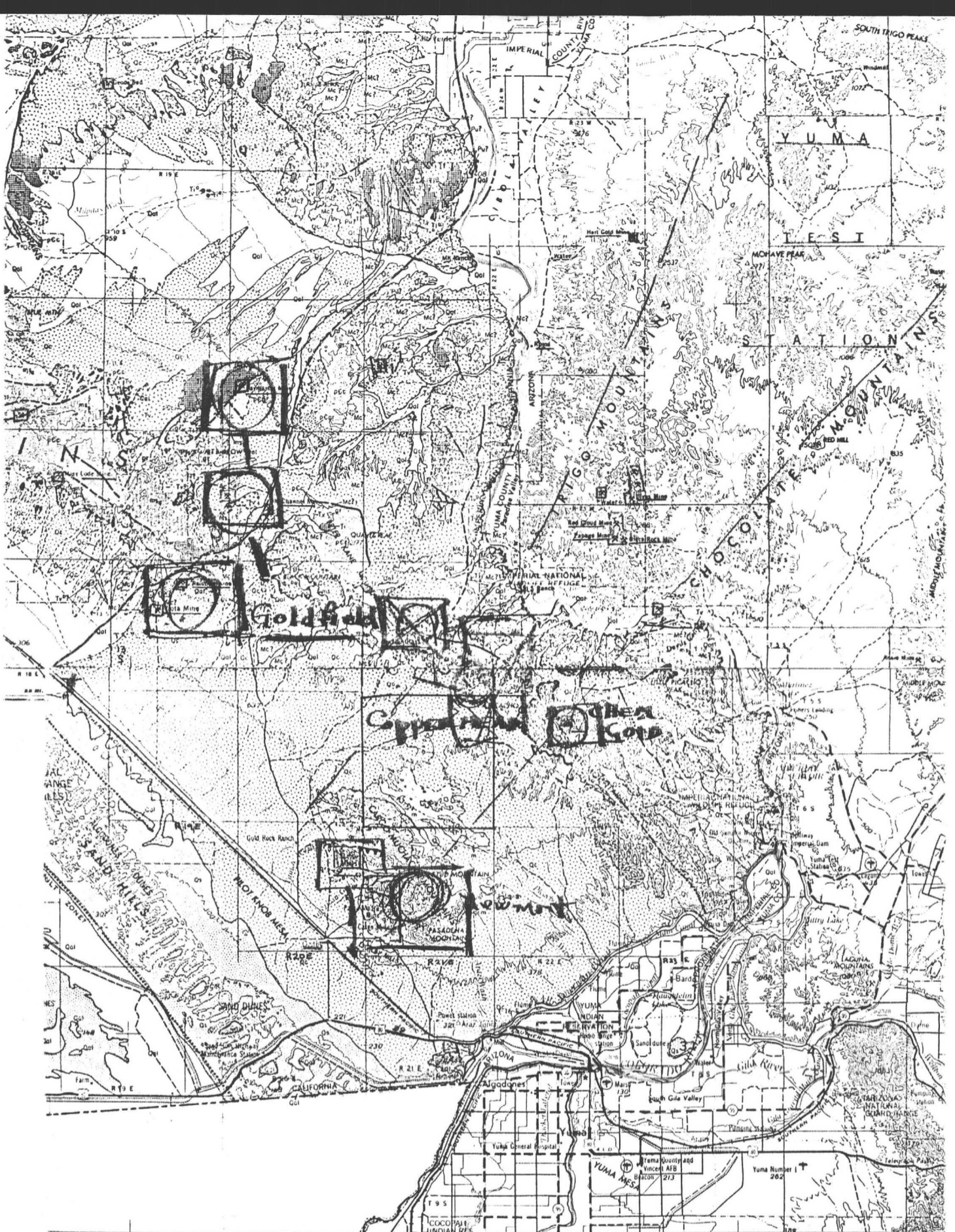
INDEX MAP SHOWING
RELATIONSHIP OF THE
VARIOUS CLAIM GROUPS
UNDER OWNERSHIP BY
COPPERHEAD ENTER-
PRISES, INC.

BASIN PLACERS

R21E R22E

BASIN PLACERS





115°00'

45'

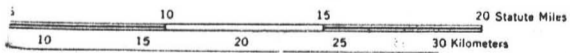
R 24 W

R 23 W

R 22 W

R 21 W

Scale 1:250,000



Contact

Check for updates and corrections

SHEET	
9	7



United States Department of the Interior

BUREAU OF MINES
Salt Lake City Metallurgy Research Center
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY, UTAH 84112

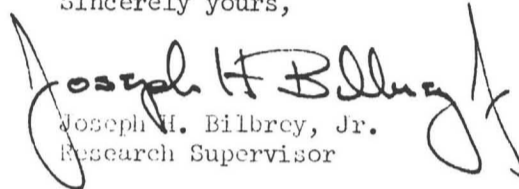
June 16, 1976

Mr. Sam Harper
6237 W. Elm Street
Phoenix, Ariz. 85033

Dear Mr. Harper:

This is in response to your recent letter to Mr. Potter, who is now retired. A copy of a memorandum report on the results of tests made on ore supplied by Harper Mineral Co. is enclosed for your information.

Sincerely yours,


Joseph H. Bilbrey, Jr.
Research Supervisor

Enclosure



United States Department of the Interior

BUREAU OF MINES
Salt Lake City Metallurgy Research Center
1600 EAST FIRST SOUTH STREET
SALT LAKE CITY, UTAH 84112

June 11, 1976

Memorandum

To: Joseph H. Bilbrey, Jr., Research Supervisor
From: Project Leader, Gold and Silver Minerals Processing
Subject: Column Leach and Carbon Adsorption Test,
816, HM 273.1, March 31, 1976

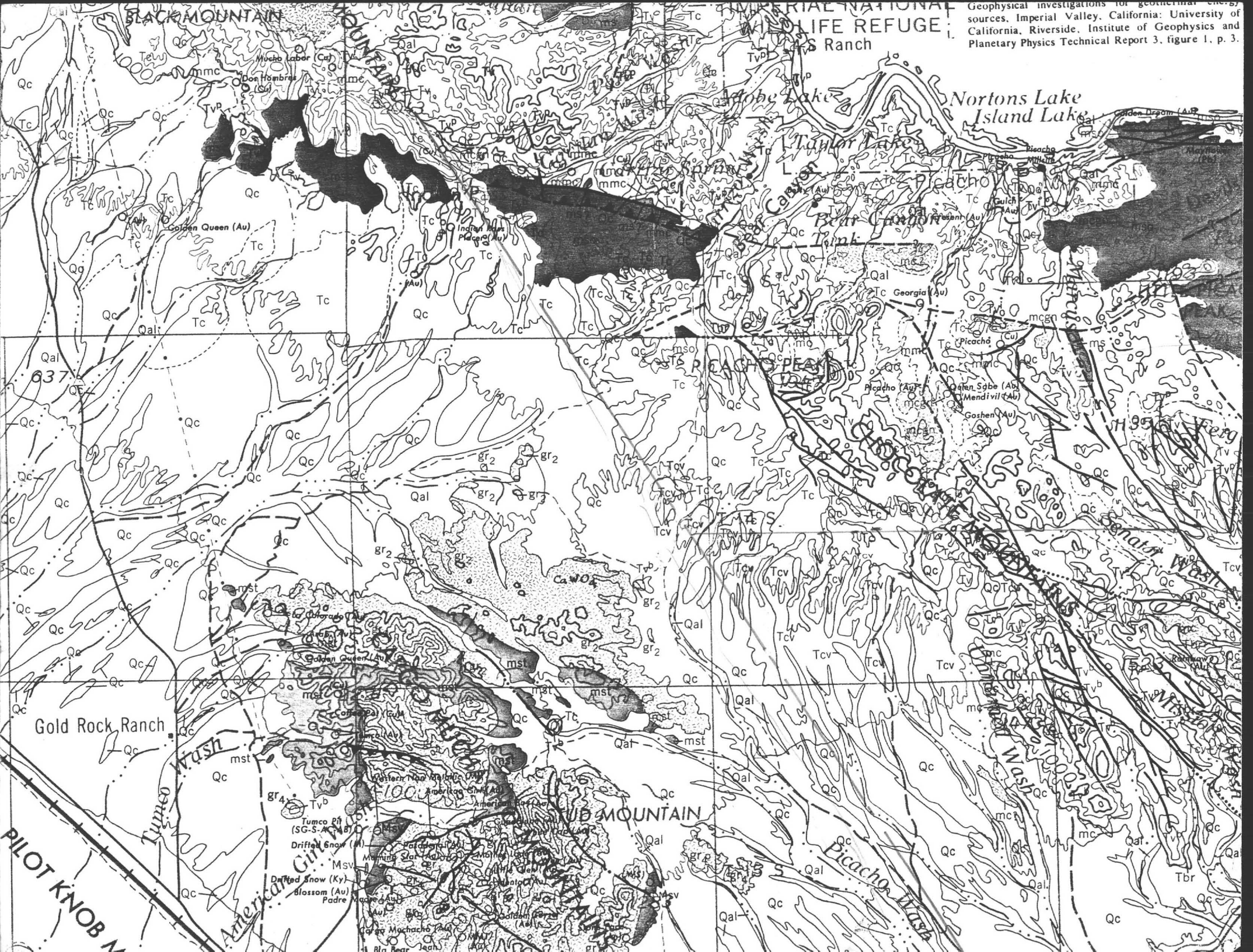
Approximately 20 pounds of minus 1/4-inch ore was submitted by Mr. Sam Harper, Harper Mineral Co., 4538 W. Cavalier Drive, Glendale, Ariz., 85301, residence telephone: 602-931-4838.

The entire sample was loaded into a 6-inch diameter glass leaching column and percolated with lime water at 5 ml/min until a pH of 11.1 was obtained. The solution was made up to 0.039 percent NaCN, and percolation continued at the same rate for 816 hours. The pregnant solution was pumped through a carbon column before being returned to the ore bed.

	oz/ton		Distribution, pct		Pounds used per ton	
	Au	Ag	Au	Ag	NaCN	CaO
Carbon	0.242	0.04	99.6	50.0		
Residue	.001	.04	.4	50.0		
Calculated head	.243	.08	100.0	100.0	3.3	10.5


Harris B. Salisbury





Geophysical investigations for geothermal energy sources, Imperial Valley, California: University of California, Riverside, Institute of Geophysics and Planetary Physics Technical Report 3, figure 1, p. 3.

Chocolate Mtns. Proj. E

COPPERHEAD ENTERPRISES INC.

255 West 24th Street
Yuma, Arizona 85364
Phone (602) 344-4003

2221-C Westpark Drive
Norman, Oklahoma 73069
Phone (405) 360-3811

E. Grover Heinrichs & Associates

1802 W. Grant Road, Suite 110-4

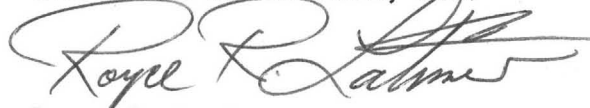
Tucson, Arizona 85745

You are granted permission to enter upon the claims owned by Copperhead Enterprises, Inc., in the Picacho Mining District, for only the following dates and for only the below-stated purpose, on the understanding that all information gained therefrom, whether obtained while on the claims themselves, or from personnel of Copperhead, or obtained by testing and/or assay of samples retrieved from the claims, is the sole property of Copperhead Enterprises, Inc. and will be returned to Copperhead Enterprises at the termination of your inquiry with personnel of the company.

Please indicate your agreement to the foregoing conditions by signing a copy of this communicate and delivering same to an officer of Copperhead Enterprises, Inc.

Very truly yours,

COPPERHEAD ENTERPRISES, INC.



Royce R. Latimer
Vice President

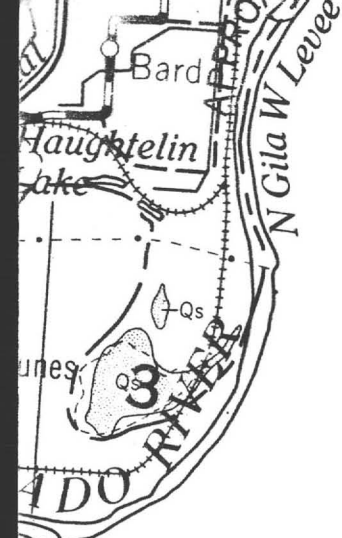
I agree to the foregoing conditions and state that my visit to the claims will be on the following dates and for the following purposes:

Date of visit: July 27, 1983

Purpose: _____

7-27-83
Date


Signature



3. Accuracy and amount of detail shown on geologic map varies according to the many compilation sources. See "Index to compilation sources".

32°45'

114°30'

CORRELATION CHART FOR IMPERIAL COUNTY

GEOLOGIC AGE		WESTERN IMPERIAL COUNTY	PAYMASTER DISTRICT	SOUTHEASTERN CHOCOLATE MOUNTAINS	PALO VERDE MOUNTAINS	CARGO MUCHACHO MOUNTAINS	
CENOZOIC	QUATERNARY	Holocene	Alluvium, dune sand Lake Cahuilla beds Older alluvium	Alluvium Older alluvium	Alluvium Older alluvium including Chemehuevis and other Colorado River deposits	Alluvium Older alluvium	
		Pleistocene	Volcanic domes Brawley Formation Ocotillo Conglomerate		Plio-Pleistocene volcanic conglomerate		
	TERTIARY	Pliocene	Borrego Formation Canebrake Conglomerate Palm Springs Formation Imperial Formation	Bouse Formation Basalt flows Non-marine clastic rocks	Bouse Formation Basalt flows	Bouse Formation Non-marine clastic rocks	Basalt flows
		Miocene	Fish Creek Gypsum Alverson Andesite Split Mountain Formation	Undivided acid to intermediate volcanic rocks Intervolcanic lake beds Post-andesite red beds Andesite (Intrusive, extrusive)	Undivided acid to intermediate volcanic rocks	Undivided acid to intermediate volcanic rocks	
	Oligocene, Eocene, and Pliocene			Andesite flows Sedimentary breccia	Post-andesite red beds Andesite (Intrusive, extrusive)	Andesite intrusives	
MESOZOIC		Plutonic rocks of intermediate composition and pegmatite dikes	Plutonic rocks of acidic composition McCoy Mountains Formation (?)	Plutonic rocks of acidic composition McCoy Mountains Formation (?)		Leucogranite, Biotite granite Quartz monzonite	
PALEOZOIC (?)		Schist, limestone, gneiss, quartzite					
PRE-CAMBRIAN (?)			Orocopia Schist Chuckwalla Complex	Orocopia Schist Chuckwalla Complex		Tumco Formation Vitrefrax Formation	

Please note: Age boundaries are dashed where uncertain.

CARTOGRAPHY DRAFTED BY EDWARD L. FOSTER

Handwritten signature or initials.

COMPILATION SOURCES

1. Ana sheet of the Geologic map of California: Geology, scale 1:250,000. Modified after Dibblee, T. (1967).

2. El Centro sheet of the Geologic map of California: Geology, scale 1:250,000. Modified after Dibblee, T. (1967). Modified in part after Meidav, Tsvi, 1966, personal map showing faults in the Salton Sea area.

3. Sea sheet of the Geologic map of California: Geology, scale 1:250,000. Modified after Dibblee, T. (1967). Modified in part after Meidav, Tsvi, 1966, personal map showing faults in the Salton Sea area.

4. Charles W., 1964 and 1966. Reconnaissance map quadrangle: California Division of Mines and Geology.

5. Weber, F. Harold, and Gray, Clifton H., 1961. Geologic maps of parts of the Acolita, Iris, Iris Pass, and Chuckwalla Mountains: California Division of Mines and Geology, unpub. scale 1:250,000. Modified by John, and Haxel, Gordon, 1973, written comments on 1967 Salton Sea sheet of the Geologic map of California.

6. Recent geologic mapping of parts of the Chuckwalla Peak quadrangles: California Division of Mines and Geology, unpub. scale 1:250,000. Modified in part after Dillon, John, and Meidav, Tsvi, 1967, written comments on 1967 Salton Sea sheet of the Geologic map of California (January 10, 1973).

7. James H., 1965. Preliminary geologic map of the Tumco, Ogilby and Quartz Peak quadrangles: California Division of Mines and Geology, unpub. scale 1:125,000.

TERTIARY
Miocene

Imperial Formation

Marine sequence of light yellow-gray clay, interbedded arkosic sandstone with oyster-shell reefs, and fossiliferous calcareous sandstone.



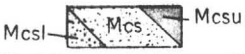
Fish Creek Gypsum

Thick massive beds of pure gypsum, minor anhydrite and celestite.



Alverson Andesite

Varicolored andesite flows and interbedded tuff, breccia, and nonmarine sediments. Mvp = Jacumba pyroclastic rocks



Split Mountain Formation

Mcsu = Upper member; gray conglomerate and brown arkosic sandstone
McsL = Lower member; reddish-brown arkosic sandstone, conglomerate, and sedimentary breccia.

TERTIARY

Interbedded white, flaggy tuffs, and gray thinly bedded limestone.



Red sedimentary beds

Well-bedded reddish conglomerate and sandstone, largely devoid of volcanic debris except minor andesite.



Volcanic rocks

Tvⁱ = intrusive
Tv^p = pyroclastic
Tv^r = rhyolitic
Tv^a = andesitic
Tv^{ia} = intrusive andesite
Tv = undifferentiated



Sedimentary breccia

Pale grayish-yellow, poorly sorted breccia composed largely of metavolcanic and metasedimentary rocks in a poorly to moderately well cemented matrix of silt to sand.



UNDIVIDED PRE-TERTIARY



Hypabyssal rocks

Multiple parallel dikes of porphyritic quartz latite composition in fine-grained porphyritic quartz monzonite of possibly pre-Tertiary age; abundance and regularity of dikes gives appearance of well-layered rock.



Granitic rocks

Largely Mesozoic in age.
gr₁ = biotite granite
gr₂ = leucogranite
gr₃ = quartz diorite
gr₄ = quartz monzonite



McCoy Mountains Formation

Interbedded dark grayish metavolcanic and metasedimentary rocks and phyllite. All of Mesozoic(?) age.



Metamorphic rocks

Predominantly biotite schist, quartzite, gneiss, and marble of Paleozoic(?) age.
Pmls = marble



Metasedimentary rocks

All of Precambrian(?) age.
mst = Tumco Formation. Gray to pinkish-gray, highly indurated, massive, fine-grained arkosite and green-gray hornblende schist.
msv = Vitrefrax Formation-sericite schist, quartzite, Kyanite quartz granulite; Kyanite pyrophyllite sericite pelitic schist.
ms = undivided



Orocopia Schist

Sericite albite schist, quartz sericite schist, biotite schist, phyllite, quartzite, and actinolite schist. Includes rocks tentatively correlated with Orocopia schist all of Precambrian(?) age.



Chuckwalla Complex

Quartz diorite gneiss (mcgn), foliated hybrid granitic rocks, and granophyres, largely acidic to intermediate range in composition of Precambrian(?) age.

VIBRATING GOZZLY
 TYPE: TAPERED BAR
 SIZE: 8 FT BY 14 FT.
 DRIVE: 5 H.P.

TROMMEL
 TYPE: BREAKER
 SIZE: 1/4" OPENING
 DRIVE: 5 H.P.

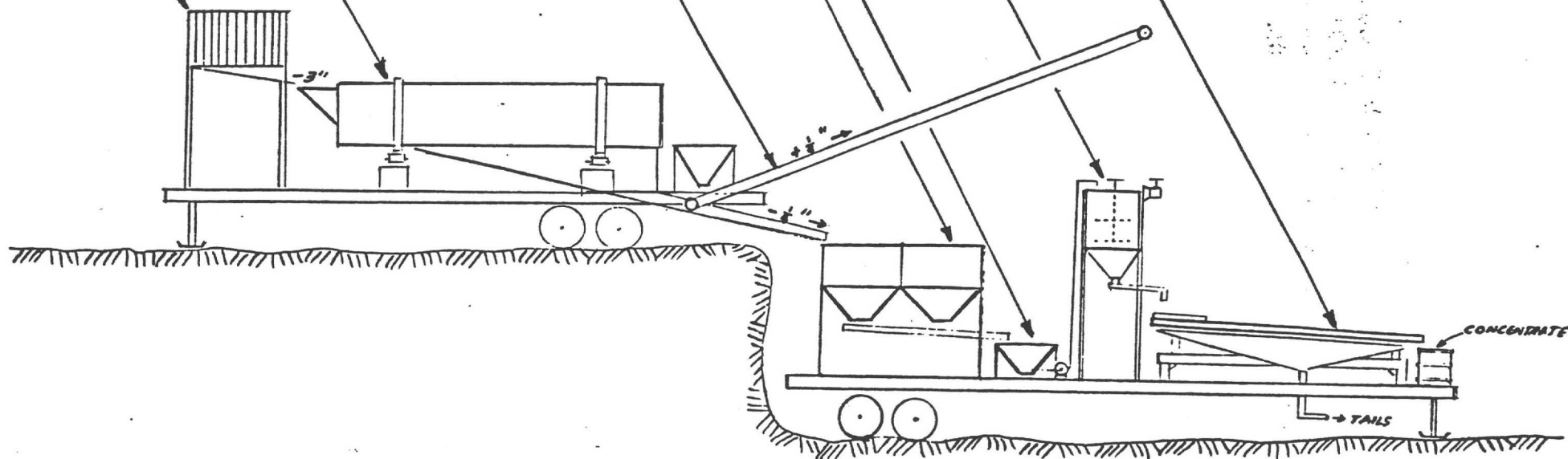
MINERAL J16
 TYPE: DENVER DUPLEX
 SIZE: 16" X 24"
 DRIVE: 1 1/2 H.P.

CONVEYOR BELT
 TYPE: COATED
 SIZE: 16" X 24 FT.
 DRIVE: 2 H.P.

SLURRY TANK & PUMP
 TYPE: RUBBER COATED
 SIZE: 1"
 DRIVE: 1 H.P.

CONDITIONING TANK
 TYPE: STEEL
 SIZE: 100 GHL.
 DRIVE: 1/2 H.P. GEAR BOX

CONCENTRATING TABLE
 TYPE: WILFLEY, 6A
 SIZE: 6 X 16 FT.
 DRIVE: 1 1/2 H.P.



SIERRA MINING & MFG. COMPANY, INC.
 450 CHICK ROAD
 EL CENTRO, CALIFORNIA 92243
 (619) 352-8050

GENERAL ARRANGEMENT DRAWING

SCALE:

APPROVED BY:

DRAWN BY J. G.

DATE: 5-18-83

REVISED

CAPACITY: 20 YDS./HR.

GOLD PLACER MILL

DRAWING NUMBER

P-20

