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12/04/96

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: KING TUT

ALTERNATE NAMES:  
APACHE ORO

MOHAVE COUNTY MILS NUMBER: 196A

LOCATION: TOWNSHIP 29 N RANGE 17 W SECTION 9 QUARTER NE  
LATITUDE: N 35DEG 55MIN 18SEC LONGITUDE: W 114DEG 07MIN 05SEC  
TOPO MAP NAME: GARNET MTN - 15 MIN

CURRENT STATUS: UNKNOWN

COMMODITY:  
AU PLACER  
W

BIBLIOGRAPHY:

ADMMR KING TUT PLACERS FILE  
~~SEE: ADMMR APACHE ORO COMPANY FILE~~ *DELETE & COMBINE*  
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P. 1; 1969  
USGS CIRC. 621, "HEAVY METALS PROGRAM PROGRES  
S REPORT", P. 12; 1969  
MALACH, R. "CERBAT MTN CTRY" P. 38; 1975  
SKILLINGS MNG REVIEW, 2/2/74, P. 18  
JOHNSON, M.G., "PLACER GOLD DEPOSITS OF AZ."  
USGS BULL 1355, 1972, P. 32-33  
"AZ GOLD PLACERS & PLACERING" AZBM BULL 160,  
P. 37; 1952  
ADMMR KING TUT PLACERS COLVO FILE

APACHE ORO COMPANY PLACERS

MOHAVE COUNTY  
LOST BASIN DISTRICT  
T29N R17W Sec. 9

ABM Bull. 160 p. 37

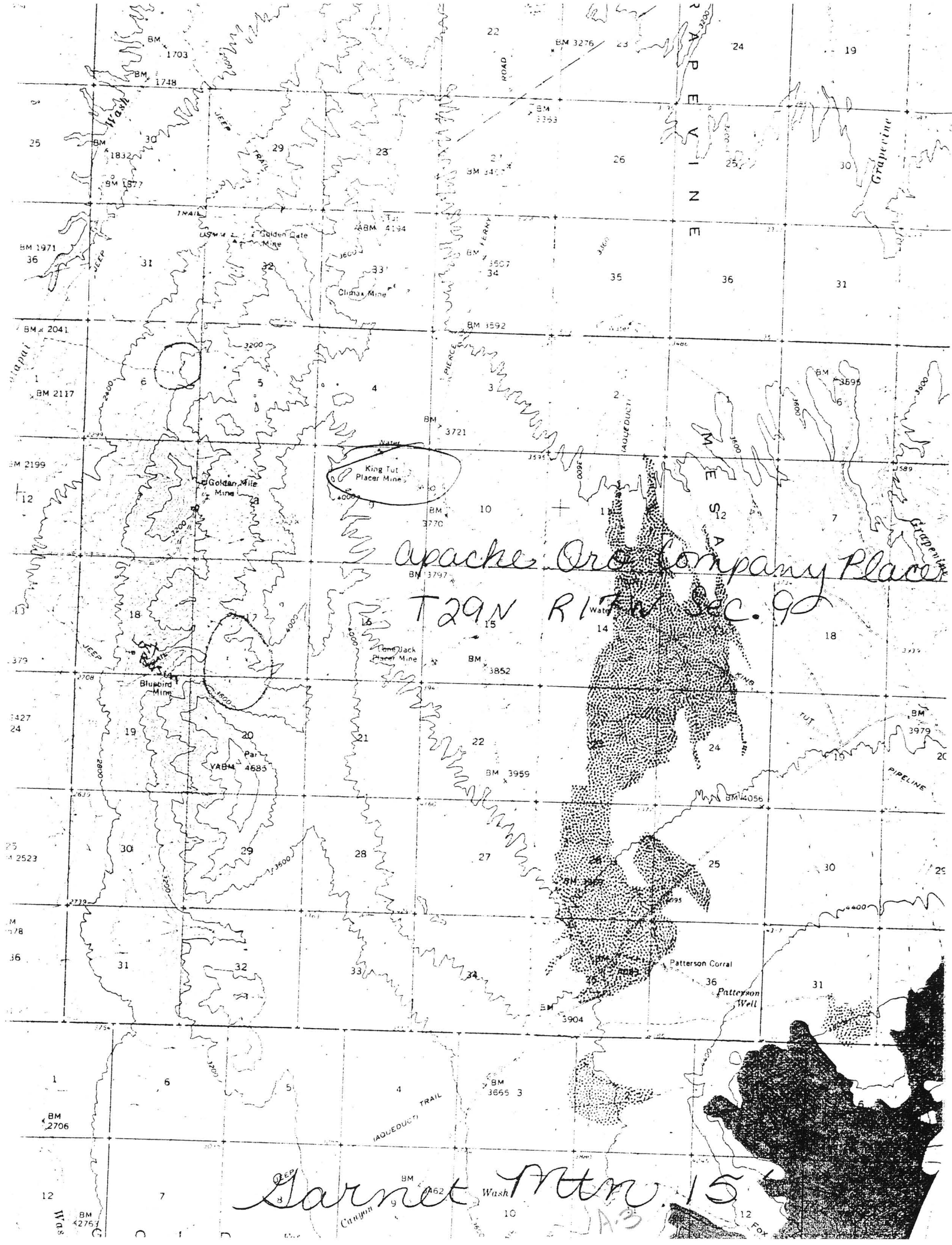
~~Joshua Gold Natural Resources (file)~~

Mohave County MILS Index #196A

AKA: Apache Oro, King Tut

Garnet Mtn, AZ 15' Topo (included in file)

A-2





A Mr. Frank Snyder, American Mining and Petroleum Co., Inc., 8700 N. Stemmons, S. 325, Dallas, Texas, 75247, has purchased a gold placer property in Gold Basin, Mohave Co., which he called the Basha property. He plans to purchase a Denver Gold Saver and sample the property. A company he referred to as Apache Oro holds adjacent ground where he (Snyder) reports they (Apache Oro) carried on a gold promotion that included pictures of large gold nuggets mined at the property; but not in actuality. KAP WR 1/21/76

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CJH WR 5/15/80: Mr. Cook reported that the Apache Oro Co. has purchased the King Tut Placers.

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JHJ, Memo, 5/9/85: Telephone call from Mr. Warren Mallory, Apache Oro Co., Box 730, Laramie, Wyoming 82070. They own the Apache Oro, Golden Gate, King Tut, Lone Jack Placers and Climax mine in T29N and 30N R17W. They have had the property leased the last 9 years but have recently been able to break the lease. Resources International out of Denver was lessee and operator. Their parent company has gone into bankruptcy. They spent \$2,000,000 and ended up with nothing. Jim Crazier was initial consultant on the project. J.C. recommended small, small 5 ft. high pilot leach plant. He was let go and they made 20 ft. high production facility. USGS recently completed open file report (82-1052) - Preliminary Report of Gold Mineralization of Gold Basin and Lost Basin Districts. Mr. Mallory will send us copies of reports he has had made. In return he wants names of some companies he can contact.

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NJN WR 1/17/86: Warren Mallory (c) of Apache Oro Co. (f) called from Wyoming and reported that they have leased the lode portion of their property in Mohave Co to Sante Fe Mining (c). They did not lease the placer portion but are still interested in doing so. He sent a new brochure on the placer portion of their property and it has been placed in the company file.

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B-1

APACHE ORO COMPANY PLACERS

MOHAVE COUNTY  
KING TUT DIST.

Location: T30N, R17E<sup>W</sup> In the King Tut placer area in Lost Basin  
(King Tut) District, near the King Tut mine.

Frank P. Knight - Memo - 9-1962

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B-2

KING TUT PLACERS

MOHAVE COUNTY

Sampling of the King Tut Placers, north of Kingman, Arizona, carried on recently over a period of five and one-half months by Guy E. Pitts, Rives-Strong Building, Los Angeles, produced an average gold value for the area sampled of 69¢ per bank yard. The tonnage blocked out is approximately 90,000 tons, with an additional 250,000 tons now in sight of about the same average value. The area covered by the samples to date is approximately one section, with six additional sections remaining to be tested. Cursory examination has shown the possibility of an eight to ten year operation on the basis of 24,000 tons per month. The recovery plant, now ready for installation on the property, has a capacity of 100 bank tons per hour, and will start operation on or before the fifteenth of August. The owners believe that this is the only "Dry Extraction Plant" ever worked out scientifically and thoroughly tested prior to installation to run a large tonnage of gravel of proven value. The plant is designed to keep the gravel thoroughly dry and effect a continuous rerun of a wide cut middlings, thus effecting a saving of 95 percent of known gold values. This effect is produced by a series of roughers, middlings concentrators and finishers, with high-grade concentrate to amalgamation.


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About 8 miles from Colorado River (T29 & 30N, R17W) Privately owned chiefly by the Duncan ranch and by the Santa Fe railway. ABM Bull. 160 p. 37

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It was reported that Apache Mining Company has acquired the old King Tut property and located claims over much of Gold Basin east of Kingman. VBD WR 1/7/75

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 PAY DIRT for February 24, 1975

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Placer Mining Resources International of Colorado has established the Lost Basin Mining Company in Arizona for the purpose of heap leaching placer deposits of gold at the old King Tut Mine area in Mohave County.

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CH/WR 3/6/79 - The mine is 34 miles northeast of U.S. 93 on the Pierce Ferry Road, which, in turn is 32 miles northwest of Kingman. 4/11/79 a.p.

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CJH WR 5/14/80: George McDevitt, Kingman, Arizona, doesn't think the King Tut Placer Mine is operating.

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CJH WR 5/15/80: Mr. Cook reported that the Apache Ore Co. has purchased the King Tut Placers.

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# APACHE ORO COMPANY

Minerals Division of *Tideaus Inc*



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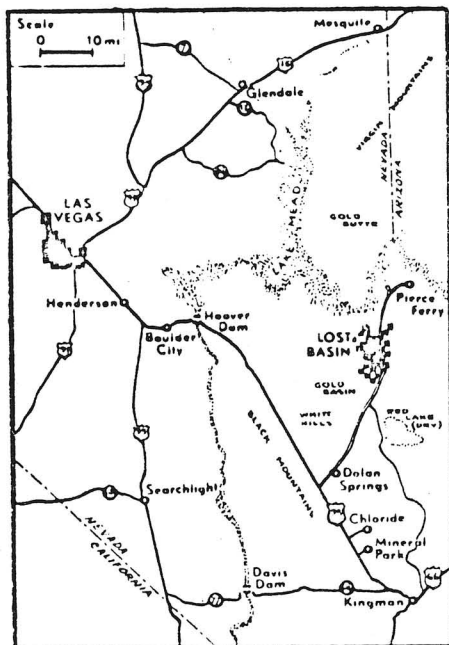
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January 1, 1986

## SUMMARY OF GOLD PLACER DEPOSITS OF LOST BASIN, MOHAVE COUNTY, ARIZONA

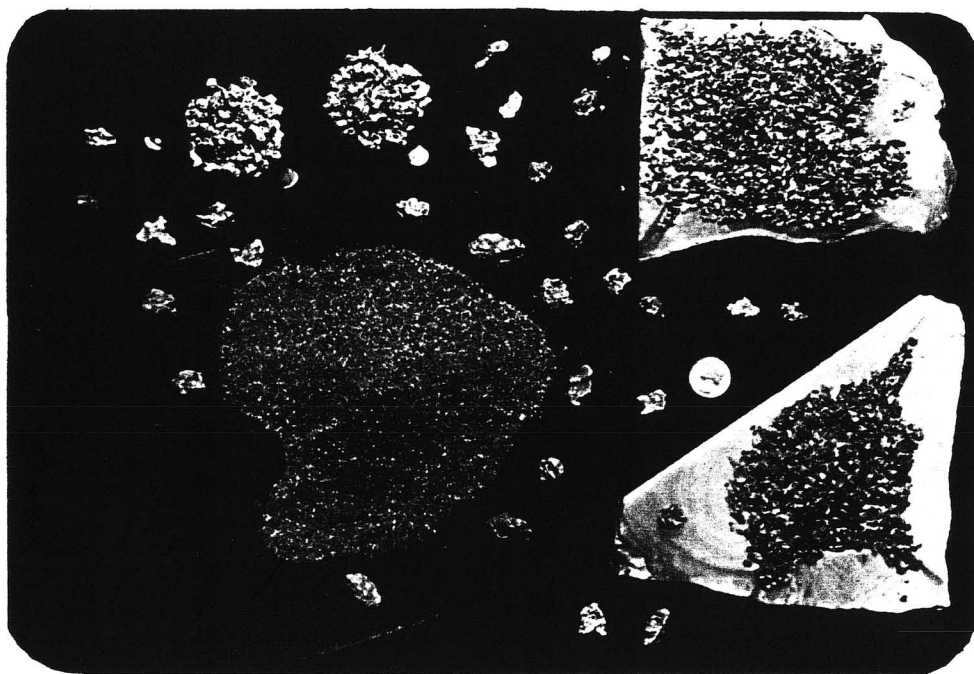
Description: The information which follows concerns several unusually large gold placer deposits located just west of the Grand Wash Cliffs (Colorado Plateau) and south of the east end of Lake Mead, in T28, 29, & 30N, R17 & 18W in the Lost Basin mining district, Mohave County, in northwest Arizona. The gold bearing alluvial gravels consist of rough fragments primarily derived from the Lost Basin Range whose bedrock gold mineralization consists of both solitary

veins and disseminated mineralization over a north-south distance of eight miles. Three different gold placer deposits have been found:

1. The oldest is a buried residual fossil placer in a north-south band of seven miles in length located on the east side of Lost Basin Range. The fossil layer was formed just previous to the downdropping of the Range to the west, leaving the layer subject to minimal erosion. This buried deposit in the alluvial gravels has been untouched in past placer operations.
2. From the foregoing placer layer, slow erosion produced fossil channels flowing outward from this layer. These channels are buried under present alluvial gravels and exposed in a few spots by incised present-day gulches. Like the foregoing residual layer, these buried fossil channels have been untouched in past placer operations.
3. From both the residual fossil layer and subsequent outwardly eroded fossil channels, present-day alluvial gold placers were formed.

Ownership: Approximately 10,000 acres (about 15.5 square miles) of alluvial gold placer gravels are covered by unpatented placer claims owned by American Heavy Minerals (AHM), an associate of Apache Oro Company. This total area has been divided into four placer areas as shown in Figure 1, Page 9. The lode area has been recently leased by AHM to Santa Fe Mining, Inc. (a subsidiary of Santa Fe Southern Pacific Corp.).

Mineral Potential: 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. The residual fossil layer and the outward flowing fossil channels (neither adequately explored, as yet), should average several times these surface values. Preliminary drilling and sampling of these fossil deposits suggest values up to as high as 0.2 ounces of gold per cubic yard. 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 diameter and have sharp, ragged surfaces and are not substantially 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.



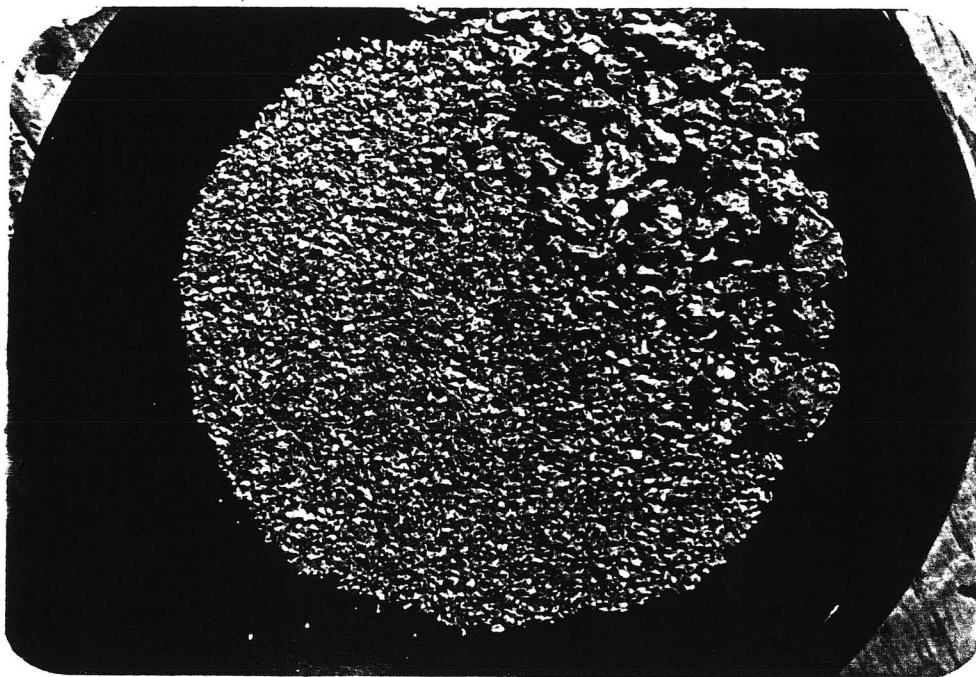
113 troy ounces of placer gold from two present-day surface gulches in N½ of Section 10 of North Placer. (Note quarter)

Geology: 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.



Sources of Placer Gold: 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 in the lode area, 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. In the eight mile long lode area Apache Oro has found 52 different quartz veins exposed in 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 small particles, just barely visible to the naked eye, with occasional particles as large as 1/16 inch diameter, usually found in red or brown hematite after chalcopryite and pyrite in spongy boxworks of vuggy and brecciated quartz. The surrounding eleven mile long placer area corresponds with the eight mile long mineralization pattern of the lode area.

Fossil Placer Gold Deposits: Both the residual fossil layer and the outward flowing fossil channels have been observed in the North and the South Placer areas of Figure 1, Page 9. Preliminary drilling suggests that this layer is a curved band about 8 miles long from Section 34, T29N, R17W, through Sections 33/34, T30N, R17W, at an altitude of about 3,950 feet in the southern part to around 3,600 in the northern, from 5 to 20 feet below the surface of the present ridges, from 10 to 20 feet thick, and from 1,000 feet wide at both ends to perhaps 2,000 feet wide in the middle (King Tut area). Inspection with a microscope of the heavy mineral concentrate from this fossil layer shows very sharp, ragged, and bright surfaces, indicating very limited travel and suggests minimal attack by associated chemicals in ground water. These features are very noticeable in this fossil layer, even in comparison with concentrates from present-day alluvial surface concentrations in Lost Basin which show slightly more wear from travel and considerably more attack from chemical solutions as indicated in the following photo:



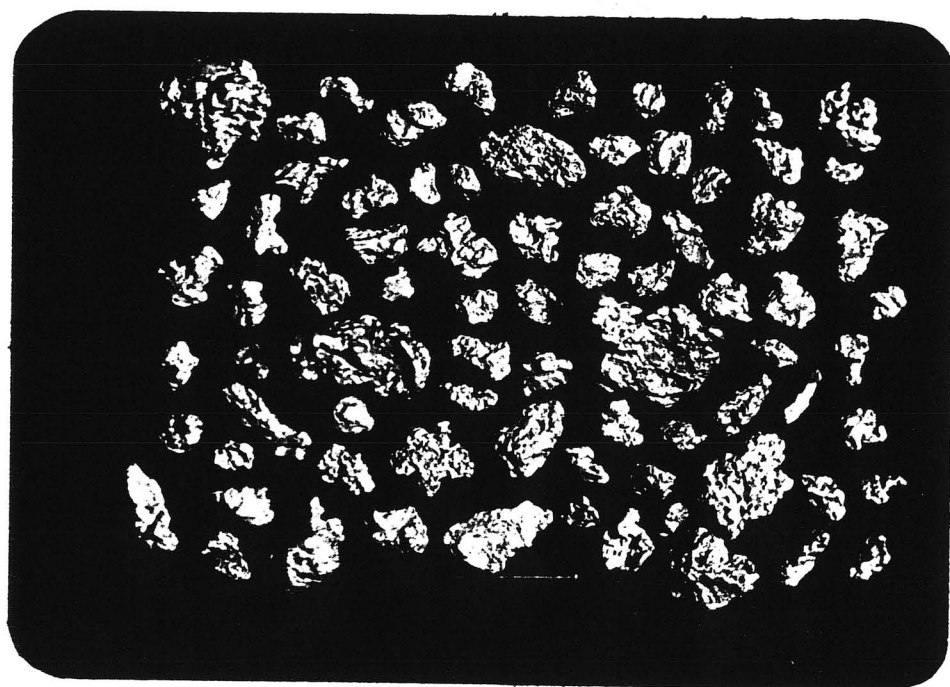
Nuggets from North Placer area (E½ of Sec. 33), present-day gulches near to residual fossil layer. Note ratio of coarse to average size nuggets and the extremely sharp, ragged surfaces. (Photo about 50% actual size).

Fossil Placer Gold Deposits (Continued):

The mineral concentrates from the fossil layer appear somewhat similar to concentrates from a freshly crushed mineral vein, and leaves the impression that the mineralized bedrock rapidly eroded and concentrated at the base of the Lost Basin Range, then after the Range downdropped to the west, this eastern fossil concentration was left intact subject to minimal erosion. Both the residual fossil layer and the outward flowing fossil channels contain anomalous amounts of hematite and the resulting reddish-brown staining of the fossil channels is usually apparent where present-day gulches have cut the fossil channels, especially as seen in color stereo aerial photos and after a rain. Using this coloring as an indicator, the location of fossil channels can be implied up to about two miles from the residual fossil layer.

Present-day Alluvial Placers: These were formed from concentrations of erosion from the fossil residual layer and channels. Large gold nuggets are found, of course, nearer to the fossil deposits in the North and South Placer areas, with the gold particles becoming smaller and more uniformly distributed in the East and Southwest (Gold Basin) Placer areas. These later two areas appear to hold good promise for potential large scale placer operations because they both are where the two main drainages from the Lost Basin area are located and where widely disseminated concentrations of heavy minerals should occur at the points where the rate of water flow suddenly decreases. Both color and black and white aerial photos suggest widespread heavy black sand concentrations at these points of sudden flow rate change. Also, if it is proven in the future that the alluvial gravels can be economically leached for gold, both the East and the Southwest (Gold Basin) Placer areas should be amenable to leaching due to the smallness of the gold particles and their more uniform distribution, as compared to the North and South Placer areas which contain much more spotty concentrations and large nuggets.

Large nuggets from North Placer area (NW $\frac{1}{4}$  Section 10), present-day surface placer. Note sharp, ragged surfaces on many nuggets. (Photo about 75% actual size).





Production History of Present-Day Gold Placer Deposits: Due to no significant bedrock gold deposits appearing higher than the present-day eastern alluvial gravels (Lost Basin Range had previously downdropped) 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 surficial 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 were successful. (See Figure 2, page 10).

During 1969, Western Nuclear drilled 10 seven-inch cable tool holes 100 feet deep in the alluvial gravels in the North, South, and East Placer areas. Gold colors were obtained from all holes with the most colors appearing within, or just west of the East Placer area. No holes were drilled in the Southwest Placer area. Because the drill baler input valve was about 8 inches above the bottom, only very fine gold was caught and recovered. A year later, Apache Oro personnel obtained grab samples from the bottom of several of these 100 foot deep holes and found that considerable gold particles and black sands were left in the bottom of the holes by this ineffective drill baler.

During 1974 and 1975, spot sampling of the surficial placer gravels in the North, South, and East Placer areas to a maximum depth of 10 feet 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.

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 in the N½ of Section 10, T29N, R17W, 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 (See gold photo on page 2). However, RIP ceased operations due to exorbitant management and operating costs of \$12.68/cu. yd., (over double the normal).

Also, RIP reportedly drilled 551 holes 50 feet deep at random in the alluvial gravels of the North, South, and East Placer areas which were said to average 0.0174 oz. gold per cubic yard. Subsequently, RIP set up a cyanide heap leaching operation in the extreme east center of Section 4, T29N, R17W, 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 attempts were abandoned.

Water: A 1,340 foot deep water well was drilled by a water well contractor for RIP in the SE corner of Section 3, T29N, R17W. Engineering estimates indicated a capacity of 4,000 gallons per minute. The eight inch well diameter and RIP's pump capacity limited the flow to about 600 gallons per minute. The well was located over 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. The 1,340 foot deep well was entirely in the alluvial gravels and did not reach bedrock. RIP's assays of the well to its bottom are said to be comparable to the average of 0.0174 oz. gold per cubic yard RIP obtained from their surrounding 551 fifty feet deep holes.

Exploration Completed: From 1968 to date, the following which are related to the alluvial placer areas were conducted on Apache Oro's Lost Basin properties and the results are given in the reports listed in the appended APPLICABLE REFERENCES:

Geologic mapping and study by the USGS and by graduate studies of students of Colorado School of Mines, Pennsylvania State University, and New Mexico Institute of Mineral Technology, and by Lawrence E. Smith, Consultant.

Color stereo aerial photography.

Total intensity airborne magnetic survey.

Total intensity airborne scintillation survey.

Induced polarization survey, 7 lines.

Gravity meter profile, north-south on Pierce Ferry Road.

Metal zoning survey of bedrock mineralization.

Mapping of occurrences of Princesplume (Stanleya Albescens) indicating anomalous mineralized zones in alluvial gravels.

10 cable-tool drill holes (average 100 feet deep) in the alluvial gravels.

551 percussion drill holes (average 50 feet deep) in the 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.

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 placer gold deposits must first be adequately studied and explored. 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.

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# APACHE ORO COMPANY

Minerals Division of *Western*



P.O. Box 730

Laramie, Wyoming 82070

307 742-6668 Cable: APACHE

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. PhD 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.

**Max L. Trover:** 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.

Recently listed

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Sec. 34. SE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$  and E $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ ;  
 Sec. 35. NE $\frac{1}{4}$ NW $\frac{1}{4}$ , E $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$  and W $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 36. NE $\frac{1}{4}$ , E $\frac{1}{4}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$  and NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ .  
 T. 14 N., R. 25 E.,  
 Sec. 1. SE 10 acs of lot 3, W $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ , E $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$  and SE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 2. N $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ ;  
 Sec. 3. NW $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ ;  
 Sec. 11. SW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 12. N $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ , NW $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ , NW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ , SW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$  and SW $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 13. E $\frac{1}{4}$ NE $\frac{1}{4}$ , E $\frac{1}{4}$ W $\frac{1}{4}$ NE $\frac{1}{4}$ , W $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$  and N $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 14. SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;  
 Sec. 15. S $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$  and SE $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 22. N $\frac{1}{2}$ N $\frac{1}{2}$ , NE $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$  and W $\frac{1}{2}$ SE $\frac{1}{4}$ ;  
 Sec. 23. S $\frac{1}{2}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ , N $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  and NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ ;  
 Sec. 26. NW $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ , W $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$  and SW $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 27. NE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$  and NE $\frac{1}{4}$ SW $\frac{1}{4}$ ;  
 Sec. 34. SW $\frac{1}{4}$ NE $\frac{1}{4}$ .  
 T. 14 N., R. 26 E.,  
 Sec. 1. W 19.92 acs of lot 3, lot 4, SW $\frac{1}{4}$ NW $\frac{1}{4}$ , W $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$  and SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;  
 Sec. 2. lots 1, 2, 3, 4, NE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , SW $\frac{1}{4}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$  and SW $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 4. N $\frac{1}{2}$ SW $\frac{1}{4}$ , N $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$  and S $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 5. S $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ S $\frac{1}{2}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$  and N $\frac{1}{2}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 6. SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , E $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$  less 2.58 acs for graveyard, N $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$  and S $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 7. N $\frac{1}{2}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$  and SE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ ;  
 Sec. 8. E $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , N $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$  and NE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 10. N $\frac{1}{2}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$  and SW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 11. N $\frac{1}{2}$  and E $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 13. E $\frac{1}{4}$  and E $\frac{1}{4}$ NW $\frac{1}{4}$ ;  
 Sec. 17. NW $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  and NW $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;  
 Sec. 21. NE $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;  
 Sec. 22. E $\frac{1}{4}$ SE $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$  and NW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 24. E $\frac{1}{4}$ , SE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$  and S $\frac{1}{2}$ NW $\frac{1}{4}$ ;  
 Sec. 25. SE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ ;  
 Sec. 26. S $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ , S $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$  and E $\frac{1}{4}$ W $\frac{1}{2}$ SE $\frac{1}{4}$ ;  
 Sec. 27. NW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ , E $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ , NW $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ , NW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ , E $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ , E $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ , E $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ , SW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ , E $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$  and NW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ ;  
 Sec. 28. W $\frac{1}{2}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ , E $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ , S $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$ , NW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$ , SW $\frac{1}{4}$ SE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$  and SW $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ ;

Sec. 29. W $\frac{1}{2}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$  and S $\frac{1}{2}$ SE $\frac{1}{4}$ ;  
 Sec. 30. lots 1, 2, W 19.89 acs of lot 3, NE 10 acs of lot 3, W $\frac{1}{2}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$  and E $\frac{1}{4}$ NW $\frac{1}{4}$ ;  
 Sec. 31. NW 9.91 acs of lot 2, NE 10 acs of lot 2, lot 4, SW $\frac{1}{4}$ SW $\frac{1}{4}$ NE $\frac{1}{4}$  and N $\frac{1}{2}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ ;  
 Sec. 33. W $\frac{1}{2}$ E $\frac{1}{4}$ , NW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , E $\frac{1}{4}$ W $\frac{1}{2}$ , N $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ , SE $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$  and NW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;  
 Sec. 35. W $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$ .

Containing a total of 18,748.98 acres.

BILLY M. BRADY,  
*Acting State Director.*

(FR Doc. 78-11381 Filed 4-26-78; 3:43 am)

#### OUTER CONTINENTAL SHELF

##### Approval of Official Protraction Diagrams

1. Notice is hereby given that, effective with this publication, the following OCS Official Protraction Diagrams, approved on the dates indicated, are available for information in the Outer Continental Shelf Office, Bureau of Land Management, Anchorage, Alaska. In accordance with title 43, Code of Federal Regulations, these protraction diagrams are the basic record for the description of mineral and oil and gas lease offers in the geographic area they represent.

#### OUTER CONTINENTAL SHELF PROTRACTION DIAGRAMS

	Description	Approval date
NM 2-2	Maury Deep.....	Oct. 12, 1977.
NM 59-2	.....	Dec. 1, 1977.
NN 1-5	Pochnoi Trough.....	Oct. 12, 1977.
NN 1-6	Korovin Canyon.....	Do.
NN 2-5	Amliia Knoll.....	Do.
NN 2-7	Seguam.....	Do.
NN 3-6	Sanak Bank.....	Do.
NN 3-7	.....	Do.
NN 3-8	.....	Dec. 1, 1977.
NN 4-5	Derikson Seamount.....	Oct. 12, 1977.
NN 4-6	Walls Knoll.....	Do.
NN 4-7	Sirius Seamount.....	Dec. 1, 1977.
NN 8-3	.....	Do.
NN 59-4	.....	Do.
NN 60-3	Ulm Plateau.....	Oct. 12, 1977.
NN 60-4	Bowers Bank.....	Dec. 1, 1977.
NN 60-5	.....	Do.
NN 60-6	Rude Canyon.....	Oct. 12, 1977.
NP 2-7	St. Matthew.....	Do.
NP 3-5	Hooper Bay.....	Do.
NP 3-7	Nunivak Island.....	Do.
NP 3-8	Baird Inlet.....	Do.
NR 3-2	.....	Do.
NR 3-6	Point Lay.....	Do.
NR 4-1	.....	Do.
NR 4-3	Wainwright.....	Do.

2. Copies of these diagrams are for sale at two dollars (\$2.00) per sheet by the Manager, Outer Continental Shelf Office, Bureau of Land Management, P.O. Box 1159, Anchorage, Alaska 99510. The street address is 800 A Street, Anchorage, Alaska. Checks or

Money Orders should be made payable to the Bureau of Land Management.

EDWARD J. HOFFMANN,  
*Manager, Alaska Outer Continental Shelf Office.*

(FR Doc. 78-11380 Filed 4-26-78; 8:45 am)

[4310-34]

[W-61829]

WYOMING

Application, Amendment

APRIL 18, 1978.

Notice is hereby given that pursuant to section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185), the Colorado Interstate Gas Co. of Colorado Springs, Colo., filed an amendment application to reroute their pending right-of-way application to construct a 4½ inch O.D. pipeline for the purpose of transporting natural gas across the following described public lands:

SIXTH PRINCIPAL MERIDIAN, WYOMING

T. 36 N., R. 93 W.,  
 Secs. 7, 18, 19, and 30.  
 T. 36 N., R. 94 W.,  
 Sec. 25.

The proposed pipeline will transport natural gas from the Nos. 22-25 and 41-25 Fuller Reservoir II wells located in the N½ of Section 25, T. 36 N., R. 94 W., to a point of connection with Montana-Dakota Utilities Co.'s existing pipeline located in the NE¼ of Section 7, T. 36 N., R. 93 W., Fremont County, Wyo.

The purpose of this notice is to inform the public that the Bureau will be proceeding with consideration of whether the application should be approved, and if so, under what terms and conditions.

Interested persons desiring to express their views should do so promptly. Persons submitting comments should include their name and address and send them to the District Manager, Bureau of Land Management, 1300 Third Street, P.O. Box 670, Rawlins, Wyo. 82301.

HAROLD G. STINCHCOMB,  
*Chief, Branch of Lands and Minerals Operations.*

(FR Doc. 78-11378 Filed 4-26-78; 8:45 am)

[4310-03]

Heritage Conservation and Recreation Service

#### NATIONAL REGISTRY OF NATURAL LANDMARKS

##### Revision of List

Pursuant to authority contained in the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461), the Department of the Interior administers and implements a natural areas program, includ-

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ing the National Registry of Natural Landmarks. It is the purpose of this notice to revise the National Registry of Natural Landmarks as published in the FEDERAL REGISTER of May 5, 1975 (40 FR 19503).

All Federal agencies should take cognizance of the sites included in the National Registry of Natural Landmarks to fulfill the intent of section 102 of the National Environmental Policy Act of 1969 (83 Stat. 852; 42 U.S.C. 4331).

In accordance with section 2, Pub. L. 94-453, enacted October 7, 1976 (90 Stat. 1939, 1940), adding new section 8 to the act of August 18, 1970 (84 Stat. 825), the Secretary of the Interior is directed to transmit annually to the United States Congress a list of the Natural Landmarks which exhibit known or anticipated damage or threats to the integrity of their resources, along with notations as to the nature and severity of such damage or threats.

CHRIS THERRAL DELAPORTE,  
Director, Heritage Conservation  
and Recreation Service.

APRIL 20, 1978.

The owner(s) of sites indicated by an asterisk have entered into a voluntary agreement to protect the sites' nationally significant values.

#### ALABAMA

- \*Beaverdam Creek Swamp, Limestone County—Wheeler National Wildlife Refuge, 10 miles northeast of Decatur.
- \*Cathedral Caverns, Marshall County—4 miles northeast of Grant.
- \*Dismals, Franklin County—4 miles northeast of Hackleburg.
- Mobile-Tensaw River Bottomlands, Baldwin, Mobile, and Washington Counties—extends from Mobile Bay north for 35 miles.
- Newsome Sinks Karst Area, Morgan County—between Morgan City and Union Hill.
- \*Shelta Cave, Madison County—within city limits of Huntsville.

#### ALASKA

- \*Aniakchak Crater—24 air miles southeast of Port Heiden.
- \*Arrigetch Peaks—250 miles northwest of Fairbanks.
- \*Bogoslof Island—Bogoslof National Wildlife Refuge, 25 miles north of Umnak Island in the Aleutian Archipelago.
- \*Brown Bear Refuge—200 miles southwest of Anchorage.
- \*Clarence Rhode National Wildlife Range—on the Bering Sea Coast between Hooper Bay and Kipnuk.
- \*Miamna Volcano—135 miles southwest of Anchorage.
- \*Lake George—44 miles northeast of Anchorage.
- \*Malaspina Glacier—25 miles west of Yakutat.
- Middleton Island—155 miles southeast of Anchorage.
- \*Mount Veniaminof—20 miles northeast of Port Moller on the Alaska Peninsula.
- \*Redoubt Volcano—110 air miles southwest of Anchorage.

- \*Shishaldin Volcano—Aleutian Islands—National Wildlife Refuge, 50 miles west of Cold Bay in the Aleutian Archipelago.
- \*Simeonof National Wildlife Refuge—in the Shumagin Island Group south of the Alaska Peninsula.
- \*Unga Island—in the Shumagin Island Group, 500 miles southwest of Anchorage.
- \*Walker Lake—250 air miles northwest of Fairbanks.
- \*Walrus Islands—375 miles southwest of Anchorage in Bristol Bay.
- \*Worthington Glacier—30 miles east of Valdez.

#### AMERICAN SAMOA

- \*Aunuu Island—off the northeast coast of Tutuila Island.
- Cape Taputapu—on the western tip of Tutuila Island.
- Fofoana Crater—on the southwest coast of Tutuila Island.
- \*Leala Shoreline—on the southwest coast of Tutuila Island.
- \*Matafao Peak—1½ miles south of the city of Pago Pago.
- \*Rainmaker Mountain—east of Pago Pago Harbor.
- Vaiava Strait—on the north-central coast of Tutuila Island.

#### ARIZONA

- \*Barringer Meteor Crater, Coconino County—15 miles west of Winslow.
- \*Canelo Hills Cienega, Santa Cruz County—1½ miles northwest of Canelo.
- \*Comb Ridge, Navajo County.
- Hualapai Valley Joshua Trees, Mohave County—45 miles north of Kingman.
- Onyx Cave, Santa Cruz County—7 miles northwest of Sonita.
- \*Patagonia-Sonora Creek Sanctuary, Santa Cruz County—1 mile from Patagonia.
- \*Ramsey Canyon, Cochise County—7 miles south of Sierra Vista.
- Willcox Playa, Cochise County—4 miles south of Willcox.

#### ARKANSAS

- \*Big Lake Natural Area, Mississippi County—Big Lake National Wildlife Refuge, 3 miles east of Manila.
- \*Lake Winona Natural Area, Saline County—38 miles west of Little Rock.
- Mammoth Spring, Fulton County—northeast of Mammoth Spring.
- \*Roaring Branch Research Natural Area, Polk County—4 miles north of the village of Athens.
- \*White River Sugarberry Natural Area, Desha County—4 miles northwest of the village of Snow Lake.

#### CALIFORNIA

- Amboy Crater, San Bernardino County—west of the town of Amboy.
- American River Bluffs and Phoenix Park Vernal Pools, Sacramento County—2 miles east of Fair Oaks.
- Anza-Borrego Desert State Park, San Diego, Imperial, and Riverside Counties—vast majority of site is located in eastern San Diego County.
- \*Audubon Canyon Ranch, Marin County—20 miles northwest of San Francisco.
- Black Chasm Cave, Amador County—¾ mile south-southeast of Volcano.
- Cinder Cone Natural Area, San Bernardino County—24 miles east of Baker.
- Cosumnes River Riparian Woodlands, Sacramento County—18 miles southeast of Sacramento.

- \*Deep Springs Marsh, Inyo County—20 miles southeast of Bishop.
- \*Elder Creek, Mendocino County—4 miles north of Branscomb.
- \*Emerald Bay, El Dorado County—16 miles south of Tahoe City.
- Fish Slough, Mono and Inyo Counties—8 miles due north of Bishop.
- \*Mount Shasta, Siskiyou County—60 miles north of Redding.
- \*Miramar Mounds, San Diego County—12 miles north of central San Diego.
- \*Mitchell Caverns and Winding Stair Cave, San Bernardino County—23 miles northwest of Essex.
- Nipomo Dunes-Point Sal Coastal Area, San Luis Obispo, and Santa Barbara Counties—extends from Pismo Beach south for 17 miles.
- \*Pixley Vernal Pools, Tulare County—6 miles east of Pixley.
- \*Point Lobos, Monterey County—near Carmel.
- \*Pigmy Forest, Mendocino County—5 miles south of Fort Bragg.
- \*Rainbow Basin, San Bernardino County—8 miles north of Barstow.
- \*Rancho La Brea, Los Angeles County—Hancock Park, Wilshire Boulevard, Los Angeles.
- \*San Andreas Fault, San Benito County—at Cienega Winery, 8 miles south of Hollister.
- \*Sand Hills, Imperial County—15 miles west of Yuma.
- San Felipe Creek Area, Imperial County—13 miles northwest of Westmoreland.
- Snarktooth Hill, Kern County—8 miles northeast of Bakersfield.
- Tijuana River Estuary, San Diego County—between the city of Imperial Beach and the U.S.-Mexico International Boundary.
- Torrey Pines Reserve, San Diego County—20 miles north of San Diego.
- \*Trona Pinnacles, San Bernardino County—7 miles south of Argus.
- Turtle Mountains Natural Area, San Bernardino County—30 miles south-southwest of Needles.

#### COLORADO

- \*Garden of the Gods, El Paso County—10 miles northeast of Pikes Peak.
- Garden Park Fossil Area, Fremont County.
- \*Lost Creek Scenic Area, Park County—40 miles southwest of Denver.
- Morrison Fossil Area, Jefferson County—just north of Morrison.
- Raton Mesa, Las Animas County—10 miles south of Trinidad.
- Russell Lakes, Saguache County—10 miles south of Saguache.
- Slumgullion Earthflow, Hinsdale County—2 miles south of Lake City.
- Spanish Peaks, Huerfano and Las Animas Counties—25 miles southwest of Walsenburg.
- \*Summit Lake, Clear Creek County—13 miles southwest of Idaho Springs.

#### CONNECTICUT

- \*Bartholomew's Cobble, Litchfield County, Conn., and Berkshire County, Mass.—1 mile west of Ashley Falls, Mass. (See also Massachusetts.)
- \*Beckley Bog, Litchfield County—2½ miles southeast of the village of Norfolk.
- Bingham Pond Bog, Litchfield County—1 mile east of the New York State boundary.
- Chester Cedar Swamp, Middlesex County—2 miles west-southwest of the village of Chester.



## United States Department of the Interior

## OFFICE OF HEARINGS AND APPEALS

## INTERIOR BOARD OF LAND APPEALS

4015 WILSON BOULEVARD  
ARLINGTON, VIRGINIA 22203

## APACHE ORO COMPANY

IBLA 74-249

Decided August 5, 1974

Appeal from a decision of the Arizona State Office, Bureau of Land Management, rejecting mineral lease applications A 7645 and A 7646 for lands within the Lake Mead Recreation Area.

Affirmed.

Mining Claims: SECRETARY OF THE INTERIOR - Discretion To Lease.

The leasing of lands for mineral exploration and development within the Lake Mead Recreation Area is discretionary, and where an applicant for a mineral lease has not shown to the satisfaction of the authorized officer that the lands applied for are likely to contain deposits of the specified mineral which can be developed in paying quantities, the rejection of the offer will be affirmed.

APPEARANCES: Warren M. Mallory, President, Apache Oro Company, for the appellant. John McMunn, Esq., Office of the Solicitor, Department of the Interior, San Francisco, California.

## OPINION BY ADMINISTRATIVE JUDGE STUEBING

Apache Oro Company has appealed from the decision of the Arizona State Office which rejected two of appellant's applications for mineral leases covering lands in the Lake Mead Recreation Area.

Mineral leasing in this area is authorized by the Act of October 8, 1964, 16 U.S.C. § 460m-2 (1970), and the regulations in 43 CFR Subpart 3566. The statute provides that "\* \* \* the Secretary may provide for the following activities \* \* \*: (3) Mineral leasing;". 16 U.S.C. § 460m-3(b). This language vests

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INDEX CODE:

43 CFR Subpart 3566 (1973)

43 CFR 3566.3-1(1973)



## GOLD PROPERTY FOR SALE

PROPERTY: (Not marked on enclosed map). Consists of 2400 acres of gold dry placer claims in northwestern Arizona near Lake Mead. Altitude is approximately 3500 feet above sea level and the property is covered with a beautiful Joshua tree forest. It is approximately 100 miles by highway from fabulous Las Vegas. All claims are properly posted with notice of location, are recorded in county records, and all assessment work is up to date.

HISTORY: The first discovery of gold on this land was made 10 years before World War II. With subsequent rapid decline of national interest in gold mining, the property has essentially lain dormant except for occasional "pick and shovel" prospectors. According to a report by members of the United States Geological Survey, this location is one of the principal gold districts of the Western United States.

The significance is that it is one of the most recent important rich gold discoveries in the United States. Added to this is the fact that the gold recovery is one of the highest in the United States per dollar of operating cost.

EXPLORATION: Tests by the Arizona Bureau of Mines produced an average gold value of \$1.21 per cubic yard. Tests by Mr. Ted L. Johnston, Consulting Professional Mining Engineer, produced gold value from \$.50 to \$8.00 per cubic yard. Two old time prospectors in operating a small scale hand operated dry shaker, estimate the average gold value at \$2.00 per cubic yard, and have found value as high as \$40.00 per cubic yard. A quick calculation using a six foot depth of top soil on 2400 acres shows the potential gold value to be many millions of dollars.

CHARACTER OF GOLD: The gold occurs as nuggets (not flower gold) ranging in size from a pin head to 3/4 inch pieces. (See enclosed photograph). The nuggets have sharp, ragged surfaces and are not rounded and smoothed with wear, all of which indicates the material has not traveled far. A few of the nuggets carry attached quartz, further indicating a local derivation.

LODE POSSIBILITIES: Because of the unusual raggedness and size of the nuggets, the geology, and the association of quartz, the chances are extremely likely that very rich lode deposits are near by. No lode exploration has been conducted on the property to our knowledge.

CHARACTER OF GROUND: The gold-bearing gravels consist predominantly of slabby schist pebbles, with few boulders more than ten inches in diameter, intermingled with abundant clay and sand. The pebbles have sharp, ragged surfaces (like the gold nuggets) indicating local derivation. These gold-bearing gravels consist of a top soil blanket from two to ten feet deep and rest upon a hard-pan of caliche-cemented gravels whose depth is unknown. No core drilling exploration of this caliche has been done to determine its gold bearing possibilities. However, some of the gold nuggets carry attached caliche material, thus, indicating it is also gold-bearing.



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PROCESSING REQUIRED: Large capacity dry processing and earth moving equipment is needed to work this gravel and clay blanket. However, because of the looseness of the soil, no overburden to remove, and only a few boulders more than ten inches in diameter, no drilling or blasting is required to work this blanket. This type of soil is considered to be the least costly to process. Of course, should the hard-pan caliche under the blanket be worked, drilling and blasting probably would be required.

OBTAINING ADDITIONAL SURROUNDING LAND: Some adjoining sections are owned by a railroad company. Correspondence with officials of this railroad indicates they would be willing to lease these sections to a financially responsible mining company with the necessary large-capacity dry processing equipment and who will explore and work the land.

TOPOGRAPHY: The western part of the area is a low northward-trending ridge. To the east of this ridge the plain is pediment-floored with thousands of arroyos from two to twenty feet deep. Its vegetation consists principally of small desert shrubs and abundant Joshua trees.

AERIAL PHOTOS IN THREE DIMENSIONS: Complete aerial photographs have been taken of the property and a three dimensional study has been made with a stereoscope. Black sand is found in abundance with the gold nuggets and these photographs show the many points of concentration of the black sands, impossible to see from the ground. These concentrations when correlated with arroyo topography should show where the most rich gold deposits are located. No exploration has been done at these many points of concentration. This information will be made available to the purchaser of the placer gold claims.

PRESENT LEASES AND OPTION: In 1961 after exploring the property, a small mining company leased 800 acres and was given an option to lease the remaining 1600 acres. They have had difficulty in obtaining sufficient financing for the necessary large capacity dry processing equipment which they planned to move onto the property. Thus, they may be unable to fulfill the terms of their lease which could expire in June, 1962.

BILL BEFORE U. S. CONGRESS: According to an Associated Press news release to newspapers on March 15, 1962, "the Senate minerals sub-committee is considering a bill by Senator Clair Engle (D-Calif.), that would provide incentive payments of up to \$35.00 an ounce for newly mined gold." Because the U. S. Treasury's gold reserve is the lowest in history, some incentive such as subsidy, or a raise in gold prices, probably will be made by the Government in the near future to stimulate gold mining.

RANCHO HOMESITES: This property is an ideal location for rancho homesites. In fact, land near our claims is being sold by a real estate development company for \$316.00 per acre in small parcels. Another real estate development company is selling homesites about 25 miles away for \$495.00 per acre, yet it is not anywhere as desirable or beautiful as our area.

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WATER: A water line has been built from a natural spring a few miles from our property and runs across and stops on our claims. However, the water line is owned by a rancher who has Taylor grazing rights in the area. Also, it has been reported that water in the area has been found by drilling to depths from a minimum of 60 feet to a maximum of 660 feet.

CLIMATE: Unlike many mining areas of the United States where winter weather stops operations, this area can be worked year-round. The average annual maximum temperature is 76.7 degrees, the average annual minimum temperature is 46.1 degrees, and total yearly rainfall averages only 10.09 inches resulting in low humidity. Summer temperatures are 8 degrees cooler than that of Phoenix, Arizona.

APACHE ORO COMPANY: Our company is offering the gold placer claims for sale. Its officers are:

President - Mr. Ted L. Johnston, Professional Consulting Mining Engineer, with experience in mining in North and South America and the Orient. Is currently employed as Chief Mining Consultant with the Mineral Concentrates Company (Mincon), Industrial Park, Loveland, Colorado.

Vice President and Treasurer - Mr. Warren M. Mallory, Professional Registered Engineer. Former Professor of Engineering at the University of Wyoming. Is currently President of Ideas, Inc., a nationwide sales organization with headquarters at 214 Iverson Ave., Laramie, Wyoming.

Secretary - Mr. Elwood G. Childers, formerly Vice President of the Bank of Commerce, New York City. Is currently President of Ideas - Eastern, Inc., 4545 Connecticut Ave., N. W., Washington, D. C.

SOURCES OF DATA: The specific sources of information given in this report may be obtained by personally contacting any of the three directors of Apache Oro Company

WHY WE ARE SELLING: Apache Oro Company does not have the necessary finances to purchase and operate the large capacity dry processing and earth moving equipment required to process this large volume of earth. Also, the Officers do not have the personal time required to devote to the operation due to other pursuits.

B22

from: W.H. Crutchfield Jr. Mohave County Prospect Assessment Compilation (post 1982)

Name of Mine or Prospect:		Township	Range	Section	Priority
King Tut Placers		29N	17W	9 adc	B
Principal Minerals:		1:250,000 Quad		7.5' - 15' Quad	
Gold		Kingman		Garnet Mtn.	
Associated Minerals:		District		Principal Product	
Gravels		Lost Basin		Gold	
Type of Operation:		County	State	Type of Deposit	
Surface		Mohave	Ar.	Sedimentary	
Ownership or Controlling Interest:					
Apache Oro Co.					
Access: from the intersection of U.S. 93 and Pierce Ferry Road, proceed north on Pierce Ferry Road for 34 miles. Turn left on unimproved road for 1 mile. Mine is shown on topographic quadrangle.					
Structural Control or Geological Association:					
"Sedimentary, Placer gravels."1					
Age of Mineralization: Tertiary					
Production History			Geochemical Analyses		
"Nuggets ranging in size from a pin head to 3/4" in diameter."2					
References					
1) ADMR file, Phoenix, Ar. 2) Mallach (1977) p. 44					

B-23

Schrader - field work, <sup>Oct</sup> 1906 - <sup>Feb</sup> 1907

Cyclopic - early 80s

1901 - W/ Golden Rule was sold  
to a Minneapolis outfit who killed some  
ore 1904 a Denver outfit took

over — ad. Museum to Weyman-King

$$\frac{3}{4} \text{ mile} \times \overset{\text{length}}{200'} + \text{in width}$$

Prominent Reefs of alumped fe-stained breccia  
 several or more feet on north outcrop  
 several feet above the surface. OC  
 identical to the Croppings of the  
 Golden Rule and other veins in the  
 area — but do not continue at depth  
 like a fissure vein but give way to less  
 firm material having an "imperfect crystalline"  
 structure

No mining below 30 ft - red clay or gouge at this depth

1906 - One low grade - sand to mill  
\$7 to \$8 / ton and to cyanide well.

1,000,000 tons reported in night 1906

Snatch - abandoned in 1906 -  
 we too low grade to pass haulage  
 Is a small 7 miles away.

Flat

B-24

*Alone*  
NAME: KING TUT PLACERS (f)

COUNTY: MOHAVE

T 29 N

R 17 W

SEC. 9

E 1 3800

DISTRICT: LOST BASIN

*Garolite 15*

*NE 1/4*

Mineralization: Au

Geology:

Type Operation:

Production:

References: ABM 135

*clipping file*

*ABM, Bull 166*

Mohave Cty Card File

DEPARTMENT OF MINERAL RESOURCES

News Items

Date 10 / 13 / 17

Mine King Tut (Apache Oro)

Location Gold Basin

Owner Norm Frank Denver Colorado

Address Meadville

(Secs 4 & 9 - T29N R17W

Operating Co.

Address

Pres.

Genl. Mgr.

Mine Supt.

Mill Supt.

Principal Metals

Men Employed

Production Rate

Mill, Type & Capacity

Power, Amt. & Type

Signed

(Over)

Did not visit  
Supposed to have  
plant similar to  
Polze mine (see report dated  
10-13-77)  
info from George Fass.

B27



DEPARTMENT OF MINERAL RESOURCES

News Items

Date 10/13/17

Mine King Tut (Apache Oro)

Location Gold Basin

Owner Norm Frank Denver Colorado

Address Meadville

(Secs 449 - T29N R17W

Operating Co.

Address

Pres.

Genl. Mgr.

Mine Supt.

Mill Supt.

Principal Metals

Men Employed

Production Rate

Mill, Type & Capacity

Power, Amt. & Type

Signed

(Over)

Did not visit  
Supposed to have  
plant similar to  
Polpe mine (see report dated 10-12-17)  
Info from George Fass.

B-27

B-28



C  
O  
P  
Y

*Apache River Co Placers*

TAKEN FROM MINING JOURNAL, JULY 30, 1933, p. 10

Sampling of the KING TUT PLACERS, north of Kingman, Arizona, carried on recently over a period of five and one-half months by Guy E. Pitts, Rives-Strong Building, Los Angeles, produced an average gold value for the area sampled of 69 cents per bank yard. The tonnage blocked out is approximately 90,000 tons, with an additional 250,000 tons now in sight of about the same average value. The area covered by the samples to date is approximately one section, with six additional sections remaining to be tested. cursory examination has shown the possibility of an eight to 10 year operation on the basis of 24,000 tons per month. The recovery plant, now ready for installation on the property, has a capacity of 100 bank tons per hour, and will start operation on or before the fifteenth of August. The owners believe that this is the only "Dry Extraction Plant" ever worked out scientifically and thoroughly tested prior to installation to run a large tonnage of gravel of proven value. The plant is designed to keep the gravel thoroughly dry and effect a continuous rerun of a wide cut middlings, thus effecting a saving of 95 per cent of known gold values. This effect is produced by a series of roughers, middlings concentrators and finishers, with high-grade concentrate to amalgamation.







B-29

Figure 1



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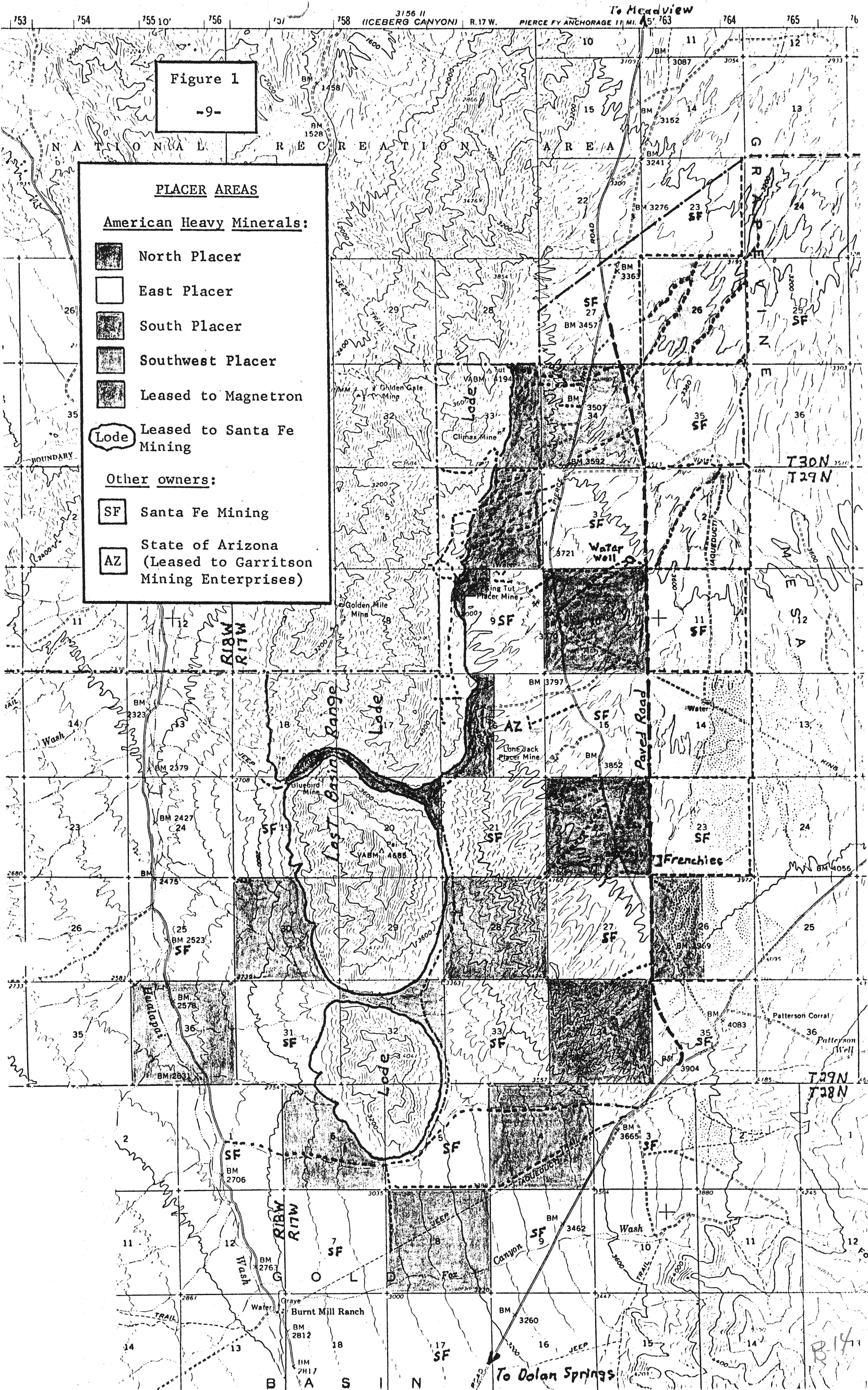
PLACER AREAS

American Heavy Minerals:

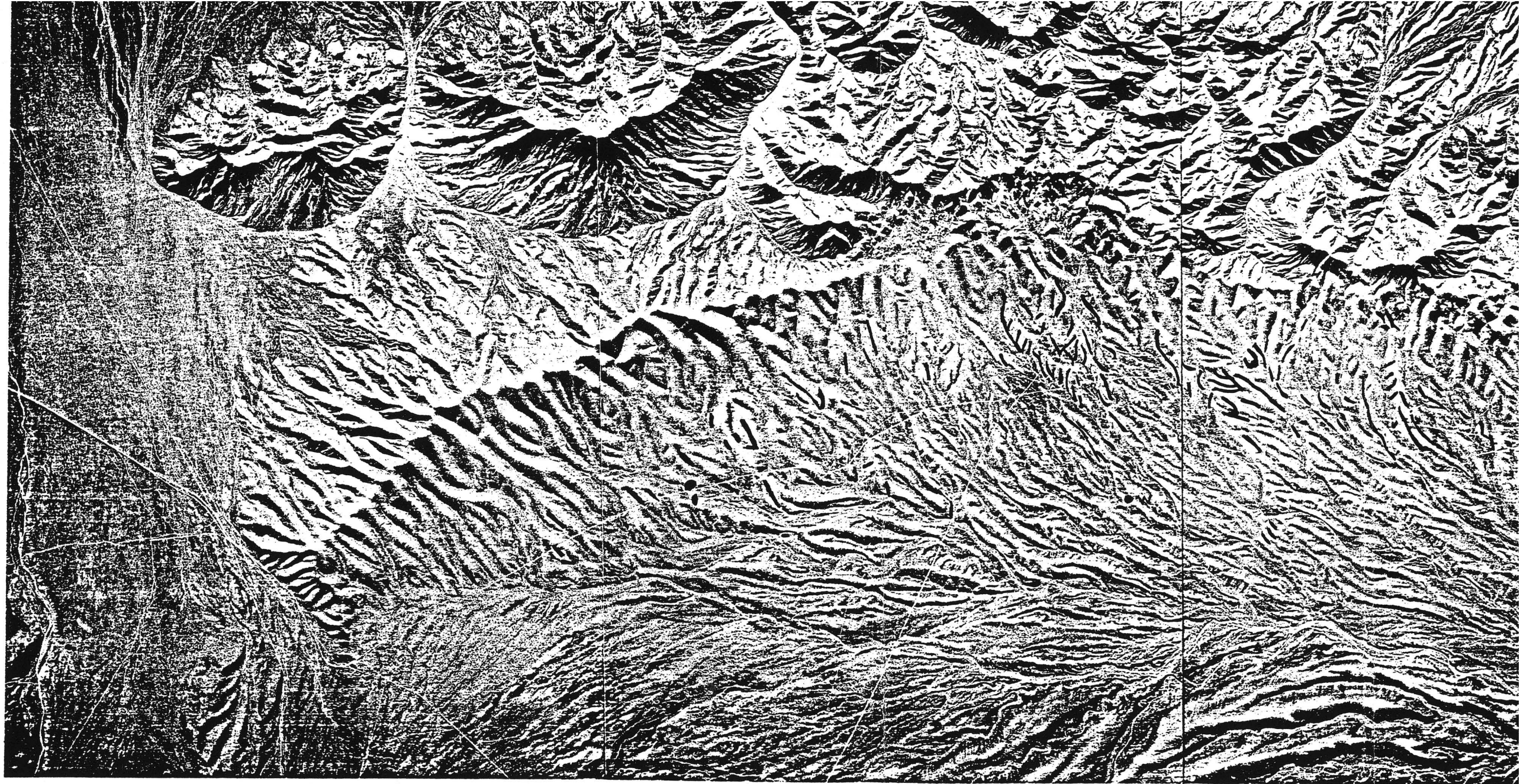
-  North Placer
-  East Placer
-  South Placer
-  Southwest Placer
-  Leased to Magnetron
-  Leased to Santa Fe Mining

Other owners:

-  Santa Fe Mining
-  State of Arizona  
(Leased to Garritson  
Mining Enterprises)







↖ ————— 7 miles —————

- Gulches placered for gold by the King Tut and others. Scale:  $1\frac{1}{2}'' \doteq 1$  mile.
- W --- Water well, 4,000 gal./min. (estimated), 1,340 feet deep in alluvial gravels.