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The following file is part of the John E. Kinnison mining collection

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John Sandy
Tucson, Arizona

June 26, 1972

John E. Kinnison
Tucson, Arizona

File
Blue

Reconnaissance, Quartzsite
Quadrangle, Yuma County,
Arizona

As you know we have copies in the office of a recently-completed geologic quadrangle covering part of the Plomosa mountains, by Fred K. Miller. In the mountain range to the southeast of the Plomosa placers which you recently examined, Miller has mapped a "quartz porphyry." Miller describes this unit as one in which plagioclase phenocrysts as well as an originally affinitic ground mass are both altered almost totally to sericite or epidote. Would you briefly examine some of the exposures of this unit, to determine if this alteration is a porphyry copper type with concomitant disseminated sulphides. Miller also maps a "quartz monzonite porphyry," northwest of Black Mesa, which sounds a little like the Laramide granite. You might have a look at this area also.

I would suggest that, being in the vicinity, you contact the operators of the old Plomosa placer workings--if any are in the vicinity--and determine what they have to say about the gold values and the distribution thereof.

JEK/b1

J. J. Durek
Oakland, California

August 8, 1972

John E. Kinnison
Tucson, Arizona

J. Sandy
File
Blue

Plomosa Placers, Yuma County,
Arizona

This will transmit John Sandy's report on the subject property, which I believe you will find interesting. He concludes, and I concur, that the gold values reported by Church are in error, and that the prospect is not of interest to Kaiser.

I had asked John to include a calculation showing the value per 1 mg of contained gold in the sample box used for measurement. This was a box which I had on hand, approximately 1' square and $\frac{1}{2}$ ' deep.

As has been the case with so many gold placer deposits which are reported to contain a dollar or more per yard, the Plomosa Placers turned out in the end to be over-rated. I had held out slightly more hope for these because of the nature of the report--it was specific.

As usually, there is no way to account for the discrepancy between the gold content reported and that actually found by careful sampling. This was also the case at the Mesquite diggings area in California, southwest of Blythe, which Mel and I examined a little over a year ago. The property had been presented by Tipperary Land, and the results of exhaustive bulk sampling and concentration were the basis for examination. Although occasional pockets of free gold undoubtedly did exist, systematic sampling shows that the area in general contains virtually no gold at all. Rarely is there a satisfactory explanation for these discrepancies, and it makes one despair of following down rumors and unverified reports when even legitimate-appearing reports cannot be verified.

JEK/bl

John E. Kinnison
Tucson, Arizona

August 3, 1972

John Sandy
Tucson, Arizona

J. J. Durek
File
Blue

Plomosa Placer Reconnaissance
Geologic Report

Background on the Plomosa Placers is given by your file memo of June 5, 1972, in which you call attention to a possible gold content of plus \$1.00 per cubic yard, based on a quotation from an old report by John Church, mining engineer.

The Plomosa Placers are located on the western edge of the Plomosa Placers, six miles east-southeast from Quartzsite, in Yuma County, Arizona, (see enclosed location maps). Since their discovery in the 1860's, some of the richest areas have been extensively worked and systematically tested by means of pits dug down to solid rock. The property is essentially idle.

I submit the following report on a reconnaissance of these placer deposits, having spent three days on the ground assisted by Paul Strobel. During this time samples were collected from steep-sided dry washes, and also from shaft dumps.

Enclosed are: (1) Location map of Plomosa Placer--portion of the Quartzsite 15' quadrangle; and (2) Plomosa Placer sketch map.

CONCLUSIONS AND RECOMMENDATIONS

The old professional report by John Church (quoted by V. C. Heikes, 1912) is evidently in error since the present sampling yielded much lower gold grades (trace to 21¢ per cu yard). As Church reported, however, gold does occur throughout the unconsolidated upper portion of the gravels, and not just close to bedrock.

Most of the mining was confined to narrow channels following higher grade streaks of gold. The Church report suggested a more uniform distribution.

No further work appears to be justified.

GEOLOGY

The Plomosa Placers consist of two large areas of alluvial gravels separated by a low hill (Attachment B). Both principal areas cover about a half square mile with several times this area further downslope where some testing has been done. The gravels are composed mainly of schist and volcanic rocks with some granite. All of the fragments are of probable Precambrian to Paleozoic ages.

The gold was probably derived from gold-bearing quartz veins and stringers in the schist and granite, and has a fineness of approximately 870 (as calculated from Church's

report). Coarse gold is found in the up-slope gravels, being quite visible with the naked eye in a panned sample.

Schist bedrock crops out amongst the workings, which are generally confined to meanders. Most of the lower portions of the gravels are well-cemented with caliche. Down-slope from the bedrock outcrops areas prospect pits more than 80 feet deep were sunk in unconsolidated gravel.

Well-sorted and uniform layers of gravel are occasionally exposed in wash banks, but most of the gravels are poorly sorted and appear to have been deposited rapidly with little or no re-working.

The alluvial slopes are covered with smooth "desert pavement," with very sparse vegetation, making vehicle access very easy. These slopes are dissected by steep-sided dry washes which average about 15 feet deep.

SAMPLING AND ASSAYING

Method

Channel samples of wash banks and test pit dumps were cut with a pick and shovel. The surface to be sampled was cleaned off and fresh gravel was collected on a metal sheet. The size of the channel cut was gauged to just fill a 754 cubic inch screening box which was used as a volume constant. This method of sampling eliminated splitting and quartering, and all of the channel sample taken was panned.

The 754 cubic inch sample was screened to $-1/4"$. The oversize material was saved for volume/weight calculations. The $-1/4"$ sample was panned to a heavy mineral concentrate. Since the weight of this concentrate was small, the entire concentrate was fire assayed and the results reported in both ounces of gold per ton of concentrate, and as total weight of gold in milligrams.

The 754 cubic inch volume constant is equivalent to 0.016 cubic yard. The weight of this volume of gravel averaged 50 pounds, which calculates to 3,125 pounds per cubic yard--a reasonable approximation for this type of dry gravel. Swelling could not be measured, but at most would not be more than 20%.

Results

The following calculations show the dollar value of 1 milligram of gold per sample box used on the Plomosa Placer sampling.

31.1 grams = 1 troy ounce

31,100 milligrams = 1 troy ounce

Assume: gold at \$40 per troy ounce

$\frac{31,100 \text{ mg}}{\$40.00} = 777 \text{ milligrams}/\1.00

Volume constant (measuring box) is 754 cu. in.

$$\frac{754 \text{ cu. in.}}{46,656 \text{ cu. in./cu. yd.}} = .0165 \text{ cu. yd.}$$

$$\frac{1.0 \text{ cu. yd.}}{.0165 \text{ cu. yd.}} = 60.6 \text{ (Reduction ratio)}$$

$$\text{then: } \frac{777 \text{ mg Au}}{60.6} = 12.8$$

or: 12.8 mg Au/sample box would equal \$1.00 per cubic yard

and: 1 mg Au/sample box = approximately \$0.08/cubic yard

The results of the sampling are shown below:

<u>Sample No.</u>	<u>Vertical Interval</u>	<u>Oz/Cu Yd</u>	<u>\$/Cu Yd</u>
1	0' - 6' wash bank	.0013	0.051
1	6' - 12' wash bank	.0052	0.208
1	12' - 15' wash bank	.0014	0.056
1	15' - 21' wash bank	-	-
2 D.H.	0' - 25' drill hole	-	-
2	0' - 8' wash bank	-	-
2	8' - 14' wash bank	-	-
3	0' - 10' wash bank	-	-
3	10' - 18' wash bank	.0014	0.056
3	18' - 23' wash bank	-	-
4	0' - 18' wash bank	-	-
5	0' - 10' wash bank	-	-
6	0' - 13' wash bank	-	-
T.P. 1	0' - 25' test pit	-	-
T.P. 2	0' - 25' test pit	-	-
T.P. 3	0' - 25' test pit	-	-
T.P. 4	0' - 25' test pit	-	-

PROPERTY DATA

Access

A good road connects Interstate 10 from the eastern Quartzsite exit with the diggings (Attachment A). The first three miles of this road is paved, being the old highway east. Where the paved road ends, a graded dirt road continues south and then east to the northern portion of the placers on Plomosa wash. A jeep trail runs directly from Quartzsite to the southern portion of the placers, which lies between Plomosa and Plomosita wash.

History

The earliest production from the Plomosa Placers was recorded around 1860. By the early 1900's richer portions of the gravels had been honeycombed with small diggings which are still intact. Several eras of work followed as indicated by numerous prospect and test pits, small open cuts, and crushing and screening foundation sites.

Plomosa Placer Properties were incorporated in 1916 for \$500,000 by a Phoenix syndicate. About ten claims were recorded with at least one being patented. No record of production or work done is available.

During the Depression small-scale dry-washing operations reportedly averaged 25¢ to 50¢ per day per man. A larger scale operation was begun by L. A. Applington and Associates of Quartzsite in 1941, under the name of the Plomosa Development Company. Lode and placer claims were purchased from Plomosa Placer Properties and a stamp mill erected.

Land Status

Current land status in the Plomosa Placer area is greatly simplified from the situation a few years ago when more than 900 claims were held by the Gadbury family. Without researching too deeply it appears that claims are presently held by the following persons:

- Jack Pot.....Calvin T. and Ada K. Giffin
- Jack Pot Extension.....Calvin T. and Ada K. Giffin
- Plomosa A-1 through A-10.....Dan Patch
- Plomosa B-1 through B-10.....Dan Patch
- Plomosa C-1 through C-10.....Dan Patch
- ERK 1 through 20.....R. W. and E. G. Gadbury

INTER-OFFICE MEMORANDUM

TO Files
AT Tucson, Arizona

DATE June 5, 1972

FROM John E. Kinnison
AT Tucson, Arizona

COPIES TO J. Sandy
J. J. Durek
Blue

SUBJECT Plomosa Gold Placer, Yuma
County, Arizona

In the Arizona Bureau of Mines Bulletin 160, 1952, "Arizona Gold Placers," the following description of the subject property is given:

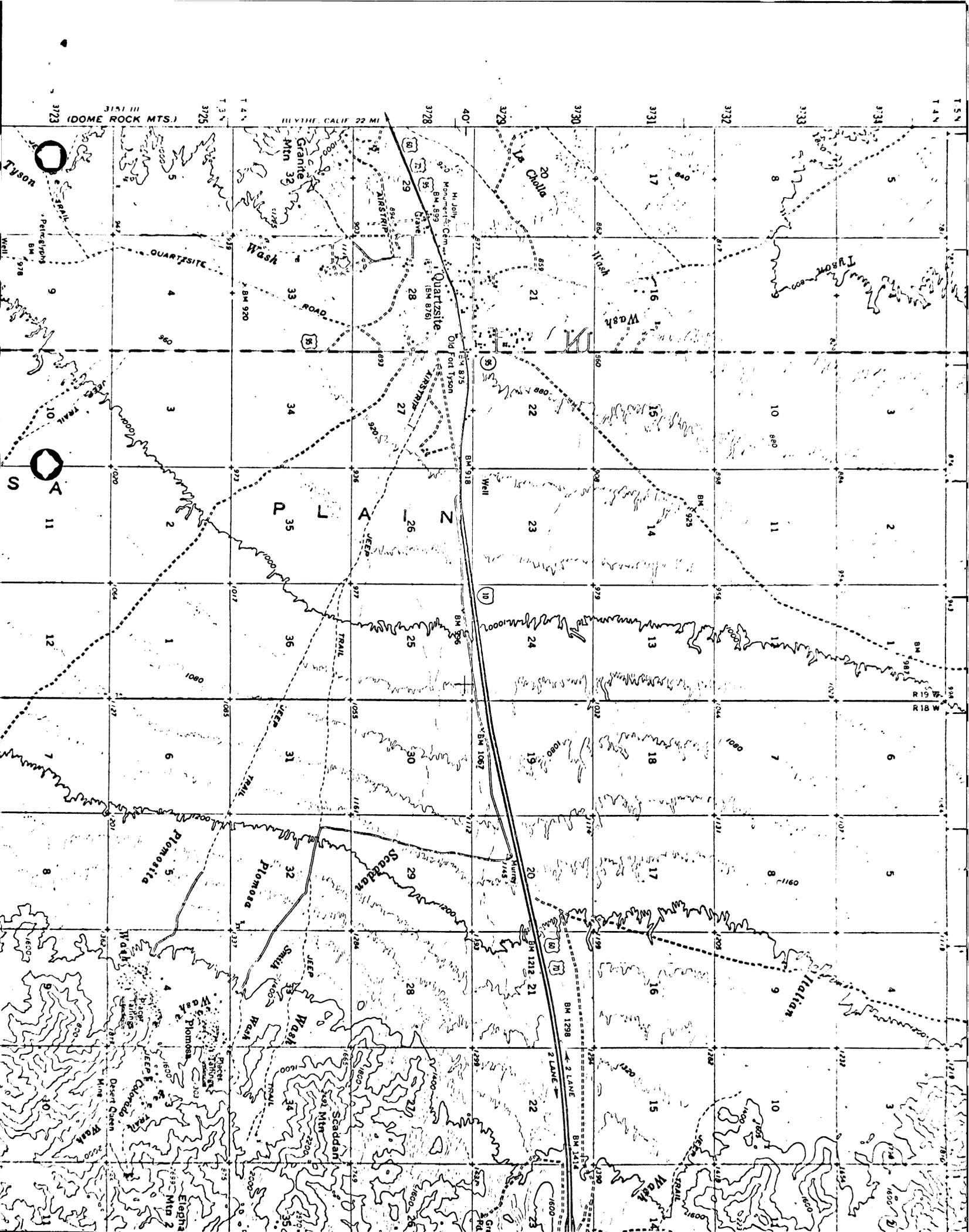
V. C. Heikes (1912) quotes from a professional report by John Church, who sampled the property from vertical cut-banks in arroyos dissecting the gravels. According to Church, the upper eight yards of gravel in an area 2400 ft. x 1500 ft was sampled, and yielded an average value of 64¢/yard. Gold was estimated at \$18/oz. (870 fine). The average value lay between extremes of 42¢/yard and \$1.04/yard.

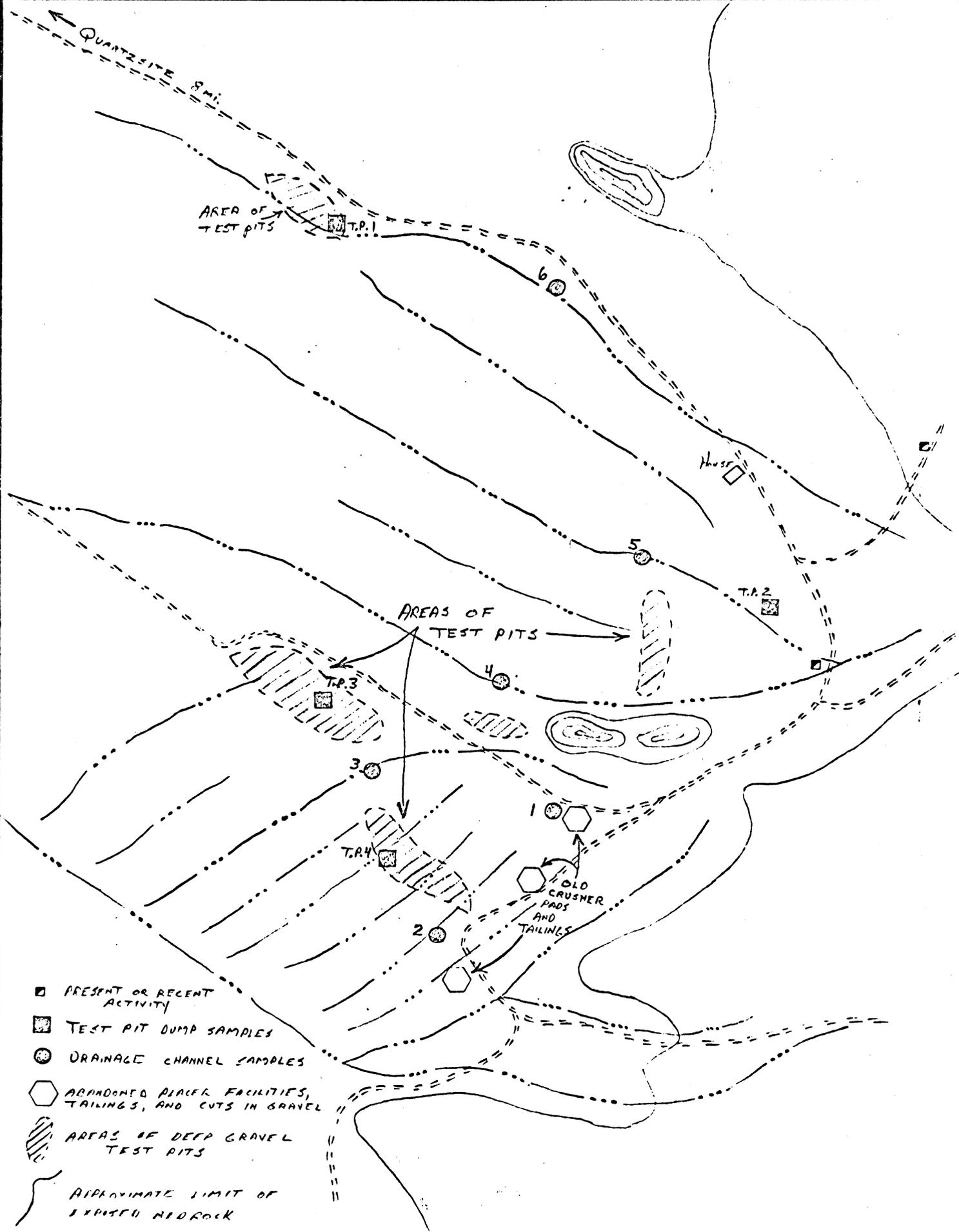
Up-dating to gold at \$40/ounce, and retaining the estimated 870 fineness, produces an average value of \$1.23/yard for consideration at this time.

The exact location of the area sampled by Church is not known, although the general area is defined. Using modern equipment to handle unconsolidated gravel should produce a sufficiently low cost to approach a commercial situation, even considering cost of pumping and recycling water.

An examination is underway to determine if the quoted value can be confirmed, and if it exists in unconsolidated material.

JEK/bl





- PRESENT OR RECENT ACTIVITY
- ▣ TEST PIT DUMP SAMPLES
- DRAINAGE CHANNEL SAMPLES
- ⬡ ABANDONED PLACER FACILITIES, TAILINGS, AND CUTS IN GRAVEL
- ▨ AREAS OF DEEP GRAVEL TEST PITS
- APPROXIMATE LIMIT OF EXPOSED BEDROCK

KACC 5419 (12/70)

KAISER EXPLORATION & MINING COMPANY
 OAKLAND, CALIFORNIA

PLOMOSA PLACER DISTRICT
 PRELIMINARY SECTION

SCALE: 1" = 100' BY [initials] DATE 6/22/70 DWG. NO.

INTER-OFFICE MEMORANDUM

TO Files ✓
AT Tucson, Arizona

DATE June 6, 1972

FROM John E. Kinnison JEK
AT Tucson, Arizona

COPIES TO John Sandy
George Richardson
Paul Strobel

SUBJECT Gold Placer Sampling

After panning a placer sample, the concentrate is fire assayed for gold and silver, and reported in troy oz./short ton. If we know, by weighing the entire sample before panning, the dry weight of the total sample, and the dry weight of the concentrate, these two figures provide the Ratio of Concentration.

Thus: $\frac{\text{Weight of Total Sample}}{\text{Weight of Concentrate}} = \text{Concentration Ratio}$

The assayer provides an assay by weight for the concentrate, or Concentrate Assay

Then: $\frac{\text{Concentrate Assay}}{\text{Concentration Ratio}} = \text{Placer Sample Assay}$

To convert assay in amount/ton to amount/cubic yard requires a single conversion, based preferably on weight and measurement in the field to determine the number of pounds in a cubic yard. In the absence of measurements, an approximation may be made, and is usually sufficient for preliminary evaluation. Typically, unconsolidated sand and gravel from basin fill weighs about 3000 lbs./cubic yard. The alluvium at the Mission mine, for which I have accurate figures, weighs about 3200 lbs./yard, or 1.6 tons/yard, which is equivalent to a tonnage factor of 16.8.

Thus, @ 3000 lbs./yard (1.5 tons/yard):
Gold, ounces/ton x 1.5 = Gold, ounces/yard

JEK/bl

John Sandy
Tucson, Arizona

June 6, 1972

John E. Kinnison
Tucson, Arizona

P. S. Strobel
File

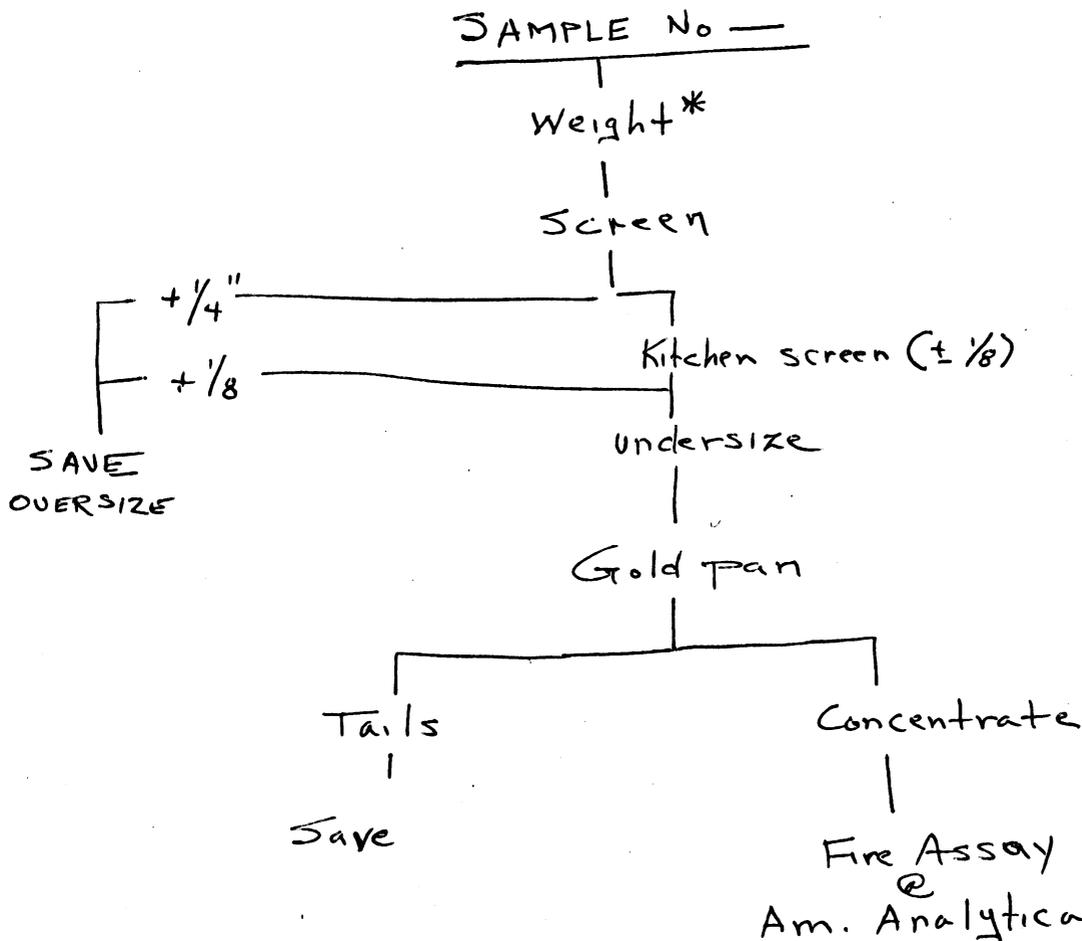
Plomosa Gold Placer

I attach a flow sheet for handling the samples for the
subject district.

JEK/bl
Attach.



Plomosa Placer



Request duplicate runs of 1-Assay for each, with duplicates reported separately.

* The Fairbanks Morse Scale in the store room is graduated in lbs-ounces, requiring only a simple conversion to lbs and $\frac{1}{10}$'s of lbs.

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