PRO. 18-4 3M-8-30

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

Commenced drilling with rotary tools in 24" hole, using 6" drill pipe, on January 13, 1931.

0	20'	Caliche

On January 13, 1931, cemented 20" casing at 20' for conductor.

CASING DETAIL:

All 20", O.D., 90#, 8 thread, National DBS, Lapweld casing.

Drilled ahead in 18" hole, using 6" drill pipe.

20	82	Sand
82	162	Sand & boulders
162	284	Sand rock
284	285	Hard sand rock
285	290	Sand
290	291	Hard sand rock

Ran 13-3/8" casing but stopped at 190'. Pulled casing out and reamed hole from 111' to 291' with 18" rock bit.

On January 16, 1931, cemented 13-3/8" casing at 291' with 200 sacks of El Toro Oil Well Special Cement, none treated. Averaged 43# slurry, Halliburton Process, using Perkings top plug; no pressures recorded. Circulation maintained while cementing. 40 minutes mixing and pumping cement into place.

CASING DETAIL:

All 13-3/8", 54.5#, 8 thread, API, Spang & Chalfant "Standard" seamless casing with Texas Pattern Shoe.

Stood cemented 3 days.

On January 19, 1931, drilled out plug and cement from 285' to 291'. Drilled ahead in 12" hole, using 6" drill pipe.

291	310	Hard sandy lime
310	517	Red beds
517	772	Broken red beds

Ran acid bottle at 517'. Angular deviation of hole 2 degrees at 510'.

772	860	Red rock and shale
860	885	Sandy lime

PRO. 19-A 3M-8-50

WELL COMPLETION REPORT--18-A
LOG AND HISTORY

WELL NO. PROPERTY COMPANY

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

Ran acid bottle. Angular deviation of hole 2 degrees at 880'.

885	903	Red rock & shale
903	948	Red rock with streaks of red shale
948	992	Red rock and shale
992	1070	Red rock
1070	1092	Hard red rock
1092	1152	Red rock
1152	1172	Red rock with streaks of red shale
1172	1234	Red rock and shale
1234	1256	Broken red rock
1256	1272	Hard red rock
1272	1325	Hard red rock and shale
1325	1335	Red rock
1335	1368	Anhydrite with streaks of red rock
1368	1402	Hard anhydrite TOP ANHYDRITE 1335'
1402	1435	Anhydrite and red rock
1435	1452	Salt TOP SALT 1435'
1452	1483	Anhydrite & streaks of salt
1483	1494	Red rock & lime shells
1494	1544	Red rock, anhydrite with streaks of salt
1544	1585	Anhydrite with streaks of salt

Ran acid bottle at 1544' and found deviation 1 degree at 1500'

1585	1610	Salt & anhydrite
1610	1638	Anhydrite & trace of lime
1638	1678	Salt & anhydrite
1678	1712	Salt and anhydrite, trace of potash
1712	1744	Red rock and salt
1744	1803	Salt & anhydrite
1803	1843	Salt with streaks of anhydrite and potash
1843	2662	Salt, potash and anhydrite

Ran acid bottle. Angular deviation 3-1/2 degrees at 2000'. Ran acid bottle. Lost container, which was recovered. Angular deviation 5 degrees at 2500'. Depth corrected from 2595 to 2594 feet by Halliburton Measuring Line.

2662	2690	Anhydrite with streaks of salt
2690	2890	Salt, potash and anhydrite
2890	2917	Anhydrite with trace of lime
2917	2980	Anhydrite with streaks of gray lime
2980	2995	Anhydrite with streaks of brown lime
2995	3001	Anhydrite and brown lime

PRO. 18-4 3M-5-50

WELL COMPLETION REPORT — 18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY COMPANY

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

February 7, 1931, cemented 9-5/8" casing at 3000' with 500 sacks of Al Tero Cement (Oil Well Special), none treated. Averaged 43% slurry. Halliburton Process, using Perkings top plug. Final gauge pressure 750#. Circulation was maintained while cementing and 1 hour and 44 minutes was required to mix and pump cement into place.

CASING DETAIL:

All 9-5/8", O.D., 36#, 8 thread, API, Spang & Chalfant "Standard" seamless Grade "C" casing with Baker Burch cement float shoe. Stood cemented 4 days.

February 11, 1931, drilled out plug and cement from 2980 to 3001 feet. Drilled ahead in 8-3/4" hole, using 4" drill pipe.

3001	3006	Brown lime with trace of anhydrite

February 12, 1931, bailed fluid to 2200'; stood 3 hours and no fluid entered; water shut off O-K.

3006	3030	Brown lime with trace of anhydrite
3030	3051	Brown lime with some anhydrite
3051	3111	Anhydrite, sandy shale, and trace of lime
3111	3155	Anhydrite, sandy shale, and lime
3155		

Ran acid bottle. Angular deviation 2 degrees at 3025'. Depth corrected from 3149' to 3150' by Halliburton measuring device.

3155	3173	Brown lime
3173	3178	Brown lime & sandy shale, SMALL SHOWING GAS 3173' to 3178'
3178	3205	Brown lime and sandy shale
3205		

While drilling from 3190' to 3203', well cleaned itself. After blowing 2 hours, gas tested at rate of 3,000 MCF per day.

3205	3210	Brown lime & sandy shale, SMALL INC. GAS 3235-3237'

PRO. 18-A SM-1-58

WELL COMPLETION REPORT 18-A
LOG AND HISTORY

WELL NO. 1 PROPERTY [illegible] COMPANY

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

3210 3237 Brown lime & sandy shale

Test at 3215' showed gas production at rate of 1,000 MCF per day and at 3237' at the rate of 1,500 MCF gas per day.

3237 3247 Brown lime & sandy shale INC GAS TO 12,000 MCF per DAY FROM 3241 TO 3247 FEET

Shut down 6 hours at 3247' to allow well to blow dry and measure volume of gas. Killed well with mud weighing 82 pounds per cubic foot (11.4 per gallon). Drilled ahead using mud weighing 68 pounds per cubic foot (9.1 per gallon).

3247 3255 Sand & sandy shale
3255 3275 Brown lime, sand and sandy shale
3275 3296 Hard brown lime, sandy shale & bentonitic shale
3296 3317 Hard brown lime
3317 3320 Hard brown sandy lime
3320 3323 Hard brown lime
3323 3328 Hard brown sandy lime
3328 3348 Hard brown lime & sandy shale
3348 3354 Hard brown & black lime
3354 3369 Hard brown lime
3369 3500 Hard brown lime with trace of shale. FORMATION SOFT AND A POSSIBLE INCREASE IN GAS FROM 3488 to 3493 FEET.

Ran acid bottle. Angular deviation 2 degrees at 3450'. Depth corrected from 3469' to 3468' by Halliburton measuring device.

3500 3534 Hard brown lime, some sandy lime & shale
3534 3582 Hard brown lime & trace of shale
3582 3605 Hard brown sand, some brown lime and shale
3605 3616 Hard brown lime and trace of shale
3616 3620 Hard brown sand, some brown lime and shale
3620 3644 Hard brown lime, trace of sand and shale
3644 3660 Streaks of hard brown lime with trace of sand & shale
3660 3671 Streaks of hard and medium hard brown sand with some brown lime and shale
3671 3675 Medium hard brown calcareous sand and trace of shale
3675 3680 Hard brown lime, trace of sand and shale

Lost reamer and 8-3/4" Reid roller bit in hole. Recovered reamer and bit.

3680 3700 Hard brown sandy lime with trace of shale.

WELL NO. PROPERTY COMPANY

WELL COMPLETION REPORT AND LOG

FORM 10-4 3M-2-30

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

Ran acid bottle. Angular deviation of hole 2 degrees at 3605'. Checked depth of hole at 3690' with Halliburton Measuring Line. No correction.

On March 11, 1931, cemented 7" casing at 3700' with 55 sacks of El Toro Oil Well Special cement, none treated. Averaged 43% slurry. Halliburton Process, using Perkins top and bottom plugs. Initial gauge pressure 250#. Final gauge pressure 400#. Weight of mud 75# per cubic foot (9-3/4# per gallon). Circulated 15 barrels of water ahead of cement. Circulation maintained while cementing. 33 minutes mixing and pumping cement into place.

CASING DETAIL:

All 7", O.D., 24#, 10 thread, Spang Chalfant, API, "Standard" seamless Grade "C" casing with Baker Burch cement float shoe. Stood cemented 5 days.

On March 16, drilled out plugs and cement from 3690' to 3700'. Drilled ahead in 6-1/4" hole with clear water, using 4" drill pipe.

3700	3705	Hard sandy brown lime with trace of shale

Bailed fluid to 3400' and stood 3 hours. No fluid entered. Shut off O-K.

3705	3708	Hard sandy brown lime with trace of shale

Bradenhead gas between 7" and 9-5/8" casing tested at the rate of 1,900,000 cubic feet per day. Commence using bradenhead gas for fuel.

3708	3729	Sandy brown lime
3729	3734	Hard brown lime with trace of shale
3734	3740	Grayish brown sandy dolomitic lime with trace of brown shale
3740	3750	Brown & gray sandy dolomitic lime with increased amount of brown shale
3750	3757	Light brown sandy dolomitic lime & brown shale
3757	3775	Hard grayish brown lime with trace of shale
3775	3785	Brown lime with trace of shale
3785	3790	Light brown sandy lime
3790	3795	Brown lime with trace of shale
3795	3806	Hard grayish sandy brown lime
3806	3830	Grayish brown lime with trace of shale
3830	3831	Hard grayish brown sandy lime SHOWING GAS

PRO. 18-4 3M-8-50

WELL COMPLETION REPORT—18-A
LOG AND HISTORY

WELL NO. PROPERTY COMPANY

3750 3800 Sandy gray shale

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

At depth of 3831 feet allowed well to clean itself for 4 hours and flow wide-open for 7 hours. Tested at rate of 15,200 MCF gas per day, with an assumed gravity of 1.0. Killed well with clear water. Drilled ahead in 6-1/4" hole, using clear water and 3" drill pipe.

3831 3843 Hard white lime
3843 3853 Medium hard gray lime

Ran acid bottle. Angular deviation 2 degrees at 3835'. Depth corrected from 3853 to 3862 feet by Halliburton measuring device.

CORE #1 - 3862 to 3872' - Recovery 5'

3862 3871 Medium hard; 4'6" of recovery indicates gray and brown crystalline lime with shale laminations. Core showed some porosity and carried a trace of LIVE OIL

3871 3872 Hard. 6" of recovery indicates hard, dense gray lime

CORE #2 - 3872 to 3882 - Recovery 5'

3872 3874 Drilled like hard gray lime
3874 3877 Drilled medium hard. 5' of recovery indicates brown lime having an estimated porosity of 5%. Core showed TRACE OF OIL
3877 3882 Drilled soft

CORE #3 - 3882 to 3897' - Recovered 7'. Lost 6 bbls. of water while coring.

3882 3891 Drilled soft. 2' of recovery indicates brown lime, porous in part and SHOWING A TRACE OF OIL
3891 3897 Drilled medium soft. 5' of recovery indicates gray crystalline lime with shale laminations and having an estimated porosity of 5%. Core showed a trace of OIL

DRILLED:

3897 3919 Medium soft gray and brown lime; lost 5 barrels water per hour
3919 3925 Medium hard, gray and white lime; lost 5 bbls. water per hour
3925 3930 Medium hard gray lime; lost 5 bbls. water per hour
3930

At 3930 pulled drill pipe up to 3800'; let stand 2 hours but well did not flow. Connected bradenhead gas from between 7" and 9-5/8" casing into 3" drill pipe and built up

PRO. 19-4 SM-5-30

WELL COMPLETION REPORT--19-4
LOG AND HISTORY

WELL NO. 1 PROPERTY COMPANY

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

1150# preasure, but well did not flow after standing 4 hours. Pulled drill pipe up to 3000' and connected gas from bradenhead to 3" drill pipe. Well commenced flowing between 3" drill pipe and 7" casing after preasure had built up to 900#. Flowed into pits from between 3" drill pipe and 7" casing for 14 hours at an estimated rate of 300 barrels of fluid, cut 4% B.S.,and 15,000 MCF gas per day. After flowing into pits for an additional 12 hours, well was killed with clear water under 800# pressure. An estimated 600 barrels of water was pumped into formation.

DRILLED:

3930 3935 Medium hard white lime

CORED- CORE #4- 3935' TO 3950' - Recovery 6'6"

3935	3939	Drilled hard
3939	3942	Drilled medium hard
3942	3948	Drilled medium soft
3948	3950	Drilled medium hard

Formation recovered from Core #4 was white crystalline lime, granular in appearance, STAINED WITH OIL, with an estimated porosity of 5%.

Completed drilling to a depth of 3950' on March 28, 1931.

Tubed well to 3950' with 2-1/2", 10 thread, 6.5#, Jones & Laughlin, API, upset tubing, including Robinson Hall Packer set at 3850' and a 7/64" hole in tubing at 3820' to allow enough gas to enter from above packer to flow well.

March 29, 1931, swabbed fluid to 2100' and lost swab in hole. Well commenced flowing by heads into pits. March 30, 1931, recovered swab. Flowed well into pits thru open 2-1/2" tubing for about 37 hours. During the last 9 hours, flowed at an estimated rate of 350 barrels of fluid, cut 1% B.S.&W, and 550 MCF gas per day. Gas-oil ratio 1570 cubic feet per barrel.

Well was shut in April 2 to connect up separator and tanks. During the following four days the production gauged an average of 221 barrels of fluid, cut 1% to 1.5% B.S.&W. per day and approximately 670 MCF gas per day.

WELL COMPLETION REPORT
LOG AND HISTORY

WELL NO. PROPERTY COMPANY

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

May 23, 1931, pressures of 1480# and 1500# were registered at depths of 3841' and 3935', respectively, with a California Depth Pressure Recorder. The pressure at the surface was 1400#.

May 26, killed well with clear water under 1500# pressure. Bridged hole with rock from 3950' to 3860' and with lead wool from 3860' to 3858'. Dumped 3 sacks of Oil Well Special cement, none treated, on top of the lead wool which filled hole from 3858' to 3847'. Cement set O-K. Tubed to 3814' with 2-1/2" upset end tubing. Before cementing, a 2-hour test with well flowing wide-open between 2-1/2" tubing and 7" casing showed gas at rate of 11,400 MCF per day (Pitot tube measurement) and no oil. Killed well and secured circulation with clear water.

On May 31, 1931, cemented off gas with 75 sacks of El Toro Oil Well Special cement mixed with 81 cubic feet of water. Pumped in thru 2-1/2" upset end tubing at 3814', using Halliburton pumps. Casinghead kept pinched until cement reached bottom of tubing, then shut in.

While 54 sacks of cement were being pumped back into formation, pressure increased from 200# to 1300#. Tubing was hanging on slips in Hinderliter tubing head (4000# test). As tubing was being picked up to avoid possibility of sticking, the body of the Hinderliter tubing head failed. 2-1/2 hours were lost pulling tubing, breaking out head, changing connections and building up 1400# pressure before the well was shut in. Stood cemented 4 days.

On June 5, found top of cement at 3710'. Drilled out cement from 3710' to 3852'. Bailed water to 1250' and well commenced to flow, and was allowed to flow open into pit for 14 hours. After the hole was cleaned, a gauge showed fluid at the rate of 75 barrels, cut 35% BS&W, and gas (Pitot tube measurement) at the rate of 1250 MCF daily. Later the gas increased to 3500 MCF daily.

On June 8, 1931, the well was killed with water under 1000# pressure. Cleaned out bridge from 3852' to 3950'. On June 10, ran tubing. Tubed to 3944' with 2-1/2" upset end tubing with a 1/8" bottom hole bean set at 3942'. Swabbed fluid to 2000' and well began to flow. Production from between the 2-1/2" tubing and 7" casing, which was turned into the pit for 7 days, gauged as follows:

PRO. 18-A 2M-3-58

WELL COMPLETION REPORT 18-A
LOG AND HISTORY

WELL NO. 1 PROPERTY Bradish COMPANY

WELL COMPLETION REPORT—18-4

LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

On January 6 landed 5-1/2" casing at 3950'. Before the casing was landed, pumped in mud weighing 94# per cubic foot (12.5# per gal.) between the 5-1/2" and 7" casings.

Left-hand adapter on casing 365' above shoe.

Shut down three days to remove rotary table and rig up cable tools.

Bailed out mud which was left inside of 5-1/2" casing from 3150' to 3300'.

On January 12 sand line parted, leaving 4" x 31' bailer and 100' of sand line in hole. On February 7, 1932, recovered bailer and sand line after pulling all of 5-1/2" casing.

On February 8, landed 5-1/2" casing at 3950'. Left-hand adapter 365' above shoe, and on the following day commenced deepening in 4-3/4" hole with cable tools. Bit showed marks which were probably due to pieces of latch out of latch jack and slip from combination socket which were left in hole while fishing for bailer.

3950 3952 Gray lime, hard
3952 3954 Gray lime, soft

On February 12, bailed hole dry to test for water shut-off. The following tests were made:

STOOD HOURS	HOURS BAILING DRY	FLUID ENTERED GAL. OIL	FLUID ENTERED GAL. WATER	TOTAL TIME	RATE OF FLUID ENTRY PER 24 HRS BBLS. OIL	RATE OF FLUID ENTRY PER 24 HRS BBLS. WATER	HOLE OPEN TO
3	1	54	22	4	7.7	3.1	3954'
3	1	39	15	4	5.6	2.1	"
3	1	43	14	4	6.1	2.0	"

Filled hole to 3450' with water and drilled ahead in 4-3/4" hole with Baker cable tool core barrel

CORED - CORE #5 - 3954' to 3959' - Recovered 5'
CORE #6 - 3959' to 3961' - Recovered 1'6"
CORE #7 - 3961' to 3964' - Recovered 1'

3954 3964 Medium, dense brown lime saturated with oil but non-porous.

Checked depth of hole with steel measuring line at 3964'. No correction.

PRO. 18-A ZM-8-28

WELL COMPLETION REPORT—18-A

LOG AND HISTORY

WELL NO. [illegible] PROPERTY [illegible] COMPANY

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

Average daily production - bbls fluid	- 151
Avg. cut % (due to water used to kill well)	27.2
Avg. daily gas production, MCF	- 4,180
Gas-Fluid ratio - Cu. ft. per bbl.	- 27,500
Avg. daily prod. bbls. net oil	- 110
Gas-Oil ratio - cu. ft. per bbl.	- 37,800
Pressure on tubing	- No record
" " casing	- " "

From June 17 to 21 an attempt was made to produce thru the 1/8" bottom hole bean but production only averaged from 1 to 2 barrels daily. Apparently the bean was plugged. The bean was cleaned and production obtained thru it and a 3/8" bean on the casing was as follows:

Number of days	- 3
Average daily production - bbls fluid	- 41
Avg. cut %(due to water used to kill well)	- 13.7
Avg. daily production of gas - MCF	- 3545
Gas-fluid ratio, cu. ft. per bbl	-86,500
Avg. daily prod. , bbls net oil	- 36
Gas-Oil ratio , cu. ft. per bbl.	-98,500
Pressure on tubing	trap pressure
Pressure on casing, lbs. per sq.in.	1200

Between June 25 and July 8, 1931, the bottom hole bean was removed and the well retubed to 3944' with 2-1/2" tubing with bottom hole bean collar set at 3942'. Well commenced to flow when fluid was swabbed to 2000'. From July 4 to July 25, 1931, production data were as follows:

Flow string	open 2-1/2" tubing
Number of days	20
Avg. daily production-bbls of fluid	53
Avg. cut %(due to water used to kill well)	8.8
Avg. daily production gas - MCF	4144
Gas-Fluid ratio - cu. ft. per bbl.	78,300
Avg. daily production - bbls. net oil	49
Gas-Oil ratio - cu. ft. per barrel	84,300
Pressure on tubing - Lbs per sq. inch	Trap pressure
Pressure on casing - " " " "	900#

During the above test there was a gradual decrease of oil from approximately 75 to approximately 45 barrels, and an increase in gas from approximately 3600 MCF to 5000 MCF daily. The cut decreased from 15% to 1% B.S.&W.

WELL COMPLETION REPORT—18-A
LOG AND HISTORY

WELL NO. 1 PROPERTY COMPANY

PRO. 18-4 2M-8-29

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

From July 24 to December 5, unsuccessful attempts were made to reduce the gas-oil ratio as indicated below:

DATE From	DATE To	NO. D(ays) H(ours)	Tubg. Bean	Csg. Bean	AVG. DAILY PROD. Oil Bbls	Gas MCF	Gas-Oil Ratio	PRESSURE #/Sq.In. Tbg.	PRESSURE #/Sq.In. Csg.
Jul 26	Aug 1	7D	8/64"	None S.I.	None	281	—	1400	1400
Aug 2	Aug 3	2D	Open	3/8"	68	5040	73576	50	600
Aug 4	Aug 4	1D	"	1/2"	67	4880	72835	50	600
Aug 5	Aug 6	2D	"	3/4"	72	4825	67013	50	250
Aug 7	Aug 10	4D	"	3/8"	63	4830	76364	50	375
Aug 11	Aug 23	13D	"	3/4"	61	4678	76210	50	300
Aug 24	Aug 31	8D	"	1-1/4"	72	4650	65000	50	200
Sep 1	Sep 22	22D	"	"	72	4650	65000	50	200
Sep 23	Sep 28	Shut in to form oil seal						1400	1400
Sep 29		1 H	Open	None S.I.	20	172	8600	50	700
Sep 29	Shut in		2-1/2"						
Sep 29	Oct 5	Shut in to form oil seal						1400	1400
Oct 5		20H	8/64"	None S.I.	5	175e	35000	925	1400
Oct 6		(2H	8/64"	"	1/2)			(925	1400
		(22H Open	2½"	"	66-1/2)	6050	90300	(50	700
Oct 7	Oct 9	2 D	"	"	67	5990	89400	50	700
Oct 10	Oct 18	9 D Shut in						1400	1400
Oct 19		5 H Open	2½"	"	31	1085	35000	50	700
Oct 18	Oct 28	Shut in						1400	1400
Oct 29		1 D Open	2½"	"	46	2860	62200	50	700
Oct 29	Nov 9	Shut in						1400	1400
Nov 10		7½ H Open	2½"	"	41	2320	56600	50	700
Nov 10	Nov 23	Shut in						1400	1400
Nov 23		6 H Open	2½"	"	36	?	?	50	700
Nov 23	Dec 4	Shut in						1400	1400
Dec 5		6½ H Open	2½"	"	46	1302	39174	50	700

Well averaged 126 barrels daily for first 30 days, prorated and testing, flowing thru various chokes.

CONTRACTOR: George Barham, Big Spring, Texas

DRILLERS: Ed Henson
L. R. Tippett

Midland, Texas, Nov. 3, 1932.

GEORGE L. KLINGAMAN
GORDON M. GRIFFIN

WELL COMPLETION REPORT—18-A
LOG AND HISTORY

WELL NO. 1 PROPERTY [illegible] COMPANY

[illegible] August 24 to November 9, [illegible] as follows:

DATE From	To	Dep. (Ft.)	Tube. Size	Csg. Perf.	Ann. Gallons Oil	Gallons Gas	Gas-Oil Ratio Cu. Ft. per Bbl.	Gravity Deg.
[illegible]	[illegible]	1	7"	5/64"	[illegible]	221	—	1400
Aug. 3	Aug. 5	30		3/32"				
Aug. 4	Aug. 6	30		1/8"				
Aug. 5	Aug. 8	30		5/64"				
Aug. 7	Aug. 10	40		3/32"				
Aug. 11	Aug. 13	30		1/4"				
Aug. 14	Aug. 21	30		1-1/4"				
Aug. 22	Aug. 24	30		"				
Sep. 1	Sep. 22	30		"				
Sep. 23	Sep. 25	30	Shut in to for	oil test				1400
Sep. 26		30	Open	None				1400
Oct. 29	Shut in		2-1/2"	S.I.				
Dec. 20	Shut in to for							1400
Jan. 1		2011	6/64"	None S.I.	3	1750	58000	1400
[illegible]		(Est.	8/64"	"				(858 1400
		(Est. Open	32"	"	60-1/2)	8030	102300	(60 702
Jul. 7	Jul. 9	4		"		87	5980	82400	80 700
[illegible]		10	Shut in					1400
[illegible]		5	Open 8/	"		21	1065	35300	50 700
Jul. 10	Jul. 20		Shut in					1400
Jul. 18	Jul. 25		1	Open 32"	"		46	2840	18200	70 700
Jul. 22	Nov. 9		Shut in					1400
Jul. 10		7/8	R	Open 32"	"		41	8320	86000	80 700
Jul. 10	Jul. 23		Shut in					1400
Jul. 23		6		Open 32"	"		56	"	"	80 700
Jul. 25	Aug. 4		Shut in					1400
Aug. 5		6/8		Open 8/	"		46	1802	36174	80 700

Well averaged 120 barrels daily for first 30 days, producing
and testing, flowing thru various chokes.

[illegible]

[illegible] Superintendent

[illegible], Ozark, Nov. 9, 1928. [illegible]

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

DEEPENING & PLUGGING HISTORY

On December 5, 1931, authorization was received to shut off gas.

PROPOSED WORK.

1. Kill well with water.
2. Ream hole to 6-1/4" with rotary tools from 3700' to 3950'
3. Run 5-1/2" casing with left-hand adapter approximately 200' above shoe. Before setting casing on bottom, pump in some heavy mud.
4. Test 5-1/2" casing for shut-off.
5. Deepen with cable tools to next porous zone which it is estimated should be encountered within the next 50 feet. If rotary tools are used, the hole should be cored continuously.
6. When the porous horizon is encountered, test for fluid content. Further procedure will depend upon the character and amount of fluid obtained.
7. If a commercially productive oil horizon is not found, plug with cement and proceed as in 8.
8. If oil is encountered, loosen the 5-1/2" casing and cement at approximately 3850' to cement off gas.
9. If well does not flow, shoot productive horizons.
10. If desired, 5-1/2" casing may be backed off at left-hand adapter and pulled.

WORK DONE

Started hauling material for rigging up cable tools on December 19, 1931. The well was shut in until the crew was ready to commence work with the exception of a few short tests.

DATE 1931	NO. HRS.	TUBG. BEAN	CSG. BEAN	BBLS. OIL	GAS MCF	GAS-OIL RATIO	PRESSURE TBG.	PRESSURE CSG.
Dec 17	5	open 2½"	None S.I.	31	1535 Est	49516	50	700
Dec 31	(8	do	do)	93	No. Meas.		50	700
	(13	do	Open bet. tbg & csg)				?	?
1932 Jan 1	8	do	do	41	5600	136600	?	?

On January 1, 1932, killed well with water under 1200# pressure, removed Xmas tree connections and pulled all 2-1/2" tubing. On January 2 and 3, reamed hole from 3700' to 3950' with 6-1/4" Hughes bit on 3" drill pipe.

PRO. 18-A SM-11-58

WELL COMPLETION REPORT 18-A
LOG AND HISTORY

WELL NO. 1 PROPERTY Grant COMPANY

[illegible]

[illegible]

[illegible]

WELL COMPLETION REPORT--18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

On February 14 bailed hole dry and made following tests:

STOOD HOURS	HOURS BAILING	FLUID ENTERED GALS. OIL	GALS. WATER	TOTAL TIME	RATE FLUID ENTRY PER 24 HOURS BBLS OIL	BBLS. WATER	HOLE OPEN TO
3	1	66	21	4	9.4	3	3964'

Water tasted fresh, gravity of oil 33° API.

Filled hole to 3450' with water and drilled ahead in 4-3/4" hole with Baker cable tool core barrel.

CORED - CORE #8 - 3964' to 3968' - Recovered 4'

3964 3968' Medium, dense, brown lime, somewhat SATURATED WITH OIL but non-porous

CORE #9 - 3968' to 3973' - Recovered 5'

3968' 3971' Medium, broken white lime, porous in part, showing no oil, probable increase in fresh water from approximately 5 to approximately 30 gallons per hour.

3971 3973' Medium, dense, brown lime slightly sandy, SOMEWHAT SATURATED WITH OIL but very slightly porous

On February 14, 1932, bailed hole dry and made the following tests for fluid:

STOOD HOURS	HOURS BAILING	FLUID ENTRY GALS. OIL	GALS. WATER	TOTAL TIME	RATE OF FLUID ENTRY PER 24 HOURS BBLS. OIL	BBLS. WATER	HOLE OPEN TO
1	1	43	61	2	12.3	17.5	3973'
2	1-1/2	70	100	3-1/2	11.4	16.6	"
3	3	56	148	6	5.3	14.1	"

Water tasted fresh.

Drilled ahead in 4-3/4" hole using Baker cable tool core barrel.

WELL COMPLETION REPORT

LOG AND HISTORY

WELL NO. PROPERTY COMPANY

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

CORED - CORE #10 - 3973' to 3978' - Recovered 3'6"
CORE #11 - 3978' to 3980' - Recovered 1'0"

3973 3974 Medium, dense, brown lime slightly sandy
3974 3976 Medium, dense, gray, sandy lime
3976 3979 Broken white lime, porous in part with some pores FILLED WITH DEAD OIL. Appears oolitic in part

3979 3980 Hard, brown lime with white lime inclusions, slightly porous in part

CORE #12 - 3980 to 3983 - Recovered 2'6"

3980 3983 Medium, white and brown lime, slightly porous in part

CORE #13 - 3983' to 3986' - Recovery 2'6"

3983 3986 Medium, soft, dense, brown lime

CORE #14 - 3986' to 3991' - Recovered 4'6"

3986 3991 Medium brown lime with inclusions of white lime, somewhat porous in part; POSSIBLE SLIGHT INCREASE IN GAS & OIL

CORE #15 - 3991' to 3995' - Recovered 3'6"

3991 3995 Medium gray lime, slightly porous in part

On February 18, 1932, bailed hole dry and made following tests:

STOOD HOURS	HOURS BAILING	FLUID ENTERED GALS. OIL	GALS. WATER	TOTAL TIME	RATE OF ENTRY PER 24 HOURS BBLS. OIL	BBLS. WATER	HOLE OPEN TO
1	1/2	40	66	1-1/2	15.2	25.2	3995'
2	2-1/2	80	115	4-1/2	10.2	14.6	3995'

Drilled ahead in 4-3/4" hole, using Baker cable tool core barrel.

PRO. 18-4 2M-8-50

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. PROPERTY COMPANY

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

CORED - CORE #16 - 3995' to 3997' - Recovered 1'6"

3995 3997 Medium hard, dense, brown lime, non-porous

CORE #17 - 3997' to 4000' - Recovered 3'

3997 3998 Medium brown lime, oolitic in appearance, slightly porous

3998 4000' Medium dark-gray lime, oolitic in appearance, slightly porous.

Completed drilling to a total depth of 4000' on February 18, 1932.

It was decided to quit drilling at 4000' and plug off water in lower part of hole as it was not thought an increase in oil would be encountered below that depth.

Before plugging, hole was washed with 70 barrels of fresh water. Applied 700# pump pressure on 5-1/2" casing but received no returns from between the 5-1/2" and 7" casings. Applied 1000# pump pressure between the 5-1/2" and 7" casings but did not receive any returns thru 5" casing. These tests indicated the 5-1/2" casing seat to be holding O-K.

On February 21, plugged 4-3/4" hole with 13 sacks El Toro Oil Well Special cement not treated (mixed with water to 60% slurry) pumped in thru 2-1/2" tubing hung at 3998'. Equalized cement with 21.4 barrels water under 500# pressure. Pulled tubing back to 3915' and circulated 3.5 barrels of water under 500# pressure and then pulled tubing back to 3678' and circulated 60 barrels of water under 500# pressure and let stand shut in under 500# pressure for 5 days for cement to set.

On February 26, 1932, drilled out cement from 3920' to 3950'.

On February 27, 1932, bailed hole dry, let stand 2 hours and no fluid entered. Oil and water encountered between 3950' and 4000' plugged off successfully.

From February 28 to March 1, 1932, pulled and jarred on 5-1/2" casing to loosen it. Pulled out all (3950') of 5-1/2" casing. Put in and drove on 525# lead wool which plugged hole from 3950' to 3945' (SLM).

PRO. 18-4 3M-5-30

WELL COMPLETION REPORT - 18-4
LOG AND HISTORY

WELL NO. [illegible] PROPERTY [illegible] COMPANY

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

On March 8, 1932, shot formations from 3935' to 3974' with 240 quarts of nitroglycerin in 5" shells. 10' anchor below shot. The well had been killed with water before putting in nitroglycerin shells. After the zero hour bomb had been placed, swabbed fluid to 900' and well commenced to flow. Flowed thru open 7" casing from 3:30 to 7:00 P.M. when shot exploded.

Following the shot the well was allowed to flow into the air for 30 minutes to clean hole before production was turned into flow tanks.

Well flowed 1077 barrels of fluid thru open casing into tanks during the first 24 hours after the shot; BS&W decreased from 35 to 1 per cent, and during the next few hours decreased to 5/10 of 1 per cent BS; gas-oil ratio 7100 cubic feet per barrel.

March 10 and 11, experimented with casing chokes ranging from 14/64" to 1/2", but gas-oil ratios were high.

On March 13 ran 3910' of 2-1/2", 6.5#, J&L, API, 10 thread, U.S. tubing with bottom hole bean collar at 3907' and four rows of 5/8" x 4" perforations at 3908'. Tubing run thru Regan oil saver with disc on bottom of tubing.

During the period March 16 to 31, experimented with tubing chokes ranging from 12/64" to open; gas-oil ratios 24,000 to 15,400 cubic feet per barrel.

Shut in account over allowance April 1 to 15.

Experimented with various tubing and casing chokes April 16 to 21; gas-oil ratios 16,900 to 8,900 cubic feet per barrel.

Shut in account over allowance April 22 to May 4, 1932.

May 5 and 6 well flowed 1222 barrels of oil in 24 hours thru a 24/64" tubing choke and a 1" casing choke; gas meter out of order, estimated ratio 10,000 cubic feet per barrel.

During the period May 7 to June 6, experimented with various tubing and casing chokes and shut in for storage 13 days. The results of gas-oil ratio tests were approximately the same as on previous tests.

WELL COMPLETION REPORT—18-A
LOG AND HISTORY

WELL NO. 1 PROPERTY Merwin COMPANY

WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

June 6 to 15, well flowed an average of 20 barrels daily thru a 7/64" choke with a gas-oil ratio of 9,900 cubic feet per barrel.

June 15 to 17, well flowed an average of 22 barrels daily thru a 6/64" tubing choke with a gas-oil ratio of 6,500 cubic feet per barrel.

June 18 to 23, flowed thru various tubing and casing chokes and obtained an average of 1000 barrels of oil daily with a ratio of 9,500 cubic feet per barrel.

June 23 to July 14, flowed thru various tubing chokes and wide-open while replacing gasket in Regan tubing head.

July 15 to 26, flowed an average of 18 barrels daily thru a 6/64" tubing choke with gas-oil ratio of 6,300 cubic feet per barrel.

July 27 to August 5, flowed an average of 20 barrels daily thru a 5/64" tubing choke with a gas-oil ratio of 3500 cubic feet per barrel. During this period the gas-oil ratio decreased from 4900 to 430 cubic feet per barrel, and tubing pressure decreased from 1060 to 220 pounds.

August 6 to 8, flowed an average of 27 barrels daily thru a 6/64" tubing choke with the gas-oil ratio increasing to 6,600 cubic feet per barrel and tubing pressure to 1140 pounds.

August 8 to 21, flowed an average of 16 barrels daily thru a 5/64" tubing choke; gas-oil ratio dropped in 4 days to 1000 cubic feet per barrel, and tubing pressure to 220 pounds.

August 22 to 23, flowed thru a 5/64" tubing choke and open while repacking Regan tubing head.

August 24 to September 1, installing another separator and connecting up.

September 2 to 5, flowed an average of 14 barrels daily with a gas-oil ratio of 1140 cubic feet per barrel, thru 5/64" choke on tubing.

September 6 to 9, shut in while laying down 5-3/16" casing.

WELL COMPLETION REPORT– 18-A
LOG AND HISTORY

WELL NO. 1 PROPERTY Coreditas COMPANY

June 6 to 12, well flowed an average of 80 barrels daily thru a 7/64" choke with a gas-oil ratio of 5,000 cubic feet per barrel.

June 13 to 17, well flowed an average of 60 barrels daily thru a 9/64" bubbling choke with a gas-oil ratio of 6,500 cubic feet per barrel.

June 18 to 25, flowed thru various tubing and casing chokes and on average of 1000 barrels of oil daily with a ratio of 9,500 cubic feet per barrel.

June 26 to July 14, flowed thru various tubing chokes and wide-open while replacing sucker rods in seven tubing joints.

July 15 to 25, flowed an average of 50 barrels daily thru a 6/64" bubbling choke with gas-oil ratio of 6,500 cubic feet per barrel.

July 27 to August 5, flowed an average of 30 barrels daily thru a 5/64" bubbling choke with a gas-oil ratio of 7000 cubic feet per barrel. During this period the gas-oil ratio decreased from 4500 to 420 points, and tubing pressure increased from 1060 to 320 pounds.

August 6 to 8, flowed an average of 27 barrels daily thru a 5/64" bubbly choke with the gas-oil ratio increase to 6,000 cubic feet per barrel and tubing pressure to 1100 pounds.

August 9 to 21, flowed an average of 18 barrels daily thru a 5/64" bubbly choke; gas-oil ratio increased to 7000 cubic feet per barrel, and tubing pressure to 850 pounds.

August 22 to 25, flowed thru a 5/64" bubbly choke open with tubing pressure 1100 pounds.

August 26 to September 1, reperforating and conditioning hole.

September 2 to 8, flowed an average of 1240 barrels daily with a gas-oil ratio of 1140 cubic feet per barrel. Made 1/64" choke on tubing.

September 9 to 11, ran 2" tubing open ended to 6,500 feet.

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WELL COMPLETION REPORT—18-4
LOG AND HISTORY

WELL NO. 1 PROPERTY Meredith THE CALIFORNIA COMPANY

September 10 to 11, repacking Regan tubing head.

September 12 to October 29, flowing an average of 16 barrels daily thru a 5/64" tubing choke. The tubing pressure decreased from 1340 pounds on September 12 to 200 pounds on September 24 and remained steady at 200 pounds and the gas-oil ratio decreased from 3600 to 250 cubic feet per barrel during the same period and remained steady.

NOTE: All gas measurement, except as noted, are calculated from a determined gravity of .75 and an assumed pressure base of 13.2 pounds plus 4 ounces.

The abnormally low gas-oil ratio of 250 cubic feet per barrel obtained thru a 5/64" tubing choke in the period September 12 to October 29, 1932, appears to be correct, altho the solubility of the gas in the oil at the formation pressure is perhaps two or three times this amount.

On October 28, 1932, the gas meter was found to be operating properly and no leaks could be found in the separator or lines.

Well averaged 83.43 barrels daily first 30 days after being deepened and shot, flowing thru various chokes and tubing, being shut down approximately 17 days account proration.

CABLE TOOL DRILLERS: D. Ghene
Roy Messimer
Sam O'Neil.

Midland, Texas, Nov. 3, 1932

GEORGE L. KLINGAMAN
COLIN E. KEITH.

PRO. 18-A 2M-3-28

WELL COMPLETION REPORT—18-A
LOG AND HISTORY

WELL NO. 1 PROPERTY Worrell COMPANY

Operations to be ll, reporting began waiting period.

November 11 to October 28, flowing on average of
16 barrels daily thru a 3/64" tubing choke. The tubing pressure
decreased from 1350 pounds on September 12 to 320 pounds on
September 24 and remained steady at 300 pounds and the gas-oil
ratio decreased from 3000 to 250 cubic feet per barrel during
the same period and remained steady.

[illegible] All pay measurements, except as noted, are reckoned from a determined gravity of .78 and an assumed pressure base of 15.8 pounds plus 6 ounces.

The abnormally low gas-oil ratio of 800 cubic feet per barrel observed thru a 3/64" tubing choke in the period November 11 to October 28, 1932, appears to be correct, altho the solubility of the gas in the oil at the formation pressure is perhaps two or three times this amount.

On October 28, 1932, the gas meter was found to be operating properly and no leaks could be found in the separator lines.

All measured 08.45 barrels daily first 24 days after being reopened and also, flowing thru various chokes and tubing, below shut down approximately 17 days account pressure.

[illegible] Thano
Log Examiner
Gas Oil Well

January [illegible], 1933

[illegible]
Secretary