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This reports covers:

Abstracted by N Johnson
7/16/96

GRAvel Pit 10 (507A-M-O - 17N, 2W, Sec5)
Gravel Pit 11 (508-M-O - 17N, 2W, Sec5)
Gravel Pits 1 (59-M-O - 17N, 2W, Sec5)
Gravel Pits 2 (60-M-O - 18N, 2W, Sec32)
Gravel Pits 4 (515-M-O - 18N, 2W, Sec32)

# GRAVEL VOLUME CALCULATIONS
# of the
# CHAMPION OIL & MINING PROPERTY
# Yavapai County, Arizona

## INTRODUCTION

At the request of Champion Oil and Mining Company, Pasadena, California and through their representative, Mr. H. D. Edmonds, Phoenix, Arizona, the writer had been retained to conduct an impartial study of the sand and gravel potential of their 4500 acre holdings in Big Chino Wash just northwest of Paulden, a small community on U. S. Highway 89 about 25 miles north of Prescott, Arizona, all in Yavapai County.

Accompanied by Mr. H. D. Edmonds, the writer personally visited the holdings on February 13 to examine same and to personally examine the "in place" condition, attitude and characteristics of the sand and gravel comprising the valley fill of Big Chino Wash.

Drillers logs of water wells drilled on or near the property were examined and studied at the U. S. G. S. water branch office in Phoenix and "work" cross-sections were prepared to arrive at various conditions and conclusions and form the basis of the sand and gravel volume calculations of this report.

## CONCLUSIONS

Having studied the available data including geological deposition of the erosional material in the area of concern, the writer concludes the following:

(1) Volume calculations indicate that the property contains some 86,333,600 cubic yards or 116,555,000 tons of sand and gravel which varies from eight to 30 feet in thickness and zero to eighteen feet of soil overlying the gravel.
(2) Additional reserves are present below the depths used in the calculations but would contain more clay than the "mother natures" washed strata immediately below the "soil".
(3) The Arizona Highway Department considers the sand, chip gravel and gravel products--produced by a previous operator--, as class "A" material for structural concrete and road base, and
(4) The past operator has supplied the market from Prescott north, westward to Kingman and eastward to Winslow and on special occasion to Phoenix.

## PROPERTY and LOCATION

The property, as shown on Maps 1, 2 and 3, comprise about 4,500 acres of fine valley land suitable for grazing land, homesites development and sand and gravel production. The holdings also cover a tremendous underground water reservoir which is tapped by many wells in the valley at depths of less than 200 feet.

This acreage is located on both sides of the Big Chino Wash from Paulden to the northwest. Paulden is 25 miles north of Prescott on U. S. Highway 89.

Electric power, telephone, piped natural gas and water is available on the property.

## GEOLOGY

Big Chino Wash valley is at least 30 miles long and varies up to half that distance in width. The "valley fill" (gravel, sand, clay) is from 400 to 500 feet in thickness from the surface to the "malapai" bedrock. Gravel, sand and silt also exist below the malapai bedrock as indicated by some of the drilled water wells which have penetrated the malapai.

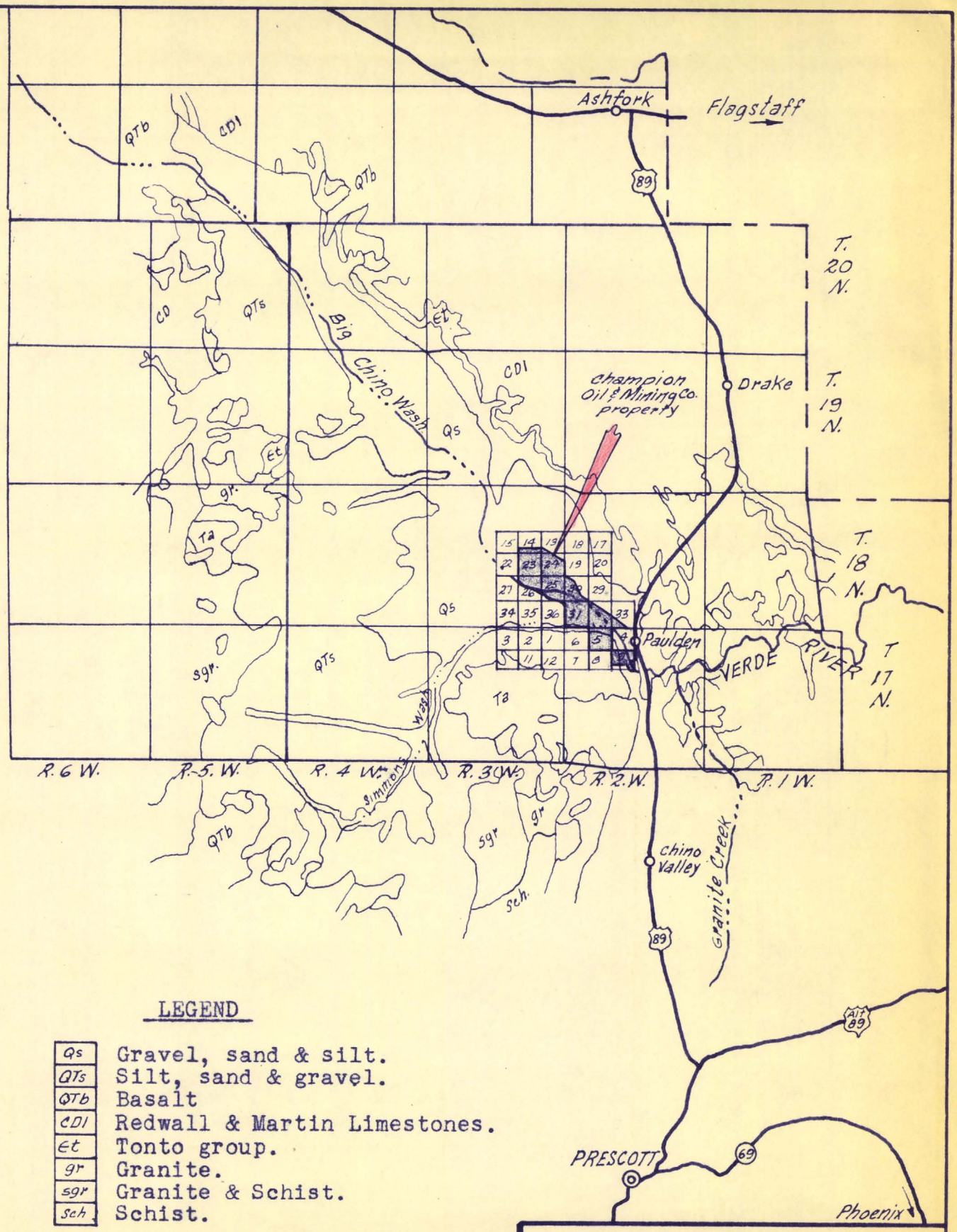
The sand and gravel of interest is the upper most, near surface layer which is for practical purposes "clean of clay" and shown to be very persistant in latitude as it has been readily recognized by the drillers and in their logging of the wells.

Below this gravel-sand strata, the drillers have termed the material as sand and clay of an alternate nature. Water well drillers are not professional geologists and thus perhaps do not present the correct classifications of the material at all times. They usually use drilling rates as their guide to classification of the material, --fast rate for clay and sand, - a slow rate for gravel-sand or rock.

## VOLUME CALCULATIONS

Gravel, sand and silt deposition, although dependent on surface water flow, usually follows definite patterns. This geologic and mechanical condition is in evidence by reason of the several water wells that have been drilled in six of the ten sections in which the property is located.(see Map 3)

The writer has utilized the water well information (strata classification and thicknesses for each respective area of concern.(see Map 3 and Volume Schedule) Each area of concern was planimetered and the square yards determined. Volumes, in cubic yards, were determined by multiplying the determined




LEGEND

| | |
|---|---|
| Qs | Gravel, sand & silt. |
| QTs | Silt, sand & gravel. |
| QTb | Basalt |
| CDl | Redwall & Martin Limestones. |
| Et | Tonto group. |
| gr | Granite. |
| sgr | Granite & Schist. |
| sch | Schist. |

GEOLOGIC MAP
Portion of
YAVAPAI COUNTY, ARIZONA

Scale: 1" = 6 miles

Feb., 1969

R.E. Mieritz

Map 1

For Ken

Urgent ☐

Date 11/4 Time 11:10

# While You Were Out

M Aline LaForge

Of BLM

Phone 502- 505- 1238

AREA CODE NUMBER EXTENSION

| | |
|---|---|
| Telephoned ☑ | Please Call ☑ |
| Came To See You ☐ | Will Call Again ☐ |
| Returned Your Call ☐ | Wants To See You ☐ |

Message

Signed Ann

9711

ADAMS BUSINESS FORMS

areas by the reasoned and determined average depth or thickness (in yards) of the sand and gravel for the particular area.

The following schedule isolates the various volumes of each area by sections:

## VOLUME SCHEDULE

| AREA of Concern | Square Yards | | Depth Yards | Volume |
|---|---|---|---|---|
| T.18 N., R.3 W. | | | | |
| Sec. 14, 13 | 1,301,000 | X | 3.0 yds | 3,903,000 cu.yds. |
| Sec. 23 | 3,097,600 | X | 3.0 " | 9,292,800 " " |
| Sec. 24 | 2,540,000 | X | 3.0 " | 7,620,000 " " |
| Sec. 25 | 2,230,000 | X | 4.0 " | 8,920,000 " " |
| Sec. 26 | 1,704,000 | X | 5.0 " | 8,520,000 " " |
| T.18 N., R.2 W. | | | | |
| Sec. 30 | 1,549,000 | X | 3.0 " | 4,647,000 " " |
| Sec. 31 | 3,097,600 | X | 5.5 " | 17,036,800 " " |
| Sec. 32 | 2,788,000 | X | 6.0 " | 16,728,000 " " |
| T.17 N., R.2 W. | | | | |
| Sec. 5 | 1,611,000 | X | 6.0 " | 9,666,000 " " |
| Total | | | | 86,333,600 cu. yds. |
| | (20 cu. ft. = 1 ton) | | | X 1.35 |
| Total | | | | 116,550,000 tons |

## MATERIALS QUALITY

The previous operator has been marketing some of his product to the Arizona Highway Department who use same for their highway construction in northern Arizona, - roads, bridges, culverts, etc - all concrete construction requiring a very high compressability strength and rigid specifications.

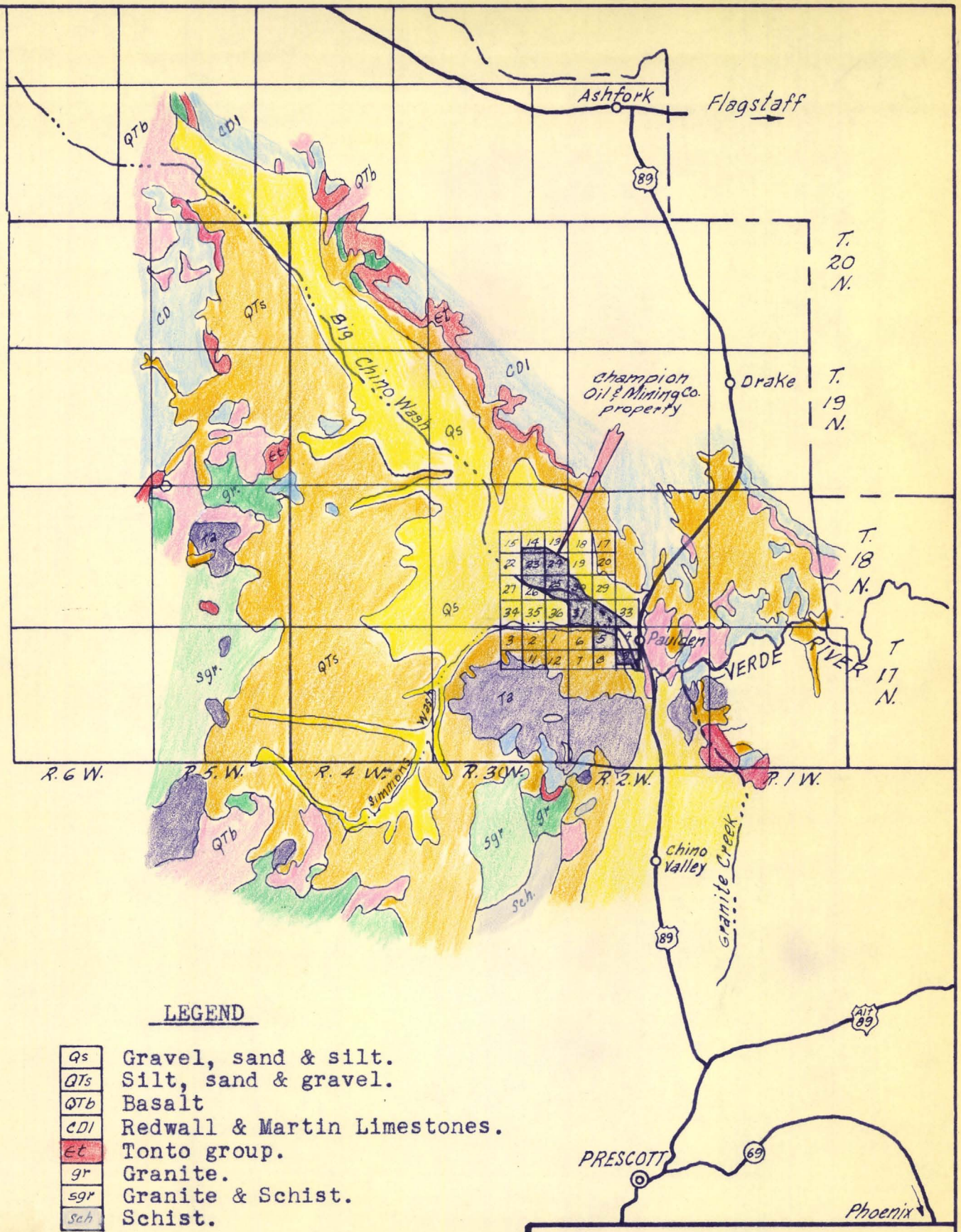
The Arizona Highway Department has thoroughly tested the material and found it to be of excellent quality. The above mentioned statement of fact is substaniated by the writers review of data from the Highway Department--Mix Design sheets, screen analysis, 7 and 28 day compressive tests for concrete using this material, etc. Copies of these records are on file with the writer if verification is required.

A special characteristic of this material is the greater abundance of the angular shapes (without mechanical crushing) of the sand and gravel particles.

Respectfully submitted,

R. E. Mieritz
Mining Consultant

February 15, 1969




LEGEND

| | |
|---|---|
| Qs | Gravel, sand & silt. |
| QTs | Silt, sand & gravel. |
| QTb | Basalt |
| CDI | Redwall & Martin Limestones. |
| Et | Tonto group. |
| gr | Granite. |
| sgr | Granite & Schist. |
| Sch | Schist. |

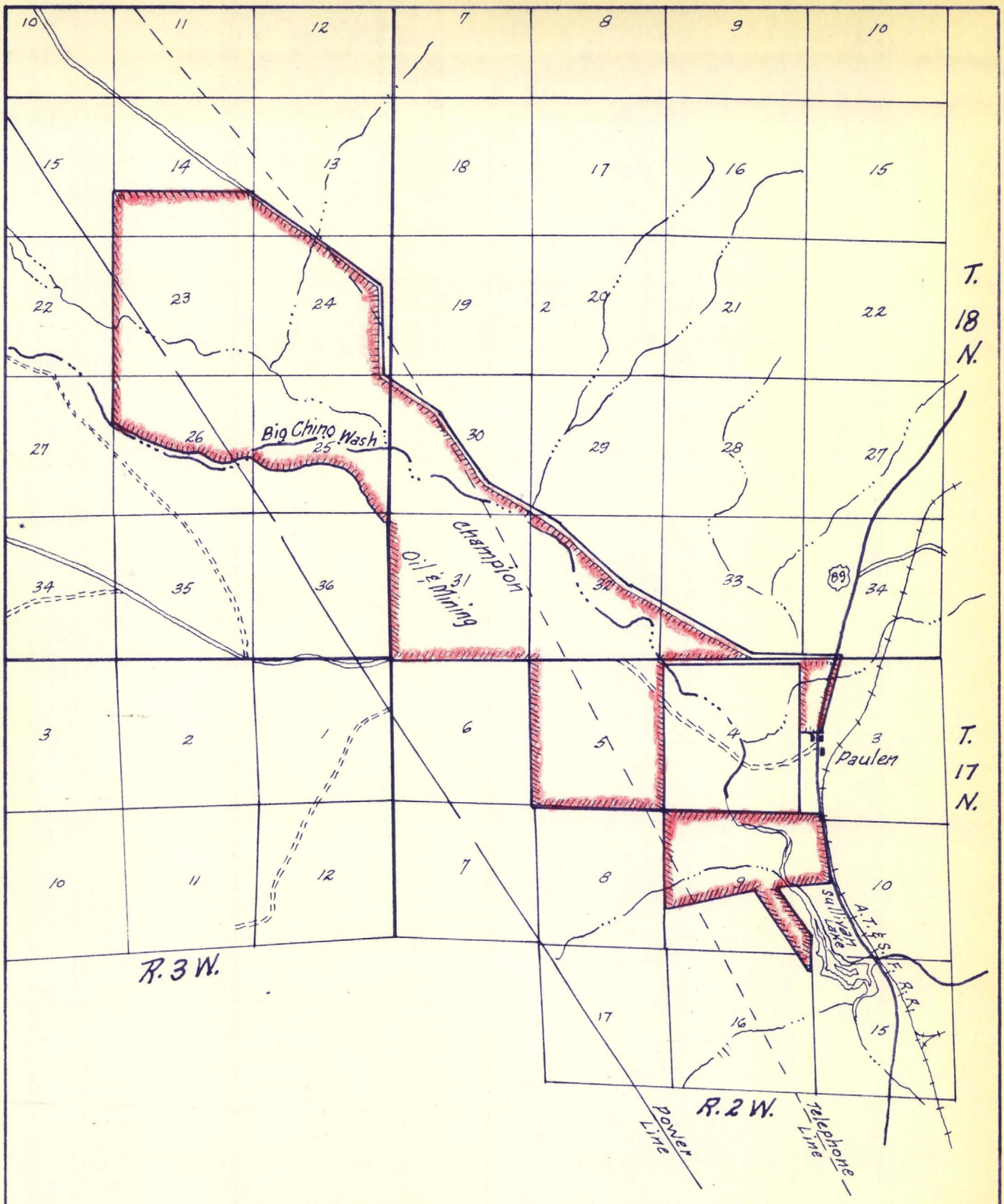
GEOLOGIC MAP
Portion of
YAVAPAI COUNTY, ARIZONA

Scale: 1"= 6 miles

Feb., 1969

R.E. Mieritz

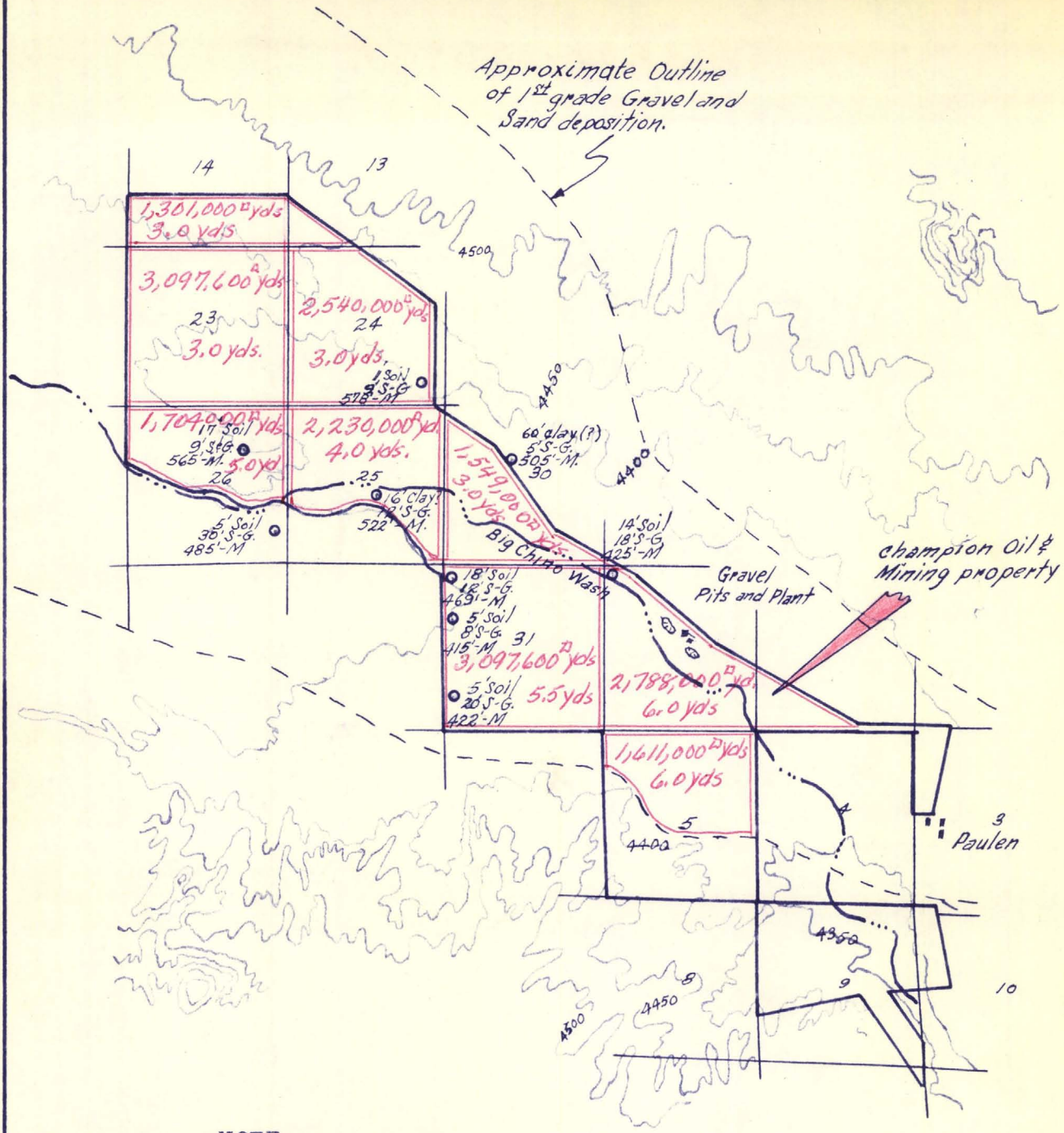
Map 1




SURFACE MAP
Portion of
BIG CHINO WASH
Yavapai County, Arizona
Scale: 1" = 1 mile

Feb., 1969 R.E. Mieritz

Map 2




NOTE

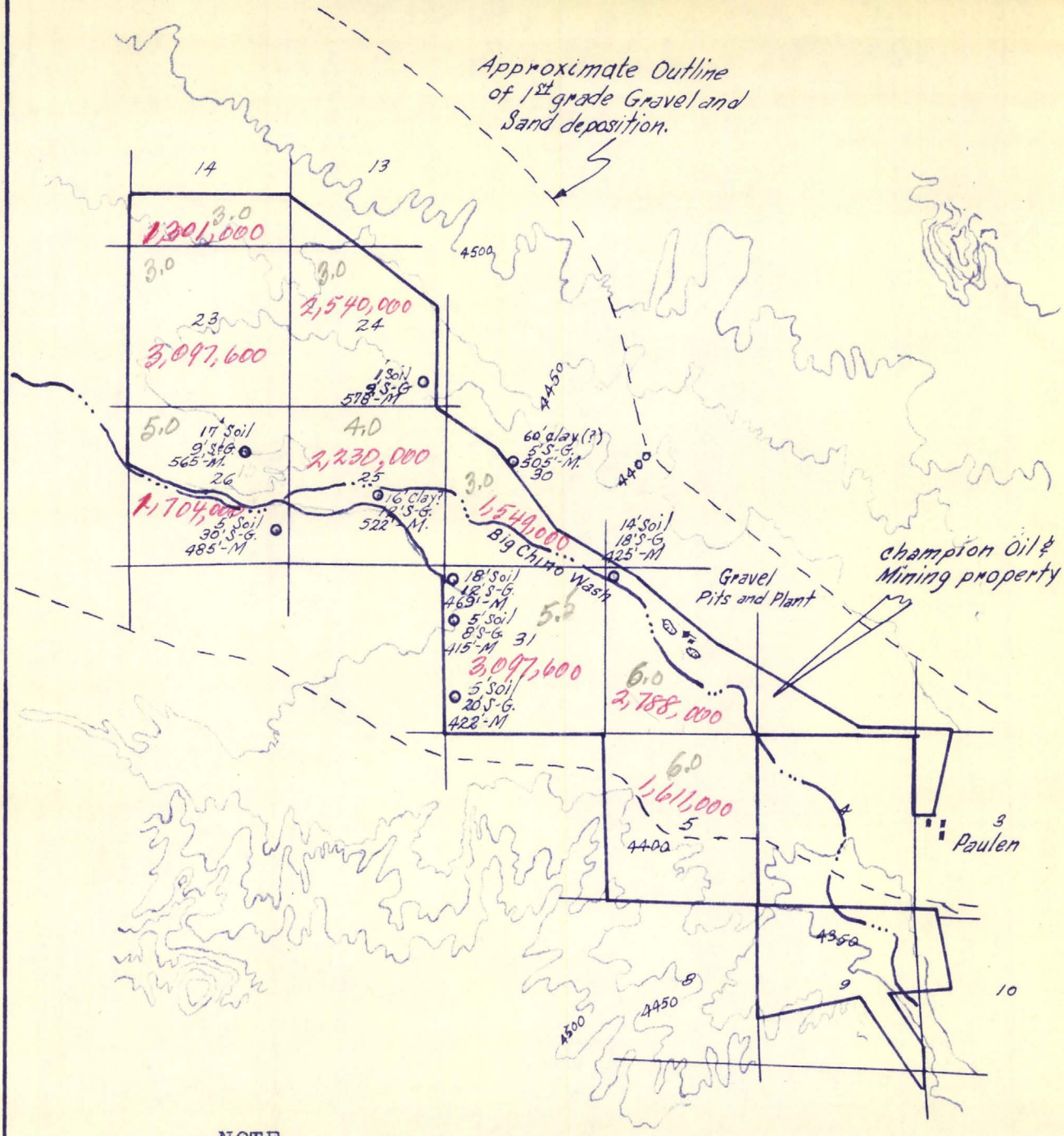
o 5' Soil 20' S-G 422'-M — Drilled water well with 5 ft. soil, 20 ft. of sand and gravel and 422 feet to Malapai which is the Basalt in the area.

WATER WELL LOCATION MAP
Portion of
BIG CHINO WASH
Yavapai County, Arizona

Scale: 1" = 1 mile

Feb., 1969 — R.E. Mieritz

Map 3




NOTE

o 5' Soil 20' S-G 422'-M — Drilled water well with 5 ft. soil, 20 ft. of sand and gravel and 422 feet to Malapai which is the Basalt in the area.

WATER WELL LOCATION MAP
Portion of
BIG CHINO WASH
Yavapai County, Arizona

Scale: 1" = 1 mile

Feb., 1969 R.E. Mieritz

Map 3

274-7792 Edmonds home - Phx

534 W. Maryland. Barkly Apt. face W.
532 B

Feb. 13 Trip to Chino Valley - with H. D. Edmonds.
3,000 tons/acre - 3000 of 4000 acres with good - to 12 feet
at 14 feet consolidated sand which crumbles.
Cu yd = 2800 pounds.

Report -
Champion Oil & Mining - Edmonds agent.
234 E. Colorado Blvd. 792-2640 - Off.
Suite 504 681-7993 - L.A.
Pasadena, Calif. 990

1624 W. Adams. Water Div.

Don Young. —
Crows. — Champion Oil & Mining.

Report - gravel unit. Gill Bisjack —
Turners Report Water. Burt Campbell —

4000 Acres. —
14 Wells.
Report — Shown from available information —
— angle gravel —