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PRINTED: 11/20/2001

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: LOST BASIN

ALTERNATE NAMES:
LITTLE NUGGET

MOHAVE COUNTY MILS NUMBER: 199A

LOCATION: TOWNSHIP 29 N RANGE 17 W SECTION 18 QUARTER SW
LATITUDE: N 35DEG 53MIN 50SEC LONGITUDE: W 114DEG 08MIN 55SEC
TOPO MAP NAME: GARNET MTN - 15 MIN

CURRENT STATUS: DEVEL DEPOSIT

COMMODITY:
GOLD
SILVER
COPPER
GOLD PLACER

BIBLIOGRAPHY:
ADMMR LOST BASIN FILE
USGS PP 1361, P. 141, LOCALITY 285, 286

12/28/90

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

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DATE: January 15, 1992

SUBJECT: Lost Basin Property, Mohave County, Arizona: Summary and Recommendations

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INTRODUCTION

The Lost Basin property is located some 60 miles north of Kingman, Arizona, and just 7 miles south-southwest of Meadview, Arizona at the east end of Lake Mead, in Mohave County, Arizona (see Figure 1). The primary areas of interest are in Sections: 33, T30N, R17W; 4, 9, 15, 16, 21, and 22, T29N, R17W (see Figure 2). Sections 33, T30N, R17W; 4, 9 (W¼), 16 (W½), and 22, T29N, R17W are controlled by American Heavy Minerals (Warren Mallory, General Manager) an associate of Apache Oro Company. The east half of Section 16, T29N, R17W is controlled by Andy and Ken Garritson, in the form of a 20 year Arizona state lease. The east 3/4 of Section 9 and all of Sections 15 and 21, T29N, R17W are owned (surface and mineral) by Santa Fe Railroad.

PROPOSED TARGETS

Three basic targets are envisioned for the Lost Basin area: (1) fossil eluvial bench placers within the Muddy Creek Fanglomerates (Miocene to Pliocene); (2) possible detachment related gold occurrences at the contact of the Muddy Creek Fanglomerate with the underlying Precambrian X basement rocks; and (3) epithermal gold associated with possible episyenitic plugs to breccia pipes along N15°E trending Basin and Range structures.

1. Fossil Eluvial Bench Placers

The Muddy Creek Fanglomerate was deposited by coalescing southeast trending alluvial fans off of the Lost Basin Range to the west which infilled a N15°-20°E trending graben called the Grand Wash Graben, during mid-Miocene to early Pliocene time (see Figure 3). Source rocks for the Muddy Creek Fanglomerate were the Precambrian X (monzogranite intrusives, granite-gneiss, schist and amphibolite with minor banded iron formation) basement rocks of the Lost Basin Range immediately to the west. Gold mineralization exposed within these Precambrian X basement rocks along the core of the Lost Basin Range to the west is hosted by narrow quartz-carbonate, (base metal, sulfide-rich) veins 2 to 5 feet wide which are associated with a late Cretaceous to early Tertiary two mica monzogranite intrusive at

depth; and/or occurs at the contact of pegmatite intrusives (Precambrian Proterozoic or late Cretaceous) into gneissic granite to schist. The Laramide two mica peraluminous monzogranites acted solely as a heat source to remobilize background gold from the Precambrian X host rocks and concentrate it along north-south and east-west structures within the Precambrian basement rocks.

The Muddy Creek Fanglomerate is a semi-consolidated alluvial fanglomerate consisting of intercalated conglomerate, sandstone, siltstone-mudstone, and mudflow breccias with lenses or beds 3 to 5 feet thick of rhyolitic ash fall tuff at its base. Fossil eluvial bench placers occur within the top 50 to 100 feet of the Muddy Creek Fanglomerate within the east half of Section 16, T29N, R17W. Numerous backhoe trenches about the central portion of Section 16 (Garritson state lease) expose 1 to 3 foot thick red clay mudseams or mudflows from which coarse placer gold nuggets (< 1/10" to 3/4") have been dry placered. There are as many as 3 to 4 of these red clay seams or benches over a 10 to 15 foot deep trench or backhoe cut. Andy Garritson claims to have dry placered 100 ounces of gold (coarse gold only) from one of these red clay mudseams over a trench cut 300 feet long, 10 feet wide, and 3 feet deep (100 ounces of gold per 500 tons of mixed red clay-mudstone and gravel = 0.20 opt Au). The semi-consolidated fanglomerate material (angular fragments of Precambrian X basement rocks ranging from gravel to cobble size) also contain gold bearing quartz vein fragments. The Garritsons have also recovered gold values (.01 to .03 ounces per cubic yard) from caliche cemented angular fanglomerate lenses 2 to 5 feet thick above and below the red clay-mud seams or mudflows.

Gold Source

Four distinct types of gold bearing quartz vein fragments have been noted by the Garritsons within the Muddy Creek Fanglomerates about Section 16 of the Lost Basin area:

1. Chalcedonic to opaline quartz vein fragments (epithermal) and also sub-rounded grains within ragged edged gold nuggets from the fossil eluvial bench placers.
2. High temperature greasy quartz veins (cristobalite) alternating with ferrocarbonate (ankerite) veins.
3. Brecciated to fractured, dull to light gray quartz with strong hematite rich vugs after pyrite and/or chalcopyrite (mesothermal).
4. Buff to light creamy white (possible intermixed adularia) vuggy boxwork quartz veins (epithermal).

It is evident that both epithermal and mesothermal quartz vein material contributed to the fossil eluvial bench deposits within the Muddy Creek Fanglomerate. The USGS has conducted detailed geochemical studies of the gold bearing lode quartz veins, placer gold, and the gold bearing episyenitic rocks of the Gold Basin and Lost Basin areas (USGS Professional Paper 1361, Theodore, Blair, and Nash-1987) and has found that the ratio of silver:gold in the present day lode quartz/carbonate veins (10-20:1) exposed in the Lost Basin Range to the west of Section 16, is much higher than that of the placer gold which averages 900 fine. This indicates possibly a different source for the placer gold or that the bulk of the placer gold came from the now eroded upper portions (epithermal) of the

present day lode quartz vein which would have been lower in silver and base metals. Heavy mineral concentrates taken by the USGS of gold bearing quartz lode veins, placer gold nuggets, and gold bearing episyenitic rocks, have shown that the overall abundances of rare earth elements (Th, U, V, Ce, and La) and rare earth element ratios of the placer gold samples are very similar to the rare earth signatures of the gold bearing episyenitic rocks of suspected mid-Tertiary age. These episyenite plugs and breccia pipes may have been late stage magmatic differentiates containing highly potassic residual liquids enriched in H_2O, HF, CO_2, Zr, and Au, which originated from the same magma chamber as the Laramide two mica monzogranites.

Average Grade

Previous placer operation (King Tut, Lone Jack) which operated between 1933 and 1940, recovered only 2000 to 5000 ounces of gold from recent alluvial gravels in the existing washes or arroyos to only 6 to 10 foot depths. Reported average grades for these operations were 0.035 ounces per cubic yard (= .023 opt Au using a density factor of $18ft^3$ per ton). These placer operations only recovered coarse visible gold which probably accounted for only 40% to 50% of the gold actually present. The source for these alluvial placers was the fossil eluvial benches within the underlying Muddy Creek Fanglomerate. Better grades were encountered within these alluvial placers where arroyos dead-ended into east-west ridges comprised of Muddy Creek Fanglomerates. From 1974 to 1975, Vanguard Partners and Western Contracting bulk sampled some 140 backhoe trenches about Sections 4, 9, and 16, T29N, R17W. Most trenches were dug in recent drainage bottoms but some were dug into adjacent slopes and ridges. One cubic yard samples were processed through a Denver Gold Saver and a 6 foot Hungarian riffle box, thus the ultra fine gold was not recovered (can account for 50% to 60% of the total gold content). The coarse gold bearing drainages and possible fossil eluvial benches gave values of 0.02 to 0.03 ounces Au per cubic yard. Some 37 of the 140 samples taken were, however, barren of gold. Most of these barren samples were from reworked pediment gravels and/or gravels from the lower reaches of the recent drainage bottoms.

From 1976 to 1979 Resources International Partners drilled some 551 percussion air holes to 50 foot depths in Sections 4, 9, and 16 adjacent to the contact of the Precambrian X basement rocks with the overlying Muddy Creek Fanglomerates. These drill holes indicated an average grade of 0.0174 ounces Au per cubic yard over a 50 foot thickness within the Muddy Creek Fanglomerates. The sample recovery was poor for this drilling operation and a coarse gold problem was not accounted for (only standard fire assays, not screen fire assays), thus the actual average grade was probably much higher.

The USGS spent considerable time evaluating the Placer potential of the Lost Basin area, and in 1969 (USGS Professional Paper 650-A) estimated that the average grade of the past alluvial placers was probably .04 to .05 ounces per cubic yard and that of the parent fanglomerate (Muddy Creek) .01 to .02 ounces gold per cubic yard. An average of the alluvial and fanglomerate grades gives 0.03 ounces gold per cubic yard.

The fossil eluvial bench placers within the Muddy Creek Fanglomerate have never been worked except by the Garritsons in the east central part of Section 16, T29N, R17W.

Drilling by the Garritsons (5 holes about the central portion of Section 16) using a conventional rotary drill rig, revealed detectible gold in pan concentrates to depths of 95 feet within the Muddy Creek Fanglomerate. However, no quantitative assays on drill cuttings have been determined. Extensive sampling about Section 16 by the Garritsons from 1941 through 1991, using a rocker sluice box, has indicated that if all the coarse gold is weighted and the black sand concentrates containing the fine gold are fire assayed, the fanglomerate will run 1 gram (0.0322 ounces) of gold to the cubic yard on an average. This is in agreement with the past placer production and extensive surface sampling described above. One cubic yard equals 27 cubic feet and thus using a density factor of 18 cubic feet per ton (standard for gravel) there are 1.5 tons per cubic yard. Therefore, 0.0322 ounces per cubic yard is equivalent to 0.0215 opt Au. It is somewhat risky to assign an average grade of 0.0215 opt Au to depths greater than 10 to 15 feet, since most trenching within the Muddy Creek fossil eluvial benches only go to a maximum depth of 15 feet. However, as described above, Resources International did encounter grades to 50 foot depths in their drilling about Sections 4, 19, and 16, and the Garritsons have panned colors out of drill hole cuttings to depths of 95 feet.

The Garritsons have noted that the best placer gold values about Sections 4, 9, 16 and 22 seem to occur in a band some 500 to 1000 feet wide immediately east of the 4000 foot elevation contour. The 400 foot contour may represent a natural paleo sluice-slope or angle about which the coarse gold eroded out of the gold bearing, quartz carbonate veins (and/or epithermal veins associated with the episyenitic pipes or plugs) to the west within the Lost Basin Range, was deposited within a high energy alluvial fan environment.

Potential Size

The potential size of the fossil eluvial placer deposit about Section 16, T29N, R17W, can be estimated as follows:

$$\frac{\text{length x width x thickness}}{\text{density of gravel}}$$

$$\frac{(5280')\ (1000')\ (100')}{18\ ft^3/ton} = 29{,}333{,}333 \text{ tons @ } .0215 \text{ opt Au} = 630{,}667 \text{ oz. contained}$$

The 1000 foot wide band of fossil eluvial gold placers about the 4000 foot elevation contour could possible extend an additional 3 miles to the north into Sections 4 and 9, T29N and Section 33, T30N, R17W, and 1 mile to the south into Section 22. All of these sections have been dry-placered in the past for gold contained within the alluvial gravels along the present day washes, with minor gold recovery noted. Thus, there could potentially be 5 x 630,667 oz. = 3,153,335 contained ounces of gold within the Muddy Creek Fanglomerate of the Grapevine Mesa about the eastern side of the Lost Basin Range. In Professional Paper 650-A, 1969, the USGS estimated a potential resource of 500 million cubic yards grading .01 to .02 ounces gold per cubic yard for 5 to 10 million contained ounces.

Recovery Methods for Coarse and Fine Gold

Potential recovery techniques and costs of producing a deposit averaging only .0215 opt Au, are somewhat in question. The Garritsons have done some experimenting with recovery schemes and think that you should be able to recover 75% to 80% of the contained ounces using a combination of gravity separation (for the coarse gold) and closed circuit, agitated vat leach (cyanide) and/or cyanide heap leach for the fine gold (micron size), which they believe comprises 50% to 60% of the contained gold. The Muddy Creek Fanglomerate is only loosely consolidated and rips easily with a D-8 cat and thus won't have to be drilled and blasted, or even crushed, because it consists of gravel to cobble sized angular fragments with very few boulders greater than 2 feet in diameter. Run of mine material could be run through a large tumbler or trommel (gravel pit operation type) without baffles, to break up the caliche zones and red clay seams (contain pay zone nuggets). The material coming out of the trommel should be screened to -3/4". The coarse reject (+3/4") should be scanned with a metal detector for possible coarse gold nuggets. The screened -3/4" material would then be run through a Garritson designed wet sluice box equipped with vibrating rockers and specially designed baffles (tops concave downwards). Caustic soda would be added at the top end of the shaker sluice box to break down organics and MnO_2 coating gold fragments, so they won't float off the top of the vibrating sluice box. Organics and/or MnO_2 are only expected in the top 10 to 15 feet of the Muddy Creek Fanglomerate due to dense Joshua and Yucca Tree and various desert shrub brush cover. Thus, the top 10 to 15 feet should be stripped initially and run only through the trommel and vibrating sluice box to recover only the coarse gold. For material mined beneath the organic cover (> 15 foot depth), coarse gold would be collected from the riffles at the end of the shaker sluice box along with any visible gold within the black sand concentrates (a magnetic separator may be used in this step). The stripped black sand concentrate along with the 3/4" material which goes over the baffles would then be collected and fire assayed. Black sand concentrates assaying greater than 0.10 opt Au would go directly to the closed circuit, agitated vat leach mill. Concentrates assaying less than 0.10 opt Au but greater than .015 opt Au could be mixed with the 3/4" material which assays greater than 0.015 opt Au, and cyanide heap leached.

To be economically feasible, the trommel and shaker sluice box would have to be able to process 1000 cubic yards of material per day. A water source is available in the southeast corner of Section 3, T29N, R17W. This well was drilled by Resources International Partners in 1977 to a depth of 1340 feet and had a capacity of 4000 gallons per minute.

Recommendations for Garritson's Section

The Garritsons have a 20 year lease (just renewed at the end of 1991) with the State of Arizona, and pay a rental fee of $1 per acre per year and the state retains a 5% gross proceeds royalty.

I recommend initially drill a fence of 10 holes on 100 foot centers to 300 foot depths about the central portion of Section 16, immediately east of the ~~400~~ 4200 foot elevation contour, in the vicinity of the Garritson drill holes that showed colors in pan concentrates to a depth of 95 feet. Four of these 10 holes should be drilled to the Precambrian bedrock (500 to 700 feet), to test for possible mineralization along a suspected low angle detachment surface between the Muddy Creek Fanglomerate and the Precambrian-X basement rock. A reverse circulation Canterra rig equipped with a center return hammer, should be employed to assure optimum recovery of coarse and fine gold from the drill hole, and to minimize drill site construction costs. The entire 5 foot reverse circulation sample should be saved and split into an assay and metallurgical sample, to be stored in Tri-combined Resources polyester bags to insure that no fine gold is lost. The assay split sample should be screen-fire assayed, at -80 mesh, to account for any coarse gold encountered. For those screen-fire assay samples which display values of >0.015 opt Au, the second metallurgical split could then be weighed and run initially through a Denver Gold Saver to recover and weigh any visible coarse gold. All the material (minus any coarse gold) passing through the Denver Gold Saver should also be run through a Garritson designed vibrating wet sluice box to recover and weigh any visible gold missed by the Denver Gold Saver. The black sands removed from the riffles of the Garritson vibrating sluice box should be panned to recover and weigh any additional visible gold. The stripped black sands containing micro-fine gold should then be fire assayed (pan concentrate assay be American Assay Labs). Both the fine and coarse material passing over the baffles of the vibrating sluice box should be collected in Tri-Combined Resources polyester bags, dried and also fire assayed. This suggested sampling and assaying technique will be both time consuming and expensive but will be one way to approach an accurate assay by eliminating the nugget effect caused by coarse gold and assuring that most of the fine gold is accounted for. Bulk backhoe trench samples from the more productive Muddy Creek Fanglomerate horizons exposed at the surface about the east half of Section 16, could also be run through the Denver Gold Saver and Garritson vibrating sluice box, using the same assaying and sampling procedures described above.

2. Possible Detachment Related Gold Occurrences

The lower part of the Muddy Creek Formation consists of well-bedded mudflows and rhyolitic air-fall tuffs with intercalated tuffaceous sedimentary rocks and porphyritic hornblende andesite to basalt flows. These volcanic to vocaniclastic units may be time equivalents to the Mount Davis Volcanics or the Patsy Mine Volcanics Groups of the Black Mountain Range to the southwest of the Lost Basin Range, where gold occurrences are noted along the Black Mountain Detachment, with tilted volcanics on the hangingwall and Precambrian-X rocks in the footwall of the detachment.

The Cyclopic Mine located within the White Hills, some 15 miles southwest of the Lost Basin property, produced (both open pit and underground) gold between 1904 and 1941 (reported 5000 to 7000 ounces at grades of better than 0.20 opt Au) from a Miocene-aged detachment fault between the Muddy Creek Formation and Precambrian-X basement rocks. Some 2 miles to the north of the Cyclopic Mine the lower plate Precambrian-X basement rocks are intruded by a Laramide-aged two mica monzogranite which displays episyenitic altered margins or cupolas to pipelike intrusive bodies, which locally contain disseminated gold associated with pyrite and fluorite (see Figure IV).

Gold mineralization is also associated with a low angle normal fault or detachment fault at the Van Deeman Mine, Located some 35 miles southwest of Lost Basin, within the El Dorado Mining District. The Van Deeman Mine is controlled by Fischer Watt Gold Company Inc. with estimated reserves of 1 to 2 million tons grading .031 to .055 opt Au (31,000 to 110,000 contained ounces). Gold mineralization is hosted by a thick package of shear to brecciated Precambrian through late Mesozoic crystalline rocks in the footwall of a regionally extensive, low angle normal fault and/or detachment fault. Brecciated to sheared host rocks display strong iron oxide clays, and sericite, pyrite quartz. The upper plate rocks consist of essentially unaltered Patsy Mine Volcanics (includes volcanics, volcaniclastic, and sedimentary rocks - conglomerates, sandstone and mudstone) which are steeply tilted to the west.

From 1976 to 1979, Resources International Partners drilled some 551 percussion rotary holes to 50 to 90 foot depths in Sections 4, 9, and 16, T29N, R17W, immediately adjacent to the contact of the Precambrian basement rocks with the overlying Muddy Creek Fanglomerates of Miocene to Pliocene age. Minor to moderate brecciation along with moderate quartz-carbonate to propylitic alteration are noted along this contact interpreted to be a possible detachment surface by Dederick (Master's Thesis "Geologic Investigation of the Apache Oro Mining Claims, Lost Basin Range, 123 pgs., New Mexico Institute of Mining and Technology, 1980). Resources International's drilling indicated intercepts of 30 to 95 feet of .03 to .07 opt Au over an area measuring 1000 to 1500 feet wide and some 2 miles along strike, along a suspected detachment surface. It is also conceivable that gold was concentrated within a thick residual weathering surface at the top of the Precambrian. Resources International's assay results are somewhat in question and could not be matched in twin holes drilled by Becker Drilling for AMAX in 1980 and by Billiton Minerals in 1989. Both Andy and Ken Garritson, along with Warren Mallory, contend that the sampling and assaying techniques employed by Becker and Billiton did not qualitatively determine the free gold present in the Muddy Creek Fanglomerate and/or Precambrian basement rocks. They were able to pan free gold from the tailings out the end of the Denver Gold Saver employed by Billiton, and Becker Drilling only fire assayed samples obtained with a reverse circulation rig.

3. Epithermal Gold Associated with Episyenitic Intrusives

As mentioned earlier in this report, heavy mineral concentrates taken by the USGS of both gold bearing episyenitic rocks and placer gold nuggets in both the Lost Basin and Gold Basin Ranges, displayed very similar abundances of rare earth elements (Th, U, V, Ce and La) and rare earth element ratios. These episyenite intrusives could also be termed

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feldspathic fenite (Sutherland, 1965) or microlinite as used by Hanekom (1965). They have a seriate texture (interlocking K-spar crystals) and are composed of 85% to 90% complexly twinned potassium feldspar and 1% to 4% quartz. Accessory minerals include pyrite (2% to 5%) which is gold bearing, fluorite and trace white mica. The episyenites of the Gold Basin/Lost Basin area display an overall composition and chemistry which is very similar to episyenitic alteration zones or fenites/mocrolinites associated with some carbonatite complexes (Toror Hills, Uganda and Palabora, South Africa).

Most of the episyenite intrusives found to date on the Lost Basin property occur as small 25 to 30 foot diameter plugs or pipes intruding the Precambrian-X basement rocks. Gold is visible with a ten power hand lens as discrete disseminations (<1% by volume of rock) and/or is associated with psuedomorphs (limonite and hematite) after pyrite which can make up to 5% to 10% by volume of the rock. I sampled a small (<30 feet across) episyenite plug exposed in a prospect pit about the southeast ¼ of the northeast ¼ of Section 17, T29N, R17W (just west of the Wall Street and Carl prospects), which ran .03 to .05 opt Au most likely associated with pyrite which made up to 3% by volume of the rock as small (1mm) disseminations. Strongly clay altered Precambrian basement rocks peripheral to the epysinite plug (up to 300 feet) also display anomalous gold ranging from 130 to 760 ppb Au.

The episyenite plugs and/or breccia pipes described above may have been late stage magmatic differentiates containing highly potassic residual fluids enriched in H_2O, HF, CO_2, SO_2, Zr and Au, which originated from the same magma chamber as the Laramide two mica monzogranites exposed in the Senator Mountain area of the Gold Basin to the southwest of Lost Basin (see Figures I and IV). The volatile bearing episyenitic intrusives were most likely intruded during Miocene extensional tectonics and were probably penecontemperaneous with detachment faulting. The USGS (Professional Paper 1361, Theodore, Blair, and Nash, 1987) has postulated that the gold bearing quartz/carbonate veins within the Lost Basin Range, are probably associated with a Laramide (Late Cretaceous/early Tertiary) aged two mica monzogranite intrusive at depth which is similar in composition to those exposed in the Senator Mountain area (Cyclopic Mine) of Gold Basin (See Figures III and IV). Gold bearing episyenite intrusives may take the form of later staged (mid-Tertiary) cupolas or breccia pipes above the Laramide aged two mica monzogranites. The two mica monzogranites are of batholithic proportions and probably remobilized substantial background gold out of the surrounding Precambrian-X basement rocks, some of which was expelled during Laramide intrusive activity. It is possible that gold bearing epithermal vein systems may have been generated above the episyenitic intrusives. Several parallel sets of north-south to N15°E trending Basin and Range type structures cross-cut even the overlying Miocene to Pliocene Muddy Creek Fanglomerate (formed the east tilted Grapevine Mesa) and may have been conduits for the gold bearing episyenitic intrusives. Warren Mallory and Ken Garritson have delineated several circular shaped drainage patterns within the Muddy Creek Fanglomerate, off of high altitude aerial photos, which may represent intrusive plugs or breccia pipes of possible episyenitic composition. Coincidentally, some of the best eluvial placer gold has been mined peripheral to these suspected episyenitic plugs to breccia pipes (Lone jack placer in Section 16 and the King Tut placer in Section 4 and 9). The placer gold nuggets recovered in this area have displayed ragged edges, are pitted and are flat on top and bottom suggesting vein gold eroded out of

source rocks in the immediate vicinity. During my field visits to the Lost Basin area, I found minor amounts of angular pyrite bearing episyenitic float rock abut the common ¼ corner of Section 4 and 9, T29N, R17W. These suspected photo interpreted episyenitic breccia pipe to intrusive centers need to be substantiated by trenching, detailed float mapping, and/or airborne geophysics.

APACHE ORO COMPANY

Minerals Division of Ideas inc

318 South 2nd Street
P.O. Box 730
Laramie, Wyoming 82070
307 742-6668 Cable: APACHE

May 10, 1985

Mr. John Jett, Director
Department of Mines and Mineral Resources
Mineral Building
Fairgrounds
Phoenix, AZ 85007

Dear Mr. Jett:

As discussed during our telephone conversation yesterday we would appreciate your consideration of informing us of reputable companies who might be interested in developing our 13,740 acres of gold lode and placer properties in Lost Basin, Mohave County, Arizona, described in the enclosed summary.

We are seeking a competent mining company to further explore and develop our gold lodes, and another to do the same for our gold placer.

Thank you for your consideration and we look forward to hearing from you.

Cordially,

APACHE ORO COMPANY

Warren M. Mallory

Warren M. Mallory
President

Enc: AO Summary, 5/1/85

WMM/pw

B-10

APACHE ORO COMPANY

Minerals Division of ideas inc

318 South 2nd Street
P.O. Box 730
Laramie, Wyoming 82070
307 742-6668 Cable: APACHE

May 17, 1985

Mr. John Jett, Director
Department of Mines and Mineral Resources
Mineral Building
Fairgrounds
Phoenix, AZ 85007

Dear Mr. Jett:

Reference is made to my letter of May 10 regarding our Lost Basin, Arizona, gold properties.

From May 20 to around June 3, I will be on the properties and can be reached through Mr. Boyd Harford, City Engineer's Office, Kingman, Arizona, phone (602) 753-5561.

Cordially,

APACHE ORO COMPANY

Warren M. Mallory

Warren M. Mallory
President

WMM/pw

WARREN M. MALLORY, P. E.
Engineering Consultant

318 SOUTH 2ND STREET - POST OFFICE BOX 730
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APACHE ORO COMPANY

Minerals Division of Tideway Inc

318 South 2nd Street
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Laramie, Wyoming 82070
307 742-6668 Cable: APACHE

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Telephone (503) 225-2111

E.J. Haines, President
First Interstate Bank of Laramie
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During the summer:
P.O. Box 349
Jackson, WY 83001
Telephone (307) 733-2177

Glenn Parker, Wyoming Supreme Court Justice, Retired
200 Boyd Building
P.O. Box 1346
Cheyenne, WY 82001
Telephone (307) 632-0541

George L. Winders, President
Electriduct Company
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P.O. Box 2415
Casper, WY 82602
Telephone (307) 234-5881

WYOMING
COLORADO
ARIZONA

AMERICAN HEAVY MINERALS, INC.

318 So. 2nd
~~XXXXXXXXXXXXXXXX~~ • Laramie, Wyoming 82070 • 307 742-2511 • Cable: AHM

AMERICAN HEAVY MINERALS, Inc.
(Incorporated in Wyoming in 1969)

BALANCE SHEET
October 31, 1984

ASSETS

Fixed Assets:		
Equity in Lost Basin, AZ operation (Cost since 1976) (*)	$571,797.67	
Other Assets:		
Research & Development (Cost)	$ 18,627.38	
Total Assets		$590,425.05

LIABILITIES

Current Liabilities:		
Notes payable		
Apache Oro Company, AHM-17	$179,277.59	
IDEAS, Inc., AH-16	151,340.60	
Accounts payable	1,263.67	
Total current liabilities		$331,881.86
Stockholders Equity:		
Common capital stock		
(Authorized 10,000,000 shares $ .01 par)		
Issued 2,607,339 shares	$ 26,073.39	
Payable 38,838 shares	388.38	
Treasury 2,853 shares	28.53	
Capital contributed in excess of par value	232,052.89	
Total equity		$258,543.19
		$590,425.05

Roland E. Duffy, Secretary

(*) Note: Cost does not include $925,092.36 invested by Apache Oro Company from 1961 to 1976 in acquiring, exploring, and maintaining the Lost Basin claims, nor does cost include normal interest and inflation on this initial investment. Also, cost does not include the approximate $2,000,000.00 RIP spent from 1976 to date on their development of a placer heap leaching operation and a placer gravity recovery system, nor does the cost include the untold hundreds of thousands of dollars spent by the USGS in their 15 years of research in the area, nor that spent in field studies by candidates for Masters Degrees at the Colorado School of Mines and New Mexico Institute of Mining and Technology. Total investment in developing Lost Basin exceeds $5,000,000.00 to date.

APACHE ORO COMPANY

Minerals Division of Ideas Inc

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307 742-6668 Cable: APACHE

APACHE ORO COMPANY
(Incorporated in Arizona in 1960)

BALANCE SHEET
October 31, 1984

ASSETS

Current Assets:		
Notes Receivable		
American Heavy Minerals, Inc., AHM-17	$179,277.59	
Deaderick, AO-JGD	50,000.00	
Accounts Receivable		
Stockholders	31,964.92	
IDEAS, Inc.	95,421.93	
		$356,664.44
Fixed Assets:		
Mining Claims (Cost)		
Jamestown Fluorspar Project (Colorado)	$ 20,271.61	
Ward Heavy Minerals Project (Colorado)	87,578.05	
Copper King Mine Project (Colorado)	23,356.74	
Alaska Partners Project (Cost)	39,183.03	
		$170,389.43
Other Assets: (Cost)		
Research & Development		$100,269.37
Total Assets		$627,323.24

LIABILITIES

Current Liabilities:		
Notes Payable		
Prine	$ 20,000.00	
Accounts Payable	47.71	
Total current liabilities		$ 20,047.71
Stockholders Equity:		
Common capital stock		
(Authorized 10,000,000 shares $ .01 par)		
Issued 2,607,339 shares	$ 26,073.39	
Payable 38,838 shares	388.38	
Treasury 2,853 shares	28.53	
Capital contributed in excess of par value	580,785.23	
Total equity		$607,275.53
		$627,323.24

Warren M. Mallory

Warren M. Mallory, President

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APACHE ORO COMPANY

Minerals Division of Tenneco

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Laramie, Wyoming 82070
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The following are some of the consultants affiliated with Apache Oro Company:

John C. Bellamy: Civil engineer and nuclear physicist. Recently retired Professor of Civil Engineering, University of Wyoming and a director of Apache Oro Co. Formerly Director of Natural Resources Research Institute; founding member of Western Interstate Nuclear Board; Associate Director of Cook Research Labs; special consultant to U. S. Army Corps; Director of Institute of Tropical Meteorology in Puerto Rico; and Bellamy & Sons Engineers whose major client was Sinclair Oil Co. Registered professional engineer and land surveyor, State of Wyoming. Certified consulting meteorologist. Awarded the Medal of Freedom by the President of the U.S., 1945; the Losey Award from the Institute of Aeronautical Sciences, 1945; and the Turlow Award from the Institute of Navigation, 1944. PhD in meteorology, University of Chicago, 1947. PhM in nuclear physics, University of Wisconsin, 1938. B.S. in civil engineering, University of Wyoming, 1936.

Louis W. Cope: Mining Engineer-Metallurgist. Independent consulting mining and process engineer on domestic and foreign projects since 1966. Specialties are placer and lode gold, silver, base and non-metallic metals. Efforts include full range of mine and mill planning, feasibility, rehabilitation, construction, start-up and trouble shooting. Prior to 1966, professional employment with American Metal-Climax, Inc., ASARCO, Inc. and Union Carbide Corporation, as well as smaller firms. Registered professional engineer, State of Colorado. B.S. in mining engineering-metallurgy at the University of Texas at El Paso, 1950.

Alfred J. Deaderick: Geologist. Currently minerals geologist for Shell Oil Co. Formerly part-time field geologist for Public Service Company of Oklahoma, Wyoming Geological Survey, Superior Oil Co., University of Wyoming Geology Department, and Ozark-Mahoney Mining Co. M.S. in geology, New Mexico Institute of Mining & Technology, 1980. B.S. in geology, University of Wyoming, 1976.

Walter E. Duncan: Mineral engineer. Recently retired Director of Natural Resources Research Institute and presently is advisor to Lost Basin Mining and Apache Oro Company. Formerly Professor of Mineral Engineering at University of Wyoming and mineral engineer for Ozark-Mahoning Mining Co. Specialty areas are mineral processing, utilization, specifications, identification and analysis. Registered professional engineer, State of Illinois. Professional degree in mineral engineering at Montana School of Mines, 1960. Three years of graduate work in metallurgy at University of Missouri, 1938. M.S. in metallurgical engineering at Montana School of Mines, 1934. B.S. in chemical engineering at Montana School of Mines, 1933.

Edward J. Krish: Exploration geologist. Currently senior minerals exploration geologist for Kerr-McGee Resources. Formerly exploration geologist for Texas-Gulf, Inc., Exxon Corp., U.S. Geological Survey, and Sunray DX Oil Co. M.S. in Geology, Colorado School of Mines, 1974. B.S. in geology, University of Texas, 1971.

Warren M. Mallory: Exploration engineer. Currently consultant with Banner Associates, Managing Partner of Lost Basin Mining and President of Apache Oro Co. and IDEAS, Inc. Formerly President of P & M Building Co.; member of International Committee, U.S. Chamber of Commerce; Professor of Electrical Engineering, University of Wyoming; electrical design engineer for U.S. Bureau of Reclamation and Naval Research Laboratories; and geophysical engineer for Magnolia Petroleum Co. Licensed professional electrical engineer, State of Wyoming. Patentee in both electrical engineering and minerals identification. Professional Electrical Engineer degree, University of Colorado, 1950. B.S. in electrical engineering, University of Colorado, 1941.

Frank J. Sander: Electrical engineer. Currently advisor to Lost Basin Mining and Apache Oro Co.; President of Invention Activators, Inc.; and General Manager of Wyoming Information Systems Co. Formerly District Manager of Schlumberger Well Surveying Corp. Registered professional electrical engineer, State of Montana. B.S. in electrical engineering, University of Wyoming, 1950.

Lawrence E. Smith: Economic geologist. Currently advisor to Lost Basin Mining Company, Apache Oro Company, and other companies. Formerly 25 years as an independent consulting geologist to various mining companies; for 11 years previously was responsible for mining and exploration geology and geophysics for North Range Mining Company; and 6 years before as an economic geologist with the USGS. Completed all requirements for PhD in geology except submission and defence of thesis, University of California, 1948. B.S. in geology, Pennsylvania State College, 1942.

Robert B. Smith: Economic geologist. Currently President of R. B. Smith & Associates, Inc., consultants in base metal and uranium ventures. Formerly Manager of Regional Exploration for Westinghouse Uranium Operations Division; supervisory geologist for Humble Oil & Refining Co., Minerals Division; Manager of Mineral El Cantil; senior mine geologist for Homestake-Sapin Partners; mine engineer for Pictograph Uranium Corp.; and owner of Uranium Claims Co. Author of several published technical papers. Post graduate courses at Colorado School of Mines, International Business Machines, Casper College, Rice University, and South Dakota School of Mines & Technology. B.S. in geology, University of Texas, 1969.

Recently fired

Max L. Troyer: Exploration geologist. Currently advisor to Lost Basin Mining and Apache Oro Co. Formerly Deputy Chief of USAID/USGS program in Brazil. Acting Chief of the Astrogeology Branch of the U.S. Geological Survey; Professor and Administrative Geologist of U.S.G.S. to Brazilian government; coal specialist of U.S.G.S. to Taiwan government; geological work in Alaska, Wyoming, and Colorado. M.S. in geology, University of Wyoming, 1951. B.S. in geology, University of Wyoming, 1946.

Gunther Von Gotsche: Geological engineer. Currently an independent consulting geologist to Coronado Oil Co. and Buttes Resources. Formerly consultant to Tesoro Petroleum Corp. and Midwest Mining Co.; geological engineer for Amerada Petroleum Co., Chevron Oil Co., and Chilean Government Petroleum Corp. Author of several technical articles. B.S. in geological engineering, Colorado School of Mines, 1950. Two years of undergraduate work at Copiapo School of Mines in Chile, 1947.

Other experts: The foregoing consultants are personally acquainted with other experts in virtually every aspect of the minerals industry. Many of these experts are semi-retired individuals and their many years' of experience is available as needed. Thus, their pay is based only on the services rendered (like our consultants' pay).

Old-timers: Apache Oro Company is also affiliated with several retired old-time mining men who are extremely knowledgeable and experienced.

Other consultants: Although not directly affiliated with Apache Oro Company, various engineering, analytical, geophysical, geochemical, geological, and aerial photography consulting organizations are hired by Apache Oro Company for specific projects.

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APACHE ORO COMPANY

Minerals Division of ideas inc

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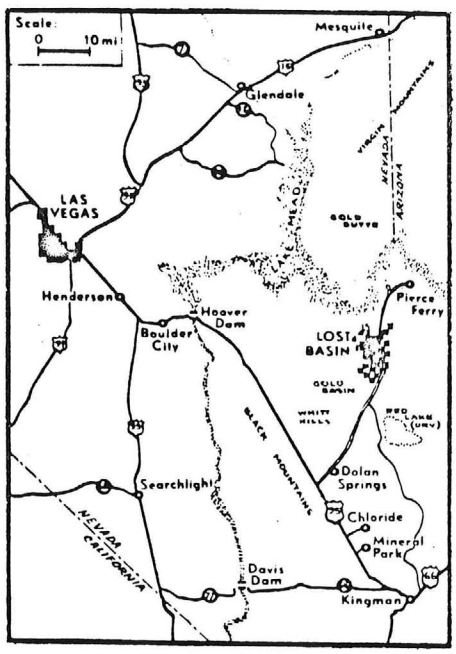
May 1, 1985



SUMMARY OF GOLD, SILVER, COPPER-MOLYBDENUM DEPOSITS OF LOST BASIN, MOHAVE COUNTY, ARIZONA

Description of Properties

The information which follows concerns an unusually large gold placer, large gold-bearing breccia zones, a suspected buried gold porphyry, many small gold and silver veins, and a suspected buried copper-molybdenum porphyry all located just west of the Grand Wash Cliffs and south of the east end of Lake Mead in T28, 29, & 30N, R17 & 18W of northwestern Arizona. The properties, called the "Lost Basin Mining District" consist of about 21.5 square miles (13,740 acres) composed of 92 unpatented placer and 174 unpatented lode claims. The mineral rights of about 16 square miles of adjoining land is owned by Santa Fe Pacific Railroad Company, which has cooperated with Apache Oro in the district's development. The properties include a 7 mile length of low lying exposed Precambrian bedrock and the balance of the properties is made up of alluvial gravel beds up to at least 1,340 feet thick which form the basin to the east and alluvial fans to the west and south of the exposed bedrock. Bedrock occupies about one-third of the area, and the gold-bearing alluvial gravels blanket the other two thirds. See appended area map, "Lost Basin Placers & Lode areas."

General Considerations

Because the alluvial gold and mineralization of the breccia zones, metasomatic alteration bodies and veins covers such an unusually large area, the properties are considered by several consulting geologists and engineers to contain one of the largest potential new gold deposits in the United States. Published reports from studies by the USGS (U.S. Geological Survey) and recent drilling and sampling strengthens this belief. Also, considerable surficial exploration conducted by Apache Oro suggests a large buried porphyry copper-molybdenum deposit at depth which is further substantiated by research of the USGS and by graduate studies of students of the Colorado School of Mines, Pennsylvania State University, and New Mexico Institute of Mineral Technology.

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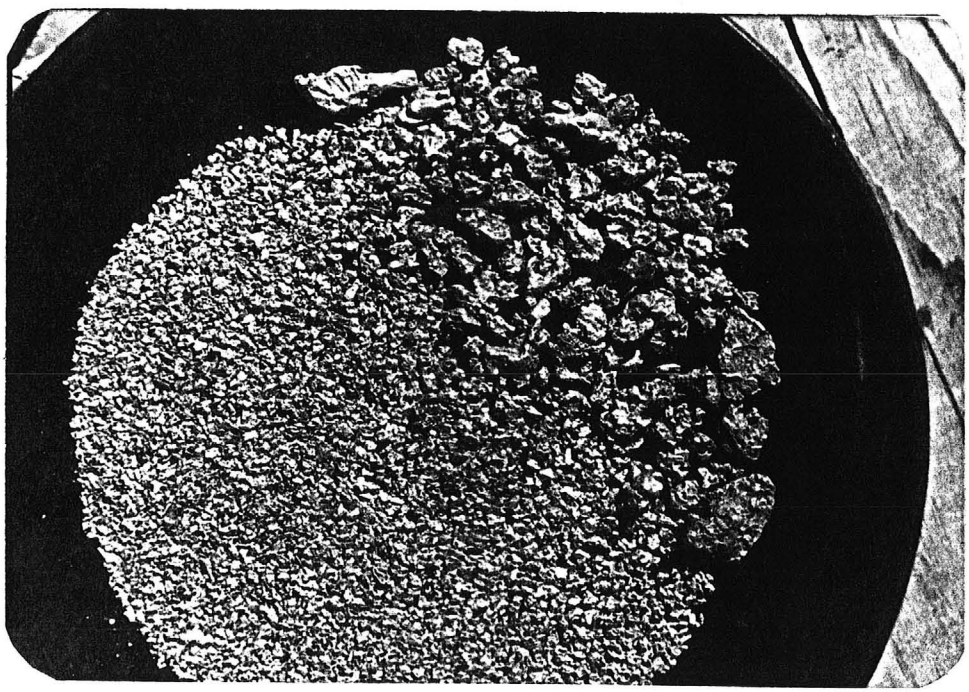
Lost Basin Mineral Potential

Gold Placer Deposits: The USGS in 1968 and 1969 published estimates that the potential placer gold resources "may exceed 500 million cubic yards of gravel averaging 0.01 - 0.02 oz. gold per cubic yard," (U.S. Geological Survey, Heavy Metals Program, Progress Report, Circular 560 and Professional Paper 650-A). Based on a price of $300 per ounce, this would add up to $1.5 billion to $3 billion. Many surface arroyos over a mile long have averaged 0.03 - 0.05 oz. gold per cubic yard and ancient channels (as yet, undeveloped) should average several times these surface values. Since 1968, the USGS (Denver) has been conducting an expanded research program of spectro-chemical analysis of the trace elements present in placer gold samples collected from many points in the area in an effort to determine the origin. (U.S. Geological Survey, Preliminary Report of the Geology and Gold Mineralization of the Gold Basin and Lost Basin Mining Districts, Mohave County, Arizona, 82-1052 Open File, 1982). The gold occurs both as nuggets ranging in size from a pinhead to over one ounce, and as widely disseminated flour gold from microscopic to visible particles. The majority of the nuggets are about 1/16 inch to 1/8 inch diamemter and have sharp, ragged surfaces and are not rounded and smoothed with wear, indicating limited travel. Secondary values of platinum, silver, tungsten and other heavy minerals have been found in the gold placer deposits.



Note ratio of coarse to average size nuggets and the sharp, ragged surfaces. (Photo about 50% actual size).

Gold Placer Sources: The placer gold nuggets are believed to have been formed from both hydrothermal solutions in the Laramide vein systems, breccia zones, and metasomatic alteration bodies, and from precipitation out of cold water mineralized solutions by bacteria and fungi which are suspected to form the larger nuggets around river-worn and metamorphosed sand, magnetite, and other alluvial particles often found inside the nuggets. Age dating and geological data indicate several different geologic periods and environments of gold mineralization.

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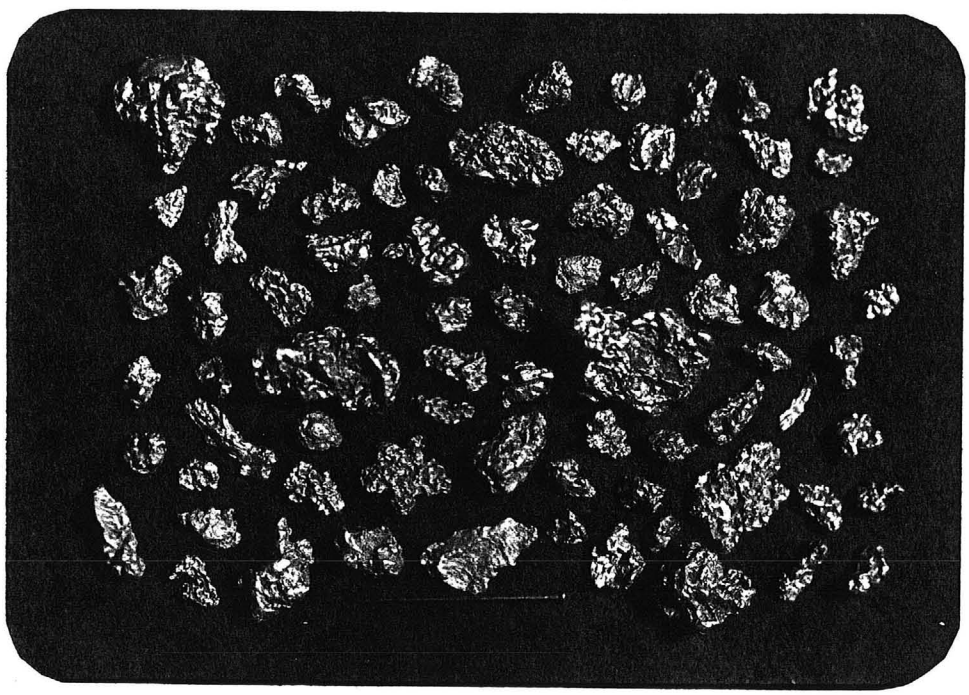
Gold Placer Sources (continued):

In the Summer of 1983, Apache Oro Company commissioned Lawrence E. Smith, Consulting Geologist with over 40 years of professional experience, to study the area and to review and evaluate the numerous geological, geophysical, and geochemical reports; the drill hole and channel sampling data; and the color stereo and satellite imagery photos which are listed in APPLICABLE REFERENCES at the end of this summary. Mr. Smith's resulting report, "Review and Evaluation, Geology and Mineralization of the Lost Basin Range, Mohave County, Arizona, October 23, 1984," is considered by most professionals personally acquainted with the area, to be the first comprehensive analysis which ties together all of the findings of the USGS and the several independent geologists who have studied the area, and which defines the source of the present surfacial alluvial gold concentrations. This source is composed of buried gold deposits which are the targets for future gold production.



Note sharp, ragged surfaces on most nuggets. (Photo about 75% actual size).

Production History of Gold Placer Deposits: Due to the unusual topographic position of the placer deposits (the most productive of which occur in alluvium only slightly below and to the east of the gold bearing metamorphic source rocks) and due to the lack of water, the gold placer deposits were not discovered until 1931) - - - not by prospectors, but by a rancher's wife who picked up a golf ball size gold nugget! From 1935 to 1937 the King Tut placer operation reported a recovery of 1,175 ounces of free gold from several short gulches averaging 0.035 oz./cu. yd. Several other small operations have been attempted to mine the placer gold since that time, but because of the inefficiency of small volume handling, lack of water, and the low price of gold for so many years ($35 per oz.), none of these operations have been successful.

During 1974 and 1975 spot sampling of the surfacial placer gravels in nine sections was made by Vanguard Partners, a limited partnership, and Western Contracting, an earth moving corporation. However, due to the random pattern of the richer concentrations of the surficial placer gold and the depression of gold prices (from $190 to around $120/oz.), sampling was discontinued.

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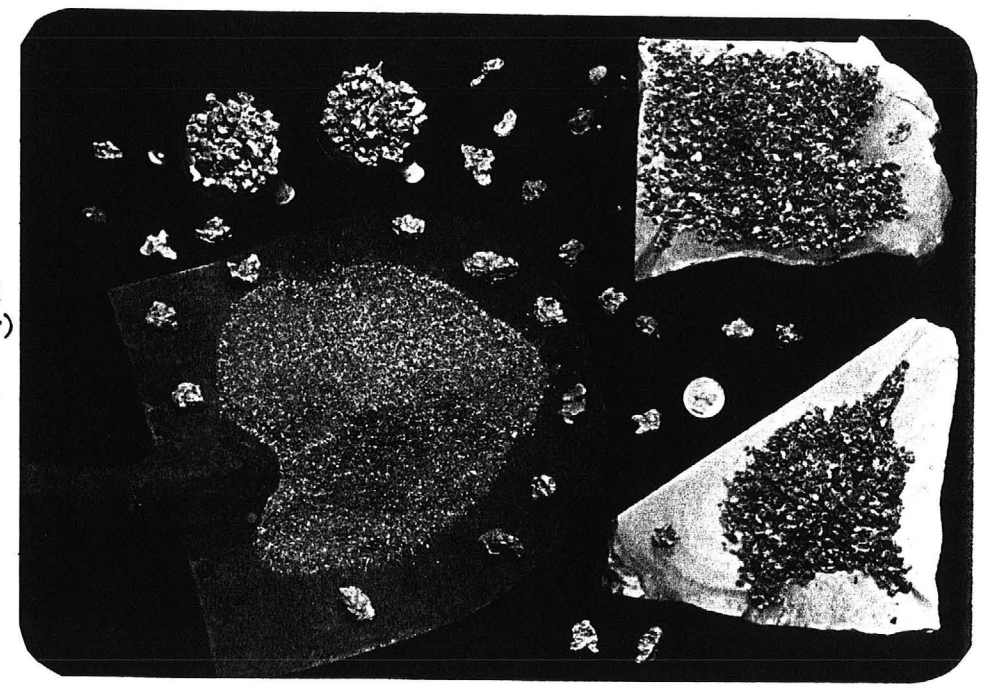
Production History of Gold Placer Deposits (continued):

In 1976, Apache Oro leased its properties to Resources International Partners (RIP), a limited partnership, who (in 1978) set up a wet placer system using water from a 1,340 foot well. Placer gravels from two narrow gulches to an average depth of 10 feet along the center line were dug by a front-end loader and then dumped onto a conveyor feeding a wet classifier from which (-)3/4" material was sluiced. Later, jigs were added at the output of the sluice for black sand recovery. After about five months of placering, RIP recovered 113 troy ounces of free gold, plus abundant black sands. However, RIP ceased operations due to exorbitant operating costs of $10.68/cu. yd. (about double the normal).

113 troy ounces of placer gold recovered by RIP. (Note quarter)



Gold Placer Leaching: RIP drilled 551 holes 50 feet deep at random in the alluvial gravels which were reported to average 0.0174 oz. gold per cubic yard. Subsequently, RIP set up a cyanide heap leaching operation in an attempt to leach the gold from the vugs and fractures of the alluvial gravels, as well as from free gold particles. Many problems were encountered in obtaining uniform and consistent wetting of the excessively large leach pile and overcoming the detrimental effects of carbon and manganese from the gravels and a cyanide polymer which was formed. Also, several problems were encountered in obtaining satisfactory separation of the gold and other metals from the pregnant solution. An ion exchange process and a zinc separation method were attempted with little success. Subsequently, leaching operations were stopped until satisfactory solutions to the problems could be found. RIP now reports after several years of research that they have found the solutions to the problems they encountered.

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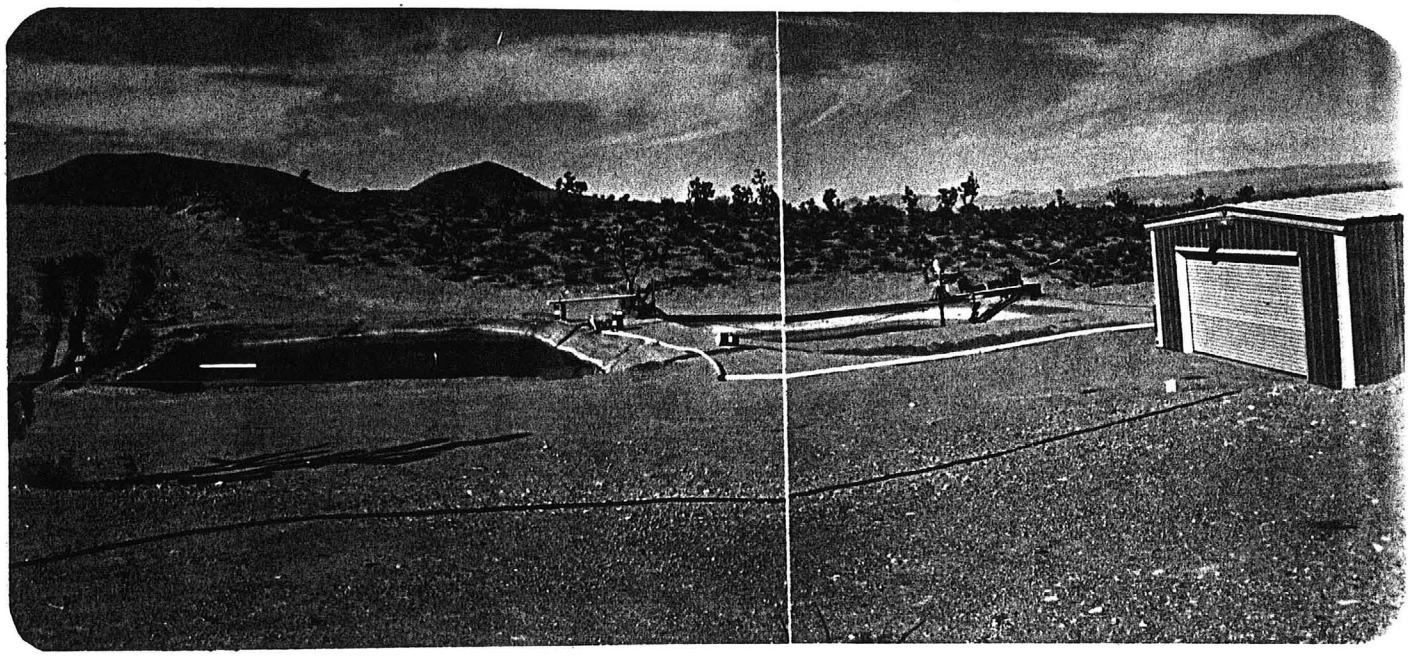
Gold Placer Leaching (continued):



Pregnant cyanide pond (left), and building (right) of RIP's metals separation system

Gold Mineralized Breccia Zones: These are evident at the contact of the eastern alluvial gravel deposits and the adjacent bedrock to the west. Recently, one mineralized breccia zone over two miles long and up to ¼ mile in width has been surficially explored (50 foot drill holes) indicating the potential for a large open-pit low-grade gold operation. Also, a 240 foot core hole was drilled in this breccia zone and the drill sludge assayed 0.08 oz. gold/ton.

Gold Porphyry: An iron-stained circular depressed area, called "Red Basin", in bedrock about ½ mile in diameter is believed to cover, or be adjacent to a suspected gold porphyry. An 86 foot deep percussion drill hole near the center of this red area averaged 0.05 oz. gold/ton over the entire 86 feet. To the north of "Red Basin" is a 27 ft. wide gold bearing north-south ankerite zone about ¼ mile long.

Gold Bearing Quartz Veins: Apache Oro has found 52 different quartz veins exposed in the exposed bedrock that contain visible native gold. Also, several hundred other veins contain silver, copper and lead. Over 6,000 rocks with visible gold in vugs and fractures have been collected from exposed outcrops. The visible vein gold consists of thin flakes, just barely visible to the naked eye, with occasional flakes as large as 1/16 inch diameter, usually found in red or brown hematite after chalcopyrite and pyrite in spongy boxworks of vuggy and brecciated quartz. Assays show gold values from a few dollars up to several hundred dollars per ton of ore shoots in quartz veins a few inches to over seven feet in width.

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Copper-Molybdenum Bedrock Deposits: The existence of a buried porphyry copper-molybdenum deposit is suggested by exploration conducted by qualified consultants for Apache Oro and by research of the USGS. This suggestion results from the following observations:

1) An apparent metal zoning pattern consisting of a gold-rich outer halo enclosing a band of silver-lead-zinc deposits, centered on a copper area.

2) Recent spectrochemical analysis by the USGS (Denver) of accessory metals in native gold samples from surrounding veins suggests nearby porphyry copper-molybdenum mineralization which coincides with the apparent metal zoning pattern.

3) Recent graduate research by a student of the Colorado School of Mines in comparing the relationship of trace element distribution to the level of erosion in some producing porphyry copper deposits (Silver Bell and Esperanza) in Arizona with prospects (Lost Basin, Arizona, and Bella Esperanza, Mexico) showed a definite correlation in mineral zoning between Lost Basin and the two producing porphyry copper deposits.

4). The presence in many rock and soil samples from the properties of geochemically anomalous amounts of gold, silver, copper, lead, zinc, molybdenum, nickel, chromium, barium, arsenic, vanadium, mercury, indium, cadmium, antimony, thallium, manganese, and tellurium.

5) The existence of high amounts of mercury associated with gold veins and with the few exposed copper occurrences suggesting that both types of deposits are genetically related and younger than Precambrian.

6) An isotopic age on vein material indicating that the veins are of Laramide age (approximately 70 million years old) - - the same general age as that of many porphyry copper deposits of the southwestern United States.

7) An aeromagnetic pattern consisting of a magnetic low in part centered on the exposed copper section of the area, and surrounded by a discontinuous band of aeromagnetic highs apparently produced by epigenetic introduction of magnetite, along with vein quartz. This magnetic discontinuity has been confirmed at high altitude by the USGS.

B-2

Copper-Molybdenum Bedrock Deposits (Continued):

Forty miles to the south, the Duval-Pennzoil copper-molybdenum mine at Mineral Park, Arizona, exhibits similar geologic features, but its surface erosion is at least several hundred feet deeper, thus making the near surface indications of the deposit much more obvious than those at the Lost Basin Properties.

Water: A 1,340 foot deep water well in the alluvial gravels has been drilled about two miles east of exposed bedrock and engineering estimates indicate a capacity of 4,000 gallons per minute. The eight inch diameter and present pump capacity limit the flow to about 600 gallons per minute. The well is located in an indicated major fault zone suggested by Apache Oro and USGS aerial photographs and by ERTS high altitude satellite photographs. Several water wells drilled in the alluvial gravels about one mile to the east of this fault zone have produced water at depths from 450 to 900 feet and at pumping rates from 20 to an estimated maximum capacity of 300 gallons per minute.

Exploration Completed: In addition to the foregoing, the following has been conducted on Apache Oro's Lost Basin properties and the results are given in the reports listed in the appended APPLICABLE REFERENCES:

Geologic mapping.
Color stereo aerial photography.
Total intensity airborne magnetic survey.
Total intensity airborne scintillation survey.
Induced polarization survey, 7 lines.
Gravity meter profile, north-south.
Metal zoning survey.
Mapping of occurrences of Princesplume (Stanleya Albescens) indicating anomalous mineralized zones in alluvial gravels.
Assays of several veins, including the mapping of one major vein in an old mine.
Age dating of vein material by potassium argon method.
24 percussion drill holes (average 80 feet deep) and over 100 holes (average 50 feet deep) in the gold breccia zone just west of the eastern alluvial gravels.
One core drill hole (240 feet deep) in the foregoing breccia zone.
12 cable-tool drill holes (average 100 feet deep) in the eastern alluvial gravels.
551 percussion drill holes (average 50 feet deep) in the eastern alluvial gravels.
Bulk sampling of over 140 backhoe trenches (average of 5 feet deep) in over 30 alluvial placer gulches.
Construction of more than 35 miles of roads.

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Technical Direction: Apache Oro has worked in Lost Basin with over 20 prominent consultants and their associates in the fields of exploration (geophysical, geochemical, and geological), metallurgy, mining and milling during the past 24 years. Also, from 1968 to date, several top-level research personnel of the USGS and graduate students of two universities have conducted research on the geology and mineralization of Apache Oro's properties in Lost Basin.

Costs to Date: Over $5 million total. Apache Oro has spent slightly over $1.5 million since 1961 in acquiring and maintaining the properties and for aerial and surface exploration. RIP reportedly spent approximately $2.0 million since 1976 in mining development. The costs of 15 years of research by the USGS and field studies by candidates for Masters Degrees at the Colorado School of Mines and New Mexico Institute of Mining and Technology exceed a minimum of $1.5 million.

Apache Oro Company: Incorporated in Arizona in 1960, Apache Oro Company is headquartered in Laramie, Wyoming. It is a privately held company engaged in minerals exploration and its assets consist almost entirely of various mining properties in Arizona and Colorado. The company relies upon consultation and direction from independent professional geologists and engineers. In 1976, the company transferred its mining properties in Lost Basin to American Heavy Minerals, Inc. (AHM) and Lost Basin Mining (LBM), a limited partnership. Stockholders own the same percentage interests in the three companies. LBM was set up for stockholders to take gold "in kind" in order to pay tax on their income only when they sold their gold. These are privately held companies and the stock is not traded on the public market. IDEAS, Inc. is one of the stockholders (of about 255) and has furnished the capital in the past to finance the three companies.

Future Development: In order for these properties to be developed successfully, the various mineral deposits must first be adequately studied by further geophysical, geological, and geochemical surveys to assist in pinpointing the targets for future drilling to block out mineable ore bodies. Apache Oro does not want future potential lessees, or joint venture partners, to erroneously think that they can start immediate mining production (like some groups have wrongly concluded in the past) before adequate ore body delineation and pilot plant studies have been completed.

As shown in APPLICABLE REFERENCES, pages 9 and 10, considerable general basic data has been developed covering the area. This provides a base for further detailed studies to assist in outlining mineable ore bodies, such as ancient gold placer channels under the surficial alluvial gravels, a suspected buried gold porphyry, mineralized veins and pipes, mineralized breccia zones, and a suspected buried copper-molybdenum porphyry.

B-23

APPLICABLE REFERENCES
LOST BASIN MINING DISTRICT, MOHAVE COUNTY, ARIZONA

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Horton, Jack O., December 23, 1963, Letter to Apache Oro Company describing field test of Jalander Magnetometer on Apache Oro's gold placer, 2 p., plus description of Jalander Magnetometer, 3 p.

Krish, Edward J., 1974, Relationship of Trace Element Distribution to Level of Erosion in Some Porphyry Copper Deposits and Prospects, Southwestern U.S. and Northwestern Mexico, 138 p., Colorado School of Mines.

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Mallory, W. M., February 1967, Apache Oro Deposits, 16 p.

"_____, 1967 - 1974, Mineralization Plot, plus USGS enlarged photos (4"=1 mile), 6-30-58, GS-VVB, prints 3-74 and 3-76.

"_____, March 3, 1970, Letter to E. V. Post, 2 p., plus excerpt from "Poisonous Plants of the United States and Canada," 4 p.

"_____, March 18, 1970, Factors indicating the possibility of a large copper porphyry (?), Lost Basin Mining District, Mohave County, Arizona, 1 p.

APPLICABLE REFERENCES (continued)

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"_____, June 10, 1970, Addendum to: Post, E. V., Porphyry Copper Potential Apache Oro Properties Lost Basin Range, Mohave County, Arizona, March 1970, 1 p.

"_____, January 1, 1971, Thoughts on the Porphyry Copper Potential of Apache Oro Properties. Lost Basin Mining District, Mohave County, Arizona, 2 p.

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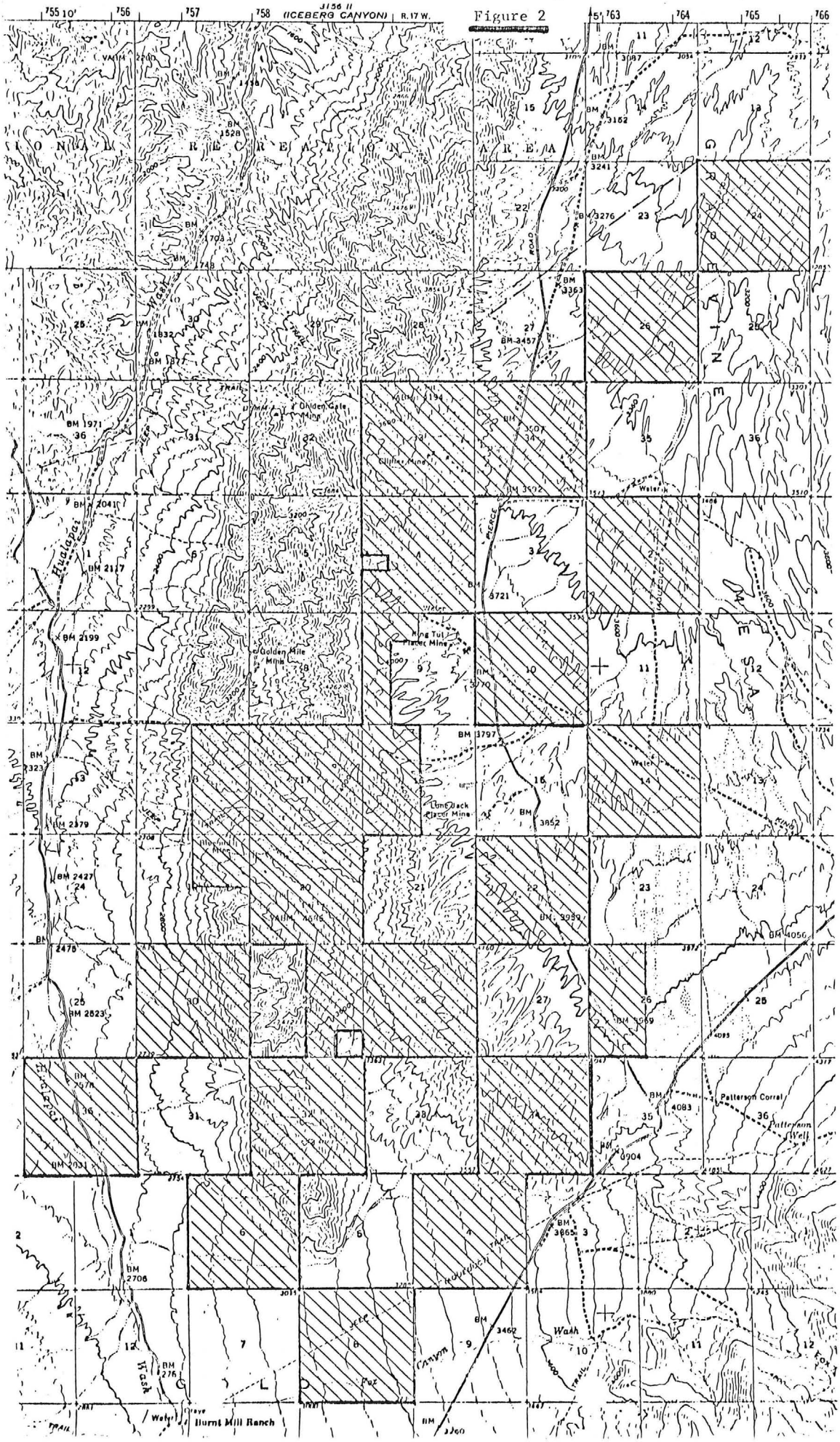
Holdings of Apache Oro Co.

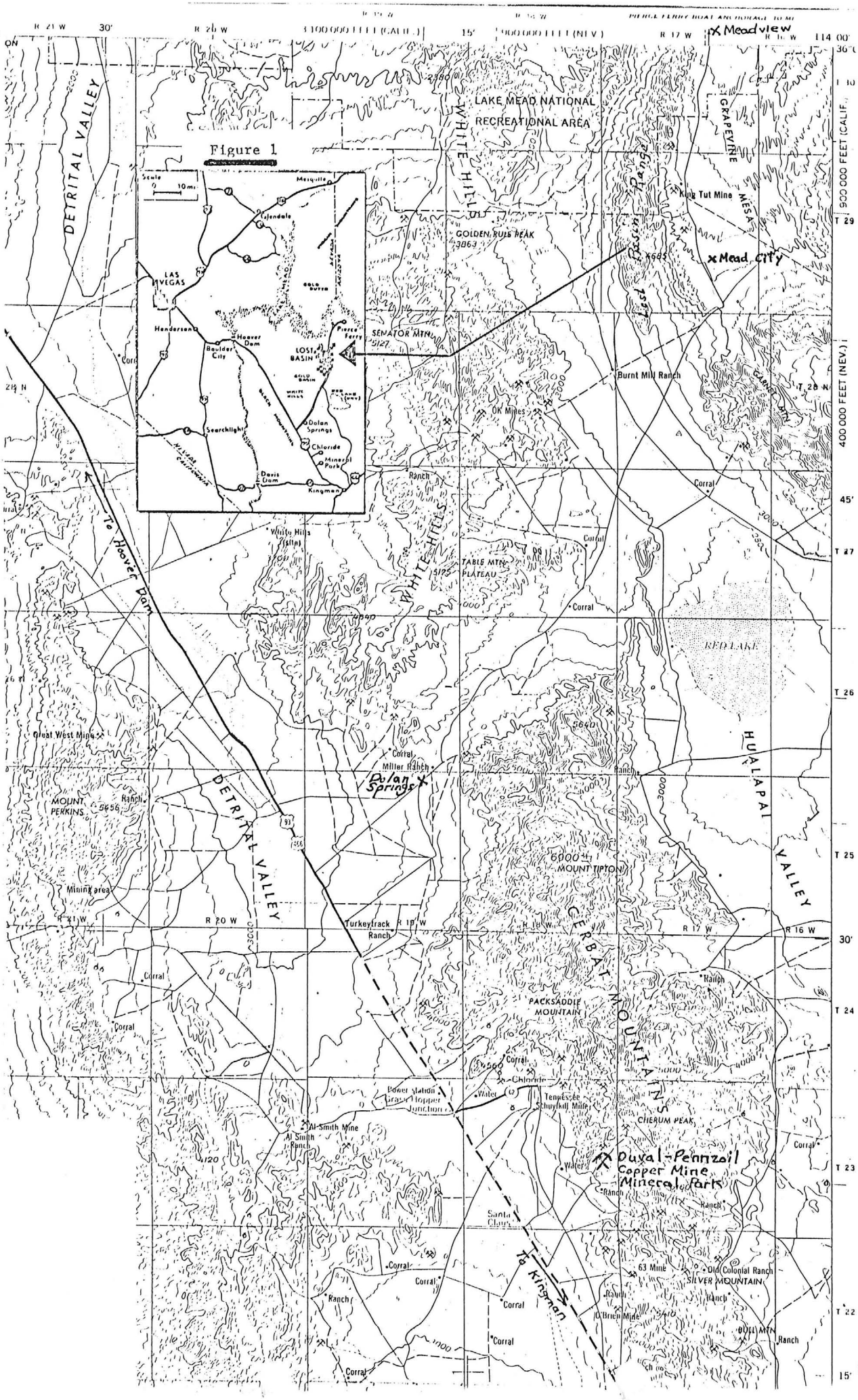
Figure 2



B-26

L28

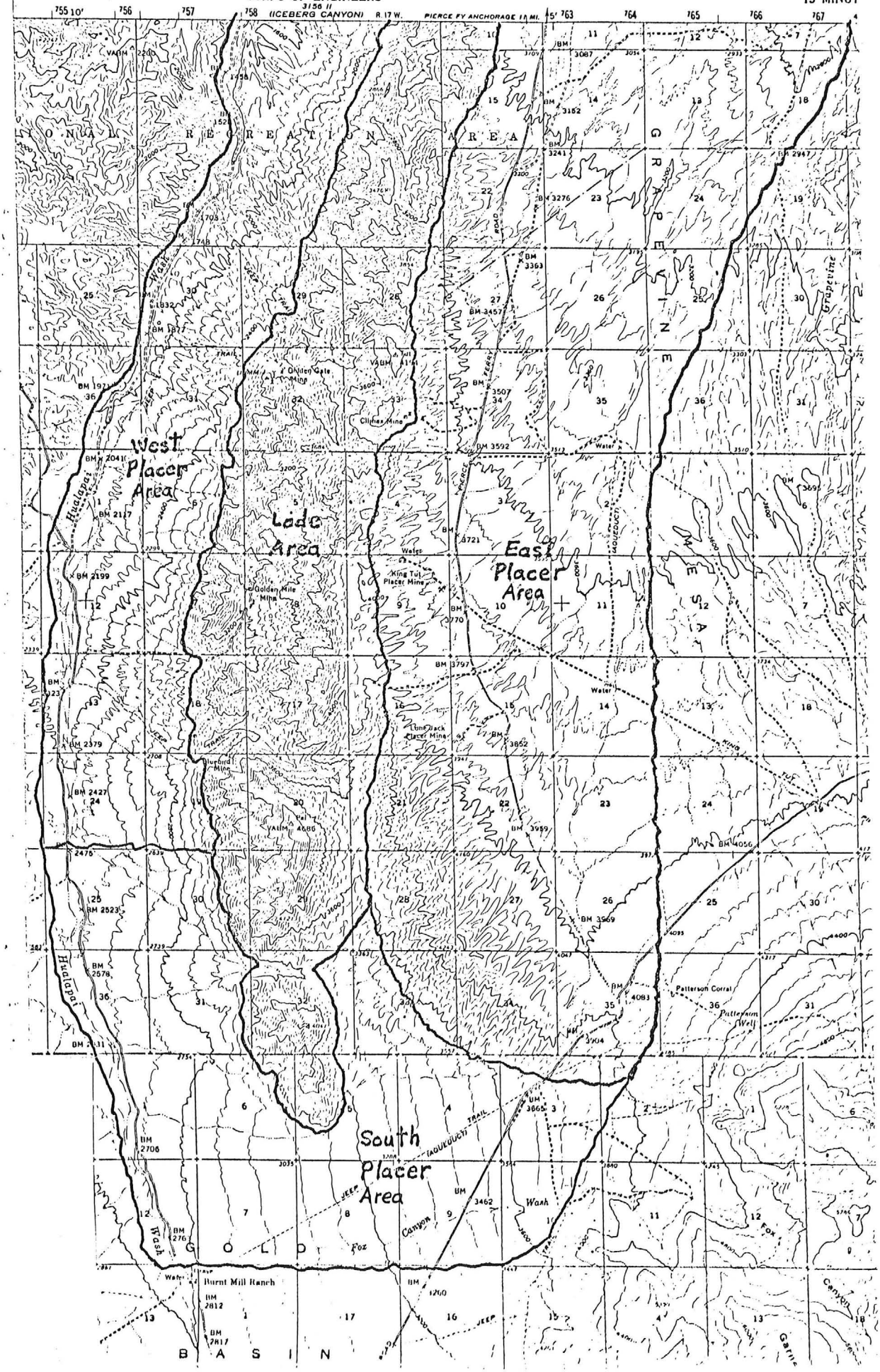
Figure 1


Meadview
LAKE MEAD NATIONAL RECREATIONAL AREA
DETRITAL VALLEY
WHITE HILLS
GRAPEVINE MESA
Kingman Range
King Tut Mine
GOLDEN RULE PEAK 3863
Mead City
SENATOR MTN 5127
Burnt Mill Ranch
OK Mines
Corral
Ranch
TABLE MTN PLATEAU 5125
RED LAKE
To Hoover Dam
Great West Mine
MOUNT PERKINS 5656
Dolan Springs
HUALAPAI VALLEY
6000± MOUNT TIPTON
Mining area
Turkeytrack Ranch
GRIFFITH MOUNTAINS
PACKSADDLE MOUNTAIN
Power Station
Grasshopper Junction
Tennessee Chuckwalla Mine
CHERUM PEAK
Al Smith Mine
Al Smith Ranch
Duval-Pennzoil Copper Mine Mineral Park
Santa Claus
To Kingman
63 Mine
Old Colonial Ranch
SILVER MOUNTAIN
O'Brien Mine
DULL MTN
Scale 10 mi
Mesquite
Glendale
LAS VEGAS
Henderson
Hoover Dam
Boulder City
LOST BASIN
Pierce Ferry
Searchlight
Dolan Springs
Chloride
Mineral Park
Davis Dam
Kingman
R 21 W
R 20 W
R 19 W
R 18 W
R 17 W
R 16 W
T 29
T 28 N
T 27
T 26
T 25
T 24
T 23
T 22
900 000 FEET (CALIF.)
400 000 FEET (NEV.)
30'
45'
15'
114 00'

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

Lost Basin Placers + Lode Areas

GARNET M
AR
15 MINUT

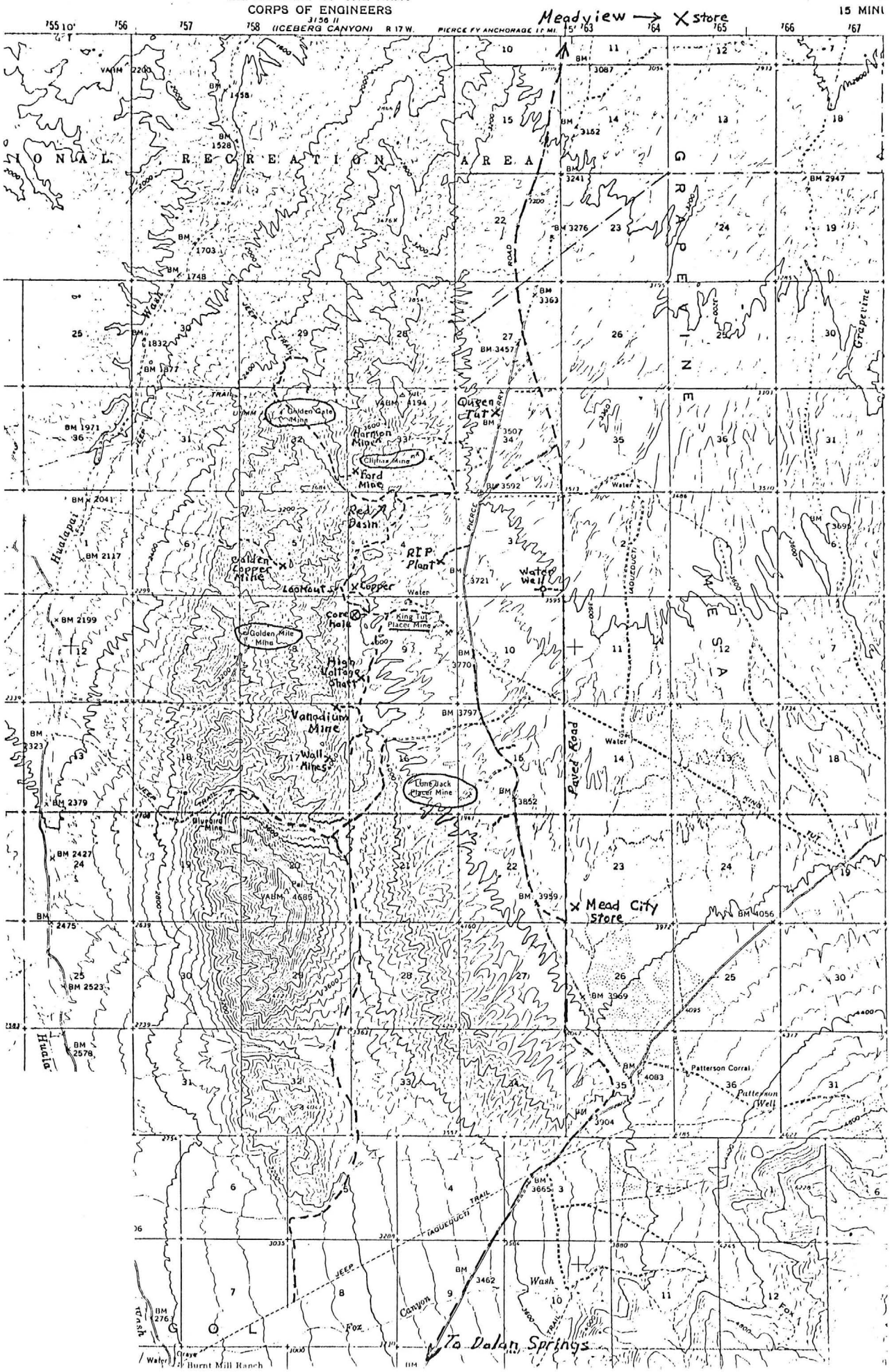


B-28

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

GARNET

15 MINU



B-29

OMMODITIES Gold

D NO. 199 A DATE 4/21/80

PROPERTY SUMMARY

I. MINE NAME: Little Nugget AKA; Lost Basin - Main Name

AKA; AKA;

AKA; AKA;

I. LOCATION: T 29N R 17W Sec(s) SW 18 UTM;

ELEV.; DIST.; STATE; Arizona CO.; Mohave

DIRECTIONS;

Map Attached / /

II. OWNERSHIP: Name; Joe Dimaggio Phone;

Address: Dolan Springs

Date of Information;

DBA; Title Report Attached / /

IV. PROPERTY: Apparently for desert cabin - no shaft apparent.

Date of Property Status; Map Attached / /

V. HISTORY: First Located; Operated;

Remarks;

Report(s) Attached / /

VI. PAST PRODUCTION:

Schedule(s) Attached / /

B-32

IV. AERIAL PHOTOGRAPHY:_____ Photo Attached / /

V. RESERVES: Proven;_____Calculations Attached / / Probable;_____
Calculations Attached / / Possible;_____Calculations Attached / /
Total;_____ Calculations Attached / / Potential;_____
Calculations Attached / /

VI. ECONOMICS: Mine Life;_____Yrs. Annual Production;_____
Capital Outlay;_____Time;_____
Operating Cost;_____/Yr. _____
Gross Annual Income;_____DCF/ROI;_____
Metal Prices Used;_____
Sensitives;_____ _____ Report(s)Attached / /

VII. REFERENCES:

Author;_____ _____ Title;_____
Date;_____ Abstracted By;_____ Date;_____
Status;_____
Remarks;_____

Author;_____ _____ Title;_____
Date;_____ Abstracted By;_____ Date;_____
Status;_____
Remarks;_____

Author;_____ _____ Title;_____
Date;_____ Abstracted By;_____ Date;_____
Status;_____
Remarks;_____

VIII. REMARKS:

Field find by Ken Phillips & H.M. Coggin.

B-33

COMMODITIES Gold

D NO. Not on MILS DATE 4/21/80

PROPERTY SUMMARY

I. MINE NAME: Susan's Folly AKA;
AKA; AKA;
AKA; AKA;

I. LOCATION: T 29N R 17W Sec(s) SW 18 UTM;
ELEV.; 2800 DIST.; Lost Basin STATE; Arizona CO.; Mohave
DIRECTIONS; 1½ miles east of Hualapai Wash Road

Map Attached /x/

II. OWNERSHIP: Name; Unknown Phone;
Address:
Date of Information;
DBA; Title Report Attached / /

V. PROPERTY: Unknown

Date of Property Status; Map Attached / /

. HISTORY: First Located; Unknown Operated;
Remarks;

Report(s) Attached / /

I. PAST PRODUCTION: Small

Schedule(s) Attached / /

B-34

II. WORKINGS: Considerable adit dump - not entered

Map Attached / /

III. GEOLOGY: Deposit Type; Vein Vein Strike; N65E
Distance; Width; 12" Dip; Age;
Host Rock; Age; Ore
Control
Existing Report(s) Attached / / Report Based on New Examination Attached / /

X. MINEROLOGY: Economic Minerals;
Gossan Minerals;
Alteration; limonite
Gangue; qtz
Petrographic Study; Report(s) Attached / /

METALLURGY: Report(s) Attached / /
Method of Determination; Metallurgical Reports Attached / /
Remarks;

I. SAMPLE DATA: Sampling Technique;

Samples Taken By; Number of Samples;
Date; Assay Report(s)/Maps Attached / /
Drilling; Type; Total Footage;
When Drilled; Drilling/Report Attached / /

II. GEOCHEMISTRY: Type; Type Anomolies;
Report(s)/Map(s) Attached / /

III. GEOPHYSICS: Type;
Anomolies;
Report(s)/Map(s) Attached / /

IV. AERIAL PHOTOGRAPHY:_____ Photo Attached / /

V. RESERVES: Proven;_____Calculations Attached / / Probable;_____
Calculations Attached / / Possible;_____Calculations Attached / /
Total;_____ Calculations Attached / / Potential;_____
Calculations Attached / /

VI. ECONOMICS: Mine Life;_____Yrs. Annual Production;_____
Capital Outlay;_____Time;_____
Operating Cost;_____/Yr. _____
Gross Annual Income;_____DCF/ROI;_____
Metal Prices Used;_____
Sensitives;_____ _____ Report(s)Attached / /

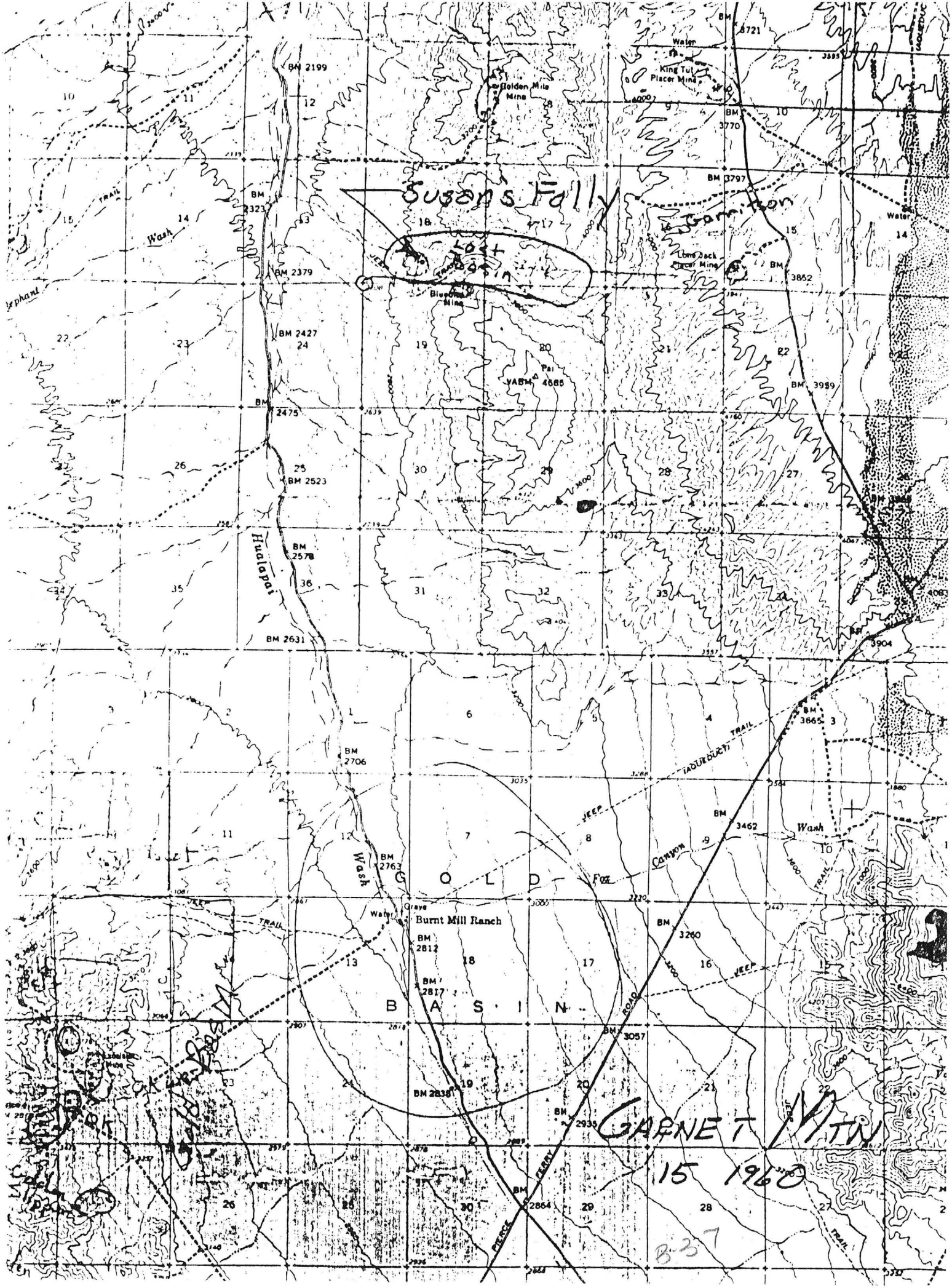
VII. REFERENCES:
Author;_____ _____ Title;_____
Date;_____ Abstracted By;_____ Date;_____
Status;_____
Remarks;_____

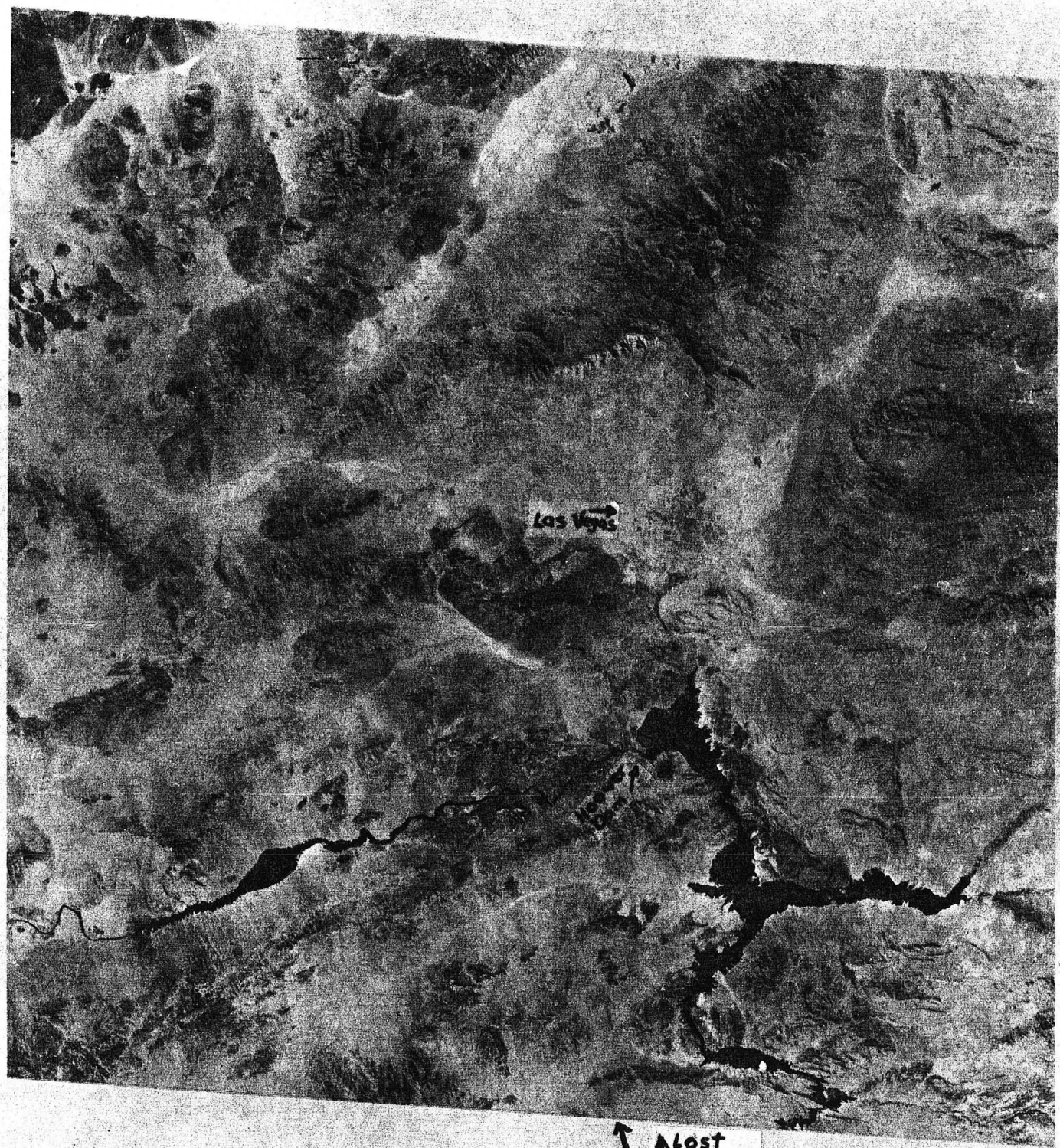
Author;_____ _____ Title;_____
Date;_____ Abstracted By;_____ Date;_____
Status;_____
Remarks;_____

Author;_____ _____ Title;_____
Date;_____ Abstracted By;_____ Date;_____
Status;_____
Remarks;_____

VIII. REMARKS:

Field find Ken Phillips and H. Mason Coggin

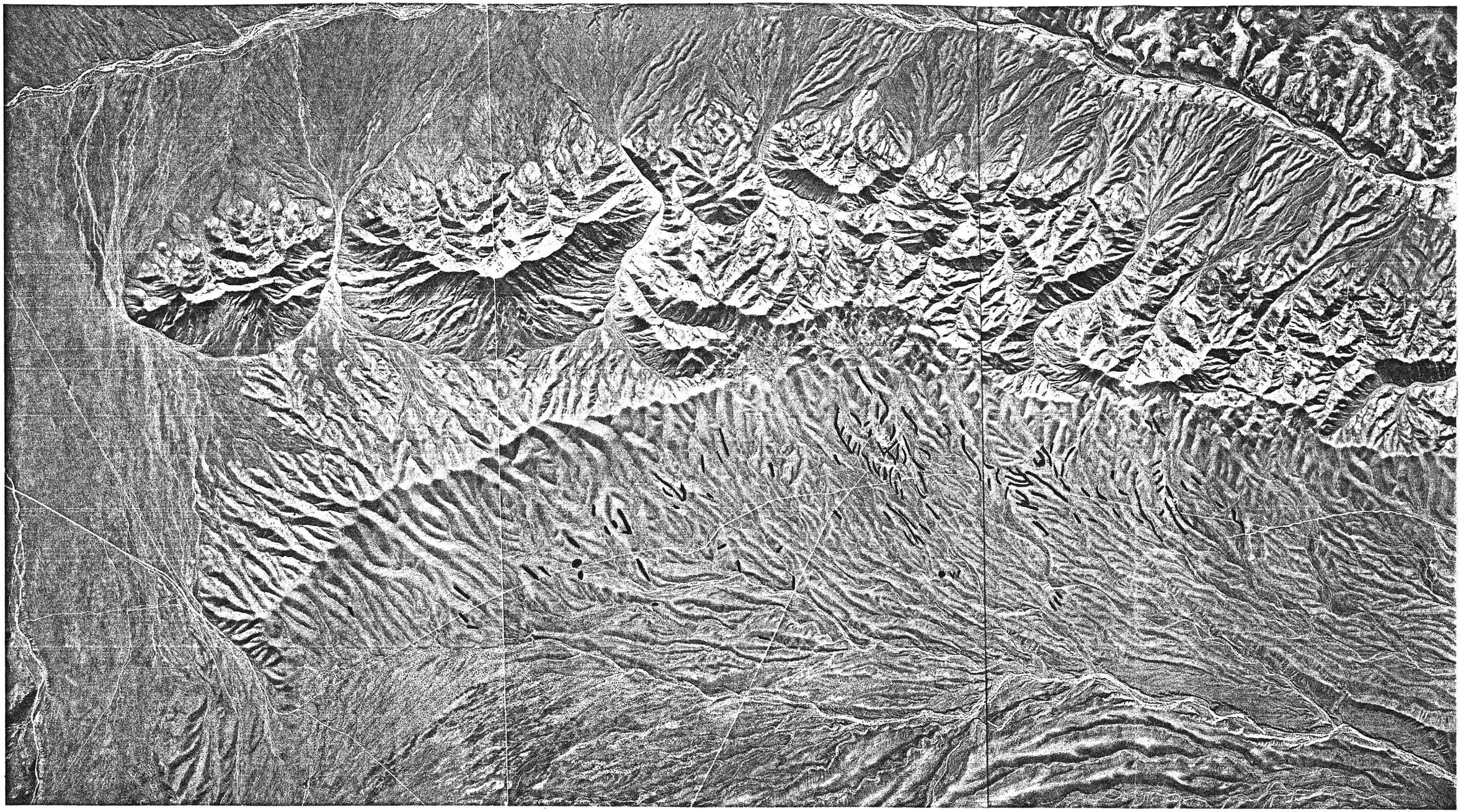

Susan's Folly
Lost Basin
Garnet Wash
Golden Mile Mine
King Tut Placer Mine
Long Jack Placer Mine
Bluebird Mine
Hualapai
Wash
Burnt Mill Ranch
Grave
Water
Fox Canyon
Wash
JEEP TRAIL
HOUDUCH TRAIL
PIERCE FERRY ROAD
GOLD BASIN
BM 2199
BM 2323
BM 2379
BM 2427
BM 2475
BM 2523
BM 2578
BM 2631
BM 2706
BM 2763
BM 2812
BM 2817
BM 2838
BM 2864
BM 2935
BM 3057
BM 3260
BM 3462
BM 3665
BM 3770
BM 3797
BM 3852
BM 3989
BM 4083
BM 3721
Pal
VABM 4685
3904
GARNET WTN
15 1960
B-37



W115-301
W115-001
W114-301

W116-00
13SEP72 C N35-57/W115-06 N N35-57/W114-58 MSS 45 7 D SUN EL49 AZ136 190-0725-G-1-N-D-2L NASA ERTS E-1052-17490-B 01

ERTS Satellite Imagery



7 miles

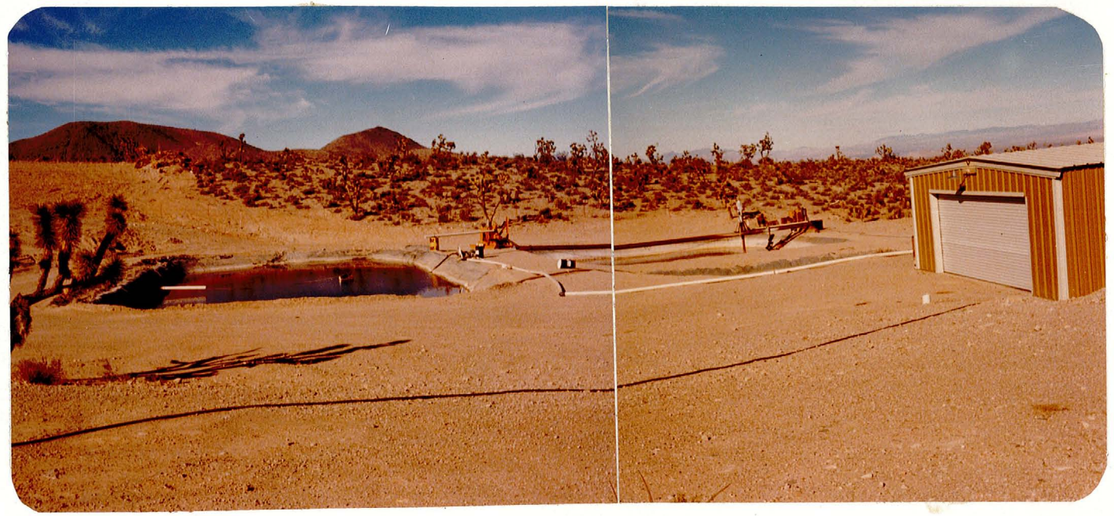
N

\ --- Gulches placered for gold by the King Tut and others. Scale: 1½" ≐ 1 mile.

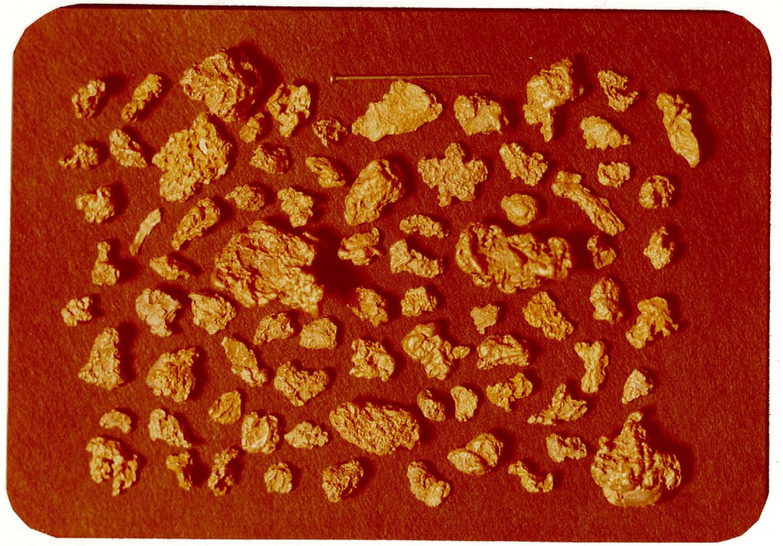
•W --- Water well, 4,000 gal./min. (estimated), 1,340 feet deep in alluvial gravels.

113 troy ounces of placer gold recovered by RIP. (Note quarter)

Note ratio of coarse to average size nuggets and the sharp, ragged surfaces. (Photo about 50% actual size).



Pregnant cyanide pond (left), and building (right) of RIP's metals separation system



Note sharp, ragged surfaces on most nuggets. (Photo about 75% actual size).