

P-W

Benedum Trees-Arzberger #1
Unknown---Sec. 19-Twp. 15S-R 26E
Cochise, County No Permit 2-15

2-15.
10

County Cochise

Area Willcox

Lease No. _____

Well Name Benedum Trees Arzberger #1

Location SE/4 Sec 19 Twp 15S Range 25E Footage est. 1980 fr 1980 fe 1

Elev _____ Gr _____ KB _____ Date 4-3-31 Spud _____ Complete _____ Total 3298
Abandon 10-28-31 Depth 3298

Contractor: _____ Approx. Cost \$ _____

Drilled by Rotary _____
Cable Tool _____

Casing Size Depth Cement

Production Horizon _____

Initial Production D & A

REMARKS:

Elec. Logs (2)
Applic to Plub _____ Plugging Record _____ Completion Report _____

Sample Log _____
Sample Descript X
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 # 02-003-05025

PERMIT NO. None Date Issued _____

2-15

REPORT OF PLUGGING OF ARZBERGER #1, COCHISE COUNTY, ARIZONA.

Hole plugged back to the bottom of 8 $\frac{1}{2}$ " casing--3285 feet:
Dumped five sacks of cement: Cut 8 $\frac{1}{2}$ " casing at 3225; pulled to bottom
of 10" casing--2348 feet: Filled with heavy mud to bottom of 10" casing;
After pulling all of 8 $\frac{1}{2}$ " casing started 10" casing: Filled with heavy
mud to bottom of 12 $\frac{1}{2}$ " casing ---1468 feet; After pulling all of 10"
casing out 12 $\frac{1}{2}$ " casing at 1019 feet: Filled with heavy mud to bottom
of 15 $\frac{1}{2}$ " casing--638 feet; After pulling all of 12 $\frac{1}{2}$ " casing filled
hole with heavy mud; Pulled 15 $\frac{1}{2}$ " casing and filled hole with heavy
mud to surface; Put cement cap over hole at the bottom of the cellar.

*Two Johns Drilling Co.
By R. W. Hickman agt-*

R. W. Hickman being first duly sworn deposes and says:
That the foregoing is a true description of the way in which he
closed the Arzberger Well #1; That all of the statements contained
in the foregoing account are true .

R. W. Hickman

Subscribed and sworn to before me this 7th day of November, 1931.

My Commission Expires March 8, 1933.

Martin L. Lundy
Notary Public

"Thanks"
make file

no permit

2mestone

IN' August Report of the Bear RY Springs Oil & Gas Company W

has
at
of
im-
et-
ich
ug-
on
for
T.
st a

ner.
oss
ven
to
cks

the
the
re-
will
ee-
wall
that
im-
s at

of is
used
City

ords.
mmer
stroy-
heth-
athing
and
stone's
ming-
e pool
main-
esert;
e and
and
it.
tone's
ave a
ig-un-
of old-
f the
Macia
ted to
thers.
at for

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. 2SE., 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. 2SE., State Land 17 miles north of Bowie. Pinal Oil Co. in return for loan of 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 5-5-8 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. 28E. Reed permit, still negotiating with eastern capital to drill his 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 O'Keil drilling machine, is on location and the option calls for completion of the well.

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. 28E., 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. 30, T. 5S., R. 24E., 7 miles NW of Pima, shut down at 2630 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 Colrazier 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. Kissa No. 1 Well, Sec. 27; T. 18N., R. 2W., 29 miles north of Prescott, in charge of A. L. Kissa, 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 Pantenney 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 INCORP.—

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. Kehfer 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.

file 2-15

2-15

Taken from Helms Report

PARTIAL LIST OF WELLS DRILLED IN ARIZONA

APACHE COUNTY

1. Hogback Oil Company No. 1. Sec. 24, T. 23N. R. 30E.
 340' from N. line, 300' from W. line of NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 24. ✓
 Drilling commenced November 15, 1926.
 Drilling completed May 7, 1927.
 Total Depth 1510', in gray granite.
 No shows recorded.
 Log on file and plotted.
 Located on upthrown fault block South end of Defiance Uplift.
2. U. S. Indian Service Water Well, at junction of roads, South of Window Rock and 2 miles East of St. Michaels.
 T. D. 1795. Surface dips 15-25° E., in Chinlee Fm.
 Hole bottomed in Cutler Formation. No shows oil or gas.
 Log on file.
 E. flank Defiance Uplift.
3. Zuni Oil Company No. 1 Sec. 6, T. 19N., R. 24E.
 T. D. @ 1000 feet. Start in Chinlee, bottomed in lower Chinlee. ✓
 No shows oil and gas on our records.
 No log on file.
 Located on NE flank of so-called Carrizo Anticline.

COCHISE COUNTY

1. Arzberger No. 1 (SE $\frac{1}{4}$) Sec. 19, T. 15 S., R. 26 E. ✓
 Commenced drilling April 3, 1931.
 Completed drilling October 28, 1931.
 T. D. 3298'.
 No shows recorded on log.
 Temperature at 3225-35' 110° F.
 Log on file and plotted.
2. Bowie Oil Leasing Syndicate No. 1. (SE $\frac{1}{4}$ NW $\frac{1}{4}$) Sec. 16, T. 13 S., R. 28 E. ✓
 Commenced * * * * *
 Completed drilling February 1, 1925.
 T. D. 4110'.
 Shows:
 1925-35 sso
 2100-2300 sdy sh, sso
 2670-2700 sdy sh, sso & g
 2958-62 sd, sso & g
 3580 sh, sso & g
 3815-3852-4110 shows oil when tested with chloroform also H₂S.
 Log on file and plotted.

3. Funk Benevolent Corp., No. 1 Fee. SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 27, T. 13 S., R. 30 E.

Commenced drilling 1929
Completed - - still drilling Oct. 5, 1938
Depth to date 6440'
Temperature at 2430' - 165°
Temperature at 6400' - 274°.
Shows of oil and gas numerous, beginning at 1730' and occurring at frequent intervals to bottom.
Hole full of water; operators attempting shut-off and swab test.
No correlation of formations available but suggestion is offered that the conglomerate in lower 500' of hole may be basal Cretaceous.
Log on file at 6400'.

4. Southern Pacific Railroad Water Well, Willcox.
1928-30

T. D. 650'.
Produced light oil, kerosene and gasoline; pumper sold 2,800 gallons to local ranchers at 10¢ a gallon.
Well not used since 1930.
Log on file and plotted.

MARICOPA COUNTY

1. Camelback No. 1 NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 30, T. 2 N., R. 4 E.

Drilled 1907.
T. D. 2818'.
Shows numerous between 618' and 2400'.
Log on file and plotted.
Located on flank of Camelback Uplift.

2. Tannehill No. 1, Beardsley. SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 25, T. 4 N., R. 2 W.

T. D. 3350'
Shows:
2540 Light oil
3280 Black shale saturated with oil, some gas.
Log on file.

NAVAJO COUNTY

1. Adamana Oil and Land Company No. 1.

Sec. 4, T. 14 N., R. 20 E.

T. D. 3387'.
Shows:
1740-50 sh, oil
1940-50 sh, oil and gas
2250-2300 sd, oil
2480-2495 sd, oil
3380-(?) sdy, ls, oil

Hole lost after fishing for tools. Never tested bottom show.
Log on file.
Located 2 miles N. of Richards Lake-Snowflake fault and 2 miles E. of anticline.

2. Black Canyon No. 1 Sec. 20, T. 16 N., R. 17 E.
T. D. 510'. ?
Core drill rig, took 7' cores of Coconino sandstone, which lie on ground near rig.
No shows on record.
No log on file.
Surface - Coconino Ss.
Located N. of Richards Lake-Snowflake fault on W. Flank of anticline. ✓
3. Great Basin Oil Company No. 1. Fuller (E. 5. Taylor). Sec. 21, T. 17 N., R. 20 E.
T. D. 4675'.
Shows:
1925-35 sd, salt water, gas.
3590-96 ls, oil
3685-3870 arkosis sd, oil on tools, water.
Correlations vague, but bottom hole may be Cambrian.
Log on file and plotted.
Supposedly located on structure by Dorsey Hager, but proved to be off structure. ✓
4. Holbrook Oil Company No. 1. Sec. 23, T. 15 N., R. 18 E. ✓
T. D. 2400' in 1922.
Deepened as Jerome-Navajo Drilling Company to 3775' in 1925.
Show gas?
No log on file.
Located on structure? Doubtful
5. Hopi Oil Company No. 1. Sec. 21, T. 15 N., R. 19 E. ✓
T. D. 2500'
No log on file.

YAVAPAI COUNTY

1. Arizona-Verde Oil Company. NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 14, T. 13 N., R. 5 E.
T. D. 4625'.
Bottomed in igneous rock.
Correlation: 0-250'; Redwall ls ?
Log on file
2. Arizona-Verde Oil Company. NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 9, T. 13 N., R. 5 E. ✓
T. D. 1225'.
Bottomed in igneous rock.
Log on file.

3. Chino Valley Oil and Mining Company No. 1.
Sec. 27, T. 18 N., R. 2 W.

Drilled 1913
T. D. 1800' SSO.
No log on file.
Surface: Redwall ls.
Located on NW trending anticline in Redwall ls.

YUMA COUNTY

1. J. R. Loftus No. 1 (Stovall) NW $\frac{1}{4}$ Sec. 4, T. 8 S., R. 13 W.

Commenced
Completed
T. D. 2360'.
Temperatures:
2405-45 110°
2500 120°
2545 140°
Shows: Black mud at 2545-50', methane gas.
Log on file and plotted. No correlations.

Page 4.

3. Chino Valley Oil and Mining Company No. 1.
Sec. 27, T. 18 N., R. 2 W.

Drilled 1913.
T. D. 1800' SSO.
No log on file.
Surface: Redwall ls.
Located on NW trending anticline in Redwall ls.

YUMA COUNTY

1. J. R. Loftus No. 1 (Stovall) NW $\frac{1}{4}$ Sec. 4, T. 8 S., R. 13 W.

Commenced
Completed
T. D. 2360'.
Temperatures:
2405-45 110°
2500 120°
2545 140°
Shows: Black mud at 2545-50', methane gas.
Log on file and plotted. No correlations.

ARZBERGER WELL #1 (same as BENEDUM TREES-ARZBERGER #1
19-15S-26E

COCHISE COUNTY

Commenced drilling April 3, 1931.
Finished " Oct. 28, 1931.

20" Casing in hole 119 - 7"
Set at 129 = 4
15 1/2" Set at 638 - 2
12 1/2" " " 1468
10 " " 1965
Reamed to 2348
8 1/2" Set at 3285

TD 3298

have smpl? log

	0	40	Yellow Clay
	40	83	White Shale
	83	103	Water sand
	103	105	Yellow clay
	105	110	Clay
	110	125	Gravel
	125	150	20" Casing in hole 119-7" White & yellow clay
	150	165	Set at 129-4 Red shale, sandy
	165	180	Soft red shale
	180	250	red shale & gyp
	250	255	Red shale
	255	260	Hard shells
	260	265	Red shale
	265	283	Hard shells & gyp
	283	287	Red shale
	287	295	Gyp
	295	305	Red shale and sand
	305	355	Not sure about water - 20" broke in Gyp, shells and red shale
Water	(355)	360	Gravel
	(360)	398	Red sand & gravel
	(398)	400	Gravel
	(400)	408	Red sand & gravel
	(408)	412	Hard shell, very sharp
	412	419	Gravel & boulders
	419	585	Sand & gravel, very hard
	585	590	Sandy shale, very sticky
	590	615	Pink sandy shale
	615	635	Red sandy shale
	635	665	Pink sandy shale & gravel
	665	695	15 1/2" Set at 638-2 Red & pink sandy shale w/strks of gravel
	695	700	Pink sandy shale & gravel
	700	715	Sandy gravel w/pink shale brks.
	715	755	Pink shale & sandy gravel
	755	805	Pink shale & gravel
	805	840	Pink shale very sticky
	840	856	pink shale
	856	880	Pink shale, sand & gravel, soft
	880	940	Pink shale & sand
	940	955	Pink shale
	955	1015	Pink shale, very sticky
	1015	1045	Pink shale
	1045	1065	Pink shale, sticky
	1065	1100	Pink shale, sandy
	1100	1125	Red sand
	1125	1140	Very hard brown gravel
	1140	1230	Brown sand & gravel
	1230	1245	Shale, sand & gravel
	1245	1250	Hard brown gravel
	1250	1260	Sand & gravel
	1260	1300	Brown sand & gravel
	1300	1310	Brown sand, carries water

ARZBERGER #1-Sec 19-T15S-R26E
COCHISE COUNTY
filed with

ARZBERGER WELL #1 (same as Benedum Trees-Arzberger #1) COCHISE COUNTY

1310	1325	Brown sand
1325	1340	Brown sand, hard
1340	1365	Brown sand w/hard shells through it
1365	1385	Brown sand & shale
1385	1395	Sand, gravel & shale
1395	1408	Shale, red
1408	1410	Sticky red shale
1410	1415	Red shale
1415	1430	Sand & shale
1430	1435	Red shale
1435	1460	Gyp
1460	1465	Red shale
1465	1540	Gyp Cemented 12½" w/165 sacks cement 1410-1468
1540	1588	Gyp w/gray shale
1588	1592	Quick sand, dark brown-water
1592	1598	Gyp & gray shale
1598	1620	Red sand
1620	1680	White shale
1680	1690	Conglomerate
1690	1750	Yellow conglomerate
1750	1775	Red conglomerate
1775	1788	Gray conglomerate & sandy
1788	1798	Red conglomerate
1798	1843	Gray conglomerate, hard
1843	1875	Dark gray water sand
1875	1905	Dark gray grit with small bits of bentonite
1905	1975	Gray grit with gray shale streaks 10" set at 1965
1975	1980	Gray sand - hole full water
1980	1995	Gray shale w/strks. of sand
1995	2000	Dark gray sand
2000	2006	Gray sand & shale
2006	2010	Gray sand
2010	2018	Gray shale with sand
2018	2060	Gray sand
2060	2080	Sand water
2080	2100	Gray sand, very fine
2100	2105	Water sand
2105	2115	Water sand gray, hard & very fine
2115	2150	Gray sand, soft
2150	2190	Dark gray sand
2190	2200	Gray sand
2200	2215	Pink shale and sand
2215	2225	Shale streaks in gray sand
2225	2290	Gray sand, hard water 2285 to 2290
2290	2320	Gray sand
2320	2325	Gray sand & red shale, drill very slow
2325	2348	Gray sand 10" Reamed to 2348
2348	2360	Dark brown sand, very hard
2360	2380	Dark brown sand with brown shale streaks
2380	2395	Dark brown sand, very hard
2395	2415	Brown sand
2415	2425	Red sandy lime
2425	2450	Brown sandy lime, very hard at bottom
2450	2475	Brown sandy lime
2475	2520	Red volcanic mud & cinders
2520	2545	Red volcanic mud
2545	2568	Red sand & shale
2568	2620	Gray sand with small showing of lime
2620	2640	Brown sand
2640	2655	Gray sand
2655	2680	Red shale with sand shells
2680	2700	Red sandy shale and shells
2700	2720	Red sandy lime, hard
2720	2735	Red sandy lime, very hard
2735	2755	Red sandy lime, hard
2755	2790	Brown shale and very hard shells
2770	2780	Red shale and shells
2780	2810	Red mud with very thin hard shells
2810	2830	Red mud and brown hard shells

ARZBERGER WELL #1 (same as Benedum Trees-Arzberger #1)

COCHISE COUNTY

2830	2855	Red mud with thin hard shells
2855	2945	Red mud with hard brown shells
2945	2955	6 B P H water in brown grit
2955	2965	Brown grit
2965	2985	Brown sand and shells
2985	2990	Brown shale & shells
2990	3015	Brown sandy lime, hard shells
3015	3030	Brown shale
3030	3035	Hard brown sand
3035	3045	Brown shale
3045	3075	Brown sandy lime
3075	3100	Brown shale with thin hard shells
3100	3125	Brown sandy lime
3125	3150	Brown shale & thin hard shells
3150	3165	Brown sandy lime
3165	3180	Red limey shale
3180	3215	Red shale with lime covered brown boulders
3215	3230	Red gravel - water 7 boilers Temperature of water 110
3230	3250	Red shale
3250	3255	Red shale and gravel
3255	3270	red shale & gravel mixed with brown shale
3270	3275	Red shale and gravel
3275	3285	Red lime 8 $\frac{1}{4}$ set at 3285

Total depth 3298, ran into crevice at 3285

L O G

ARZBERGER WELL #1

Cochise County, Arizona

19-153-468.

Commenced drilling April 3, 1931.
Finished " Oct 28 1931

20" Casing in hole 119 - 7"
Set at 129 - 4
15 1/2" Set at 638 - 2
12 1/2" " " 1468
10 " " 1965
Reamed to 2348
8 1/4" Set at 3285

	0	40	Yellow Clay
	40	83	White shale
	83	103	Water sand
	103	105	Yellow clay
	105	110	Clay
	110	125	Gravel
	125	150	20" Casing in hole 119-7" White & yellow clay Set at 129-4
	150	165	Red shale, sandy
	165	180	Soft red shale
	180	250	Red shale & gyp
	250	255	Red shale
	255	260	Hard shells
	260	265	Red shale
	265	283	Hard shells & gyp
	283	287	Red shale
	287	295	Gyp
	295	305	Red shale and sand Not sure about water 20" broke in
	305	355	Gyp, shells & red shale
	(355	360	Gravel
Water	(360	398	Red sand & gravel
	(398	400	Gravel
	(400	408	Red sand & gravel
	(408	412	Hard shell, very sharp
	412	419	Gravel & boulders
	419	585	Sand & gravel, very hard
	585	590	Sandy shale, very sticky
	590	615	Pink sandy shale
	615	635	Red sandy shale
	635	665	Pink sandy shale & gravel
	665	695	15 1/2" Set at 638-2 Red & pink sandy shale w/strks. of gravel.
	695	700	Pink sandy shale & gravel
	700	715	Sandy gravel w/pink shale brks.
	715	755	Pink shale & sandy gravel
	755	805	Pink shale & gravel
	805	840	Pink shale very sticky
	840	856	pink shale
	856	880	Pink shale, sand & gravel, soft
	880	940	Pink shale & sand
	940	955	Pink shale
	955	1015	Pink shale, very sticky
	1015	1045	Pink shale
	1045	1065	Pink shale, sticky
	1065	1100	Pink shale, sandy
	1100	1125	Red sand
	1125	1140	Very hard brown gravel
	1140	1230	Brown sand & gravel
	1230	1245	Shala, sand & gravel
	1245	1250	Hard brown gravel

No permit

1250	1260	Sand & gravel
1260	1300	Brown sand & gravel
1300	1310	Brown sand, carries water
1310	1325	Brown sand
1325	1340	Brown sand, hard
1340	1365	Brown sand w/hard shells through it
1365	1385	Brown sand & shale
1385	1395	Sand, gravel & shale
1395	1408	Shale, red
1408	1410	Sticky red shale
1410	1415	Red shale
1415	1430	Sand & shale
1430	1435	Red shale
1435	1460	Gyp
1460	1465	Red shale
1465	1540	Gyp Cemented 12 $\frac{1}{2}$ " w/165 sacks cement 1410-1468
1540	1588	Gyp w/gray shale
1588	1592	Quick sand, dark brown-water
1592	1598	Gyp & gray shale
1598	1620	Red sand
1620	1680	White shale
1680	1690	Conglomerate
1690	1750	Yellow conglomerate
1750	1775	Red conglomerate
1775	1788	Gray conglomerate & sandy
1788	1798	Red conglomerate
1798	1843	Gray conglomerate, hard
1843	1875	Dark gray water sand
1875	1905	Dark gray grit with small bits of bentonite
1905	1975	Gray grit with gray shale streaks 10" set at 1965
1975	1980	Gray sand - hole full water
1980	1995	Gray shale w/strks. of sand
1995	2000	Dark gray sand
2000	2006	Gray sand & shale
2006	2010	Gray sand
2010	2018	Gray shale with sand
2018	2060	Gray sand
2060	2080	Sand water
2080	2100	Gray sand, very fine
2100	2105	Water sand
2105	2115	Water sand gray, hard & very fine
2115	2150	Gray sand, soft
2150	2190	Dark gray sand
2190	2200	Gray sand
2200	2215	Pink shale and sand
2215	2225	Shale streaks in gray sand
2225	2290	Gray sand, hard Water 2285 to 2290
2290	2320	Gray sand
2320	2325	Gray sand & red shale, drill very slow
2325	2348	Gray sand 10" Reamed to 2348
2348	2360	Dark brown sand, very hard
2360	2380	Dark brown sand with brown shale streaks
2380	2395	Dark brown sand, very hard
2395	2415	Brown sand
2415	2425	Red sandy lime
2425	2450	Brown sandy lime, very hard at bottom
2450	2475	Brown sandy lime
2475	2520	Red volcanic mud & cinders
2520	2545	Red volcanic mud
2545	2568	Red sand & shale
2568	2620	Gray sand with small showing of lime
2620	2640	Brown sand
2640	2655	Gray sand
2655	2680	Red shale with sand shells
2680	2700	Red sandy shale and shells
2700	2720	Red sandy lime, hard

Gray sand

Brown sand

Lime

Volcanic

No permit

Page #3 - Log of Arzberger well #1

2720	2735	Red sandy lime, very hard
2735	2755	Red sandy lime, hard
2755	2770	Brown shale and very hard shells
2770	2780	Red shale and shells
2780	2810	Red mud with very thin hard shells
2810	2830	Red mud and brown hard shells
2830	2855	Red mud with thin hard shells
2855	2945	Red mud with hard brown shells
2945	2955	6 B P H water in brown grit
2955	2965	Brown grit
2965	2985	Brown sand and shells
2985	2990	Brown shale & shells
2990	3015	Brown sandy lime, hard shells
3015	3030	Brown shale
3030	3035	Hard brown sand
3035	3045	Brown shale
3045	3075	Brown sandy lime
3075	3100	Brown shale with thin hard shells
3100	3125	Brown sandy lime
3125	3150	Brown shale & thin hard shells
3150	3165	Brown sandy lime
3165	3180	Red limey shale
3180	3215	Red shale with lime covered brown boulders
3215	3230	Red gravel - water 7 boilers. Temperature of water 110
3230	3250	Red shale
3250	3255	Red shale and gravel
3255	3270	Red shale & gravel mixed with brown shale
3270	3275	Red shale and gravel
3275	3285	Red lime
		8 $\frac{1}{2}$ set at 3285

Total depth 3298, ran into crevice at 3285

BOND NO. _____

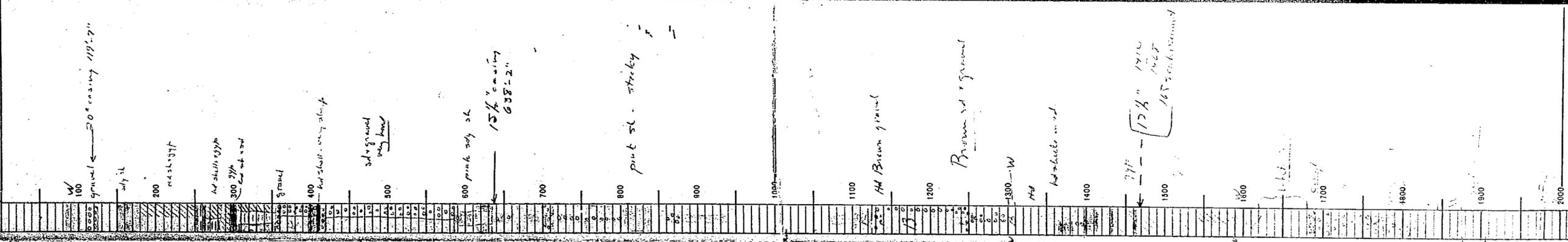
AMOUNT _____

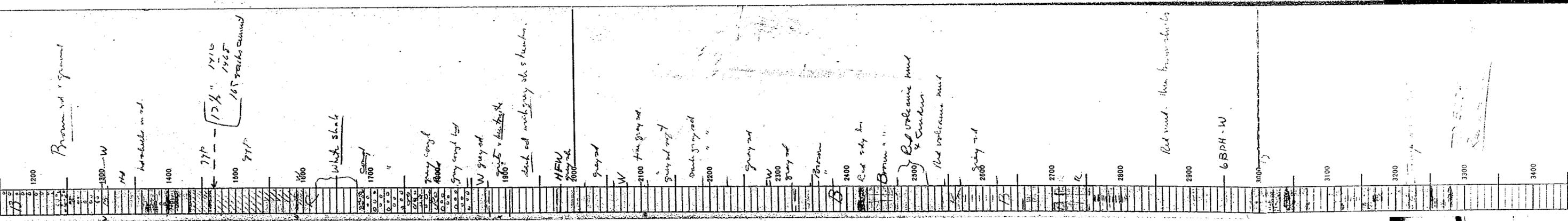
CANCELLED _____

ORGANIZATION REPORT Yes.

no permit

COCAINE 2-15
 153 121E Arzberger COMPANY
 NO. 1
 COMMENCED 4-23 1931
 COMPLETED 10-28 1931
 ELEVATION 10
 REMARKS:





Brown red siltstone

1300 - W

1400
hardly in ad.

1710
1865
12 1/2" interval
165 tracks around

White shale

1700

1800
W gray sd.

1900
dark red with gray sh. & shales.

1950
W

2000

2100
fine gray sd.

2200
dark gray sd.

2300
gray sd.

2400
Red silt. sh.

2500
Brown "

2600
Red volcanic mud & sandstone

2700
gray sd.

2800

2900
Red mud. then brown shales.

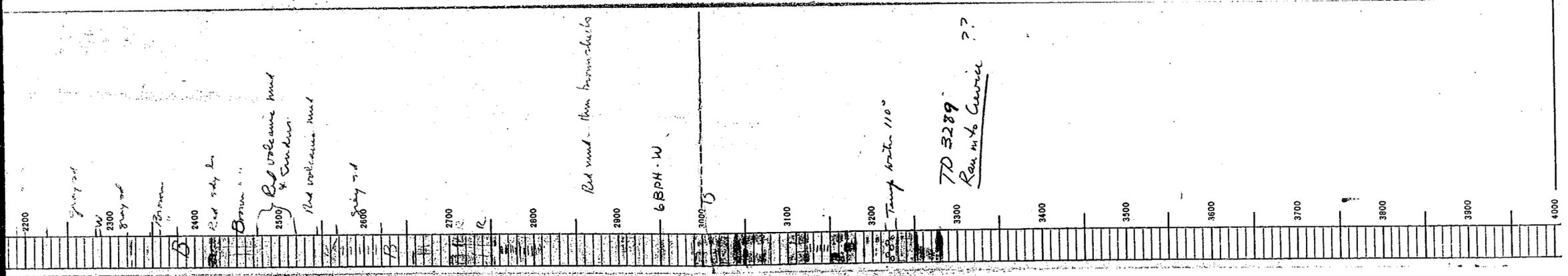
3000
6BPH - W

3100

3200

3300

3400



Gray and W

Gray and Brown

Red silty ls

Brown s.s.

Red silty ls & sandstone

Red silty ls

Red mud - thin laminae

6SPH-W

Temp water 110°

TD 3289

Rem m to Corvici ??

2200

2300

2400

2500

2600

2700

2800

2900

3000

3100

3200

3300

3400

3500

3600

3700

3800

3900

4000

5



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

June 3, 1996

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

file 2-15

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

Graham County Guardian and Gila Valley Farmer (Safford, Ariz.);

March 27, 1931: "Two New Oil Wells Will Be drilled In Willcox District"
"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. se

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.

file 2-15
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. se

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.

The Bennedum-Trees well fourteen miles southeast of Willcox, after a water shut off at about 1400 feet, is now down nearly 2,000 feet. 6/19/31

The Windle well further east towards the mountains is now drilling, having recently been spudded in. 112

August 7, 1931, p. 7: "Willcox Oil Well Is Now More Than 2,000 Feet, Report"
"Douglas - Having already drilled their well to a depth of more than 2,000 feet, the Bendamen and Trees test well in the Willcox 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 Willcox as a result of the well.'"

in Cen-
r school
ld berry
the fact
and cold
the time
h school
valentine
he home
ich was
amed of
and re-
bes and
Gordon
ers left
ecks at
and Mr.
d down
rela-
From
service
Sunday.
ord was
clatives.
olomon-
school
Church-
ro last
led by
sville.
a men-
h coun-
is, rep-
ctly of
peakers
in Cen-
keep ill
was a
day of
son of
ral last
ffering
at ser-
rowing
Martin
ity.
recor-
ntly to
other
ll quite
ie post-
ren and
tokens
easily.
VS
meeting
held
into a
l time
people
is both
a enter-
he week
J. Allen
return.
N. M.
l by Gila
morning
rofessor
sophistic
locations,
erating
students
lex. Em-
Tuesday
do ordi-
mple.
ve Sun-
dren in
who has
Nelson,
o weeks
Tucson
ra. T. S.
a short
Opening
of the oil
returned
and Mrs.
a Nina,
in home-
liza and
walk for
parents.

visiting with Mr. and Mrs. Granell 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. Verno Pace, Mr. and Mrs. D. C. Pace, and Mr. and Mrs. A. E. Jameson.
The post men are getting ready for the spring shipping which will begin as soon as the weather clears up.
Mr. Murrow 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

(Lucie Hervert)
George Echols, who was recently married to Miss Deslie 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 Westera, 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. Mandenhall, Miss Theima Layton and Mr. Solomon of the Layton ward, Mr. and Mrs. Moroni Sklener 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. Ertha Herbert is visiting at the home of her mother, Mrs. Echols.
E. Herbert of Georgetown made a business trip to Glenbar Tuesday.
Miss Clella Bryce 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 Thursday 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 53-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 800 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 brings 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 Texarkana...

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 "double bug" of any sort.
"But I got restless 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 out 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 in 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 oil basin 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 R. Hotel and when the remodeling is completed the entire aspect of the big hostelry will be changed.

TOMRSTONE—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, 13. 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 stage coach, the railroad train and the steamboat, street cars, horseless carriages and their modern development, the fleet 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 King Gibson during the 32 years of his busy life. But until very recently the veteran national chaplain of the U. S. 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 25 of Thatcher Township 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 23 East of Gila and Salt River Meridian in Graham County, Arizona; thence running East 16 rods; thence North 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.

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 DOINIE, Deputy.

First Publication: February 17, 1928
Last Publication: March 9, 1928



East via romantic New Orleans

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 sleepers 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 "Argosur" daily over this route, carrying thru sleepers to St. Louis, Memphis, Washington, D. C. and inter-mediate 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. 5

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

Markets

LOCAL PRODUCE
Buying Prices on Poultry

Heavy Hens, lb	20c
Small Hens	18c
Roosters, lb	10c to 20c
Broilers, lb	25c
Friers, lb	25c

Retail Selling Prices

Bananas, lb	15c
Eggs, Doz	30c
Beets, bunch	5c
Carrots, bunch	5c
Bell Peppers, lb	30c
Radishes, bunch	5c
Celery, bunch	20c and 25c
Lettuce, 2 heads	25c
Cabbage, lb	5c
Green Chili, lb	25c
Fresh Tomatoes, 2 lbs	25c
Lemons, doz	30c to 40c
Oranges	30c to 50c
Cooking onions, 3 lbs	25c
Onions, bunch	5c
Grape fruit, 2 for	25c
New Potatoes, 5 lbs	25c
Rhubarb, 2 lbs	25c
String beans, lb	15c
Squash, lb	5c
Cucumbers, 2 lbs	25c
Cantaloupes	5 to 10
Watermelons	3c
Okra	10c
Plums, 2 lbs	25c
Seedless grapes, 2 lbs	25c
Peaches, lb	15c

EGGS
PHOENIX
Buying Price

Brown, extra	25c
White, extra	25c
White, medium	22c
White, small	14c

SAFFORD

Eggs, brown per dozen	25c
White, per dozen	27.5c

COTTON MARKET
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 same trade or commission house buying. October sold up from 17.75 to 17.95 and was holding around 17.85 in the mid-afternoon market when active months were about 3 to 4 points net higher. Spot quiet, middle 17.10. Close, January, 18.08; March, 18.25; May, 18.45; 18.46; July, 17.46; October, 17.50; December, 15.02 to 15.03.

CATTLE MARKET
KANSAS CITY

CATTLE—7,000; calves 1,000; beef steers and yearlings opening slow, steady to weak; she stock mostly steady; bulls strong; vealers steady to 50c higher; stockers and feeders slow, weak; choice medium weight steers held above \$15; good to choice light weight steers \$11.50; good medium weight wintered Kansas grassers \$12.10; common to Kansas grazed Texas grassers \$7.65-7.85; practical yearling \$12.50; two loads Kansas grassers on country accounts averaging 1,100 lbs. \$10.50.

LOS ANGELES

CATTLE—Little small supply cleaned up readily at strong prices; medium 1045 lb. steers 8.50; low she stock 5.00-6.00; calves 50c steady, vealers 10.00 to 12.00.

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 eastern 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 25, 1927.
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 paraffinic 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 250 to 500 feet deep, and less than a quarter of a mile from the edge of the old field, and which fields are divided 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 off 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 take a test 30 feet from a well which had been drilled into the salt core at 1550-foot depth, without production. It did not register. This test, also, convinced me that the machine acted perpendicularly as there were producing oil wells within 100 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, like 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 upturned 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 sulphurous 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 paraffinic 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 side 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 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 sketch).

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 locations mapped out by me for the first test wells to be drilled. In fact, averaged from 700 to 1300 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 2000 to 3500 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 pressures.

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 gypsum 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, ARIZ.)

May 31, 1949

Mr. J. M. Holliday
Benedum-Trees Oil Company
Benedum-Trees Building
Pittsburgh, Pa.

Dear Mr. Holliday:

Thank you very much for your reply regarding the
Arzberger well.

We are very sorry to hear that there are no samples
existing of this well. However, we would appreciate
a further check of your files to possibly uncover
either a sample analysis or a geologic report
regarding the well.

We appreciate your consideration in this matter.

Very truly yours,

L. A. Heindl
Geologist

LAH:kb

No permit

BENEDUM-TREES OIL COMPANY

BENEDUM-TREES BUILDING

PITTSBURGH, PENNA.

May 17, 1949

MAY 20 1949
STATE LAND DEPARTMENT
OF ARIZONA

State Land Department
Phoenix, Arizona

Attention: Mr. L. A. Heindl, Geologist

Dear Sir:

The writer is sorry to say that he is unable to give you the information requested about the Arzberger well. This well was drilled by a company that is now out of existence and there is nobody here that has any samples taken from the well.

Yours very truly,

By J. M. Holliday
J. M. Holliday

jmh/rks

No permit

May 12, 1949

Benedum-Trees Company
Pittsburgh, Pennsylvania

Gentlemen:

Sometime in the early '30s your Company drilled a well on the Arsberger lease in Section 19, Township 15 South, Range 26 East, Cochise County, Arizona. The well was drilled to a total reported depth of 3298 feet. We have in our files only a driller's log of this well, and as you well know this information is not satisfactory for a serious consideration of the formations encountered in the hole.

At the present time we are having a considerable amount of activity in the Willcox area with one well being shut down at 6594 waiting to be tested and a second well which spudded in on May 5th.

We would very much appreciate having the loan of any samples that you might have from the Arsberger well, and if samples are not available, a copy of the sample analysis which you no doubt had made by your geologists at the time the well was drilled, plus any corollary information that you might be able to give us.

Your cooperation in this matter would be greatly appreciated.

Very truly yours,

L. A. Heindl
Geologist

LAH:kb

No permit