ATKINSON

COMPLETION REPORT

Lee No. 1-12

February 5, 1970

Ran 155 jts. 5½" 14# J-55 new seamless casing - total 4905.18'. Halliburton float shoe, baffle plate in top of shoe jt.(28.61' shoe jt.)w/Orbit tool scratchers, baskets & centralizers; 1st basket - top of float shoe, 2nd - bottom of 15th jt. Ran scratchers on 10' spacing 30' above & below each zone, & on 5' spacing thru each zone. Centralizers on jts. 1,2,4,16, 18,20,22,24 & 26. Then cemented w/310 sx. Common salt saturated @ 16.2#/gal. Had good pressure & returns thruout job. Set pipe @ 4900' K.D.B. Plugged down @ 7:45 P.M. Checked float - OK., then pressured back to 500# & closed well in. W.O.C.

February 6, 1970

Set 5½" on slips & cut off same; welded on bell nipple. Halliburton ran temperature survey & found top of cement @ 4030'. Survey looks O.K. Inside pipe T.D. - 4868'. W.O.C.

February 7 - 17, 1970

W.O.C.

February 18, 1970

Moved in cable tools & rigged up. Swabbed hole down to 3700'. Shut down for night.

February 19, 1970

Welex rigged up & ran Core log from 4860 - 4000'. Perforated w/Super Dyna Jets - 4 shots per from 4834 - 36'. Finished swabbing hole down from 3700 to T.D. Let set 30 min. from 2:00 - 2:30 P.M., recovered no fluid or gas. Dowell hooked up & pumped in 500 gal. mud acid, followed w/118 bbls. water to load casing. Pressured up to 500# & let set 5 min., pressured up to 2000#; let stand 10 min. Pressured up to 2500#, let set 15 min. Pressured to 3000#, let set 25 min. Pressured to 3500#, let set 5 min.; broke to 400#. Started pumping @ 3/4 bbl./min. - pressure 500#. Acid all in formation; shut pump down; pressure dropped to 0 in 15 min. Started swabbing back 130 bbls. load acid & water. Swabbed well to bottom; no kickback. Shut well in for the night.

February 20, 1970

Had 800' fluid in hole: 125' oil & 675' water/12 hrs. Swabbed hole to bottom; let set 30 min.; had approximately 30' fluid - all water, scum oil. Next 30 min., had 20' fluid - all water w/scum oil & rotary mud. Continued to swab until 2:00 P.M. @ about 30 gal./hr. w/good show oil & froggy muddy rotary mud.

2:00 P.M. - re-acidized w/500 gal. 28% & followed w/1,000 gal. 15%. Pump pressure - 800#. Pumping 7 bbls./min. When 500 gal. was in formation, pressure broke to 675#. When 1,000 gal. in formation, pressure broke to 500#; still pumping @ 7 bbls./min. All acid in & 12

Feb. 20'70, Cont'd.

bbls. overflush; pressure still 500#. Shut pump down; immediate pressure drop to 225#; on vacuum in 10 min. Total load to recover - 166 bbls. Started swabbing.

6:00 P.M. - Had recovered 123 bbls. of load. Swabbing down to 3500'. Had show of oil. Shutin for night.

February 21, 1970

Started up @ 8:00 A.M. Fluid level 2500' down. Filled up 1000' overnight. Swabbed 105' oil off top, or 2½ bbls.; rest water. Started swabbing hole down. At 9:00 & 10:00 A.M. - 20 bbls. water. At 11:00 A.M., 15 bbls. total fluid; oil started showing up. Had 23 bbls. overload. At 12:00 Noon, 15 bbls. total fluid; about 20% oil,; 57 bbls. overload. Never did get well swabbed below 3500'. Welex ran junk basket. Went in w/5" Baker P-1 plug set @ 4470'. Perforated 1' from 4397 - 98' - 4 holes. Swabbed hole down & tested 30 min. No show of oil, water or gas. Acidized w/500 gal. mud acid. Pressured up to 1,000#; let set 5 min.; pressure fed off to 550# in 5 min. Started pumping; pressure went up to 850#, then broke to 50#. Sped up pump to 6 bbls./min.; pressure @ 700#. Acid all in, shut pump down; immediate vacuum. Total load 119 bbls. Started swabbing hole down @ 6:30 P.M. At 9:00 P.M., had swabbed back 109.5 bbls. total fluid; about 20% oil. Still lack 10 bbls. recovering load. Swabbed down to 3300'. Shutdown for night.

February 22, 1970

Started up - checked fluid level. Had 1800' fluid in hole, or 2600' down from surface. Started swab test:

8:30 - 9:30 A.M.	30.2 T.F.	12½% oil
9:30 -10:30 A.M.	10.0 T.F.	30% oil, hole swabbed down
10:30 -11:00 A.M.	2.5 T.F.	33% oil, one pull
11:00 -12:00 Noon	3.5 T.F.	46% oil
12:00 - 1:00 P.M.	3.5 T.F.	44% oil
1:00 - 2:00 P.M.	3.5 T.F.	44% oil
3:00 - 4:00 P.M.	3.5 T.F.	44% oil
4:00 - 5:00 P.M.	3.5 T.F.	50% oil
5:00 - 6:00 P.M.	2.5 T.F.	40% oil

Shut down for night.

February 23, 1970

Started up 8:00 A.M., had 1200' fluid in hole - or down 3200' from surface in 14 hrs. From 8:30 - 9:30: Swabbed 19.2 bbls. to swab hole down to perforations. Hooked up Dowell & treated w/500 gal. 28% & followed w/2,000 gal. 15%. Had 123 bbls. fluid in before we hit any pressure. Pumping 2-3/4 bbls./min @ 700#. Increased rate to 3 bbls./min - pressure 800#. All acid in. Shut pump down. Went on vacuum; 116 bbls. total load. Went in with swab; hit fluid down 300' from surface.

Feb. 23'70, Cont'd.

10:30 - 11:30 A.M.	84.4 bbls.	T.F.	
11:30 - 12:30 P.M.	32.9 bbls.	T.F.	
12:30 - 1:30 P.M.	36.2 "	"	
1:30 - 2:30 P.M.	25.0 "	"	(Had total 178.5 at this point;
2:30 - 3:30 P.M.	6.0 "	"	46% oil 12.5 overload)
3:30 - 4:00 P.M.	8.9 "	"	50% "
4:00 - 4:30 P.M.	4.3 "	"	44% "
4:30 - 5:00 P.M.	3.75 "	"	50% "
5:00 - 6:00 P.M.	4.9 "	"	46% "

Shutdown for nite.

February 24, 1970

Started up @ 8:00 A.M., fluid level @ 3,000' from surface.

10:00 A.M.	39.0 bbls.	T.F.	38% oil, hole swabbed down
11:00 "	4.6 "	"	39% "
11:30 "	4.5 "	"	33% "
12:00 "	4.6 "	"	33% "
12:30 "	4.4 "	"	30% "
1:00 "	4.4 "	"	30% "
1:30 "	4.5 "	"	31% "
2:00 "	4.3 "	"	30% "

Called Welex & set Baker bridgeplug @ 4340' & perforated @ 4236 - 40': 2 holes/ft.; total 8 holes. Treated w/1,000 gals. Dowell mud acid. Pressured up to 200#; stopped pump; pressure bled off. Started pumping @ 2 bbls./min.; pressure 400#. Broke to 375#, then to 100#. Sped up to 7 bbls./min.; pressure 500#; broke to 400#. All acid in; shut pump down; on vacuum in 1 min. Total load - 128 bbls. Started swabbing @ 5:00 P.M. At 6:00 P.M., well kicked off & started flowing thru 5" casing. Had 76 bbls. of load back. Lacked 52 bbls. getting load back. Flowed well in tank 'til 7:00 P.M. Shutin for nite.

February 25, 1970

Opened wellhead & checked pressure on casing - 935#. Flowed thru casing. Well flowed 37 bbls./3 hrs. Pumped 150 bbls. treated water into well & killed to run 2" EUE tubing. Ran (1) 30.25 mud anchor, (1) 8.03 tubing sub & 129 jts. of 2-3/8" EUE 8rd tubing for a grand total of 4326.90'. Tubing spaced 13.10' off plugged back T.D. of 4340'. Shutdown for nite.

February 26, 1970

Started up; had 139# on casing & 50# on tubing side. Tried to swab thru tubing; got tubing swab down to 3100'. Had parafin bridge. Called out hot oil truck. Heated oil & pressured up to 2000# on tubing; finally broke & circulated out parafin. Started tubing swab @ 2:00 P.M. Swabbed 'til 6:00 P.M. total of 80 bbls., all water. Well did not flow. Casing had 200#. Shutin for nite.

Feb. 27, 1970

Started up; tubing had 640# pressure. Swabbed 20 bbls. water. Well started flowing; flowed 35 min. & died. Started swabbing again @ 9:00 A.M. Kicked well off @ 10:30 A.M., flowed water, oil & gas. Shut in @ Noon & hooked in to gas separator. Started flowing @ 1:00 P.M. full 1" choke.

	Oil	Water	Gas	Tubing	Casing
2:00	5.0 bbls.	2.3 bbls.	1,790,000 MCF	325#	630#
3:00	7.6	2.3	"	"	"
4:00	5.0	"	"	"	"
5:00	5.0	"	"	"	"
6:00	5.0	"	"	"	"

Feb. 28, 1970

Started up; tubing pressure 875#; casing pressure 1100#. Started flowing on full choke. Dumping lots of water. Released rig @ 10:00 A.M. Open flow thru 2" tubing for 9 hrs. Gas average - 1,790,000 MCF. Oil average - 7.4 bbls./hr., or 67.6 bbls./9 hrs. Water, just a trickle @ end of test. Tubing flow pressure - 420#. Casing pressure - 660#.

s/Marvin D. Sullivan

PHONE
LIBERAL, KANSAS 316/624-3251

AGENT MUD CO.

PHONE
GUYMON, OKLA. 405/338-3830

ENGINEER'S TEST REPORT

Check No. 10 Date FEB. 4, 1970

Operator: Lee BANKS + W.R. ATKINSON	Contractor: SAGE DRLG. CO.	Rig No. 3	
Address: LIBERAL, KS.	Address: LIBERAL, KANSAS		
Report for Mr.: Bill	Report for Mr.: AL		
Well Name and No.: Lee #1	Field: EVALYN – CONDIT	State: KANSAS	County: SEWARD

Sec.	Twp.	Rng.	Spud Date	Bit No.	Pump Liner In.	Stroke In.	Bbl./Cyc.	Cyc./Min.	Bbl./Min.	Annular Vel. Ft./Min. ☐ Opp DP ☐ Opp Cal.
12	33	34	1-23-70							

Mud Sample Taken	Last Csg. Size	Last Csg. Depth	Liner Size	Liner Depth	D.P. Size	Bit Size	Est. Mud Vol. Bbl.
Flowline ☑ Pit ☐	8 5/8	761'			4½	7 7/8	Pit 300 Hole 400 Tot. 700

Operation	Time		Flowline Temp.	Total Circulating Time	Circulating Time Bottom - Pp
DRLG.	9:30	A.M. ☑ P.M. ☐	5:15 PM °F		

Depth 4972

	MUD PROPERTIES 2-4-70			DRILLING FLUID SPECIFICATIONS
Weight of Mud (lb/gal ☐ lb/cu ft ☐ psi/1000 ft)	9.0		9.0	Type STARCH Weight 9.0-9.2
	468.0		468.0	Filtration 10-15 Viscosity 40-42
Viscosity, Funnel, Sec., API ___°F	38		40.	Other – – – Filler 4-6 #BBL.
App. Viscosity, cp, 600 rpm/2	15		16	ADDITIVES IN MUD
Plastic Viscosity, cp ___°F	9		10	Super Bar ☐ Starch ☑
Yield Point, lb./100 sq ft	12		13	Bentonite ☐ Preservative ☑
Gels, lb/100 sq ft., Initial/10 min.	3/4		3/4	Salt Gel ☑ Caustic Soda ☐
pH (Electrode Indicator ☐ Filtrate ☐ Mud ☑)	6.8		6.8	Driscose ☐ Soda Ash ☐
Filtrate, ml, API	12.8		12.0	Oil ☐ Lime ☐
Cake, 32nd In. API ☐ 500 psi ☐	1/32		1/32	MATERIALS RECOMMENDED
Salt (NaCl Cl ion ☐ ☐ PPM ☑ GPG ☐)	18,150		20,050	SALT GEL FOR VIS
Sand Content ___% by Vol	TRACE		TRACE	FILLER - AS NEEDED
Calcium Ion; ppm ☐ epm ☐	HVY		HVY.	
Sulphate ion (EPM ☐ PPM ☐)	HVY		HVY.	VERY SMALL AMT. WATER
Alkalinity, API (Pf, cc N/50 acid)	–		–	
(Pm, cc N/50 acid)	–		–	55 KS STARCH PER TOUR
Oil ___% by Vol	–		–	50 #RES. PER TOUR
Water ___% by Vol	90.0		90.0	
Solids ___% by Vol	8.5		8.5	
Lost Circulation ___ mat Vol	2 #BBL.		4 #BBL.	
Preservative ___ (lb./bbl.)	.24		.24	Mud Cost - Daily $147.60 145.35
				Cumulative $2853.55 $2,998.90

EQUIPMENT

Degasser	☐	Mud Logging	☐
Gas Detector	☐	Desander	☐

COMMENTS

Keep Hole Full

44-46 Vis To Log

SERVICE ENGINEER TELEPHONE

Name: GEORGE THOMAS Mobile: 624-5316

Home Address: LIBERAL, KS. Home: OR

Whse. Address: SEAT UNIT #49 Whse.: 624-3251

PHONE
LIBERAL, KANSAS 316/624-3251

AGENT MUD CO.

PHONE
GUYMON, OKLA. 405/338-3830

ENGINEER'S TEST REPORT

Check No. 9 Date Feb. 2, 1970

Operator: Lee BANKS & W.R. ATKINSON	Contractor: SAGE DRLG. CO.		Rig No. 2
Address: LIBERAL, KANSAS	Address: LIBERAL, KS.		
Report for Mr.: Bibb	Report for Mr.: AL		
Well Name and No.: Lee # 1	Field: EVALYN-CONDIT	State: KANSAS	County: SEWARD

Sec.	Twp.	Rng.	Spud Date	Bit No.	Pump Liner IN.	Stroke IN.	Bbl./Cyc.	Cyc./Min.	Bbl./Min.	Annular Vel. Ft./Min. ☐ Opp DP ☐ Opp Cal.
12	33	34	1-22-70							

Mud Sample Taken: Flowline ☑ Pit ☐	Last Csg. Size	Last Csg. Depth	Liner Size	Liner Depth	D.P. Size	Bit Size	Est. Mud Vol. Bbl. Pit	Hole	Tot.
	8 5/8	1612			4½	7 7/8	300	376	676

Operation	Time	A.M. ☐ P.M. ☐	Flowline Temp. °F	Total Circulating Time	Circulating Time Bottom - Pp
CIRC FOR TEST #5	7:45				

Depth 4860

	MUD PROPERTIES			DRILLING FLUID SPECIFICATIONS	
Weight of Mud (lb/gal ☐ lb/cu ft ☐ psi/1000 ft)	9.1			Type STARCH	Weight 9.0 - 9.2
	472.0			Filtration 10-15	Viscosity 40-42
Viscosity, Funnel, Sec., API ___°F	47			Other — — —	Filler 4-6#
App. Viscosity, cp, 600 rpm/2	19			ADDITIVES IN MUD	
Plastic Viscosity, cp ___°F	11			Super Bar ☐	Starch ☑
Yield Point, lb./100 sq ft	16			Bentonite ☐	Preservative ☑
Gels, lb/100 sq ft., Initial/10 min.	4/5			Salt Gel ☑	Caustic Soda ☐
pH (Electrode Indicator ☐ Filtrate ☐ Mud ☑)	6.8			Driscose ☐	Soda Ash ☐
Filtrate, ml, API	11.4			Oil ☐	Lime ☐
Cake, 32nd In. API ☐ 500 psi ☐	1/32			MATERIALS RECOMMENDED	
Salt (NaCl ☑ Cl ion ☐ PPM ☑ GPG ☐)	16,500			SALT GEL FOR VIS	
Sand Content ___% by Vol	TRACE			FILLER AS NEEDED	
Calcium Ion; ppm ☐ epm ☐	HVY.			2 SKS STARCH PER TOUR	
Sulphate ion ___ (E P M ☐ P P M ☐)	HVY.			50# PRES. PER TOUR	
Alkalinity, API (Pf. cc N/50 acid)	—				
Alkalinity, API (Pm. cc N/50 acid)	—			VERY SMALL AMT. WATER	
Oil ___% by Vol	—				
Water ___% by Vol	90.0				
Solids ___% by Vol	9.5				
Lost Circulation ___ mat Vol	4# BBL.				
Preservative ___ (lb./bbl.)	.25				
				Mud Cost - Daily	#66.50
				Cumulative	#2,705.95

EQUIPMENT

Degasser	☐	Mud Logging	☐
Gas Detector	☐	Desander	☐

COMMENTS

Keep Hole Full

SERVICE ENGINEER — TELEPHONE

Name	GEORGE THOMAS	Mobile 624-5316
Home Address	LIBERAL, KS.	Home OR
Whse. Address	SALT UNIT #49	Whse. 624-3251

PHONE
LIBERAL, KANSAS 316/624-3251

AGENT MUD CO.

PHONE
GUYMON, OKLA. 405/338-3830

ENGINEER'S TEST REPORT

Check No. 8 Date Feb. 2, 1970

Operator: Lee BANKS & W.R. ATKINSON	Contractor: SAGE DRLG. Co.	Rig No. 3	
Address: LIBERAL, KS.	Address: LIBERAL, KS.		
Report for Mr. BILL	Report for Mr. AL		
Well Name and No. Lee #1	Field EVALYN-CONDIT	State KANSAS	County KIOWA

Sec.	Twp.	Rng.	Spud Date	Bit No.	Pump Liner IN.	Stroke IN.	Bbl./Cyc.	Cyc./Min.	Bbl./Min.	Annular Vel. Ft./Min. ☐ Opp DP ☐ Opp Cal.
12	33	34	1-22-70							

Mud Sample Taken	Last Csg. Size	Last Csg. Depth	Liner Size	Liner Depth	D.P. Size	Bit Size	Est. Mud Vol., Bbl.	
Flowline X Pit ☐	5 1/2	4612			4 1/2	7 7/8	Pit 250 Hole 368 Tot. 618	

Operation	Time	Flowline Temp. °F	Total Circulating Time	Circulating Time Bottom - Pp
DRLG.	12:05 A.M. ☐ P.M. ☑			

Depth 4642	MUD PROPERTIES			DRILLING FLUID SPECIFICATIONS			
Weight of Mud (LB/GAL X LB/CU FT ☐ PSI/1000 FT)	9.0			Type STARCH	Weight 9.0 - 9.2		
	468.0			Filtration 10-15	Viscosity 40-42 TO TEST		
Viscosity, Funnel, Sec., API ___°F	35			Other - - -	Filler 4-6 #BBL.		
App. Viscosity, cp, 600 rpm/2	16			ADDITIVES IN MUD			
Plastic Viscosity, cp ___°F	9			Super Bar ☐	Starch ☑		
Yield Point, lb./100 sq ft	14			Bentonite ☐	Preservative ☑		
Gels, lb/100 sq ft., Initial/10 min.	3/4			Salt Gel ☑	Caustic Soda ☐		
pH (Electrode Indicator ☐ ☑ Filtrate Mud ☐ ☑)	6.8			Driscose ☐	Soda Ash ☐		
Filtrate, ml, API	15.2			Oil ☑	Lime ☐		
Cake, 32nd In. API ☐ 500 psi ☐	1/32			MATERIALS RECOMMENDED			
Salt (NaCl ☑ Cl ion ☐ PPM ☑ GPG ☐)	18,150			SALT GEL - AS NEEDED			
Sand Content ___% by Vol	TRACE			FIBER - AS NEEDED			
Calcium Ion; ppm ☐ epm ☐	HVY.						
Sulphate ion (EPM ☐ PPM ☐)	HVY.			5 SKS STARCH - PER TOUR			
Alkalinity, API Pf, cc N/50 acid	—			50 # PRES. - PER TOUR			
Alkalinity, API Pm, cc N/50 acid	—						
Oil ___% by Vol	1.0			VERY SMALL AMT. WATER			
Water ___% by Vol	90.0						
Solids ___% by Vol	6.5						
Lost Circulation ___ mat Vol	5 #BBL.						
Preservative ___ (lb./bbl.)	.25						
				Mud Cost - Daily # 378.50			
				Cumulative # 2,639.45			
				EQUIPMENT			
				Degasser ☐	Mud Logging ☐		
				Gas Detector ☐	Desander ☐		

COMMENTS

Keep Hole Full on Trips

SERVICE ENGINEER — **TELEPHONE**

Name: George THOMAS — Mobile: 624-5316

Home Address: LIBERAL, KS. — Home: OR

Whse. Address: SCAT Unit #49 — Whse: 624-3251

PHONE
LIBERAL, KANSAS 316/624-3251

AGENT MUD CO.

PHONE
GUYMON, OKLA. 405/338-3830

ENGINEER'S TEST REPORT

Check No. 7 Date JAN. 31 1970

Operator	Lee BANKS & W.R. ATKINSON	Contractor	SAGE DRLG. CO.
Rig No.	3		
Address	LIBERAL, KANSAS	Address	LIBERAL, KANSAS
Report for Mr.	BILL	Report for Mr.	AL
Well Name and No.	Lee #1	Field	EVALYN-CONDIT
State	KANSAS	County	SEWARD

Sec.	Twp.	Rng.	Spud Date	Bit No.	Pump Liner IN.	Stroke IN.	Bbl./Cyc.	Cyc./Min.	Bbl./Min.	Annular Vel. Ft./Min. ☐ Opp DP ☐ Opp Cal.
12	33	34	1-23-70							

Mud Sample Taken	Last Csg. Size	Last Csg. Depth	Liner Size	Liner Depth	D.P. Size	Bit Size	Est. Mud Vol. Bbl.		
Flowline ☑ Pit ☐	8 5/8	4612			4½	7⅞	Pit 250	Hole 344	Tot. 594

Operation	Time	A.M. ☐ P.M. ☑	Flowline Temp. °F	Total Circulating Time	Circulating Time Bottom - Pp
DRLG	5:30				

Depth 4275

	MUD PROPERTIES		
Weight of Mud (lb/gal ☐ lb/cu ft ☐ psi/1000 ft)	9.0		
	468.0		
Viscosity, Funnel, Sec., API ___°F	40		
App. Viscosity, cp, 600 rpm/2	15		
Plastic Viscosity, cp ___°F	9		
Yield Point, lb./100 sq ft	12		
Gels, lb/100 sq ft., Initial/10 min.	4/5		
pH (Electrode Indicator ☐ Filtrate Mud ☑)	6.8		
Filtrate, ml, API	10.8		
Cake, 32nd In. API ☐ 500 psi ☐	1/32		
Salt (NaCl ☑ Cl ion ☐ PPM ☑ GPG ☐)	23,100		
Sand Content ___% by Vol	TRACE		
Calcium Ion; ppm ☐ epm ☐	HVY.		
Sulphate ion ___ (EPM ☐ PPM ☐)	HVY.		
Alkalinity, API (Pf, cc N/50 acid)	-		
(Pm, cc N/50 acid)	-		
Oil ___% by Vol	3.0		
Water ___% by Vol	90.0		
Solids ___% by Vol	7.0		
Lost Circulation ___ mat Vol	4# BBL.		
Preservative ___ (lb./bbl.)	.25		

DRILLING FLUID SPECIFICATIONS

Type STARCH Weight 9.0 - 9.2

Filtration 10 - 12 Viscosity 40-42

Other - - - Filler 4-6# BBL.

ADDITIVES IN MUD

Super Bar	☐	Starch	☑
Bentonite	☐	Preservative	☑
Salt Gel	☑	Caustic Soda	☐
Driscose	☐	Soda Ash	☐
Oil	☑	Lime	☐

MATERIALS RECOMMENDED

SALT GEL - AS NEEDED FOR VIS.

2 HULLS - 1 CEDAR FOR FILLER

5 SKS STARCH - PER TOUR

50# PKGS. - PER TOUR

VERY SMALL AMT. WATER

Mud Cost - Daily $126.70

Cumulative $2,260.95

EQUIPMENT

Degasser	☐	Mud Logging	☐
Gas Detector	☐	Desander	☐

COMMENTS

Keep Hole Full ON TRIPS

SERVICE ENGINEER — **TELEPHONE**

Name: GEORGE THOMAS — Mobile: 624-5316

Home Address: LIBERAL, KANSAS — Home: OR

Whse. Address: SCAT UNIT 49# — Whse.: 624-3251

PHONE
LIBERAL, KANSAS 316/624-3251

AGENT MUD CO.

PHONE
GUYMON, OKLA. 405/338-3830

ENGINEER'S TEST REPORT

Check No. 6 Date JAN 30, 1970

Operator: Lee BANKS & W. R. ATKINSON	Contractor: SAGE DRLG. CO.	Rig No. 3	
Address: LIBERAL, KANSAS	Address: LIBERAL, KANSAS		
Report for Mr.: Bill	Report for Mr.: Al		
Well Name and No.: Lee #1	Field: EDALYN-CONDIT	State: KANSAS	County: SEWARD

Sec.	Twp.	Rng.	Spud Date	Bit No.	Pump Liner IN.	Stroke IN.	Bbl./Cyc.	Cyc./Min.	Bbl./Min.	Annular Vel. Ft./Min. ☐ Opp DP ☐ Opp Cal.
12	32	34W	1-22-70							

Mud Sample Taken	Last Csg. Size	Last Csg. Depth	Liner Size	Liner Depth	D.P. Size	Bit Size	Est. Mud Vol. Bbl.
Flowline ☑ Pit ☐	8 5/8	1612					Pit 300 Hole 336 Tot. 636

Operation	Time	A.M. / P.M.	Flowline Temp. °F	Total Circulating Time	Circulating Time Bottom - Pp
DRLG.	10:50	A.M. ☑ P.M. ☐			

	MUD PROPERTIES		
Depth	4216		
Weight of Mud (LB/GAL ☑ LB/CU FT ☐ PSI/1000 FT)	9.1		
	472.0		
Viscosity, Funnel, Sec., API ____ °F	43		
App. Viscosity, cp, 600 rpm/2	17		
Plastic Viscosity, cp ____ °F	9		
Yield Point, lb./100 sq ft	15		
Gels, lb/100 sq ft., Initial/10 min.	5/6		
pH (Electrode Indicator ☑ Filtrate Mud ☑)	6.8		
Filtrate, ml, API	14.6		
Cake, 32nd In. API ☐ 500 psi ☐	1/32		
Salt (NaCl ☑ Cl ion ☐ PPM ☑ GPG ☐)	18,150		
Sand Content ____ % by Vol	TRACE		
Calcium Ion; ppm ☐ epm ☐	HVY.		
Sulphate ion ____ (EPM ☐ PPM ☐)	HVY.		
Alkalinity, API (Pf, cc N/50 acid)	—		
(Pm, cc N/50 acid)	—		
Oil ____ % by Vol	1.0		
Water ____ % by Vol	90.0		
Solids ____ % by Vol	9.0		
Lost Circulation ____ mat Vol	6# BBL.		
Preservative ____ (lb./bbl.)	.24		

DRILLING FLUID SPECIFICATIONS

Type STARCH Weight 9.3 OR LESS

Filtration 10-15 Viscosity 40-42 TO TEST

Other — — — Filler 5-6 # BBL.

ADDITIVES IN MUD

Super Bar	☐	Starch	☑
Bentonite	☐	Preservative	☑
Salt Gel	☑	Caustic Soda	☐
Driscose	☐	Soda Ash	☐
Oil	☑	Lime	☐

MATERIALS RECOMMENDED

SALT GEL - AS NEEDED FOR VIS.

3 HULLS - 1 CEDAR FOR FILLER

5 SKS STARCH - PER TOUR

50# PHPA - PER TOUR

VERY SMALL AMT. WATER

Mud Cost - Daily $210.40

Cumulative $2,134.25

EQUIPMENT

Degasser	☐	Mud Logging	☐
Gas Detector	☐	Desander	☐

COMMENTS

Keep Hole Full on TRIPS

SERVICE ENGINEER — **TELEPHONE**

Name: GEORGE THOMAS 624-5316 MOBILE

Home Address: LIBERAL, KANSAS HOME OR

Whse. Address: SCAT UNIT #49 624-3251 WHSE.

PHONE
LIBERAL, KANSAS 316/624-3251

AGENT MUD CO.

PHONE
GUYMON, OKLA. 405/338-3830

ENGINEER'S TEST REPORT

Check No. 5 Date JAN. 29 1970

Operator: Lee BANKS & W.R. ATKINSON	Contractor: SAGE DRLG. CO.	Rig No.
Address: LIBERAL, KANSAS	Address: LIBERAL, KANSAS	
Report for Mr.: Bill	Report for Mr.: Al	

Well Name and No.	Field	State	County
Lee #1	EVALYN-CONDIT	KANSAS	SEWARD

Sec.	Twp.	Rng.	Spud Date	Bit No.	Pump Liner IN.	Stroke IN.	Bbl./Cyc.	Cyc./Min.	Bbl./Min.	Annular Vel. Ft./Min. ☐ Opp DP ☐ Opp Cal.
12	33	34	1-23-70							

Mud Sample Taken	Last Csg. Size	Last Csg. Depth	Liner Size	Liner Depth	D.P. Size	Bit Size	Est. Mud Vol. Bbl.
Flowline ☑ Pit ☐	8 5/8	1612			4 1/2	7 7/8	Pit 300 Hole 328 Tot. 628

Operation	Time	A.M. ☐ P.M. ☑	Flowline Temp. °F	Total Circulating Time	Circulating Time Bottom - Pp
DRLG.	12:10				

Depth 4122

	MUD PROPERTIES		
Weight of Mud (LB/GAL ☑ LB/CU FT ☐ PSI/1000 FT)	9.2		
	478.0		
Viscosity, Funnel, Sec., API ___°F	40		
App. Viscosity, cp, 600 rpm/2	17		
Plastic Viscosity, cp ___°F	10		
Yield Point, lb./100 sq ft	15		
Gels, lb/100 sq ft., Initial/10 min.	4/5		
pH (Electrode Indicator ☐ Filtrate Mud ☑)	6.8		
Filtrate, ml, API	11.0		
Cake, 32nd In. API ☐ 500 psi ☐	1/32		
Salt (NaCl Cl ion ☑ ☐ PPM ☑ GPG ☐)	18 800		
Sand Content ____ % by Vol	TRACE		
Calcium Ion; ppm ☐ epm ☐	HVY.		
Sulphate ion ____ (EPM ☐ PPM ☐)	HVY.		
Alkalinity, API (Pf, cc N/50 acid)	—		
(Pm, cc N/50 acid)	—		
Oil ____ % by Vol	1.2		
Water ____ % by Vol	90.0		
Solids ____ % by Vol	8.0		
Lost Circulation ____ mat Vol	6 # BBL.		
Preservative ____ (lb./bbl.)	.26		

DRILLING FLUID SPECIFICATIONS

Type STARCH Weight 9.2 OR LESS

Filtration 10-15 Viscosity 40-42 TO TEST

Other Filler 5-6 # BBL.

ADDITIVES IN MUD

Super Bar	☐	Starch	☑
Bentonite	☐	Preservative	☑
Salt Gel	☑	Caustic Soda	☐
Driscose	☐	Soda Ash	☐
Oil	☑	Lime	☐

MATERIALS RECOMMENDED

5 SKS STARCH PER TOUR

50 # PRES. PER TOUR

SMALL STRM. WATER WHILE DRLG.

Mud Cost - Daily # 675.10

Cumulative # 1923.85

EQUIPMENT

Degasser	☐	Mud Logging	☐
Gas Detector	☐	Desander	☐

COMMENTS

MUD IN SHAPE FOR TEST

KEEP HOLE FULL

SERVICE ENGINEER — TELEPHONE

NAME GEORGE THOMAS MOBILE 624-5316

HOME ADDRESS LIBERAL, KANSAS HOME OR

WHSE. ADDRESS SCAT UNIT #49 WHSE. 624-3251

PHONE
LIBERAL, KANSAS 316/624-3251

AGENT MUD CO.

PHONE
GUYMON, OKLA. 405/338-3830

ENGINEER'S TEST REPORT

Check No. 4 Date JAN. 28 1970

Operator: Lee BANKS & W.R. ATKINSON	Contractor: SAGE DRLG. Co.	Rig No. 3	
Address: LIBERAL, KANSAS	Address: LIBERAL, KANSAS		
Report for Mr.: Bill	Report for Mr.: Al		
Well Name and No.: Lee #1	Field: EVALYN-CONDIT	State: KANSAS	County: SEWARD

Sec.	Twp.	Rng.	Spud Date	Bit No.	Pump Liner IN.	Stroke IN.	Bbl./Cyc.	Cyc./Min.	Bbl./Min.	Annular Vel. Ft./Min. ☐ Opp DP ☐ Opp Cal.
12	33	34 W	1-22-70							

Mud Sample Taken	Last Csg. Size	Last Csg. Depth	Liner Size	Liner Depth	D.P. Size	Bit Size	Est. Mud Vol. Bbl.
Flowline ☑ Pit ☐	8 5/8	1612			4 1/2	7 7/8	Pit 200 Hole 312 Tot.

Operation	Time	A.M. ☐ P.M. ☑	Flowline Temp. °F	Total Circulating Time	Circulating Time Bottom - Pp
DRLG.	4:40				

Depth 2879

	MUD PROPERTIES		
Weight of Mud (lb/gal ☑ lb/cu ft ☐ psi/1000 ft)	9.2		
	478.00		
Viscosity, Funnel, Sec., API ___ °F	31		
App. Viscosity, cp, 600 rpm/2	11		
Plastic Viscosity, cp ___ °F	6		
Yield Point, lb./100 sq ft	8		
Gels, lb/100 sq ft., Initial/10 min.	3/4		
pH (Electrode Indicator ☐ Filtrate Mud ☑)	7.0		
Filtrate, ml, API	100		
Cake, 32nd In. API ☑ 500 psi ☐	2/32		
Salt (NaCl ☑ Cl ion ☐) (PPM ☑ GPG ☐)	21,450		
Sand Content ___ % by Vol	TRACE		
Calcium Ion; ppm ☑ epm ☐	HVY.		
Sulphate ion ___ EPM ☐ PPM ☑	HVY.		
Alkalinity, API — Pf, cc N/50 acid	—		
Pm, cc N/50 acid	—		
Oil ___ % by Vol	1.5		
Water ___ % by Vol	90.0		
Solids ___ % by Vol	4.5		
Lost Circulation ___ mat Vol	5# BBL.		
Preservative ___ (lb./bbl.)	—		

DRILLING FLUID SPECIFICATIONS

Type SALT Weight 9.3 OR LESS
Filtration Viscosity
Other - - - Filler 5-6# BBL.

ADDITIVES IN MUD

Super Bar	☐	Starch	☐
Bentonite	☐	Preservative	☐
Salt Gel	☑	Caustic Soda	☐
Driscose	☐	Soda Ash	☐
Oil	☑	Lime	☐

MATERIALS RECOMMENDED

SALT GEL AS NEEDED FOR VIS.
2 HULLS - 1 CEDAR FOR FILTER
@ 3900 MIX 250# PRES SHOW AT FLOW LINE
MIX 40 SKS STARCH SHOW - CUT WATER TO SMALL STREAM
EVE TOUR 20 SKS + MORN TOUR 20 SKS

Mud Cost - Daily $310.95
Cumulative $1,248.75

EQUIPMENT

Degasser	☐	Mud Logging	☐
Gas Detector	☐	Desander	☐

COMMENTS

KEEP HOLE FULL ON TRIPS
MIX 5 SKS STARCH PER TOUR + 50# PRES PER TOUR AFTER 40 SKS

SERVICE ENGINEER — **TELEPHONE**

Name: GEORGE THOMAS Mobile: 624-5216
Home Address: LIBERAL, KANSAS Home: OK
Whse. Address: SEAT UNIT #49 Whse.: 624-3251

PHONE
LIBERAL, KANSAS 316/624-3251

AGENT MUD CO.

PHONE
GUYMON, OKLA. 405/338-3830

ENGINEER'S TEST REPORT

Check No. 3 Date JAN 27 1970

Operator: Lee BANKS - W.R. ATKINSON	Contractor: SAGE DRLG. CO.	Rig No. 3	
Address: LIBERAL, KANS.	Address: LIBERAL, KANSAS		
Report for Mr.: Bibb	Report for Mr.: Al		
Well Name and No.: Lee #1	Field: EVALYN-CONDIT	State: KANSAS	County: SEWARD

Sec.	Twp.	Rng.	Spud Date	Bit No.	Pump Liner IN.	Stroke IN.	Bbl./Cyc.	Cyc./Min.	Bbl./Min.	Annular Vel. Ft./Min. ☐ Opp DP ☐ Opp Cal.

Mud Sample Taken Flowline ☐ Pit ☐	Last Csg. Size 8 5/8	Last Csg. Depth 1612	Liner Size	Liner Depth	D.P. Size 4½	Bit Size 7 7/8	Est. Mud Vol. Bbl. Pit 300 Hole 264 Tot. 564

Operation	Time	A.M. ☐ P.M. ☑	Flowline Temp. °F	Total Circulating Time	Circulating Time Bottom - Pp
DRLG.	1:30				

Depth 3282

MUD PROPERTIES			
Weight of Mud (LB/GAL ☐ LB/CU FT ☐ PSI/1000 FT)	9.0		
	468.6		
Viscosity, Funnel, Sec., API ___°F	32		
App. Viscosity, cp, 600 rpm/2	–		
Plastic Viscosity, cp ___°F	–		
Yield Point, lb./100 sq ft	–		
Gels, lb/100 sq ft., Initial/10 min.	2/3		
pH (Electrode Indicator ☐ Filtrate ☐ Mud ☑)	7.0		
Filtrate, ml, API	80+		
Cake, 32nd In. API ☐ 500 psi ☐	2/32		
Salt (NaCl ☑ Cl ion ☐ PPM ☑ GPG ☐)	23,100		
Sand Content ___% by Vol	TRACE		
Calcium Ion; ppm ☐ epm ☐	HVY.		
Sulphate ion ___ EPM ☐ PPM ☐	HVY.		
Alkalinity, API Pf. cc N/50 acid	–		
Pm. cc N/50 acid	–		
Oil ___% by Vol	1.5		
Water ___% by Vol	89.0		
Solids ___% by Vol	6.0		
Lost Circulation ___ mat Vol	4# BBL.		
Preservative ___ (lb./bbl.)	–		

DRILLING FLUID SPECIFICATIONS

Type SALT Weight 9.3 OR LESS
Filtration N.C. Viscosity 31-33
Other — — Filler 5-6# BBL.

ADDITIVES IN MUD

Super Bar	☐	Starch	☐
Bentonite	☐	Preservative	☐
Salt Gel	☑	Caustic Soda	☐
Driscose	☐	Soda Ash	☐
Oil	☑	Lime	☐

MATERIALS RECOMMENDED

SALT GEL FOR VIS.
NO MORE SOLTROL

2 HULLS - 1 CEDAR FOR FIBER

USE WATER TO CONTROL WT.

Mud Cost - Daily —
Cumulative # 937.80

EQUIPMENT

Degasser	☐	Mud Logging	☐
Gas Detector	☐	Desander	☐

COMMENTS

KEEP HOLE FULL ON TRIPS

IF MUD UP FOR COUNCIL GROVE - START 250# PRES AT FLOW LINE - 35 SKS STARCH + CALL ME WHEN MIXED

SERVICE ENGINEER TELEPHONE

NAME George THOMAS MOBILE 624-5316
HOME ADDRESS LIBERAL, KANSAS HOME OK
WHSE. ADDRESS SCAT UNIT #49 WHSE. 624-3251

PHONE
LIBERAL, KANSAS 316/624-3251

AGENT MUD CO.

PHONE
GUYMON, OKLA. 405/338-3830

Check No. 2

ENGINEER'S TEST REPORT

Date JAN. 26 1970

Operator: Lee BANKS + Bill ATKINSON	Contractor: SAGE DRLG. CO.		Rig No.
Address: LIBERAL, KANSAS	Address: LIBERAL, KANSAS		
Report for Mr.: Bill	Report for Mr.: AL		
Well Name and No.: Lee #1	Field: EVALYN-CONDIT	State: KANSAS	County: SEWARD

Sec.	Twp.	Rng.	Spud Date	Bit No.	Pump Liner IN.	Stroke IN.	Bbl./Cyc.	Cyc./Min.	Bbl./Min.	Annular Vel. Ft./Min. ☐ Opp DP ☐ Opp Cal.
12	33	34	1-23-70							

Mud Sample Taken	Last Csg. Size	Last Csg. Depth	Liner Size	Liner Depth	D.P. Size	Bit Size	Est. Mud Vol. Bbl.	
Flowline ☑ Pit ☐	8 5/8	1602			4½	7 7/8	Pit 200	Hole 224 Tot. 8-24

Operation	Time		Flowline Temp. °F	Total Circulating Time	Circulating Time Bottom - Pp
DRLG.	2125	A.M. ☑ P.M. ☐			

Depth 2809

MUD PROPERTIES			DRILLING FLUID SPECIFICATIONS			
Weight of Mud (LB/GAL ☐ LB/CU FT ☐ PSI/1000 FT)	9.4		Type SALT	Weight 9.5 ORLES		
	487.0		Filtration N.C.	Viscosity 31-33		
Viscosity, Funnel, Sec., API ___°F	32		Other — — —	Filler 5-6 #BBL.		
App. Viscosity, cp, 600 rpm/2	—		ADDITIVES IN MUD			
Plastic Viscosity, cp ___°F	—		Super Bar ☐	Starch ☐		
Yield Point, lb./100 sq ft	—		Bentonite ☐	Preservative ☐		
Gels, lb/100 sq ft., Initial/10 min.	1/2		Salt Gel ☑	Caustic Soda ☐		
pH (Electrode Indicator ☐ Filtrate Mud ☐)	7.0		Driscose ☐	Soda Ash ☐		
Filtrate, ml, API	80+		Oil ☐	Lime ☐		
Cake, 32nd In. API ☐ 500 psi ☐	2/32		MATERIALS RECOMMENDED			
Salt NaCl Cl ion ☑ ☐ PPM ☑ GPG ☐	24,650		3 SALT GEL TO 1 SOLTROL FOR VIS			
Sand Content ___% by Vol	.10					
Calcium Ion; ppm ☐ epm ☐	HVY.		2 HULLS - 1 CEDAR FOR FILLER			
Sulphate ion ___ EPM ☐ PPM ☐	HVY.					
Alkalinity, API Pf. cc N/50 acid	—					
Alkalinity, API Pm. cc N/50 acid	—		WATER FOR WT. CONTROL			
Oil ___% by Vol	—					
Water ___% by Vol	94.0					
Solids ___% by Vol	5.0					
Lost Circulation ___ mat Vol						
Preservative ___ (lb./bbl.)	—		Mud Cost - Daily			
			Cumulative #92.55 — ?			

EQUIPMENT

Degasser	☐	Mud Logging	☐
Gas Detector	☐	Desander	☐

COMMENTS

Keep Hole Full on TRIPS

SERVICE ENGINEER — TELEPHONE

Name: George Thomas — Mobile: 624-5316

Home Address: Liberal, Kansas — Home: OR

Whse. Address: SCAT Unit #49 — Whse.: 624-3251

PHONE
LIBERAL, KANSAS 316/624-3251

AGENT MUD CO.

PHONE
GUYMON, OKLA. 405/338-3830

ENGINEER'S TEST REPORT

Check No. 1 Date JAN. 15 1970

Operator Lee Banks	Contractor Sage Drlg. Co.	Rig No. 2
Address Liberal, Kansas	Address Liberal, Kansas	
Report for Mr. Bibb	Report for Mr. Al	

Well Name and No.	Field	State	County
Lee #1	Evalyn-Condit	Kansas	Seward

Sec.	Twp	Rng	Spud Date	Bit No.	Pump Liner IN.	Stroke IN.	Bbl./Cyc.	Cyc./Min.	Bbl./Min.	Annular Vel. Ft./Min. ☐ Opp DP ☐ Opp Cal.
12	32	34	1-23-70							

Mud Sample Taken	Last Csg. Size	Last Csg. Depth	Liner Size	Liner Depth	D.P. Size	Bit Size	Est. Mud Vol. Bbl.	
Flowline ☑ Pit ☐	8 5/8	1612			4½	7 7/8	Pit 250	Hole 184 Tot. 434

Operation	Time	Flowline Temp.	Total Circulating Time	Circulating Time Bottom - Pp
DRLG	A.M. ☐ P.M. ☐	°F		

Depth 2290

Mud Properties		
Weight of Mud (lb/gal ☐ lb/cu ft ☐ psi/1000 ft)		
Viscosity, Funnel, Sec., API ___°F	WATER + NATIVE	
App. Viscosity, cp, 600 rpm/2	MUD	
Plastic Viscosity, cp ___°F		
Yield Point, lb./100 sq ft		
Gels, lb/100 sq ft., Initial/10 min.		
pH (Electrode Indicator ☐ Filtrate Mud ☐)		
Filtrate, ml, API		
Cake, 32nd In. API ☐ 500 psi ☐		
Salt (NaCl ☑ Cl ion ☐) (ppm ☑ gpg ☐)	33,000	
Sand Content ___% by Vol		
Calcium Ion; ppm ☐ epm ☐		
Sulphate ion ___ (ppm ☐ epm ☐)		
Alkalinity, API Pf. cc N/50 acid		
Alkalinity, API Pm. cc N/50 acid		
Oil ___% by Vol		
Water ___% by Vol		
Solids ___% by Vol		
Lost Circulation ___ mat Vol		
Preservative ___ (lb./bbl.)		

DRILLING FLUID SPECIFICATIONS

Type		Weight	
Filtration		Viscosity	
Other		Filler	

ADDITIVES IN MUD

Super Bar	☐	Starch	☐
Bentonite	☐	Preservative	☐
Salt Gel	☐	Caustic Soda	☐
Driscose	☐	Soda Ash	☐
Oil	☐	Lime	☐

MATERIALS RECOMMENDED

AT 2500'-2600' HAVE VIS AT 31-33
BUILD FILTER TO 5-6 BBL
USE 2 SALT GEL TO 1 SOLTROL FOR VIS.

RUN WATER AS NEEDED

Mud Cost - Daily

Cumulative

EQUIPMENT

Degasser	☐	Mud Logging	☐
Gas Detector	☐	Desander	☐

COMMENTS

Keep Hole Full on Trips

SERVICE ENGINEER — **TELEPHONE**

Name George Thomas — Mobile 624-5316
Home Address Liberal, Kansas — Home OR
Whse. Address Seat Unit #49 — Whse. 624-3251