

is the present time. This rock of the Archean time and  
nly speaking in part with that of south  
ern New Mexico and southwestern  
and distinctly different from  
and in any other fissure or cavity bear  
the place of its development; provided,  
always that these exist.

BEAR SPRINGS OIL - ALLEN #1 5-1  
SE/SE Sec 25-T10S-R28E, Graham Co.

P-111

5-7  
16

County Graham

Area \_\_\_\_\_

Lease No. \_\_\_\_\_

Well Name Bear Springs Oil Allen #1

Location SE SE Sec 25 Twp 10S Range 28E Footage est 660 fsl 660 fel

Elev \_\_\_\_\_ Gr \_\_\_\_\_ KB \_\_\_\_\_ Date \_\_\_\_\_ Spud \_\_\_\_\_ Complete \_\_\_\_\_ Abandon 1929 Total \_\_\_\_\_ Depth 1532

Contractor: \_\_\_\_\_ Approx. Cost \$ \_\_\_\_\_

Drilled by Rotary \_\_\_\_\_ Cable Tool \_\_\_\_\_

Casing Size 8 1/4 Depth 1517 Cement \_\_\_\_\_

Production Horizon \_\_\_\_\_

Initial Production D & A

REMARKS:

Elec. Logs \_\_\_\_\_  
Applic to Plub \_\_\_\_\_ Plugging Record \_\_\_\_\_ Completion Report \_\_\_\_\_

Sample Log \_\_\_\_\_  
Sample Descript \_\_\_\_\_  
Sample Set \_\_\_\_\_  
Cores \_\_\_\_\_

Water well - accepted by \_\_\_\_\_

Bond Co. & No. \_\_\_\_\_

Bond Am't \$ \_\_\_\_\_ Cancelled \_\_\_\_\_ Date \_\_\_\_\_ Organization Report \_\_\_\_\_

Filing Receipt \_\_\_\_\_ dated \_\_\_\_\_ Well Book \_\_\_\_\_ Plat Book \_\_\_\_\_  
Loc. Plat \_\_\_\_\_ Dedication \_\_\_\_\_

API # 02-009-05011

PERMIT NO. None Date Issued \_\_\_\_\_

5-7

BOND NO. \_\_\_\_\_

AMOUNT \_\_\_\_\_

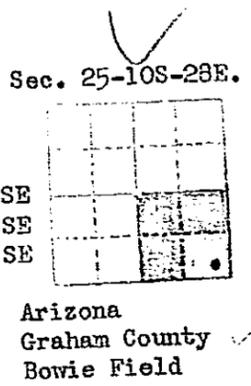
CANCELLED \_\_\_\_\_

ORGANIZATION REPORT \_\_\_\_\_

*No Permit*

*Frank [unclear]  
This is to be [unclear] #2 [unclear]*

Well No. 2 - Bear Springs Oil and Gas Company. - Allen #1



|         |         |   |
|---------|---------|---|
| 0       | 14      | Drift sand  |
| 14      | 49      | Adobe   |
| 49      | 53 1/2  | Hard, black sand  |
| 53 1/2  | 88 1/2  | Water sand; little water                                  |
| 88 1/2  | 211 1/2 | Gumbo and green clay                                      |
| 211 1/2 | 245 1/2 | Black water sand; water                                   |
| 245 1/2 | 280 1/2 | Grey clay, squeezes                                       |
| 280 1/2 | 343 1/2 | Soft sandstone  |
| 343 1/2 | 357 1/2 | Lime, blue  |
| 357 1/2 | 402 1/2 | Hard sand; gas and oil colours                            |
| 402 1/2 | 432 1/2 | Green shale   |
| 432 1/2 | 433     | Lime  |
| 433     | 468     | Quicksand   |
| 468     | 468 1/2 | Lime  |
| 468 1/2 | 506 1/2 | Peat and quicksand; oil and gas showings                  |
| 506 1/2 | 510 1/2 | Sandstone   |
| 510 1/2 | 513 1/2 | Black shale and selenite                                  |
| 513 1/2 | 564 1/2 | Green shale   |
| 564 1/2 | 611 1/2 | Blue and white shale                                      |
| 611 1/2 | 619 1/2 | Shale and selenite  |
| 619 1/2 | 638     | Green and brown shale                                     |
| 638     | 678     | Light-colored shale and selenite                          |
| 678     | 705     | Green and brown shale                                     |
| 705     | 715     | Green and brown shale                                     |
| 715     | 720     | Crystalized lime; gypsum                                  |
| 720     | 735     | Brown and green shale                                     |
| 735     | 800     | Green shale   |
| 800     | 905     | Brown shale with streaks of gypsum                        |
| 905     | 930     | Yellow shale; not sandy                                   |
| 930     | 1008    | Yellow and brown shale                                    |
| 1008    | 1030    | Alternate layers dark and light brown, and yellow shale   |
| 1030    | 1035    | Brown shale; oil showings                                 |
| 1035    | 1042    | Lime or gypsum  |
| 1042    | 1069    | Water gravel; some water                                  |
| 1069    | 1084    | Brown shale and sandstone; oil showings                   |
| 1084    | 1241    | Alternate layers of brown shale and gypsum                |
|         |         | 142' 12 1/2" casing with shoe; 1008' 10" casing with shoe |
|         |         | 1235' 8 1/2" casing with shoe set.                        |
| 1241    | 1326    | Alternate layers brown shale and gypsum                   |
| 1326    | 1436    | Brown sandy shale   |
| 1436    | 1444    | Hard conglomerate   |
| 1444    | 1476    | Hard rock   |
| 1476    | 1500    | Hard conglomerate   |
| 1500    | 1503    | Coarse sand   |
| 1503    | 1516    | Conglomerate  |
| 1516    | 1519    | Fine sand   |
| 1519    | 1521    | Black sandstone; 1517' 10", 8 1/4" casing with shoe set   |
| 1521    | 1530    | Black sandstone   |
| 1530    | 1532    | Light sand  |
| 1532    |         | Dark brown sand showing heavy in oil, and some gas.       |

T.D.

*Wade [unclear]*

*Basal [unclear]  
volcanic [unclear]*

Bear Springs Oil and Gas Company-Allen #1  
 Bowie Field, Graham County, Arizona  
 Sec. 25-10S-28E

|                   |   |                   |   |
|-------------------|---|-------------------|---|
| 0                 | - | 11                | Drift sand  |
| 11                | - | 49                | Adobe   |
| 49                | - | 53 $\frac{1}{2}$  | hard, black sand  |
| 53 $\frac{1}{2}$  | - | 88 $\frac{1}{2}$  | water sand; little water  |
| 88 $\frac{1}{2}$  | - | 241 $\frac{1}{2}$ | gumbo and green clay  |
| 241 $\frac{1}{2}$ | - | 245 $\frac{1}{2}$ | black water sand; water   |
| 245 $\frac{1}{2}$ | - | 280 $\frac{1}{2}$ | grey clay, squeezes   |
| 280 $\frac{1}{2}$ | - | 343 $\frac{1}{2}$ | soft sandstone  |
| 343 $\frac{1}{2}$ | - | 357 $\frac{1}{2}$ | lime, blue  |
| 357 $\frac{1}{2}$ | - | 402 $\frac{1}{2}$ | hard sand; gas and oil colours  |
| 402 $\frac{1}{2}$ | - | 432 $\frac{1}{2}$ | green shale   |
| 432 $\frac{1}{2}$ | - | 433               | lime  |
| 433               | - | 468               | quicksand   |
| 468               | - | 468 $\frac{1}{2}$ | lime  |
| 468 $\frac{1}{2}$ | - | 506 $\frac{1}{2}$ | peat and quicksand; oil and gas showings                                |
| 506 $\frac{1}{2}$ | - | 510 $\frac{1}{2}$ | sandstone   |
| 510 $\frac{1}{2}$ | - | 513 $\frac{1}{2}$ | black shale and selenite  |
| 513 $\frac{1}{2}$ | - | 564 $\frac{1}{2}$ | green shale   |
| 564 $\frac{1}{2}$ | - | 614 $\frac{1}{2}$ | blue and white shale  |
| 614 $\frac{1}{2}$ | - | 619 $\frac{1}{2}$ | shale and selenite  |
| 619 $\frac{1}{2}$ | - | 638               | green and brown shale   |
| 638               | - | 678               | light colored shale and selenite  |
| 678               | - | 705               | green and brown shale   |
| 705               | - | 715               | green and brown shale   |
| 715               | - | 720               | crystalized lime; gypsum  |
| 720               | - | 735               | brown and green shale   |
| 735               | - | 800               | green shale   |
| 800               | - | 905               | brown shale with streaks of gypsum                                      |
| 905               | - | 930               | yellow shale; not sandy   |
| 930               | - | 1008              | Yellow and brown shale  |
| 1008              | - | 1030              | alternate layers dark and light brown, and yellow shale                 |
| 1030              | - | 1035              | brown shale; oil showings   |
| 1035              | - | 1042              | lime or gypsum  |
| 1042              | - | 1069              | water gravel; some water  |
| 1069              | - | 1084              | Brown shale and sandstone; oil showings                                 |
| 1084              | - | 1241              | alternate layers of brown shale and gypsum                              |
|                   |   |                   | 1142', 12 $\frac{1}{2}$ " casing with shoe; 1008', 10" casing with shoe |
|                   |   |                   | 1235', 8 $\frac{1}{4}$ " casing with shoe set.                          |
|                   |   |                   | alternate layers brown shale and gypsum                                 |
| 1241              | - | 1326              | brown sandy shale   |
| 1326              | - | 1436              | hard conglomerate   |
| 1436              | - | 1444              | hard rock   |
| 1444              | - | 1476              | hard conglomerate   |
| 1476              | - | 1500              | coarse sand   |
| 1500              | - | 1503              | conglomerate  |
| 1503              | - | 1516              | fine sand   |
| 1516              | - | 1519              | black sandstone; 1617', 10", 8 $\frac{1}{4}$ " casing with shoe set     |
| 1519              | - | 1521              | black sandstone   |
| 1521              | - | 1530              | light sand  |
| 1530              | - | 1532              | dark brown sand showing heavy in oil, and some gas.                     |

T.D.

No Permit

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Beas Springs Oil and Gas Company - Allen #1  
 Beasie Field, Graham County, Arizona

Sec. 25 - 10 S. - 28 E.

|                   |                   |  |
|-------------------|-------------------|--|
| 0                 | 14                | Drift sand   |
| 14                | 49                | Adobe  |
| 49                | 53 $\frac{1}{2}$  | Hard, black sand   |
| 53 $\frac{1}{2}$  | 88 $\frac{1}{2}$  | Water sand; little water   |
| 88 $\frac{1}{2}$  | 241 $\frac{1}{2}$ | Gumbo and green clay   |
| 241 $\frac{1}{2}$ | 245 $\frac{1}{2}$ | Black water sand; water  |
| 245 $\frac{1}{2}$ | 280 $\frac{1}{2}$ | Grey clay, squeezes  |
| 280 $\frac{1}{2}$ | 343 $\frac{1}{2}$ | Soft sandstone   |
| 343 $\frac{1}{2}$ | 357 $\frac{1}{2}$ | Lime, blue   |
| 357 $\frac{1}{2}$ | 402 $\frac{1}{2}$ | Hard sand; gas and oil colors  |
| 402 $\frac{1}{2}$ | 432 $\frac{1}{2}$ | Green shale  |
| 432 $\frac{1}{2}$ | 433               | Lime   |
| 433               | 468               | Quicksand  |
| 468               | 468 $\frac{1}{2}$ | Lime   |
| 468 $\frac{1}{2}$ | 506 $\frac{1}{2}$ | Peat and quicksand; oil and gas showings   |
| 506 $\frac{1}{2}$ | 510 $\frac{1}{2}$ | Sandstone  |
| 510 $\frac{1}{2}$ | 513 $\frac{1}{2}$ | Black shale and selenite   |
| 513 $\frac{1}{2}$ | 564 $\frac{1}{2}$ | Green shale  |
| 564 $\frac{1}{2}$ | 614 $\frac{1}{2}$ | Blue and white shale   |
| 614 $\frac{1}{2}$ | 619 $\frac{1}{2}$ | Shale and selenite   |
| 619 $\frac{1}{2}$ | 638               | Green and brown shale  |
| 638               | 678               | Light-colored shale and selenite   |
| 678               | 705               | Green and brown shale  |
| 705               | 715               | Green and brown shale  |
| 715               | 720               | Crystallized lime; gypsum  |
| 720               | 735               | Brown and green shale  |
| 735               | 800               | Green shale  |
| 800               | 905               | Brown shale with streaks of gypsum   |
| 905               | 930               | Yellow shale; not sandy  |
| 930               | 1008              | Yellow and brown shale   |
| 1008              | 1030              | Alternate layers dark and light brown, and yellow shale  |
| 1030              | 1035              | Brown shale; oil showings  |
| 1035              | 1042              | Lime or gypsum   |
| 1042              | 1069              | Water gravel; some water   |
| 1069              | 1084              | Brown shale and sandstone; oil showings  |
| 1084              | 1241              | Alternate layers of brown shale and gypsum<br>442' - 12 $\frac{1}{2}$ " casing with shoe; 1008' - 10" casing<br>with shoe. 1235' - 8 $\frac{1}{4}$ " casing with shoe set. |
| 1241              | 1326              | Alternate layers brown shale and gypsum  |
| 1326              | 1436              | Brown sandy shale  |
| 1436              | 1444              | Hard conglomerate  |
| 1444              | 1476              | Hard rock  |
| 1476              | 1500              | Hard conglomerate  |
| 1500              | 1503              | Coarse sand  |
| 1503              | 1516              | Conglomerate   |
| 1516              | 1519              | Fine sand  |
| 1519              | 1521              | Black sandstone; 1617'; 10" - 8 $\frac{1}{4}$ " casing with shoe set   |
| 1521              | 1530              | Black sandstone  |
| 1530              | 1532              | Light sand   |
| 1532              |                   | Dark brown sand showing heavy in oil, and some gas.  |

TD

X

| Location  |      |      | County  | Land status | Operator, lease, and well number                 | Completion date | Elevation (feet) | Total depth (feet) | Geologic formation |        | Status |
|---|------|------|---------|-------------|--|-----------------|------------------|--------------------|--------------------|--------|--------|
| Section   | T.   | R.   |         |             |  |                 |                  |                    | Surface            | Bottom |        |
| Northeast quadrant-Continued                          |      |      |         |             |  |                 |                  |                    |                    |        |        |
| SW $\frac{1}{4}$ SE $\frac{1}{4}$ 19,                 | 41 N | 31 E | Apache  | Indian      | El Paso Natural Gas Co., Navajo Tribal 4-X       | 1956            | 5081             | 690                | Jm                 | Jm     | A      |
| SW $\frac{1}{4}$ SE $\frac{1}{4}$ 34*                 | 42 N | 18 E | Navajo  | do          | The Texas Co., Navajo 1                          | 1953            | 6662             | 4523               | Jm                 | De     | A      |
| Southeast quadrant                                    |      |      |         |             |  |                 |                  |                    |                    |        |        |
| SE $\frac{1}{4}$ SE $\frac{1}{4}$ 17                  | 1 S  | 8 E  | Pinal   | State       | Robison-Mason, Nickols 1                         | 1952            | 1535             | 2836               | Qal                | gr     | A      |
| SW $\frac{1}{4}$ 32                                   | 2 S  | 10 E | do      | do          | East Lantorn Oil Co., State 1                    | 1949            |                  | 1020               | Qal                | v      | A      |
| NE $\frac{1}{4}$ NW $\frac{1}{4}$ 36                  | 4 S  | 3 E  | do      | do          | Robison-Mason, Harbor 1                          | 1950            | 1195             | 3642               | Qal                | gr?    | A      |
| S $\frac{1}{2}$ SW $\frac{1}{4}$ 25                   | 4 S  | 9 E  | do      | Pat'd       | Schoenheit, Moorhouse 1                          | 1945            | 1462             | 415                | Qal                | Qal    | A      |
| NW $\frac{1}{4}$ NW $\frac{1}{4}$ 19                  | 4 S  | 23 E | Graham  | State       | R. S. Knowles 1                                  | 1919            |                  | 810                | Qal                | QTg    | W      |
| SW $\frac{1}{4}$ SW $\frac{1}{4}$ 31                  | 5 S  | 10 E | Pinal   | Public      | Western Oil Fields Inc., Hines 1                 | 1955            | 1625             | 5142               | Qal                | v      | A      |
| 8*  | 5 S  | 14 E | do      | Pat'd       | Hackberry  | 1905            |                  | 700                |                    |        | A      |
| NE $\frac{1}{4}$ SE $\frac{1}{4}$ 17                  | 5 S  | 24 E | Graham  | do          | A. C. Alexander 1                                | 1906            |                  | 1400               | Qal                |        | A      |
| SW $\frac{1}{4}$ NE $\frac{1}{4}$ 30                  | 5 S  | 24 E | do      | do          | Gila Oil Synd. 1                                 | 1931            |                  | 2645               | Qal                |        | A      |
| NE $\frac{1}{4}$ NE $\frac{1}{4}$ 30                  | 5 S  | 24 E | do      | do          | Ashurst Oil Co. 1                                | 1928            |                  | 1247               | Qal                |        | A      |
| SE $\frac{1}{4}$ SE $\frac{1}{4}$ 25                  | 6 S  | 7 E  | Pinal   | do          | Casa Grande Oil Development Assoc., Laveen 1     | 1945            | 1474             | 4742               | Qal                | gr     | A      |
| NW $\frac{1}{4}$ NE $\frac{1}{4}$ 13                  | 6 S  | 24 E | Graham  | do          | Underwriters Synd. of N. Y., Mack 1              | 1928            |                  | 3767               | Qal                |        | A      |
| NE $\frac{1}{4}$ NW $\frac{1}{4}$ 22                  | 7 S  | 8 E  | Pinal   | do          | Hatchett and others, McFarland 1                 | 1945            | 1500             | 1260               | Qal                | Qal    | A      |
| SW $\frac{1}{4}$ 8                                    | 7 S  | 26 E | Graham  | do          | Safford City 1                                   | 1907            |                  | 1830               | Qal                |        | W      |
| 17  | 7 S  | 26 E | do      | do          | Somhera Pacific Railroad                         | 1907            |                  | 1820               | Qal                |        | W      |
| SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$ 12 | 8 S  | 7 E  | Pinal   | do          | Dr. Creed Cherry                                 | 1948            | 1685             | 2700               | Qal                |        | W      |
| SE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ 25 | 8 S  | 16 E | do      | do          | Santa Maria Exploration Co. 1                    | 1948            | 2909             | 2145               | Qal                |        | A      |
| 33  | 8 S  | 17 E | do      | do          | San Pedro Oil Co., Smith 1                       | 1930            |                  | 1485               | Qal                |        | A      |
| SW $\frac{1}{4}$ NW $\frac{1}{4}$ 6                   | 8 S  | 26 E | Graham  | do          | Idle Oil Co., Healy 1                            | 1932            |                  | 1700               | Qal                |        | W      |
| SE $\frac{1}{4}$ NW $\frac{1}{4}$ 6                   | 8 S  | 26 E | do      | Pat'd       | Waggoner, Eureka Ranch 3                         | 1913            | 2920             | 1800               | Qal                |        | W      |
| 14  | 9 S  | 21 E | do      | do          | Ariz. Public Service Co.                         | 1952            |                  | 1501               | Qal                |        | W      |
| SW $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ 15 | 10 S | 10 E | Pinal   | State       | Bear Springs Oil and Gas Co., Allen 2 (Pinal 1)  | 1929            | 3350             | 1555               | QTg                | QT     | W      |
| SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ 15 | 10 S | 10 E | do      | do          | do   | 1953            |                  | 2240               | Qal                |        | W      |
| SE $\frac{1}{4}$ SE $\frac{1}{4}$ 25                  | 10 S | 28 E | Graham  | Public      | J. C. Clark 1                                    | 1926            |                  | 1000               | QTg                |        | W      |
| SE $\frac{1}{4}$ SE $\frac{1}{4}$ 32                  | 10 S | 28 E | do      | do          | U. S. Oil Co. 1                                  | 1917            |                  | 900                | QTg                |        | A      |
| NW $\frac{1}{4}$ NE $\frac{1}{4}$ 35                  | 10 S | 28 E | do      | do          | Whitlock Oil Co., State 1                        | 1927            |                  | 1925               | QTg                |        | A      |
| NE $\frac{1}{4}$ NE $\frac{1}{4}$ 36                  | 10 S | 29 E | do      | Public      | Whitlock Oil Co., Penrod 1                       | 1930            | 3475             | 521                | QTg                |        | A      |
| SW $\frac{1}{4}$ NE $\frac{1}{4}$ 20                  | 10 S | 30 E | do      | State       | U. S. Oil Refining Co. 1                         | 1920            |                  | 700                | Qal                |        | A      |
| 20  | 10 S | 30 E | do      | do          | M. T. Berry Mineral Development Project, Berry 1 | 1953            | 1920             | 3212               | Qal                | v      | A      |
| NE $\frac{1}{4}$ SE $\frac{1}{4}$ 27                  | 11 S | 10 E | Pima    | Public      | Hooker and others 1                              | 1930            | 4400             | 1985               | Qal                |        | A      |
| NE $\frac{1}{4}$ NW $\frac{1}{4}$ 6                   | 11 S | 23 E | Graham  | Pat'd       | Bear Springs Oil and Gas Co., Reed 1             | 1928            | 3220             | 670                | QTg                |        | A      |
| SW $\frac{1}{4}$ NE $\frac{1}{4}$ 28                  | 11 S | 28 E | do      | do          | Howle 1  | 1912            |                  | 1100               | Qal                |        | A      |
| 28  | 11 S | 28 E | do      | Pat'd       | Seely  | 1927            |                  | 650                | QTg                |        | W      |
| SE $\frac{1}{4}$ 1                                    | 11 S | 29 E | do      | do          | S. L. Martin, Martin 1                           |                 | 3400             | 676                | QTg                |        | W      |
| NE $\frac{1}{4}$ 14                                   | 11 S | 29 E | do      | Public      | Howard   |                 |                  | 800                | QTg                |        | W      |
| NW $\frac{1}{4}$ 26                                   | 11 S | 29 E | do      | Pat'd       | S. L. Martin, Martin 2                           | 1928            |                  | 800                | QTg                |        | W      |
| SE $\frac{1}{4}$ SE $\frac{1}{4}$ 27                  | 11 S | 29 E | do      | do          | S. L. Martin, Martin 3                           | 1927            |                  | 750                | QTg                |        | W      |
| SW $\frac{1}{4}$ NW $\frac{1}{4}$ 27                  | 11 S | 29 E | do      | Pat'd       | S. L. Martin, Martin 4                           | 1928            |                  | 815                | QTg                |        | W      |
| NW $\frac{1}{4}$ SE $\frac{1}{4}$ 27                  | 11 S | 29 E | do      | do          | S. L. Martin, Martin 1                           | 1927            |                  | 680                | QTg                |        | W      |
| NE $\frac{1}{4}$ NE $\frac{1}{4}$ 35                  | 11 S | 29 E | do      | Pat'd       | Eloy Development Assoc., State 1                 | 1949            | 1975             | 4950               | Qal                |        | A      |
| NE $\frac{1}{4}$ SW $\frac{1}{4}$ 6                   | 12 S | 11 E | Pima    | State       | Duncan, Clayton 1                                | 1945            | 4953             | 1000               | Qal                | QT     | A      |
| NE $\frac{1}{4}$ SE $\frac{1}{4}$ 29                  | 13 S | 22 E | Cochise | do          | Duncan, Clayton 2                                | 1945            | 4852             | 1180               | Qal                |        | A      |
| NW $\frac{1}{4}$ NW $\frac{1}{4}$ 29                  | 13 S | 22 E | do      | do          | Duncan and others, State 1                       | 1955            | 4953             | 1428               | Qal                |        | A      |
| NE $\frac{1}{4}$ SE $\frac{1}{4}$ 33                  | 13 S | 22 E | do      | do          | Duncan and others, State 2                       | 1957            | 4953             | 5307               | Qal                |        | A      |
| NE $\frac{1}{4}$ SE $\frac{1}{4}$ 33                  | 13 S | 22 E | do      | do          | A. S. Waddell and others, McComb 1               | 1949            | 4172             | 6865               | Qal                | v      | A      |
| SW $\frac{1}{4}$ SE $\frac{1}{4}$ 23                  | 13 S | 24 E | do      | Pat'd       | Bowie Oil Syndicate 1                            | 1925            | 3700             | 4110               | Qal                |        | A      |
| SE $\frac{1}{4}$ NW $\frac{1}{4}$ 16                  | 13 S | 28 E | do      | State       | S. W. Funk and others, San Simon 1               | 1939            | 3600             | 6668               | Qal                | v?     | A      |
| SE $\frac{1}{4}$ NE $\frac{1}{4}$ 27                  | 13 S | 31 E | do      | Pat'd       | M. K. D. Fitzwater, Thayer 1                     | 1947            | 3600             | 4137               | Qal                | v      | A      |
| SW $\frac{1}{4}$ SE $\frac{1}{4}$ 31                  | 13 S | 31 E | do      | do          | State of Ariz., Winslow 1                        |                 | 3600             | 1190               | Qal                |        | W      |
| 31  | 13 S | 31 E | do      | do          | Francis Brothers Oil Co., Proctor 1              | 1950            | 4185             | 4605               | Qal                | v      | A      |
| SE $\frac{1}{4}$ SW $\frac{1}{4}$ 30                  | 14 S | 24 E | do      | do          | Waddell and Duncan, Lawson 1                     | 1949            | 4225             | 2702               | Qal                | QT     | A      |
| SW $\frac{1}{4}$ NE $\frac{1}{4}$ 4                   | 14 S | 25 E | do      | do          | Geronimo Oil Co., Brumby 1                       | 1931            | 4100             | 770                | Qal                | QT     | A      |
| NE $\frac{1}{4}$ NE $\frac{1}{4}$ 6                   | 14 S | 25 E | do      | do          | Geronimo Oil Co.-Clark, Holliday 1               | 1930            | 4100             | 428                | Qal                |        | A      |
| NE $\frac{1}{4}$ NE $\frac{1}{4}$ 6                   | 14 S | 25 E | do      | do          | Southern Pacific Railroad                        | 1928            | 4075             | 650                | Qal                | QT     | W      |
| 6   | 14 S | 25 E | do      | do          | Wilcox Oil and Gas Syndicate 1                   | 1925            | 4175             | 2360               | Qal                |        | A      |
| SE $\frac{1}{4}$ SE $\frac{1}{4}$ 9                   | 14 S | 25 E | do      | State       | Ryan and others, Ryan 1                          | 1931            | 4100             | 990                | Qal                |        | A      |
| SE $\frac{1}{4}$ NW $\frac{1}{4}$ 34                  | 14 S | 30 E | do      | do          | Ariz. Oil and Gas Development Co., State 1       | 1954            | 3866             | 7568               | Qal                | pc?    | A      |
| NE $\frac{1}{4}$ NE $\frac{1}{4}$ 36                  | 14 S | 30 E | do      | do          | State of Ariz. 1                                 | 1923            | 3675             | 2000               | Qal                |        | W      |
| SW $\frac{1}{4}$ SE $\frac{1}{4}$ 16                  | 14 S | 31 E | do      | do          | Car 1  | 1927            |                  | 865                | Qal                |        | A      |
| NE $\frac{1}{4}$ NE $\frac{1}{4}$ 26                  | 14 S | 31 E | do      | Pat'd       | Benedum-Trees Co., Arzberger 1                   | 1931            | 4250             | 3298               | Qal                |        | A      |
| SE $\frac{1}{4}$ 19                                   | 15 S | 26 E | do      | do          | Pomerene 1                                       | 1951            |                  | 1000               | Qal                | QT     | W      |
| NW $\frac{1}{4}$ SE $\frac{1}{4}$ 34                  | 16 S | 20 E | do      | do          | S. W. McCall, State 1                            | 1928            | 4250             | 1510               | Qal                |        | A      |
| NW $\frac{1}{4}$ NW $\frac{1}{4}$ 36                  | 16 S | 24 E | do      | State       | Portal Drilling Co., Ellis 1                     | 1953            | 4350             | 5353               | Qal                | v      | A      |
| NW $\frac{1}{4}$ NE $\frac{1}{4}$ 9                   | 16 S | 31 E | do      | do          | L. A. Thomson, State 1                           | 1958            | 4310             | 5234               | QTg                |        | A      |
| NE $\frac{1}{4}$ NE $\frac{1}{4}$ 10                  | 16 S | 31 E | do      | do          | Century Petroleum Co., Colglazier 1              | 1931            | 4250             | 1550               | Qal                |        | A      |
| NW $\frac{1}{4}$ NE $\frac{1}{4}$ 17                  | 17 S | 19 E | do      | Pat'd       | Cienega Basin Oil and Gas Co., State 1           | 1952            | 4800             | 560                | K?                 | K      | A      |
| NE $\frac{1}{4}$ SW $\frac{1}{4}$ 33                  | 18 S | 18 E | Pima    | State       | Ted Jones Drilling Co., Juanita 1                | 1956            | 4860             | 2656               | Qal                | K?     | A      |
| NW $\frac{1}{4}$ NW $\frac{1}{4}$ 34                  | 18 S | 18 E | do      | do          | Ariz. Oil Exploration Co., Boyce 1               | 1942            | 4450             | 2991               | Qal                | v      | A      |
| SE $\frac{1}{4}$ SW $\frac{1}{4}$ 22                  | 19 S | 17 E | do      | Pat'd       |  |                 |                  |                    |                    |        | A      |

OM-201, 1959

salt water for a short time. No record was kept of the temperature or of the depth at which the water stood in the well, and no chemical analysis of the water is available.

In the southeastern part of T. 10 S., R. 28 E., two flowing artesian wells, the Whitlock Nos. 1 and 2 of the Pinal Oil Co., were obtained in drilling unsuccessfully for oil. The Whitlock No. 1 well, shown in plate 53, A, was drilled in 1927-28. It yields a strong flow of soft, warm water (temperature 105° F.) from conglomerate at a depth of 1,445 feet, above which only clay and sand, probably lake beds, were encountered. A flow of sulphur water was struck at a depth of 1,750 feet. "Limerock" was encountered at a depth of 1,500 feet, and the well was drilled through this to a depth of 1,925 feet and finished in "sandy lime." When the well was completed the discharge was estimated by the drillers to be about 12,000 barrels (500,000 gallons) in 24 hours. The discharge is controlled by a valve at the casing head. The Pinal Oil Co.'s Whitlock No. 2 well, was drilled with cable tools to a depth of 1,555 feet. It discharges a "2-inch pipe full" of lukewarm water. The depths to the water sands in this well were not ascertained.

The location of wells in the towns of Pima, Thatcher, and Safford in 1934 is shown in figures 31, 32, and 33. The data collected by the writer on these and other wells in the valley are presented in the table at the end of this paper.

#### SPRINGS

The Goodwin Spring, in Goodwin Wash, sec. 35, T. 4 S., R. 22 E., near the east boundary of the San Carlos Indian Reservation, is a seepage from the alluvial gravel of the creek bottom. The discharge on January 10, 1934, was about 8 gallons a minute. This spring is reported to have yielded much more copiously some years ago.

Several springs, yielding less than 100 gallons a minute in total discharge, issue along the sloping terrace escarpment that rises about 100 feet above the alluvial lowland plain in secs. 21 and 22, T. 4 S., R. 23 E. The water seems to come from the base of porous Pleistocene (?) gravel, several feet thick, which caps about 90 feet of dense lacustrine clays of Pliocene age exposed on the hillside. The water is highly mineralized and is used only for watering stock.

A spring about 1 mile northeast of Fort Thomas, near the southwest corner of sec. 25, T. 4 S., R. 23 E., yields about 6 gallons a minute. The water issues from the base of Pleistocene (?) terrace gravel overlying dense clays of the Pliocene lake beds. The spring is used to water stock.

The residents of Eden, in secs. 28 and 33, T. 5 S., R. 24 E., normally obtain their water supply from a small spring of seasonally variable yield about 1 mile northeast of the settlement. The spring issues from a small excavation in the porous gravel bottom of a minor reen-

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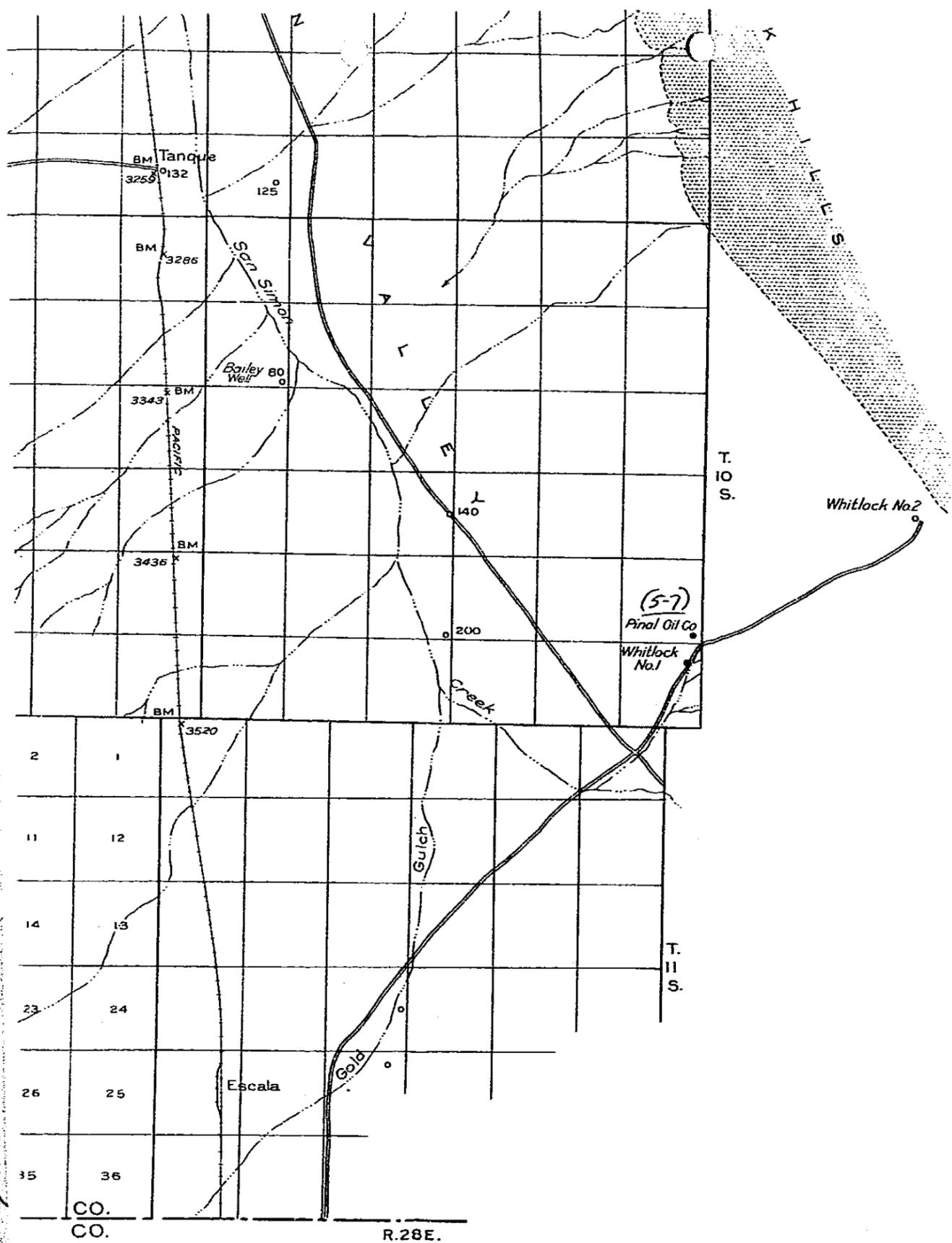
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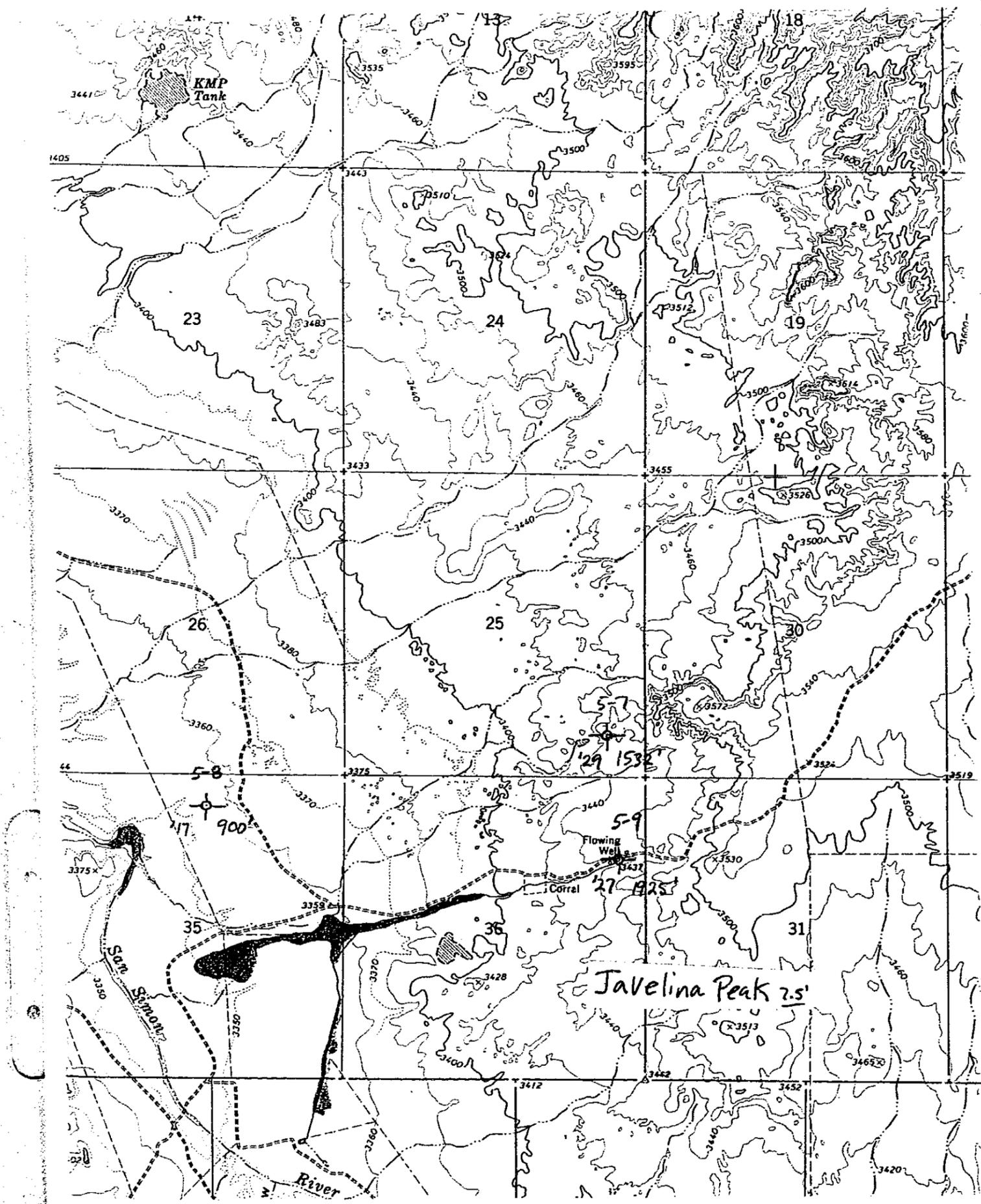
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Geology by Maxwell M. Knechtel.

Y, ARIZONA

Plate 46, WSP 796-F, 1938





Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500



Larry D. Fellows  
Director and State Geologist

August 30, 1996

Mr. John P. Wilson  
1109 Skyway  
Las Cruces, New Mexico 88001-4016

*file 5-7*

Dear Mr. Wilson:

I received your final report and photographs yesterday, and read your report last night. I enjoyed reading it. It's a good report. I didn't find anything wrong with the report and I sure couldn't tell where you were on thin ice. I was, am fascinated by the subject.

It's too bad the BLM didn't tie the old equipment into the current development of the area to provide a sense of appreciation as to why the hot well was drilled in the first place -- like arranging it around the refurbished wellhead to somewhat mimic its original relationship to the hole as it was being drilled in the 1920's. At least they didn't just cart the stuff off to the dump.

Your conclusion about oil tests on the Gila River Indian lands agrees with our records, which indicate that no oil tests have ever been drilled on Gila River Indian lands. We carry the Isabel-Hartner as a water well, so it is not plotted or listed on our *Arizona Well Location Map and Report*. In appreciation of your providing me with a copy of your good report, I have enclosed a complimentary copy of our well location map and report for your files.

Let me know if I may be of further assistance on any oil and gas matter in Arizona.

Sincerely,

*Steven L. Rauzi*

Steven L. Rauzi  
Oil and Gas Program Administrator

Enclosure

1109 Skyway  
Las Cruces, New Mexico  
88001-4016  
August 27, 1996

Mr. Steven L. Rauzi,  
Oil & Gas Program Administrator  
Arizona Geological Survey  
416 W. Congress, Suite 100  
Tucson, Arizona 85701

*file 5-7*

Dear Mr. Rauzi:

Enclosed is a copy of my report on the two oil well sites south of Safford, Az., that I researched for the Safford District BLM office; also a set of the photographs that I took when I visited the area in early July. The report has gone in to the BLM (actually, to Dr. Pat Gilman at the University of Oklahoma) and I assume that when my check arrives, that project will be over.

I would like to ask that if you see anything wrong in my report, would you let me know? I was on fairly thin ice in some places and had to say more what I thought than what I knew.

My next project will evidently be one of historical research for the Gila River Indian Community (Reservation) which is part of an ongoing major cultural resources inventory. My responsibility will be a historical overview and drafting a series of research questions appropriate to the historic-period sites on that reservation. Speaking of which, I've looked over Oil & Gas Investigations map OM-201 again and do not find any old oil wells shown on that reservation. Is this correct? The closest ones appear to be Isabel-Hartner Co. in T1N R1E, completed in 1940, and Robison-Mason, Harbor 1, in T4S R3E, completed in 1950. Both seem to be off the reservation, however. Have I overlooked anything?

Sincerely,

*John P. Wilson*  
John P. Wilson

P.S. Flyer for book just out is enclosed also.

# Hot Well Dunes

story and photos by Diane Drobka

*file 5-7*

Hot Well sprang into existence by accident. Back in 1928 when Pinal Oil Company was exploring the San Simon Valley for oil, they hit water, water that was exceptionally hot. The artesian well, producing in excess of 250 gallons of water per minute at a temperature of 106 degrees Fahrenheit, became an attraction for those that enjoyed relaxing in the hot mineral waters.

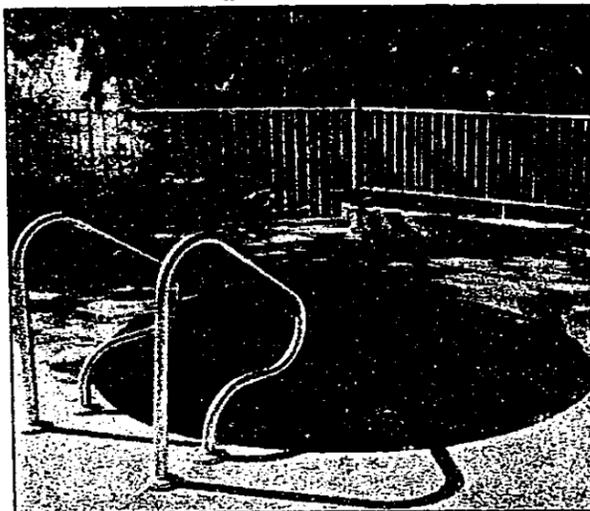
BLM acquired the area in 1985. The operations staff, along with numerous volunteers, put in many hours improving it. Now, two sunken tubs, a shallow wading pool for kids, ten campsites with grills, and a new restroom make the site a popular destination. The restroom and one hot tub are wheelchair accessible and a cable keeps off-highway vehicle use away from the tubs, allowing a more quiet and relaxing soak. Each year, thousands of people come to Hot Well Dunes to soak in the tubs, camp, picnic, and ride their OHVs in the sand.

Partners and local dignitaries joined the BLM on Tuesday, April 23, to dedicate the new facilities at the Hot Well Dunes Recreation Area. The dedication ceremony, cosponsored by Hacienda Motorcycles, culminated a multi-year team effort that included the BLM

and many partners.

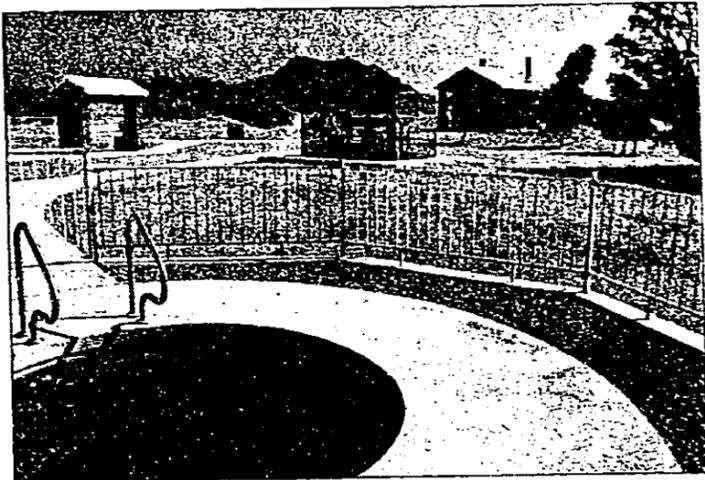
The Safford District acquired the lands encompassing Hot Well Dunes through a land exchange with the state of Arizona. BLM managers realized the importance of the area for recreation and designated approximately 2,000 acres as a Special Recreation Management Area. Many of the improvements at the site were made possible only through the individuals and organizations that were interested in improving the site.

BLM Arizona State Director Denise Meridith and Safford District Manager Bill Civish recognized the contributions of the many volunteers and organizations that participated in Hot Wells' transformation. These included students from the University of Oklahoma who spent six weeks conducting archaeological surveys of the site, boy scouts who conducted litter clean-up projects, and volunteers who



planted cottonwood trees to provide shade.

Grazing permittee Pete Brawley was instrumental in the designation and development of the Hot Well Dunes Recreation Area. From the time BLM acquired this area, Pete worked to accommodate recreation use even though this meant extra effort to run his cattle operation. In 1992, Brawley worked with the Safford District to withdraw 2,000 acres of public land from livestock grazing so that the recreation area could be developed and vehicles controlled. He also created ponds, filled by the run-off from the well. These ponds provide water for both livestock and wildlife, along with



*(opposite page and above) Improvements at Hot Well Dunes have made the area functional and inviting. Thousands of people take advantage of the site each year.*

a place to fish. Brawley continues to help in the management of the area by maintaining the perimeter fence.

The Nomad Motorcycle Club from Sierra Vista had been coming to Hot Well Dunes for many years. They realized early on that to keep areas open and available for off-highway vehicle riding, they needed to get involved with land management agencies. The Nomads installed posts and cable around the tubs and restroom, assisted with construction projects, patrolled and maintained the perimeter fence, helped with general clean-up, and educated members, as well as non-members, on proper off-highway driving procedures.

Another person who realized the importance of the area was Rick Hatch, owner of Hacienda Motorcycles.

Since his business includes sales of dirt bikes and OHVs that are used to ride the dunes, Hatch joined BLM as a cosponsor of the dedication, providing lunch and a fleet of ten four-wheelers. This gave everyone attending the dedication an opportunity to try



*Local dignitaries, volunteer cooperators and representatives from contributing organizations joined BLM Arizona State Director Denise Meridith in dedicating the new facilities at the Hot Well Dunes Recreation Area.*

riding the dunes, which was the highlight of the day for many.

Improvements to the access road were funded through a \$30,000 grant from the Arizona Game and Fish Department's Heritage Fund, a product of Arizona Lottery money. The Hot Well facilities would not have been possible without financial support from the Arizona State Parks' Off-Highway Vehicle Recreation Fund which, in 1994, gave BLM a \$61,000 grant to improve the site. The OHV monies are a percentage of the Arizona sales tax on gasoline.

The work at Hot Well Dunes is not yet complete; last month, BLM was awarded another OHV grant to continue work. This grant includes money for a walkway to the second tub, covered shade ramadas, improvements to a campsite that a site host will occupy, and development of a brochure. ▲



## BLACK GOLD IN THE SAN SIMON

Exploring for Oil in Southeastern Arizona, 1927 - 1931

John P. Wilson  
Las Cruces, New Mexico

*file 5-7*

Prepared for Dr. Patricia A. Gilman, Department of Anthropology,  
University of Oklahoma, and the Safford, Arizona, District  
Office of the Bureau of Land Management

Report No. 75

August 1996

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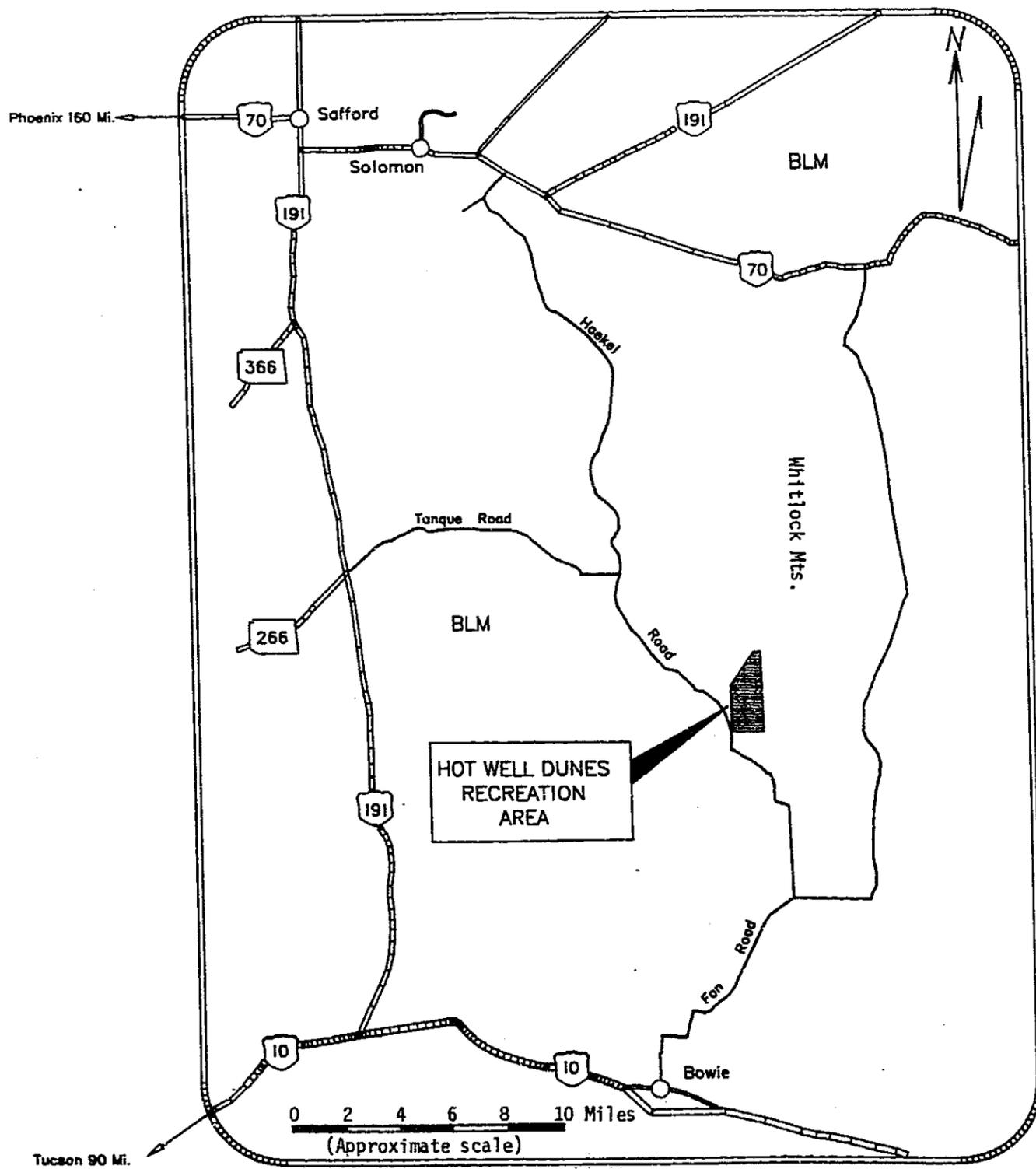


Figure 1

## INTRODUCTION

On March 1, 1996, Dr. Patricia A. Gilman of the University of Oklahoma asked the present writer if he would investigate two historic sites as a part of her Hot Well Dunes Archaeological Project in the San Simon region of southeastern Arizona (Fig. 1). The intention was to mitigate future impacts by revisiting these sites, recorded originally for the University of Arizona, to document their layout and contents, and determine their age, nature, and backgrounds. It was thought that the actual Hot Well site (AZ:CC:7:54(ASM)) had been the location of a wildcat oil test called Whitlock No. 1, drilled in 1927-28 (Fig. 4). This well still discharged warm water, and abandoned drilling equipment was reported to be present.<sup>1</sup> A second site (AZ:CC:7:57(ASM)) had been described as two historic trash dumps, possibly 40 to 60 years old, with a damned pond and an overturned automobile shell. These features were somewhat dispersed, but lay approximately one-third of a mile north of the first site (Fig. 2). At the time of its recording in 1992 it was thought that AZ:CC:7:57 might mark a CCC camp location from the 1930's, but a more recent opinion held that it was probably a camp used by the Pinal Oil Company.<sup>2</sup>

A purchase order from the Safford, Az., Bureau of Land Management office allowed the writer to carry out the historical portion of the 1996 Hot Well Dunes Archaeological Project. This involved researching the histories of sites AZ:CC:7:54 (ASM) and AZ:CC:7:57 (ASM), updating the Arizona State Museum site survey forms for both, preparing a report to be included with the University of Oklahoma's final report of its investigations, and coordinating with Dr. Gilman for the field work and report preparation. This is the report; other aspects of the requirements have already been completed.

After copies of several references<sup>3</sup> and the site survey forms had been obtained, the two site locations were defined as the SE $\frac{1}{4}$ , NE $\frac{1}{4}$ , Section 36, T10S R28E (site AZ:CC:7:54) and the SE $\frac{1}{4}$ , SE $\frac{1}{4}$ , Section 25, T10S R28E (site AZ:CC:7:57) in Graham County, Az. (Fig. 3).

These locations were sent to the Arizona Geological Survey, where the Oil and Gas Program Administrator, Mr. Steven Rauzi, promptly responded with copies of the cover sheets, well logs, contemporary newspaper articles, the table of exploratory wells from U.S. Geological Survey *Oil and Gas Investigations Map OM-201* (Arizona) and a section of the 1928 Canfield scouting report on oil and gas explorations in Arizona.

This sudden wealth of information was more than ample to document the Hot Well, AZ:CC:7:54, shown as "Flowing well" on the USGS Javelina Peak 7.5' topo map, as the wildcat oil well now listed as Whitlock Oil Co., State 1, completed in 1927. A second well drilled by the same company, Whitlock Oil Co., Penrod 1, is now shown as "Badger Den well" in the SW $\frac{1}{4}$ , NE $\frac{1}{4}$ , Section 20, T10S R29E (Fig. 3). This site, completed in 1930(?), had not been indicated for study. Site AZ:CC:7:57, however, coincided with the location given for another oil well, now designated Bear Springs Oil and Gas Co., Allen 2 (Pinal 1), completed in 1929. Whether the latter site had been a CCC camp as well, in the 1930's, was a question not settled until Mr. Manton Botsford, the archeologist at the BLM's Safford office, determined that the only CCC camp previously unaccounted for by location (Camp Joy Valley; SCS Camp A-7) had actually been about eight miles southeast from AZ:CC:7:57.

Research then concentrated upon learning more about the historical background of oil explorations in southeastern Arizona and the two sites in particular, now that we were virtually certain that both had been the locations of unsuccessful wildcat oil wells. Microfilms of the *Graham County Guardian and Gila Valley Farmer* newspaper, published at Safford, Az., were borrowed for the years 1927-1932 and numerous articles about oil drilling transcribed. The names of three companies involved with the two wells - Whitlock Oil Co., Pinal Oil Co., and Bear Springs Oil and Gas Co. - were sent to the Arizona Corporation Commission and copies

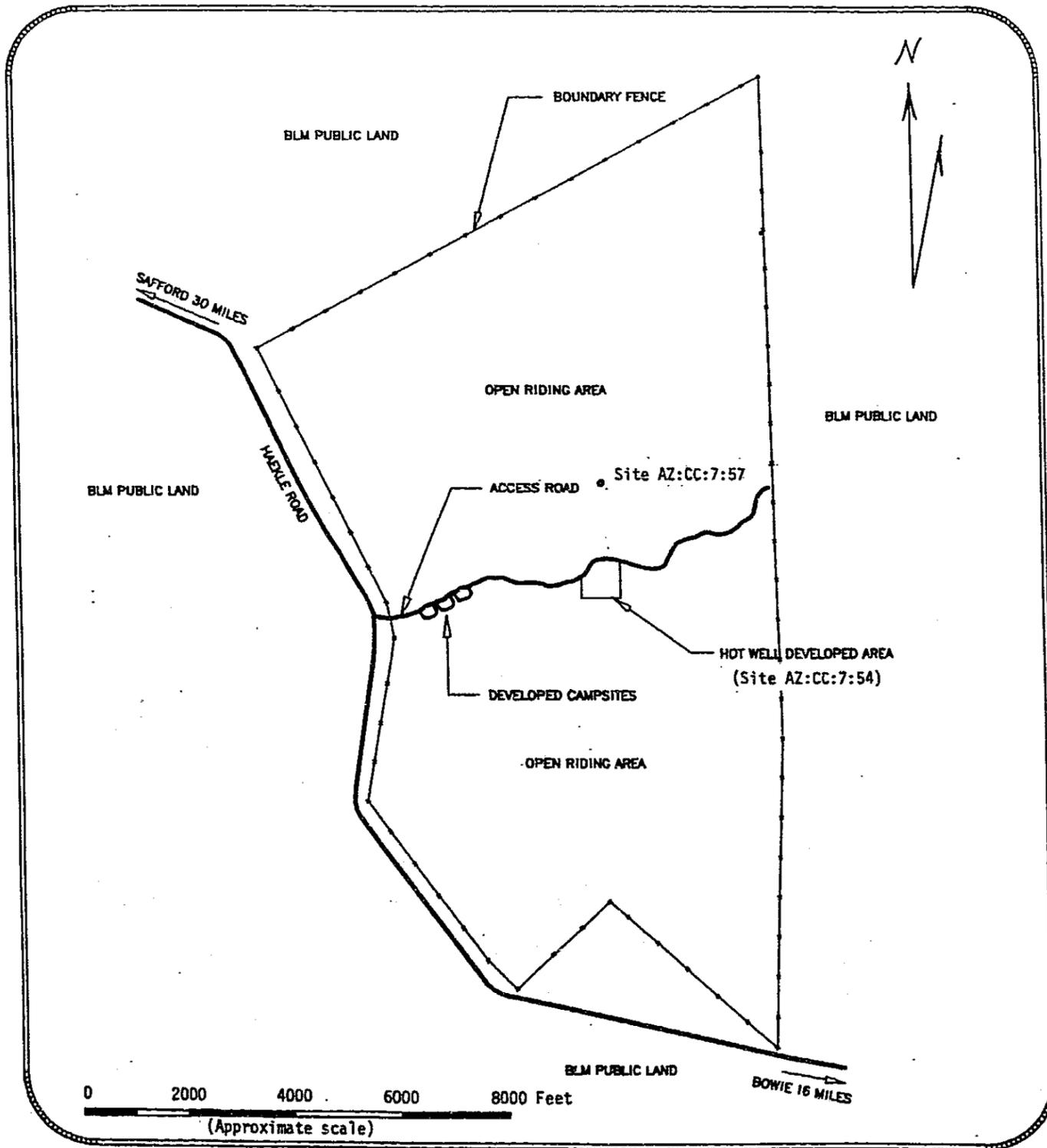


Figure 2

of their articles of incorporation and annual reports were received in return.

At the Arizona Department of Library, Archives and Public Records, Ms. Donna Meszaros generously checked their hard copies (not on microfilm) of the Bowie, Az., *San Simon Valley News*, *San Simon Valley Oil News*, and *San Simon Valley Tribune* for the period January 1928 to January 1934, and xeroxed the most relevant articles from these. This was actually a single newspaper, published in the town closest to the drilling activity. She also found articles in the Globe paper, the *Arizona Record*, and one on CCC camps in the *Willcox Arizona Range News*. Between this collection, the clippings from the Arizona Geological Survey's files, and the transcripts made from the *Graham County Guardian* microfilms, a very complete run of newspaper coverage from the period was at hand.

The BLM offices in Phoenix and Safford confirmed that a homestead entry had been made, in 1932, on the lands where the Bear Springs Oil & Gas, Pinal 1 well was drilled. This case file was eventually located in the Pacific Southwest Region office of the National Archives and a copy of the file obtained. It

showed that while no settlement had been made or cultivation attempted to 'prove-up' the claim, the entryman had been the business agent for the Bear Springs Oil & Gas Co. He died in November 1932 and the entry was cancelled in 1938. Some of the geologic literature and an oil & gas journal were scanned for information, and a few additional items found. Every line of research turned up something useful.

At the end of June in 1996, while Dr. Gilman's field school was ongoing in the San Simon Valley, the writer visited Safford, Az., and spent three days in rerecording the two sites, visiting two other former well locations not listed for study at the same time. Photographs were taken, maps and artifact inventories made, and the other activities incidental to a site survey record completed. At the end of this, the writer returned to Las Cruces, N.M., to prepare a report that incorporated the findings in the field with the historical background. The cooperation received from all parties during the course of research is responsible for whatever merit this study may possess. It was a pleasure to work with everyone.

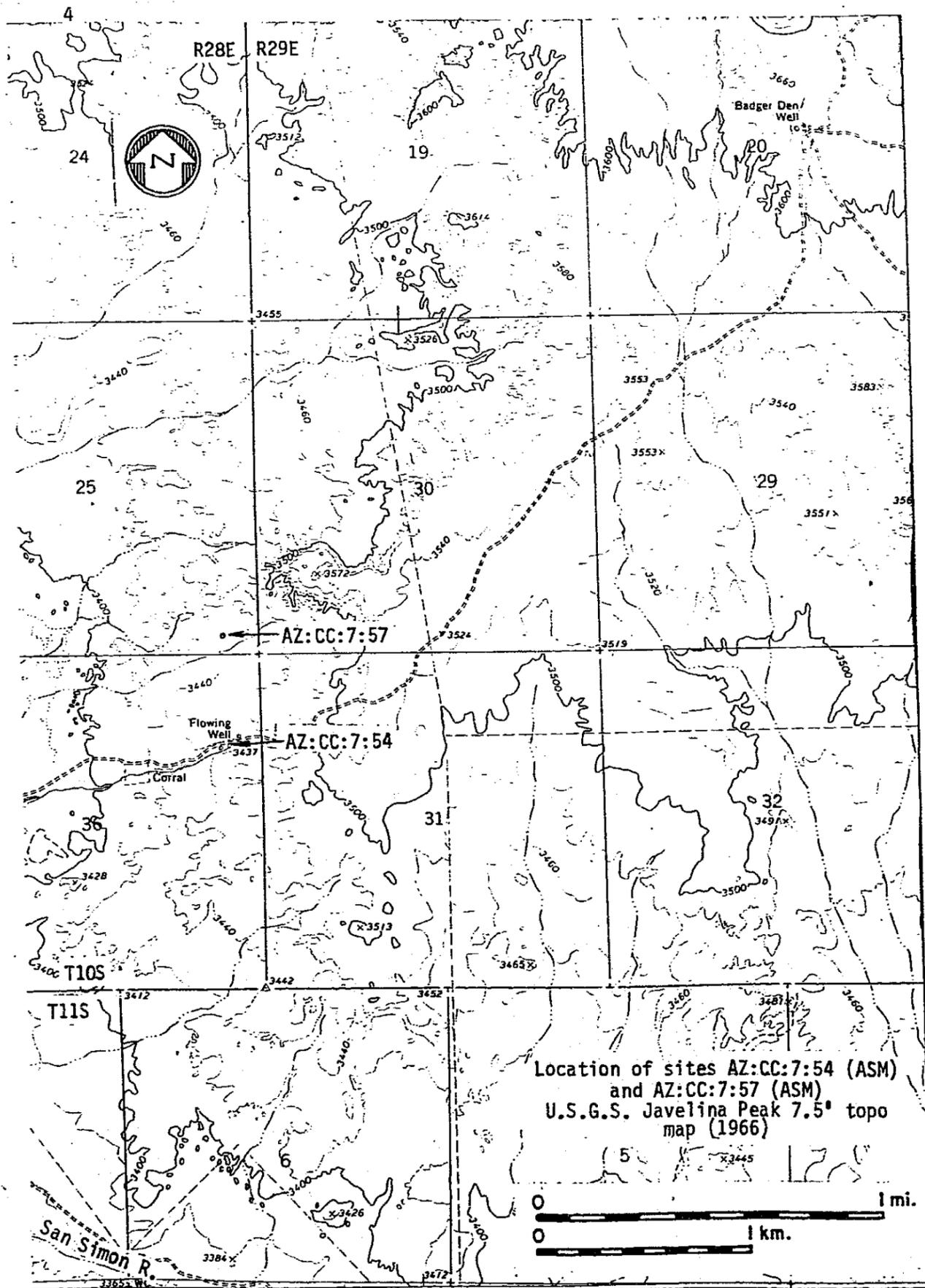
## HISTORICAL BACKGROUND

Arizona is not normally thought of as an oil-producing state, and through 1955 the only commercial production was 47 barrels of oil from a single well in Apache County.<sup>4</sup> This changed rapidly with the discovery of several new fields, all in the northeastern corner of the state. More than 37,000 barrels of crude oil were produced by 1960, while in 1967 production zoomed to almost 3,000,000 barrels.<sup>5</sup> The total in the most recent year (1995) is 71,067 barrels, more than 80 percent of which came from the 18 wells in the Dineh-bi-Keyah field near Lukachukai on the Navajo Indian Reservation.<sup>6</sup> Currently about 200 barrels of oil and 8.5 million cubic feet of gas per day flow from 22 oil and seven gas wells. Since 1954, wells in Arizona have yielded more than 20 million barrels of oil.<sup>7</sup>

The completion of commercial oil wells was preceded by more than fifty years of testing, showings of oil, and dry holes. Exploration was spurred initially by discoveries

in surrounding states, beginning with southern California in the 1890's and then the old Spindletop oil field near Beaumont, Texas, in 1901. The first test well in Arizona was completed in 1903, and from then until the first commercial oil well was brought in in 1955, about 164 wells are known to have been drilled.<sup>8</sup> By 1967, 548 holes had been drilled for oil, gas or helium in the state.<sup>9</sup>

Until the discovery of oil in 1955, the pace of drilling was slow, but southeastern Arizona witnessed some of the exploratory activity. The U.S. Geological Survey tabulated four wells completed there between 1905 and 1910, four more through 1919, another six before 1927, and 22 between 1927 and 1931.<sup>10</sup> Only two more wells were completed in the southeast quadrant of the state prior to World War II: one in 1932, and one (S.W. Funk and others, San Simon 1) where drilling had commenced in 1930. The object of some wells was to find water; how many were in



Location of sites AZ:CC:7:54 (ASM)  
 and AZ:CC:7:57 (ASM)  
 U.S.G.S. Javelina Peak 7.5' topo  
 map (1966)

Figure 3

search of oil or gas is not known.

There appear to be no historical studies of this aspect of Arizona's history, so primary source materials had to be located at the Arizona Geological Survey (which administers the oil and gas program in Arizona), the Arizona Corporation Commission, and in the newspapers of the period. These showed that all of the explorations began as ventures of companies organized in Arizona. These were small companies, organized for the purpose of drilling for and producing oil, by persons who had no previous experience in the business.

There are a few contemporary accounts of these early explorations. One reminiscence, about the well now known as Howle 1, said that

In the summer of 1912, Perry Howle, on the recommendation of his geologist, T.F. Colton, drilled a well in the southeast corner of Graham county to a depth of 1100 feet. Under affidavit dated March 2nd, 1927, he says: "We drilled through as I recall it, a sedimentary formation, lime, sandstone, shales, several oil sands and little if any quicksand. Below 750 feet we encountered several showings of oil and gas and the gas would burn. After myself and another had gone to bed, the well blew in, throwing oil and gas over the derrick and did so for nine days and nights, and eventually ruined the hole and sealed itself off. No effort was made to reopen the well."<sup>11</sup>

A summary of wildcatting efforts mentioned the U.S. Oil Co. 1 well, completed in 1917:

One of the first holes to be drilled was the U.S. well located north of Bowie about ten miles. They went down better than 1000 feet. They seemed to have had plenty of oil showings but eventually they quit work, pulled their casing and departed.<sup>12</sup>

Late in 1927, one of the boilers with the steam engine at a well being drilled near Pima, Az., exploded and scattered parts of the rig across the countryside. One worker received burns.<sup>13</sup>

The five years from 1927 through 1931 were a peak period of drilling activity and, to judge by the newspaper coverage and level of outside interest, amounted to a boom in oil exploration. What started this? The early and

middle 1920's had witnessed one oil boom after another, as new fields were brought in in southern California and west Texas. Another factor was probably the recent oil discoveries in New Mexico: three fields in the Shiprock area adjoining Arizona brought into production between 1922 and 1925; discovery of the Artesia pool in Eddy County in 1924; and the drilling of Lea County's first successful oil well in 1926.<sup>14</sup> Other discoveries soon followed in these same areas.

Drillers in the northwestern corner of New Mexico had employed conventional wisdom and located, with good results, on anticlines or domes where crude oil had accumulated in traps. In Arizona, geologists made similar recommendations, while some test holes may have been drilled on the strength of oil and gas showings in water wells.<sup>15</sup> It is unlikely that testing followed a haphazard pattern, however, because drilling was expensive even then. One account of explorations mentioned several oil showings in water wells, and reports from Willcox, Az., as far back as 1912 told of gas breaking through water wells and destroying drilling rigs.<sup>16</sup> However, locations in the fields near Bowie, San Simon, and Pima, Az., seem to have been chosen by devices that, in the language of the times, amounted to "doodle-bug contraptions."

Geophysical methods of oil prospecting were known in the 1920's, and theoretical articles in the *Bulletin of the American Association of Petroleum Geologists* speak of gravity anomalies (measured with the torsion balance), magnetometers, and electrical methods of prospecting.<sup>17</sup> No references to these techniques in Arizona have been found. The most important factor was probably the opinions of geologists, and when the Whitlock Oil Co. commenced drilling on their Prospect No. 1 (the Whitlock Oil Co., State 1 well) north of Bowie, Az., on July 3, 1927, it was after 28 geologists and three geophysicists had reported favorably on the location chosen, in the San Simon Valley.

The company claimed that the start of drilling climaxed seven years of study, at a cost of \$12,000 to \$15,000 (the Whitlock Oil Co. was incorporated in September 1926).<sup>18</sup> Actually, according to another article, this location on a state land lease 14 miles north of Bowie, Az., was "where an extremely high reading was obtained recently with the Lind

oil detecting instrument."<sup>19</sup> The same device had also located the Bear Springs Oil & Gas Co., Pinal 1 well, about one-third mile north of the Whitlock prospect.<sup>20</sup>

Arizona newspapers in 1927-28 made a number of references to (a) the Lind oil-detecting instrument, (b) the Trumbull Oil-Detecting Instrument (or Oil and Gas Affinity Instrument), and (c) to an unnamed device invented by William A. Sharpe of the Colorado School of Mines. The latter was illustrated in *The Arizona Republican* for December 4, 1927, which showed a device that resembled a mortar shell suspended with point downward from a tripod, and a box with dials set up adjacent to the tripod. No explanation of its operation was given. Another article made reference to the Trumbull Seismograph, which was presumably the same as M.C. Trumbull's oil-affinity machine. Geologist Claude Palmer was satisfied "that the instrument had an affinity to petroliferous content."<sup>21</sup>

The only account of how any of these devices worked was given by one Wm. J. Vaughan, cited as the local manager of the Underwriters' Syndicate and superintendent of the well being drilled on the Mary E. Mack lease at Pima, Az.:

There are two types of detectors. One reacts to the presence of oil and indicates volume. The other indicates only the depth at which oil may be struck. The first type may be described as an affinity instrument. It carries a reservoir of compound chemicals similar to those contained in petroleum. These chemicals are sympathetic to the vibrations sent out by electrons of the petroleum atoms and respond when the reservoir is suspended over a subterranean reservoir of oil. Amplifiers similar to those used in magnifying radio vibrations step up the sympathetic vibrations in the container until they can be mechanically indicated on a dial.<sup>22</sup>

Presumably all three detectors were of the first type and operated on similar principals(?). Whatever their merits, they did have a following, as all of the wells spudded in in 1927 seem to have relied on them, which includes another hole at Ashurst, Az., five miles west of the one at Pima, financed by a New York

based syndicate. None of these ventures resulted in a production well.

Oil in northeastern Arizona has been produced from the Mississippian and Devonian formations of Paleozoic age, although shows have been reported from other geologic formations. In southeastern Arizona there are thick Paleozoic sections exposed in the mountains. Within the basins these same sections may be present, but the deep accumulation of Quaternary sand, gravel and other valley fill conceals the structure of the older rocks. The relative recency of the alluvial sediments accounts for why none of the wells in the San Simon Valley struck oil, and the wonder is why, with the geologic expertise they had available, companies would continue sinking wells, expecting to find commercial quantities of oil in these sands, shales and gravels.<sup>23</sup>

One of the small Arizona ventures was the Pinal Oil Co., organized February 3, 1927. The original amount of its capital stock was \$20,000, later raised to \$60,000, and in 1929 to \$500,000. Of this, almost \$150,000 was shown as paid up and issued. The Bear Springs Oil & Gas Co., organized in March 1926, had the same authorized amount of capital stock but showed only \$11,874.50 paid up and issued in their 1929 annual report, with virtually no assets. The Whitlock Oil Co., chartered in September 1926, had an authorized capital of \$100,000, but in their only annual report (June 1, 1927) listed \$21,450 paid up and issued, with virtually the same amount as assets.<sup>24</sup> That month they did receive permission to sell an additional 150,000 shares of stock at \$1 per share.<sup>25</sup>

All of these local operations were undercapitalized and some were bought out by interests from Utah, California, and New York. The infusions of new money allowed drilling to resume (sporadically), at some wells, but even so, none of these ventures resulted in a producing oil or gas well. With the companies that remained under strictly local control - the Whitlock Oil Co., Bear Springs Oil & Gas Co., and Pinal Oil Co. - activity at their initial well sites effectively halted in 1928. Whitlock did drill a second well, a dry hole, completed in 1930.

From the reportage in the newspapers, it appears that only rarely would a company drill more than a single well at a time. This

reflects the strains on financing. If, as sometimes happened, there was said to be eight or nine wells active, this meant almost the same number of companies involved. All of these endeavors seem to have been legitimate efforts to find oil. Noticeably absent from the newspapers were large display advertisements that solicited readers to buy oil stocks, as happened with an oil 'boom' in the Tularosa Basin of southern New Mexico in 1919-1920. Such advertisements were plays to fleece investors rather than honest efforts to finance the discovery of oil. By way of contrast, in Arizona the claim was made as late as 1931 that "Pinal Oil Co. is fully financed and .... all negotiations for purchase of that company's stock are cancelled."<sup>26</sup>

Through the period of the 1927-1931 oil 'boom,' the names of companies, investors, and oil wells came and went in southeastern Arizona, but one name, that of Bob Thomas, was consistently present. He was initially shown as statutory agent for both the Bear Springs Oil & Gas Co. and the Whitlock Oil Co., and was one of the incorporators for the Whitlock company. In December 1927 he was listed as a geologist with the Whitlock firm.<sup>27</sup> Thereafter, through 1931, he was usually shown as business agent for the Bear Springs Oil & Gas Co., even when the activity of that organization was clearly waning. He may have been the person most responsible

for keeping alive an expectation that there was oil somewhere beneath the surface in southeastern Arizona, even when test after test yielded only showings or dry holes.

As testimony of his optimism, on May 10, 1932, he filed a Homestead Entry on 320 acres in Section 25, T10S R28E, a tract that included the old Bear Springs Oil & Gas Co., Pinal 1 hole spudded in early in 1927. He was only 59 years old when he made the entry, but on November 2d of the same year he died. No residence had yet been established and there had been no cultivation. In 1938 the entry was cancelled.<sup>28</sup> His death, at the depth of the Depression, probably signaled the close of oil exploration in southeastern Arizona for a generation.

Hope springs eternal in the realm of mineral exploration as elsewhere, and the discovery of several large oil and gas fields in rock beneath Laramide-age thrust sheets in Utah and Wyoming stimulated leasing and the drilling of nine exploratory wells in Arizona in 1980-1982, to test the theory that the Laramide overthrust belt extended across Arizona. Eight holes lay within the Basin and Range province. One well, Phillips Safford A1 State, in the San Simon Valley, reached a depth of 8,509 feet in upper Tertiary conglomerate. As with the other tests, no oil or gas was discovered.<sup>29</sup>

## THE TWO WELLS

Drilling sites for abandoned oil and gas wells are not difficult to identify. The principal means for doing so in Arizona is USGS *Oil & Gas Investigations Map OM-201*.<sup>30</sup> This map specifies the locations for most tests to a ¼-¼ section. Until the early 1950's, the drillers' debris was simply left at the site and not cleaned up or buried. The amount of material can be substantial, and extend across 100 meters or more. Well locations were apparently not identified by distances to the two nearest section lines until after World War II, nor were the names or locations of abandoned wells welded onto the casing or an attached plate until then.

Exploratory wells are normally not close together and can easily be distinguished from one another with only ¼-¼ locations. In T10S

R28E, there were only four tests in the entire township. Two of these, at sites AZ:CC:7:54 and AZ:CC:7:57, are the principal subjects of this report. Another one, the U.S. Oil Co. 1 site in the NW¼, NE¼, Section 35, was visited but has not yet been recorded. The fourth location, J.C. Clark 1, lies near the south line of the township in Section 32 and has not been revisited.

The documentary record relating to an oil well, particularly newspaper accounts, is typically most complete from the time drilling began until the discovery of oil, if any was found. Publicity was a good way to encourage new investors. However, the course of drilling often met with interruptions, as when waiting for the arrival of more casing, coping with equipment breakdowns, or

shutting down when the sponsor ran out of money. If one company quit, another one might buy out its interest and resume drilling. News releases often announced plans that were never realized.

As a result, one can usually say when drilling commenced, but it may not be known how long this continued or when delays were met if the only result was a dry hole. At most such wells, the span of genuine activity was probably rather brief, measured in months rather than in years. A 1931 newspaper article said that the wells at what are now sites AZ:CC:7:54 and AZ:CC:7:57 had been practically shut down for the past three years (i.e., since 1928), although another article a few months earlier gave the impression that there was substantial activity at both sites.<sup>31</sup> The completion dates listed in *Oil & Gas Investigations Map OM-201* are good estimates, but they may not be a reliable guide as to when drilling began, or account for later activity. Information must be drawn from every type of surviving record.

#### AZ:CC:7:54 (ASM)

This well was drilled by the Whitlock Oil Company as their Prospect No. 1, on lands then owned by the State of Arizona, in Section 36, T10S R28E, in southern Graham County. This company's Articles of Incorporation were filed September 8, 1926, with Temple F. Penrod of Phoenix, described in one account as a "well known auto accessory salesman," as the president and Bob Thomas, then of Globe, Az., as statutory agent.<sup>32</sup> One of the incorporators, Boyd Victor Lind of Yuma, Az., was promoting or perhaps had invented the Lind oil-detecting instrument, mentioned earlier.

The company's officers spent at least part of the time until the following April in raising capital. The prospecting must have been done already. In April, the company president announced that they had no stock on the market and "our company is completely financed."<sup>33</sup> This was probably premature, as the company was still raising money in May. By June, according to the only Annual Report on file, they held oil and gas leases on Section 36, T10S R28E (State of Arizona lands) and on seven sections of

Federal lands in the southwestern part of T10S R29E, all in the southern part of Graham County.<sup>34</sup> According to BLM records, oil and gas lease PHX 060054 issued on February 19, 1927 covered Section 20, T10S R29E. The only oil and gas lease on record for Section 36 (A 22456), however, was issued by the State of Arizona on February 24, 1984.<sup>35</sup>

Although the news item on April 8th said that "The contract for drilling the (Whitlock) company's first well was awarded last week and drilling apparatus is already on the ground," it would appear that the company drilled its own well. No mention was made of a drilling subcontractor in any subsequent reports. It would have been unusual not to subcontract the drilling, especially for a company with no prior experience in the field. Perhaps the Whitlock crew shared members and even equipment with the Bear Springs Oil & Gas Co. well already being drilled by the Pinal Oil Co. just one-third of a mile to the north. The Whitlock Oil Co. and Bear Springs Oil & Gas Co. did share Directors and Officers to some extent, with Temple Penrod being one of the Directors of the Bear Springs company and Leroy Kennedy serving both as President of the Bear Springs Oil & Gas Co. and Secretary of the Whitlock Oil Co. Another individual served simultaneously as Vice-President of one company and Treasurer of the other.<sup>36</sup> One photograph of the Whitlock No. 1 well shows a crew of five men plus a young girl, probably the cook.<sup>37</sup>

Drilling on the Whitlock Prospect No. 1 finally began July 3, 1927. The well was drilled entirely with a cable-tool drilling rig, as both the Canfield report from 1928 and a contemporary newspaper article make clear.<sup>38</sup> Whether this was powered by steam or by a gasoline engine is not known, but an early progress report stated that the well had struck water at 150 feet and drilling was suspended until the completion of a water well nearby.<sup>39</sup> This implies the possible use of a steam engine. However, two articles from 1931 mention an 80-horsepower Buffalo Gasoline engine and a National No. 2 drilling machine, owned by the Whitlock Oil Co., at their Well No. 1.<sup>40</sup> It may be that the drilling rig was replaced at some point; one photograph in 1927 shows what appears to be a simplified drill rig with a small derrick (for the water

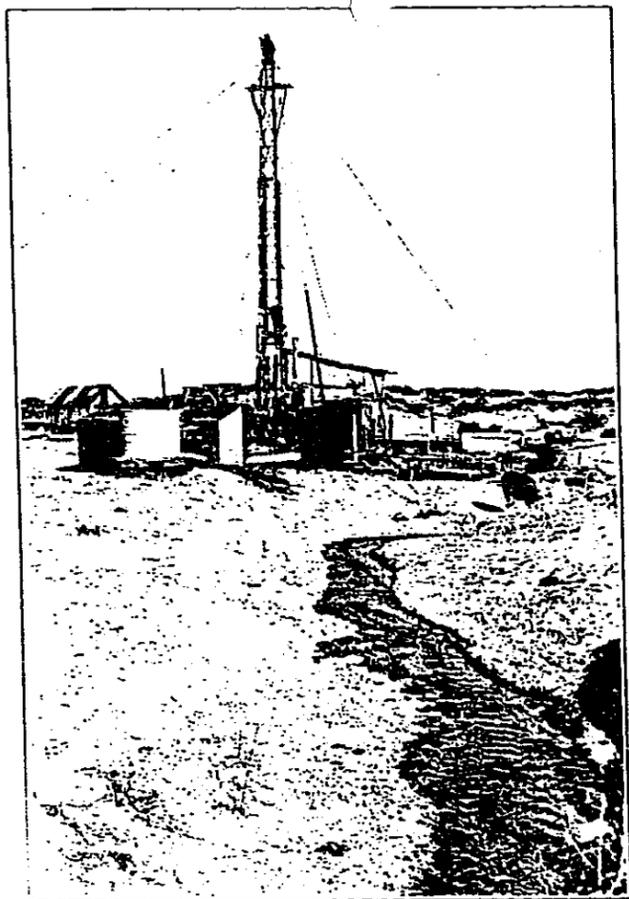


Fig. 4. "A Flow of Warm Water from Pinal Oil Co.'s Whitlock No. 1 Well" (Whitlock Oil Co., State 1 well). From USGS Water- Supply Paper 796-F (1938).

well(?) adjacent, a single roofed shelter, and four small cabins that comprised the Whitlock camp.<sup>41</sup> An undated but later photograph shows a somewhat more elaborate derrick guyed up by cables, probably a portable rig, with several small sheds, a roofed shelter and at least one of the small camp buildings (Fig. 4). The rigs in the two views are not the same equipment. The power source is not obvious in either scene.

No new progress reports were published until the end of August, when the well had been drilled below 1200 ft.<sup>42</sup> One month later, it was reported that drilling had been shut down for more than 15 days, pending the arrival of casing. The drill had reached 1325 ft., "and quite a bit of gas and some oil has been encountered."<sup>43</sup> In October, drilling was again suspended, awaiting another shipment of casing.<sup>44</sup> Early in November it was shut down once more, preparatory of making a water shut-off.<sup>45</sup>

Finally, in its November 25, 1927 issue, the *Graham County Guardian* announced that the Whitlock Oil Co. had struck "Sand containing a heavy saturation of oil" at a depth of 1400 ft. Significantly, "A heavy flow of water was encountered with the new

sand."<sup>46</sup> Reporting on this well then virtually ceased in the Safford paper, except for allusions to attempts to secure a water shut-off and an enigmatic statement the next April that "satisfactory progress is being made."<sup>47</sup>

Outside of Bowie and Safford, a somewhat different story was told. *The Arizona Republican* in Phoenix and the *Arizona Record* in Globe carried major stories on the discovery of oil in Arizona in their December 4, 1927, issues. An unnamed Tucson paper printed the same story on December 5th. The well "came in" on November 9th, "and is said to have been in good quantities." The estimate of production was 1,000 to 7,000 barrels of oil per day. Company officials said that no announcement was made at the time in order to allow them to secure leases on other acreage in the vicinity. Mr. Penrod added that arrangements had been made with Los Angeles banks to finance the Whitlock Co. "until arrangements for delivery of the oil are completed." Apparently the company had expended its capital and was now reduced to borrowing.<sup>48</sup>

Although the level with the oil sand had been plugged for the time being, a careful

reader would see that there was a serious problem with water. The same December 4th article in *The Arizona Republican* went on to say that

Oil has been flowing with the water over both slush pits at the well and through the ditches as far as three-quarters of a mile across the desert. A vast earthen dam has been constructed at some distance from the well, and as soon as the cementing off process is completed, oil will be permitted to flow out into this huge reservoir until tank or pipe line construction can be completed, Mr. Penrod said.

Officials of the Whitlock company "freely predicted" that "Whitlock No. 1 had written the first line of a new chapter in Arizona's history." This 'reservoir' may still be seen on the USGS Javelina Peak 7.5' topo map (Fig. 3).

The log on file at the Arizona Geological Survey shows the Whitlock Oil Co., State 1 well as drilled to 1837 ft., while the USGS lists total depth as 1921 ft. No explanation was made as to why drilling continued several hundred feet below the oil sand, which one report said was encountered at 1427 ft.<sup>49</sup> Perhaps another showing was discovered, as a 1931 article said that this well would be plugged from 1920 ft. back to 1500 ft. "in order to protect the green oil sand that was encountered between 1600 and 1700 ft. from infiltration of water."<sup>50</sup> A later report also mentioned that this well hit two flows of water, that flowed under artesian conditions and discharged an estimated 500,000 gallons per day.<sup>51</sup> The flows were apparently brought under some control, but the drillers were not able to effect a water shut-off, which effectively doomed any further development.<sup>52</sup> The company was reorganized in the spring of 1929.

Temple Penrod and Charles Button, the field supervisor, left the Whitlock company and, with his California connections providing the financing, began drilling the Ryan and others Ryan 1 well 7½ miles southwest of San Simon in June 1930. This reached 990 ft. and proved to be another dry hole.<sup>53</sup> As for the equipment at the Whitlock Oil Co., State 1 well site, this was moved off in June of 1931.<sup>54</sup> Section 36 became Federal property through

a land exchange with the State of Arizona in 1989.

When site AZ:CC:7:54 was initially recorded in July of 1992, the site survey sketch showed a rectangular, concrete enclosure dating from the 1970's around the well head, with a rectangular bathing tub attached. Since 1992, the original surface has been completely altered in the vicinity of the well head. BLM engineers also removed the concrete enclosures and dug down along the old casing to a depth of ten feet, until they encountered sound metal. They then installed a new length of casing, with a control valve at the top.<sup>55</sup> The area saw two outdoor hot tubs and a wading pool installed, as well as sanitary facilities, the result being the attractive Hot Well Dunes Recreational Area that opened to the public in 1996 (Figs. 5-7).

There appear to be no features remaining in place from the period of the Whitlock Oil Co., 1927-1931, except for the well itself, with its new casing and control head. The cabins were probably mounted on skids and removed when no longer needed here. Even refuse is absent, perhaps in consequence of the recent landscaping. Alongside the road that leads in to the recreational area, however, are two assemblies that are evidently part of the equipment used to drill this well. To identify these, a number of sources were consulted for descriptions of early drilling equipment, but very little was learned. A good account of cable-tool drilling procedure was found,<sup>56</sup> as well as two pictorial histories of the early oil industry,<sup>57</sup> but the latter included few close-up views of equipment.

One assembly at the site (Fig. 8) was a 7 ft. diameter bull wheel mounted at one end of a shaft 13½ ft. in length. Part of the 16 inch diameter shaft was a cylinder upon which two 3 ft. diameter flanges had been mounted, as anchors for the wire cable that was wound on the spool between the flanges, and alternately released and taken up to raise and lower the tool bit whose pounding created the drill hole.<sup>58</sup> Markings on this assembly were almost unreadable because of corrosion, but included the words SPOOLING FLANGE .... BULL WHEEL .... as well as the initials NS CO within a shield.. This had

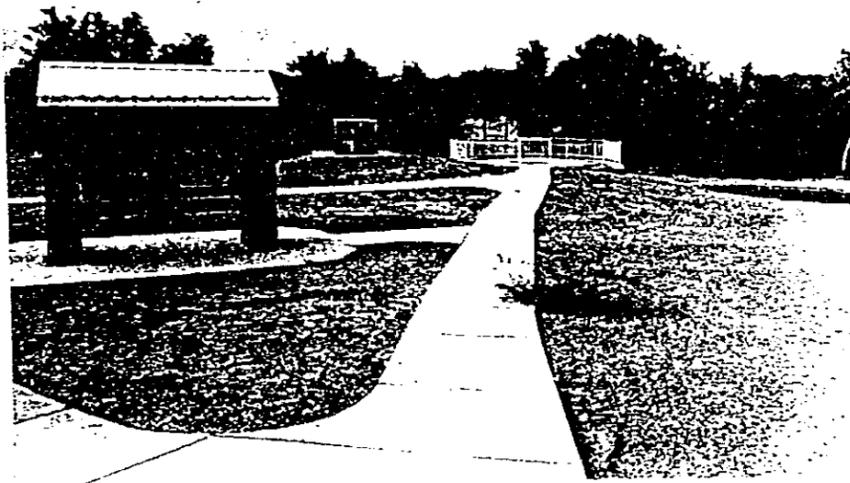


Fig. 5. Site AZ:CC:7:54 (ASM) (Whitlock Oil Co., State 1). Overall view of Hot Well Dunes Recreational Area with interpretive panel, well head, hot tub, and wading pool. Bearing 175°. July 1996.

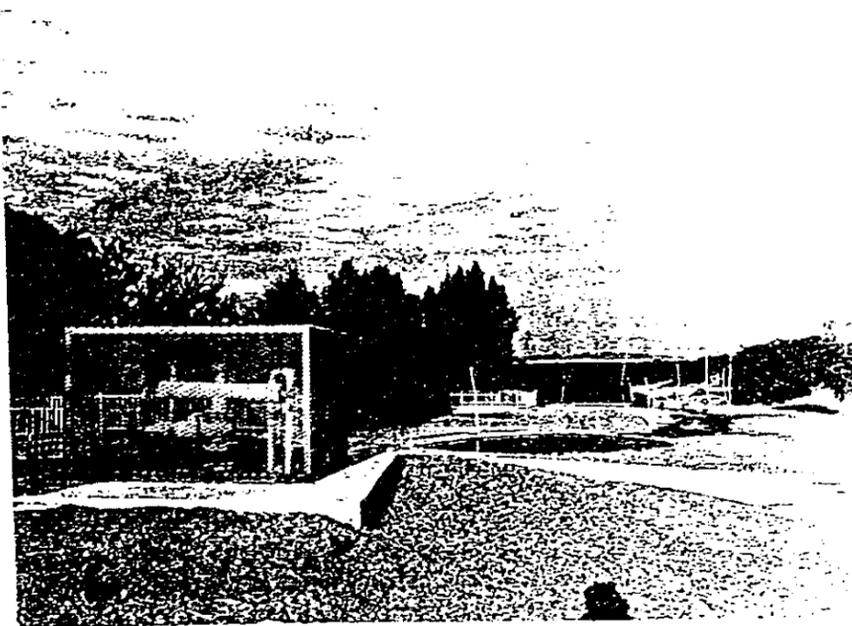


Fig. 6. Site AZ:CC:7:54 (ASM) (Whitlock Oil Co., State 1). Well head for former Whitlock Oil Co. well in the foreground; wading pool and partial view of two hot tubs, with runoff. Bearing 250°. July 1996.



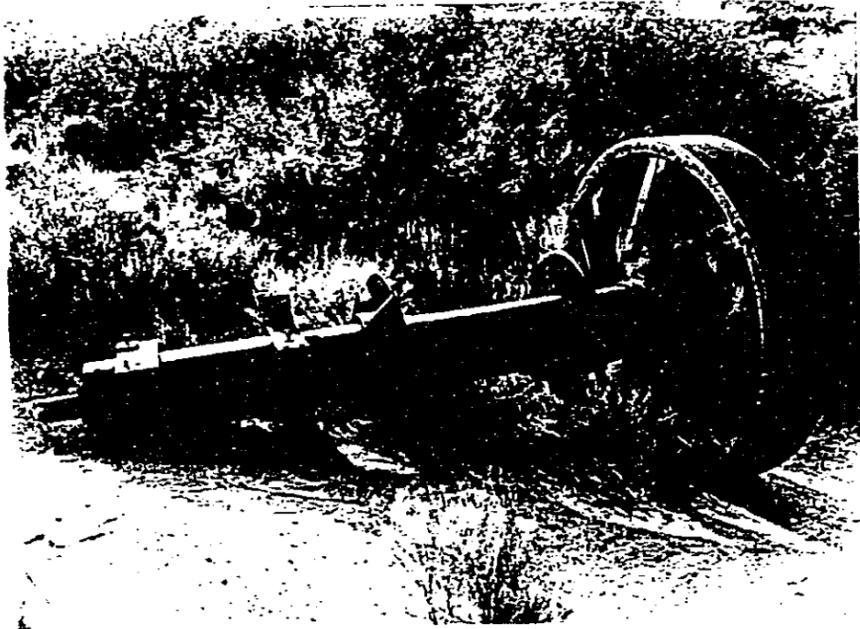


Fig. 8. Site AZ:CC:7:54 (ASM) (Whitlock Oil Co., State 1). 7 ft. diameter bullwheel and spool assembly, including spooling flanges, from original oil drilling rig. July 1996.

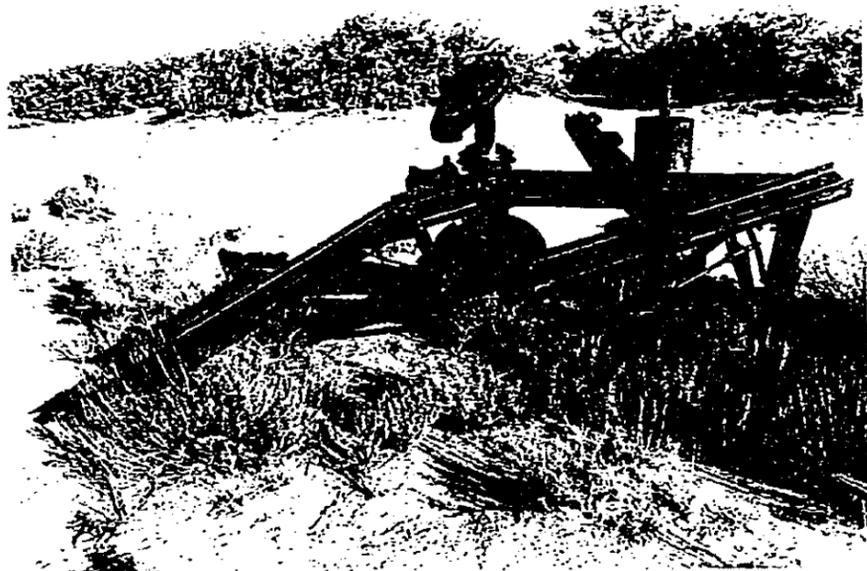


Fig. 9. Site AZ:CC:7:54 (ASM) (Whitlock Oil Co., State 1). A-frame assembly of channel iron with eccentric arm, chain sprocket, belt drums, from original oil drilling rig. July 1996.



obviously been part of a cable-tool drilling rig, but not the original one, which had bull wheels approximately 10 ft. in diameter.<sup>59</sup>

The other assembly was a flattened A-frame made of channel iron, welded and bolted together, upon which two shafts (both present) had been mounted (Fig. 9). The length of this frame was 12 ft., and the height to the center of the bearing shown in the photograph was 3 ft. 2 inches. The eccentric arm mounted on one shaft lies outside the frame, while the sprocket for a chain drive and two 30 in. diameter disks were mounted inside the frame. The second shaft had two wheels or spools for belt drives, one 14 inches in diameter and the other 24 inches in diameter. Cast-in markings consisted of N S CO U.S.A. and HK 12. This assembly seems to have been part of a cable-tool drilling rig, by virtue of the eccentric arm. Why these two assemblies were left at the site is not known, unless they had broken down in service and were considered not repairable. These, and the well itself, are all that remain from the original Whitlock Oil Co., State 1 wildcat oil well.

#### AZ:CC:7:57 (ASM)

The story of this well parallels that of the first one, but involves two companies: the Bear Springs Oil & Gas Co., which was the oil exploration company, and the Pinal Oil Co., which did the drilling. The actual holder of the oil and gas permit (Phoenix 058484) was Charles H. Allen of Globe, Az., hence the name Bear Springs Oil & Gas Co., Allen 2 (Pinal 1) assigned to this well. This lease was issued January 13, 1926, and cancelled February 7, 1935.<sup>60</sup>

The Bear Springs Oil & Gas Co., incorporated on April 3, 1926, was established to drill for, produce, develop and otherwise produce and deal in oil, and to engage in any and all kinds of business in which natural persons could legally engage, etc., etc. As noted, two of its officers were also officers in the Whitlock Oil Co., organized later in 1926, and Bob Thomas was the statutory agent for both firms. The Bear Springs Co. had few assets and relatively little capital at any time; their Annual Report in 1926 listed \$910.92 in assets and \$1898 as the amount of capital

stock paid up and issued. From this point until the last Annual Report was filed in 1931, their assets decreased with each filing, to \$2.08 in 1931, and the amount of paid-up stock increased, to \$12,423.50 in the same year.<sup>61</sup>

The historical background on the Pinal Oil Co. is both more complex and more confusing. Incorporated on February 3, 1927, its principal place of business shifted from Phoenix to Superior and then to Tucson, Az., over three years. The incorporators, directors and officers were largely the same individuals in the first two years. The president, C.H. Bouton, most recently had owned and operated a motor freight line in central Arizona. The only person with experience in oil seems to have been William Crawford, described as driller and field manager, who was one of the incorporators but not a director. He was replaced as head of field operations by Mr. Bouton on August 1, 1928.<sup>62</sup>

The Pinal Oil Co. had been organized specifically to drill for oil and gas, acquire leases and build pipelines. Originally capitalized at \$20,000, none of the officers or directors held office in either the Whitlock or Bear Springs firms. The company prospered initially, at least in the eyes of investors, because in July 1927 the stockholders authorized a 150-for-1 split with each of the 60,000 new shares having a par value of \$1, in effect a tripling of their value since February. A new class of preferred stock was authorized, but whether any shares were issued is undetermined.

Sometime between the summer of 1928 and February 1929 a completely new set of officers assumed control of the company. This was followed by the issuance of new shares and more than doubling of the company's capitalization. As for assets, the 1929 and 1930 Annual Reports showed that the Pinal Oil Co. owned an old well-drilling outfit, cable tools, a tractor, tank(?) and, curiously, a 1500 ft. well valued at more than \$13,000 in 1929. Drilling rights included four specific sections, including Section 25, in T10S R28E, and, at various times between 1928 and 1930, up to 16 additional sections in southern Graham County.<sup>63</sup> *The San Simon Valley Oil News* for November 2, 1928, carried an informative profile of the Pinal Oil Co. So far as can be determined, this company drilled

only one well.

The drilling crew spudded in the Bear Springs Oil & Gas Co., Pinal 1 well some time in early March, 1927, and by mid-month had penetrated to 300 ft.<sup>64</sup> Three weeks later they had drilled to 500 ft. The first big news was that gas pressure had forced quicksand almost to the top of the hole, and "big oil showings have been obtained by bailers" while "the slush pit is said to be covered with oil."<sup>65</sup> The driller, William Crawford, was faced with drilling and casing a new well. A month later, more than 300 ft. of casing had been installed.<sup>66</sup>

Progress was slow. In mid-July it was announced that the Keystone rig, with which the well had been spudded in and drilled to a depth of more than 600 ft., was being moved to another location held by the Bear Springs Oil & Gas Co.<sup>67</sup> Apparently it did not leave the site, but during August was shifted to a location nearby to drill a water well that would supply a 60 horsepower steam boiler and engine that would power a replacement for the Keystone drilling rig. By implication, the latter may also have been steam-powered.<sup>68</sup>

The afternoon of August 17th brought a serious delay, when a high wind "of tornado proportions" demolished the Pinal Oil Co.'s derrick and blew over the bunk houses.<sup>69</sup> Three weeks later a new derrick had been completed and another cable-tool rig, a No. 28 Star drilling machine, was reportedly in place with casing set and drilling scheduled to be resumed the next week.<sup>70</sup> This replacement equipment was described later as an old No. 7 Star rig, used previously to drill the State of Ariz. 1 well at San Simon, spudded in in December 1923.<sup>71</sup>

The crew "plugged along steadily," as a later report put it, and the hole reached 800 ft. in October.<sup>72</sup> Announcements were made in September and again in December that the Bear Springs Co. had signed new drilling contracts, although no one but the Pinal Oil Co. worked at the Bear Springs Oil & Gas Co., Pinal 1 location.<sup>73</sup> By mid-December the well was down to 1100 ft., with no more claims of oil or gas, and it had been overshadowed for the moment by the claims for the Whitlock Oil Co., State 1 well just to the south.<sup>74</sup> No news

followed for the next seven months, which suggests that drilling was shut down.

After C.H. Bouton, the Pinal Oil Co.'s president, took over as drilling supervisor on August 1, 1928, rapid progress was reported with another 400 feet of hole through hard shale and conglomerate to a total depth of 1515 feet. Mrs. Bouton said that she lived at the well for fifteen months; cooking for the drilling crew, keeping records of their time, a well log, records of the footage made and casing set, making the overnment reports and doing the company's correspondence.<sup>75</sup> Mr. Bouton at this time was trying to effect a cement water shut-off at about 1450 ft., in expectation that the hole would soon strike an oil sand. The shut-off may have been effected, but by March 1929 the well was no deeper.<sup>76</sup> The reported depth as of 1931 was 1552 ft.<sup>77</sup>

The new officers of the Pinal Oil Co. did not resume drilling, and the well evidently remained shut down after 1928. In June 1931 it was reported that the National No. 2 drilling machine and 80 horsepower Buffalo gasoline engine were being repaired at the Whitlock Oil Co., State 1 site and would be moved 1700 ft. north to the Pinal No. 1 well. G.E. Parsons was field manager with the Lantz Securities Syndicate of Prescott as fiscal agent for the Pinal company, which suggests that the latter was in receivership. Two months later the field superintendent, Sam Twentier, was said to be hard at work getting the camps in shape with a crew of three.<sup>78</sup> Apparently nothing came of these efforts and the well itself produced only the early showings of oil and gas.

In Bob Thomas' homestead case file from May of 1932, there is what is called a water-hole affidavit, which affirmed that his entry had no spring, waterhole, hot springs or other body of water. It did have a water well and the Pinal No. 1 oil well 1552 ft. deep with water in it. Thomas claimed that the Pinal No. 1 well was then flowing about 5 gallons of water a minute.<sup>79</sup> As of 1938, the U.S. Geological Survey reported that this well discharged a "2-inch pipe full" of lukewarm water.<sup>80</sup> There is no flow at present and there probably has been none in the recent past.

The site survey record of AZ:CC:7:57



Fig. 10. Site AZ:CC:7:57 (ASM) (Bear Springs Oil & Gas Co. Allen 2 (Pinal 1) well). View of old well head (casing), with west end of coal clinker area on the right. Bearing 330°. July 1996.

made in July 1992 described this as a historic trash dump, probably debris from a Pinal Oil Co. camp in the vicinity. When revisited on July 1, 1996, the first thing seen was the old well casing, 8½ inches in diameter and now corroded, projecting about one meter above the ground surface (Fig. 10). The top of the casing is open and no identification or location was found welded on the side. The surrounding area is undisturbed except for a couple of tracks created by off-road vehicles. About 170 meters to the northwest is a pond, created by a dike or berm across a drainageway, that currently holds water (Fig. 3). It is uncertain whether this pond may have been built in association with the oil drilling activities or is of more recent origin. Numerous mesquite-capped sand dunes are present within and around the site area.

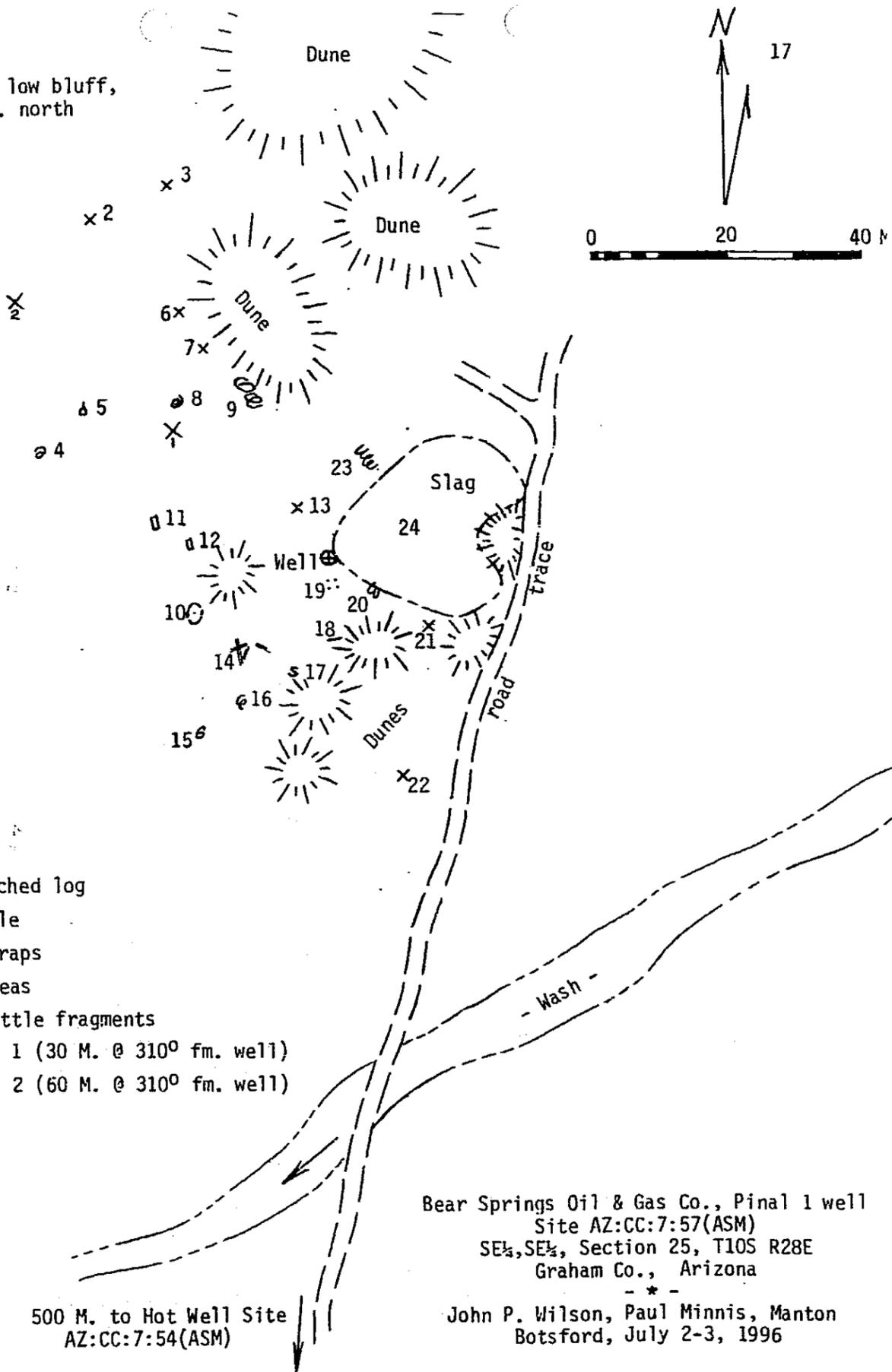
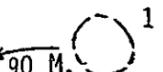
Adjoining the well head to the east is an area of about 400 M<sup>2</sup> covered with small fragments of coal clinker, some slag, and occasional firebrick fragments. This would have been the location of the boiler and steam engine used for powering the drill rig, and probably for the blacksmithing operation to keep the tool bits dressed. Nothing

structural was seen there. Spaced three to four meters south of the casing, however, were four anchor bolts, 1.1 M. apart from east to west and 1.4 to 1.6 M. between north and south. What type of feature these anchored down is not known (Fig. 11).

Elsewhere around the well head, to distances of about 60 M. to the north, 40 M. west, and 30 M. south, were scattered fragments of (primarily) container glass and corroded metal artifacts. These included strands of wire cable 5/8 in. to 1 in. in diameter, frayed at the ends; some heavy-gage sheet metal, a few tin cans, a single-width cot or bedspring, a small oil can, at least one iron ring for protecting the threads on a length of casing, and four board scraps. Also present were several fragmentary dinner and salad plates, of both thin and heavy bodied white earthenware, and a small yellowware crock. Container glass (all fragmentary) included two snuff bottles, a GEBHARDT EAGLE CHILI POWDER panel bottle, the base of a mustard jar embossed DESIGN PATENTED AUG. 5<sup>th</sup> 1919, a tumbler base with a Capstan Glass Co. (1918-1937) trademark, and an H.J. Heinz bottle base with an Owens

↑ base of low bluff,  
35-40 M. north

90 M. to pond



Legend

- 1-24 See attached log
- o Wire cable
- X Board scraps
- o Trash areas
- s Snuff bottle fragments
- X Ref. pt. 1 (30 M. @ 310° fm. well)
- X Ref. pt. 2 (60 M. @ 310° fm. well)

Bear Springs Oil & Gas Co., Pinal 1 well  
Site AZ:CC:7:57(ASM)  
SE $\frac{1}{4}$ , SE $\frac{1}{4}$ , Section 25, T10S R28E  
Graham Co., Arizona

John P. Wilson, Paul Minnis, Manton  
Botsford, July 2-3, 1996

Figure 11

Bottie Co. date-mark for 1930. Numerous other glass container fragments were mostly undiagnostic. No recognizable parts of a drilling rig, steam engine, or boiler remained here, and all corroded metal scraps except for some of the cable lengths and the bedspring were quite small.

Eighty meters northwest of the well casing lay a small trash area about six meters across, within which were found many of the ceramics and container glass fragments inventoried for this site. This plus the locations of the boards and bedspring suggested that the camp buildings, probably small, wood-frame cabins mounted on skids, lay to the west and northwest of the well - somewhere between it and the trash area. There are no known historical photographs of the Bear

Springs Oil & Gas Co., Pinal 1 well and camp, but in appearance it probably differed little from the Whitlock Oil Co. camp (Fig. 4).

A complete new site survey record of site AZ:CC:7:57 included a scaled sketch map to indicate the locations of the features and the numerous piece-plotted artifacts (located by compass bearings and taped distances relative to the well head; see Fig. 11), and a detailed listing of these artifacts. Several photographs were taken as well (Fig. 10). Mr. Manton Botsford determined the site location by a GPS instrument. Arizona State Museum site survey forms were completed for both AZ:CC:7:57 and AZ:CC:7:54. One piece of flagging was tied to a yucca at AZ:CC:7:57, with the two sites otherwise left unmarked.

## CONCLUSIONS

With time and resources, similar histories might be constructed for many of the other oil wells, all of them ultimately unsuccessful, drilled in what were being called the Willcox, San Simon, and Bowie fields during the late 1920's. A newspaper article in April 1927 claimed that nine drilling rigs were in operation that month in the Bowie field, which may be a high number and would have included all of southeastern Arizona.<sup>81</sup>

In later months, wells would frequently be shut down for various reasons while new operations would begin, so that several would be drilling at any given time. Some, such as the Whitlock No. 1, State 1, and Whitlock No. 2, Penrod 1 (the Badger Den well; see Fig. 3) continue in use as water wells, while the others are forgotten except for traces left on the landscape. The histories of all of these ventures would probably be similar to the two outlined in this report, differing in some details. While it is not recommended that historical backgrounds be developed for these other wells because of the disproportionate effort for the amount of new information, all of them should be recorded as thoroughly as any other archeological sites.

At the beginning of the summer, several research questions were proposed with respect to the historic sites in the Hot Well Dunes Archaeological Project Area.<sup>82</sup> Although all of the anticipated sources of information were utilized, it was soon seen that the questions were not well framed. The Whitlock No. 1 well location had been cleaned up entirely in the process of creating the Hot Well Dunes Recreational Area, which virtually eliminated the possibility of deriving any information from features or artifacts at that site. It was also seen that the possibility of distinguishing wells drilled with cable-tool rigs and those done with rotary rigs is slight to impossible, and indeed at some documented sites both types of rigs were employed.

All of the wells drilled in the 1927-1931 period were at least begun by small, Arizona-based companies, with little expertise and slim financing that disappeared rapidly in the face of the \$80,000 to \$100,000 reportedly expended on some wells. The geologic expertise that had led to the choice of drilling locations was dubious to say the least, and the principal result of these efforts is a chapter in Arizona's history now told for the first time.

## ENDNOTES

- <sup>1</sup> Paul E. Minnis and Heather P. York, *Hot Well Dunes Archaeological Project: Survey and Testing Phases* (Norman, Department of Anthropology, University of Oklahoma; 1993), pp. 2.9-2.10.
- <sup>2</sup> Minnis and York 1993: 2.10-2.11; Patricia A. Gilman, *Proposal for Mitigating Impacts to the Hot Well Dunes Sites, San Simon River Valley Southeast of Safford, Arizona* (Norman, Department of Anthropology, University of Oklahoma; 1996), p. 9.
- <sup>3</sup> Minnis and York 1993; Maxwell M. Knechtel, *Geology and Ground-Water Resources of the Valley of Gila River and San Simon Creek, Graham County, Arizona*, U.S. Geological Survey Water-Supply Paper 796-F (Washington, Government Printing Office; 1938).
- <sup>4</sup> Thomas F. Stipp and Helen M. Beikman, *Map of Arizona Showing Oil, Gas, and Exploratory Wells, Pipelines, and Areas of Igneous and Metamorphic Rocks*, Oil and Gas Investigations Map OM-201 (Washington, U.S. Geological Survey; 1959).
- <sup>5</sup> Arizona Bureau of Mines, *Mineral and Water Resources of Arizona*, Bulletin 180 (Tucson, The University of Arizona; 1969), pp. 71-76.
- <sup>6</sup> *Ibid* pp. 72-75; personal communication, Mr. Steven L. Rauzi, Arizona Geological Survey, Tucson, July 3, 1996.
- <sup>7</sup> FYI, *Mineral and Energy Resources in Arizona*, n.d. (1996). Leaflet distributed by the Arizona Geological Survey, Tucson.
- <sup>8</sup> Arizona Bureau of Mines (1969), p. 71.
- <sup>9</sup> Willard D. Pye, "Arizona: a new exploration frontier," *Oil and Gas Journal* 65(19), p. 168 (May 8, 1967).
- <sup>10</sup> Stipp and Beikman (1959).
- <sup>11</sup> *Graham County Guardian and Gila Valley Farmer* (hereafter abbreviated as GCG), August 5, 1927, p. 10.
- <sup>12</sup> "Searching for Oil in Arizona," *The San Simon Valley Oil News* (Bowie, Az.), March 22, 1929, p. 1. The listed depth of this well is 900 feet. A visit to this site in 1996 showed plenty of evidence of an oil-drilling operation, but no trace of casing that would indicate the well location.
- <sup>13</sup> GCG, November 4, 1927, p. 1.
- <sup>14</sup> K.C. Nowels, "Development and Relation of Oil Accumulation to Structure in the Shiprock District of the Navajo Indian Reservation, New Mexico," *Bulletin of the American Association of Petroleum Geologists* 13(1), pp. 117-151 (1929); Kendall Beaton, *Enterprise in Oil; A History of Shell in the United States* (New York, Appleton-Century-Crofts, Inc.; 1957), pp. 334-335; U.S. Geological Survey, *Mineral and Water Resources of New Mexico*, New Mexico Bureau of Mines and Mineral Resources Bulletin 87 (Socorro, New Mexico Institute of Mining & Technology; 1965), pp. 41, 68.; "Lea County's First Oil Well," *Llano Estacado Heritage* 1(4), pp. 17-18 (November 1971).
- <sup>15</sup> GCG, August 5, 1927, p. 10; Arizona Bureau of Mines (1969), p. 70.
- <sup>16</sup> "Arizona May Assume Place As An Oil-Producing Area; Bowie Field Draws Interest," *The Arizona Republican* (Phoenix), April 8, 1927; "Searching for Oil in Arizona," *The San Simon Valley Oil News*, March 22, 1929, p. 1. The last claim probably refers to the Howle 1 well.
- <sup>17</sup> See Arthur W. McCray and Frank W. Cole, *Oil Well Drilling Technology* (Norman, University of Oklahoma Press; 1959), pp. 22-40; also Beaton (1957), pp. 200-206.
- <sup>18</sup> "Whitlock Well Strikes Oil in 1427 Foot Hole," *The Arizona Republican*, December 4, 1927.
- <sup>19</sup> "New Company Enters Oil District North of Bowie, in Arizona," clipping from unknown Holbrook, Az., newspaper, March 18, 1927, in files of the Arizona Geological Survey, Tucson.
- <sup>20</sup> "The Pinal Oil Co. and Its President," *The San Simon Valley Oil News*, November 2, 1928, p. 1.
- <sup>21</sup> "New Company Enters Oil District North of Bowie, in Arizona," in Holbrook, Az., newspaper, March 18, 1927; "Arizona May Assume Place As An Oil-Producing Area; Bowie Field Draws Interest," *The Arizona Republican*, April 8, 1927; GCG, May 13, 1927, p. 5, July 15, 1927, p. 8, November 25, 1927, p. 8; *The Arizona Republican*, December 4, 1927; "The Pinal Oil Co. and Its President," *The San Simon Valley Oil News*, November 2, 1928, p. 1.
- <sup>22</sup> GCG, February 17, 1928, p. 6.

<sup>23</sup> Pye (1967).

<sup>24</sup> Articles of Incorporation and Annual Reports for the Pinal Oil Co., Bear Springs Oil and Gas Co., and Whitlock Oil Co., 1926-1931, on file with the Arizona Corporation Commission, Phoenix.

<sup>25</sup> "Will Sell Stock," *The Arizona Republican*, June 5, 1927.

<sup>26</sup> "Monthly Oil Review of Southeastern Arizona," *San Simon Valley Tribune*, June 19, 1931, p. 1.

<sup>27</sup> *The Arizona Republican*, December 4, 1927.

<sup>28</sup> National Archives, Pacific Southwest Region. Record Group 49, Bureau of Land Management, cancelled land (homestead) entry PHX-071867. His full name was Robert K. Thomas.

<sup>29</sup> J. Dale Nations, Daniel J. Brennan, and Rudy A. Ybarra, "Oil and Gas in Arizona." In J.P. Jenney and S.J. Reynolds, *Geologic Evolution of Arizona*, Arizona Geological Society Digest 17 (Tucson, Arizona Geological Society 1989), pp. 795-815.

<sup>30</sup> Stipp and Beikman (1959).

<sup>31</sup> "August Report of the Bear Springs Oil & Gas Company," *Tombstone Epitaph*, September 3, 1931; "Monthly Oil Review of Southeastern Arizona," *San Simon Valley Tribune*, June 19, 1931, p. 1.

<sup>32</sup> Articles of Incorporation for the Whitlock Oil Co., 1926, on file with the Arizona Corporation Commission, Phoenix; *The Arizona Republican*, April 8, 1927.

<sup>33</sup> *The Arizona Republican*, April 8, 1927.

<sup>34</sup> Annual Report of the Whitlock Oil Co., Inc., June 1, 1927, on file with the Arizona Corporation Commission, Phoenix; GCG, April 22, 1927, p. 7.

<sup>35</sup> Bureau of Land Management, Master Title Plat for Section 36, T10S R28E, Graham County, Arizona.

<sup>36</sup> Articles of Incorporation and Annual Reports for the Whitlock Oil Co. and Bear Springs Oil and Gas Co., 1926-1931, on file with the Arizona Corporation Commission, Phoenix.

<sup>37</sup> *The Arizona Republican*, December 4, 1927.

<sup>38</sup> Ibid; also extracts from R.E. Canfield, "Scout Report of Arizona," May 1, 1928, unpublished manuscript in files of the Arizona Geological Survey, Tucson.

<sup>39</sup> GCG, July 15, 1927, p. 4.

<sup>40</sup> *San Simon Valley Tribune*, June 19, 1931, p. 1; *Tombstone Epitaph*, September 3, 1931.

<sup>41</sup> *The Arizona Republican*, December 4, 1927.

<sup>42</sup> GCG, August 26, 1927, p. 2.

<sup>43</sup> GCG, September 23, 1927, p. 1.

<sup>44</sup> GCG, October 7, 1927, p. 10.

<sup>45</sup> GCG, November 4, 1927, p. 8.

<sup>46</sup> GCG, November 25, 1927, p. 1.

<sup>47</sup> GCG, December 16, 1927, p. 13; January 27, 1928, p. 1; April 20, 1928, p. 1.

<sup>48</sup> *The Arizona Republican*, December 4, 1927; "Water Shut-Off to be Made in Well; is Northeast of Bowie," *Arizona Record* (Globe, Az.), December 4, 1927, p. 1; "Estimated Flow Out of 'Discovery Well' 1000-5000 Bls. Daily," unnamed Tucson newspaper, December 5, 1927, p. 2; all clippings in files of the Arizona Geological Survey, Tucson.

<sup>49</sup> "Whitlock Oil Well Nears Completion," *The San Simon Valley Oil News*, January 13, 1928, p. 1.

<sup>50</sup> *San Simon Valley Tribune*, June 19, 1931, p. 1.

<sup>51</sup> Knechtel (1938), p. 214.

<sup>52</sup> "Searching for Oil in Arizona," *The San Simon Valley Oil News*, March 22, 1929, p. 1.

<sup>53</sup> GCG, June 13, 1930, p. 9; *San Simon Valley Tribune*, June 19, 1931; *Tombstone Epitaph*, September 3, 1931; Stipp and Beikman (1959).

<sup>54</sup> GCG, June 19, 1931, p. 2.

<sup>55</sup> Personal communication, Manton Botsford, Safford, Az., July 1996.

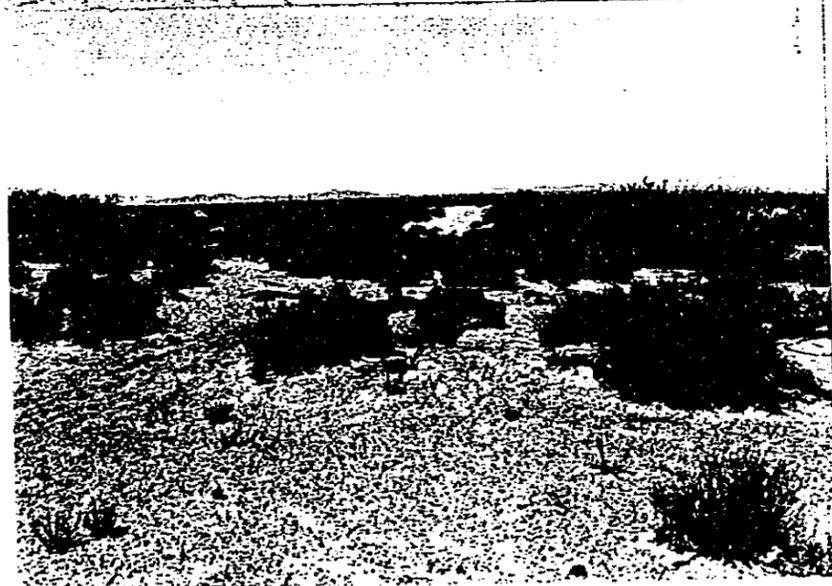
<sup>56</sup> McCray and Cole (1959), pp. 324-330.

- <sup>57</sup> Kenny A. Franks and Paul F. Lambert, *Early Louisiana and Arkansas Oil* (College Station, Tx., Texas A&M University Press; 1982); *Early California Oil* (College Station, Tx., Texas A&M University Press; 1985).
- <sup>58</sup> Franks and Lambert (1982), p. 53, upper.
- <sup>59</sup> *The Arizona Republican*, December 4, 1927.
- <sup>60</sup> Bureau of Land Management, Master Title Plat for Section 25, T10S R28E, Graham County, Arizona; also National Archives, Pacific Southwest Region, Record Group 49, Bureau of Land Management, cancelled homestead entry PHX-071867.
- <sup>61</sup> Articles of Incorporation and Annual Reports for the Bear Springs Oil and Gas Co., 1926-1931, on file with the Arizona Corporation Commission, Phoenix.
- <sup>62</sup> Articles of Incorporation and Annual Reports for the Pinal Oil Co., 1927-1930, on file with the Arizona Corporation Commission, Phoenix; "The Pinal Oil Co., and It's President," *The San Simon Valley Oil News*, November 2, 1928, p. 1.
- <sup>63</sup> *Ibid.*
- <sup>64</sup> Clipping from unknown Holbrook Az., newspaper, March 18, 1927, in files of the Arizona Geological Survey, Tucson.
- <sup>65</sup> *GCG*, April 8, 1927, p. 3.
- <sup>66</sup> *GCG*, May 6, 1927, p. 10.
- <sup>67</sup> *GCG*, July 15, 1927, p. 4; September 9, 1927, p. 9.
- <sup>68</sup> *GCG*, September 9, 1927, p. 9.
- <sup>69</sup> *GCG*, August 26, 1927, p. 2.
- <sup>70</sup> *GCG*, September 9, 1927, p. 9.
- <sup>71</sup> *The San Simon Valley Oil News*, November 2, 1928, p. 1; extracts from the Canfield report, May 1, 1928, unpublished manuscript in files of the Arizona Geological Survey, Tucson.
- <sup>72</sup> *GCG*, October 7, 1927, p. 10; *The San Simon Valley Oil News*, November 2, 1928, p. 1.
- <sup>73</sup> *GCG*, September 30, 1927, p. 1; December 16, 1927, p. 13.
- <sup>74</sup> *The Arizona Republican*, December 4, 1927; *GCG*, December 16, 1927, p. 13.
- <sup>75</sup> *The San Simon Valley Oil News*, November 2, 1928, p. 1.
- <sup>76</sup> *The San Simon Valley Oil News*, March 22, 1929, p. 1.
- <sup>77</sup> *GCG*, June 5, 1931, p. 9.
- <sup>78</sup> *GCG*, June 19, 1931, p. 2; *San Simon Valley Tribune*, June 19, 1931, p. 1; *Tombstone Epitaph*, September 3, 1931.
- <sup>79</sup> National Archives, Pacific Southwest Region, Record Group 49, Bureau of Land Management, cancelled homestead entry PHX-071867.
- <sup>80</sup> Knechtel (1938), p. 214.
- <sup>81</sup> *The Arizona Republican*, April 8, 1927.
- <sup>82</sup> Gilman (1996), pp. 21-23.

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file 5-7

Site AZ:CC:7:57 (ASM) Roll 1 #15  
(Bear Springs Oil & Gas Co., Pinal  
well location)  
View of old well head (casing) with  
part of coal- or ash-clinker area  
(trash area #2) in foreground.  
Camera bearing 235°.

John P. Wilson July 3, 1996

Site AZ:CC:7:57 (ASM) Roll 1 #14  
(Bear Springs Oil & Gas Co., Pinal  
well location)  
View of old well head (casing) with  
south end of the Whitlock Mts. in  
background. Camera bearing 25°.

John P. Wilson July 3, 1996

Site AZ:CC:7:57 (ASM) Roll 1 #13  
(Bear Springs Oil & Gas Co., Pinal  
well location)  
View of the old well head (casing),  
with west end of coal clinker area  
on the right. Camera bearing 330°.

John P. Wilson July 3, 1996

1109 Skyway  
Las Cruces, New Mexico  
88001-4016  
July 27, 1996

Dear Mr. Rauzi:

I thought you might like to see a copy of the enclosed, which the Safford BLM sent over earlier this week. I included a full-size reproduction of the view of one of the assemblies at the Whitlock Oil Co. - State 1 site. What, properly, should I call this assembly? The BLM has cleaned up the site entirely, so that all that is left there is the well itself and the two assemblies by the side of the road. The other assembly is a 7-ft. diameter bull wheel on the same shaft as a spool that has a flange mounted at either end of the spool. At the well, the BLM dug down ten feet to find solid metal to attach a new piece of casing to, so that they could mount a valve at the top. I haven't picked up the photos that I took yet. The other photo, the one with me in it, shows the wellhead at the Bear Springs Oil & Gas - Pinal 1 well location. No water flowing there now.

Sincerely,

*John P. Wilson*  
John P. Wilson

*file 5-7*

Eastern Arizona Courier  
Safford, AZ  
Wednesday, July 17, 1956

file 5-7

# Sifting history from the Sands of San Simon



TOP: The inhospitable sand dunes of the San Simon make hard work of area archaeology. RIGHT: Roy Conner, area volunteer, holds a small archaeological point found in the desert sands. Photos by Tom Williams

## Study sites yield clues to the past

By Tom Williams  
Features Editor

A team of professional archaeologists and volunteers are again at work in the San Simon Valley east of Safford, searching for the history and prehistory of that desert area.

In the sand dunes, workers sift materials for bits and pieces of the life that was found there in times as far back as 3,000 to 1,000 B.C. And they are finding what they seek.

They are also finding some things they didn't expect to find. Dr. Pat Gilman, with the University of Oklahoma, has been coming to this part of Arizona for a number of years. Her particular interest is the people who lived along the San Simon about 750-500 A.D.

Their small dwelling sites abound up and down the valley. One site, a pit house in a location where one has never before been found, is of particular interest to the researchers. It was their luck that a survey crew chance upon this "acred" in the backyard, by noting a faint trace of discoloration in the sand. That turned out to be a hearth area of the pit house, reaching its edge to the surface.

Not only is it apparently in the "wrong place," but it is also the wrong shape for the people expected to be in the area. Only time and more study will determine who these people were; they were apparently using the area during either a time of drought and little food or for a seasonal camp. Large amounts of burned rabbit bone give some clues to how these people lived.

Other finds have included points (arrowheads) from a wide range of times and in a wide range of materials. Obsidian is found naturally in the area and small bits are found which have been chipped off during tool making.

An unusual "middle archaic" site has been found (from the 3,000-1,000 B.C. time frame) which will fill a missing gap of information from people who lived there before agriculture. These people were hunters and gatherers; fire rocks (cracked piles of stone

from fire pits) and points have been found and are being studied.

Prehistoric sites, possibly even older, have yielded stone artifacts and other clues to the life of these very early residents of the area.

All together, notes Gilman, some 20 sites are being evaluated, mapped and the artifacts collected for further study in the laboratory. Working on the site during the six-

work project are about a dozen assistants, not all there at one time. Several are local volunteers, who have worked with Gilman often during her visits to Arizona. More are students, some graduate assistants, from the Oklahoma university. A couple are working on their master's programs.

One, Bob Stokes, is on his first See History Page 3B



Dr. Pat Gilman looks over a core, all that is left after early people were through chipping away pieces for stone tools. This was one of the artifacts found from a 10 X 10 meter test area; other items found went into bags and bottles for safe keeping.

TOP: Gene Riggs is a local volunteer who has worked on many archaeological sites in the area. Here, he sifts materials from a small excavation, seeking artifacts of the past. BELOW: Dr. Pat Gilman, left, watches as Bob Stokes checks an unusual pit house site.



## Many seek 'black gold'

By Tom Williams  
Features Editor

A part of the archaeology study on the San Simon is one not too many would think of as archaeology—but it really is. As part of the larger study, John Wilson, Ph.D., is investigating two interesting sites on the Hot Wells Dunes Recreation Area.

These are just a few of a larger number of oil drilling sites dating to about 1927, a part of the Bowaz Dunes where the search for "black gold" was then under way. His research has found reports of oil drilling from many years prior to that, as well as into the 1930s. The hope for riches from the desert sands has been a dream unwilling to die.

The work and the promotion of the oil wells seems to have been merely speculation with some wild sales pitches thrown in, not an unusual occurrence of the time.

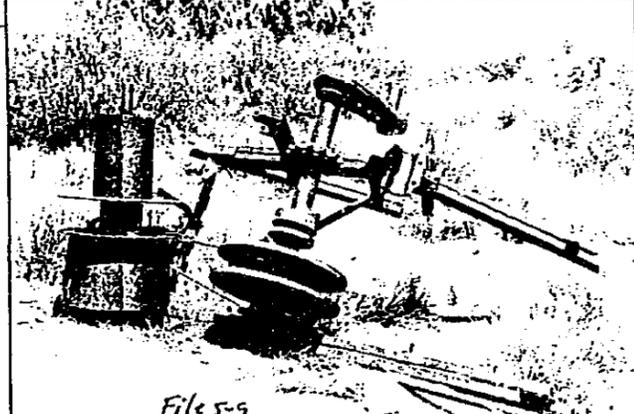
Wilson has found reports in papers of an "oil detection instrument" being used in the area. The report even shows a strange

but like machine with dials and knobs. "Probably a take off on some 'water witching' scheme," notes Wilson, who is a trained archaeologist turned historian and writer. He has questioned experts about the equipment and some are knowledgeable about any such workable tool, seismic soundings used today were unknown at that time.

He has been fascinated with the oil drilling project, having studied and written about many other facets of Southeastern Arizona's industries and natural resources.

At the two sites in his study, evidence of the oil drilling work still shows. Hot Springs Oil and Gas was at one of the sites, drilling to some 1,350 feet. Historical remains include wood from "skid cabins" and lots of burned coal from what he notes as blacksmith operations and from heating the boiler for the steam engines to run the drill.

The most dramatic evidence is See Gold Page 3B



Drilling equipment left after a 1927 oil exploration project can be seen at the Hot Wells Dunes Recreation Area southeast of Safford. The large equipment was used by the Whitlock Oil Co. No oil was found but the hot water which resulted from the drilling operation has served to make quite a spa in the area to this day.

File 5-9



### DRILLING REMAINS

BLM's Manton Botsford, left, talks with Paul, one of the Oklahoma students, and John Wilson, who is studying the oil drilling operations of the 1920s at the Hot Wells Dunes area.

## History

(Continued from Page 1B)

trip to the San Simon. He usually works with the Mimbres culture in New Mexico, but needed what Gilman describes as "desert experience," which he was certainly getting here. The crews start early to

take advantage of what cool temperatures are available. Even so, the day the accompanying photos were taken, it reached 106 in the shade, and there wasn't any shade.

Stokes was leading the work at the pit house excavation, hopeful that the unusual find will yield more clues to the people, possibly Mogollon, who were there. Unusually angled post holes, sloping sides to the pit house depression and other unique features provided plenty to ponder. Materials from the hearth may provide more clues while 800 A.D. ceramics offer some more puzzles to try and solve.

The study team is finding the work challenging and fascinating, as they try to learn more about the variety of cultures who have made this desolate place home, or "temporary home," over a long span of years.

## Gold

(Continued from Page 1B)

that seen by all visitors to the Hot Wells Dunes area, as the skeletons of huge drilling equipment lies rusting in the desert sun. The immense wheels were part of the drill rig cable spool. The tall derrick was held in place by more large cables extending out to stabilize it.

This was the work of the Whitlock Oil Co., which reported "oil found" in 1927. In actuality, according to government reports, a trace of oil floated on the first large volume of hot water that erupted from the 1,922-foot hole. The water drained off a quarter-mile away, making a water impoundment which can still be seen.

Wilson's research information, when completed, will be used by the Bureau of Land Management, sponsor of the study, to provide interpretations to the public on these unusual efforts to gain wealth from Graham County soils.

July 16, 1996

Dear Mr. Rauzi:

Yes, the note in the Heritage Fund Highlights newsletter is in reference to the project I'm doing for the Safford BLM. Or I should say, it's in reference to the Whitlock Oil Co. - State 1 well. I was over there July 2-3 and recorded the Bear Springs Oil & Gas - Pinal 1 site, which is very much the way it was left, and the Whitlock - State 1 location, which is completely altered as a result of the new facilities. I took photos and will send you prints when they come back. We also saw the Whitlock - Penrod 1 site, converted to a windmill-powered water well for stock, and the U.S. Oil Co. 1 site, which was either uncased or had the casing pulled as no actual well location could be seen there. At Whitlock - State 1 there is a 7' dia. bullwheel with two spooling drums on the same shaft, and a low A-frame of channel iron on which two shafts were mounted. I recorded both sites on Arizona State Museum forms. Interesting trip; warm out there.

Sincerely, *John Wilson*

file 5-7



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500



Larry D. Fellows  
Director and State Geologist

July 10, 1996

Mr. John P. Wilson  
1109 Skyway  
Las Cruces, New Mexico 88001-4016

Dear Mr. Wilson:

I thought of your work when I came across the enclosed note in the *Heritage Fund Highlights* about the Hot Wells Dunes Recreation Area. Is the 1928 oil drilling operation mentioned in this note the focus of your study?

In any event, I hope you had a good, fruitful trip to the field earlier this month, and that your research is coming along well.

Sincerely,

Steven L. Rauzi  
Oil and Gas Program Administrator

Enclosure

Graham County Guardian and Gila Valley Farmer (Safford, Ariz.); reel commencing with April 1, 1927 (31st year, #7), continuing thru April 20, 1928:

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"Pinal Oil Company" 5-7

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The Keystone rig, with which the well was spudded in and drilled to a depth exceeding 600 feet, will be moved to another location of the company. The new location is approximately a mile north of Pinal well No. 1."

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The company's bunk houses were also blown down. The extent of the damage to the derrick is unknown but it is believed to be completely demolished.

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One of the companies which will start drilling within 45 days, is a strong Arizona corporation and the other is a Louisiana outfit. Both companies expect to drill with rotary tools."

The Pinal Oil Co., down about 800 feet, is again drilling in the Whitlock district twelve miles north and six miles east of Bowie. 10/7/27

The Whitlock company, drilling about 18 miles northeast of Bowie in Graham county, the editor of the News said, is at present shut down preparatory to making a water shut off, but the Pinal Company, drilling in the same locality, have their drill going steadily down at an average of 40 feet a day to the oil sand which the company has hopes of striking at a depth of from 1500 to 1600 feet. The company is now down to a depth of 1089 feet with a 10-inch hole cased all the way, said Editor Rood, and the formation that is being penetrated alternates between brown and green shale. Sometimes there is considerable gas showing. A water well has been drilled, with good water for domestic use as well as for drilling purposes has been encountered at a depth of 140 feet." 11/4/27 p.1

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A special cement has been ordered from a firm in Texas with which to shut off the water at the Whitlock. The water which was encountered carries a large amount of gypsum and samples of the water has been sent to the cement chemist and a cement will be furnished that is believed will set. The water flow is said to be artesian in nature and is flowing over the control head.

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Four other extensions were recently granted on tracts of similar size held by the Bear Springs company. Two of these tracts, north of Bowie, are under drilling contract to the Pinal Oil company of Superior, which is also drilling oil tract No. 12 of the Bear Springs company.

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The Pinal well is located on a tract of government land held by the Bear Springs company. The latter company now holds approximately 46,000 acres of extended government land in the vicinity of Safford and Bowie, which is a major portion of extended government oil and gas land in Arizona, it is said. Extensions practically on all of this land were obtained for two years daring from Nov. 15 last by Mr. Thomas, business agent."

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Tucson, Arizona 85701  
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Larry D. Fellows  
Director and State Geologist

June 3, 1996

*file 5-7*

Mr. John P. Wilson  
1109 Skyway  
Las Cruces, New Mexico 88001-4016

Dear John:

Thank you for sending the several newspaper quotes on early drilling activity in San Simon Valley. I'm not familiar with the "oil affinity instrument" mentioned in the articles. A seismograph instrument measures and records the travel time of sound waves through the earth, sourced either by dynamite or vibroseis at the surface. The descriptions in the accounts do not make it entirely clear if the "Trumbull Seismograph" was a true seismograph instrument in this sense, or something else, like maybe a witching stick?!

You may find information on old drilling equipment by contacting a museum in a drilling town. The Oil Museum in Midland, Texas, has several of the old rigs rigged up, and it may be a good source. Maybe the museum in oil towns like Roswell or Farmington.

Finally, a copy of the section on the overthrust play in Arizona from *Oil and Gas in Arizona* by Nations, Brennan, and Ybarra is attached. This article gives a good overview of that play in Arizona.

Sincerely,

*Steve*

Steven L. Rauzi  
Oil and Gas Program Administrator

Enclosure

1109 Skyway  
Las Cruces, New Mexico  
88001-4016  
May 29, 1996

Mr. Steven L. Rauzi,  
Oil and Gas Program Administrator  
Arizona Geological Survey  
416 W. Congress, Suite 100  
Tucson, Arizona 85701

*file 5-7*

Dear Mr. Rauzi:

Back in March of this year you were most helpful with information about several oil wells drilled in southern Graham County, north of Bowie, back in the late 1920's. These were the Whitlock Oil Co. State 1, Whitlock Oil Co. Penrod 1, and Bear Springs Oil & Gas Co. Allen 2 (Pinal 1) wells. Since then I've managed to acquire a copy of the USGS Oil & Gas Investigations Map OM-201 (a xerox from the USGS library) and have gone thru the Safford newspaper from the 1927-1932 period, transcribing from this all of their reporting on drilling activity. A kind librarian at the Arizona State Library in Phoenix went thru their hard copies of the San Simon Valley Oil News from this same period and photocopied the more substantial articles about the doings of the various oil companies. You of course had sent me copies of the articles, from other newspapers, that are in your files. Yet to come are copies of the annual reports filed by several of these companies, from the Arizona Corporation Commission.

It looks like the only two wells I will be expected to deal with directly for the Safford BLM office are the Whitlock State 1 and Bear Springs Pinal 1 locations. I have yet to go thru all of the newspaper materials and sort out which paragraphs deal with which wells; this will be about the next step. At this time however I am enclosing for you a copy of my notes plus 2 printouts from the Safford newspaper. There are a number of wells represented, and I suspect that sometimes the paper's mileage estimates from Bowie (or wherever) for well locations may not be accurate. For what they're worth, here you are.

I have been curious about two aspects. One is this reliance on oil affinity instruments (i.e. May 13, 1927; also July 15, 1927), which in one article (Nov. 25, 1927, p. 8) is referred to as the Trumbull Seismograph. There seems to have been more than one type of device. Do you have an idea as to what these things were and how they worked?

As you'll see, there were some accidents. A boiler blew up at one rig near Pima, and a cyclone blew down the derrick at the Pinal 1 well at one time. I am told that there is debris around both of the well locations I will be visiting. What I would like to see is photographs or drawings, perhaps catalog illustrations, for equipment that would have been used in drilling oil wells at this period. We even have some names; No. 28 Star drilling machine, and a Keystone rig; also an Okell combination rotary. Can you advise me where to look to find illustrations that might show such equipment well enough that I could at least tentatively identify old oil drilling hardware if parts are still lying around? Thanks.

Sincerely,

*John P. Wilson*  
John P. Wilson

June 1, 1996

Dear Mr. Rauzi;

I seem to recall that during the late 1970's - early 1980's there was a burst of oil exploration activity in what was being called the "overthrust belt", which at least included far southwestern New Mexico and I presume into Arizona. Did this activity extend through the old Bowie-Willcox-San Simon oil field areas, from the late 1920's? Can you advise me whether there is an article somewhere that would give me an overview of the drilling activity, and the findings (if any) in this "overthrust belt" period? I recall newspaper articles but didn't save any clippings relating to this. Thank you very much.

Sincerely,<sup>AS</sup>

John Wilson

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Oil string casing is now being installed at the Bowie well four miles east of Bowie, now in charge of the Utah Petroleum corporation. Plans to place the well on production are nearing completion, it is reported." } 2-4

2. April 15, 1927, p. 1: .... "Now, however, it appears that that part of Graham County north of Bowie is to develop into an important oil field. Already drilling is in progress and the first shallow oil has been encountered in the well being drilled by the Pinal Oil Co. Other companies are making preparations to drill. The business is being transacted through Bowie, the only town available by highway." Reprinted from the San Simon Valley News of Bowie, issue of last week. 5-7

3. April 22, 1927, p. 7: "Whitlock Oil Co. Complete Plan to Drill Near Bowie." "At a stockholders meeting a few nights ago in the office of Dr. E.L. Gotthelf, financing of the Whitlock Oil Co., Inc., were completed and drilling on its property near Bowie would commence within the next two months, it was announced by T.F. Penrod of Tucson, president, according to information brought to Safford. 5-9  
+5-10

The company holds leases on government and state land in the vicinity of Bowie, Arizona, to the extent of about 5,120 acres and according to Penrod has received excellent reports from geologists and with geological instruments. There is no stock on the market the officer of the company said."

4. April 22, 1927, p. 10: "Utah Company Will Complete Drilling of Bowie Oil Well." "According to information reaching Safford, the Utah Petroleum corporation, with headquarters at Salt Lake City, has made arrangements to complete Bowie Oil Well No. 1. Their superintendent, Mr. A.J. Denny, according to the information received is on the ground and we understand operations have commenced. 2-4

After an investigation the company released the following report:

'Test of Bowie well showed large quantity very high grade oil coming out in spite of three thousand feet of water. Gas pressure very pronounced, so much so that it became necessary to wire for gas control head to come by express. That the hole is straight and in excellent condition for a water shut-off and safe production. That the superintendent's test is conclusive on account of long, successful experience, reliability and conservativeness and that they are advising their friends who have leases to retain them and acquire as much more as possible, assuring them that a big producer is imminent and that they have authorized Superintendent Denny to spend all money necessary to bring the well in good condition.'

5. April 29, 1927, p. 1: Material arrives for oil rig to be erected at Ashurst (i.e., in Section 30, T5S R24E). 5-3

6. May 6, 1927, p. 10: "Day and Night Operation at Bowie Well." "Work of accomplishing a final water shut-off at the Bowie oil well, four miles east of Bowie, is now in progress under the direction of superintendent A.J. Denny, of the Utah Petroleum company, now in charge of operation at the well, it was learned last week. 2-4

An express shipment of 1,600 pounds of a special cement for making the shut-off was received at Bowie on the Sunset limited from the west. It was unloaded on a truck and taken to the property immediately.

A night 'tour' has been put on the well and work is going continuously night and day.

It is expected that a production test will be made within a short time, as the mud and water column will be bailed as soon as the shut-off is effected.

Installation of casing at the well of the Pinal Oil company of Superior, drilling on a tract 14 miles north of Bowie is progressing rapidly, according to reports received here. More than 300 feet of casing has been installed. Drilling was suspended recently when an oil-bearing quicksand was encountered at 500 feet, being forced up in the hole several hundred feet by gas pressure. 5-7

"Whitlock Nears Goal" 5-9 & 5-10

"Funds for drilling a well a half mile from the Pinal company well are being rapidly raised by the Whitlock Oil company, and it is expected that the total amount needed will be secured within a short time." 5-3

7. May 13, 1927, p. 5: "Material for Ashurst Oil Well Arrives." Derrick is being constructed, etc. Also, .... "In the near future it is expected that drilling will be started in the Bowie field by the Whitlock Company. The driller for the company is now in Texas to purchase the equipment, according to announcement made here this week by Bob Thomas, who was in town from the field. .... The location for the Whitlock well was determined by M.C. Trumbull and H.T. Proctor by the use of the Trumbull Oil and Gas Affinity Instrument." 5-9 & 5-10

8. July 8, 1927, p. 8: "Order Tanks to Test Bowie Oil Production." "Measuring tanks for a production test at the Bowie oil well No. 1 2-4 have been ordered and will arrive soon at the well site, according to reports from Bowie, Wednesday. The well is now shut down awaiting the arrival of a new swab, to replace a swab broken a few days ago.

The big column of mingled water and oil in the well is under a heavy gas pressure and it has been necessary to put a control head on the well since the recent drilling into the deepest oil sand, according to S.L. Mains, an official of the Utah Petroleum Oil company in charge of the well, who was in Globe several days ago.

At the time the well was being swabbed the control head was opened and the water-oil column shot up 85 feet to the crown block of the derrick for five minutes, he said.

A flowing well will be brought in within a short time, Mr. Mains asserted confidently. He said, however, that it was impossible to make any prediction as to the daily production.

According to another report a visitor at the well Saturday stated that the oil-water column spouted 25 feet when the control head was opened. Heavy showings of oil were seen on the derrick afterwards, he reported. - Globe Record."

9. July 15, 1927, p. 4: A carload of casing for the Pima and Ashurst oil wells 5-3 is on the way and drilling should begin next week. Also, "Whitlock Oil Company .... Reports from the oil district around Bowie state that following the discovery of water in the Whitlock Oil Company well, 16 miles northeast of Bowie, at a depth of 150 feet, drilling has been suspended until the completion of a water well nearby. Water will also be furnished the Pinal Oil Company, drilling a quarter of a mile distant from this well. There were oil showings in the water, it is reported. 5-9 +5-10

A car load of casing arrived for the Whitlock Company last Friday and a water shut off has now been made and according to the report, drilling will progress with both a night and day shift."

"Pinal Oil Company" 5-7

"To insure more rapid progress a new No. 27, Star rig will be moved in on the location of Pinal well No. 1, being drilled by the Pinal Oil company near the Whitlock mountain 16 miles northeast of Bowie, it was announced Monday.

The Keystone rig, with which the well was spudded in and drilled to a depth exceeding 600 feet, will be moved to another location of the company. The new location is approximately a mile north of Pinal well No. 1."

- \* Ibid., p. 8: Long article, a reprint of a report on the performance of the M.C. Trumbull oil affinity instrument. No idea as to how it works from this article. Printed out.

10. July 29, 1927, p. 1: Ashurst oil well spudded in Thursday morning (i.e. July 28). 5-3

11. August 5, 1927, p. 5: Underwriters Syndicate spudded in its well on the Mary 5-5 S. Mack farm at Pima on Thursday, July 28, at 1:30 P.M. Well is beginning with a 24-inch (diameter) hole.

Ibid., p. 10: Synopsis of reports by other geologists on oil showings in the Gila Valley and thereabouts, beginning in 1918. It appears that to some extent, they followed the conventional wisdom of drilling on structures. Also,

"In the summer of 1912, Perry Howie, on the recommendation of his geologist T.F. Colton, drilled a well in the Southeast corner of Graham county to a depth of 1100 feet. Under affidavit dated March 2nd, 1927 he says: 'We drilled through as I recall it, a sedimentary formation, lime, sandstone, shales; several oil sands and with little if any quicksand. Below 750 feet we encountered several showings of oil and gas and the gas would burn. After myself and another had gone to bed, the well blew in throwing oil and gas over the derrick and did so for nine days and nights, and eventually ruined the hole and sealed itself off. No effort was made to reopen the well.'"

- 12. August 26, 1927, p. 2: "Wind Blows Down Derrick of Pinal Oil Co., Bowie" <sup>5-7</sup>  
 "Bowie - A high wind of tornado proportions blew down the big derrick of the Pinal Oil company's well No. 1, 17 miles north of Bowie Wednesday afternoon, Aug. 17th, at 4 o'clock, it was learned here last night. The company's bunk houses were also blown down. The extent of the damage to the derrick is unknown but it is believed to be completely demolished. Nearby, at the Whitlock Oil company's well No. 1, the storm did no damage. This well is now drilling below 1200 feet, following the removal and reseating of a casing shoe." <sup>5-9 +5-10</sup>

- 13. September 9, 1927, p. 9: "New Oil Derrick Erected by Pinal Oil Co. at Bowie" <sup>5-7</sup>  
 "The Pinal Oil company, north of Bowie, drilling for the Bear Springs Oil and Gas company, reports the new 74 foot derrick completed. This is to replace the new derrick that a young cyclone blew down about three weeks ago. The No. 28 Star drilling machine is set and steam in a 60 horse power boiler will be used. A water well near the oil well was drilled in August and sufficient water to supply this boiler was developed. Four hundred and forty two feet of 12½-inch and 705 feet of 10-inch casing have been set. Drilling will be resumed early next week. The Keystone rig will be moved on the Clyde Campbell permit, held by the Bear Springs Oil and Gas company, where a new well will be spudded in."

- 14. September 16, 1927, p. 2: "Bowie Oil Well Is Closed Down Machinery Moved" <sup>2-4</sup>  
 "A geologist of the Utah Petroleum company is in the vicinity of Bowie inspecting proposed sites for spudding in a new well, according to news received here. The company has suspended operation at the Bowie oil well No. 1. Part of the equipment has been removed to Willcox, where drilling is to be resumed soon at the Willcox well, two miles east of that city. The remainder has been stored in Bowie for the present."

- 15. September 23, 1927, p. 1: Drilling operations at the Pima oil well are under way again, in two shifts; depth of over 60 ft. has been reached and 24" and 20" casing has been set. At the Ashurst well some changes are being made by Messrs. M.C. Trumbull and W.W. Todd of New York City, who are in charge. Carload of fuel oil has been unloaded and 24" casing has been set. Day and night shifts. Also, <sup>5-5</sup>  
 "Operations at the Whitlock well in Graham county, located near Bowie are expected to be resumed in a few days. The well has been shut down for more than 15 days pending the arrival of casing from El Paso. It has been found that heavier casing and tools were needed to handle the drilling operations more rapidly than was being done, it is reported. <sup>5-3</sup>  
 At the time operations were suspended, the drill had reached a depth of 1,325 feet and quite a bit of gas and some oil has been encountered." <sup>5-9 +5-10</sup>

16. September 30, 1927, p. 1: "Bear Springs Oil and Gas Co. Signs Drilling Contracts"  
"At a regular meeting of the directors of the Bear Springs Oil and Gas company held Tuesday night in the Silver Belt office at Miami, announcement was made that contracts had been signed with two different outfits to drill for oil; one at Bear Springs and the other 10 miles north of Bowie, both in Graham county.

One of the companies which will start drilling within 45 days, is a strong Arizona corporation and the other is a Louisiana outfit. Both companies expect to drill with rotary tools."

<sup>5-3</sup>  
Ibid., p. 4: Eastern capitalists visited the Ashurst well. Active drilling resumed and 24" casing has been set; now drilling with a 22" bit. Visitors were pleased.

- <sup>5-5</sup>  
17. October 7, 1927, p. 10: "Pima Oil Well Will Drill Next Week" "Another Carload of Casing Is Now En Route From Los Angeles" "Cochise and Graham counties, in Southern Arizona, as well as Navajo county in the north, continue to attract attention as favorable wildcat territory for oil wells."

"In the Gila valley proper two rigs are in operation at Pima and Ashurst. In the Whitlock district, on the border between Cochise and Graham, two more rigs have been set and the wells spudded in, and two more wells are to be started in Graham county in the Bear Spring s district during the fall months. At Bowie and Willcox, in Cochise county, drilling operations have been conducted spasmodically during the past year. The indications are at present that before the end of the year eight wildcat wells will be drilling in this section of the state.

<sup>5-5</sup>  
J.L. Vaughan, local manager of the Underwriters Syndicate, composed of a group of eastern investors, returned on Tuesday from Los Angeles where he had been to purchase a carload of twelve and a half inch casing. This syndicate is drilling at Pima and the well was spudded in July 28th. The casing for this well is on the road and drilling operations will be resumed within the next ten days, working night and day.

The Pinal Oil Co., down about 800 feet, is again drilling in the Whitlock <sup>5-7</sup> district twelve miles north and six miles east of Bowie.

The Whitlock Oil Company has temporarily suspended drilling in the same lo- <sup>5-9</sup> cality awaiting another shipment of casing now en route. This well has gained a depth of 1675 feet.

At Ashurst in this county the Proctor and Turmbull well will resume drilling <sup>5-3</sup> during the present month.

The well of the Utah Petroleum company at Bowie has reached a depth between three and four thousand feet and the well at Willcox financed by the same company is bottomed at 2,000 feet. <sup>2-4</sup>

18. November 4, 1927, p. 1: Boiler explodes at the oil well being drilled near Pima, <sup>5-5</sup> Az., and burns N.S. Hartsaw about the face and body; damage to machinery estimated at \$3,500. The company was using twin boilers in its operations at the well.

Ibid., p. 8: "Operations at the Bowie Well to be Resumed" "New Company Expects <sup>2-4</sup> to Bring Well No. 1 Into Production and Begin Immediately Thereafter on Another Well"

"From W.E. Rood, editor of the San Simon Valley News, who was a visitor in Safford Monday, it is learned that the oil situation in the Bowie field is looking very promising, both at the Well No. 1 and at the Whitlock and Pinal wells."

"In speaking of the Bowie well, No. 1, Editor Rood said that last week he

2-4  
had received a letter from S.W. Funk of Charter Oak, Cal., in which it was stated that N.A. Anderson, who has the power to represent the Bowie Oil Leasing Syndicate, F.L. Copening and others interested, made a proposition to Mr. Funk to turn the Bowie well over on a certain per cent, and a certain number of acres of Community leases and also individual and State leases, if he could have B.A. Gillispie and Warren E. Deuel (with whom he had previously closed a 1600 acre community lease, upon which a well will soon be started) bring the Bowie well on production and immediately thereafter begin another well with a rotary drilling outfit on the Community leases.

Mr. Funk says that he has been able to close the deal with Mr. Gillispie and Mr. Deuel, to accept the proposition made to him and that the leases and agreements were in escrow with the Glendora Bank of Glendora, Cal., on the 17th inst., and that as soon as all transfers have been largely made, Mr. Gillispie and Mr. Deuel will proceed as soon as it is possible to bring the Bowie well on production. It is quite possible that since the hole has been standing full of water for more than a month, the gas pressure will be killed to a certain extent and that it will be necessary to drill a few feet further into the oil sands to get fresh gas pressure.

Mr. Funk said he thinks there will be no further delays.

In a later communication, Editor Rood said, it had been learned that after many delays all the leases and agreements have been signed up and placed in escrow. Mr. Gillispie and his associates will be in Bowie sometime in the next ten days to look over things in general and see what is needed to bring the Bowie well into production. Arrangements are also being made to drill at least two other wells in the Bowie field.

5-9 The Whitlock company, drilling about 18 miles northeast of Bowie in Graham county, the editor of the News said, is at present shut down preparatory to making a water shut off, but the Pinal Company, drilling in the same locality, 5-7 have their drill going steadily down at an average of 40 feet a day to the oil sand which the company has hopes of striking at a depth of from 1500 to 1600 feet. The company is now down to a depth of 1089 feet with a 10-inch hole cased all the way, said Editor Rood, and the formation that is being penetrated alternates between brown and green shale. Sometimes there is considerable gas showing. A water well has been drilled, with good water for domestic use as well as for drilling purposes has been encountered at a depth of 140 feet."

19. November 25, 1927, p. 1: "Oil Sand is Found in Test Well of Whitlock Co." 5-9

"Oil Strata Encountered at Depth of 1,400 Feet Will Be Fully Tested Out Before Going Deeper, It Is Reported." "Sand containing a heavy saturation of oil was struck by the Whitlock Oil company in its test well 18 miles northeast of Bowie, according to reports contained in the San Simon Valley News. The sand was encountered at a depth of 1,400 feet and the oil is light amber in color

A heavy flow of water was encountered with the new sand but this will be shut off with cement and the newly discovered oil strata will be fully tested out before drilling deeper.

5-7  
Breaking of the string of casing is holding up operations at the Pinal county (sic; company) well, one half mile from the Whitlock operations.

A special cement has been ordered from a firm in Texas with which to shut off the water at the Whitlock. The water which was encountered carries a large amount of gypsum and samples of the water has been sent to the cement chemist and a cement will be furnished that is believed will set. The water flow is said to be artesian in nature and is flowing over the control head.

The company is fully financed and ready to proceed with production operations should the test warrant."

Ibid, p. 8: Short article on the prospects for oil in the Gila Valley around Pima and Ashurst. Makes reference to the Trumbull Seismograph, and the highest Seismographic readings ever recorded by the Trumbull instrument.

20. December 16, 1927, p. 13: "Test Well to be Drilled on Bear Springs Lease"  
"According to the Miami Silver Belt, the Bear Springs Oil and Gas Company has just closed a drilling contract with the Pinal Oil company to drill two government permits in the Southern part of Graham county, 15 miles north of Bowie. The Pinal company has already moved machinery to one of these permits to begin the drilling for water well to secure water for the heavier drilling operations when they go after the oil. The announcement was made Saturday by Leroy Kennedy, president of the Bear Springs Oil and Gas company. Bob Thomas, business agent of the Bear Springs company, negotiated the lease and drilling contracts. Part of this is located immediately north of the Whitlock well No. 1, which has recently drilled 22 feet into a rich oil sand and is now engaged in securing a shut-off of a strong flow of artesian water.

Pinal Company No. 1 is down 1,100 feet. That is also being drilled on royalty basis on lands leased from the Bear Springs company. 5-7

It seems reasonable to suppose that a good part of this land is underlaid by the rich sand recently tapped by the Whitlock well. Pinal company is headed by Bill Crawford and made up of business men in Superior. The securing of these two leases now gives the Pinal company 7,500 acres of land in a compact body."

21. January 27, 1928, p. 1: (Headline) "Encounter Oil Bearing Sand at Pima Well" 5-5

"The well being drilled by the Underwriters Syndicate near Pima drilled into oil bearing formation Thursday afternoon at a depth of 1460 feet, according to information reaching the Graham County Guardian today just before going to press and verified by J.L. Vaughan, superintendent in charge of operation. Mr. Vaughan stated that the drill just touched the top of the sand and no forecast could be made as to the potential production as operation was immediately shut down pending the arrival of casing." ....

"William J. Vaughan and William A. Laet of New York City, who head the Underwriters Syndicate and the Gila Oil Syndicates, respective, arrived in Safford a few days ago to inspect the wells they are drilling at Pima and Ashurst.

Mr. Vaughan states the Underwriters' Syndicate well, being drilled at Pima, has set casing at 1,400 feet and that the formation in this well is approximately the same as that encountered in the Whitlock well north of Bowie.

He also stated that the Whitlock well is expected to be in production as soon as the cement is drilled thru to the producing sand, which sand is said to have made a remarkable showing of high gravity oil before setting the cement to cut off the water." ....

22. February 3, 1928, p. 1: Drilling to be resumed at the Pima well, where "a nice indication" of oil was picked up at the 1,430 foot level. 5-5

- \* 23. February 17, 1928, p. 6: Interview with oilman Wm. J. Vaughan while he was in Phoenix. Describes operation of oil affinity instruments. Print-out made.

24. March 2, 1928, p. 4: "The showing of oil in the Pima well being drilled on the Mary E. Mack lease by the Vaughan Oil company is increasing with each foot drilled, remarked W.J. Vaughan, head of the syndicate today." Well is flowing in excess of 1,200 barrels of water every 24 hours. The oil showing in the water is conservatively estimated to be in excess of 75 barrels daily. The well is now down about 2,400 feet. 5-5

25. April 20, 1928, p. 1: "Federal Oil Men Here Securing Data on Wells" "Brief Resume of Activities at Oil Wells in Graham County and the Bowie Field - Disagreements Adjusted Satisfactorily." "That the oil developments in Graham county is attracting considerable outside attention is evidenced by the fact that H.V. Moffat and R.E. Canfield of the United States Geological survey were in Safford this week getting data for their department. \* 'Bob' Thomas of Globe, actively associated with the Whitlock Oil company, who are drilling two wells in the southeastern part of Graham county, is acting as their pilot.

Mr. Thomas has been one of the promoters in the oil development work in this section and is very enthusiastic as to the future.

According to reports the well at Ashurst, being drilled by W.W. Todd and J.H. Leat, has reached a very interesting formation, showing both oil and gas indications. At the present time, it is said, they are now awaiting fuel oil and upon its arrival casing will be lowered, shutting off a small flow of water, and then drilling will be resumed. 5-3

Mr. Leat arrived in Safford Wednesday from New York and is here on business in connection with the well.

At Pima the well being drilled by the Underwriters' Syndicate is temporarily shut down awaiting casing to make a test of sand which shows indications of oil and gas. This sand was found at thirty-one hundred and five feet. It is reported that gas pressure was sufficient to cause a pulsating motion on the water when first discovered. 5-5

At the Whitlock No. 1, satisfactory progress is being made. The same company's No. 2 well, being drilled by rotary tools, about two miles from well No. 1, is shut down awaiting replacement parts for the machinery according to information reaching here. 5-9

The Crawford well, one mile north of Whitlock No. 1, is working two shifts and satisfactory progress is also reported here. 5-10

At Brown No. 1 well, four miles east of Bowie, it is understood that the casing has been cemented and a shut-off made. Traces of oil at this well have also been reported.

At Willcox considerable delay has been encountered due to legal entanglements, but advices here are that during the last week the different disagreements have been satisfactorily adjusted and this well will probably be drilling soon."

→ Second reel, commencing April 27, 1928, and continuing thru May 3, 1929:

26. May 25, 1928, p. 1: "Oil Showing Is Encountered at Ashurst" "Visitor Reports Oil Seen on Bit and In Slush Pit Last Monday" "Last Monday a very encouraging showing of oil was encountered at the oil well being drilled at Ashurst by Messrs. Leat and Todd of New York, according to visitors at the well. 5-3

It is said the oil could be seen on the bit and when the bailer was emptied into the slush pit quantities of oil appeared on top of the residue.

One of these visitors in commenting on the situation stated that the people of Graham county should be very much encouraged over the showing and appreciate the fact that outside money is being spent in the development of Arizona's natural resources. It is believed that the showing unmistakably points to a large pool of oil beneath Ashurst and every day gives more indications that the drill is drawing closer to an underground lake of oil.

Continuing he said 'ere long the people will awake to the fact that Arizona is being proclaimed one of the oil states of the union.'

The men in charge of the well have not proffered any information."

27. June 8, 1928, p. 1: "Directors Oppose Selling Oil Well Units In County"  
"At a special meeting of the directors of the Chamber of Commerce last Tuesday night permission was denied the operators of the oil well being drilled in the Ashurst vicinity to dispose of interests in the proposition in Graham county."
28. July 13, 1928, p. 4: "Extension of Oil Permits Granted" "Extensions on oil and gas rights in 11 2560-acre tracts in the Bear Springs district have been granted permit holders by the United States Interior department, according to Bob Thomas, business agent of the Bear Springs Oil and Gas company, which is in control of a number of the tracts. The extensions were dated to June 30, 1929.  
Four other extensions were recently granted on tracts of similar size held by the Bear Springs company. Two of these tracts, north of Bowie, are under drilling contract to the Pinal Oil company of Superior, which is also drilling oil tract No. 12 of the Bear Springs company.  
The other two extensions were granted on two 2560-acre tracts under drilling contract to the Gila Oil company of Globe. One of these tracts is near Pinal Oil company's well, north of Bowie, and the other at Bear Springs. All four extensions were granted to June 30, 1929."
29. September 14, 1928, pp. 1, 4: Wm. J. Vaughan of New York City has the following to say about the well being drilled on the Mary A. Mack lease near Pima, Az. Showing of oil more or less at all times since passing 1450 ft. A strong showing of gas was encountered at 3,104 ft. .... "a strong presence of oil made itself known more and more convincingly until at a depth of 3,107 ft. and the sand became lighter in color and carried so much high grade paraffine base oil that all further tests were considered unnecessary." Convinced that they now have commercial production. This is Underwriters' Syndicate No. 1 well.
30. March 8, 1929, p. 1: "A more favorable showing of oil was encountered in the Pima oil well last Wednesday at a depth of 3,250 feet, according to information obtained from J.L. Vaughan, local manager of the Underwriters' Syndicate.  
Mr. Vaughan stated that at a depth of 3,247 feet they struck lime shell three feet thick and after penetrating this the increased oil showing was encountered. On account of the water pressure they were unable to make an estimate as to the amount of the showing.  
The ten-inch casing is down 3,100 feet and while exploiting with smaller tools and pipe, they encountered this encouraging condition, reports Mr. Vaughan. They are still drilling, and late Thursday reported that the drill had reached a depth of 3,275 feet."
- Third reel, commencing May 10, 1929, and continuing thru April 11, 1930:
31. June 14, 1929, p. 3: Interesting account (by one W.B. Kelly) of a motor trip from Safford to Holbrook, evidently as publicity for radio station WBK, now at Holbrook but which will be broadcasting from Winslow and Tuba City during the present week. Also,  
"One of the first fellows we met in Holbrook Sunday morning was our old friend T.H. Jordan, formerly of Morenci, who is president of the Zuni Oil Company, which has been wildcatting twenty miles north of Holbrook for the past five years. The well is now down nine hundred feet but is marking time now pending a decision in

a law suit in the superior court of this county. There are a number of stockholders in the Zuni company in the Clifton-Morenci district who are willing to back Jordan to the limit. Every dollar of the stockholders' money has gone into the ground and the bringing in of a big oil well recently at Farmington, a twenty thousand barrel well, approximately 100 miles in a north-easterly direction, has revived interest in this wildcat territory around Holbrook."

32. July 5, 1929, p. 5: The equipment of the San Simon Valley Oil News is being moved this week to Gilbert, Ariz., where the owners will begin publication of the Gilbert Enterprise. San Simon Valley Oil News will still be in circulation but will be printed at Gilbert (instead of at Bowie).

32. August 16, 1929, p. 1: "Ashurst Oil Well To Be Completed By New Company" <sup>5-3</sup>  
"An interest in the Ashurst oil well by the Interocean Oil Company, which will complete the well, is the information given out yesterday by W.A. Leet, who arrived in Safford yesterday from California by way of Phoenix and Globe. W.W. Todd, who is interested with Mr. Leet in the well, is expected to arrive here today or tomorrow.

The Ashurst well was started about two years ago by Leet and Todd, New York oil men, and drilling was prosecuted to a depth of approximately 2,700 feet. Drilling was suspended nearly a year ago.

All water has been shut off at the Ashurst well, except that coming up between the casing, which it was deemed inexpedient to stop, and it is believed that the new drilling company will not have difficulties due to artesian water which has bothered other companies in the Bowie, Bear Springs and Willcox fields.

R.B. Vinmont, representative of the Interocean Oil Company, was recently at the well. He has expressed himself that the Bear Springs field represents an excellent field for oil exploration.

It is the intention of the company to make a thorough test for oil in the vicinity of Safford.

The company has three producing wells at Huntington Beach near Los Angeles, it is said.

Drilling is to be started by the company at once at the Ashurst well."

33. January 10, 1930, p. 3: "Drilling For Oil on Hooker Ranch in Graham County" <sup>5-12</sup>

"A new oil well is being drilled on the Hooker Ranch nine miles northwest of Wilcox, according to reliable news received here.

The well is being put down by the ranch management and the contract calls for a hole of 2,000 feet. 'Oil, gas or water' is said to be the object of the drilling operations. The well is now down over 1,000 feet.

J. Fred Carey, Safford, drilling contractor, who drilled the Pima oil well to 3700 feet, is the head driller in charge of operations.

Water from wells on the Hooker ranch and in the vicinity have been impregnated with oil, often making it almost impossible to drink the water, and this has led to the belief that oil exists in commercial quantities in the vicinity.

This is the second well which has been started recently in the Wilcox district, the other one being a shallow test well on the same lot in the Willcox townsite on which is located the famous 'chicken yard well' which has already produced a considerable quantity of high grade oil."

34. February 28, 1930, p. 2: "Drilling Operations At Ashurst Oil Well Will Be Resumed" <sup>5-3</sup>  
"Drilling operations at the Ashurst oil well between Pima and Ft. Thomas, will be resumed within the next 60 or 90 days, according to a statement made by W.W. Todd and E.H. Stone yesterday.

When drilling operations at the Ashurst well were temporarily discontinued several months ago following an expenditure of approximately \$64,000, the well had reached a depth of 2,700 feet.

Since that time Mr. Todd has succeeded in interesting the Arizona Pacific Exploration Co. of Los Angeles, in the Ashurst district, and the announcement is made that this company has acquired a substantial interest in the Ashurst well and surrounding territory.

Mr. Todd states that the entrance of the Arizona Pacific Exploration Co. into the Ashurst field insures this locality of a real test for oil and gas at an early date. This company is an oil producing company operating in the Colinga, Huntington Beach, and other oil fields of California, and has acquired a substantial interest in the Ashurst well."

→ Fourth reel, commencing April 18, 1930, and continuing thru June 5, 1931:

35. June 13, 1930, p. 9: "New Oil Well Spudded In Near San Simon." "Globe - A new oil well has just been spudded in seven miles south of the present Funk well, and seven and a half southwest of San Simon, according to a telegram received here Saturday by Bob Thomas, business agent of the Bear Springs Oil and Gas company, making their headquarters at Bowie. 2-13

Los Angeles interests in co-operation with Temple Penrod, formerly president of the Whitlock Oil company and Charles Button, formerly superintendent of the same company's field operations, are drilling the well and are assured ample funds to complete the well.

Twelve sections of government land have been secured adjoining the well, and an Okell combination rotary and core drilling rig will be used to sink the well. Three towers, or shifts, of men will be used to push the work to completion under the direction of Mr. Button. The rig and other equipment passed through Bowie Tuesday, and the drillers were able to spud in a twelve inch hole in preparation for drilling. The managers of the company state that they expect to strike the oil sands at a shallow depth, and will push the operations until they make their strike.

Other news from the district, Benson and Willcox, seems to indicate an increase in the interest in the prospecting for oil. Leases have been secured near St. David, and it is expected that a well will be drilled there soon."

36. February 27, 1931, p. 1: "Phoenix - A measure was introduced in the Arizona legislature Friday offering a reward of \$25,000 to the discoverer of the first oil well in the state.

Under the provisions of the bill the well must produce at least 200 gallons of crude oil per day for a period of six months before the money is paid. Representative Valentine of Superior submitted the measure in the house."

37. March 27, 1931: "Two New Oil Wells Will Be drilled In Willcox District" 2-15

"Nine truckloads carrying a heavy Standard Oil drilling rig, Kohler plant powerful gas engine, and ninety-foot steel derrick and other equipment have arrived on location 12 miles southwest of Willcox and erection of the derrick was begun immediately, according to a telegram received by Ralph E. Herron, president of the Bear Springs Oil and Gas company, from Bob Thomas, business agent of the company at Bowie.

The rig came from the Pecos field in West Texas and is the property of the Bennedum Trees company, large oil operators of Texas and Oklahoma.

The location chosen is several miles northeast of Cochise and close to the Southern Pacific railroad, according to information received here recently from Willcox. It is on the southwest side of what is known as the "Dry Lake" which is crossed by the Southern Pacific railroad. The northwest shore of the lake is close to Hado, a siding about five miles from Willcox.

This will be the first test well of the Bennedum Trees company which has been acquiring acreage in the Willcox district for the past five years. The company now has in the neighborhood of 100,000 acres leased, on which it has been paying rentals.

The Bennedum Trees well is the second to be started near Willcox within the past few days.

Mr. Thomas also reports that the cellar for the 90-foot derrick of a well to be drilled on the Riggs ranch east and south of Willcox by Sereno V. Windle of Los Angeles, has been completed and also a camp for the workmen.

A heavy standard rig will be used for drilling at the Windle well. Three carloads of machinery will be shipped from Los Angeles by rail, unloaded at Pearce, and hauled to the property. It is expected that the well will be spudded in within the next two or three weeks.

Mr. Windle has a lease on 37,000 acres of land comprising the Riggs ranch and proposes to make a thorough test of the field. The location chosen for the well is about 18 miles from Willcox.

Three other oil companies are working in the southeastern Arizona area at present.

Drilling is being continued at the Mammoth well, in Pinal county, located about a mile and a half from that town.

Active operations are being continued at the Pinal Oil company well 16 miles northeast of Bowie. This well is located on land held by the Bear Springs company.

The Funk well, two miles west of San Simon, is actively drilling about 4,000 feet and reports a bone dry hole."

2-5  
38. June 5, 1931, p. 9: "Oil Activity Reported in Cochise Area" "Willcox - A general survey of work in the oil fields throughout this district shows considerable activity.

The Windle well has been spudded in on the Riggs ranch property between Willcox and Pearce and the Bennedum Trees company is making considerable progress in drilling near here. Much interest is centered on these two projects as both are declared to be operating in choice locations.

The Bowie-San Simon Oil company declared to be operating at its well west of San Simon (garbled sentence). The Geronimo Oil company has added two more rigs for drilling with the Clark-Holiday drill suspended at 426 feet. The new rigs are on the Anna Bruning No. 1 and Keystone locations.

It is reported that a large oil company has been negotiating with the Whitlock Oil company for the leasing of its property north of Bowie. Two wells have been spudded in but all work has been suspended. One is at a depth of 1,921 feet and the other at 520 feet. 5-10

5-9  
The Underwriters Syndicate well two miles northwest of Pima has suspended operations. One of these wells has been drilled to a depth of 3,765 feet. It is understood Long Beach interests are behind the enterprise.

5-7  
The Pinal Oil company has shut down its test well to install heavier equipment. A Star rig has been used in sinking to 1,552 feet.

The boundaries of the Farmington, N.M. district of the U.S. Geological Survey have been extended to cover the eastern part of Arizona as far west as the Gila and Salt River meridian. This will give the office jurisdiction over most of the oil drilling on the public lands in the state. John A. Frost, district engineer at Farmington, will make inspection trips through the area occasionally."

→ Fifth reel, commencing June 12, 1931, and continuing thru October 14, 1932:

39. June 19, 1931, p. 2: "Oil Activities at Wilcox Increased, Reports Reveal"

"Oil exploration activities are especially marked in Wilcox and vicinity, according to reports made by Bob Thomas, business agent, with headquarters in Bowie, and officials at a regular monthly meeting of the Bear Springs Oil & Gas company held at the office of the Whalley Lumber company in Globe.

The Geronimo Oil company has drilled 221 feet in its third shallow well spudded in at Wilcox and is now engaged in a production test with the hope of bringing in a five or ten-barrel well.

2-10 At the Anna Bruning well, No. 1, located half a mile southwest of Wilcox, another production test is contemplated. Tests made at Los Angeles are reported as showing that the company has encountered a commercial oil sand but that much of the petroleum was washed out by warm artesian water, since shut off.

Deep Test Planned

The company is continuing drilling operations at another well, the first drilled by this concern, in Wilcox, which is near 600 feet in depth.

New equipment to carry on production tests will be brought from Los Angeles soon, according to the Arizona Range News, Wilcox newspaper. The company also proposes to initiate a deep test well with a standard rig soon on the east side of the Southern Pacific track south of Wilcox, the newspaper states.

2-15 The Bennedum-Trees well fourteen miles southeast of Wilcox, after a water shut off at about 1400 feet, is now down nearly 2,000 feet.

The Windle well further east towards the mountains is now drilling, having recently been spudded in.

Pinal to Resume Soon 5-7

G.E. Parsons, field superintendent of the Pinal Oil company, has received a substantial amount of money for drilling operations and will start work as soon as the engine and rig at the Pinal well, 16 miles northeast of Bowie, are ready. A rig has been secured from the Whitlock well, half a mile south.

The Pinal well is located on a tract of government land held by the Bear Springs company. The latter company now holds approximately 46,000 acres of extended government land in the vicinity of Safford and Bowie, which is a major portion of extended government oil and gas land in Arizona, it is said. Extensions practically on all of this land were obtained for two years daring from Nov. 15 last by Mr. Thomas, business agent."

40. August 7, 1931, p. 7: "Willcox Oil Well Is Now More Than 2,000 Feet, Report" 2-15

"Douglas - Having already drilled their well to a depth of more than 2,000 feet, the Bendamen and Trees test well in the Wilcox field is now being underreamed preparatory to carrying it farther down, according to Judge S.W. McCall who was in the city on business. Judge McCall, who has been one of the larger influences in bringing about the test now being made, says that the work is going forward steadily and that samples of the core are being kept and sent to the headquarters offices in Pittsburgh, Pa.

'It is not yet possible to tell the outcome of the enterprise, but it is possible to say that the test well now being drilled is being put down according to the best known lines of field prospecting,' said Judge McCall. 'The drilling outfit is kept busy all the time and there is quite a lot of business coming to Wilcox as a result of the well.'"

41. February 5, 1932, p. 7: "San Simon Oil Well Deepest in Arizona Is Still Drilling" 2-5

"The San Simon Valley Tribune, in its last issue, says:

Oil prospecting in this section received new impetus in 1931 and indications are that 1932 will show still greater interest.

Just now, the San Simon oil well which is down near 5000 feet, and is still drilling, is being watched very closely by oil men everywhere.

Driller Water Tuttle, said to be one of the most expert drillers in the state, and who has drilled more depth in Arizona than any other man, is getting much gas at the depth he is now drilling in the San Simon well, which burns and it is sufficiently strong to justify the belief that a big 'gasser' may blow in at any time."

42. June 10, 1932, p. 9 : "Expect To Bring In Oil At Well Near San Simon"

"Bowie - S.W. Funk, trustee and manager for a syndicate made up mostly of California interests, is confident oil will be brought in soon at the well being drilled two miles west of San Simon. Operations have been suspended while a break in the casing is being repaired, but it was expected drilling would be resumed within a week.

Mr. Funk said the group has expended approximately \$80,000 in the three years of work carried on at the well. This includes the cost of installing first class equipment for the drilling, heavy equipment capable of sinking to 8,000 feet placed. It is a standard rig equipped with a steam engine.

Down 5,016 Feet

The well at present is bottomed at 5,016 feet. Describing the various strata Mr. Funk said a stickv shale was struck at 600 feet and this continued to considerable depth. Sandstone was then encountered and later lime, shale, then lime, sandstone and shale again. All are saturated with oil which became heavier with depth, he said. Oil can be skimmed from the sump and at 300 feet from its present bottom live wet gas was encountered. He said the well had been kept filled with water to keep it from blowing in at that point, it being believed that the real body of oil will be struck at a little greater depth.

Mr. Funk said that at 2,057 feet, 11 feet of dead oil had been encountered. He said the body, however, was not sufficiently large to merit installation of a pumping system.

Field is Sealed

The saturation now being encountered, he declared, is due to the field being thoroughly sealed with the outlet following the Southern Pacific to Willcox. It migrates toward Farmington, N.M., he declared.

One of the reasons Mr. Funk gave as lending assurance that oil soon will be struck was that water from the well registered 190 degrees when dumped. It has no salt content, he said, and it takes either salt or oil to heat water.

The syndicate control 12,000 acres under state leases. The well is one-quarter of a mile from the railroad and the group has leases adjoining the road. There are about 2,000 acres of the group's holdings in the immediate vicinity of the well and about an equal acreage at Alga. The remainder of the holdings are spread out throughout the district."

# Markets

**LOCAL PRODUCE**  
Buying Prices on Poultry

|                |            |
|----------------|------------|
| Heavy Hens, lb | 20c        |
| Small Hens     | 18c        |
| Roosters, lb   | 10c to 20c |
| Broilers, lb   | 25c        |
| Fries, lb      | 25c        |

Retail Selling Prices

|                        |             |
|------------------------|-------------|
| Bananas, lb            | 15c         |
| Eggs, Doz              | 30c         |
| Beets, bunch           | 5c          |
| Carrots, bunch         | 5c          |
| Hell Peppers, lb       | 30c         |
| Radishes, bunch        | 5c          |
| Celery, bunch          | 20c and 25c |
| Lettuce, 2 heads       | 25c         |
| Cabbage, lb            | 5c          |
| Green Chilli, lb       | 25c         |
| Fresh Tomatoes, 2 lbs  | 25c         |
| Lemons, doz            | 30c to 40c  |
| Oranges                | 30c to 60c  |
| Cooking onions, 3 lbs  | 25c         |
| Onions, bunch          | 5c          |
| Grapefruit, 2 for      | 25c         |
| New Potatoes, 4 lbs    | 25c         |
| Rhubarb, 2 lbs         | 25c         |
| String Beans, lb       | 15c         |
| Squash, lb             | 25c         |
| Cucumbers, 2 lbs       | 25c         |
| Cantaloupes            | 15c to 10c  |
| Watermelons            | 20c         |
| Okra                   | 15c         |
| Plums, 2 lbs           | 25c         |
| Seedless grapes, 2 lbs | 25c         |
| Peaches, lb            | 15c         |

**EGGS**  
Buying Price

|               |     |
|---------------|-----|
| Brown, extra  | 25c |
| White, extra  | 25c |
| White, medium | 22c |
| White, small  | 18c |

**SAFFORD**  
Buying Price

|                        |     |
|------------------------|-----|
| Brown, extra per dozen | 25c |
| White, extra per dozen | 25c |

### COTTON SPOTS AND FUTURES

**NEW YORK**—The cotton market early selling on relatively easy cables was quiet but generally steady today, and a favorable weekly weather was absorbed on moderate setbacks, and prices later rallied on covering, with some trade or commission house buying. October sold up from 17.75 to 17.85 and was holding around 17.85 in the mid-afternoon market when active months were about 3 to 4 points net higher. Spot quiet, middling 17.10. Close: January, 18.08; March, 18.22 to 18.31; May, 18.45 to 18.46; July, 17.46; October, 17.50; December, 18.02 to 18.03.

### CATTLE MARKET

**KANSAS CITY**  
CATTLE—7,000; calves 1,000; beef steers and yearlings opening slow, steady to weak; the stock mostly steady; bulls strong; vealers steady to 50c higher; stockers and feeders slow, weak; choice medium weight steers held above \$13; good to choice lightweight steers \$11.55; good medium weight wintered Kansas grassers \$12.10; common Kansas grazed Texas grassers \$7.65-7.85; practical veal up \$12.50; two loads Kansas grassers on country accounts averaging 1,100 lbs. \$10.50.

### LOS ANGELES

**LOS ANGELES**—Cattle: small supply cleaned up readily at strong prices; medium 1045 lb. steers 8.50; few she stuck 5.00-5.00; calves 50, steady; vealers 10.00 to 12.00.

### GRAIN MARKETS

# Geologist Reports On Oil Indications As Found In Graham Co.

The following report of Claude Palmer, the geologist, who checked the Trumbull instrument in the proven oil fields from Florida to Graham county and who also mapped the two structures now being drilled with western money, is very interesting to the people of Graham county, showing why these men believe there is oil in this valley. We are indebted to H. T. Proctor of Safford, who leased these two structures, for this copy of the report which we are printing below:

February 23, 1917.  
W. W. Todd, 32 Pearl St.  
New York City.

Dear Sir:  
In compliance with your request, I am pleased to submit to you a report of my findings and impression of the M. C. Trumbull oil affinity instrument or machine. Also my opinion of the Arizona structure owned by Messrs. Leet, Trumbull, Proctor and others, and on which you were contemplating the purchase of an interest for the purpose of helping defray the expenses for drilling a test well to test the properties for oil or gas.

Of course, as you accompanied Messrs. Leet, Trumbull and myself throughout the trip from Florida to the Spindle Top fields of Beaumont, Texas, and then from there to El Paso, Texas, and later to Graham county, Arizona, and observed my work of comparing and testing the accuracy of the several localities, it will not be necessary to make an extended report. Therefore, suffice to say that I selected the Beaumont oil field as the place for the first test because this locality was unusual to the extent that it had produced more oil of high grade paraffine base from shallow sand wells than any other one spot of like size in the world (the old Spindle Top field) and had eventually become stripped of all oil excepting a very few wells yet producing a small amount, and in addition the new Spindle Top field lately being developed from sands of from 2200 to 5600 feet deep, and lies less than a quarter of a mile from the edge of the old field, and which fields are delisted by the effects of the tremendous salt core, which was instrumental in causing the uplift.

This situation made an ideal locality to test the instrument on and of light oil of limited amount, the dry streak including salt core, and on and off heavy oil of large volume. While I had previously been biased in mind to a certain extent, against Mr. Trumbull's machine or instrument, and had considered it the same as many other "doodle-bug" contraptions that I had checked against geology heretofore and found lacking, I was surprised and dumfounded upon witnessing the action of this machine

or instrument while Mr. Trumbull took thirty tests at locations designated by me, and in every instance it registered correctly according to geology, and the production of the field. I was then convinced that the instrument had an affinity to petroliferous content.

To be sure that its readings were not influenced by minerals, lime, coal, salt, etc., I had him make a test 30 feet from a well which had been drilled into the salt core at 1580 feet depth, without production. It did not register. This test also convinced me that the machine acted perpendicularly as there were producing oil wells within 1000 feet distance.

I kept my own counsel and said nothing, but thought considerably upon the subject during our twenty-four hour run across Texas into the city of El Paso, where the surrounding country has been thrown up by an igneous core dike which had caused the strata of the different formations from the territory to and including the Pre-Cambrian to emerge, creating a major monocline at the contact.

I had Mr. Trumbull set his instrument and take test readings in numerous places where the different edges of all strata, including igneous, coal, Cretaceous shales, Jurassic and Triassic Limestones and gypsum strata as well as Permian-Carboniferous sandstone, lime and cement stone and shales, Cambrian and Pre-Cambrian strata, carrying sulphureous waters, alkaline waters, were apparent. It did not register.

I was satisfied by this time, after comparing notes, that I was inspecting an instrument or machine that according to test demonstrations, had an affinity to petroliferous matter, and something that may be of exceptional value to geologists and the Oil Fraternity, if intelligently used in connection with structural geology, to the extent of determining at least paraffine and asphaltic base oils in unproven territories.

As you know, I made considerable study of the formations as they existed, both east and west of the Continental Divide as we traveled by motor from El Paso, Texas, to the Gila valley in Graham county, Arizona, in order to intelligently compare the structural features of your anticline near Safford, which is in the heart of the Gila valley district. Nearly all formations lay regularly in succession on the east monocline of the Divide, and compared favorably with other districts on the eastern slope that I have examined, while the structural features on the west side of the Monocline were to a great extent covered with later Quaternary deposits and lava rock of glacial drift effects, etc.,

which made the structural features of the lower formation hard to determine.

Upon reaching the Gila valley in Graham county, Arizona, I was pleased to note the feature of an uplift, arising through an extensive syncline lying between two mountain ranges crossing a valley of about twenty miles wide.

My conclusions, after a thorough examination of the structure which lies from 12 to 16 miles northwest of the town of Safford, which you are expecting to be interested in, is that you have a closed structure worthy of a test for oil or gas, providing the well is drilled to a depth of at least 3500 feet, in order to test both sands if necessary. The outline of this structure is very discernible and it appears to be one of several along a major Anticline. I was very well pleased with the action of Mr. Trumbull's instrument or machine upon this structure. We commenced testing with the machine off and on the same as we did on the edge of Florida structure. After checking around the edge of the structure, we checked two cross-sections across the apex of the structure (see blue print).

It registered upon two producing sands in the apex of the structure, while it registered on but one sand around the edge of the structure. The instrument registered perfectly according to structural geology. The pleasant surprise was the exceptionally large readings that the machine registered upon the apex of the structure at the localities mapped out by me for the first test wells to be drilled. In fact, averaged from 700 to 1800 readings around and across both locations. These were the highest readings that were recorded on the trip; in fact they were more than double the average readings from the new Spindle Top field where we took tests beside wells making from 2,000 to 3,500 barrels per day, settled production.

Therefore, my conclusions are that the machine or instrument does register to petroliferous matter, that it does not register or is not influenced by other minerals or formation content; that it does register increased or decreased production in the sands from place to place, according to porosity of sands; that it registers accurately, according to structural geology, even though it is influenced to higher readings on account of either hydrostatic or gas pressure.

The machine will not tell the depth to any sand, will not tell the character of the oil, will not determine the gathering ground of the area surrounding the field, will not determine the hydrostatic pressure or syphon conditions to be encountered. However, all this can be determined by competent geologists, while the machine or instrument does record conditions that no geologist can determine. Therefore, I believe, if this instrument is used in conjunction with geological knowledge, that the combination will create a revelation in the history of the oil industry.

Respectfully submitted,  
(Signed) CLAUDE F. PALMER,  
Geologist.

GRAHAM COUNTY GUARDIAN AND GILA VALLEY FARMER (SAFFORD, ARIZONA)

*file 5-7*

In Cen... school... id berry... the fact... and cold... the time... school... Valentine... he home... which was... and re... bes and... Gordon... bers left... eeks at... and Mr... d down... d relat... from... service... Sunday... ord was... elatives... olomon... school... Church... ere last... ed by... sonville... a mem... h coun... is. rep... clety of... eakers... in Cen... been ill... was a... day of... son of... ral last... offering... at sev... growing... Marti... nly... recor... nently... to other... ill quite... is post... and... tokens... ensely... VS... meeting... held... into a... of time... people... both... a enter... he week... J. Alko... return... N. M... l by Gila... morning... Professor... Josephine... lectious... interesting... stude... Mrs. Em... Tuesday... do ordi... ample... Mrs. K... n... Mrs. T. S... a short... Depent... of the oil... returned... and Mrs... a Nina... all home... lize and... wait for... parson...

...with Mr. and Mrs. Granvil Pace, who are here from Cedar City, Utah. Mr. Pace is a brother of W. W. Pace. Those present were Mr. and Mrs. W. C. Pace, Mr. and Mrs. J. Verne Pace, Mr. and Mrs. D. C. Pace, and Mr. and Mrs. A. E. Jameson. The goat men are getting ready for the spring shearing which will begin as soon as the weather clears up. Mr. Morrow has completed the interior work of the four apartment house he has made out of the Claridge home on Main street. It is a very decided improvement and the apartments have been rented for sometime.

### GLENBAR NOTES

(Lucette Harvert)  
George Echols, who was recently married to Miss Beatie Thompson, gave a wedding dance Thursday evening. A large crowd was present and everyone had a most enjoyable time.  
Mrs. Rilla Curtis and daughter, Mrs. Lucy Western, arrived here from Artesia, California, Saturday evening, where they spent the winter. They intend to make their home here.  
Anthon Christensen and wife were visitors from Eden Sunday afternoon.  
President H. L. Payne of the Layton ward and William McBride of the Pima ward were visitors and speakers at the church services here Sunday evening.  
Ami Curtis, formerly of Glenbar, is lying in a hospital in Artesia, Cal., suffering an injured back. According to reports of the accident he was loading hay, and the wagon being wet and slippery he fell and struck his back on a timber. He is improving and expects to return home in September.  
The Mutual Improvement Association of the Matthews ward held a very interesting meeting Sunday evening and a number of visitors from the different wards in the stake were in attendance and gave some very interesting talks. They were Chas. Clawson, W. T. Mendenhall, Miss Thelma Layton and Mr. Solomon of the Layton ward, Mr. and Mrs. Moroni Skinner of the Kimball ward, Mr. and Mrs. H. H. Otte of Pima, Mrs. Inez H. Lee, J. H. Mangum of the Thatcher ward.  
Earl Long of Cottonwood Wash was a visitor at the home of Mr. and Mrs. H. L. Smith Monday afternoon.  
Mrs. Erwin Herbert is visiting at the home of her mother, Mrs. Echols.  
E. Herbert of Geronimo made a business trip to Glenbar Tuesday.  
Miss Clella Bryre attended the dance at Bryce Tuesday evening.  
Clifford Hughes, a former resident of Thatcher has moved into the Dave Rogers' place at Glenbar.

### ONE FARMER PROVES DAIRYING TO BE A PROFITABLE BUSINESS

That dairying is one of the best paying industries in the Gila valley is the belief expressed by C. L. Alford Tuesday when he called at the Guardian office to renew his subscription to the paper. Mr. Alford bases this belief on actual experience of many years in the business.  
Ten years ago he purchased a 55-acre farm in the Artesian district and put a few dairy cows on it, going in debt for the farm and the cows both. Today, at the end of the ten years, he is not owing anyone, so far as he knows, the cows having paid out the debt on themselves and on the farm.  
In addition to his herd of fine cows, Mr. Alford raises chickens and hogs enough to supply his family and have some for the market.  
The hay raised on the farm and fed to the dairy herd, Mr. Alford figures, brings him \$25.00 a ton. The products from the herd bring him an income that is steady and does not fluctuate with the market as do cotton, hay, etc., and he therefore knows just what he will have to meet the expenses of his family and his farm each month.  
Wm. A. Carraway left for his old home in Tevarkson, Texas...

Wm. J. Vaughan, who is interested in the drilling of the oil well at Pima, returned to Safford the first of the week from a business trip to Phoenix. While in the capital city Mr. Vaughan told in an interview with newspaper reporters how he became interested in the oil proposition in Graham county, saying:  
"The Gila basin," he said, "has been favorably noted by geologists as the possible seat of an oil basin for many years. In particular, Edward B. Hill of San Francisco, who more than any other man turned my attention to West Texas, called it to my attention six years ago. But it was not until the development of scientific oil detectors that I remembered his advice and came to look the country over for myself."  
"There are two types of detectors. One reacts to the presence of oil and indicates volume. The other indicates only the depth at which oil may be struck. The first type may be described as an affinity instrument. It carries a reservoir of compound chemicals similar to those contained in petroleum. These chemicals are sympathetic to the vibrations sent out by electrons of the petroleum atoms and respond when the reservoir is suspended over a subterranean reservoir of oil. Amplifiers similar to those used in magnifying radio vibrations step up the sympathetic vibrations in the container until they can be mechanically indicated on a dial."  
"Well, this affinity instrument was very strongly recommended to me by responsible, level headed men who had tested it. I undertook tests of my own in the West Texas field. My inclination, I am free to confess, was in the direction of extreme skepticism. If there is anything an experienced oil man is ashamed to be associated with, it is a "doodle bug" of any sort."  
"But I got readings in proved country that I knew intimately, and in dry country—known to be dry because I had tested it by sinking dry wells—that provoked me to further investigations. In all, I spent 15 months tracking down the experience of everybody who had tried the affinity detector and in the end I brought one to Arizona and went over the Gila basin. That was a little more than a year ago."  
"Five miles west of us another New York syndicate headed by W. W. Todd, another responsible operator with ample backing, is also drilling on the strength of detector readings. I think you may say that the present quantity flow of eastern capital into Arizona drilling dates from the invention of the modern scientific detector."  
"It takes money to drill a wildcat well, varying, of course with the probable depth. Perhaps \$100,000 would be an average figure for what the Arizona wildcatter may expect to encounter in the way of difficulties."  
"Our own well, wholly financed by New York City and Buffalo capital, was spudded last August, but active drilling was not really begun before November 1. We are now down about 1,500 feet, and at 2,000 feet expect to set our 10-inch casing on a limestone bed which we expect to encounter at about that depth. We began with a 24-inch hole."  
"At 1,100 feet we tapped a deposit of rock salt 145 feet thick, laid down in early geologic times when the sea covered Arizona. At present we are bringing up drill cuttings that under other tests, show the existence of oil, but we do not expect to get into production sands much above the level of the sea. That was our experience in West Texas and would take us down in this country, about 3,200 feet."  
I am inclined to regard the Gila basin as a possible offshoot or extension of the West Texas field, stretching across New Mexico. The state is surrounded by other oil bearing states—New Mexico, where there are proved fields now in production, Texas, Utah, Colorado and California. The formations traversed by our drill much resemble those found in Colorado."

## STATE SIFTINGS

**TUSCON**—Additional improvements cost—between \$150,000 and \$200,000 are to be made to the Santa K.A. Hotel and when the remodeling is completed the entire aspect of the big hostelry will be changed.

**TOMBSTONE**—Loss estimated between \$12,000 and \$15,000 resulted to business property here last week when fire destroyed several of the business houses in the heart of the town. The fire started when a gas tank in the Owl Cafe exploded while a leak was being mended by Joe Fredericks, 11. He was perhaps fatally burned and another, Robert Gilmore, was severely burned in attempting to save the boy.

**MIAMI**—Three Mexican mine laborers were crushed to death at the Inspiration Consolidated Copper Company plant when they were carried to into workings of the mines on a conveyor belt on which they had gone to sleep.

**TUCSON**—One of the large Pickwick stage line buses was completely destroyed by fire which started from a heater. No one was injured and all baggage was saved.

### AFTER CONDEMNING AUTOS FOR YEARS BUYS CHRYSLER 52

The Red Indian's trail, the pioneer's covered wagon, the stake coach, the railroad train and the steamboat, street cars, horseless carriages and their modern development, the feet and beautiful automobile of today, even the aeroplane—all methods of transportation developed in the fast moving progress of the Nineteenth and Twentieth centuries have been watched with interest by Chaplain James Kirk Gibson during the 32 years of his busy life. But until very recently the veteran national chaplain of the G. A. R. knew them only as spectator and passenger. Salesmen found him immune when they tried to induce him to buy.  
Not until Walter P. Chrysler gave to the world an automobile so full of new beauty, smart handling, flashing acceleration and dependability that its appeal could not be resisted, did Dr. Gibson fall from grace. A few weeks ago he went into the showrooms of the Chrysler agency of Dayton, Ohio, and came out the owner of a Chrysler "52" coupe, the first car he has owned.  
With only a few lessons he mastered the details of gear shift and steering, and he is now an enthusiastic Chrysler owner, driving through Dayton's city traffic with as much ease and certainty as any representative of young America.

Best Man: "Wasn't it annoying the way that baby cried all during the ceremony?"  
Maid of Honor: "It was dreadful. When I am married I shall have engraved on the invitations, 'No babies expected.'"

### SHERIFF'S NOTICE OF SALE NO. 233

IN THE SUPERIOR COURT OF THE COUNTY OF GRAHAM, STATE OF ARIZONA.  
M. E. O'Bryan, attorney-in-fact for the heirs of T. O'Bryan, deceased, plaintiff, versus Orville L. Larson and Orville L. Larson, administrator of the estate of Hazel Larson, deceased, defendant.  
Under and by virtue of a special execution and judgment of foreclosure and sale issued out of the Superior Court of Graham County, Arizona, on the 23rd day of November, 1927,

All of lot 4 in Block 23 of Thatcher Townsite and bounded as follows, to-wit: Beginning at a point 92 rods North and 95 rods East of the Southwest corner of Section 2 Township 7 South of Range 25 East of Gila and Salt River Meridian in Graham County, Arizona; thence running East 16 rods; thence North 16 rods; thence West 16 rods; thence South 16 rods to the place of beginning, containing one and six-tenths (1 6/10) acres. Also one share of stock in Union Canal Company.

together with all and singular the rights and appurtenances thereto in any wise belonging.  
Public notice is hereby given that on Monday the 12th day of March, 1928, at 10:00 o'clock in the forenoon of said day at the court house door in the City of Safford, County of Graham, State of Arizona, I will, in obedience to the special execution, sell the above described real estate to satisfy said judgment, interest, costs and expenses of said sale, to the highest bidder for cash, lawful money of the United States of America.  
Dated this 15th day of February, 1928.

H. M. TATE, Sheriff.  
By SETH DODGE, Deputy.

First Publication: February 17, 1928  
Last Publication: March 3, 1928



## East via romantic New Orleans

and southern and eastern point  
Over this route travels the "Sunset Limited," famed round the world. It takes you swiftly and with the greatest comfort to New Orleans where connections are made to all principle cities of the east and south. On this train is a through standard sleeper to Jacksonville, Fla. and points enroute.  
From New Orleans you can take a Southern Pacific steamer to New York and have this 100-hour ocean voyage with your meals and berth included at no extra fare.  
Also the "Argonaut" daily over this route, carrying thru sleepers to St. Louis, Memphis, Washington, D. C. and intermediate points.  
Ask the agent for free illustrated folder describing the Sunset journey east.

## Southern Pacific

GRAHAM COUNTY GUARDIAN AND GILA VALLEY FARMER (Safford, Ariz.), February 17, 1928, p. 6

file 57

"Eastern Man Tells How He  
Became Attracted to Pima  
As a Promising Oil Field"



Fife Symington  
Governor

State of Arizona  
**Arizona Geological Survey**

416 W. Congress, Suite 100  
Tucson, Arizona 85701  
(520) 770-3500



Larry D. Fellows  
Director and State Geologist

March 13, 1996

Mr. John Wilson  
1109 Skyway  
Las Cruces, New Mexico 88001

*file 5-7*

Dear Mr. Wilson:

I received your letter of March 10 today. The very name of the Whitlock #1 State well in 36-10s-28e implies State-owned mineral rights in section 36 when the Whitlock well was drilled. There have been a lot of land swaps in the last 10 years or so, I believe the State signed a deed of reconveyance for 36-10s-28e on or about September 1985.

As luck would have it, the August Report of the Bear Springs Oil & Gas Company in the September 3, 1931, Tombstone paper was in our file. A copy of this article and the sample description for the Bear Springs Oil and Gas Company #1 Allen hole are attached.

The ponds or pits at the Whitlock well site were probably dug to hold water for the drilling operation, even though mud is not "circulated" in a cable tool operation. I'm sure that any artesian water encountered in the hole would have been diverted into, fill, and eventually overflow the ponds. I'd suspect, however, that reports of significant amounts of oil flowing with the water were somewhat hyped up for promotional purposes. If things were really "that good," the well would have been completed as a producer.

Let me know if I may be of further assistance.

Sincerely,

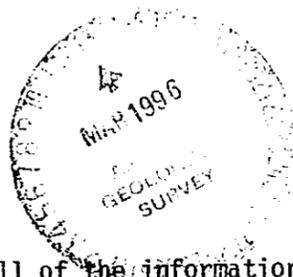
*Steven L. Rauzi*

Steven L. Rauzi  
Oil and Gas Program Administrator

Enclosures

1109 Skyway  
Las Cruces, New Mexico  
88001-4016  
March 10, 1996

Mr. Steven L. Rauzi,  
Oil and Gas Program Administrator  
Arizona Geological Survey  
416 W. Congress, Suite 100  
Tucson, Arizona 85701



Dear Mr. Rauzi:

5-9 Thank you more than I can say for all of the information you sent me about the two Whitlock Oil Company wells. The newspaper articles are especially helpful in indicating that different companies were carrying on drilling operations for several leaseholders in the same general area at the same time. I think you are correct though, in that the two Whitlock Oil Co. wells appear to have been the "flowing well" in the NE $\frac{1}{4}$ , NE $\frac{1}{4}$ , Sect. 36, T10S R28E, and the "Badger Den well" in the SW $\frac{1}{4}$ , NE $\frac{1}{4}$ , Sect. 20, T10S R29E.

5-10 From the materials you sent I now have a much clearer idea as to where to direct additional inquiries. For example, we need to clarify ownership of the mineral rights as of the late 1920's. I had assumed that the Whitlock Oil Co., State 1 well in Section 36 was on a BLM section, since it is the BLM's Safford District office that is interested in the background on this well. But from what you found, and the statement in the Holbrook newspaper that "... the Whitlock Oil Co., having a state land lease 14 miles north of Bowie and a drilling site chosen, ..." it certainly sounds like Section 36 was a State section then. I assume that I need to direct this kind of question to the BLM and to the State Land Office.

With the names of both the companies involved and the individuals who served as officers in the Whitlock Oil Co., I can write to the Arizona Corporation Commission to ask about annual reports and whatever else they may have by way of records of this corporation.

My research will go to Dr. Pat Gilman at the University of Oklahoma, who will incorporate it with the results of her archeological field school in the area and pass the information to the BLM. My role involves two historic sites. One is the Whitlock #1 well location. The other is a trash dump and historic camp site about 1/4 mile north of the well, in Section 25. Dr. Gilman thought this might be the drillers' camp associated with the Whitlock #1 well. It seemed a bit remote, so I asked the BLM about any records of homesteading activity in Sections 25 and 36. They reported none.

After seeing your information I think Dr. Gilman was half-right with her expectation; the site in Section 25 was probably a drillers' camp but associated with another well. The Dec. 4 and 5, 1927 newspaper articles said that the Pinal Oil Co. of Superior had been drilling for the past 6 months, at 1,300 ft. north of the Whitlock Co. well. By reference to the chart with oil & gas map OM-201 it appears that the Pinal drilling site is the Bear Springs Oil and Gas Co. Allen 2 (Pinal 1) well location, completed in 1929 and abandoned. It was this well (ref. OM-201 again) that extended to a depth of 1,555 ft., not the Whitlock Oil Co. Penrod 1 well. The USGS Water-Supply Paper 769-F seems to have confused the three. Since I will have to deal with this campsite, I would like to see what records you have for the Bear Springs... Pinal 1 well. Could you also make copies of these for me? I expect that this summer Dr. Gilman may want to look for the well site too. 5-7

The Dec. 4, 1927 article in the Phoenix paper raises another question. In this article is the statement that Whitlock #1 was drilled with a cable tool. However, in the column just before, the article says that oil has been flowing with the water "over both slush pits at the well and through the ditches as far as three-quarters of a mile across the desert." Also, that "a vast earthen dam has been constructed at some distance from the well" and that oil would be permitted to flow out into this reservoir, etc. I assume that things never got that bad or the site would probably be on the Superfund list, but I wonder what was meant by the two slush pits at the well? In your opinion, what might these have been; for what purpose? All I can think of is that these might have been ponding areas to contain the water that had been struck at higher levels in the well and that was flowing under artesian conditions. I don't know if the term mud pit was in use then, but absent the use of a rotary drilling rig, there shouldn't have been any mud pits at the site, do you think?

Thank you very much once again for your assistance.

Sincerely,

*John P. Wilson*

John P. Wilson

**Newspaper articles about Bear Springs Oil Company**

1. Safford paper 9-23-19  
Geological Report on the properties of the Bear Springs oil, gas, and water company  
by Walter C. Gayhart
2. Miami paper 4-8-26  
Bear Springs Oil Co. is organized to drill deep test well in Graham County
3. Miami paper 6-21-26  
Buy Bear Springs Oil at 50 cents
4. Miami paper 7-19-27  
Bear Springs Oil Company said to be arranging to complete drilling contracts
5. Miami paper 3-20-29  
Bear Springs Oil Company to elect officers Monday
6. Miami paper 3-26-29  
Bear Springs Oil and Gas Co. officers
7. Phoenix paper 6-15-30  
Bear Springs to spud well at San Simon
8. Phoenix paper 3-15-31  
Oil firm selects directors
9. Phoenix paper 4-26-31  
Oil company retains 1930 office staff
10. Tombstone paper 9-3-31  
August report of the Bear Springs Oil & Gas Company

*Drumstone*

**IN' RY W**

# August Report of the Bear Springs Oil & Gas Company

*file 5-7*

## SAN SIMON VALLEY

San Simon Well, on SE $\frac{1}{4}$ N $\frac{1}{4}$  Sec. 27; T. 13S., R. 30E.; Torrence ranch 2 miles west of San Simon. Walter Tuttle, driller, has the deepest oil well, drilling, in Arizona, 4230 feet, now in hard black sand (Lime) Good oil showings; 170 degree water at 4056 ft.; 6 $\frac{1}{4}$  in. casing hanging at 4035 ft. Will underream to 4160 ft. to shut off water and dry hole.

Pinal Oil Co. Well No. 1, on Allen permit, SE $\frac{1}{4}$ SE $\frac{1}{4}$  Sec. 25; T. 10S., R. 23E., 17 miles north of Bowie. Sam Twentier, Field Supt. with crew of three has had a hard job to get two camps in shape to start active work. These two wells have been practically shut down for the past three years.

Whitlock Oil Co. Well No. 1, on NE $\frac{1}{4}$ NE $\frac{1}{4}$  Sec. 36, T. 10S., R. 23E.; State Land 17 miles north of Bowie. Pinal Oil Co. in return for loan of the National No. 2 drilling machine and 30 h. p. Buffalo Gasoline engine, owned by Whitlock Oil Co., have repaired and put in good working order to pull 5-8 in. casing and plug Whitlock No. 1 Well back to 1500 ft. before moving the above equipment to Pinal No. 1 Well.

Whitlock No. 2 Well, on NE $\frac{1}{4}$ NE $\frac{1}{4}$  Sec. 20, T. 10S., R. 29E., on Penrod permit, still shut down at 521 ft.

Finn No. 1 Well, 9 miles north of Bowie on SW $\frac{1}{4}$ NE $\frac{1}{4}$  Sec. 28, T. 11S., R. 23E., Reed permit, still negotiating with eastern capital to drill this permit.

Ryan et al Well on SE $\frac{1}{4}$ NW $\frac{1}{4}$  Sec. 34, T. 14S., R. 30E.; State Land 9 miles south of San Simon at 920 ft. Tentative option has been given a group of oil men, on the fifteen state land sections, held by R. J. Ryan and associates of Montebello, Calif. A "K" type Okeji drilling machine, is on location and the option calls for completion of the wells.

## SULPHUR SPRINGS VALLEY

Benedum-Trees, Arzberger No. 1 Well on NW $\frac{1}{4}$ SE $\frac{1}{4}$  Sec. 19; T. 15S., R. 26E., 14 miles SE of Willcox. 4000 ft. 8 $\frac{1}{4}$  in. casing unloaded by S. P. Ry. and delivered to well 10 in. set at 2348 ft. Depth 3140 ft. in hard

brown shale with shells. Little water in hole. Two towers with crew of five. R. W. Hickman in charge, making very good progress, considering the many delays. John Pugh of the Two John Drilling Co., contractors, made a flying trip from Shreveport, La., Denver, Willcox, and back to headquarters.

Geronimo Oil Co., No. 1, No. 2, and No. 3 Wells, in town of Willcox have shut down for the time being. Mr. I. R. Borck is in charge and expects a large heavy standard rig within 60 days. The splendid oil showings in their wells should warrant further explorations.

S. V. Windle, Riggs No. 1 Well, N E $\frac{1}{4}$  Sec. 10, T. 17S., R. 23E., still waiting for equipment necessary to spud in.

Western Water Works, of Alamo-gordo, N. M., was awarded the contract for drilling the state well for artesian water to irrigate 10,000 acres in the Stewart District. An appropriation of \$10,000.00 was allowed to do this drilling.

## GILA VALLEY

Gila Oil Syndicate Well No. 1, SW  $\frac{1}{4}$ NE $\frac{1}{4}$  Sec. 20, T. 5S., R. 24E., 7 miles NW of Pima, shut down at 2680 ft.

Underwriters Syndicate Well No. 1 (Vaughn Oil Co.) 2 miles NW of Pima, on Mary Mack farm, NW $\frac{1}{4}$ N E $\frac{1}{4}$  Sec. 13, T. 6S., R. 24E., standing shut down at 3765 ft. Several deals pending to finish this well to completion.

## SAN PEDRO VALLEY

Century Petroleum Co. Well No. 1 on Colrazer permit, NW $\frac{1}{4}$ NE $\frac{1}{4}$  Sec. 17; T. 17S., R. 19E., 9 miles west of Benson, expecting to contract the deepening of this well, now shut down at 1550 ft.

Understand interested people are looking over this prospect with view of starting drilling.

San Pedro Oil Corp., No. 1 Well on Smith Bros. ranch 1 $\frac{1}{2}$  miles SE of Mammoth, shut down at 1400 ft.

## CHINO VALLEY

Pinal Oil Co. Lantz No. 1 Well NE $\frac{1}{4}$ NE $\frac{1}{4}$  Sec. 3, T. 16N., R. 2W., 19 miles north of Prescott spudded

in August 16th. Now about 300 feet All casing on rack, all supplies purchased, work is progressing in fine shape, with a steam Star rig, under supervision of Fred Womack, Supt. A water well was drilled to 305 ft. and 350 bbls. a day artesian flow of good water was encountered there, making drilling water for that district a certainty.

Yavapai Oil Development Co. Kissah No. 1 Well, Sec. 27; T. 13N., R. 2W., 29 miles north of Prescott, in charge of A. L. Kissah, who, I am told, has a number of Japanese clients interested in this development. Their No. 1 Well will be spudded in on the 30th, I hear.

There is a possibility of a third well being drilled on the Punteneey Ranch. I hear that all arrangements have been made and the rig is being shipped in from Los Angeles.

"Petroleum" a bulletin issued by the University of Arizona and prepared by Dr. G. M. Butler and J. E. Tenney, is now ready for state distribution. The bulletin treats of the origin of petroleum, methods of concentration, favorable structures, hints to prospectors and tests for petroleum.

## NEW COMPANIES INCORPD.

Blue Ribbon Refinery Co., capital 100,000 shares, no normal par value. Incorporators, A. G. Hill, Robert U. Moore and R. H. Orkin.  
National Carbonic Ice Co., capital 1,000,000 shares, no par value. Incorporators, R. M. Malone, H. A. Kehler and C. A. Winder, all of San Francisco.

Appointment of eight agents in Arizona was made yesterday by the Texas company, a foreign corporation, empowered to operate in Arizona. The agents are: Folsom Moore, Bisbee, Cochise Co.; Ed Matteson, Wenden, Yuma Co.; H. R. Sisk, Nogales, Santa Cruz Co.; J. Verne Pace, Safford, Graham Co.; L. F. Sweeting, Clifton, Greenlee Co.; A. W. Sydnor, Globe, Gila Co.; Kirk Moore, Tucson, Pima Co.; Ned Creighton, Phoenix, Maricopa Co.

BOB THOMAS,  
Business Agent Bear Springs Oil & Gas Co., Bowie, Arizona.

has at t of im- ret- ch- ug- on for, 7, st a ner, oss ven ck the re- will ee- wall that im- ol is used City cords, mmer- stroy- heth- uthing and it. stone's eming- e pool -main- esert; e and and it. stone's ave a ig-un- of old- f the Macia ted to thers- at for

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## Bear Springs To Spud Well At San Simon

Bob Thomas, business agent of the Bear Springs Oil and Gas company of Bowie, has announced plans for the spudding in of a test well near San Simon. The well will be the first of several to be drilled in the district by Los Angeles interests in co-operation with Temple Penrod and Charles Button, formerly connected with the Whitlock Oil company. Thomas said that ample funds have been supplied for the work.

The men have acquired leases to 12 sections of land in the vicinity. An Okell combination rotary and core drill will be used and it is expected that three towers of drillers will be employed in order that work may be carried on day and night. Mr. Button will be in charge of the drilling.

The well will be spudded in with a 12-inch hole and it is expected that oil sands will be encountered at a shallow depth, the management has declared. The rotary drill will be used to speed up the work and the development of the properties will depend largely on the results of the first operation.

Considerable interest is being taken in oil properties in the Bowie, Benson and Willcox districts. A number of leases have been taken on properties near St. David, southeast of Benson in the San Pedro valley. One operator announced that he will bring in a rig to start drilling soon.

It is reported that oil showings are much better at the San Simon well. The bit has passed the 3,000-foot mark and a string of six-inch casing has been run. Drilling also is progressing rapidly at the new well recently started near Mammoth.

The Bear Springs Oil company has established permanent offices in Bowie with Mr. Thomas in charge.

*Phoenix  
June 15/30*

*file 57*

## Oil Firm Selects Directors

GLOBE, Mar. 14.—Directors of the ensuing year were selected at the annual meeting of the stockholders of the Bear Springs Oil and Gas company held last evening at the offices of the Whalley Lumber company.

The following were named: Ralph E. Herron, Will A. Peters, E. Ford Knowles, Sim Stanley, H. M. Parks, Joseph Cubitto, Louis Strukan, C. E. Payer, J. C. Holloway, Fred Jones and J. B. Cobb. All are residents of Globe except Mr. Holloway, who resides in Miami.

The present officers of the company are Ralph E. Herron, president; Will A. Peters, vice-president; E. Ford Knowles, secretary-treasurer. New officers will be elected at the first monthly meeting of the new directors.

The company recently received extensions on 18 permits aggregating approximately 44,000 acres of government land in the vicinity of Safford and Bowie.

The Pinal Oil company, which holds approximately 7,500 acres of land under sub-drilling contracts from the Bear Springs company, recently resumed active drilling operations at its well 18 miles northeast of Bowie.

## BEAR SPRINGS OIL AND GAS CO. OFFICERS

At a meeting of newly elected directors of the Bear Springs Oil and Gas company, held last evening, in Bob Thomas' apartment in the Murphy hotel, the following officers were elected for the ensuing year:

President, Leroy Kennedy, Apache Junction; first vice president, Will A. Peters, Globe; second vice president, George W. Read; secretary, E. Ford Knowles; assistant secretary, J. B. Woodward, Miami; treasurer, Ralph E. Heron, Globe. Other directors of the company are Howard Parks, Globe; Sim Stanley, Globe; J. A. Willis, Globe; John C. Greenway, Miami, and Louis V. Strukan, Globe.

Bob Thomas was elected business manager for the ensuing year.

## Oil Company Retains 1930 Office Staff

WILCOX, Apr. 25.—Officers of the Bear Springs Oil and Gas company for the past year were re-elected at a meeting of the new board of directors held the first of the week.

Officers re-elected included the following: Ralph E. Herron, president; Will A. Peters, vice-president and E. Ford Knowles, secretary-treasurer.

Reports read at the meeting from Bob Thomas, business agent, located at Bowie, indicated that conditions were more favorable for the development of an oil field in Southeastern Arizona than at any time since prospecting for oil started about 15 years ago.

### Willcox Wells

The Bennedum Trees company well, 11 miles southeast of Willcox is now down 500 feet. Two towers of drillers are employed for continuous work. This company is prepared to drill at least three wells to outline a structure.

Sereno V. Windle of California is completing a wooden derrick on the Riggs ranch to the southeast of the Bennedum Trees well and expects to spud in shortly.

The Geronimo Oil company, drilling a half mile from Willcox to the southeast, has completed a water shut-off at 700 feet after encountering warm artesian water, and expects to drill deeper as soon as the cement has hardened. Heavier drilling equipment has been ordered.

### Predict Shell Entry

The Shell company will soon come into the Willcox field and it is expected will spud in a well close to the Geronimo company well, it is reported on reliable authority. This company is said to have acquired a large acreage to the south and west of Willcox from the Bennedum Trees company.

The San Simon Funk well is drilling at approximately 4,000 feet. The Pinal Oil company well 17 miles northeast of Bowie is shut down but is expected to resume operations soon.

### Pima Negotiations

Negotiations by which the Pima oil well is to be taken over by California interests are still uncompleted due to a desire for greater acreage.

The Red Okell well nine miles south of San Simon is still shut down but new and heavier equipment is being assembled at Montepello, Calif., for shipment so operations can be resumed.

(5)

## BEAR SPRINGS OIL COMPANY SAID TO BE ARRANGING TO COMPLETE DRILLING CONTRACTS

*Miami 7/19/27*  
Advices from Bowie, near where extensive oil explorations have been in progress for several years, and in which many residents of the Miami-Globe district are interested, carry many expressions regarding what is confidentially expected to be, at this time, the impending production of oil in commercial quantities.

Progress of Bowie Well No. 1, which is reported to have made an excellent showing is attracting great interest and a production test is to be made in a few days, it has been announced. Coincident with

the announcement, a number of officials of the Utah Petroleum company, which controls the Bowie operations, is arriving there today to be present when the anticipated test is made.

In another field, northwest of Bowie, the Bear Springs Oil company, which has been active for some time, is preparing for more extensive development and, at a recent meeting, stock in the enterprise was withdrawn from open subscription.

The company is said to be making arrangements to complete drilling contracts for all of its five large government tracts north of Bowie.

*file  
5-7*

## BEAR SPRINGS OIL COMPANY TO ELECT OFFICERS MONDAY

*Miami 3/20/29*  
At the annual meeting of stockholders of the Bear Springs Oil and Gas company, the following were elected directors for the ensuing year: Will A. Peters, Leroy Kennedy, George Reed, E. F. Knowles, Ralph E. Herron, Louis V. Strukan, John C. Holloway, Howard M. Parks, Sim H. Stanley, J. B. Woodward and J. A. Willis.

Officers will be elected at the regular March meeting of the directors next Monday evening, it was announced.

Bob Thomas, business agent for the company, presented a detailed report of the company's activities since its organization on April 3, 1926.



ELT

MIAMI, ARIZ., THURSDAY EVENING, APRIL 8, 1926

## Bear Springs Oil Co. Is Organized to Drill Deep Test Well in Graham County

The first meeting of the newly organized Bear Springs Oil and Gas company was held last night at the court house in Globe. The incorporation has been passed by the State Corporation commission. The board of directors which will have charge of the company's operations for the first year is as follows: Leroy Kennedy, Miami; Will A. Peters, Globe; E. F. Knowles, Globe; Ralph E. Herron, Globe; Bert M. Moore, Globe; Wm. B. Kelly, Saford; Temple F. Penrod, Phoenix; R. A. Clifford, Miami; John C. Holway, Miami; George W. Reed, Globe, and Louis V. Strukan, Globe.

At last night's meeting of the board of directors the following officers were elected to direct the first year's operations: Leroy Kennedy, Miami, president; Will A. Peters, Globe, vice president; E. F. Knowles, Globe, secretary; Ralph E. Herron, Globe, treasurer. Bob Thomas of Globe was selected as business agent and will have charge at present of the work of validating the drill permits at Bear Springs, four miles west of Pima, in Graham county. As soon as the validating

is complete, a larger drill rig will be installed at Bear Springs and every effort of the company will be bent to put down a deep test for oil on this land. The company is capitalized at \$500,000.

The Bear Springs company will have contracts for drilling on approximately 10,000 acres of land in Graham county, on a royalty basis. For the past several years various geological investigators have studied the Bear Springs and other sections of both Graham and Cochise counties and have pronounced the indications first-class for finding oil and say the indications are for oil at less than 3,500 feet. Several well defined oil structures have been worked out and roughly mapped by these visiting geologists in the past eight years. It now looks as if sufficient interest is being taken in the Graham county fields to insure a deep test for oil. The Bear Springs company is composed of men who have believed for a long time in the existence of oil at Bear Springs and they announce that they will make an earnest and determined effort to find it.

file 5-7

Safford

SEP 23 1919

# GEOLOGICAL REPORT

## On the Properties of the Bear Springs Oil, Gas and Water Co., Graham County, Ariz.

By WALTER C. GAYHART

A corporation, organized for the avowed purpose of boring for oil and its allied products, is promoted for the purpose of making money either for the promoters or for the stockholders. In the former case, the money is made out of the victimized investors and in the latter case is made for the investors out of the ground. It was only after I had satisfied myself of the sincerity and good faith of the incorporators of the Bear Springs Oil, Gas and Water Company that I undertook the examination of the field herein covered and used my utmost endeavor to form correct conclusions from nature's data spread before me—conclusions that I trust future exploitation may verify.

Before answering the question, "Does the showing at Bear Springs justify the sinking of a test well?" it may perhaps not be amiss to touch somewhat upon the geological history of this part of Arizona, the genesis of petroleum and the line of reasoning upon which my conclusions are founded. Arizona contains rocks of every system and of nearly every series and even group, and affords a field to the geologist the most interesting of all the states with which I am familiar.

Since the third day of the creation some hundred million years or more ago, when the waters under the heaven were gathered together into one place and the dry land appeared for the first time, the sea has waged a perpetual, ceaseless warfare against the dry land—rocks, lands and continents have been time and again swept away, ground to pieces and washed into the sea, to be there again cemented into rock, layer upon layer. The thin crust of the earth itself was kept ever rising and falling like the top crust of a pie in baking, forced up by the pressure of the heated gases below, while from fissures, both on land and under the waters, would pour out molten masses, converting a sea into vapor to be precipitated again into floods washing all before them into the sea.

Millions of years were doubtless consumed in this process of kneading, mixing and stirring the ingredients of the primitive crust until it had attained a thickness and solidarity to insure a permanence of at least portions of this original crust to the present time. This is the rock of the Archaean time and comprises the Laurentian System. Since the only Archaean rock that we can see is that which was raised in Archaean time and was never again depressed below the water to receive sediments, or, having been so depressed and covered up and again brought above water level, has had such deposits eroded off, it follows that not much outcrop exists. There are vast areas of it in northeastern Canada, Sweden, and some in Arizona and New Mexico. Strata are 50,000 feet thick—always metamorphic—always contorted, and usually rich in

in common with southern New Mexico and southwestern Texas, appears to have remained submerged during the next period of Lower Carboniferous, or the Mississippian series, which seems to rest conformably upon the Devonian. Then followed a long period during the Pennsylvanian and the earlier part of the Mesozoic, or Secondary Age, that all this territory was elevated above the sea level, or the sea subsided from it, and the exposed rocks were much acted upon by erosive agencies. During Cretaceous time this valley and all lands east to the Mississippi were again submerged, except the higher ridges, and received characteristic deposits of Cretaceous limes, sands and shales, leaving characteristic fossil remains. A recession of the waters of this period marks the last submergence of this area. Some time during the Pennsylvanian, or post-Pennsylvanian periods, the country to the east of the Safford valley, perhaps from far into New Mexico, was subjected to successive flows of eruptive rock, both acid and basic, which has since, in part, eroded away, leaving the mountains to the east of the valley with abrupt monoclinal structure, with almost vertical escarpment to the west. These in turn have been covered by a late Tertiary flow of malpais, or dark brown colored vesicular lava, now almost wholly eroded away.

The Pinaleno mountains on the west side of the valley, at Safford, and the Galiuro range across the narrow Aravaipa valley, beyond the Pinalenos, at one time, no doubt, constituted one great fold of pre-Cambrian granite, probably 20,000 to 40,000 feet high. These mountains have been shook and shivered by convulsions, worn by wind and water, and altered by heat and other dynamic agencies, until their highest peak is but 11,000 feet high—Mount Graham. And deserving of a passing word is Mount Graham. It has seen oceans come and go again and again, and receding leave sloping mesas to the east, out of which whole states might have been carved; and later it has seen great fissures open on those mesas and belching up great streams of lava build up on top of the sedimentary plane, range after range of eruptive mountains only slightly more insignificant than itself. It has witnessed the birth of life in the waters leaving its shores, seen this life develop from that of the uncelled amoeba to that of the gigantic monsters of the Tertiary time, who dragged huge, slimy bodies over its rugged sides. It saw the war of Jove and the Titans; witnessed the advent of man, and has seen man rival the powers of the gods with his inventions. When man shall have vanished from the face of the earth, and the world shall become silent, cold, dark and deserted, it will still stand in solemn majesty—like the Sphinx of Egypt—a monument of terrestrial age.

What I desire to emphasize at this time is that this part of Arizona under discussion, the Gila valley in Graham county, has a geological history generally speaking in part with that of southern New Mexico and southwestern Texas; and distinctly different from that of the central or western part of the State, which is intimately connected with the history of the Sierra Nevada ranges. I do not mean to imply that all the territory is alike, because there are always local conditions peculiar to each locality examined.

The Bear Springs Oil District is located in the central part of Graham county, State of Arizona, about twelve miles west of Safford, the county seat. Its exact geographical limits are not very definitely fixed, but I should say

course the high mesa is wholly granitic and no evidence of underlying sedimentary series was apparent. On the east side of the valley, from the point where the Gila river breaks into the valley, to the Cochise county line, is the same series of structures described on the west side. The sandstone is thicker bedded and more compressed. This series I traced across the entire breadth of the Peloncillo range into the valley of the Gila at Duncan, twenty-five miles or more distant to the eastward. This series is evidently continuous except for fissures and openings through which eruptive matter has flowed. One of these I found in a cut near the summit of the range, extending northwest and southeast along the axis of the fold, filled with ash and scoriaceous matter.

Throughout the Safford District, Bear Springs District and down the Gila river to Geronimo, various local indications of oil exist. At Geronimo, an appreciable seepage of oil occurs at the base of a considerable cut made in the sedimentary sand for a store foundation, near by is a well, flowing fifty gallons or more of salt water with considerable gas. To the south and west of Safford, along the artesian belt, have been bored a large number of water wells, most of which flow freely. These waters are all more or less charged with sulphuretted hydrogen and yield a black, muck-like precipitate in the ditches leading from them. In one well, about five miles southwest of Safford, which is now being drilled, a pocket of gas was encountered at the depth of 1,000 feet, sufficiently strong to blow the water from the hole in a jet thirty to forty feet high; this subsided in a half hour or so. At another well in the near vicinity, a flow of seventy-five gallons of water was encountered at 600 feet. With a view of increasing the flow, the hole was sunk sixty feet further and a flow of oil was struck sufficient that a cupful could be separated out in a short time—this under pressure of a 600-foot column of water—200 pounds to the square inch—is of interest. The drilling was stopped and the bottom of the hole plugged up with sand to the water level, and the oil effectually shut off. In a number of places salt beds are encountered in drilling with underlying beds of gypsum. Gypsum and salt are products resulting from evaporation of sea water. The gypsum always crystallizes out first and then the salt. Some of the waters are warm, notably Indian Hot Springs in the northeast part of the valley and on the east side of the Gila. The water from this well is quite salt and has a temperature of about 110 degrees. Considerable gas escapes with the water, presumably carbon dioxide, and the heat is of chemical, rather than volcanic source.

Petroleum is stored in the porous sedimentary rock in which it has been formed, in porous sands and shales immediately above or below, in voids formed by the shrinkage of the ordinary limestone in changing to dolomite, and in any other fissure or cavity near the place of its development; provided, always, that there exists overlying it a stratum of impervious matter. Under the immense pressure of earth and water above, it tends to migrate laterally and along the up-slope under its cap or covering. Pressure drives it into every tiny crack and crevice, if such exist from one bedding plane to the next, eventually to seep out in minute quantities at the bottom of some deep cut or canyon. These seepages cannot exist where there is no oil, but the source may be miles from where the seepage shows. The gas and oil pockets

properties, near the foot of the sloping mesa.

It is not in the power of man to enter a new field (or frequently an old one, either), and say with certainty that oil will be found beneath in paying quantities, one can only make intelligent comparisons, draw deductions and form conclusions through his own and the experience of others; so, I cannot say that oil is to be found there, but I do say that the indications for oil in this Bear Springs field, taken all in all, are the best I have ever seen in an undeveloped field—better than they were at Montebello, and certainly as good as they were at Fresno, or in the celebrated Texas fields. I, therefore, answer the question, "Does the showing at Bear Springs justify the sinking of a test well?"—it most certainly does. Near the Bear Springs Butte, in the anticlinal, and every physical condition is there found as favorable as the nature of such attrited surface would anywhere allow. The oil sands should be reached in 2,500 feet; but be prepared to go 4,000 feet if need be. Carry down a large hole, it is terra incognita, and trouble from running sands is to be expected.

In conclusion, I desire to express my appreciation of the kindness, good will and helpfulness of all the people of the valley whom I had the pleasure of meeting, and to thank Mr. W. D. French, Mr. L. J. Broshears, Mr. W. V. Thorpe and Mr. A. O. Lamoreaux and others for taking me over the country in their cars.

While my employment was for the Bear Springs Company, I feel a personal interest in the whole valley and shall always be glad to answer any letters of inquiry from anyone without charge where the answers sought are not to the prejudice of anyone.

Respectfully submitted,  
WALTER C. GAYHART,  
Geologist.  
Box 1602, Los Angeles, Cal.

file 5-7

THE OIL FIELD IN ARIZONA

... 100 feet thick—always metamorphic—always contorted, and usually rich in iron. It is the age without life; but from the presence of vast beds of graphite, iron, lime and marble that are found in the Laurentian, we know that organic life, both animal and vegetable, was abundant. The length of earth time up to the close of the Archean Age is greater than all that has since elapsed. At the close of the Archean time all of the United States was covered by ocean, except here and there a mountain range—folds of the earth's crust rising high above the waters and the greater part of eastern Canada and Labrador. In our own vicinity, Mount Graham, with an elevation of probably five or six times its present height, with its chain to the southeast and northwest, looked out over this sea of turbid water. The second great age is called the Paleozoic—the age of early life forms—the Primary Rock System. This age is divided into the following subordinate ages and rock systems: The Cambrian, Ordovician, Silurian, Devonian, Carboniferous and Permian (frequently classed as part of the Carboniferous). These constitute the series of interest to us in connection with the finding of petroleum. If found at all in this valley, it will be in the lower group of the Carboniferous—the Mississippian—or in the Devonian lying beneath.

At the close of the Archean Age, there was laid down over all southeastern Arizona and probably extending largely across New Mexico and Texas, a series of Cambrian formations, quartzite, limestones, shales and sandstones, resting unconformably upon the upturned edges and folds of the Archean beneath. Following this Cambrian period, for southeastern Arizona must have come a long period of emergence from the sea, and erosion of the late Cambrian formations; since, during the period, when Ordovician and Silurian series are elsewhere being laid down, none was formed here, but the Cambrian was probably half or more eroded. Of the Cambrian strata there remain about 1,000 feet. From the close of the Cambrian to the beginning of the Carboniferous was the greatest lime-forming period of the world's existence. The seas teemed with low forms of animal life that secreted from the calcareous waters of the ocean, lime for their shells. No great physical change occurred between the Silurian and the Devonian; yet with little interlude we find the Devonian sea filled with fish—kinds never seen before and that became extinct during the succeeding Carboniferous periods.

Formations of lime were formed that aggregate three miles to five miles thick, and the various animals, large to small to microscopic, that lived in the shells that formed the lime, each contributed its quota to the rock oil now so earnestly sought. Do these figures seem unreasonably large? If there were animals enough in the sea to precipitate ONE inch on the sea bottom in ONE YEAR, it would form in 60,000 years a mass of oil-bearing sediment ONE MILE thick, or FIFTEEN MILES in ONE MILLION Years; and a million years marks but a short chapter in the geological history of the world.

Much, very much, of this oil has been decomposed and lost to these rocks; dissipated in a score of ways to become absorbed in some other department of nature; but, yet much, very much, of this oil still remains wherever this oil-bearing shell, shale or sand formation became early covered by some impervious layer of clay or silt to hermetically seal it, within the strata that produced it, and lies there ready to be tapped by the drill of man.

The Devonian lime and shale extends from Globe to Tombstone, and probably to the Chiricahuas; it probably underlies the greater portion of southern New Mexico and does underly all of southwestern Texas, Safford valley,

west of Safford, the country is very definitely fixed, but I should say it embraces the territory included in Townships 4 to 7 South, Ranges 22 to 25 East, Gila and Salt River Basins and Meridian. The Springs that give name to the district are found in Section 1, of Township 7, Range 23, where a strong stream of excellent water flows continuously. At this point, the valley is about 18 to 20 miles wide, sloping down from each side to the Gila river, which flows down to the northwest through about the middle of the valley. The formation of the entire valley is wholly sedimentary, consisting of alternating strata of sandstone and lime. In the bottoms of the gullies near the springs is to be seen a stratum of blue clay and shale, giving good indications of oil on digesting in spirits of turpentine. The mesa here has been deeply eroded about 200 feet or more, showing all the various successive layers of sand, lime, clay and shale. Along the rim extends a layer of conglomerate of moderate sized pebbles, three to four inches in diameter, quite firmly cemented together with a sandy calcareous cement. Near the springs and to the north and west, perhaps a mile, are to be seen several strata of diatomaceous origin, showing that comparatively deep water had stood for a long time at that elevation—probably 500 or 600 feet above the river level of the valley—these tiny vegetable organisms, diatoms, did not thrive in water with much movement. Here I also found a stratum, a foot or more in thickness, of a very hard, fine textured calcareous sandstone, very similar to the "cap rock" I have seen overlying Ordovician Trenton oil bearing sands.

From all the data at hand, it appears that the anticlinal of this district passes to the northeast through the vicinity of the corner common to Sections 1, 2, 11 and 12, Township 7 South, Range 23 East, and that this point marks the logical place for a test well. The topographical elevation is some 200 feet or more below the level of the mesa, with sufficient water flowing at hand for drilling purposes.

On the south and west side of the valley, following somewhat the trend of the mountains and at a distance of five or six miles from the foot of the mountains, extends for fifteen miles or more, a belt above which artesian flow of water is had at shallow depths—200 feet or so; while below this strip drilling must be 500 feet or more and the water may not always flow. The cause probably will be found in a subterranean remnant of some earlier sedimentation left by erosion, possibly beds of clay, that hold back the water that seeps down from the Graham mountain. At one place, some eight or nine miles south of Safford, this has formed a cienega of considerable extent; and another cienega at the same level is to be found directly east on the opposite side of the valley, and some twenty miles therefrom.

At a point ten miles south-southwest from Safford, the sedimentary structure of the valley makes contact with the base of Graham mountain, overlapping and resting upon the steep mountainside; from that point to the northwest for twenty miles this contact continues, sloping gradually upwards, following in and out the sinuosities of the mountain base. There is a marked absence of detritus or erosion products from the granite mountain, and the canyons and gullies show everywhere the same general structure of the valley—alternate layers of arenaceous lime, gray and yellowish-gray sand, and beds of blue and gray clay, with a sprinkling here and there of fine to moderately coarse gravel. From the point mentioned to the southeast, the line of contact bears away from the mountain to the east, and at the Cochise county line is found crossing the valley in a southeast direction, very close to San Simon creek. Along this

source may be miles from where the seepage shows. The gas and oil pockets spoken of above are small reservoirs along the line of tiny seepage courses from the deeper sources below. The Montebello Oil Field, some twelve miles east of Los Angeles, was discovered through a boy accidentally lighting a small flow of gas from a small fault plane in a wash on the side hill. This was three years ago. Many millions of dollars worth of oil have already been taken from this field, and the depth of the productive sands is 3,500 to 4,000 feet.

There is no question whatever that petroleum is a product from small organisms in water, entangled in a sedimentary bed at the sea bottom, or that the formation of granite, gneiss and metamorphosed rocks is such as to preclude the possibility of petroleum being coincidentally formed; therefore, the encountering of granite, or of highly metamorphosed, igneous, or mineralized rocks in the drill hole means failure in that hole at least, and the question of the depth at which such rocks will be encountered becomes one of vital moment. At Bear Springs at least 5,000 to 6,000 feet of sediment lies above the granite. The granite encroaches more into the valley as one passes to the southeast; at the Cochise county line it extends nearly half way into the valley. Bear Springs lies four miles from the contact of the mesa with Graham mountain.

The presence of organic matter in the series is simply evidenced by the predominating color of the sands and shales—light brown or yellowish-gray. Organic matter reduces the ferric oxides (red) to ferrous oxides (ochre). This also accounts for the presence of sulphurous gases in the water of the wells. Organic matter reduces the gypsum (sulphate of calcium) to sulphide of calcium, which yields calcium carbonate and sulphuretted hydrogen and the latter oxidizing at the surface precipitates sulphur or sulphur salts in the muds of the streams. There is in the entire valley, so far as examined, no evidence of volcanic or igneous action; even where the eruptive overflows on the eastern side rest upon the eroded surface of the sands, the heat has been insufficient to oxidize them beyond the forming of a thin streak along the plane of contact.

No faulting in the valley strata is apparent, and only a slight inclination of any of the strata. Change of water level is indicated by changes in the positions of the coarser matter; but the uniformity with which the successive layers are laid down is indicative of a period of great tranquillity, while these strata were being formed.

About twenty-five miles southeast of Safford, in Township 10 South, Range 23 East, the United States Oil Company are now sinking a well for oil and at the present writing are down about 400 feet. The site selected for their well is in close proximity to a well sunk some years ago for water, in which was encountered a very marked showing of oil.

Perhaps to the layman much of the foregoing is obscure and hard to understand; but I will say that the general conditions described are those that are recognized by practical oil producers as most highly indicative of oil over the oil fields of the United States—particularly Oklahoma, Texas and California. Sulphur water springs are frequent in all those fields. At Montebello it was at one time thought to use them in connection with a sanitarium. In the Burk-Burnett field sulphur, salt and gypsum will be found recorded in the log of nearly every well. The sedimentary deposits are broad and extensive, the Bear Springs District, embracing some 500 square miles, to say nothing of the Safford and Bowic fields, of equal or greater extent. The Arizona Eastern Railroad passes within six or seven miles of the Bear Springs

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# GEOLOGICAL REPORT

## On the Properties of the Bear Springs Oil, Gas and Water Co., Graham County, Ariz.

By WALTER C. GAYHART

A corporation, organized for the avowed purpose of boring for oil and its allied products, is promoted for the purpose of making money either for the promoters or for the stockholders. In the former case, the money is made out of the victimized investors and in the latter case is made for the investors out of the ground. It was only after I had satisfied myself of the sincerity and good faith of the incorporators of the Bear Springs Oil, Gas and Water Company that I undertook the examination of the field herein covered and used my utmost endeavor to form correct conclusions from nature's data spread before me—conclusions that I trust future exploitation may verify.

Before answering the question, "Does the showing at Bear Springs justify the sinking of a test well?" it may perhaps not be amiss to touch somewhat upon the geological history of this part of Arizona, the genesis of petroleum and the line of reasoning upon which my conclusions are founded. Arizona contains rocks of every system and of nearly every series and even group, and affords a field to the geologist the most interesting of all the states with which I am familiar.

Since the third day of the creation some hundred million years or more ago, when the waters under the heaven were gathered together into one, place and the dry land appeared for the first time, the sea has waged a perpetual, ceaseless warfare against the dry land—rocks, lands and continents have been time and again swept away, ground to pieces and washed into the sea, to be there again cemented into rock, layer upon layer. The thin crust of the earth itself was kept ever rising and falling like the top crust of a pie in baking, forced up by the pressure of the heated gases below, while from fissures, both on land and under the waters, would pour out molten masses, converting a sea into vapor to be precipitated again into floods washing all before them into the sea.

Millions of years were doubtless consumed in this process of kneading, mixing and stirring the ingredients of the primitive crust until it had attained a thickness and solidarity to insure a permanence of at least portions of this original crust to the present time. This is the rock of the Archæan time and comprises the Laurentian System. Since the only Archæan rock that we can see is that which was raised in Archæan time and was never again depressed below the water to receive sediments, or having been so depressed and covered up and again brought above water level, has had such deposits eroded off, it follows that not much outcrop exists. There are vast areas of it in northeastern Canada, Sweden, and some in Arizona and New Mexico. Strata are 50,000 feet thick—always metamorphic—always contorted, and usually rich in iron. It is the age without life; but from the presence of vast beds of graphite, iron, lime and marble that are found in the Laurentian, we know that organic life, both animal and vegetable, was abundant. The length of Earth time up to the close of the Archæan Age is greater than all that has since elapsed. At the close of the Archæan time all of the United States was covered by ocean, except here and there a mountain range—folds of the earth's crust rising high above the waters and the greater part of eastern Canada and Labrador. In our own vicinity, Mount Graham, with an elevation of probably five or six times its present height, with its chain to the southeast and northwest, looked out over this sea of turbid water. The second great age is called the Paleozoic—the age of early life forms—the Primary Rock System. This age is divided into the following subordinate ages and rock systems: The Cambrian, Ordovician, Silurian, Devonian, Carboniferous and Permian (frequently classed as a part of the Carboniferous). These

back side

are common with southern New Mexico and southwestern Texas, appears to have remained submerged during the next period of Lower Carboniferous, or the Mississippian series, which seems to rest conformably upon the Devonian. Then followed a long period during the Pennsylvanian and the earlier part of the Mesozoic, or Secondary Age, that all this territory was elevated above the sea level, or the sea subsided from it, and the exposed rocks were much acted upon by erosive agencies. During Cretaceous time this valley and all lands east to the Mississippi were again submerged, except the higher ridges, and received characteristic deposits of Cretaceous limes, sands and shales, leaving characteristic fossil remains. A recession of the waters of this period marks the last submergence of this area. Some time during the Pennsylvanian, or post-Pennsylvanian periods, the country to the east of the Safford valley, perhaps from far into New Mexico, was subjected to successive flows of eruptive rock, both acid and basic, which has since, in part, eroded away, leaving the mountains to the east of the valley with abrupt monoclinal structure, with almost vertical escarpment to the west. These in turn have been covered by a late Tertiary flow of malapai, or dark brown colored vesicular lava, now almost wholly eroded away.

The Pinaleno mountains on the west side of the valley, at Safford, and the Galiuro range across the narrow Aravaipa valley, beyond the Pinalenos, at one time, no doubt, constituted one great fold of pre-Cambrian granite, probably 30,000 to 40,000 feet high. These mountains have been shook and shivered by convulsions, worn by wind and water, and altered by heat and other dynamic agencies, until their highest peak is but 11,000 feet high—Mount Graham. And deserving of a passing word is Mount Graham. It has seen oceans come and go again and again, and receding leave sloping mesas to the east, out of which whole states might have been carved; and later it has seen great fissures open on those mesas and belching up great streams of lava build up on top of the sedimentary plane, range after range of eruptive mountains only slightly more insignificant than itself. It has witnessed the birth of life in the waters leaving its shores, seen this life develop from that of the unicelled amoeba to that of the gigantic monsters of the Tertiary time, who dragged huge, slimy bodies over its rugged sides. It saw the war of Jove and the Titans; witnessed the advent of man, and has seen man rival the powers of the gods with his inventions. When man shall have vanished from the face of the earth, and the world shall become silent, cold, dark and deserted, it will still stand in solemn majesty—like the Sphinx of Egypt—a monument of terrestrial age.

What I desire to emphasize at this time is that this part of Arizona under discussion, the Gila valley in Graham county, has a geological history generally speaking in part with that of southern New Mexico and southwestern Texas; and distinctly different from that of the central or western part of the State, which is intimately connected with the history of the Sierra Nevada ranges. I do not mean to imply that all the territory is alike, because there are always local conditions peculiar to each locality examined.

The Bear Springs Oil District is located in the central part of Graham county, State of Arizona, about twelve miles west of Safford, the county seat. Its exact geographical limits are not very definitely fixed, but I should say it embraces the territory included in Townships 4 to 7 South, Ranges 22 to 25 East, Gila and Salt River Meridians. The Springs that give name to the district are found in Section 1, of Township 7, Range 23, where a strong stream of excellent water flows continuously. At this point, the valley is about 18 to 20 miles wide, sloping down from each side to the Gila river, which flows down to the northwest through about the middle of the valley. The formation of the entire valley is wholly sedimentary, consisting of alternating strata of sandstone and lime. In the bottoms of the gullies near the springs is to be seen a stratum of blue clay and shale, giving good indications of oil on digesting in spirits of turpentine. The mesa here has been deeply eroded about 200 feet or more, showing all the various successive layers of sand, lime, clay and shale. Along the rim extends a layer of conglomerate of moderate sized pebbles, three to four inches in diameter, quite firmly cemented together with a sandy calcareous cement. Near the springs and to the north and west, perhaps a mile, are to be seen several strata of detrita-

course the high mesa is wholly granitic and no evidence of underlying sedimentary series was apparent. On the east side of the valley, from the point where the Gila river breaks into the valley, to the Cochise county line, is the same series of structures described on the west side. The sandstone is thicker bedded and more compressed. This series I traced across the entire breadth of the Peloncillo range into the valley of the Gila at Duncan, twenty-five miles or more distant to the eastward. This series is evidently continuous except for fissures and openings through which eruptive matter has flowed. One of these I found in a cut near the summit of the range, extending northwest and southeast along the axis of the fold, filled with ash and scoriaceous matter.

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Respectfully submitted,  
WALTER C. GAYHART,  
Geologist.  
Box 1602, Los Angeles, Cal.

file 5-7

OUR O. OXIDE NOISE JOURNAL



### DRILLING REMAINS

BLM's Manton Botsford, left, talks with Paul, one of the Oklahoma students, and John Wilson, who is studying the oil drilling operations of the 1920s at the Hot Wells Dunes area.

## History

(Continued from Page 1B)

trip to the San Simon. He usually works with the Mimbres culture in New Mexico, but needed what Gilman describes as "desert experience," which he was certainly getting here. The crews start early to

take advantage of what cool temperatures are available. Even so, the day the accompanying photos were taken, it reached 106 in the shade, and there wasn't any shade.

Stokes was leading the work at the pit house excavation, hopeful that the unusual find will yield more clues to the people, possibly Mogollon, who were there. Unusually angled post holes, sloping sides to the pit house depression and other unique features provided plenty to ponder. Materials from the hearth may provide more clues while 800 A.D. ceramics offer some more puzzles to try and solve.

The study team is finding the work challenging and fascinating, as they try to learn more about the variety of cultures who have made this desolate place home, or "temporary home," over a long span of years.

## Gold

(Continued from Page 1B)

that seen by all visitors to the Hot Wells Dunes area, as the skeletons of huge drilling equipment lies rusting in the desert sun. The immense wheels were part of the drill rig cable spool. The tall derrick was held in place by more large cables extending out to stabilize it.

This was the work of the Whitlock Oil Co., which reported "oil found" in 1927. In actuality, according to government reports, a trace of oil floated on the first large volume of hot water that erupted from the 1,922-foot hole. The water drained off a quarter-mile away, making a water impoundment which can still be seen.

Wilson's research information, when completed, will be used by the Bureau of Land Management, sponsor of the study, to provide interpretations to the public on these unusual efforts to gain wealth from Graham County soils.

# Sifting history from the Sands of San Simon



TOP: Gene Riggs is a local volunteer who has worked on many archaeology sites in the area. Here, he sifts materials from a small excavation, seeking artifacts of the past. BELOW: Dr. Pat Gilman, left, watches as Bob Stokes checks an unusual pit house site.



TOP: The inhospitable sand dunes of the San Simon make hard work of area archaeology. RIGHT: Roy Conner, area volunteer, holds a small archaic point found in the desert sands. Photos by Toni Williams

## Study sites yield clues to the past

By Toni Williams  
Features Editor

A team of professional archaeologists and volunteers are again at work in the San Simon Valley, east of Safford, searching the desert area for prehistoric ruins, workers sift materials for bits and pieces of the life that was found there in times as far back as 3,000 to 1,000 B.C. And they are finding what they seek.

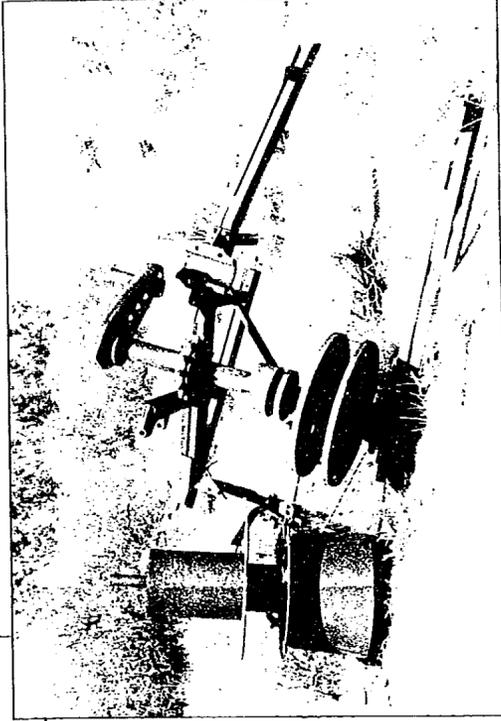
They are also finding some things they didn't expect to find.

Dr. Pat Gilman, with the University of Oklahoma, has been coming to this part of Arizona for a number of years. Her particular interest is the people who lived along the San Simon about 250-500 A.D. Their small, dwelling sites around up and down the slopes in a local area, she has never before been found, is of particular interest to the researchers. It was sheer luck that a survey crew chanced upon this "necropolis" in the backyard, by noting a faint trace of disorientation in the sand. From the pit house, teaching its story, is it apparently in the "wrong place," but it is also the "wrong place" for the people expected to be in the area. Only time and more study will determine who those people were; they were apparently using the area during either a time of drought and little food or for a seasonal camp. Large amounts of burned rabbit bone give some clue to how these people lived.

Other finds have included points (arrowheads) from a wide range of times and in a wide range of materials. Obsidian is found naturally in the area and small bone artifacts which have been clipped off during tool making.



Dr. Pat Gilman looks over a core, all that is left after early people were through chipping away pieces for stone tools. This was one of the artifacts found from a 10 X 10 meter test area; other items found went into bags and bottles for safe keeping.



Drilling equipment left after a 1972 oil exploration project can be seen in the Hot Wells Dunes Recreation Area southwest of Safford. The huge equipment was used by the Whillock Oil Co. No oil was found but the hot water which resulted from the drilling operation has served to make quite a spa in the area to this day.

## Many seek 'black gold'

By Toni Williams  
Features Editor

A part of the archaeology study on the San Simon is an archaeological study by John Wilson, Ph.D. is investigating two interesting sites on the Hot Wells Dunes Recreation Area.

These are just a few of a larger number of oil drilling sites dating to about 1927, a part of the **Bowie District** where the search for "black gold" was then under way. His research has found reports of oil drilling from many years prior to that, as well as into the 1930s. The hope for riches from the desert sands has been a dream unwilling to die.

The work and the promise of the oil wells seems to have been mostly speculation with some wild sales pitches thrown in, just an unquenchable desire for the riches of the well.

Wilson has found reports on newspaper "oil selection restaurant" being used in the area. One report even shows a strange

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week project are about a dozen assistants, not all trained archaeologists. Several are oil workers, who have worked with Gilman, offering her visits to Arizona. More students, some graduate assistants, from the Oklahoma university, are working on their master's programs.

One, Bob Stokes, is on his first See History Page 3B

**COAL, OIL AND GAS OBSERVATIONS  
AT OR NEAR  
BEAR SPRINGS**

Some 200 citizens of Globe, Miami, Phoenix, etc., hold approximately 30,000 acres (twelve government oil and gas permits) at Bear Springs, and about 12,500 acres (five government oil and gas locations) north of Bowie. They have gathered up considerable data on oil and gas possibilities in the Gila Valley, Graham County, Arizona, and these indications should show our Arizona people and others, that the chances of finding oil or gas on these locations are unusually good and test wells should be drilled to bring in new wealth and prosperity to all.

In 1905, George W. Reed, Conductor, S. P. Ry. Globe, found an oil seep south of Geronimo. In 1910 he says "I got Dr. Ricketts to look at it—take a sample and test it—it proved to be oil. Dr. Ricketts, Geo. Sanks, myself and others located a number of claims."

In 1919 Leroy Kennedy and others located in the neighborhood of 30,000 acres, for oil, at Bear Springs and north of Bowie. This on account of well defined structures, surface indications and geological data.

Walter C. Gayhart, Los Angeles, Calif., says: "Better than Montebello and certainly as good as Fresno or the Texas fields, from surface indications." Mr. Gayhart further states his conclusions on our Bear Springs structure:

"1. Hydro-carbons in the form of petroleum and natural gas have impregnated the sands and shales and to some extent are still to be found in them, overlying a large part of the valley and cropping out or exposed by deeply eroded gullies all over your structure.

"2. That there is no evidence whatever in this part of the valley of either volcanic or igneous action, nor of any mineralization or any other agency destructive to oil, other than that of denudation through the porous surface covering.

"3. That there is highly apparent geological reasons for predicting the finding of oil in the strata underlying the valley drift at no great depth—say 2500 to 3000 feet.

"4. And that from all the facts, I am glad to say professionally and conscientiously, that the showing here made amply justifies the sinking of a test well to 4000 feet unless oil or granite be struck at a shallower depth."

In November, 1924, Mr. David H. Gustavson, Geologist, now with the Pan American Petroleum Company, visited Bear Springs. He told Mr. Will A. Peters of Globe, and a number of Miami people, "that Bear Springs possessed a perfect structure and the sands that should be productive of oil would, he believed, be found at a depth of 2800 to 3100 feet below the surface. The formation is sedimentary and of the Carboniferous period." He said "that he believed the indications in the Bear Springs district were good for oil."

He also discussed the San Simon Valley, with 130,000 acres of land, with many indications that oil might be found at a depth of from 2100 feet to 2500 feet.

Mr. Gustavson, who has been through the Russian, Roumanian, Galician and South American oil fields, said he believed that the State of Arizona would become one of the great oil producing sections of America.

In 1925 Mr. Kirby Smith, Pasadena, Calif. (with the G. C. Julian Company), accompanied by David H. Gloss, of the Pasadena Star-News, looked over the Bear Springs country. He said "there are four distinct domes at Bear Springs and oil should be found, if drilled for."

In February, 1926, Mr. Mulford Martin, Jr., Independence, Kansas, Oil Drilling Contractor, told Engineer Drummond, and others of the Pinto Valley Mining Company, Globe, "that the most likely place for oil that I have seen, since leaving Amarillo, Texas, is at Bear Springs."

Bob Knowles, of Geronimo, says: "I drilled a well 810 feet deep, found oil and gas—it would have made at least six barrels—have a flowing well of warm, saline water, which shows a trace of paraffine. I know that oil seeped into excavation made for Geronimo Hotel and the Railroad cut. Our people here have known of an oil seep in Gila River bottoms, east of here, for a long time.

In drilling Indian Hot Springs well a number of years ago, it is said a heavy flow of gas was encountered.

On February 12, 1926, Messrs. M. C. Trumbull and H. C. Proctor, El Paso and Mansfield, La., with the Trumbull Oil Locating Instrument,

**To the Right  
To the Left  
READ CAREFULLY**

*An Unusual Opportunity*  
**FOR THE DEVELOPMENT OF ARIZONA RESOURCES**  
And Your Own Prosperity

**Buy Bear Springs Oil at 50c**  
TO OUR ARIZONANS

**DON'T let it be the same old story in Arizona as it has been in every other oil state, "Of going far afield to seek the treasure hidden under our own hearth-stone."**

**Buy this Company's stock now, AND THEN BUY MORE.**

**The officers and directors are buying stock as they believe this is their OPPORTUNITY and they are grasping it.**

**NO PROMOTION STOCK—NO SALARIED OFFICERS—they share in dividends like yourself, as their only source of income.**

"The wildcat oil well is a great profit-maker if it develops commercial production. A wildcat oil lease takes on thousands of per cent additional value after the drill hits a productive oil sand. A lease may be worth but a relatively small amount before production is struck, but if a gusher is brought in, a 40-acre lease may sell for more than a million dollars, as we know has been the case in the past."—Mining and Financial Record.

**Bear Springs Oil and Gas Company stock is selling at 50c a share—one-half par value—for a short time. When this issue is sold, the price will be \$1.00 a share.**

*References: Any Bank, Globe and Miami, Arizona*

**Bear Springs Oil and Gas Company**

*Authorized under the strict Arizona Corporation Laws,  
Investment Company No. 1919, Permit 2793, May 14, 1926.*

P. O. Box 2469  
Globe, Gila County, Arizona.

made a few tests at Bear Springs. At a meeting in Safford that night they said they got some very interesting readings, and on that account on March 6, 1926, Mr. H. C. Proctor went over a portion of Bear Springs again with the scientific machine, which he said indicated a lot of oil, which he believes to be comparatively shallow. Since then Mr. Proctor has leased nearly all of the patented land from Pima to Geronimo and expects to have two rigs on this acreage soon.

Fossilized limestone, uplifted in foothills of Gila Mountains, north of the Gila River, from Geronimo, and Fort Thomas, show coroid stems and shells of the Carboniferous period.

Coking and blocking coal within 23 miles of Bear Springs oil locations, University of Arizona, Bulletin No. 41, says: COAL (Bituminous).

Locality: Pinal County, Deer Creek field, at the eastern end of the county, 35 miles southeast of Globe, and east of Winkelman area, 30 square miles; two workable beds, 24 to 30 inches; blocking and coking.

**BEAR SPRINGS OIL AND GAS CO.**

An Arizona Corporation—an unusual company that has not given a share of stock away for nothing. Our list of officers and directors follow:

Leroy Kennedy, President, Editor and Manager, "Silver Belt," Miami.  
Will A. Peters, Vice President, Automobile Dealer, Globe.  
Ralph E. Herron, Treasurer, Editor and Manager, Arizona Record, Globe.  
E. F. Knowles, Secretary, Manager Whalley Lumber Company, Globe.  
Bert S. Moore, Proprietor Popular Confectionery, Globe.  
Wm. B. Kelly, Publisher Graham County Guardian, Safford.  
Temple P. Penrod, Phoenix, State Representative E. A. Featherstone Co.  
R. A. Clifford, Former Manager, Murray-Layne Co., Globe.  
John C. Holloway, Warehouse Foreman, S. P. Railway, Miami.  
George W. Reed, Passenger Conductor, S. P. Railway, Globe.  
Louis V. Strukan, Merchant, Globe.

As you will note, all are responsible business men. It is their belief, as well as my own, that oil can be brought in on the Bear Springs (Fort Thomas) and United States well (Bowie), Arizona, structures, in paying quantities at a depth of less than 4,000 feet. Noted Geologists have passed favorably on our locations.

It is needless to tell you that this is a wildcat venture, pure and simple. You know the chances to lose, but if you win, you win big, and the Bear Springs Oil and Gas Company, that has drilling contracts on 15,114.26 acres in these fields, guarantees that 80 per cent of your money will be used in connection with drilling the wells.

We have no Promotion Stock nor Salaried Officers, so you are sure to "get a run for your money." The Officers and Directors of this company who have large interests in Government Oil and Gas Permits at Bear Springs and Bowie, have paid cash for their stock at the same price the public is paying. They are spending their money to bring in oil, thereby benefitting the entire State of Arizona. They will be satisfied with the royalties from their interests and the dividends from this company's stock they buy, and, as they took no Promotion Stock, they feel that everybody should help develop this oil by buying as much stock as they can afford.

We have permission from the Arizona Corporation Commission to sell 50,000 shares of our stock at fifty cents a share. (Par value \$1.00).

We expect this issue to be oversubscribed very soon. If you wish to come in with us kindly advise by wire how many shares you want and we will hold same pending your remittance, if immediately following by mail. In case this issue is oversubscribed, we reserve the right to cancel order and return your money to you.

Send for our prospectus.

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Signed:..... (Print Name as You Want it on Stock Certificates)

Street..... Town..... State.....

Miami  
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Investment Company No. 1919, Permit 2793, May 14, 1926  
Globe, Gila County, Arizona