



DIRECTIONAL DRILLING RECORD

THE LIVINGSTON-SHRADER CO.

Liberty, Texas

1318 Highway 90

Phone 650

P. O. Box 375

**Directional Drilling
Record**

**SUN OIL COMPANY
HARPER NO. 1**

JAL, LEA COUNTY, NEW MEXICO

THE LIVINGSTON - SHRADER CO.

LIBERTY, TEXAS

THE LIVINGSTON-SHRADER CO.

DIRECTIONAL DRILLING RECORD

SUN OIL COMPANY
WELL HARPER NO. 1

FIELD JAL, LEA COUNTY, NEW MEXICO DATE September 3, 1953

	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES				REMARKS
						NORTH	SOUTH	EAST	WEST	
1.	10,400 00	1° 45'	10,394 80	FROM SPERRY-SUN SURVEY	N 40° 00' E	102 12		141 74		CSG. W.S. SET @ 10,465' K.G.# 1 SET @ 19,576'
2.	10,465 00	1° 45'	10,459 77		N 66° 00' E	103 64		143 01		
3.	10,576 00	1° 00'	10,570 75		S 62° 00' E	104 43		144 77		
4.	10,630 00	3° 00'	10,624 67		S 73° 00' E	103 10		147 26		
5.	10,667 00	3° 15'	10,661 61			102 49		149 27		
6.	10,725 00	5° 00'	10,719 39		S 58° 00' E	99 81		153 56		
7.	10,753 00	6° 00'	10,747 22		S 63° 00' E	98 48		156 17		
8.	10,790 00	7° 45'	10,783 88		S 69° 00' E	96 69		160 83		
9.	10,815 00	8° 45'	10,808 59		S 77° 00' E	95 83		164 54		
10.	10,851 00	10° 00'	10,844 04		S 82° 00' E	94 96		170 73		
11.	10,954 00	12° 45'	10,944 50		N 86° 00' E	96 54		193 41		
12.	10,984 00	14° 00'	10,973 61		N 79° 00' E	97 93		200 54		
13.	11,060 00	16° 45'	11,046 39		N 76° 00' E	103 23		221 80		
14.	11,100 00	17° 00'	11,084 64		N 74° 00' E	106 45		233 04		
15.	11,131 00	16° 30'	11,114 36		N 72° 00' E	109 17		241 41		
16.	11,165 00	15° 00'	11,147 20		N 71° 00' E	112 04		249 73		
17.	11,202 00	14° 00'	11,183 10		N 67° 00' E	115 54		257 97		
18.	11,232 00	14° 15'	11,212 18		N 69° 00' E	118 19		264 87		
19.	11,262 00	14° 30'	11,241 22		N 66° 00' E	121 25		271 73		
20.	11,292 00	15° 00'	11,270 20		N 66° 00' E	124 41		278 82		
21.	11,326 00	15° 00'	11,303 04		N 66° 00' E	127 99		286 86		
22.	11,342 00	14° 30'	11,318 53		N 62° 00' E	129 87		290 40		
23.	11,365 00	14° 30'	11,340 80		N 61° 00' E	132 66		295 44		
24.	11,420 00	15° 30'	11,393 80		N 59° 00' E	140 23		308 04		
25.	11,443 00	15° 15'	11,415 99		N 59° 00' E	143 34		313 23		

ALL DIRECTIONS ARE FROM TRUE NORTH

THE LIVINGSTON-SHRADER CO.

DIRECTIONAL DRILLING RECORDSUN OIL COMPANY
WELL HARPER NO. 1

FIELD JAL, LEA COUNTY, NEW MEXICO DATE September 3, 1953

	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES			REMARKS
						NORTH	SOUTH	EAST	WEST
26.	11,470 00	14° 45'	11,442 10		N 60° 00' E	146 78		319 18	
27.	11,499 00	14° 45'	11,470 14		N 62° 00' E	150 25		325 70	
28.	11,531 00	14° 15'	11,501 15		N 64° 00' E	153 70		332 78	
29.	11,565 00	15° 30'	11,533 91		N 66° 00' E	157 40		341 08	
30.	11,588 00	15° 30'	11,556 07		N 69° 00' E	159 60		346 82	
31.	11,610 00	14° 30'	11,577 37		N 67° 00' E	161 75		351 89	
32.	11,637 00	14° 15'	11,603 54		N 68° 00' E	164 24		358 05	
33.	11,665 00	14° 45'	11,630 62		N 69° 00' E	166 79		364 71	
		CLOSURE:		401.04'	N 65° 25' E				
		LOSS IN DEPTH:		34.38'					

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DEVIATION SURVEY AFFIDAVIT

STATE OF TEXAS, 1

COUNTY OF LIBERTY. 1

BEFORE ME, the undersigned authority, a Notary Public in and for Liberty County, Texas, on this day personally appeared H. L. Sapp, who, being first duly sworn, stated as follows:

1.

My name is H. L. Sapp. I am a directional drilling engineer for The Livingston-Shrader Company of Liberty, Texas, a firm engaged in directional drilling of oil wells and in surveying such deviated wells. As engineer for the above firm, I supervised the surveys made of directionally drilled well designated as SUN OIL COMPANY'S, HARPER WELL NO. 1, JAL, LEA COUNTY, NEW MEXICO, completed on September 2, 1953.

2.

The surveys of such well were made over a period of time, the first survey being run July 25, 1953 at a depth of 10,465 feet, measured, and the last being made on September 2, 1953 at a depth of 11,665 feet, measured.

3.

A detailed description of the nature of the surveys is shown on attached copies of The Livingston-Shrader Company's Directional Drilling Record for the above mentioned well, pages 1 through 2, and are likewise shown on the attached horizontal plat, data ~~for~~ said plat being obtained from Directional Drilling Records. Said surveys were obtained through the use of the single shot method, records being made at various depths in the hole while drilling said well. The facts represented in said surveys and said data sheets are true and correct and afford a true and correct representation of the nature and conditions of the well insofar as direction, deviation, and bottom-hole location are concerned at the time the surveys were made.

H. L. Sapp
Affiant

Subscribed and sworn to before me, the undersigned Notary Public, at Liberty, Texas, this the 8th day of September, 1953.

Donald E. Tims
Notary Public in and for Liberty
County, Texas.
Donald E. Tims,
Notary Public

SEAL

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