

COUNTY GRAHAM AREA GERONIMO LEASE NO. N/A

WELL NAME R.S. KNOWLES 1 GERONIMO

LOCATION NW NW NW SEC 19 TWP 4S RANGE 23E FOOTAGE 50' FNL 150' FWL

ELEV 2710' GR KB SPUD DATE 1918 STATUS \_\_\_\_\_ TOTAL DEPTH 810'  
 COMP. DATE 1919\*

CONTRACTOR

CASING IZE	DEPTH	CEMENT	LINER SIZE & DEPTH	DRILLED BY ROTARY
10"	14'			_____
06"	UNKNOWN			DRILLED BY CABLE TOOL <u>X</u>
02"	±25'			PRODUCTIVE RESERVOIR <u>NONE</u>
				INITIAL PRODUCTION <u>NONE</u>

FORMATION TOPS	DEPTHS	SOURCE		REMARKS
		L.L.	E.L.	
Clay, sand, gravel	90	x		Fresh water at several horizons to 90'
Hard clay & lime	495	x		Artesian flow of salt water at 495'
Sand, shale, gravel	810	x		Total depth, no water below 495'

ELECTRIC LOGS	PERFORATED INTERVALS	PROD. INTERVALS	SAMPLE LOG
			SAMPLE DESCRP. _____
			SAMPLE NO. _____
			CORE ANALYSIS _____
			DSTs _____

REMARKS \*Flowed salty water since 1919. Plugged and abandoned by ADOT on June 17, 2003.

APP. TO PLUG X  
 PLUGGING REP. X  
 COMP. REPORT \_\_\_\_\_

WATER WELL ACCEPTED BY \_\_\_\_\_

BOND CO. \_\_\_\_\_ BOND NO. \_\_\_\_\_  
 DATE \_\_\_\_\_  
 BOND AMT. \$ \_\_\_\_\_ CANCELLED \_\_\_\_\_ ORGANIZATION REPORT \_\_\_\_\_  
 FILING RECEIPT \_\_\_\_\_ LOC. PLAT \_\_\_\_\_ WELL BOOK \_\_\_\_\_ PLAT BOOK \_\_\_\_\_  
 API NO. \_\_\_\_\_ DATE ISSUED \_\_\_\_\_ DEDICATION \_\_\_\_\_

PERMIT NUMBER 5-17



## PLUGGING RECORD

Operator <b>Arizona Department of Transportation</b>		Address & Phone number 1655 W. Jackson, Room 164, Phoenix AZ 85007 602-712-7768	
Federal, State, or Indian Lease No. or lessor's name if fee lease <b>R.S. Knowles</b>	Well No. <b>1</b>	Field & Reservoir <b>none</b>	
Location of Well <b>NW NW NW, 150' from west line, 50' From north line</b>		Sec - Twp - Rqe <b>19-4S-23E</b>	County <b>Graham</b>
Application to drill this well was filed in name of <b>drilled in 1919, without permit</b>	Has this well ever produced oil or gas? <b>No</b>	Character of well at completion (initial production) Oil (bbls/day) <b>- 0 -</b> Gas (MCF/day) <b>- 0 -</b> Dry? <b>Yes</b>	
Date plugged <b>June 17, 2003</b>	Total depth <b>804 feet</b>	Amount well producing when plugged: Oil (bbls/day) <b>- 0 -</b> Gas (MCF/day) <b>- 0 -</b> Water (bbls/day) <b>~ 800</b>	
Name of each formation containing oil or gas. Indicate which formation open to wellbore at time of plugging	Fluid content of each formation	Depth interval of each formation	Size, kind & depth of plugs used. Indicate zones squeeze cemented, giving amount of cement
<b>none</b>			

### CASING RECORD

Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, etc.)	Packers and shoes
<b>10 inches</b>	<b>14</b>	<b>0</b>	<b>14</b>	<b>none</b>	<b>none</b>
<b>6 inches</b>	<b>not known</b>	<b>0</b>	<b>not known</b>	<b>none</b>	<b>none</b>
<b>2 inches</b>	<b>~ 25</b>	<b>~ 25</b>	<b>0</b>	<b>cored out</b>	<b>none</b>
Was well filled with heavy drilling mud, according to regulations? <b>Yes</b>				Indicate deepest formation containing fresh water <b>~ 90 feet</b>	

### NAME AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

Name	Address	Direction from this well
<b>not known</b>	<b>not known</b>	

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

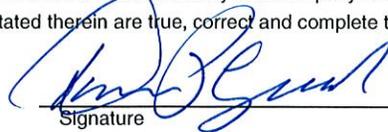
Use reverse side for additional detail For additional details, see Sundry Notice

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the outside consultant of the Arizona Department of Transportation (company) and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

**June 24, 2003**

Date

Signature



Permit No. <u>5-17</u>  Mail completed form to: Oil and Gas Program Administrator Arizona Geological Survey 416 W. Congress, #100 Tucson, AZ 85701-1315	<b>STATE OF ARIZONA</b> <b>OIL &amp; GAS CONSERVATION COMMISSION</b>  Plugging Record File One Copy  Form No. 10
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**SUNDRY NOTICES AND REPORTS ON WELLS**

1. Name of Operator Arizona Department of Transportation

2. OIL WELL  GAS WELL  OTHER  (Specify) Oil test well flowing salty water

3. Well Name R.S. Knowles #1  
 Location NW 1/4 of NW 1/4 of NW 1/4. 150 feet east and 50 feet south of the northwest corner of section 19.  
 Sec. 19 Twp. 4 South Rge. 23 East County Graham, Arizona

4. Federal, State, or Indian Lease Number, or lessor's name if fee lease Property owned by R.S. Knowles in 1919. Presently Arizona Department of Transportation right of way.

5. Field or Pool Name none

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT--OFF <input type="checkbox"/>	WEEKLY PROGRESS <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	DIRECTIONAL DRILL <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	PERFORATE CASING <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ALTER CASING <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(OTHER) _____	ABANDONMENT <input checked="" type="checkbox"/>

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log, Form 4)

1. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.

The wellhead was presumably at the ground surface at the time of drilling and completion (1919), but is said to have been broken off below the ground surface by excavation equipment.

In April, 2003, Miller Brooks Environmental, Inc. used a trackhoe to excavate down to the top of remaining casing, at approximately 14 feet below the surrounding ground surface. The existing well casing consisted of 2-inch steel inner casing, surrounded by concrete that filled a 6-inch steel outer casing. Salty water flowed through the 2-inch inner casing to the surface at a rate of approximately 23 gallons per minute. The base of a 14-foot length of 10-inch diameter steel casing was placed over the top of casing, and the hole backfilled so that 10-inch steel casing extended to the ground surface.

On June 9, 2003, a drill rig and crew from Prosonic Corporation, of Chandler, Arizona, mobilized to the site. A steel tremie pipe lowered through the 2-inch inner casing was stopped by an obstruction at a depth of 65 feet.

On June 11, 2003, a 4-inch diameter core bit was lowered over the 2-inch inner casing, and cored out the hole to a depth of 115 feet. The 4-inch core bit was tripped out of the hole, and replaced with a 3-inch diameter core bit. Drilling continued, and met little resistance except for the interval 577 to 580 feet. Drilling continued until the core bit met resistance at a depth of 804 feet on June 13, 2003. As the original well depth was reported to be 810 feet, the bit was considered to be at total depth.

On June 16, 3-inch diameter tremie pipe was lowered to total depth, and 500 gallons bentonite mud mixed with barite were pumped into the well, followed by neat cement grout. The flow of water stopped entirely. The tremie pipe was removed in stages as the grout was added. A total of 1,050 gallons of neat cement grout was pumped into the well through the tremie pipe, until cement grout circulated to the ground surface. Grouting was completed on June 17, 2003. The 10-inch diameter steel outer casing was cut off at ground level, so as not to leave a traffic hazard on the highway right of way. A 3-inch aluminum ADOT survey marker was set into the cement, flush with the ground surface. The marker reads:

R.S. Knowles #1  
 NW NW NW 19-4S-23E

8. I hereby certify that the foregoing is true and correct.

Signed  Title Senior Engineer Date June 24, 2003

Permit No. 5-17

**STATE OF ARIZONA**  
**OIL & GAS CONSERVATION COMMISSION**  
 Sundry Notice and Reports On Wells  
 File One Copy

Form No. 25



**R.S. Knowles well near Geronimo: nw nw nw 19-4s-23e, Graham County, Arizona**  
Reports from Dan Plazak, Miller Brooks Environmental Inc.

- 3/25/03 Plan to move in soon to plug the Knowles well  
Wanted to discuss the well monument  
ADOT would prefer a brass cap flush with the ground = Sounds okay to me
- 4/25/03 Went out with driller  
Had driven an outer 10" casing around old well head  
Driller pulled it out to center the bit over the hole and  
Pulled the outer 10" casing off the top of the well  
The backhoe wasn't big enough to reset the 10" over the hole  
Will prepare wellhead early next week  
Move-in next time a rig is available
- 6/6/03 Getting ready to move-in on Monday  
Well is right on the highway north of Geronimo  
Dan Plazak #602-728-0577  
David George (field supervisor) cell #602-743-6530
- 6/13/03 Washed pipe with core bit down to 570 ft, got hard (about 1 ft/30 min)  
Ground through hard spot and washed pipe down to 804 ft TD  
Planned to kill well with mud and cement from 804 ft to surface. But...  
Rig's mud supplier in Globe has gone out of business, he'll contact another supplier  
Will run 3" pipe to TD and shut in for weekend and resume job on Monday  
Will prepare wellhead early next week  
Move-in next time a rig is available
- 6/24/03 Plugged the well, filled it with neat cement  
Set a 3" aluminum monument at ground surface  
Will send a copy of the final paperwork when completed
- 6/27/03 Inspected the Knowles well site near Geronimo  
Location restored, abandoned hole monument in place.



APPLICATION TO PLUG AND ABANDON

FIELD none
OPERATOR Arizona Department of Transportation ADDRESS & PHONE 205 S. 17th Avenue, Mail Drop 619E Phoenix, AZ 85007 602-712-7768
LEASE NUMBER (Lessor's name if fee) R. S. Knowles WELL NO. 1
LOCATION NW NW NW 19-4S.-23E., milepost 301.3, north side of U.S. Highway 70, Geronimo.

TYPE OF WELL dry TOTAL DEPTH 810 feet
(Oil, Gas, or Dry)

ALLOWABLE (If Assigned)
LAST PRODUCTION TEST OIL (Bbls.) WATER (Bbls.)
GAS (MCF) DATE OF TEST
PRODUCING HORIZON none PRODUCING FROM TO

1. COMPLETE CASING RECORD:
This was an unsuccessful test for oil drilled by an unknown operator on the former property of R.S. Knowles in 1919. Salty water now flows from the borehole onto the ground surface. The abandonment is being done on behalf of the present landowner, the Arizona Department of Transportation.
There is no record of casing. Where exposed, at the bottom of a pit 8 feet below ground surface, there is a 6-inch steel outer casing, a 2-inch steel inner casing, with concrete in the annular space between the two casings. It is not known how far down the surface casings extend.

- 2. FULL DETAILS OF PROPOSED PLAN OF WORK:
1) Excavate and remove PVC pipe.
2) Drill 10 feet below ground surface with 4" casing.
3) Overdrill 2" PVC/Steel pipe with 4" O.D. -3" O.D. diamond core drill bit.
4) Drill to total depth (810' +/-), remove 2" PVC and steel pipe.
5) Using 2 3/4" O.D. x 2 3/8" I.D. drill pipe as tremie, pump 400-600 gallons of 15# Barite weighted bentonite mud to reduce/stop artesian flow. Plow 14# cement grout while removing tremie pipe.
6) Cement cap surface.
7) May require use of disposable packer set inside well.

DATE COMMENCING OPERATIONS March 31, 2003
NAME OF PERSON DOING WORK Dan Plazak ADDRESS Miller Brooks Environmental Inc. 202 E. Earll Dr. #470, Phoenix AZ 85012

Signature
Senior Engineer

Title
202 E. Earll Dr. #470, Phoenix AZ 85012

Address
February 26, 2003

Date

Mail two copies of completed form to:
Oil and Gas Program Administrator
Arizona Geological Survey
416 W. Congress #100
Tucson, AZ 85701

Date Approved 2-28-03
STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
By SC Ravis

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Application to Plug and Abandon
File Two copies
Form No. 9

Permit No. 5-17



## 222 CONTRIBUTIONS TO HYDROLOGY OF UNITED STATES, 1937

### *Analyses of water from wells and springs in the valley of the Gila River and San Simon Creek, Graham County, Ariz.*

[Parts per million. Numbers correspond to well numbers in following table. Letters A, B, C, F, and G refer to springs described on pp. 214-217. E. W. Lohr, analyst]

No.	Date of collection	Total dissolved solids (calculated)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K) (calculated)	Bicarbonate (HCO <sub>3</sub> )	Sulphate (SO <sub>4</sub> )	Chloride (Cl)	Fluoride (F)	Nitrate (NO <sub>3</sub> )	Total hardness as CaCO <sub>3</sub> (calculated)
2	Nov. 22, 1933.	531	47	12	140	244	80	130	2.0	0.0	167
3	Nov. 23, 1933.	296	33	6.5	71	152	50	59	1.2	.70	109
* 16	Nov. 22, 1933.	14,035	133	85	5,076	492	1,838	6,656	4.5	-----	681
59	Nov. 23, 1933.	<sup>1</sup> 192	42	12	11	144	50	6.0	.2	.0	154
73	Apr. 7, 1934.	136	28	5.1	15	100	<sup>2</sup> 34	4.0	.4	.50	91
87	Nov. 20, 1933.	2,568	78	10	878	106	357	1,190	3.3	.0	236
A	do.	2,996	78	9.0	1,643	98	404	1,410	3.7	.0	232
B	do.	3,016	80	9.4	1,048	100	405	1,420	4.1	.0	239
C	do.	3,455	102	12	1,182	114	518	1,580	4.3	.50	304
97	Nov. 30, 1933.	3,351	73	7.2	1,190	96	419	1,610	4.9	.0	212
F	Feb. 9, 1934.	1,715	62	27	540	178	319	675	3.3	1.2	266
G	Nov. 9, 1933.	228	44	7.2	38	240	<sup>2</sup> 10	10	.8	.20	140
130	do.	500	39	5.0	142	124	84	168	.0	.50	118
131	do.	1,124	97	9.2	305	102	211	450	1.6	.0	280
132	do.	411	<sup>2</sup> 2	-----	167	163	77	96	7.1	.20	( <sup>3</sup> )
135	do.	1,282	90	8.5	369	112	269	490	.0	.0	260
143	Dec. 27, 1933.	217	<sup>2</sup> 1	-----	87	<sup>5</sup> 91	<sup>2</sup> 50	38	5.0	.10	( <sup>3</sup> )
154	Feb. 16, 1934.	2,880	<sup>2</sup> 36	-----	1,085	60	564	1,265	7.1	.50	<sup>4</sup> 81
155	do.	2,352	<sup>2</sup> 26	-----	891	66	521	970	7.3	.50	<sup>4</sup> 48
182	July 23, 1934.	1,672	158	51	388	507	325	480	.2	20	604
189	Apr. 11, 1934.	1,045	129	26	231	446	115	305	.8	18	429
190	July 21, 1934.	1,133	141	27	252	513	121	315	.6	24	463
224	Apr. 3, 1934.	1,081	77	23	305	486	158	260	3.3	15	287
225	do.	1,080	78	25	301	486	150	265	3.2	18	298
245	Dec. 19, 1933.	941	<sup>2</sup> 11	-----	358	276	270	195	9.3	.70	<sup>4</sup> 28
246	do.	1,166	60	17	367	526	192	260	5.8	4.7	220
253	Jan. 22, 1934.	1,873	201	62	387	484	437	500	1.6	46	757
257	Feb. 13, 1934.	1,881	<sup>2</sup> 10	-----	738	220	262	830	1.2	.50	<sup>4</sup> 22
258	do.	<sup>6</sup> 771	<sup>2</sup> 17	-----	286	218	211	181	1.6	.50	<sup>4</sup> 36
271	Nov. 17, 1933.	718	<sup>2</sup> 5	-----	280	<sup>7</sup> 65	164	251	15	.0	<sup>4</sup> 8
273	do.	1,488	40	2.2	509	48	349	550	14	.0	109
278	Nov. 18, 1933.	807	<sup>2</sup> 10	-----	313	460	180	87	5.3	15	<sup>4</sup> 32
285	Nov. 16, 1933.	1,682	<sup>2</sup> 2	-----	658	243	370	590	7.8	1.0	<sup>4</sup> 8
286	do.	857	<sup>2</sup> 7	-----	332	176	193	268	5.3	.0	<sup>4</sup> 16
295	do.	1,479	30	2.2	512	46	389	510	13	.0	84
296	do.	536	<sup>2</sup> 5	-----	209	122	134	143	8.7	.10	<sup>4</sup> 9
305	Nov. 15, 1933.	577	<sup>2</sup> 5	-----	221	116	136	173	6.1	.0	<sup>4</sup> 16
308	Nov. 18, 1933.	944	<sup>2</sup> 10	-----	361	60	223	345	14	.0	<sup>4</sup> 20
309	Nov. 17, 1933.	708	<sup>2</sup> 6	-----	275	<sup>7</sup> 85	172	230	13	.10	<sup>4</sup> 9
314	Nov. 16, 1933.	1,977	<sup>2</sup> 28	-----	725	<sup>8</sup> 66	512	740	10	.0	<sup>4</sup> 81
320	do.	1,308	<sup>2</sup> 22	-----	489	56	333	480	13	.0	<sup>4</sup> 40
328	Nov. 18, 1933.	651	<sup>2</sup> 10	-----	231	170	211	125	6.1	.90	<sup>4</sup> 50
332	Nov. 17, 1933.	225	<sup>2</sup> 7	-----	88	122	<sup>1</sup> 30	45	4.4	.10	<sup>4</sup> 1-
356	Nov. 18, 1933.	163	<sup>2</sup> 16	-----	42	130	<sup>2</sup> 20	16	.4	.0	<sup>4</sup> 60
358	Nov. 17, 1933.	786	<sup>2</sup> 6	-----	310	96	176	280	10	.0	<sup>4</sup> 11
392	Feb. 2, 1934.	<sup>9</sup> 639	<sup>2</sup> 18	-----	239	152	174	150	13	.75	<sup>4</sup> 3-
409	Nov. 13, 1933.	549	<sup>2</sup> 33	-----	167	128	171	124	1.2	1.1	<sup>4</sup> 9-
430	Nov. 7, 1933.	1,024	<sup>2</sup> 8	-----	389	205	347	215	11	.0	<sup>4</sup> 11
432	do.	940	<sup>2</sup> 6	-----	359	186	319	197	12	.0	<sup>4</sup> 1

<sup>1</sup> Iron (Fe) 0.65 part per million.

<sup>2</sup> By turbidity.

<sup>3</sup> Less than 5 parts per million.

<sup>4</sup> Determined.

<sup>5</sup> Includes equivalent of 30 parts of carbonate (CO<sub>3</sub>).

<sup>6</sup> Includes 0.8 part of borate (BO<sub>3</sub>).

<sup>7</sup> Includes equivalent of 18 parts of carbonate (CO<sub>3</sub>).

<sup>8</sup> Includes equivalent of 12 parts of carbonate (CO<sub>3</sub>).

<sup>9</sup> Includes 1.4 parts of borate (BO<sub>3</sub>).

USGS WSP 796-F



USGS WSP 296-F

Record of wells in Graham County, Ariz.  
[Compiled by M. M. Kneebell]

No.	Location	Owner or name	Topographic situation	Type	Depth (feet)	Diameter (inches)	Geologic horizon	Water level		Method of lift	Yield	Use of water	Temperature (F.)	Remarks
								Distance below surface (feet)	Date of measurement					
1	T. J. S., R. #2 E., NE 1/4 sec. 13	Kenyon	Alluvial plain	Dug	15		Quaternary alluvium	15	Nov. 22, 1933	Gasoline pump	21	63 1/2	Two wells close together. Water rises to surface in wet weather. See analysis, p. 222. In gravel, alternating with layers of sand and clay.	
2	SW 1/4 NW 1/4 sec. 13	D. H. Blakeney	do	do	29	72	do	do	do	Dado pump	21	67	See analysis, p. 222. Two or three small flows used for irrigation during 1916, 1917, and 1927. Irrigated about 25 acres with pump running part time.	
3	NE 1/4 NE 1/4 sec. 24	Southern Pacific R. R.	do	do	50	144	do	do	Nov. 23, 1933	Double-action Fairbanks-Morse gasoline pump	21			
4	do	R. S. Knowles	do	do	38		do	do	do	Removed	21			
5	SE 1/4 SW 1/4 sec. 24	J. H. Hinton	do	Dug	22	4	do	do	Nov. 22, 1933	Windmill	21			
6	SE 1/4 sec. 28	do	do	Dug	32	4	do	do	do	do	21			
7	SE 1/4 SE 1/4 sec. 35	do	do	Dug	32	4	do	do	do	do	21			
8	T. J. S., R. #2 E., Sec. 17	I. C. Johns	do	Drilled	45	4	do	do	do	Hand pump	21	67	Wells cemented. Two wells close together. First flow. Walled with concrete.	
9	NW 1/4 sec. 18	S. J. Curtis	do	Dug	25	2	do	do	do	Abandoned	21	65	Hard water.	
10	NW 1/4 sec. 18	Mrs. M. A. Ingalls	do	Dug	33	60	do	do	do	Hand pump	21	63 1/2	Water about 5 feet deep in wet weather. Used for drinking by many families. Oppons flow.	
11	NE 1/4 sec. 18	E. W. Black	do	do	30	30	do	do	do	Gasoline pump	21		Water is probably from third flow. Walls bricked.	
12	SW 1/4 SE 1/4 sec. 18	do	do	do	30	30	do	do	do	Windmill	21			
13	SW 1/4 sec. 18	R. S. Knowles	Lower terrace	do	42	60	Pliocene lake beds (?)	40	Nov. 23, 1933	Windmill	21			
14	do	H. A. McBeath	do	do	35	5	Quaternary alluvium	35	do	do	21			
15	do	J. G. Kull	do	do	35	7	do	35	do	do	21			
16	NW 1/4 sec. 19	R. S. Knowles	do	Drilled	810	6	Pliocene lake beds	810	Nov. 24, 1933	Artesian flow	21	52	No increase in flow below 465 feet. Well was abandoned. See analysis, p. 222. Well cased to 500 feet.	
17	NW 1/4 NW 1/4 sec. 19	do	do	Dug	45	60	Quaternary alluvium	35 1/2	do	Windmill	21		Third flow. 15 feet west of flowing well. Walls bricked.	
18	NW 1/4 NW 1/4 sec. 19	J. H. Hinton	Alluvial plain	do	30	48	do	28	Nov. 22, 1933	Hand pump	21	67	Water rises several feet in wet weather. Four flows. (See log, p. 201.)	
19	NW 1/4 NW 1/4 sec. 19	J. B. Blessing	do	do	100	72	do	32	do	do	21	66 1/2	Water is from third flow. Cased to depth of 30 feet.	
20	NE 1/4 NW 1/4 sec. 19	E. W. Black	do	Drilled	100	40	do	32	do	do	21			
21	do	Otto Holyoak	do	do	30	4	do	35	do	do	21			
22	NW 1/4 NW 1/4 sec. 20	Lingbeaugh Bros.	do	Dug	40	4	do	35	Nov. 24, 1933	Abandoned	21			
23	SW 1/4 NW 1/4 sec. 20	do	do	Dug	50	72	do	50	do	Bucket and rope	21			
24	NW 1/4 NW 1/4 sec. 20	Louis Taylor	do	Drilled	38	7	do	35	do	do	21			
25	NW 1/4 SW 1/4 sec. 20	J. N. Holyoak	do	Drilled	38	7	do	35	do	Hand pump	21			
26	SE 1/4 SW 1/4 sec. 20	E. H. Chesley	do	do	48	4	do	48	do	do	21			
27	SW 1/4 SE 1/4 sec. 20	C. J. Grover	do	Dug	49	48	do	49	do	do	21			
28	NE 1/4 SE 1/4 sec. 20	Jacob Peters	do	Drilled	28	6	do	15	do	Windmill	21	67	First and second flows.	
29	NE 1/4 SE 1/4 sec. 20	J. B. Hinton	do	Dug	10	60	do	14	do	do	21			
30	NE 1/4 SE 1/4 sec. 20	T. D. Burton	do	Dug	10	60	do	14	do	do	21			
31	NE 1/4 SE 1/4 sec. 20	S. E. Henry	do	Drilled	16	40	do	9	do	do	21			
32	NE 1/4 sec. 27	R. E. Hinton	do	do	40	40	do	40	do	do	21			
33	NW 1/4 sec. 27	do	do	do	40	40	do	40	do	do	21			
34	NE 1/4 SE 1/4 sec. 27	Lynn Parker	do	Dug	10	6	do	9	do	Hand pump	21			
35	SE 1/4 SE 1/4 sec. 27	do	do	Drilled	10	6	do	9	do	do	21			
36	SW 1/4 SE 1/4 sec. 27	Mrs. B. D. Wilson	do	Drilled	30	6	do	24	Nov. 24, 1933	Windmill	21			
37	NW 1/4 NW 1/4 sec. 28	Ban Montearth	do	do	60	6	do	45	do	do	21			
38	SW 1/4 NW 1/4 sec. 28	do	do	do	60	6	do	45	do	do	21			
39	SE 1/4 NW 1/4 sec. 28	Leslie Montearth	do	do	30	6	do	28	do	do	21			
40	NW 1/4 NW 1/4 sec. 28	State of Arizona	do	do	30	6	do	28	do	do	21			
41	SE 1/4 NW 1/4 sec. 28	J. H. Fine	do	Drilled	30	6	do	28	do	do	21			
42	SE 1/4 sec. 28	do	do	do	30	6	do	28	do	do	21			
43	NW 1/4 sec. 29	John Wise	do	Dug	41	60	do	40	do	do	21			
44	NW 1/4 NW 1/4 sec. 29	Schothouse	do	Drilled	33	60	do	47	do	do	21			
45	SE 1/4 NW 1/4 sec. 29	Walker	do	Dug	49	60	do	47	do	do	21			
46	SE 1/4 NW 1/4 sec. 34	J. H. Fine	do	Dug	49	60	do	47	do	do	21			
47	SW 1/4 NW 1/4 sec. 34	J. H. Fine	do	Drilled	49	60	do	47	do	do	21			
48	NE 1/4 NW 1/4 sec. 34	C. N. Higgins	do	do	47	60	do	47	do	do	21			
49	NE 1/4 sec. 34	do	do	do	47	60	do	47	do	do	21			
50	SE 1/4 sec. 34	Southern Pacific Co.	do	Dug	Filled	120	do	do	do	do	21			
51	NW 1/4 sec. 35	T. J. Rex	do	Drilled	21	3 1/2	do	20	do	Gasoline pump	21			
52	NW 1/4 SW 1/4 sec. 35	Mrs. L. Cornett	do	Drilled	42	40	do	30	do	do	21			
53	do	Higgins	do	do	42	40	do	30	do	do	21			
54	do	do	do	do	42	40	do	30	do	do	21			
55	SW 1/4 SW 1/4 sec. 35	R. Bowman	do	Dug	27	30	Quaternary alluvium	25	do	do	21			
56	NE 1/4 SW 1/4 sec. 35	R. Ferrin	do	Drilled	27	30	do	27	do	do	21			
57	SE 1/4 SW 1/4 sec. 35	Mary Brown	do	Drilled	27	30	do	27	do	do	21			
58	T. J. S., R. #2 E., Sec. 25	Ray Van Winkle	do	do	90	65	do	30	Nov. 23, 1933	Horse-driven pump	21	57 1/2	Top of principal water-bearing bed 30 feet deep.	
59	Sec. 27	J. B. Hinton	do	do	40	40	do	30	do	Power pump	21	54	Top of principal water-bearing bed 30 feet deep. Top of principal water-bearing bed 72 feet deep.	
60	Sec. 36	(?)	do	do	20	20	do	19	do	do	21		Top of principal water-bearing bed 20 feet deep.	
61	Sec. 3	Y. L. Ranch	do	do	65	65	do	74	do	Windmill	21		Top of principal water-bearing bed 92 feet deep.	
62	Sec. 8	do	do	do	92	92	do	67	do	Hand pump	21		Top of principal water-bearing bed 72 feet deep.	

R. S. Knowles  
c/c. Graham County  
#16  
see analysis  
opposite page



Log of Gila Oil Syndicate's well in the SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec. 30, T. 5 S., R. 24 E., near Ashurst

	Thick-ness	Depth	Remarks
	<i>Feet</i>	<i>Feet</i>	
Alluvium.....	50	50	Water.
Clay.....	380	430	
Sand.....	15	445	Flow of water.
White limestone.....	145	590	Salt water.
Limy shale.....	30	620	
Gray sand.....	80	700	Flow of water.
Limy shale.....	50	750	Salt water.
Blue shale.....	55	805	
Gravel.....	30	835	
Gray shale.....	200	1,035	
Brown shale.....	80	1,115	
Blue shale.....	20	1,135	
Brown shale.....	15	1,150	
Blue shale.....	15	1,165	
Brown shale.....	35	1,200	
Sandy shale.....	35	1,235	
Blue shale.....	20	1,255	
Brown shale.....	80	1,335	
Red shale.....	60	1,395	
Sandy shale.....	40	1,435	
Brown shale.....	80	1,515	
Brown sandstone.....	480	1,995	Flow of water.
Gravel.....	10	2,005	
Dark-brown shale.....	70	2,075	
Black sand.....	10	2,085	
Brown shale.....	125	2,210	
Dark-brown sandstone.....	70	2,280	
Gray shale.....	15	2,295	
Red shale.....	110	2,405	
Dark-brown sandstone.....	80	2,485	
Limestone.....	80	2,565	
Sandy limestone.....	30	2,595	
Blue shale.....	50	2,645	Bottom of well.

USGS  
WSP 796-F

The following section of the flowing well at Geronimo, in sec. 19 T. 4 S., R. 23 E., drilled for oil with cable tools in 1918-19, is furnished from memory by the owner, R. S. Knowles:

*Log of flowing well at Geronimo*



	Thick-ness	Depth	Remarks
	<i>Feet</i>	<i>Feet</i>	
Clay.....	28	28	
Sand and clay.....	17	45	Fresh water at several horizons; cemented o
Hard clay.....	43	88	A little water.
Gravel.....	2	90	
Hard clay and lime.....	405	495	Artesian flow of salt water.
Sand.....	30	525	
Shale, lime, and clay.....	270	795	
Gravel.....	15	810	Bottom of well; no water was struck bel
			495 feet.

**SUMMARY OF TERTIARY AND QUATERNARY HISTORY**

The Tertiary and Quaternary history of the Gila-San Simc trough may be summarized as follows:

An enclosed basin, surrounded by mountains and occupied by lake, was formed during late Tertiary time, possibly by block faultin Lacustrine and fluvial sediments were laid down in the basin to thickness believed to be 1,600 feet or more. A part at least, if not a of these beds were laid down in late Pliocene time. The presence







**Subject:** Old hole in 19-4s-23e  
**From:** Steve Rauzi <Steve.Rauzi@azgs.az.gov>  
**Date:** Fri, 21 Feb 2003 11:10:05 -0700  
**To:** danplazak@millerbrookseenv.com

Dan,

602-728-0577

I have attached a few of our forms, something about bentonite plugs, and a hot link to the oil & gas rules. Plugging methods and procedures are described in R12-7-127. I look forward to a proper plugging of this hole.

[http://www.sosaz.com/public\\_services/Table of Contents.htm](http://www.sosaz.com/public_services/Table_of_Contents.htm)  
(scroll down to Title 12, Chapter7)

Steven L. Rauzi, Oil & Gas Administrator

Flowing well near Safford = old o&g hole  
ADOT Funding to get it plugged.  
What are requirements?





February 21, 2003

Mr. Steve Rauzi - Oil and Gas Administrator  
Arizona Geological Survey  
416 West Congress Street, Suite 100  
Tucson, AZ 85701

**Re: Old Oil Test at Geronimo, Arizona**

Dear Mr. Rauzi:

As we discussed on the phone, please find enclosed some transcripts of newspaper articles concerning the oil test well at Geronimo. The transcripts were furnished by Ed Green of the Arizona Department of Transportation.

Note how the legend grows over time. In 1919 the well has only salt water. By 1924, the water also has paraffin, and by 1927, the landowner claims that the original drillers had found a 30-foot oil sand, but did not produce it.

Sincerely,

  
Dan Plazak



Newspaper articles – R.S. Knowles oil well

*Graham Guardian*, February 28, 1919

### **A DRINK OF WATER**

#### **May Result in Great Riches to People of Geronimo and Ft. Thomas**

There comes a time in the lives of men when some great event springs forth a complete transformation. Some incident occurring to cause forgetfulness of present conditions in the glamor [sic] of sudden prosperity, perhaps, or maybe a pretty face that causes the heart to flutter, or still it may be a good meal unexpectedly served. Anyway, strange things do happen at times to change the tide and ways of men and women, too, and this has just occurred in our beautiful Gila Valley.

What brought the new thots [sic] and ambitions and fancied riches of the peaceful inhabitants of Geronimo and Ft. Thomas, was the result of a visit several months ago of two men, who, through mistake, took a drink out of the salt well, owned by R.S. Knowles, of Geronimo, which is located about ten feet north of his store at that place.

That drink was not pleasant, but the man who indulged in it took a second thought when he finally recovered from the salty taste and took several good samples of the water, which he packed in his suit case.

The man left Geronimo several days later for California, where they had a chemist analyze the samples. The result showed that the salt water in the Knowles' well is the same as that found overlying the famous oil fields of California.

Friday, the two men returned from California and on Saturday, Sunday and Monday, they were busy securing options on all the ranches and lots at and near Geronimo, and also at Ft. Thomas. They have returned again to California.

Their actions aroused the dwellers in this particular part of the valley so much so that it is reported that the dairymen forgot to deliver their cream and milk at the depot Monday morning, and some of them even forgot to milk their cows, so engrossed were they in visions of wealth when the sportive and enriching oil comes oozing from their lands.

It is even reported that the owners of four teams, driving into Geronimo Monday and tying up went off and forgot their teams.

The wonders of the Ranger oil fields of Texas may yet be duplicated at Geronimo and Ft. Thomas, and wealth come rolling in to the favored ones, and so it has come about this great change that makes men forget their earthly duties in the worship of Mammon.

*Graham Guardian*, March 7, 1919

### **Oil May Yet Be Found at Geronimo**

R.S. Knowles, of Geronimo, was a business visitor in town Wednesday. Mr. Knowles believes that oil may yet be discovered in commercial bodies around Geronimo and Thomas. There are others of the same opinion and the chances are that some day the work will be done to prove the presence of oil, or the opening up of a bog hot mineral well that will bring fame to that community.

The well driven by Mr. Knowles north of his store in Geronimo, is down 810 feet. A small artesian flow was found at 200 feet and at 495 a flow of warm salt water. At 810 feet, the artesian flow of warm salt water is good.

The well has been driven through clay, shale and sand rock. A further depth may bring in oil or a big flowing hot well.

Work driving this well has been stopped for the present, but will be resumed in the near future.



*Graham County Guardian and Gila Valley Farmer*, July 25, 1924:

**VISITORS FROM GERONIMO**

Considerable excitement over the prospect of oil being developed at Geronimo is reported by T.B. Sullivan, who with Mrs. Sullivan, spent Wednesday in town. What is known as the Knowles well, Mr. Sullivan said, has been found to carry paraffine and other chemicals that are strong indications of oil, and the property has been leased to parties who expect to begin drilling for oil about the first of September. It is also reported, Mr. Sullivan stated, that shortly after the lease had been signed representatives of the Standard Oil Company were in Geronimo trying to secure the property.

*Graham County Guardian and Gila Valley Farmer*, August 5, 1927:

**Indications And Tests Other Than Geological Reports Found In Valley**

(On July 15th this paper published the report of Claude F. Palmer on the Graham county structures now being drilled and under lease by H.T. Proctor of Safford and Mr. Palmer's findings on the Trumbull instrument. This week we are glad to give a report of other geologists - Editor).

...The Bob Knowles well, drilled at Geronimo to a depth of 810 feet, encountered a fine, black oil sand about thirty feet thick. His driller, from Pennsylvania, wanted him to shoot it and thought he had a small producer. Much gas was encountered. But, Mr. Knowles decided to go deeper and the well was never finished...

