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HANSFORD COUNTY, TEXAS

Records of wells, drillers' logs,  
and water analyses,  
and map showing location of wells.

WORKS PROGRESS ADMINISTRATION

GROUND WATER SURVEY

PROJECT 2069

W. L. Broadhurst

Project Superintendent

\* \* \* \* \*

Analyses made, map prepared, data  
assembled, and report mimeographed by

WORKS PROGRESS ADMINISTRATION

PROJECT 2992

\* \* \* \* \*

Sponsored by the State Board of Water Engineers with  
the Bureau of Industrial Chemistry of the University  
of Texas and the U. S. Geological Survey cooperating.

\* \* \* \* \*

Austin, Texas  
Sept. 1, 1936.

## HANSFORD COUNTY TEXAS

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### Introduction

by

Samuel F. Turner  
Associate Hydraulic Engineer  
U. S. Geological Survey

The purpose of this survey was to obtain all the information possible concerning the source and the quantity and quality of ground water available for domestic, stock, irrigation, industrial, and public use.

This project was part of a Statewide Works Progress Administration Project known as a "Statewide Inventory of Water Wells" sponsored by the State Board of Water Engineers. The Division of Ground Water of the U. S. Geological Survey cooperated in the technical direction of the project and the Bureau of Industrial Chemistry of the University of Texas furnished laboratory space and equipment and supervised the chemical analyses.

The analyses were made by chemists employed on Works Progress Administration Project 2992 at Austin, Texas, sponsored by the State Board of Water Engineers. This report was typed and assembled by typists and draftsmen employed on this project.

The field work was started in Hansford County on February 24, 1936, as Project 2089 of District 16 of the Works Progress Administration, Amarillo. Mr. W. L. Broadhurst, a local geologist, was Project Superintendent. Hansford, Hutchinson, Sherman, and Moore Counties were to have been completed under this project. The project was temporarily shut down by the W. P. A. on June 14, 1936, with about 85 per cent of Hansford County completed. The field work in Hansford County was completed in August by Mr. W. O. George, a geologist with the Board of Water Engineers, assisted by Mr. Broadhurst. The project will probably be re-opened in the near future and one or more of the other counties completed.

This report contains the well and spring records and well logs obtained by the project superintendent, logs of the test wells drilled by the W. P. A. labor and the chemical analyses of water from privately owned wells and springs and from the test wells. Locations of all wells and springs listed are shown on a folded map fastened in the back of the report.

At the request of the Amarillo office of the Resettlement Administration, particular attention was given to obtaining data in the Valley of Palo Duro creek.

The test wells were drilled by hand, using a soil auger, drop auger, small churn drill, and a sand bucket. Samples were collected at one foot intervals by the well driller in charge of the party. The project superintendent studied these samples and compiled the logs.

Records of wells in Hansford County, Texas

(All wells are bored or drilled unless otherwise noted in the remarks column)

No.	Distance from Hitchland	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
1	3 miles east	Sec.16, SW 1/4 Pub.School Blk.1	J.T.Clawson	--	--	171	4½	0.5
2	In Hitchland	Sec.13, NE.1/4 Pb.School Blk.1	C.R.I.O., RR. Co.	D. L. McDonald	--	484	--	0
d/3	2½ miles west	Sec.12, NW.1/4 Pb.School Blk.1	L. C. Thoreson	--	--	214	4½	2.8
d/4	4 miles west	Sec.11, NW.1/4 Pb. School Blk.1	C.A. Hitch	--	--	228	4½	0
d/5	2-¾ miles southwest	Sec.60, SE.1/4 H&GN.Blk. P	A. Laird	--	--	228	4½	4
6	2 miles southwest	Sec.61, SE.1/4 H&GN.Blk. P	B. L. Thoreson	--	--	202	4½	2
d/7	12½ miles east	Sec.10, SW.1/4 H&TC.Blk. 45	W.P.A.test well	Geo. N. Reed	1936	12	3	0
8	8 miles east	Sec. 2, NE.1/4 Washington Co.	B.W. James	-- Hughey	1906	215	--	2.0
9	6 miles east	Sec.14, SW.1/4 WC.RR.Blk. 1	F.P.Peebles	--	--	97	4½	2
d/10	6 miles west	Sec. 2, NW.1/4 P.N.Blk. P	J. P. Pearson	--	--	79	4½	2
12	8 miles west	Sec.287,NE.1/4 GH&H.Blk. 2	do.	--	--	186	4½	0.5
d/13	14 miles southwest	Sec.142,SW.1/4 CH&H.Blk. 2	-- Enz	--	--	263	4½	1.0
14	11 miles southwest	Sec.195,NW.1/4 GH&F.Blk. 2	H. M. Te Beese	--	--	197	4½	1.5
15	10 miles southwest	Sec.238,NE.1/4 GH&H.Blk. 2	Joe Knutson	--	1933	200	4½	1.5
d/16	6½ miles southwest	Sec. 3, NW.1/4 H&GN.Blk. P	W.P.A. test well	Geo. N. Reed	1936	24	3	0
17	5 miles southwest	Sec. 33, NW.1/4 H&GN.Blk. P	W.F.C. Etling	E. R. Wilbanks	1917	236	4½	0
d/18	11½ miles east	Sec.13, NE.1/4 Washington Co.	Gus. B. Coats	Hope Pet. Corporation	--	4,585	20	--
19	12½ miles southeast	Sec.12, SW.1/4 H&TC.Blk. 45	-- Koots	--	--	--	6	1.5
d/20	do.	Sec.12, NE.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	17	3	--

a/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp;

b/ T, turbine; A, air-lift; C, cylinder; E, electric; O, oil engine; W, windmill; H, hand.

Records obtained by W. L. Broadhurst, Project Superintendent ,  
 assisted by G. N. Reed  
 (Chemical analyses of water from these wells are given in  
 the table of analyses)

No.	Water Level		Kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
1	152.6	Aug. 8, 1936	C,W	D,S	Water level measured while pumping about 2 gallons a minute.
2	186.0	Aug. 13, 1936	A,O,25	D,I	Measured 10 foot drawdown after pumping about 50 gallons a minute for 10 hours.
3	195.6	<del>Aug. 13, 1936</del>	C,W	D,S	
4	188.5	do.	C,W	D,S	Windmill broken, well had not been pumped for a long time.
5	194.0	Aug. 12, 1936	C,W	D,S	Do.
6	183.8	do.	C,W	D,S	
7	11.0	Apr. 30, 1936	None	N	See log.
8	192.3	Aug. 8, 1936	C,W	D,S	
9	68.9	Aug. 13, 1936	C,W	S	
10	52.0	May 5, 1936	C,W	D,S	
12	173.3	May 21, 1936	C,W	D,S	
13	202.6	May 18, 1936	C,W	N	
14	190.0	May 10, 1936	C,W	D,S	
15	186.5	do.	C,W	D,S	
16	19	May 21, 1936	None	N	See log.
17	198	e/ 1917	C,W	D,S,I	Water from sand. Irrigate small garden.
18	--	--	None	N	Oil test well. See log.
19	27.3	Apr. 30, 1936	C,W	D,S	
20	--	--	None	N	See log.

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.  
 d/ No water sample collected for analysis .  
 e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Hitchland	Section and Survey	Owner	Driller	Date completed	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
d/21	13 miles southeast	Sec.19, NE,1/4 H&TC,Blk. 45	W.P.A. test well	Geo. N. Reed	1936	12	3	--
d/22	12½ miles southeast	Sec.19, SW,1/4 H&TC,Blk. 45	do.	do.	1936	9	3	--
23	11½ miles southeast	Sec.18, SW,1/4 H&TC,Blk. 45	- Coonts	Ed Wilbanks	--	73	4	--
d/24	10½ miles southeast	Sec.17, SW,1/4 H&TC,Blk. 45	do.	--	--	115	4½	0.5
25	10 miles southeast	Sec.16, NE,1/4 H&TC,Blk. 45	C.C.Newcomb	--	--	116	4½	1
26	5 miles south	Sec. 3, S,1/2 Pb. School land	F. M. Hemphill	--	--	226	4½	--
27	4½ miles south	Sec.57, NE,1/4 H&GN,Blk. P.	R. Malkin	Julius Weatherford	1918	214	4½	--
28	8½ miles southwest	Sec.285, SE,1/4 GH&F,Blk. 2	- Brooks	--	--	--	4½	1
29	14 miles southwest	Sec.141, NW,1/4 GH&H,Blk. 2	E. Retsel	Ed Wilbanks	--	280	4½	--
30	17 miles southwest	Sec.52, NE,1/4 GH&H,Blk. 2	- Freeman	--	--	117	4½	1
31	13 miles southwest	Sec.188, NW,1/4 GH&H,Blk. 2	Mrs. Clara Stedje	J.F. Neelo	1922	222	4½	3
32	11 miles southwest	Sec.236, SE,1/4 GH&H,Blk. 2	H. Alexander	--	--	90	4½	2
d/33	10½ miles southwest	do.	W.P.A. test well	Geo. N. Reed	1936	41	3	0
d/34	10 miles southwest	Sec.284, SW,1/4 GH&H,Blk. 2	do.	do.	1936	38	3	0
35	9½ miles southwest	Sec.284, NW,1/4 GH&H,Blk. 2	- Brooks	--	--	74	4½	1
36	7½ miles south	Sec.26, SW,1/4 H&G,Blk. P.	Joe T. Wilkes	- Walls	1916	227	4½	0
37	8½ miles southeast	Sec. 8, NE,1/4 WC.RR. Blk. 1	Frank Lindsay	--	old	228	4½	2
d/38	11 miles southeast	Sec.24, SW,1/4 H&TC,Blk. 45	Lane Sanders	--	--	--	--	1
d/39	12 miles southeast	Sec.23, SW,1/4 H&TC,Blk. 45	W.P.A. test well	Geo. N. Reed	1936	12	3	0
40	do.	do.	Frank Davis	--	--	22	4	0
41	14 miles southeast	Sec.30, NW,1/4 H&TC,Blk. 45	- Hibbs	--	--	175	4½	1
42	13 miles southeast	Sec.33, NE,1/4 H&TC,Blk. 45	C.J.Bertran	--	1930	24	--	0

c/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

b/ T,turbine; A,air-lift; C,cylinder; E,electric; O,cil engine; W,windmill;H,hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
21	--	--	None	N	See log.
22	--	--	None	N	<del>See log.</del> Do
23	--	--	C,W	D,S	
24	68.8	Apr. 29, 1936	C,W	S	
25	90.7	Apr. 29, 1936	C,W	S	
26	--	--	C,W	D,S	Drain hole in pipe. Could not measure water level.
27	--	--	C,W	D,S	Could not measure water level.
28	84.2	May 20, 1936	C,W	S	Water level measured while pumping, windmill had no cut-off.
29	--	May 18, 1936	C,W	S	Produced 55 gallons a minute with bailer when completed.
30	92.2	do.	C,W	S	Reported strong supply.
31	195.9	do.	C,W	D,S	Do.
32	51.8	May 19, 1936	C,W	S	
33	40.5	May 20, 1936	None	N	See log.
34	36.5	do.	None	N	<del>See log.</del> Do
35	51.0	May 20, 1936	C,W	S	Measured while windmill was pumping.
36	216.7	Aug. 13, 1936	C,W	D,S,I	Furnishes water for small garden
37	191.6	Aug. 12, 1936	C,W	D,S	
38	11	Apr. 29, 1936	C,W	N	Out of order.
39	11	do.	None	N	See log.
40	11.5	Apr. 30, 1936	C,W	D,S	
41	149.0	Apr. 30, 1936	C,W	S	
42	18.2	do.	C,H	D,S	

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.  
d/ No water sample collected for analysis.  
e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Hitchland	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
d/43	12 miles southeast	Sec.27, NE.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	8	3	0
44	11½ miles southeast	Sec. 27, SW.1/4 H&TC.Blk. 45	N.W. Willard	--	--	29	4	0.5
45	10 miles southeast	Sec. 6, NW.1/4 WC. RR. Blk. 1	C.O'Laughlin	--	--	123	4½	2
46	6½ miles south	Sec. 2, SE.1/4 C. & M. RR.	Joe Vonneman	--	--	196+	4½	0
47	dc.	Sec. 4, S.1/2 Pb. Sch. Land	Clara Jones	--	--	233	4½	--
d/48	12 miles southwest	Sec.198, NE.1/4 GH&H.Blk. 2	W.P.A. test well	Geo.N. Reed	1936	38	3	0
49	<del>12 miles southwest</del>	Sec.198, SW.1/4 GH&H.Blk. 2	Robert Alexander	--	--	76	4½	1.5
d/50	13 miles southwest	Sec.187, SE.1/4 GH&H.Blk. 2	F.S. Brooks	--	--	99	4½	1.5
51	14½ miles southwest	Sec.139, NE.1/4 GH&H.Blk. 2	C.N. Sagen	- Ferguscn	1909	198	--	0
d/52	15½ miles southwest	Sec.138, SW.1/4 GH&H.Blk. 2	L. Bivins	--	--	115	4½	0
d/53	15 miles southwest	Sec.138, NE.1/4 GH&H.Blk. 2	dc.	--	--	132	4½	1.5
54	14 miles southwest	Sec.151, SE.1/4 GH&H.Blk. 2	First Nat'l Bank	--	--	55	4½	--
d/55	13½ miles southwest	Sec.186 NW.1/4 GH&H.Blk. 2	W.P.A. test well	Geo.N. Reed	1936	25	3	--
56	dc.	Sec.186, SE.1/4 GH&H.Blk. 2	C. J. Fowlston	--	--	--	4	3
d/57	13 miles southwest	Sec.199, NW.1/4 GH&H.Blk. 2	W.P.A. test well	Geo.N. Reed	1936	49	3	0
58	9 miles south	Sec.24, SW.1/4 H&GN.Blk. P.	C. J. Brandvik	--	--	261	4½	0
d/59	8 miles south	Sec. 5, S.1/2 Pb.Sch. Land	S. Jones	--	--	203	4½	0.5
d/60	10 miles southeast	Sec.32, SE.1/4 H&TC.Blk. 45	J.I. Steal	E. Wilbanks	1923	195	4½	1
61	dc.	Sec.36, NW.1/4 H&TC.Blk. 45	F.Lindsay	--	--	Spring	--	--
d/62	12 miles southeast	Sec.34, SW.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	11	3	0
63	14 miles southeast	Sec.45, SE.1/4 H&TC.Blk. 45	C.O'Laughlin	--	--	220	4½	1
64	12½ miles southeast	Sec.44, SW.1/4 H&TC.Blk. 45	-- Smith Estate	--	--	58	4½	3
d/65	dc.	dc.	W.P.A. test well	Geo. N. Reed	1936	11	3	0

a/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

b/ T, turbine; A, air-lift; C, cylinder; E, electric; O, oil engine; W, windmill; H, hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level	Date of measurement.	Pump and kind and count of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)				
43	7.0	Apr. 29, 1936	None	N	See log.
44	17.5	Apr. 29, 1936	None	N	
45	75.2	Apr. 16, 1936	C, W	S	21 foot drawdown with windmill pumping with 2½ inch cylinder.
46	196+	Aug. 13, 1936	C, W	D, S, I	Furnishes water for small garden.
47	--	--	C, W	D, S	Drain hole in pipe prevented measuring water level.
48	38.0	May 19, 1936	None	N	See log.
49	52.7	May 19, 1936	C,	D, S	Had been pumping continuously for two or three months.
50	88.7	do.	C, W	N	
51	188	June 2, 1936	C, W	D, S	Reported weak supply.
52	94.0	May 15, 1936	C, W	S	
53	128	June 2, 1936	C, W	S	
54	--	--	C, W	S	
55	--	--	None	N	See log.
56	105.9	May 19, 1936	None	N	Unused well.
57	48.5	do.	do.	N	See log.
58	207.8	Aug. 13, 1936	C, W	D, S, I	Water level measured after 12 hours shut-down. Irrigates small garden.
59	189.5	Aug. 12, 1936	C, W	D, S	Windmill broken.
60	175.5	Apr. 16, 1936	C, W	S	Out of order.
61	--	--	None	S	Water stands at constant level. Spring in sandy soil in contact with "Red beds".
62	9	Apr. 29, 1936	None	N	See log.
63	192	do.	C, W	S	
64	33.5	Apr. 17, 1936	C, W	D, S	
65	10	Apr. 20, 1936	None	N	See log.

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.  
 d/ No water sample collected for analysis.  
 e/ Water level reported.



Records of wells in Hansford County--Continued

No.	Distance from Hitchland	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground(ft.) <sup>a/</sup>
66	12 miles southeast	Sec.43, SE.1/4 H&TC.Blk. 45	J.Lindsay	--	--	43	4½	1
d/67	10 miles south	Sec. 40, SW.1/4 H&TC.Blk. 45	J.I. Steele	--	1900	214	--	--
d/68	8 miles south	Sec.16, SW.1/4 C.I.F. Blk. 1	C.A. Hitch	--	--	232	4½	1
d/69	11 miles south	Sec.281, NW.1/4 GH&H.Blk. 2	J.R.Renner	--	--	208	4½	1
70	14½ miles southwest	Sec.185, SE.1/4 GH&H.Blk. 2	F.H. Lierman	--	--	180	4½	1
d/71	do.	Sec.152, NE.1/4 GH&H.Blk. 2	W.P.A. test well	Geo. N. Reed	1936	34	3	--
72	16 ½ miles southwest	Sec.135, NE.1/4 GH&H.Blk. 2	W.W.Grooms	--	--	34	4½	2
d/73	16 miles southwest	Sec.153, SW.1/4 GH&H.Blk. 2	W.P.A. test well	Geo. N. Reed	1936	25	3	0
d/74	15½ miles southwest	Sec.153, NW.1/4 GH&H.Blk. 2	do.	do.	1936	21.5	3	--
75	14½ miles southwest	Sec.201, SW.1/4 GH&H.Blk. 2	P.A. Dahl	--	--	205	4½	0
76	12 miles south	Sec.280, SE.1/4 GH&H.Blk. 2	L.C.Koontz	--	--	216+	5	0.5
77	10½ miles south	Sec.22, SE.1/4 H&GN, Blk. F.	F.A.Stanley	--	--	244	4½	2
d/78	9½ miles south	Sec.52, NE.1/4 H&GN, Blk. F.	C.K.Wilmoth	--	--	234	4½	1.5
d/79	12½ miles southeast	Sec.48, SW.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	9	3	0
d/80	do.	Sec.48, NW.1/4 H&TC.Blk. 48	do.	do.	1936	10	3	0
d/81	do.	Sec.48, SW.1/4 H&TC.Blk. 45	do.	do.	1936	10	3	--

No.	Distance from Spearman	Survey and Section	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground(ft.) <sup>a/</sup>
d/82	11 miles northeast	Sec.57, NW.1/4 H&TC.Blk. 45	J.I.Steele	J.I.Steele	1915	25	4½	--
83	do.	Sec.56, NE.1/4 H&TC.Blk. 45	do.	--	1910	22	4½	1
84	10½ miles northwest	Sec. 1, SE.1/4 SA&MG.Blk. 2	G. W. Stewart	Orville Thomas	1912	195	4½	0.5
85	do.	Sec. 2, SW.1/4 SA&MG.Blk. 2	D. A. Tomlinson	--	--	--	4½	--

a/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

b/ T, turbine; A, air-lift; C, cylinder; E, electric; O, oil engine; W, windmill; H, hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
66	25.5	Apr. 29, 1936	C, W	D, S	
67	180	e/	C, W	S	
68	190.7	Aug. 13, 1936	C, W	S	Pump broken.
69	117.5	June 3, 1936	C, W	S	
70	169.5	May 19, 1936	C, W	D, S	
71	--	--	None	N	No water, see log.
72	22.5	May 15, 1936	C, W	D, S	
73	22	June 3, 1936	None	N	See log.
74	--	--	None	N	No water, see log.
75	190	e/	C, W	D, S	Concrete over top of casing prevented measuring water level.
76	--	--	C, W	D, S	
77	204.2	May 13, 1936	C, W	D, S	Reported strong supply.
78	214	Aug. 12, 1936	C, W	D, S	Windmill broken.
79	9	Apr. 8, 1936	None	N	See log.
80	9	do.	None	N	Do.
81	--	--	None	N	No water, see log.

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
82	15	e/	C, W	S	Pump out of order.
83	18.1	Apr. 14, 1936	C, H	D	
84	170	e/	C, W	D, S	Construction prevented measuring water level.
85	--	--	C, W	N	Do.

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.  
d/ No water sample collected for analysis.  
e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Spearman	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
86	10½ miles northwest	Sec.68, NE.1/4 H&TC.Blk. 45	Howard Cline	--	--	--	4½	--
87	9½ miles north	Sec.64, NW.1/4 H&TC.Blk. 45	J. I. Steele	--	--	32	6	1
d/88	9 miles north	Sec. 64, SE.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	17	3	--
d/89	10 miles north	Sec.63, NW.1/4 H&TC.Blk. 45	do.	do.	1936	21	3	--
90	9½ miles north	Sec.62, SW.1/4 H&TC.Blk. 45	F.B. Mapes	--	--	53	5	2
91	10 miles north	Sec.61, center H&TC.Blk. 45	W. Sutton	--	--	255	4½	2.5
92	8½ miles northeast	Sec.71, NE.1/4 H&TC.Blk. 45	F.P. Mapes	Ed Wilbanks	1936	130	6	.5
93	do.	Sec.71, S. 1/4 H&TC.Blk. 45	do.	do.	1935	137	6	1
d/94	8½ miles north	Sec.74, NE.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	11	3	--
d/95	9 miles north	<del>Sec.74, NE.1/4 H&amp;TC.Blk. 45</del>	do.	do.	1936	20	3	0
96	do.	Sec.74, SW.1/4 H&TC.Blk. 45	J.I. Steele	--	--	37	--	--
97	8½ miles northwest	Sec.76, SW.1/4 H&TC.Blk. 45	W.S.Thomas	E. R. Wilbanks	1921	258	4½	2
d/98	9½ miles northwest	Sec.78, NE.1/4 H&TC.Blk. 45	J.I. Steele	do.	1916	225	4½	1
99	11 miles northwest	Sec.80, NE.1/4 H&TC.Blk. 45	C.C. Beck	Harbour	1901	240	4½	0
100	10½ miles northwest	Sec.11, SE.1/4 SA&MG.Blk. 2	H.E. Ogle	--	--	246	4½	2.5
101	do.	Sec.81, NW.1/4 H&TC.Blk. 45	J. O'Donnell	A. Womble	1916	236	4½	0.5
102	9½ miles northwest	Sec.82, NE.1/4 H&TC.Blk. 45	L.L.Hughes	--	--	223	4½	2
103	8½ miles northwest	Sec.84, SW.1/4 H&TC.Blk. 45	W. C. Nellver	--	--	--	4½	--
104	7½ miles north	Sec.87, SW.1/4 H&TC.Blk. 45	J.I.Steele	--	--	36	4½	0.5
d/105	do.	do.	W.P.A. test well	Geo. N. Reed	1936	16	3	0
d/106	8 miles north	Sec.87, NW.1/4 H&TC.Blk. 45	do.	do.	1936	17	3	0
d/107	do.	Sec.87, NE.1/4 H&TC.Blk. 45	do.	do.	1936	13	3	0
d/108	6½ miles north	Sec.17, Center C.R.R. Blk.2	J.I. Steele	Ed Wilbanks	1933	150	8	1

a/ Measuring point is usually top of casing, top of pump base, or top of water pipe clamp.

b/ T, turbine; A, air-lift; C, cylinder; E, electric; O, oil engine; W, windmill; H, hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measur- ing point (feet)	Date of measure- ment.			
86	--	--	C,W	D,S	Construction prevented measuring water level.
87	30.1	Mar. 13, 1936	C,W	D,S	
88	--	--	None	N	See log.
89	--	--	None	N	Do.
90	44.6	Apr. 28, 1936	C,W	S	
91	220.1	do.	C,W	D,S	
92	110	do.	C,W	S	
93	54.8	do.	C,W	S	
94	--	--	None	N	See log.
95	19	Apr. 16, 1936	None	N	See log. <i>JK</i>
96	27.4	Mar. 13, 1936	C,W	S	
97	210.5	Apr. 2, 1936	C,W	D,S	Strong supply reported.
98	216.5	do.	C,W	N	Unused well.
99	210	e/	C,W	D,S	Well boxed up, could not measure water level.
100	197	Mar. 31, 1936	C,W	D,S	
101	197.9	do.	C,W	D,S	
102	217.5	Apr. 2, 1936	C,W	D,S	
103	--	--	C,W	D,S	Boxed around casing, could not measure water level.
104	31.0	Apr. 4, 1936	C,W	D,S	
105	15	Apr. 17, 1936	None	N	See log.
106	16	do.	do.	N	Do.
107	10.5	do.	do.	N	Do.
108	112.2	May 1, 1936	C,W	S	Temporarily out of order.

c/ I, irrigation; Ind, industrial; P, public; B, domestic; S, stock; N, not used.

d/ No water sample collected for analysis.

e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Spearman	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
d/109	6 miles north	Sec.90, SW.1/4 H&TC.Blk. 45	W.P.A. test well	Geo.N. Reed	1936	22	3	-
110	do.	do.	N.W.Willard	--	1900	56	4 $\frac{1}{2}$	2
d/111	7 miles north	Sec.90, NW.1/4 H&TC.Blk. 45	W.P.A. test well	Geo.N. Reed	1936	24	3	0
d/112	7 miles northwest	Sec.92, NE.1/4 H&TC.Blk. 45	N.W.Willard	--	--	--	3	--
d/113	8 $\frac{1}{2}$ miles northwest	Sec.95, NW.1/4 H&TC.Blk. 45	L.L. Hughes	E.R. Wilbanks	1916	65	4 $\frac{1}{2}$	--
d/114	9 $\frac{1}{2}$ miles northwest	Sec.96, NE.1/4 H&TC.Blk. 45	J.O'Donnell	--	--	150	6	--
115	do.	Sec.9, NW.1/4 SA&MG.Blk. 2	R.H.Ralston	Ed Wilbanks	--	140	4 $\frac{1}{2}$	--
116	7 miles northwest	Sec.100,NW.1/4 H&TC.Blk. 45	N.B. Crosby	--	--	165	--	--
d/117	5 $\frac{1}{2}$ miles northwest	Sec.101,SE.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	27	3	--
d/118	6 miles northwest	Sec.102,NE.1/4 H&TC.Blk. 45	do.	do.	1936	22	3	--
119	4-3/4 miles northwest	Sec.103,NE.1/4 H&TC.Blk. 45	L.W.Mathews	--	--	126	4 $\frac{1}{2}$	1
d/120	5 miles northwest	Sec.103,NW.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	15	3	--
d/121	do.	Sec.104,NE.1/4 H&TC.Blk. 45	do.	do.	1936	15	3	--
d/122	5 $\frac{1}{2}$ miles northwest	Sec.104,SW.1/4 H&TC.Blk. 45	do.	do.	1936	31	3	0
d/123	do.	do.	do.	do.	1936	19	3	--
124	do.	Sec.104,NW.1/4 H&TC.Blk. 45	L.W. Mathews	Ed Wilbanks	1936	151	6	2
d/125	do.	do.	do.	--	--	74	6	1
126	8 $\frac{1}{2}$ miles northwest	Sec.108,NW.1/4 H&TC.Blk. 45	S.P.Jackson	Ed Wilbanks	1934	260	4 $\frac{1}{2}$	1
127	9 miles northwest	Sec.110,NW.1/4 H&TC.Blk. 45	Mart Hart	do.	--	200+	4 $\frac{1}{2}$	1
d/128	5 miles northwest	Sec.114,NE.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	52	3	0
d/129	do.	Sec.114,SE.1/4 H&TC.Blk. 45	Joe Burns	--	--	--	4 $\frac{1}{2}$	--
d/130	4-3/4 miles northwest	do.	W.P.A. test well	Geo. N. Reed	1936	35	3	0
131	do.	do.	Joe Burns	--	--	99	4 $\frac{1}{2}$	--

a/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

b/ T,turbine; A,air-lift; C,cylinder; E,electric; O,oil engine; W,windmill;H, hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measur- ing point (feet)	Date of measure- ment.			
109	--	--	None	N	No water, see log.
110	37.7	Apr.17, 1936	C,W	S	
111	21	Apr.15, 1936	None	N	See log.
112	--	--	C,W	S	Temporarily out of order.
113	--	--	C,W	S	Reported 9 feet of clay below water sand. Well was boarded up.
114	100	e/	C,W	S	Windmill broken.
115	--	--	C,"	D,S	Tell was boxed around casing, could not measure water level.
116	110	e/	C,W	D,S	Wood box filled with dirt around well pipe. Could not measure water level.
117	--	--	do	N	No water. See log.
118	--	--	do.	N	Do.
119	65.1	Mar.13, 1936	C,W	S	
120	--	--	None	N	See log.
121	--	--	do.	N	No water, see log.
122	30	Mar.13, 1936	None	N	See log.
123	--	--	None	N	Do.
124	73.9	Mar.13, 1936	C,W	N	
125	68.0	do.	None	N	Unused well.
126	222.2	Apr.15, 1936	C,W	D,S	Hit "Red beds" at 245 feet.
127	198.8	Feb.28, 1936	C,W	D,S	
128	52	Apr.14, 1936	None	N	See log.
129	--	--	C,W	S	Coupling prevented measuring water level. Windmill broken.
130	29	May 1, 1936	None	N	See log.
131	--	--	C,W	D,S	Could not measure water level.

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.

d/ No water sample collected for analysis.

e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Spearman	Section and Survey	Owner	Driller	D. to completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
d/132	3½ miles northwest	Sec.116,SE.1/4 H&TC.Blk. 45	L.W.Mathews	Ed. Wilbanks	--	260	4½	2
133	3 miles north	Sec.33, SW.1/4 T&NO.Blk. 4T	J.W. Marle	--	--	292	6	1
134	2-1/4 miles northeast	Sec.38, SW.1/4 T&NO.Blk. 4T	Santa Fe R.R. Co.	Henry Bushman	1928	343	4½	0.5
135	4-1/4 miles northwest	Sec.118,SE.1/4 H&TC.Blk. 45	Mrs.Carrie Cotter	Arthur Womble	1911	140	6	--
d/136	5 miles northwest	Sec.119,SE.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	34	3	0
d/137	do.	do.	S. R. Hale	E. R. Wilbanks	1924	115	4½	1
d/138	do.	Sec.119,SW.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	25	3	0
139	5½ miles northwest	Sec.119,NW.1/4 H&TC.Blk. 45	Viola C. Whitson	Ed. Wilbanks	1928	105	--	--
140	7½ miles northwest	Sec.131,NE.1/4 H&TC.Blk. 45	Curtis Lowe	A. Womble	1910	123	4½	1
141	6½ miles northwest	Sec.132,NE.1/4 H&TC.Blk. 45	J.R.Collard	Ed. Wilbanks	1932	117	4½	1
d/142	6 miles west	Sec.133,NE.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	28	3	--
d/143	6 miles northwest	Sec.133,SW.1/4 H&TC.Blk. 45	S. B. Hale	Ed. Wilbanks	--	500	8-6	0
d/144	6 miles west	do.	W.P.A. test well	Geo. N. Reed	1936	37	3	--
d/145	do.	Sec.133,SE.1/4 H&TC.Blk. 45	do.	do.	1936	28	3	--
d/146	5½ miles west	Sec.133,NE.1/4 H&TC.Blk. 45	do.	do.	1936	29	3	--
d/147	5 miles west	Sec.134,SE.1/4 H&TC.Blk. 45	do.	do.	1936	49	3	0
148	5½ miles west	do.	G.C. Mitts	Arthur Womble	1907	79	4½	0.5
d/149	5 miles northwest	Sec.134,NW.1/4 H&TC.Blk. 45	W.P.A. test well	Geo. N. Reed	1936	43	3	--
d/150	do.	Sec.134,NE.1/4 H&TC.Blk. 45	do.	do.	1936	23	3	--
d/151	1½ miles northwest	Sec.59, SW.1/4 T&NO.Blk. 4T	F.W. Fullbright	--	--	253	3½	1
152	1½ miles north	Sec.59, SE.1/4 T&NO.Blk. 4T	R.R. Fullbright	Ed. Wilbanks	1923	263	4½	--
153	In Spearman	--	City of Spearman	Ed. & E.R. Wilbanks	1924	348	10	0

<sup>a/</sup> Measuring point usually top of casing, top of pump base, or top of water pipe clamp.

<sup>b/</sup> T,turbine; A,air-lift; C,cylinder; E,electric; O,oil engine; W,windmill; H,hand.

W. L. Broadhurst, Project Superintendent

No.	Depth below measuring point (feet)	Date of measurement.	Pump and kind and amount of power b/	Use of water c/	Remarks
132	198.9	Apr. 1, 1973	C,W	D,S	
133	191.0	May 1, 1936	C,W	D,S	
134	245.5	do.	C,W	D,S	
135	120	e/	C,W	S	Could not measure water on account of dirt around well pipe.
136	33	Feb. 25, 1936	None	N	See log.
137	68.6	Feb. 20, 1936	C,W	D,S	Reported strong supply.
138	24	Mar. 19, 1936	None	N	See log.
139	--	c/	C,W	S	Reported strong well; does not seem to be cased.
140	105.9	Feb. 27, 1936	C,W	S	Had open end casing. Could not lower water with windmill.
141	73.4	do.	C,W	S	Reported strong supply.
142	--	--	None	N	No water, see log.
143	58	e/	T,E,15	I	Reported production of 510 gallons a minute. Drilled in "Red beds" 288-500 feet and found no water.
144	--	--	None	N	See log.
145	--	--	None	N	Do.
146	--	--	None	N	No water, see log.
147	49	Feb. 27, 1936	None	N	See log.
148	71.1	Feb. 27, 1936	C,W	D,S	<del>Reported strong supply.</del> <i>Reported strong supply.</i>
149	--	--	None	N	No water. See log.
150	--	--	None	N	Do.
151	203.2	May 1, 1936	C,W	D,S	Well was out of order.
152	--	--	C,W	D,S	Drain in pipe, could not measure water level.
153	256	May 23, 1936	T,E,25	P	Measured drawdown of 25.2 feet after pumping 180 gallons a minute for 72 hours. See log (No. 1, north well).

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.  
d/ No water sample collected for analysis.  
e/ Water level reported.



Records of wells in Hansford County--Continued

No.	Distance from Spearman	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
154	In Spearman	--	City of Spearman	--	--	282	8	2
155	2½ miles northwest	Sec.64, NE.1/4 T&NO. Blk. 4T	Carl Hull	--	--	266	--	3
156	4 miles west	Sec.63, SW.1/4 T&NO. Blk. 4T	Curric Cotter	--	1909	288	4½	3
d/157	5½ miles west	Sec.136, SE.1/4 H&TC. Blk. 45	W.P.A. test well	Geo. N. Reed	1936	62	3	--
d/158	do.	do.	do.	do.	1936	64	3	0
159	do.	Sec.136, NE.1/4 H&TC. Blk. 45	J.R.Collard	Ed Wilbanks	1934	168	6	0.5
d/160	do.	do.	W.P.A. test well	Geo. N. Reed	1936	36	3	--
161	6 miles west	Sec.136, SW.1/4 H&TC. Blk. 45	Mrs. Willie Moore	A. Womble	1908	64	4½	2
162	do.	Sec.136, NW.1/4 H&TC. Blk. 45	Panhandle P.&I. Co.	Ernest Wilbanks	--	69	3	2
163	do.	do.	do.	W. M. Brown	1931	200	15½	1
d/164	6½ miles west	Sec.137, SE.1/4 H&TC, Blk. 45	W.P.A. test well	Geo. N. Reed	1936	61	3	0
165	7½ miles west	Sec.138, SE.1/4 H&TC. Blk. 45	Curtis Lane	Lon Womble	1912	140	4½	1
d/166	8 miles west	Sec.147, NW.1/4 H&TC. Blk. 45	W.P.A. test well	--	1936	70	3	1.5
167	do.	do.	do.	--	1936	109	--	0
d/168	do.	Sec.147, SW.1/4 H&TC. Blk. 45	do.	Geo. N. Reed	1936	33	3	0
d/169	do.	do.	do.	do.	1936	27	3	--
d/170	7½ miles west	do.	do.	do.	1936	36	3	0
d/171	do.	Sec.147, NE.1/4 H&TC. Blk. 45	do.	do.	1936	25	3	0
d/172	do.	do.	do.	do.	1936	36	3	--
d/173	do.	do.	do.	do.	1936	20	3	--
d/174	7 miles west	Sec.148, NW.1/4 H&TC. Blk. 45	do.	do.	1936	22	3	--
d/175	do.	do.	do.	do.	1936	43	3	0

<sup>a/</sup> Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

<sup>b/</sup> T, turbine; A, air-lift; C, cylinder; E, electric; O, oil engine; W, windmill; H, hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measur- ing point (feet)	Date of measure- ment.			
154	258.8	Aug.14, 1936	T,E,20	P	Reported drawdown of 22.9 feet after pumping 180 gallons a minute for 1/4 hour. (No.2, south well).
155	216.1	May 5, 1936	C,W	D,S	
156	240.9	Feb.28, 1936	C,W	D,S	Can not be pumped down with pump jack pumping day and night.
157	--	--	None	N	See log.
158	63	May 28, 1936	None	N	Dc.
159	68.6	Feb.26, 1936	C,W	D,S	Reported strong well.
160	--	--	None	N	See log.
161	57	Feb.26, 1936	C,W	D,S,I	Irrigates garden.
162	55	Feb.27, 1936	C,E, $\frac{1}{2}$	D,S,	Reported strong supply.
163	83	Feb.26, 1936	T,E,35	I	Reported drawdown of 17 feet after pump- ing 680 gallons a minute for 5 minutes. See log.
164	52.8	Apr.27, 1936	None	N	See log.
165	102.9	Mar. 2, 1936	C,W	D,S	
166	58.0	Mar. 5, 1936	None	N	See log. Drilled by machine.
167	68.7	Feb.15, 1936	None	N	<del>Drilled by machine. See log.</del> Do
168	26	June 9, 1936	None	N	See log.
169	--	--	None	N	Dc.
170	32	Mar.19, 1936	None	N	Dc.
171	31.9	May.26, 1936	None	N	Dc.
172	--	--	None	N	Dry hole, see log.
173	--	--	None	N	Dc.
174	--	--	None	N	Dc.
175	40.8	May 12, 1936	None	N	See log.

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.  
d/ No water sample collected for analysis.  
e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Spearman	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
d/176	7 miles west	Sec.148,NW.1/4 H&TC. Blk. 45	W.P.A. test well	Geo. N. Reed	1936	21	3	--
d/177	do.	do.	do.	do.	1936	20	3	--
d/178	6½ miles west	Sec.148,SE.1/4 H&TC. Blk. 45	do.	do.	1936	22	3	--
d/179	6 miles west	do.	do.	do.	1936	23	3	--
180	6½ miles west	Sec.148,NE.1/4 H&TC. Blk. 45	Bob McCoy	- Burkholder	1886	61	4½	2
d/181	6 miles west	Sec.149,NW.1/4 H&TC. Blk.45	W.P.A. test well	Geo. N. Reed	1936	31	3	--
d/182	5 miles west	Sec.150,NW.1/4 H&TC. Blk. 45	Litch Spark	- Cotter	1904	181	4½	0
183	4½ miles west	Sec.150,NE.1/4 H&TC. Blk. 45	do.	A. M. Wilbanks	1910	318	6	1.5
184	3 miles west	Sec.91, NW.1/4 T&NO. Blk. 4T	J.R. Collard	--	--	283	4½	1.5
185	2 miles southwest	Sec.90, SW.1/4 H&TC. Blk. 45	C.C. French	Ed Wilbanks	1933	228	4½	1.5
186	¾ mile southwest	Sec.89, NE.1/4 T&NO. Blk. 4T	R.H.Holton	E. R. Wilbanks	1929	327	4½	0
186-A	½ mile southwest	do.	Santa Fe RR.	A.A.Riggs	1920	436	--	--
d/187	3½ miles east	Sec.85,NE.1/4 T&NO. Blk. 4T	E.M.Graves	--	--	282	4½	0
188	1½ miles southwest	Sec.96, NW.1/4 T&NO. Blk. 4T	- Reed	--	--	260	4½	4.5
189	4 miles southwest	Sec.93, NW. 1/4 T&NO. Blk. 4T	E. G. Barrott	--	--	278	4½	0.5
190	5½ miles southwest	Sec.152,NE.1/4 H&TC. Blk. 45	L. W. Rosenbaum	Lon Hays	1901	140	4½	2
191	6 miles southwest	Sec.152,N. 1/2 H&TC. Blk. 45	L. W. Rosenbaum	Frank Lard	1929	185	6	2
192	5½ miles southwest	Sec.166,NW.1/4 H&TC Blk. 45	W.L. Mackay	--	--	--	4½	--
d/193	3½ miles southwest	Sec.121,NE.1/4 T&NO. Blk. 4T	R. Broadhurst	--	--	240	4	0
194	2½ miles south	Sec.118,NW.1/4 T&NO. Blk. 4T	Garrett Allen	Frank Lard	1929	315	4½	0
195	7 miles southeast	Sec.143,NE.1/4 T&NO. Blk. 4T	N.W.Willard	--	--	300+	4½	1
196	5 miles southwest	Sec.134,SW.1/4 T&NO. Blk. 4T	W.N.Durham	--	--	295	4½	0.5
197	7 miles southwest	Sec.169,NE.1/4 H&TC. Blk. 45	- Wiley	--	--	--	4½	--

a/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

b/ T,turbine;A, air-lift; C,cylinder; E,electric; O,oil engine; W,windmill; L,hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
176	--	--	None	N	See log.
177	--	--	None	N	Do.
178	--	--	None	N	Do.
179	--	--	None	N	Do.
180	53.5	Mar. 2, 1936	C, W	D, S	Originally dug by hand and filled in around casing.
181	--	--	None	N	See log.
182	165.2	Mar. 2, 1936	None	N	Had not been used for 2 years.
183	256.6	Feb. 28, 1936	C, W	D, S	
184	236.4	May 4, 1936	C, W	D, S	
185	212.6	May 5, 1936	C, W	D, S	
186	250	do.	C, W	D, S	Reported strong supply.
186-A	260	e/	--	Ind.	Reported daily consumption of 7,500 gallons. See log.
187	273.2	Aug. 14, 1936	C, W	D, S	Pump broken.
188	245.2	May 4, 1936	C, W	D, S	
189	--	--	C, W	D, S	Could not measure water level.
190	150.4	Mar. 2, 1936	C, W	D, S	Reported strong supply.
191	168.5	Mar. 27, 1936	C, W	D	<del>Reported strong supply.</del> <i>JK</i>
192	--	--	C, W	D, S	Could not be measured.
193	221.8	May 5, 1936	C, W	D, S	Well was out of order.
194	262.9	do.	C, W	D, S, I	Water turned soil white on surface in garden.
195	292.2	Aug. 14, 1936	C, W	D, S	
196	254.1	May 4, 1936	C, W	S	Well was out of order.
197	--	--	C, W	D, S	Concrete form around casing prevented measuring depth and water level.

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.  
d/ No water sample collected for analysis.  
e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Spearman	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
198	8½ miles southwest	Sec.179,NE.1/4 H&TC. Blk. 45	W. R. Campbell	Frank Lard	1931	276	5-3/16	1
199	9 miles southwest	Sec.179, SW.1/4 H&TC. Blk. 45	P. & S.F. RR. Co.	--	--	--	6	--
200	8½ miles southwest	Sec. 1, SW. 1/4 SA&MG. RR.	F.R.L. Jones	Ed Wilbanks	--	267	6	--
201	7 miles southwest	Sec. 2, SE.1/4 SA&MG. RR.	Frank Davis	--	--	300+	4½	0.5
202	6 miles southwest	Sec.152,NW.1/4 T&NO. Blk. 4T	J. Jackson	--	--	270	4½	--
203	4½ miles southwest	Sec.150,NW. 1/4 T&NO. Blk. 4T	T.H. Taylor	--	--	300+	4½	0.5
204	6½ miles southwest	Sec.153,NW.1/4 T&NO. Blk. 4T	R.F. Dennis	--	--	294	4½	0
205	8 miles southwest	Sec. 6,NE.1/4 SA&MG. RR.	O.L. Williams	--	--	--	4½	--
206	9-1/4 miles southwest	Sec. 7, SE.1/4 SA&MG. RR.	Collard & Mackey	Ed Wilbanks	1929	295	5	0.5
d/207	7 miles southwest	Sec. 2, NE.1/4 B&B. Blk. R	James T. Whitson	Cylinder Oil Co.	1927	3,510	20	--
d/208	8-1/4 miles southeast	Sec.6,SW.1/4 H&GN. Blk.45	J.C.Sanders	--	--	300+	--	0
209	9 miles southeast	Sec.28,SE.1/4 B&B. Blk. R.	J.J. Halin	E. R. Wilbanks	--	394	5-7/8	0
210	8-1/4 miles southeast	Sec.30,SE.1/4 B&B. Blk. R.	H.M. Shacklock	Ed Wilbanks	1929	365	4½	0.5
211	8½ miles southwest	Sec.37,NE.1/4 B&B. Blk. R.	C. Noe	--	--	320	4½	1

No.	Distance from Gruver	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
212	6-1/4 miles north	Sec.51,SE.1/4 H&GN. Blk. P.	Paul B. Higgs	--	--	238	4½	0
d/213	5½ miles north	Sec.298,SE.1/4 CH&H. Blk. 2.	S.H. Higgs	--	--	215	4	1/4
d/214	7 miles northwest	Sec.250,SW.1/4 CH&H. Blk. 2.	O. Dahl	O. Dahl	1933	--	--	1
d/215	10-1/4 miles northwest	Sec.135,NE.1/4 CH&H. Blk. 2.	W.W. Grooms	--	--	Spring	--	--
d/216	11 miles northwest	Sec.106, SE.1/4 CH&H. Blk. 2.	W.P.A. test well	Geo. N. Reed	1936	25	3	0
217	13 miles northwest	Sec.38,SE.1/4 CH&H. Blk.2.	F. Roberts	--	--	178	4½	1½

<sup>a/</sup> Measuring point is usually top of casing, top of pump base, or top of water pipe clamp.

<sup>d/</sup> T, turbine; A, air-lift; C, cylinder; E, electric; O, oil engine; W, windmill; H, hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
198	255	Mar. 3, 1936	C,W	D,S	Only one water sand. No "Red beds".
199	--	--	C,W	--	Could not measure.
200	--	--	C,W	D,S	Do.
201	274.8	May 6, 1936	C,W	D,S	
202	250	e/	C,W	D,S	Could not be measured.
203	278.5	May 5, 1936	C,W	D,S	Reported strong supply.
204	278	do.	C,W	D,S	
205	--	--	C,W	D,S	
206	255.5	May 6, 1936	C,W	D,S	
207	--	--	None	N	Oil test well. See log.
208	309	e/	C,W	D,S	Windmill was broken.
209	301+	Aug.14, 1936	C,W	D,S	First water sand was cased off. Coarse gravel at bottom.
210	196?	Aug.14, 1936	C,W	D,S	Wet pipe prevented measurement of correct water level.
211	249.5	May 5, 1936	C,W	D,S	

No.	Water level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
212	215.6	Aug.12, 1936	C,W	S	Windmill broken, water sample taken from elevated tank.
213	186.7	May 13, 1936	C,W	--	
214	208.0	June 3, 1936	C,W	D,S	
215	Flows	do.	None	S	Flows from 10 to 200 gallons a minute according to season.
	13	May 15, 1936	None	N	See log.
217	157.5	May 15, 1936	C,W	D,S	

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.  
d/ No water sample collected for analysis.  
e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Gruver	Section and survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
218	11 miles northwest	Sec.107,NW.1/4 GH&H. Blk.2,	L. Bivins	--	--	66.0	4 $\frac{1}{2}$	2
d/219	<del>11 miles northwest</del>	Sec.107,NE.1/4 GH&H. Blk. 2.	W.P.A. test well	Geo. N. Reed	1936	16	3	0
220	5 miles northwest	Sec.218, SW.1/4 GH&H. Blk. 2.	--	--	--	230	4 $\frac{1}{2}$	0
221	4 $\frac{1}{2}$ miles north	Sec.20,SW. 1/4 H&GN. Blk. P.	W.L. Murrell	--	--	243	4 $\frac{1}{2}$	0
222	7 miles northwest	Sec.204,SW. 1/4 GH&H. Blk. 2.	H. Alexander	--	--	184	4 $\frac{1}{2}$	1
223	8 $\frac{1}{2}$ miles northwest	Sec.156,SW.1/4 GH&H. Blk.2.	Marvel Walker	--	--	212	4 $\frac{1}{2}$	--
d/224	11 miles northwest	Sec.108,NE. 1/4 GH&H. Blk.2.	W.P.A. test well	Geo. N. Reed	1936	21	3	--
d/225	do.	Sec.108,SW.1/4 GH&H. Blk.2.	do.	do.	1936	23	3	--
226	11 $\frac{1}{2}$ miles northwest	Sec.84,NW.1/4 GH&H. Blk.2.	L.Bivins	--	--	86	5	1
d/227	11 miles northwest	Sec.84,center GH&H. Blk. 2.	W.P.A. test well	Geo. N. Reed	1936	25	3	0
228	9 $\frac{1}{2}$ miles northwest	Sec.109, SE.1/4 GH&H. Blk. 2.	Spivey Estate	do.	--	228	4 $\frac{1}{2}$	0
229	9 miles northwest	Sec.133,SE.1/4 GH&H. Blk. 2.	S.T. Dozier	--	--	189	4 $\frac{1}{2}$	3
230	4 miles northwest	Sec.253,SE.1/4 GH&H. Blk. 2.	L. E. Morrison	--	1915	196	4 $\frac{1}{2}$	1
231	3 $\frac{1}{2}$ miles northeast	Sec.9, center, Pub.Sch.Ld.Blk.2.	Cameron Estate	--	--	229	4	2.5
232	2 $\frac{1}{2}$ miles northwest	Sec.14,NW.1/4 H&GN.Blk.P.	R.McClellan	--	--	190	4 $\frac{1}{2}$	1
233	3 miles northwest	Sec.275,NE.1/4 GH&H. Blk. 2.	R.D.Ferguson	--	--	183	4 $\frac{1}{2}$	0.5
234	9 miles northwest	Sec.131,SW.1/4 GH&H. Blk. 2.	I.W. Ayers	- Richardson	1934	254	4 $\frac{1}{2}$	1
d/235	10 miles northwest	Sec.110,SW.1/4 GH&H. Blk. 2.	Spivey Estate	--	--	202	4 $\frac{1}{2}$	1
236	11 miles northwest	Sec.82,NW.1/4 GH&H. Blk.2.	Fred McRee	--	--	224	4 $\frac{1}{2}$	1
237	3 $\frac{1}{2}$ miles northeast	Sec.10,center, Pub.Sch.Ld.Blk.2.	Chas. Thompson	--	--	140	3	--
238	2 $\frac{1}{2}$ miles southeast	Farwell Townsite	W.E. Maupin	- Barnes	1915	175	4 $\frac{1}{2}$	1.5
239	In Gruver	C.R.I. & P.Depot Gruver	C.R.I. & P. RR. Co.	D.L. McDonald	1929	502	--	0
240	do.	City well	Panhandle P. & L. Co.	A.H. Masireh	1931	342	10-	0

a/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

b/ T, turbine; A, air-lift; C, cylinder; E, electric; O, oil engine; W, windmill; H, hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
218	39.5	May 15, 1936	C, 7	S	
219	10.1	do.	None	N	See log.
220	199.1	May 13, 1936	C, W	D, S	
221	183.2	do.	C, 7	--	
222	179.0	May 12, 1936	C, W	D, S	
223	175	e/	C, 7	D, S	
224	--	--	None	N	See log.
225	--	--	None	N	No water, see log.
226	48.7	June 1, 1936	C, W	S	
227	24	do.	None	N	See log.
228	175.8	do.	C, W	D, S	
229	160?	May 12, 1936	C, W	D, S	
230	179.5	May 13, 1936	C, W	D, S	
231	195.5	Mar. 31, 1936	C, W	D, S	
232	179.5	May 13, 1936	C, 7	D, S	
233	175.7	do.	C, W	D, S	
234	168.5	June 1, 1936	C, W	D, S	
235	170.5	do.	C, 7	D, S	
236	187	do.	C, W	D, S	
237	130	e/	C, 7	D, S	Could not measure water level.
238	164.6	Apr. 15, 1936	C, W	D, S	
239	148.1	Aug. 14, 1936	A, C, 25	Ind.	Two air lines in well. See driller's log.
240	158.5	July e/ 1931	T, E, 10	P	See log.

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.  
d/ No water sample collected for analysis.  
e/ Water level reported.



Records of wells in Hansford County--Continued

No.	Distance from Gruver	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
241	3½ miles west	Sec.256,NE.1/4 GH&H. Blk. 2	Ernest M. Johnson	Frank Davis	1929	192	4½	1
242	4 miles west	Sec.256,NW.1/4 GH&H. Blk. 2	E. Stavlo	- Barns	--	208	4½	2.5
243	7½ miles west	Sec.160,NE.1/4 GH&H. Blk. 2	J.H.Cruver	--	--	171	4½	0.5
244	10 miles west	Sec. 81,NE.1/4 GH&H. Blk. 2	- Patton	--	1931	225	5	2.5
d/245	3 miles southwest	Sec.272,SW.1/4 GH&H. Blk. 2	A.P.Borger Estate	--	--	179	4½	0.5
246	2 miles southeast	S.1/2, J.B. Dunn	H.S.Hays	- Pruitt	1910	194	4½	2
247	4½ miles southeast	Sec.123,SE.1/4 E. C. Blk. 45	Lastz Est.	J.A.Riley	1925	197	4	1
d/248	3½ miles southeast	Sec.124,SE.1/4 H&TC. Blk. 45	G.S. Cator Est.	--	--	187	4½	--
249	8½ miles southwest	Sec.127,NE.1/4 GH&H. Blk. 2	A.P.Borger Est.	--	--	203	4½	1.5
250	10½ miles southwest	Sec. 79,NE.1/4 H&TC. Blk. 2	M.M.Hagan	--	--	193	4½	1
251	11½ miles southwest	Sec. 66,SE.1/4 H&TC. Blk. 45	A.P.Borger Est.	--	--	193	4½	2
252	9-1/4 miles southwest	Sec.126,SE. 1/4 GH&H. Blk. 2	Mrs. Mary Spivey	--	--	171	4½	1
253	7 miles southwest	Sec.174,SE.1/4 GH&H. Blk. 2	Tom Dozier	--	--	173	4½	1
254	4 miles southwest	Sec.301,SE.1/4 H&GN. Blk. 2	W. Gandy	--	--	--	6	0.5
255	3½ miles south	Sec.128,SW.1/4 H&TC. Blk. 45	Hayden Hart	E. R. Wilbanks	1917	225	4½	0.5
256	5 miles southeast	Sec.130,SE.1/4 H&TC. Blk. 45	J.A. Ward	- Barns	1917	212	4½	--
257	6 miles southwest	Sec.221,SE.1/4 GH&H. Blk. 2	J.A.Layton	--	--	138	4½	1
258	13 miles west	Sec.29, NE.1/4 H&TC. Blk. 45	Rob Alexander	--	--	188	4½	1
259	7 miles west	Sec.220,SE.1/4 GH&H. Blk. 2	--	--	--	160	4½	1.5
d/260	5½ miles south	Sec. 6, S.1/2 Pub.Sch.Land	W.P.A. test well	Geo. N. Reed	1936	43	3	0
261	do.	Sec. 6,SE.1/4 E. C. L. Blk. 3	J.P.Winder Est.	A. Womble	1905	47	4	1.5
d/262	do.	Sec.143,SW.1/4 H&TC. Blk. 45	Gwinfred Lackey	E. R. Wilbanks	1916	64	4½	2
263	5½ miles southeast	Sec.145,SE.1/4 H&TC. Blk. 45	W.P.A. test well	Geo. N. Reed	1936	33	3	0

a/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

b/ T, turbine; A, air-lift; C, cylinder, E, electric; O, oil engine; W, windmill; H, hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
241	159.7	May 12, 1936	C,W	D,S	
242	205?	do.	C,W	D,S	Very little water in well.
243	127.3	do.	C,W	D,S	
244	199	do.	C,W	D,S	Well reported drilled to second sand.
245	148.4	Apr.25, 1936	C,W	D,S	Reported strong supply.
246	183.7	Apr.15, 1936	C,W	D,S	
247	184.7	Feb.28, 1936	C,W	D,S	
248	--	Apr.15, 1936	C,W	N	Well reported dry.
249	165.0	Apr.20, 1936	C,W	D,S	Reported strong supply.
250	166.3	do.	C,W	D,S	
251	164.7	do.	C,W	D,S	Reported strong supply.
252	157.0	do.	C,W	D,S	Do.
253	163.4	do.	C,W	D,S	Do.
254	181.5	May 5, 1936	C,W	S	Unable to get tape to bottom of well.
255	181.5	do.	C,W	D,S	
256	--	--	C,W	D,S	Could not measure water level. Reported sufficient supply to irrigate 1/4 acre garden.
257	134.0	Apr.20, 1936	C,W	D,S	Weak supply reported.
258	160	do.	C,W	D,S	
259	138	do.	C,W	S	
260	40.	Apr.21, 1936	None	N	See log.
261	38.2	Mar. 7, 1936	C,W	D,S	Reported strong supply.
262	45.6	do.	C,W	N	
263	22.8	Mar. 5, 1936	None	N	See log.

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.  
d/ No water sample collected for analysis.  
e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Gruver	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in)	Height of measuring point above ground (ft.) <sup>a/</sup>
d/264	6 miles southeast	Sec.145,SE.1/4 H&TC. Blk. 45	W.P.A. test well	Geo. N. Reed	1936	24	3	--
d/265	do.	Sec.146,SW.1/4 H&TC. Blk. 45	do.	do.	1936	26	3	0
d/266	6½ miles southeast	Sec.146,SE.1/4 H&TC. Blk. 45	do.	do.	1936	28	3	0
267	do.	do.	S. Lackey	Sid Lackey	1928	48	4½	3.5
d/268	do.	do.	W.P.A. test well	Geo. N. Reed	1936	16	3	--
d/269	do.	do.	do.	do.	1936	30	3	0
270	do.	do.	S. Lackey	--	1935	73	4½	3.5
d/271	do.	Sec.155,NE.1/4 H&TC. Blk. 45	do.	--	--	47	4	1.5
d/272	do.	Sec.155,NW.1/4 H&TC. Blk. 45	W.P.A. test well	Geo. N. Reed	1936	29	3	0
d/273	do.	Sec.156,NE.1/4 H&TC. Blk. 45	do.	do.	1936	38	3	0
d/274	do.	do.	do.	do.	1936	22	3	--
275	do.	Sec.156,NW.1/4 H&TC. Blk. 45	Coy Holt	--	--	39	4½	0.5
276	6½ miles south	Sec.156,SW.1/4 H&TC. Blk. 45	do.	E. R. Wilbanks	1935	147	15½	0
277	6 miles south	Sec.157,NE.1/4 H&TC. Blk. 45	do.	do.	--	120	15½	0
278	do.	do.	W.P.A. test well	Geo. N. Reed	1936	32	3	0
d/279	do.	do.	Coy Holt	--	1910	--	4	--
d/280	do.	do.	W.T. Coble	Geo. N. Reed	1927	26	4	0
281	do.	do.	W.P.A. test well	do.	1936	35	3	0
282	6½ miles south	do.	do.	do.	1936	33	3	0
283	do.	Sec.157,NW.1/4 H&TC. Blk. 45	W.T. Coble	A. Wcmble	1915?	--	--	1
d/284	6 miles south	Sec.158,NE.1/4 H&TC. Blk. 45	W.P.A. test well	Geo. N. Reed	1936	19	3	0
d/285	do.	Sec.158,NW.1/4 H&TC. Blk. 45	do.	do.	1936	19	3	--
d/286	do.	do.	do.	do.	1936	23	3	0

a/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

b/ T,turbine; A,air-lift; C,cylinder; E,electric; O,cil engine; W,windmill; H,hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
264	--	--	None	N	See log.
265	22.9	Mar. 26, 1936	None	N	Do.
266	26.0	do.	None	N	Do.
267	36.4	Mar. 3, 1936	C, W	D, S	Reported strong supply.
268	--	--	None	N	See log.
269	26	June 4, 1936	None	N	Do.
270	32.4	Mar. 3, 1936	C, W	S	Two water sands reported. First sand reported good.
271	29.2	Mar. 5, 1936	C, W	S	Windmill broken.
	25.	Mar. 26, 1936	None	N	See log.
273	36	Mar. 6, 1936	None	N	Do.
274	--	--	None	N	Do.
275	25.9	Mar. 6, 1936	C, W	D, S	
276	35.4	Mar. 26, 1936	None	N	Intended for irrigation use.
277	28.3	do.	T, E, 25	I	Perforated from water level to bottom of well. 16 foot drawn in 20 minutes.
278	24.8	Mar. 11, 1936	None	N	See log.
279	--	--	None	N	Had been unused for 15 years. Could not measure.
280	20	e/	C, H	N	Well was filled with silt. Unused.
281	18.0	Mar. 19, 1936	None	N	See log.
282	22.0	Mar. 11, 1936	None	N	Do.
283	31.5	Mar. 6, 1936	--	--	--
284	19	Mar. 9, 1936	None	N	See log.
285	--	--	None	N	No water, see log.
286	17	Apr. 6, 1936	None	N	See log.

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.

d/ No water sample collected for analysis,

e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Gruver	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
1/287	6 miles south	Sec. 7, E. center J.W. Jones	W.P.A. test well	Geo. N. Reed	1936	13 $\frac{1}{2}$	3	--
288	do.	Sec. 7, NW.1/4 P.S.L. Blk. 3	Mrs. J. Jones	- Lyle	1913	76	4 $\frac{1}{2}$	0
289	6 $\frac{1}{2}$ miles south	Sec. 7, NW.1/4 J. W. Jones	W.P.A. test well	Geo. N. Reed	1936	45	3	0
290	do.	Sec. 7, SW.1/4 D.C. Jones Blk. 3	do.	do.	1936	25	3	0
291	do.	Sec. 310, SE.1/4 G.H.H. Blk. 2	Dave Jones Est.	--	1900?	39	4 $\frac{1}{2}$	0.5
292	7 miles south	Sec. 310, SW.1/4 GH&H. Blk. 2	W.P.A. test well	Geo. N. Reed	1936	29	3	0
293	6 $\frac{1}{2}$ miles southwest	Sec. 267, NW.1/4 GH&H. Blk. 2	W.T. Coble	--	--	52	4 $\frac{1}{2}$	--
d/294	7 $\frac{1}{2}$ miles southwest	Sec. 219, Center GH&H. Blk. 2	R. A. Ferguson	--	--	46	5-3/6	1.5
d/295	8 miles southwest	Sec. 214, NW.1/4 GH&H. Blk. 2	J.H. Cator & Nobles	--	--	52	4 $\frac{1}{2}$	0.5
296	8 $\frac{1}{2}$ miles southwest	Sec. 171, NE.1/4 GH&H. Blk. 2	G.W. Norton	--	1929	95	4 $\frac{1}{2}$	2
d/297	do.	Sec. 218, SE.1/4 GH&H. Blk. 2	Cator & Nobles	A. Womble	1928	144	4 $\frac{1}{2}$	0.5
297a	do.	do.	do.	- Webb	--	42	--	0
298	7 $\frac{1}{2}$ miles southwest	Sec. 266, NE.1/4 GH&H. Blk. 2	W.P.A. test well	Geo. N. Reed	1936	20	3	0
299	8 miles southwest	Sec. 266, SE.1/4 GH&H. Blk. 2	do.	do.	1936	31	3	0
300	7 $\frac{1}{2}$ miles south	Sec. 311, SE.1/4 GH&H. Blk. 2	do.	do.	1936	36	3	0
301	7 miles south	Sec. 1, N.1/2 P.S.L. Blk. 4	E.T. Rafferty	--	1904	60	4 $\frac{1}{2}$	0
302	do.	do.	do.	--	1924	72	4 $\frac{1}{2}$	0.5
303	7 $\frac{1}{2}$ miles south	Sec. 160, SW.1/4 H&TC. Blk. 45	Mrs. J. Jones	--	--	--	4 $\frac{1}{2}$	--
304	7 miles south	Sec. 161, NE.1/4 H&TC. Blk. 45	Coy Holt	--	--	84	4 $\frac{1}{2}$	1.5
305	8 miles south	Sec. 112, NW.1/4 GH&H. Blk. 2	W.T. Coble	W.T. Coble	1921	39	4	0
306	do.	Sec. 265, NE.1/4 GH&H. Blk. 2	J.H. Cator & I.G. Noble	A. Womble	1935	29	6	2.5
307	8 $\frac{1}{2}$ miles south	Sec. 265, NE.1/4 GH&H. Blk. 2	W.P.A. test well	Geo. N. Reed	1936	36	3	0
308	<del>8 miles south</del>	do.	J. H. Cator	--	--	Spring	--	--

a/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

b/ T, turbine; A, air-lift; C, cylinder; E, electric; O, oil engine; W, windmill; H, hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump kind and amount of power b/	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
287	--	--	None	N	No water, see log.
288	49.6	Mar.11, 1936	C,W	D,S	Reported strong supply.
289	25.2	Mar.10, 1936	None	N	See log.
290	11.9	Mar.16, 1936	None	N	Do.
291	33.9	Apr.22, 1936	C,T	D,S	
292	14.2	Mar.17, 1936	None	N	See log.
293	--	--	C,W	S	Could not measure.
294	36.1	Apr.20, 1936	C,W	S	
295	44.5	do.	C,W	S	
296	45.2	do.	C,W	S	
297	122.3	Mar.18, 1936	C,T	S	
297a	23.5	do.	C,W	D,S	
298	7.1	Mar.17, 1936	None	N	See log.
299	9.7	do.	None	N	Do.
300	13.7	Mar.16, 1936	None	N	Do.
301	46.9	Mar.17, 1936	C,W	N	
302	50.4	do.	C,W	D,S	
303	--	--	C,W	N	Could not measure depth.
304	61.6	Mar.5, 1936	C,W	S	
305	15	e/	C,W	D,S	Water from white sandy clay or mud.
306	12.5	Mar.16, 1936	C,H	D,S	First sand at 12 feet, second at 29 feet.
307	16.5	Mar.18, 1936	None	N	See log.
308	Flows	Feb.20, 1936	None	D,S	N.T.N. Park Spring. Estimated flow of 5 to 10 gallons a minute from sand stratum.

c/ I, irrigation; Ind, industrial; p, public; D, domestic; S, stock; N, not used.

d/ No water sample collected for analysis.

e/ Water level reported.

Records of wells in Hansford County--Continued

No.	Distance from Gruver	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
309	8½ miles south	Sec.265,SE.1/4 GH&H. Blk. 2	W.P.A. test well	Geo. N. Reed	1936	38	3	0
310	9 miles south	Sec.265,SW.1/4 GH&H. Blk. 2	do.	do.	1936	18	3	0
311	do.	do.	Cator and Nobles	- Webb	1902	42	4½	1
d/312	8 miles south	Sec.265,NE.1/4 GH&H. Blk. 2	W.P.A. test well	Geo. N. Reed	1936	6	3	--
313	8½ miles southwest	Sec.265,N7.1/4 GH&H. Blk. 2	do.	do.	1936	22	3	0
314	9½ miles southwest	Sec. 4, SE.1/4 T&NO. Blk. 5	John Cavin	--	--	116	6	1
d/315	do.	Sec. 4, NE.1/4 T&NO. Blk. 5	W.P.A. test well	Geo. N. Reed	1936	10	3	--
316	10 miles south	Sec. 4, SE.1/4 T&NO. Blk. 5	John Cavin	A. Womble	--	40	4½	0.5
d/317	9 miles south	Sec.314,NE.1/4 G. N. Blk. 2	Cator and Nobles	--	--	34	6	1.2
318	8½ miles south	Sec.174,SE.1/4 H&TC. Blk. 45	Josephine Hays	--	--	198	4½	1.5
319	9½ miles south	Sec.176,SE.1/4 H&TC. Blk. 45	R.A. Jarvis Est.	--	--	222	4½	1
320	9½ miles southeast	Sec.178,N. 1/2 H&TC. Blk. 45	C. A. Lahmiller	Ed Wilbanks	--	320	4½	1
321	10 miles southeast	Sec.181,NE.1/4 H&TC. Blk. 45	N. W. Willard	--	--	285	4½	0.6
322	10 miles south	Sec.182,N7.1/4 H&TC. Blk. 45	- Sites	--	--	282	4½	0
d/323	10½ miles south	Sec. 7, NE.1/4 T&NO. Blk. 5T	W.P.A. test well	Geo. N. Reed	1936	22	3	0
d/324	dc.	dc.	do.	do.	1936	15	3	0
325	15 miles southwest	Sec.16, SE.1/4 GH&H. Blk. 3	J. C. Sangston	--	--	153	4½	1
d/326	12 miles south	Sec.14, SW.1/4 T&NO. Blk. 5T	W.P.A. test well	Geo. N. Reed	1936	19	3	0
327	11½ miles south	Sec.16, SW.1/4 T&NO. Blk. 5T	J.J.Hamre	Ed Wilbanks	1918	178	4½	0
328	12½ miles south	Sec.193,NE.1/4 H&TC. Blk. 45	G.H. Cole	--	--	--	4½	0.5
329	dc.	Sec.197,S7.1/4 H&TC. Blk. 45	H.N. Kelly	--	--	281	4½	2.5
330	dc.	Sec. 19,NE.1/4 T&NO. Blk. 5T	J. A. Balentine	J. A. Balentine	1908	38	4½	2
d/331	16 miles southwest	Sec. 21,SW.1/4 GH&H. Blk. 3	- Sealy	T.F.Caldwell et al	--	3,233	20	--

a/ Measuring point is usually top of casing, top of pump base or top of water pipe clamp.

b/ T,turbine; A,air-lift; C,cylinder; E,electric; O,cil engine; W,windmill; H,hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power	Use of water c/	Remarks
	Depth below measuring point (feet)	Date of measurement.			
309	24.5	Mar.18, 1936	None	N	See log.
310	14.6	do.	None	N	Do.
311	23.5	do.	C,W	D,S	Reported strong supply.
312	--	--	None	N	Dry hole, see log.
313	14.1	Mar.17, 1936	None	N	See log.
314	45.8	Mar.18, 1936	C,W	D,S	
315	--	--	None	N	Dry hole, see log.
316	13.6	Mar.18, 1936	C,W	D,S	
317	22.8	do.	C,W	N	Formerly used for stock.
318	165.3	Apr.22, 1936	C,W	D,S	Reported strong well.
319	190.1	do.	C,W	D,S	Do.
320	231.3	Mar.27, 1936	C,W	D,S	
321	256.1	Apr.22, 1936	C,W	D,S	
322	238.6	do.	C,W	D,S	Reported strong well.
323	13	Apr.24, 1936	None	N	See log.
324	13.5	do.	None	N	Do.
325	95.5	Aug.14, 1936	C,W	D,S,I	Furnishes supply for small garden.
326	15	Apr.24, 1936	None	N	See log.
327	138	do.	C,W	D,S	Well pumps some sand.
328	263.9	May 6, 1936	C,W	D,S	
329	242.2	Apr.24, 1936	C,W	S	
330	25.2	do.	C,W	D,S	Dug well. Reported strong supply.
331	--	--	None	N	Oil test well. See log.

c/ I, irrigation; Ind, industrial; P, public; D, domestic; S, stock; N, not used.

d/ No water sample collected for analysis.

e/ Water level reported.



Records of wells in Hansford County--Continued

No.	Distance from Gruver	Section and Survey	Owner	Driller	Date completed.	Depth of well (ft.)	Diameter of well (in.)	Height of measuring point above ground (ft.) <sup>a/</sup>
d/332	13½ miles south	Sec.28, SW.1/4 T&NO. Blk. 5T	O.C. Dowdy	--	--	147	4½	--
333	14 miles south	Sec.30, NW.1/4 T&NO. Blk. 5T	J. A. Balentine	--	--	66	4½	2
334	do.	Sec.31, NE.1/4 T&NO. Blk. 5T	A.M.Coffey	Coffey and Searcey	1931	63	6	4.5
335	14½ miles south	Sec.31, SE.1/4 T&NO. Blk. 5T	C.R.I. & P. R.R.	D. L. McDonald	1930	321	6-5/8	0
d/336	In Morse	--	Panhandle P. & L. Co.	W.M.Brown	1931	354	--	0
337	16½ miles southwest	Sec.32, NE.1/4 GH&H. Blk. 3	Pete Catcher	Arthur Wemble	1934	139	6	1

a/ Measuring point was usually top of casing, top of pump base, or top of water pipe clamp.

b/ T, turbine; A, air-lift; C, cylinder; E, electric; O, oil engine; W, windmill; H, hand.

W. L. Broadhurst, Project Superintendent

No.	Water Level		Pump and kind and amount of power b/	Use of water c/	Remarks
	Depth below measur- ing point (feet)	Date of measure- ment.			
332	--	--	C,W	D,S	
333	51.4	Apr.24, 1936	C,W	D,S	
334	44.5	do.	C,W	D,S	Dug well. Forty feet of clay at top, then fine sand.
335	81	Aug.14, 1936	A,E,20	D,Ind	Drawdown 12.3 feet after pumping approxi- mately 100 gallons a minute for 23 minutes. See driller's log.
336	89.5	e/ 1936	T,E,7½	P	Reported drawdown, 9 feet after pumping 100 gallons a minute for 24 hours. See driller's log.
337	122.2	Aug.18, 1936	C,W	D,S	Windmill drew water level down 6 feet.

c/ I, irrigation; Ind, industrial; P,public; D,domestic; S, stock; N, not used.  
d/ No water sample collected for analysis.  
e/ Water level reported.

Altitudes and water level measurements of observation wells in Hansford County, Texas  
(Table of well records herewith gives full descriptions of these wells.)

Date of measurement 1936	Depth to water (feet)	Date of measurement 1936	Depth to water (feet)	Date of measurement 1936	Depth to water (feet)
<p>Well 87 J. I. Steele. 9<math>\frac{1}{2}</math> miles north of Spearman. Measuring point is top of casing, 1 foot above ground. Mar. 13 - - - - - 30.10 April 14 - - - - - 30.00 April 28 - - - - - 29.90 June 10 - - - - - 30.40</p>		<p>Well 122 L. W. Mathews. W. P. A. test well on Creek bank, 5<math>\frac{1}{2}</math> miles northwest of Spearman. Measuring point is ground surface. Altitude 2,921.6 feet. Mar. 13 - - - - - 30.00</p>		<p>Well 133 J. W. Marle. 3 miles north of Spearman. Measuring point is top of 6x6 inch wood water pipe clamp, 1 foot above ground. Altitude 2,043.7 ft. May 1 - - - - - 131.05</p>	
<p>Well 96 J. I. Steele. 8<math>\frac{1}{2}</math> miles north of Spearman. Measuring point is top of wood water pipe clamp. Mar. 13 - - - - - 27.36 April 14 - - - - - 27.48 April 28 - - - - - 27.00 June 10 - - - - - 27.25</p>		<p>Well 124 L. W. Mathews 5<math>\frac{1}{2}</math> miles northwest of Spearman. Measuring point is top of concrete foundation around casing, 2 feet above ground. Altitude 2,947.6 feet. Mar. 13 - - - - - 73.92 April 14 - - - - - 74.10 April 27 - - - - - 74.29 June 10 - - - - - 74.25</p>		<p>Well 137 S. B. Hale. 5 miles northwest of Spearman. Measuring point is top of 6x6 inch wood water pipe clamp, 1.2 feet above ground. Altitude 2,966.2 ft. Feb. 20 - - - - - 68.67 Mar. 11 - - - - - 68.65 Mar. 24 - - - - - 68.65 Apr. 27 - - - - - 68.10 May 25 - - - - - 67.20 June 10 - - - - - 68.00</p>	
<p>Well 97 W. S. Thomas. 8<math>\frac{1}{2}</math> miles northwest of Spearman. Measuring point is top of 6x6 inch wood water pipe clamp, 2 feet above surface. April 2 - - - - - 210.50 April 14 - - - - - 210.00</p>		<p>Well 126 S. P. Jackson. 8<math>\frac{1}{2}</math> miles northwest of Spearman. Measuring point is top of casing, 1 foot above ground. Altitude 3,144.7 feet. April 15 - - - - - 222.20</p>		<p>Well 139 Viola C. Whitson. 5<math>\frac{1}{2}</math> miles northwest of Spearman. Measuring point is top of 4x4 inch wood pipe clamp, 4 inches above ground. Altitude 3,007.1 feet. Feb. 25 - - - - - 60.00</p>	
<p>Well 104 J. I. Steele. 7<math>\frac{1}{2}</math> miles north of Spearman. Measuring point is top of 4x4 inch wood water pipe clamp, <math>\frac{1}{2}</math> foot above surface. April 14 - - - - - 31.05 April 28 - - - - - 30.41 June 10 - - - - - 31.80</p>		<p>Well 127 Mart Hart. 9 miles northwest of Spearman. Measuring point is top of casing, 1 foot above ground. Altitude 3,166.2 feet. Feb. 28 - - - - - 198.85</p>		<p>Well 140 Curtis Lowe. 7<math>\frac{1}{2}</math> miles northwest of Spearman. Measuring point is top of casing, 1 foot above ground. Altitude 3,055.0 feet. Feb. 27 - - - - - 103.90</p>	
<p>Well 119 L. W. Mathews. 4<math>\frac{3}{4}</math> miles northwest of Spearman. Measuring point is top of casing, 1 foot above ground. Mar. 13 - - - - - 68.10 April. 14 - - - - - 68.00 April 27 - - - - - 68.15 June 10 - - - - - 68.25</p>		<p>Well 132 W. L. Mathews. 3<math>\frac{1}{2}</math> miles northwest of Spearman. Measuring point is top of 6x6 inch wood water pipe clamp, 2 feet above ground. Altitude 3,089.0 feet. April 1 - - - - - 198.90 April 14 - - - - - 198.00 April 27 - - - - - 199.25</p>			

Altitudes and water level measurements of observation wells in Hansford County--Cont.

Date of measurement 1936	Depth to water (feet)	Date of measurement 1936	Depth to water (feet)	Date of measurement 1936	Depth to water (feet)
<p>Well 141</p> <p>J. R. Collard, 6<math>\frac{1}{2}</math> miles northwest of Spearman. Measuring point is top of casing, 1 foot above ground. Altitude 3,009.0 feet.</p>		<p>Well 156</p> <p>Carrie Cotter, 4 miles west of Spearman. Measuring point is top of 3x12 inch wood water pipe clamp, 3 feet above ground. Altitude 3,128.0 feet.</p>		<p>Well 163</p> <p>PanHandle Power &amp; Light Co. 6 miles west of Spearman. Measuring point is top of base for motor, 1 foot above ground. Altitude 3,008.0 feet.</p>	
Feb. 27	73.4	Feb. 28	240.9	Feb. 26	83.08
Mar. 11	73.43	Apr. 14	240.10	Mar. 12	82.54
Mar. 24	73.45	Apr. 27	240.00	Mar. 24	82.76
Apr. 13	73.40	May 11	240.00	Apr. 27	82.24
Apr. 27	71.55	May 26	240.10	May 26	82.00
May 11	73.50			June 10	82.00
May 26	73.00	<p>Well 149</p> <p>J. R. Collard, 5<math>\frac{1}{2}</math> miles west of Spearman. Measuring point is top of casing, 0.8 feet above ground. Altitude 2,977.6 feet.</p>		<p>Well 165</p> <p>Curtis Lowe, 7<math>\frac{1}{2}</math> miles west of Spearman. Measuring point is top of casing, 1 foot above ground. Altitude 3,047.4 feet.</p>	
June 10	73.50	Feb. 26	68.60	Mar. 2	102.9
		Mar. 11	63.45	Mar. 24	101.97
		Mar. 24	68.65	Apr. 13	101.86
		Apr. 13	68.55	Apr. 27	101.10
		Apr. 27	62.76	May 25	101.00
		May 11	60.50		
		May 26	60.50		
		June 10	65.00		
		<p>Well 161</p> <p>Mrs. Willie Moore, 6 miles west of Spearman. Measuring point is top of casing, 2 feet above ground. Altitude 2,977.8 feet.</p>		<p>Well 166</p> <p>R. H. Ralston, 8 miles west of Spearman. Measuring point is top of casing, 1<math>\frac{1}{2}</math> feet above ground. Altitude 3,025.4 feet.</p>	
		Feb. 26	57.0	Mar. 19	58.03
		<p>Well 162</p> <p>M. E. Smith, 6 miles west of Spearman. Measuring point is top of 3x12 inch frame around well, 2 feet above ground. Altitude 2,980.0 feet.</p>		<p>Well 167</p> <p>R. H. Ralston, 8 miles west of Spearman. Measuring point is surface. Altitude 3,033.4 feet.</p>	
		Feb. 2	55.0	Feb. 15	66.7
				Mar. 12	66.66
				Mar. 24	66.7
				Apr. 27	66.78
				May 11	65.10
				May 25	65.90
<p>Well 148</p> <p>G. C. Mitts, 5<math>\frac{1}{2}</math> miles west of Spearman. Measuring point is top of 4x4 inch water pipe clamp, 0.7 feet above ground. Altitude 2,981.4 feet.</p>					
Feb. 27	71.10				
Mar. 11	70.65				
Mar. 24	70.70				
Apr. 13	71.10				
Apr. 27	71.12				
May 11	70.63				
May 25	70.60				
June 10	70.80				
<p>Well 151</p> <p>Dick Kikey, 1<math>\frac{1}{2}</math> miles northwest of Spearman. Measuring point is top of casing, 1 foot above ground. Altitude 3,070.0 feet.</p>					
May 1	203.28				
<p>Well 155</p> <p>Carl Hull, 2<math>\frac{1}{2}</math> miles northwest of Spearman. Measuring point is top of casing, 3 feet above ground. Altitude 3,101.8 feet.</p>					
May 5	216.1				

Altitudes and water level measurements of observation wells in Hansford County--Cont.

Date of measurement 1936	Depth to water (feet)	Date of measurement 1936	Depth to water (feet)	Date of measurement 1936	Depth to water (feet)
<p>Well 180 Bob McCoy. 6 miles west of Spearman. Measuring point is top of casing, 2 feet above ground. Altitude 2,986.4 feet. Mar. 2 - - - - - 53.55 Mar. 12 - - - - - 53.64 Mar. 24 - - - - - 53.51 Apr. 13 - - - - - 53.65 Apr. 27 - - - - - 53.25 May 11 - - - - - 53.83 May 26 - - - - - 53.66</p>		<p>Well 185 C. C. French. 2 miles southwest of Spearman. Measuring point is top of iron water pipe clamp, 1/2 foot above ground. Altitude 3,080.6 feet. May 5 - - - - - 212.68</p>		<p>Well 193 R. Broadhurst. 3 1/2 miles southwest of Spearman. Measuring point is top of casing, at ground level. Altitude 3,089.6 feet. May 5 - - - - - 221.85</p>	
<p>Well 182 Litch Spark. 5 miles west of Spearman. Measuring point is top of casing, at ground level. Altitude 3,072.8 feet. Mar. 2 - - - - - 165.25 Mar. 12 - - - - - 163.87 Mar. 24 - - - - - 163.45 Apr. 14 - - - - - 164.00 May 11 - - - - - 164.14 May 25 - - - - - 163.10</p>		<p>Well 186 R. H. Holton. 2 miles southwest of Spearman. Measuring point is top of wood water pipe clamp, at ground level. Altitude 3,104.0 feet. May 5 - - - - - 250.0</p>		<p>Well 196 W. N. Durham. 5 miles southwest of Spearman. Measuring point is top of casing, 6 inches above ground. Altitude 3,123.0 feet. May 4 - - - - - 254.10</p>	
<p>Well 183 Litch Spark. 4 miles west of Spearman. Measuring point is top of casing, 1 1/2 feet above ground. Altitude 3,138.0 feet. Mar. 25 - - - - - 256.6</p>		<p>Well 188 - - Reed. 1 1/2 miles southwest of Spearman. Measuring point is top of 6x6 inch wood water pipe clamp, 4 1/2 feet above ground. Altitude 3,099.3 feet. May 4 - - - - - 245.20</p>		<p>Well 198 W. R. Campbell. 8 1/2 miles southwest of Spearman. Measuring point is top of 4x6 inch wood water pipe clamp, 1 foot above ground. Altitude 3,179.7 feet. Mar. 27 - - - - - 255.0</p>	
<p>Well 184 J. R. Collard. 3 miles west of Spearman. Measuring point is top of 6x6 inch wood water pipe clamp, 6 inches above ground. Altitude 3,110.0 feet. May 4 - - - - - 236.40</p>		<p>Well 189 L. W. Rosenbaum. 5 1/2 miles southwest of Spearman. Measuring point is top of casing, 2 feet above ground. Altitude 3,061.7 feet. Mar. 2 - - - - - 150.46 Mar. 12 - - - - - 150.87 Mar. 24 - - - - - 150.90 Apr. 27 - - - - - 149.50 May 11 - - - - - 150.00 May 26 - - - - - 150.00</p>		<p>Well 203 L. H. Taylor. 4 1/2 miles southwest of Spearman. Measuring point is top of 6x6 inch wood water pipe clamp, 1 1/2 feet above ground. Altitude 3,136.2 feet. May 5 - - - - - 278.53</p>	
		<p>Well 191 L. W. Rosenbaum. 6 miles southwest of Spearman. Measuring point is top of 4x6 inch wood water pipe clamp, 2 feet above ground. Altitude 3,079.4 feet. Mar. 27 - - - - - 168.50</p>		<p>Well 204 R. F. Dennis. 6 1/2 miles southwest of Spearman. Measuring point is top of casing, at ground level. Altitude 3,150.0 feet. May 5 - - - - - 278.?</p>	
				<p>Well 238 W. E. Maupin. 2 1/2 miles southeast of Gruver. Measuring point is top of 4x4 inch wood water pipe clamp, 1 1/2 feet above ground. Altitude 3,143.8 feet. Apr. 15 - - - - - 164.56</p>	

Altitudes and water level measurements of observation wells in Hansford County--Cont.

Date of measurement 1936	Depth to water (feet)	Date of measurement 1936	Depth to water (feet)	Date of measurement 1936	Depth to water (feet)
<p>Well 246 H. S. Hays. 2 miles southeast of Gruver. Measuring point is top of 5x6 inch wood water pipe clamp, 2 feet above ground. Altitude 3,168.7 feet. Apr. 15 - - - - - 183.70</p>		<p>Well 267 S. Lackey. 6 miles southeast of Gruver. Measuring point is top of casing, 3 1/2 feet above ground. Altitude 3,019.2 feet. Mar. 3 - - - - - 36.44</p>		<p>Well 302 E. T. Rafferty. 7 miles south of Gruver. Measuring point is top of casing, 6 inches above ground. Mar. 17 - - - - - 50.15 Apr. 13 - - - - - 50.37</p>	
<p>Well 247 Loatz Estate. 11 1/2 miles southeast of Gruver. Measuring point is top of casing, 1 foot above ground. Altitude 3,159.0 feet. Feb. 28 - - - - - 184.73</p>		<p>Well 270 S. Lackey. 6 miles southeast of Gruver. Measuring point is top of casing, 3 1/2 feet above ground. Altitude 3,002.5 feet. Mar. 3 - - - - - 32.4</p>			
<p>Well 255 Hayden Hart. 3 1/2 miles south of Gruver. Measuring point is top of casing, 6 inches above ground. Altitude 3,190.1 feet. Mar. 5 - - - - - 181.5 Apr. 13 - - - - - 181.90 May 11 - - - - - 181.0</p>		<p>Well 277 Coy Holt. 6 miles south of Gruver. Measuring point is top of pump base, through 3/4 inch hole, 1 inch above top of casing. Altitude 3,056.2 feet. Mar. 26 - - - - - 28.32 Apr. 13 - - - - - 27.79 Apr. 27 - - - - - 29.56</p>			
<p>Well 261 J. P. Winder Estate. 5 1/2 miles south of Gruver. Measuring point is top of 4x4 inch wood water pipe clamp, 1 1/2 feet above ground. Apr. 7 - - - - - 38.16</p>		<p>Well 288 Mrs. J. Jones. 6 miles south of Gruver. Measuring point is top of casing, at ground level. Mar. 11 - - - - - 49.62 Apr. 13 - - - - - 49.75</p>			
<p>Well 262 Gwinfred Lackey. 5 1/2 miles south of Gruver. Measuring point is top of iron plate that fits on top of casing, 2 feet above ground. Mar. 7 - - - - - 45.63 Apr. 13 - - - - - 45.69</p>		<p>Well 291 E. T. Rafferty. 7 miles south of Gruver. Measuring point is top of casing, at ground level. Mar. 17 - - - - - 46.91 Apr. 13 - - - - - 46.97</p>			

Table of Drillers' Logs, Hansford County, Texas

Driller's log of well 2.

Chicago, Rock Island and Pacific Railway well in Hitchland.

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Soil-----	2	2	Clay-----	13	238
Soft caliche-----	8	10	Cemented sand-----	3	291
Hard caliche-----	3	13	Sand-----	29	320
Yellow clay-----	7	20	Sand and gravel-----	15	335
Rock-----	3	23	Red bed-----	149	484
Sandy clay-----	132	155	Water level reported at 184 feet below surface when well was completed, May 23, 1929.		
Rock-----	3	158			
Sandy clay-----	32	190			
Clean sand-----	85	275			

Partial driller's log of well 18.

(Hope Petroleum Corporation, Gus B. Coats No.1, Sec. 13, H. & T. C. RR. Block 45, 11 $\frac{1}{2}$  miles east of Hitchland.)

Cellar-----	18	18	Quicksand-----	6	976
Brown sand-----	62	80	Gypsum and red rock-----	9	985
Quicksand-----	20	100	Quicksand-----	5	990
Red rock-----	45	145	Gypsum-----	22	1012
Quicksand-----	310	455	Salt and red rock-----	98	1110
Red rock-----	272	727	Red rock-----	30	1140
Gyp rock-----	6	733	White sand-----	11	1151
Red rock-----	82	815	Red rock-----	105	1256
Gypsum-----	125	940	Salt and red rock-----	12	1268
Gypsum and red rock-----	30	970	TOTAL DEPTH-----		4,585

CASING RECORD: 20 inch to 145 feet; 15 $\frac{1}{2}$  inch to 605 feet; 12 $\frac{1}{2}$  inch to 1,006 feet; 10 inch to 1,680 feet; 8 $\frac{1}{2}$  inch to 2,028 feet; 6-5/8 inch to 3,063 feet; and 5-3/16 inch to 4,331 feet. Dry hole.

Driller's log of well 153.

City of Spearman, owner.

Surface soil-----	3	3	Pack sand-----	202	260
Clay-----	40	43	Clay-----	20	280
Cap rock-----	15	58	Coarse white sand-----	68	348

Driller's log of well 163.

Panhandle Power and Light Co., six miles west of Spearman in Sec. 136, H. & T. C. Block 45, NW.  $\frac{1}{4}$ , NW.  $\frac{1}{4}$ .

Sand-----	4	4	Clay-----	3	128
Yellow clay-----	9	13	Water sand-----	4	132
Sand-----	42	55	Sand rock-----	64	196
Yellow clay and sand-----	22	77	Brown clay-----	31	227
Water sand-----	5	82	Sand rock-----	35	262
Sand rock-----	17	99	Brown clay-----	24	286
Water sand-----	26	125	Red clay-----	6	292

Well filled with rock to 156 feet. CASING RECORD: 157 feet of 20 inch; and 226 feet of 14 inch. Water level reported 73.5 feet below surface when drilled.

Table of Drillers' Logs -- Continued

Driller's log of well 186-A.  
(North Texas and Santa Fe Railway in Spearman, Texas.)

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Soil, clay-----	36	36	Gypsum-----	20	190
Cap rock-----	32	68	Dry yellow sand-----	11	201
Light sandy clay-----	37	105	Cravey gypsum-----	69	270
Light red sticky clay----	7	112	Light red sand(some water at 280 feet-----	10	280
Brown sand rock-----	4	116	Fine sand-----	50	330
Light red sand-----	12	128	Coarse water sand-----	40	370
Light colored gypsum-----	37	165	Fine red water sand-----	66	436
Red sandy clay-----	5	175			

Partial driller's log of well 207.  
(Oklavania Oil Company; James T. Whitson No.1; NE.  $\frac{1}{4}$ , Sec. 2, Brooks  
and Burleson Survey, Block R; 7 miles southwest of Spearman)

Clay-----	50	50	Gypsum-----	88	1008
Brown clay-----	50	100	Silt-----	12	1020
Quicksand-----	236	336	Red rock-----	30	1050
Water sand and gravel---	10	346	Red rock, . lt. and gypsum	25	1075
Quicksand-----	94	440	Quicksand-----	13	1088
Red rock-----	137	627	Red rock-----	42	1130
Quicksand-----	35	722	Red rock and salt-----	41	1171
Red rock-----	136	920	TOTAL DEPTH-----		3,510
CASING RECORD: 6 inch to 466 feet; 15 $\frac{1}{2}$ inch to 742 feet; 12 $\frac{1}{2}$ inch to 900 feet; 9 $\frac{1}{2}$ inch to 1,900 feet; and 6-5/8 inch to 2,922 feet.					

Driller's log of well 239.  
(Chicago, Rock Island, and Pacific Railway well in Gruver, Texas.)

Soil-----	5	5	Pack sand-----	24	224
Caliche-----	7	12	Yellow clay-----	4	228
Clay-----	93	105	Pack sand-----	57	285
Clayey sand-----	47	152	Coarse white sand-----	5	290
Sandy clay-----	10	162	Coarse sand and gravel---	49	339
Clayey sand-----	18	180	Yellow clay-----	7	346
Brown clay-----	4	184	Cemented sand and gravel--	92	438
Sandy clay-----	16	200	Red beds-----	64	502

Driller's log of well 240.  
(Panhandle Power and Light Co., City well in Gruver.)

Brown sandy clay-----	10	10	Red clay-----	2	320
Light brown sandy clay-	110	120	Very hard sand rock-----	2	322
Broken sand, rock, and clay-----	60	180	Red clay-----	2	324
Very fine water sand---	10	190	Very hard sand rock-----	2	326
Light brown sandy clay-	35	225	Sand and gravel, water---	14	340
Fine sand-----	36	261	Large volume of water produced from this stratum, upper water shut off with 10 inch casing.		
Broken rock, sand-----	57	318	Very hard sand rock-----	2	342
8 $\frac{1}{2}$ inch casing set in this stratum with a complete shut off.					



Table of Drillers' Logs -- Continued

Partial driller's log of well 331.  
 (T. F. Caldwell et al, - Sealy No.1; SW.  $\frac{1}{4}$ , Sec. 21, G. H. & H.  
 Survey Block 3; 16 miles southwest of Gruver.)

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Brown surface soil-----	25	25	Red rock-----	5	650
Quicksand, water-----	80	105	Gypsum-----	2	652
Clay and gravel-----	15	120	Red sand-----	38	690
Quicksand-----	10	130	Red sand and shale-----	25	715
Clay and gravel-----	15	145	Red gumbo-----	10	725
Quicksand-----	15	160	Red shale-----	15	740
Sand and clay-----	15	175	Gypsum-----	5	745
Clay-----	10	185	Red rock-----	5	750
Quicksand-----	15	200	Gypsum-----	25	775
Gravel-----	25	225	Red rock-----	5	780
Pock sand-----	10	235	Gypsum-----	90	870
Quicksand-----	10	245	Red rock and gypsum-----	10	880
Clay-----	10	255	Gypsum-----	50	930
Quicksand-----	10	265	Red rock-----	10	940
Sand and gravel-----	25	290	Gypsum-----	30	970
Yellow shale-----	5	295	Blue shale-----	15	985
Sand and gravel-----	2	297	Red sandstone-----	5	990
Sandstone-----	8	305	Red quicksand-----	5	995
Sticky clay-----	5	310	Red hard sand-----	5	1000
Pink and white sandy shale	15	325	Gypsum-----	2	1002
Gypsum-----	20	345	Red bed-----	21	1023
Red rock-----	5	350	Red quicksand-----	2	1025
Gypsum-----	5	355	Red rock and gypsum-----	45	1070
Red rock-----	35	390	Red rock-----	30	1100
Gypsum-----	5	395	Red quicksand-----	12	1112
Red rock-----	25	420	Red bed-----	58	1170
Gypsum-----	5	425	Red quicksand-----	10	1180
Red rock-----	10	435	Red bed, sand-----	142	1322
Gypsum-----	5	440	Red rock-----	37	1359
Red rock-----	50	490	Red sand, water-----	41	1400
Gypsum-----	5	495	Red rock, salt, and shell-	70	1470
Red rock-----	15	510	Rock salt-----	60	1530
Gypsum-----	5	515	Brown dry sand-----	55	1585
Red rock-----	10	525	TOTAL DEPTH-----		3,233
Red sand, water-----	15	540	CASING RECORD: 20 inch to 94 feet; 15 $\frac{1}{2}$		
Quicksand-----	10	550	inch to 301 feet; 12 $\frac{1}{2}$ inch to 642 feet;		
Red rock-----	90	640	10 inch to 1,067 feet; and 8 $\frac{1}{2}$ inch to		
Gypsum-----	5	645	2,440 feet. Well flowed 535-550 feet.		

Driller's log of well 335.  
 (Chicago, Rock Island and Pacific Railway at Morse, Texas.)

Soil-----	3	3	Hard white rock-----	31	173
Caliche-----	7	10	Very hard shell-----	2	175
Yellow clay-----	25	35	Sandy clay-----	4	179
White rock and clay-----	33	68	Hard white rock-----	24	203
Yellow clay-----	7	75	Soft white rock-----	216	219
White rock-----	20	95	Hard white rock-----	6	225
White porous rock, water	47	142	Soft white rock-----	32	260

Table of Drillers' Logs -- Continued

Driller's log of well 335 -- Continued

	Thickness (feet)	Depth (feet)		Thickness (feet)	Depth (feet)
Red sandy clay-----	40	300	Coarse sand-----	313	325
Red clay-----	12	312	Red clay-----	6	331

Normal water level 84 feet when drilled in 1930. well produced capacity of 3 inch air lift equipment. Drawdown 18.5 feet at 117 gallons a minute. Eduction column, 305 feet of 3 inch pipe with 305 feet of 1 inch pipe for air line; starting pressure 100 pounds; supply pressure 92 pounds gravel walled from surface to 130 feet; 6-5/8 inch casing set at 331 feet with 42 feet of 6-5/8 inch screen with 3/8 by 6 inch perforations set from 102 feet to 144 feet; 20 feet of 6-5/8 inch screen with 3/8 inch by 6 inch perforations set from 311 to 331 feet.

Driller's log of well 336.

(Panhandle Power and Light Co., well at Morse.)

Red clay-----	18	18	Sand rock-----	16	228
White clay-----	32	50	White clay-----	31	259
Clay and sand-----	25	75	Sand-----	7	266
White clay-----	36	111	White clay-----	14	280
White clay and sand-----	33	144	Yellow clay-----	21	301
Blue shale-----	56	200	Red clay-----	13	314
Sand rock-----	9	209	Water sand and gravel-----	28	342
Water sand-----	3	212	Yellow clay-----	12	354

Logs of test wells drilled by W. P. A. labor in Hansford County, Texas. Samples examined and classified by W. L. Broadhurst, Project Superintendent.

Well 7

On Creek bank in NW.  $\frac{1}{4}$ , SW.  $\frac{1}{4}$ , Sec. 10, H. & T. C. Block 45, 12  $\frac{1}{2}$  miles east of Hitchland.

	Thickness (feet)	Depth (feet)
Dark sandy top soil-----	4	4
Dark clay and sand-----	2	6
Yellow clay-----	5	11
Sand and few gravel-----	1	12
Water at 11 feet.		

Well 16

On creek bank in NW.  $\frac{1}{4}$ , NW.  $\frac{1}{4}$ , Sec. 3, H. & G. N. Block P: 6  $\frac{1}{2}$  miles southwest of Hitchland.

Dark top soil-----	5	5
Sand and gravel-----	4	9
Yellow clay-----	3	12
Dark clay and gravel-----	5	17
Yellow clay and sand-----	7	24
Water at 19 feet.		

Well 20

12  $\frac{1}{2}$  miles southeast of Hitchland in SW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ , Sec. 12, H. & T. C. Block 45.

Dark top soil-----	3	3
Yellow clay-----	1	4
Dark clay-----	2	6
Yellow clay-----	5	11
Black gumbo-----	2	13
Gray clay and sand-----	4	17

Well 21

13 miles southeast of Hitchland; NE.  $\frac{1}{4}$ , NW.  $\frac{1}{4}$ , Sec. 19, H. & T. C. Block 45.

Dark top soil-----	4	4
Yellow sand-----	4	8
Blue clay or gumbo-----	4	12
Water at 10 feet.		

Well 22

12  $\frac{1}{2}$  miles southeast of Hitchland; in SW.  $\frac{1}{4}$ , SW.  $\frac{1}{4}$ , Sec. 19, H. & T. C. Block 45.

Dark soil-----	6	6
Sand-----	3	9
Water at 8 feet.		

Well 33

10  $\frac{1}{2}$  miles southwest of Hitchland; in SE.  $\frac{1}{4}$ , SE.  $\frac{1}{4}$ , Sec. 236, G. H. & H. Block 2.

	Thickness (feet)	Depth (feet)
Dark top soil-----	7	7
Light sand-----	9	16
Sandy clay and gravel-----	23	39
Sand-----	2	41
Water at 40 $\frac{1}{2}$ feet.		

Well 34

10 miles southwest of Hitchland; in SW.  $\frac{1}{4}$ , SW.  $\frac{1}{4}$ , Sec. 284, G. H. & H. Block 2.

Dark top soil-----	5	5
Sand and gravel-----	3	8
Dark soil-----	5	13
Clay-----	8	21
Sand-----	14	35
Clay-----	3	38
Water at 36.5 feet.		

Well 39

12 miles southeast of Hitchland; in SE.  $\frac{1}{4}$ , SW.  $\frac{1}{4}$ , Sec. 23, H. & T. C. Block 45.

Dark top soil-----	4	4
Clay-----	3	7
Sand-----	5	12
Water at 11 feet.		

Well 43

12 miles southeast of Hitchland; in NE.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ , Sec. 27, H. & T. C. Block 45.

Dark top soil-----	1	1
Sand and clay-----	3	4
Sand-----	4	8
Water at 7 feet.		

Well 48

12 miles southwest of Hitchland; in SE.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ , Sec. 198, G. H. & H. Block 2.

Dark top soil-----	3	3
Dark sand-----	2	5
Dark clay-----	2	7
Dark clay and gravel-----	2	9

Continued on next page.

Logs of W. P. A. test wells--Continued

Well 48--Continued

	Thickness (feet)	Depth (feet)
Yellow clay-----	1	10
Coarse gravel and sand-----	4	14
Clay and gravel-----	4	18
Sandy clay-----	3	21
Sand-----	4	25
Gravel and sand-----	11	36
Coarse yellow sand-----	2	38
Water at 30 feet.		

Well 55

13½ miles southwest of Hitchland; in SE. ¼, NE. ¼, Sec. 186, G.H.&H. Block 2.

Top Soil-----	1	1
Yellow clay-----	9	10
Sand-----	8	18
Gray clay-----	5	23
Clay and sand-----	2	25
Water at 22 feet.		

Well 57

13 miles southwest of Hitchland; in NW. ¼, NW. ¼, Sec. 199, G. H. & H. Block 2.

Dark soil-----	4	4
Dark clay-----	7	11
Yellow clay-----	2	13
Loam-----	3	16
Yellow sandy clay-----	8	24
Yellow clay-----	7	31
Dark sand and gravel-----	3	34
Gumbo-----	4	38
Sand-----	6	44
Sand and gravel-----	5	49
Water at 48.5 feet.		

Well 62

12 miles southeast of Hitchland; NE. ¼, SW. ¼, Sec. 34, H. & T. C. Block 45.

Dark top soil-----	3	3
Sandy clay-----	5	8
Sand-----	3	11
Water at 9 feet.		

Well 65

12½ miles southeast of Hitchland; in NW. ¼, SW. ¼, Sec. 44, H. & T. C. Block 45.

Dark top soil-----	5	5
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Well 65--Continued

	Thickness (feet)	Depth (feet)
Yellow clay-----	2	7
Yellow sand-----	4	11
Water at 10 feet.		

Well 71

14½ miles SW of Hitchland; in SE. ¼ of NE. ¼, Sec. 152, G.H.&H. Block 2.

Top soil-----	5	5
Yellow clay-----	17	22
Gray clay-----	4	26
Gray clay and sand-----	2	28
Sand and gravel-----	6	34
No water.		

Well 73

16 miles southwest of Hitchland; in center of SW. ¼, Sec. 153, G.H.&H. Block 2.

Dark top soil-----	3	3
Sand and gravel-----	16	19
Gumbo-----	4	23
Clay and sand-----	2	25
Water at 22 feet.		

Well 74

15½ miles southwest of Hitchland; NE. ¼, NW. ¼, Sec. 153, G.H.&H. Block 2.

Dark soil-----	1	1
Light clay-----	2	3
Dark clay-----	2	5
Yellow clay-----	3	8
Dark soil-----	3	11
Yellow clay-----	5	16
White sand and gravel-----	5	21
Gravel-----	1	22
Hard rock-----		22
No water.		

Well 79

12½ miles southwest of Hitchland; in SW. ¼, SW. ¼, Sec. 48, H.&T.C. Block 45.

Top soil-----	3	3
Sand-----	6	9
Quicksand-----		9
Water at 9 feet.		

Logs of W. P. A. test wells--Continued

Well 80

12 $\frac{1}{2}$  miles southeast of Hitchland;  
in SE.  $\frac{1}{4}$ , NW.  $\frac{1}{4}$ , Sec. 48, H. & T.C.  
Block 45.

	Thickness (feet)	Depth (feet)
Dark top soil-----	6	6
Sand-----	4	10
Water at 9 feet.		

Well 81

12 $\frac{1}{2}$  miles southeast of Hitchland;  
in NE.  $\frac{1}{4}$ , Sec. 48, H. & T.C. Block  
45.

Dark top soil-----	7	7
Sandy caliche and gravel----	3	10
No water.		

Well 86

9 miles north of Spearman; in  
SW.  $\frac{1}{4}$ , SE.  $\frac{1}{4}$ , Sec. 64, H. & T.C.  
Block 45.

Surface soil-----	4	4
Yellow clay-----	4	8
Yellow sand-----	9 $\frac{1}{2}$	17 $\frac{1}{2}$
Hit water at 17 feet.		

Well 89

10 miles north of Spearman; in  
NW.  $\frac{1}{4}$ , NW.  $\frac{1}{4}$ , Sec. 63, H. & T.C.  
Block 45.

Dark surface soil-----	2	2
Brown and yellow clay-----	12	14
Brown and yellow sand-----	7	21
Hard rock-----		21
Hit water at 16 feet.		

Well 94

8 $\frac{1}{2}$  miles north of Spearman;  
On creek bank in SW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ ,  
Sec. 74, H. & T.C. Block 45.

Surface soil-----	5	5
Yellow sand-----	6	11
Hit water at 10 feet.		

Well 95

6 miles north of Spearman;  
NW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ , Sec. 74, H. & T.C.  
Block 45.

Dark surface soil-----	5	5
Yellow clay-----	7	12
Light sandy clay-----	2	14
Dark clay and gumbo-----	5	19
Sand-----	1	20
Hit water at 19 feet.		

Well 105

7 $\frac{1}{2}$  miles north of Spearman;  
in center of SW.  $\frac{1}{4}$ , Sec. 87,  
H. & T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark sandy loam-----	5	5
White sand-----	4	9
Yellow sand and gravel-----	4	13
Yellow coarse sand-----	3	16
Hit water at 15 feet.		

Well 106

8 miles north of Spearman;  
in NW.  $\frac{1}{4}$ , NW.  $\frac{1}{4}$ , Sec. 87, H. & T.C.  
Block 45.

Dark soil-----	2	2
Clay-----	3	5
Dark sandy loam-----	4	9
White sand-----	8	17
Hit water at 16 feet.		

Well 107

8 miles north of Spearman;  
on creek bank in NW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ , Sec.  
87, H. & T.C. Block 45;

Surface soil and sand-----	9	9
Clay and gravel-----	1	10
Sand-----	3	13
Hit water at 10 $\frac{1}{2}$ feet.		

Well 109

6 miles north of Spearman; on  
creek bank in SW.  $\frac{1}{4}$ , SW.  $\frac{1}{4}$ , Sec.  
90, H. & T.C. Block 45.

Light top soil-----	3	3
Yellow sand-----	18	21
Sand and gravel-----	1	22
Dry hole.		

Well 111

7 miles north of Spearman; on  
creek bank in NW.  $\frac{1}{4}$ , NW.  $\frac{1}{4}$ , Sec.  
90, H. & T.C. Block 45.

Soil-----	1	1
Hard yellow clay-----	8	9
Dark clay-----	6	15
Sandy red clay-----	3	18
White sand-----	2	20
Sandy gravel-----	4	24
Hit water at 21 feet.		

Logs of W. P. A. test wells--Continued

Well 117  
 5 $\frac{1}{2}$  miles north of Spearman; on  
 creek bank in NE. $\frac{1}{4}$ , SE. $\frac{1}{2}$ , Sec.  
 101, H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark top soil-----	1	1
Yellow soil and caliche-----	2	3
Yellow clay-----	9	12
Dark gumbo-----	2	14
White sand-----	10	24
Sand and gravel-----	3	27
Dry hole.		

Well 118  
 6 miles northwest of Spearman;  
 400 feet north of creek in SW. $\frac{1}{4}$ ,  
 NE. $\frac{1}{2}$ , Sec. 102, H.&T.C. Block  
 45.

	Thickness (feet)	Depth (feet)
Dark sandy loam-----	6	6
Yellow sand-----	6	12
White sand-----	6	18
Yellow sand-----	2	20
Sandy caliche and gravel-----	2	22
Dry hole.		

Well 120  
 5 miles northwest of Spearman;  
 on creek bank in NW. $\frac{1}{4}$ , NW. $\frac{1}{2}$ , Sec.  
 103, H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark loam-----	3	3
Light loam-----	3	6
Yellow sand-----	6	12
Mixed soil and gravel-----	3	15

Well 121  
 5 miles northwest of Spearman;  
 on creek bank in NW. $\frac{1}{4}$ , NE. $\frac{1}{4}$ ,  
 Sec. 104, H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark top soil-----	5	5
Sand and gravel-----	6	11
Caliche and gravel-----	3	14
Gravel-----	1	15
Dry hole.		

Well 122  
 5 $\frac{1}{2}$  miles northwest of Spearman;  
 on creek bank in NE. $\frac{1}{4}$ , SW. $\frac{1}{4}$ , Sec.  
 104, H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Surface soil-----	6	6
Yellow clay-----	7	13
Gumbo-----	10	23
Fine white sand-----	5	28
Yellow clayey sand-----	1	29
Coarse yellow water sand-----	2	31
Hit water at 30 feet.		

Well 123  
 5 $\frac{1}{2}$  miles northwest of Spearman;  
 north creek bank, in SW. $\frac{1}{4}$ , Sec.  
 104, H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark sandy loam-----	6	6
Brown sandy clay-----	6	12
Yellow sand-----	7	19

Well 128  
 5 miles northwest of Spearman,  
 NE. $\frac{1}{4}$ , NE. $\frac{1}{2}$ , Sec 114, H. &T.C,  
 Block 45.

	Thickness (feet)	Depth (feet)
Dark soil-----	3	3
Light soil-----	3	6
Brown sandy clay-----	8	14
White sand-----	1	15
Brown sandy clay and gravel-----	4	19
Brown clayey sand-----	3	22
Gravel, clay, and sand-----	4	26
Fine white sand-----	9	35
White coarse sand and gravel-----	5	40
Yellow sand and gravel-----	2	42
Fine red sand-----	4	46
Fine yellow sand-----	5	51
White sand, water-----	3	54
Hit seep water at 52 feet.		

Well 130  
 5 $\frac{1}{2}$  miles northwest of Spearman;  
 100 yards east of creek, in SE. $\frac{1}{4}$ ,  
 Sec. 114, H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark sandy top soil-----	2	2
Caliche and clay-----	3	5
Sand and caliche gravel-----	5	10
Yellow sandy clay-----	10	20
Sand-----	13	33
Sand and gravel-----	2	35
Seep water at 30 feet.		

Well 136  
 5 miles northwest of Spearman;  
 on creek bank in NE. $\frac{1}{4}$ , SE. $\frac{1}{4}$ ,  
 Sec. 119; H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Sandy loam; surface soil-----	3	3
Clay loam-----	4	7
White sand-----	12	19
Black sandy loam-----	2	21
Yellow sandy clay-----	6	27
White sand-----	1	28
Clay and sand-----	3	31
Coarse yellow sand and gravel-----	2	33
Quicksand-----	1	34

Logs of W. P. A. test wells--Continued

Well 138

3 miles northwest of Spearman,  
NW.  $\frac{1}{4}$ , SE.  $\frac{1}{4}$ , Sec. 11, H.&T.C.  
Block 45.

	Thickness (feet)	Depth (feet)
Dark sandy loam-----	8	8
Yellow and white sand-----	12	20
Coarse sand and gravel-----	5	25
Hit water at 24 feet.		

Well 142

6 miles west of Spearman; on  
bank of draw in SW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ ,  
Sec. 133, H.&T.C. Block 45.

Dark sandy loam-----	2	2
Light sandy loam-----	6	8
Yellow sandy clay-----	5	13
Dark loam-----	4	17
Yellow clay and caliche-----	9	26
Sand and gravel-----	2	28
Dry hole.		

Well 144

6 miles west of Spearman; in  
SE.  $\frac{1}{4}$ , SW.  $\frac{1}{4}$  Sec. 133, H.&T.C.  
Block 45.

Dark soil-----	3	3
Yellow dirt-----	9	12
Dark soil-----	7	19
Yellow clay-----	7	22
Dark loam-----	7	29
White sand-----	4	33
Sand and gravel-----	4	37
Hit rocks-----		

Well 145

7 miles west of Spearman; on  
creek bank, south side, SW.  $\frac{1}{4}$ ,  
Sec. 133, H.&T.C. Block 45.

Dark surface soil-----	5	5
Brown sandy clay-----	6	11
Dark sandy clay-----	6	17
Clay-----	5	22
White sand-----	5	27
Sand and gravel-----	2	29
Rocks-----		

Well 146

5  $\frac{1}{2}$  miles west of Spearman; on  
bank of draw in SE.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ ,  
Sec. 133, H.&T.C. Block 45.

Dark sandy loam-----	6	6
Yellow sand-----	7	13

Well 146--Continued

	Thickness (feet)	Depth (feet)
Mixed sand and clay-----	6	19
Clay or gumbo-----	6	25
Sand-----	4	29
Dry hole.		

Well 147

1 mile west of Spearman; on  
creek bank in NW.  $\frac{1}{4}$ , SW.  $\frac{1}{4}$ , Sec.  
134, H.&T.C. Block 45.

Dark sandy soil-----	8	8
White sand-----	5	13
Black sandy silt-----	1	14
Sand and gumbo-----	3	17
Gumbo-----	5	22
Sand and gumbo-----	3	25
Yellow sand-----	3	28
White sand and gravel-----	2 $\frac{1}{2}$	30 $\frac{1}{2}$
Sand and gravel-----	2 $\frac{1}{2}$	33
Yellow sand-----	17	50
Hit water at 49 feet.		

Well 149

5 miles northwest of Spearman  
in SE.  $\frac{1}{4}$ , NW.  $\frac{1}{4}$ , Sec. 134, H.&T.C.  
Block 45.

Dark soil-----	2	2
Fine Yellow sandy clay-----	12	14
Dark loamy soil-----	8	22
Brown sandy clay and caliche	4	26
Yellow sand-----	6	32
Caliche, sand and gravel-----	5	37
Gravel-----	6	43
No water.		

Well 150

5 miles northwest of Spearman;  
near creek in NW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ , Sec.  
134, H.&T.C. Block 45,

Black sandy soil-----	5	5
Brown sand-----	3	8
Brown sandy clay-----	5	13
Yellow sand-----	4	17
Brown sandy silt and gravel-----	3	20
Sand, gravel and rocks-----	4	24
Hit rock. No water.		

Well 157

5  $\frac{1}{2}$  miles west of Spearman;  
center of cemetery in SW.  $\frac{1}{4}$ ,  
SE.  $\frac{1}{4}$ , Sec. 136, H.&T.C. Block 45.

Surface soil-----	1	1
Sand-----	1	2

Logs of W. P. A. test wells--Continued

Well 157--Continued

	Thickness (feet)	Depth (feet)
Yellow sandy caliche and gravel-----	22	24
Yellow sand-----	38	62

Well 158

5 $\frac{1}{2}$  miles west of Spearman;  
300 yards northwest of cemetery  
in SW. $\frac{1}{4}$ , SE. $\frac{1}{4}$ , Sec. 136, H.&T.C.  
Block 45.

Surface soil-----	1	1
Yellow caliche-----	12	13
Dark sandy soil-----	13	26
Fine light sandy caliche-----	6	32
Sand and gravel-----	4	36
Gray sand and clay-----	2	38
Red clay and gravel-----	3	41
Yellow clay and gravel-----	10	51
Yellow sand-----	13	64

Well 160

5 $\frac{1}{2}$  miles west of Spearman,  
SW. $\frac{1}{4}$ , NE. $\frac{1}{4}$ , Sec. 136,  
H.&T.C. Block 45.

Dark surface soil-----	4	4
Yellow clay-----	11	15
Yellow sand-----	4	19
White sand-----	7	26
White sand and gravel-----	10	36

Well 164

6 $\frac{1}{2}$  miles west of Spearman;  
400 yards southwest of Pedro Duro  
bridge; center, SE. $\frac{1}{4}$ , Sec. 137,  
H.&T.C. Block 45.

Dark surface soil-----	2	2
Yellow powdery clay-----	14	16
Fine sand-----	2	18
Yellow clay-----	1	19
Black gumbo-----	3	22
Yellow sandy clay-----	2	24
Gumbo-----	3	27
Fine sandy clay-----	5	32
Sand and gravel-----	3	35
White sand and gravel-----	4	39
Yellow clayey sand and gravel-----	6	45
Fine yellow clayey sand-----	10	61

Well 166

8 miles west of Spearman, NW. $\frac{1}{4}$ ,  
NW. $\frac{1}{4}$ , Sec. 147, H.&T.C.  
Block 45.

	Thickness (feet)	Depth (feet)
Surface soil-----	3	3
Sand and clay-----	42	45
Yellow clay-----	15	60
Fine sand-----	10	70
Test hole dug by machine.		

Well 167

8 miles west of Spearman,  
NW. $\frac{1}{4}$ , NW. $\frac{1}{4}$ , Sec. 147,  
H.&T.C. Block 45.

Surface soil-----	3	3
Sandy clay-----	62	65
Yellow clay-----	15	80
Red water sand-----	29	109

Well 168

8 miles west of Spearman,  
SW. $\frac{1}{4}$ , SW. $\frac{1}{4}$ , Sec. 147, H.&T.C.  
Block 45.

Surface soil-----	4	4
Sand-----	15	19
Sand and gravel-----	5	24
Blue gumbo-----	8	32
Quicksand-----	1	33
Hit water at 33 feet.		

Well 169

8 miles west of Spearman;  
NW. $\frac{1}{4}$ , SE. $\frac{1}{4}$ , Sec. 147, H.&T.C.  
Block 45.

Dark top soil-----	6	6
Yellow clay-----	12	18
Dark gumbo-----	3	21
Gray clay and sand-----	3	24
Red clay-----	2	26
White sand-----	1	27

Well 170

7 $\frac{1}{2}$  miles west of Spearman; on  
creek bank in NW. $\frac{1}{4}$ , SW. $\frac{1}{4}$ , Sec.  
147, H.&T.C. Block 45,

Clay and caliche-----	9	9
Clay, sand, and caliche-----	3	12
Hard caliche and rock-----	8	20
Caliche and gravel-----	7	27
Sand and gravel-----	10	37
Hit water at 32 feet.		



Logs of W. P. A. test wells--Continued

Well 171

7½ miles west of Spearman;  
north side of creek in S<sup>W</sup>.¼,  
NE.¼, Sec. 147, H.&T.C.  
Block 45.

	Thickness (feet)	Depth (feet)
Surface soil-----	8	8
Sand and gravel-----	14	22
Course gravel-----	3	25

Well 172

7 miles west of Spearman; 100  
feet south of gravel pit; center,  
NE.¼, Sec. 147, H.&T.C. Block 45.

Dark sandy loam-----	4	4
Light sandy clay-----	4	8
Gunbo-----	3	11
White sand-----	1	12
Gunbo-----	5	17
Yellow sand-----	1	18
Yellow clay-----	7	25
Clay, gravel and rocks-----	2	27
Caliche gravel-----	5	32
Sand and gravel-----	4	36

Well 173

7½ miles west of Spearman;  
200 feet south of creek in  
SE.¼, NE.¼, Sec. 147, H.&T.C.  
Block 45.

Dark sandy soil-----	2	2
Mixed sand and clay-----	5	7
Light sand-----	8	15
Clay and sand-----	2	17
Sand and gravel-----	3	20
Dry hole.		

Well 174

7 miles west of Spearman; in  
creek bottom in SW.¼, NW.¼, Sec.  
148, H.&T.C. Block 45.

Black sandy soil-----	6	6
Mixed sand and clay-----	12	18
Sand and gravel-----	4	22
Dry hole.		

Well 175

7 miles west of Spearman; 350 feet  
north of creek in SW.¼, NW.¼, Sec.  
148, H.&T.C. Block 45.

Dark top soil-----	1	1
Yellow clay-----	19	20
Dark gunbo-----	4	24
Sand-----	4	28
Sand and gravel-----	5	33
Yellow sand-----	10	43

Well 176

7 miles west of Spearman; in  
bottom on south side of creek  
NW.¼, Sec. 148, H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark soil-----	3	3
Brownish yellow sand-----	14	17
Sand and gravel-----	4	21

Well 177

7 miles west of Spearman; on  
creek bank in SE.¼, NW.¼, Sec.  
148, H.&T.C. Block 45.

Black soil-----	3	3
Chocolate loam-----	1	4
Sandy clay-----	8	12
Sand and clay-----	2	14
Sand and gravel-----	2	16
White sand-----	2	18
Gravel and sand-----	2	20

Well 178

7 miles west of Spearman;  
NW.¼, SE.¼, Sec. 148, H.&T.C.  
Block 45.

Dark soil-----	3	3
Dark sand-----	3	6
Dark soil-----	4	10
Chocolate clay-----	2	12
Yellow sand-----	4	16
Light sand-----	3	19
White sand and gravel-----	3	22

Well 179

On creek bank in NE.¼, SE.¼, Sec.  
148, H.&T.C. Block 45.

Black soil-----	3	3
Brown clay-----	3	6
Sand-----	2	8
Dark soil-----	1	9
Brown sand-----	1	10
Yellow clay-----	4	14
White sand-----	9	23

Well 181

6 miles west of Spearman,  
NE.¼, NW.¼, Sec. 149, H.&T.C.  
Block 45.

Dark soil-----	2	2
Light soil-----	8	10
Dark soil-----	12	22
White sand-----	6	28
Sand and gravel-----	3	31
Rocks-----		31

Logs of W. P. A. test wells--Continued

Well 216  
11 miles northwest of Gruver,  
SW.  $\frac{1}{4}$ , SE.  $\frac{1}{4}$  Sec. 106, G.H.&H.  
Block 2.

	Thickness (feet)	Depth (feet)
Dark soil-----	5	5
Yellow clay, some gravel----	3	8
Sand and gravel-----	3	11
Sand-----	3	14
Gumbo-----	11	25

Hit water at 15 feet.

Well 219  
11 miles northwest of Gruver,  
on creek bank in SW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ ,  
Sec. 107, G.H.&H. Block 2.

	Thickness (feet)	Depth (feet)
Dark surface soil-----	1	1
Yellow clay-----	8	9
Fine sand-----	7	16

Hit water at 10 feet.

Well 224  
11 miles northwest of Gruver;  
on creek bank in NW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ ,  
Sec. 108, G.H.&H. Block 2.

	Thickness (feet)	Depth (feet)
Top soil-----	1	1
Sand-----	18	19
Coarse gravel and sand ----	3	21

Hit water at 19 feet.

Well 225  
11 miles northwest of Gruver,  
on creek bank in NW.  $\frac{1}{4}$ , SW.  $\frac{1}{4}$ ,  
Sec. 108, G.H. & H.

	Thickness (feet)	Depth (feet)
Sandy top soil-----	3	3
Light sand-----	18	21
Coarse gravel-----	2	23

Dry hole.

Well 227  
11 miles northwest of Gruver;  
200 feet west of creek, near  
center of Sec. 84, G.H. & H.  
Block 2.

	Thickness (feet)	Depth (feet)
Dark sandy top soil-----	5	5
Sandy clay-----	5	10
Sand-----	15	25

Hit water at 25 feet.

Well 260  
5  $\frac{1}{2}$  miles south of Gruver,  
NE.  $\frac{1}{4}$ , S.  $\frac{1}{4}$ , Sec. 6, Public  
School Land, Block 3.

	Thickness (feet)	Depth (feet)
Sandy soil-----	14	14
Clayey sand-----	10	24
Sand-----	19	43

Hit water at 40 feet.

Well 263  
5  $\frac{1}{2}$  miles southeast of Gruver,  
NW.  $\frac{1}{4}$ , SE.  $\frac{1}{4}$ , Sec. 145, H.&T.C.  
Block 45.

	Thickness (feet)	Depth (feet)
Dark soil-----	3	3
Yellow clay-----	6	9
Dark loam-----	3	12
Yellow sandy clay-----	10	22
Dark seepy mud-----	9	31
Quicksand-----	2	33

Well 264  
6 miles southeast of Gruver; on  
creek bank in NW.  $\frac{1}{4}$ , SE.  $\frac{1}{4}$  Sec. 145,  
H. & T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark surface soil-----	15	15
Yellow sandy clay-----	7	22
Sand and gravel, water-----	3	25

Well 265  
6 miles southeast of Gruver,  
50 feet east of gate, S7.  $\frac{1}{2}$ ,  
Sec. 146, H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark surface soil-----	4	4
Yellow sand-----	4	8
Yellow clay-----	2	10
Yellow sandy clay-----	7	17
White sand-----	4	21
Yellow sand-----	5	26
Quicksand, water-----		26

Well 266  
6  $\frac{1}{2}$  miles southeast of Gruver, on  
creek bank in SW.  $\frac{1}{4}$ , SE.  $\frac{1}{4}$ , Sec.  
146, H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark surface soil-----	8	8
Clay-----	3	11
Yellow sand-----	11	22
Dark sandy clay-----	4	26
Coarse sand-----	2	28

Hit water at 26 feet.

Well 268  
6  $\frac{1}{2}$  miles southeast of Gruver; on  
creek bank in NE.  $\frac{1}{4}$ , SE.  $\frac{1}{4}$ , Sec.  
146, H.&T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark sandy soil-----	2	2
Sand-----	14	16
Sand and gravel-----	1	17

Logs of W. P. A. test wells--Continued

Well 269

6½ miles southeast of Gruver, north side of creek bank in NE.¼, SE.¼, Sec. 146, H. & T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark soil-----	14	14
Light sand-----	4	18
Sand and gravel-----	7	25
Clay and gumbo-----	2	27
Sand and gravel-----	3	30
Hit water at 26 feet.		

Well 272

6½ miles southeast of Gruver, on creek bank in NE.¼, NW.¼, Sec. 155, H. & T.C. Block 45.

Dark soil-----	4	4
Yellow powdery clay-----	11	15
Yellow sandy clay-----	14	29
Hit water at 25 feet.		

Well 273

6½ miles southeast of Gruver, 100 feet northwest of fence corner in NE.¼, NE.¼, Sec. 156, H. & T.C. Block 45.

Dark surface soil-----	3	3
Yellow sandy clay-----	9	12
White sandy caliche-----	13	25
Yellow sandy clay-----	11	36
Fine yellow sandy clay and water-----	2	38

Well 274

6½ miles southeast of Gruver, NW.¼, NE.¼, Sec. 156, H. & T.C. Block 45.

Dark sandy loam-----	10	10
Yellow sandy clay-----	9	19
Sandy clay and gravel-----	3	22
Hit boulders-----		22

Well 278

6 miles south of Gruver, NE.¼, NE.¼, Sec. 157, H. & T.C. Block 45.

Dark surface soil-----	2	2
Yellow clay-----	12	14
Sandy clay-----	3	17
Dark sandy loam-----	3	20
Yellow sandy clay-----	5	25
Blue gumbo-----	4	29
Sandy clay-----	3	32

Well 281

6 miles south of Gruver; on creek bank in NW.¼, NE.¼, Sec. 157, H. & T.C. Block 45.

	Thickness (feet)	Depth (feet)
Dark surface soil-----	6	6
Yellow sandy clay-----	13	19
Blue gumbo-----	13	32
Blue sand-----	3	35
Rock-----		35
Hit water at 19 feet.		

Well 282

6½ miles south of Gruver, SE.¼, NW.¼, Sec. 157, H. & T.C. Block 45.

Dark surface soil-----	2	2
Yellow sandy clay-----	5	7
Dark loam-----	13	20
Yellow sandy clay, water---	6	26
Bluish gray mud-----	2	28
Sandy clay-----	5	33
Quicksand-----		33

Well 284

6 miles south of Gruver, SE.¼, NE.¼, Sec. 158, H. & T.C. Block 45.

Dark sandy loam-----	5	5
Yellow sand-----	7	12
White sand-----	7	19
Gravel-----		19
Hit water at 19 feet.		

Well 285

6 miles south of Gruver, north side, NW.¼, Sec. 158, H. & T.C. Block 45.

Surface soil-----	5	5
White sand and gravel-----	14	19
Struck rock, no water-----		19

Well 286

6 miles south of Gruver, 100 feet south of creek in SE.¼, NW.¼, Sec. 158, H. & T.C. Block 45.

Dark top soil-----	2	2
Mixed soil and caliche-----	4	6
Sandy clay-----	13	19
White sand-----	4	23
Hard sand rock-----		23

Logs of W. P. A. test wells--Continued

Well 287

6 miles south of Gruver on creek bank, east center Sec. 7, J. W. Jones Survey, Public School Land Block 3.

	Thickness (feet)	Depth (feet)
Dark soil-----	1	1
Light powdery clay-----	4	5
Yellow sandy clay-----	8	13
Hard sand rock-----	1	14

Well 289

6 1/2 miles south of Gruver, NW. 1/4, NW. 1/4, Sec. 7, Pub. School Land, J.W. Jones Survey.

Mixed surface soil-----	20	20
Dark clay loam-----	5	25
Sandy clay and gravel-----	4	29
Blue clay or gumbo-----	9	38
Mixed gumbo-----	3	41
Hard yellow sand-----	4	45
Struck water at 25 feet. Tested at 25 gallons a minute for 20 minutes.		

Well 290

6 1/2 miles south of Gruver, NE. 1/4, SW. 1/4, Sec. 7, Pub. School Land Block 3, D.C. Jones Survey.

Dark soil-----	2	2
Yellow sandy clay-----	11	13
Dark clay-----	8	21
Light sandy clay-----	4	25
Hit water at 12 feet.		

Well 292

7 miles south of Gruver, SW. 1/4, SW. 1/4, Sec. 310, G.H.& H. Block 2.

Dark soil-----	4	4
Light soil-----	4	8
Yellow sand-----	4	12
Dark sandy clay-----	6	18
Dark clay and sand-----	9	27
Light sand-----	2	29
Struck water at 14 feet.		

Well 298

7 1/2 miles southwest of Gruver, North center, NE. 1/4, Sec. 266, G.H.& H. Block 2.

Surface soil-----	7	7
Yellow sandy clay-----	6	13
Blue gumbo-----	5	18
Light sandy caliche-----	2	20
Struck water at 7 feet.		

Well 299

8 miles southwest of Gruver, NW. 1/4, SE. 1/4, Sec. 266, G.H. & H. Block 2.

	Thickness (feet)	Depth (feet)
Top soil-----	2	2
Mixed clay and caliche-----	5	7
Clay-----	13	20
Clay and sand-----	4	24
Clay and gumbo-----	5	29
Sand and gumbo-----	2	31
Water at 9 feet.		

Well 300

7 1/2 miles south of Gruver, 200 feet southeast of creek in NW. 1/4, SE. 1/4, Sec. 311, G.H.& H. Block 2.

Dark soil-----	1	1
Mixed clay and soil-----	1	2
Caliche and sand-----	1	3
Clay-----	24	27
Blue or gray gumbo-----	9	36
Struck water at 14 feet.		

Well 307

8 1/2 miles south of Gruver, SE. 1/4, NE. 1/4, Sec. 265, G.H.& H. Block 2.

Dark soil-----	7	7
Soil and clay-----	11	16
Sandy clay-----	9	25
Blue gumbo-----	9	34
Fine sand-----	2	36
Hit water at 16 feet.		

Well 309

8 1/2 miles south of Gruver, NE. 1/4, SE. 1/4, Sec. 265, G.H.& H. Block 2.

Dark soil-----	2	2
Yellow clay and caliche-----	8	10
Dark loam-----	7	17
Clay-----	4	21
Yellow sandy clay-----	15	36
Sand-----	2	38
Hit water at 25 feet.		

Well 310

9 miles south of Gruver, SE. 1/4, SW. 1/4, Sec. 265, G.H.& H. Block 2.

Surface soil-----	3	3
Yellow sandy clay-----	4	7
White sandy clay-----	5	12
Yellow sand-----	6	18
Hit water at 14 1/2 feet.		

Logs of W. P. A. test wells--Continued

Well 312  
 8 miles south of Gruver,  
 SW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ , Sec. 265,  
 G.H. & H. Block 2.

	Thickness (feet)	Depth (feet)
Dark top soil-----	4	4
Light sandy soil-----	2	6
Rock-----		6

Well 313  
 8  $\frac{1}{2}$  miles southwest of Gruver,  
 SW.  $\frac{1}{4}$ , NW.  $\frac{1}{4}$ , Sec. 265, G.H. & H.  
 Block 2.

Sandy loam-----	2	2
Clay-----	3	5
Sandy clay-----	9	14
Clay-----	8	22
Sand-----		22
Hit water at 14 feet.		

Well 315  
 9  $\frac{1}{2}$  miles southwest of Gruver,  
 S. part, NE.  $\frac{1}{4}$ , Sec. 4, T. & N.O.  
 Block 5T.

Surface soil-----	2	2
Clay-----	8	10
Rock-----		10

Well 323  
 10  $\frac{1}{2}$  miles south of Gruver,  
 SE.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ , Sec. 7, T. & N.O.  
 Block 5T.

	Thickness (feet)	Depth (feet)
Dark surface soil-----	4	4
Brown clay-----	4	8
Yellow sandy clay-----	5	13
Gumbo-----	7	20
Fine sandy clay-----	2	22
Hit water at 13 feet.		

Well 324  
 10  $\frac{1}{2}$  miles south of Gruver,  
 NW.  $\frac{1}{4}$ , NE.  $\frac{1}{4}$ , Sec. 7, T. & N.O.  
 Block 5T.

Dark surface soil-----	9	9
Dark sandy clay-----	2	11
Yellow sand and gravel-----	4	15
Hit water at 13 $\frac{1}{2}$ feet.		

Well 326  
 12 miles south of Gruver,  
 SE.  $\frac{1}{4}$ , SW.  $\frac{1}{4}$ , Sec. 14, T. & N.O.  
 Block 5T.

Dark surface soil-----	6	6
Fine yellow sand and clay---	4	10
Yellow clay and sand-----	5	15
Dark mud and sand-----	4	19
Hit water at 15 feet.		

Partial analyses of water from wells in Hansford County, Texas.

(Analyzed at the State University under the direction of Dr. E. P. Schoch, Director of the Bureau of Industrial Chemistry, by J. E. Stullken, C. R. Stewart, D. F. Riddell, and Alfred J. Kelly, Chemists, and J. A. Harmaza, Martin Wieland and Jack Ramsey, Assistant Chemists. Results are in parts per million. Well numbers correspond to numbers in table of well records.)

Well No.	Owner	Depth of well (feet)	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)	Total hardness as CaCO <sub>3</sub> (calculated)
1	J. T. Clawson	171	Aug.13,1936	298	-	-	-	268	35	17	-
2	C.R.I. & P. RR. Co.	484	Aug.12,1936	314	48	28	30	256	65	15	284
6	B. L. Thoreson	202	do.	270	-	-	-	250	29	14	-
8	B. W. James	215	Aug.13,1936	257	-	-	-	232	23	21	-
9	F. P. Peebles	97	do.	245	-	-	-	256	6	16	-
12	J. P. Pearson	186	May 21,1936	425	57	38	60	464	8	30	300
14	H. M. Te Beese	197	May 20,1936	231	18	32	25	215	35	14	174
15	Joe Knutson	200	do.	301	52	25	25	250	56	18	233
17	W.F.C. Etling	236	Aug.13,1936	219	39	21	18	232	13	12	183
19	- Koots	-	Apr.30,1936	1,290	-	-	-	220	275	460	-
23	- Coonts	73	Apr.29,1936	309	-	-	-	250	50	20	-
25	C. C. Newcomb	116	do.	218	30	25	21	238	8	15	178
26	F. M. Hemphill	226	Aug.12,1936	252	45	21	23	244	27	14	198
27	R. Mulkin	214	do.	244	43	22	22	256	15	14	198
28	- Brooks	-	May 20,1936	256	-	-	-	232	25	18	-
29	E. Retsel	280	May 18,1936	316	-	-	-	244	62	17	-
30	- Freeman	117	do.	151	15	17	16	171	8	10	107
31	Mrs. Clara Stedje	222	do.	300	-	-	-	250	50	14	-
32	H. Alexander	90	May 19,1936	209	6	24	40	165	44	13	113
35	- Brooks	74	do.	340	-	-	-	268	63	18	-
36	Joe T. Wilkes	227	Aug.13,1936	214	55	16	8	244	a/	13	202
37	F. Lindsay	228	do.	264	21	35	32	256	38	10	194
40	Frank Davis	22	Apr.30,1936	809	-	-	-	280	332	105	-
41	- Hibbs	175	do.	430	-	-	-	208	69	102	-
42	J. Bertran	24	do.	361	-	-	-	305	19	78	-
44	N. W. Willard	29	Apr.29,1936	1,050	88	53	265	995	8	139	442

a/ Sulphate less than 5 parts per million.

Partial analyses of water from wells in Hansford County--Continued

Well No.	Owner	Depth of well (feet)	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)	Total hardness as Ca CO <sub>3</sub> (calculated)
45	C. O'Laughlin	123	Apr. 16, 1936	361	52	25	48	250	69	42	233
46	Joe Venneman	196	Aug. 13, 1936	236	35	24	24	256	13	12	188
47	Clara Jones	233	Aug. 12, 1936	251	-	-	-	232	27	13	-
49	Robert Alexander	76	May 18, 1936	260	-	-	-	250	19	13	-
51	C. N. Sagen	198	June 2, 1936	321	36	28	45	244	71	19	204
54	First National Bank	55	May 15, 1936	275	50	20	27	256	35	15	208
56	C. J. Fowlston	-	May 19, 1936	343	-	20	104	256	75	16	84
58	G. J. Brandvik	261	Aug. 13, 1936	302	-	-	-	280	33	15	-
61	F. Lindsay	-	Apr. 16, 1936	334	55	39	23	386	8	16	295
63	C. O'Laughlin	220	Apr. 29, 1936	293	34	24	43	220	50	32	183
64	Smith Estate	58	Apr. 17, 1936	287	-	-	-	262	23	24	-
66	J. Lindsay	43	Apr. 29, 1936	260	50	22	22	268	10	22	213
70	F. H. Lierman	180	May 19, 1936	244	-	-	-	250	12	13	-
72	W. W. Grooms	34	May 15, 1936	244	-	-	-	256	8	13	-
75	P. A. Dahl	205	May 19, 1936	325	2	28	88	269	35	38	119
76	L. C. Koontz	216	May 13, 1936	367	-	-	-	390	11	18	-
77	F. A. Shapley	244	do.	300	38	20	50	268	42	16	178
83	J. I. Steele	22	Apr. 14, 1936	475	-	-	-	452	44	25	-
84	G. W. Stewart	195	do.	230	36	27	16	232	14	21	199
85	D. A. Tomlinson	-	Apr. 2, 1936	248	-	-	-	244	15	16	-
86	Howard Cline	-	do.	218	36	18	27	244	a/	15	162
87	J. I. Steele	32	Mar. 12, 1936	245	36	22	28	244	22	15	183
90	F. B. Mapes	53	Apr. 28, 1936	284	11	41	42	268	38	18	195
91	W. Sutton	255	do.	257	38	20	35	262	19	14	178
92	F. P. Mapes	130	do.	231	-	-	-	244	8	11	-
93	do.	137	do.	288	-	-	-	244	42	17	-
96	J. I. Steele	37	Mar. 31, 1936	308	84	13	18	317	22	13	262
97	W. S. Thomas	258	Apr. 2, 1936	289	38	29	35	262	37	19	204
99	C. C. Beck	240	Mar. 31, 1936	375	53	19	62	250	56	60	212
100	H. E. Ogle	246	do.	360	-	-	-	305	50	24	-
101	J. O'Donnell	270	do.	343	48	20	52	250	78	20	202
102	L. L. Hughes	220	Apr. 2, 1936	214	22	24	31	244	a/	15	153
103	W. C. Nollner	-	do.	239	-	-	-	232	8	23	-

a/ Sulphate less than 5 parts per million.

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Partial analyses of water from wells in Hansford County -- Continued

Well No.	Owner	Depth of well (feet)	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)	Total hardness as Ca CO <sub>3</sub> (calculated)
104	J. I. Steele	36	May 14, 1936	457	78	41	25	250	138	50	365
110	N. W. Willard	56	Mar. 13, 1936	300	47	13	64	330	8	23	171
115	R. H. Ralston	140	Mar. 31, 1936	282	30	46	4	268	12	20	173
116	N. B. Crosby	165	Mar. 13, 1936	243	36	22	20	165	67	16	183
119	L. W. Matthews	126	do.	229	49	26	6	268	a/	14	228
124	do.	151	do.	274	30	10	70	311	a/	9	116
126	S. P. Jackson	160	Feb. 28, 1936	422	52	38	51	350	102	14	286
127	Mart Hart	200+	do.	212	-	23	54	220	10	15	93
131	Joe Burns	99	Feb. 25, 1936	217	52	20	6	244	a/	17	212
133	J. W. Marle	292	May 1, 1936	224	53	19	5	244	8	17	222
134	Santa Fe RR. Co.	343	do.	252	49	19	24	274	8	15	202
135	Mrs. Carrie Cotter	140	Feb. 25, 1936	249	-	-	-	250	10	18	-
139	Viola C. Whitson	105	do.	338	40	49	19	317	62	10	299
140	Curtis Lowe	123	Feb. 27, 1936	337	-	-	-	305	29	28	-
141	J. R. Collard	117	do.	173	41	17	4	195	a/	14	171
148	G. C. Mitts	79	do.	280	48	21	33	293	16	16	208
152	R. R. Fullbright	263	May 1, 1936	273	-	-	-	250	29	16	-
153	City of Spearman	348	Aug. 14, 1936	309	49	24	35	274	46	18	223
154	do.	282	do.	306	-	-	-	281	35	16	-
155	Carl Hull	266	May 5, 1936	311	45	29	29	280	42	16	234
156	Carrie Cotter	288	Feb. 28, 1936	210	36	20	20	238	a/	15	173
159	J. R. Collard	168	Feb. 26, 1936	-	59	31	2	268	35	17	276
161	Mrs. Willie Moore	64	do.	271	-	-	-	280	8	18	-
162	Panhandle Power and Light Co.	69	Feb. 27, 1936	239	12	34	35	250	16	17	169
163	do.	200	Mar. 12, 1936	240	32	27	20	201	43	18	193
165	Curtis Lowe	140	Mar. 2, 1936	238	-	-	-	244	8	16	-
167	W.P.A. test well	109	Feb. 15, 1936	237	28	28	27	256	10	16	184
180	Bob McCoy	61	Mar. 2, 1936	285	80	22	1	342	a/	11	293
183	Litch Spark	318	Feb. 28, 1936	223	-	38	35	244	12	16	158
184	J. R. Collard	283	Mar. 4, 1936	279	34	28	33	244	46	16	193
185	C. C. French	228	May 5, 1936	272	40	25	31	268	28	14	203
186	R. H. Holton	327	do.	295	46	24	33	262	46	15	212

a/ Sulphate less than 5 parts per million.



Partial analyses of water from wells in Fansford County--Continued

Well No.	Owner	Depth of well (feet)	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)	Total hardness as Ca CO <sub>3</sub> (calculated)
188	- Reed	260	May 4, 1936	231	30	36	10	268	8	13	225
189	E. G. Barrett	278	Mar. 3, 1936	232	-	-	-	250	a/	16	-
190	L. W. Rosenbaum	140	Mar. 2, 1936	217	-	-	-	354	8	43	-
191	do.	185	Mar. 27, 1936	216	-	-	-	207	10	20	-
192	W. L. Mackey	-	Mar. 25, 1936	227	37	30	12	268	a/	14	214
194	Garrett Allen	315	May 5, 1936	261	42	29	20	281	15	15	224
195	N. W. Willard	300+	Aug. 14, 1936	340	-	-	-	335	a/	40	-
197	- Wiley	-	Mar. 27, 1936	486	-	-	-	195	213	15	-
198	W. R. Campbell	276	Mar. 3, 1936	207	22	25	24	207	17	16	158
199	P. & S.F. RR. Co.	-	Mar. 27, 1936	396	31	48	43	256	127	19	276
200	F.R.L. Jones	267	do.	232	-	-	-	283	10	20	-
201	Frank Davis	300+	May 6, 1936	313	54	30	19	250	68	17	259
202	J. Jackson	270	May 4, 1936	245	-	-	-	256	8	14	-
203	T. H. Taylor	300+	May 5, 1936	316	50	31	27	342	25	12	254
204	R. F. Dennis	294	do.	257	38	25	28	268	17	15	198
205	O. L. Williams	-	Mar. 27, 1936	287	48	25	26	256	43	17	223
206	Collard Mackey	295	May 6, 1936	326	7	50	50	318	42	18	221
209	J. J. Halin	394	Aug. 14, 1936	263	30	35	21	256	35	14	220
210	H. M. Shedeck	365	do.	245	-	-	-	268	2	13	-
211	C. Noe	320	May 5, 1936	293	-	-	-	293	12	21	-
212	Paul B. Higgs	238	Aug. 12, 1936	273	40	24	32	268	27	16	200
217	F. Roberts	178	May 15, 1936	243	22	33	27	244	23	16	189
218	L. Bivins	66	do.	223	22	24	32	220	19	16	153
220	-	230	May 13, 1936	328	42	22	55	280	53	16	193
221	W. L. Murrell	243	do.	284	25	21	58	280	27	13	151
222	H. Alexander	184	May 12, 1936	292	77	15	12	256	38	22	255
223	Marvel Walker	212	June 2, 1936	259	-	-	-	275	6	15	-
225	W.P.A. test well	23	June 1, 1936	278	-	-	-	268	15	22	-
226	L. Bivins	86	do.	308	-	-	-	274	35	20	-
228	Spivey Estate	208	do.	139	9	12	31	146	a/	14	72
229	S. T. Dozier	139	May 12, 1936	263	-	-	-	242	19	28	-
230	L. E. Morrison	196	May 13, 1936	271	23	26	46	238	38	19	163
231	Cameron Estate	229	Mar. 31, 1936	325	52	27	36	317	35	17	243

a/ Sulphate less than 5 parts per million.

Partial analyses of water from wells in Hansford County--Continued

Well No.	Owner	Depth of well (feet)	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)	Total hardness as Ca CO <sub>3</sub> (calculated)
232	R. McClellan	190	May 13, 1936	316	-	-	-	281	34	23	-
233	R. D. Furgeson	183	do.	325	22	29	57	232	84	16	174
234	I. W. Ayers	254	June 1, 1936	276	-	-	-	268	12	24	-
236	Fred McRee	224	do.	209	33	16	46	201	4	20	147
237	Chas. Thompson	140	Mar. 31, 1936	256	29	16	53	275	8	13	137
238	W. E. Maupin	175	Apr. 15, 1936	231	-	-	-	256	a/	12	-
239	C.R.I.&P. RR. Co.	502	Aug. 14, 1936	265	-	-	-	293	a/	15	-
240	Panhandle Power and Light Co.	342	May 12, 1936	328	-	-	-	305	33	19	-
241	Ernest M. Johnson	192	do.	326	-	-	-	269	57	15	-
242	E. Stavlo	208	do.	331	34	30	51	299	53	14	209
243	J. H. Gruver	171	do.	261	-	-	-	232	19	27	-
244	- Patton	225	do.	159	-	-	-	153	10	12	-
246	H. S. Hays	194	Apr. 15, 1936	206	31	13	34	232	a/	12	132
247	Lantz Estate	197	Feb. 28, 1936	205	23	20	31	232	a/	15	142
249	A.P. Borger Estate	203	Apr. 20, 1936	297	-	-	-	305	10	19	-
250	H.M. Hagan	193	do.	314	19	36	53	293	40	20	195
251	A.P. Borger Estate	193	do.	215	-	-	-	220	8	14	-
252	Mrs. Mary Spivey	171	do.	266	-	-	-	256	15	21	-
253	Tom Dozier	173	do.	246	39	23	27	250	15	18	188
254	W. Gandy	-	May 5, 1936	203	22	25	23	270	10	13	158
255	Haydon Hart	225	Mar. 5, 1936	266	26	25	43	256	28	16	168
256	J. A. Ward	212	do.	222	15	41	15	256	8	15	206
257	J.A. Layton	138	Apr. 20, 1936	236	49	22	12	232	8	29	212
258	Rob Alexander	188	do.	263	30	27	38	268	21	16	183
259	-	160	do.	242	-	-	-	256	10	10	-
261	J.P. Winder Estate	47	Mar. 7, 1936	214	38	22	16	250	a/	13	188
263	W.P.A. test well	33	Mar. 5, 1936	230	-	-	-	250	a/	15	-
267	S. Lackey	48	Mar. 3, 1936	425	88	27	37	396	59	20	333
270	do.	73	do.	385	14	24	107	378	29	22	133
275	Coy Holt	39	Mar. 6, 1936	318	56	26	29	281	45	22	246
276	do.	147	Mar. 16, 1936	270	34	30	50	281	16	20	209
277	do.	120	do.	308	48	25	33	256	55	19	223

a/ Sulphate less than 5 parts per million.

Partial analyses of water from wells in Hansford County--Continued

Well No.	Owner	Depth of well (feet)	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)	Total hardness as Ca CO <sub>3</sub> (calculated)
278	W.P.A. test well	32	Mar. 11, 1936	353	27	48	45	366	18	32	266
281	do.	35	do.	447	-	-	-	500	a/	21	-
282	do.	33	do.	258	-	-	-	348	23	24	-
283	W. T. Coble	-	Mar. 6, 1936	215	-	-	-	220	8	14	-
288	Mrs. J. Jones	76	Mar. 11, 1936	265	-	-	-	280	8	14	-
289	W.P.A. test well	45	Mar. 10, 1936	283	68	30	1	336	a/	16	294
290	do.	25	Mar. 16, 1936	438	-	-	-	457	40	34	-
291	Dave Jones Estate	39	Apr. 22, 1936	477	-	-	-	293	111	50	-
292	W.P.A. test well	29	Mar. 17, 1936	353	-	-	-	384	8	15	-
293	W. T. Coble	52	Mar. 16, 1936	256	72	13	12	293	a/	13	232
296	G. W. Norton	95	Apr. 20, 1936	240	-	-	-	244	8	17	-
298	W.P.A. test well	20	Mar. 17, 1936	561	-	-	-	463	104	20	-
299	do.	31	do.	331	-	-	-	330	10	28	-
300	do.	36	Mar. 16, 1936	520	-	-	-	460	69	50	-
301	E. T. Rafferty	60	Mar. 17, 1936	279	29	19	55	256	16	32	152
302	do.	72	do.	408	68	27	48	323	66	38	283
303	Mrs. J. Jones	-	Apr. 27, 1936	217	1	32	43	244	a/	19	134
304	Coy Holt	84	Mar. 5, 1936	239	40	20	25	232	20	18	182
305	W. T. Coble	39	Mar. 16, 1936	765	60	73	103	403	277	46	449
306	J.H. Cator and I. G. Nobles	29	do.	361	62	59	-	390	24	21	299
307	W.P.A. test well	36	Mar. 18, 1936	380	-	-	-	390	16	22	-
308	J.H. Cator	Spring	Feb. 20, 1936	364	64	43	-	352	56	24	335
309	W.P.A. test well	38	Mar. 18, 1936	348	-	-	-	317	29	29	-
310	do.	18	do.	433	-	-	-	452	23	17	-
311	Cator and Nobles	42	do.	426	65	37	40	311	94	35	315
313	W.P.A. test well	22	Mar. 17, 1936	291	33	36	50	317	16	18	235
314	John Gavin	116	Mar. 18, 1936	221	32	27	18	256	a/	16	193
316	do.	40	do.	253	30	34	21	256	19	21	214
318	Josephine Wags	198	Apr. 22, 1936	258	17	36	30	268	21	16	190
319	R. A. Jarvis Estate	222	do.	268	-	-	-	281	10	14	-
320	C.A. Lahmiller	320	Mar. 27, 1936	713	66	52	71	159	403	22	427
321	N.W. Willard	285	Apr. 22, 1936	673	1	72	170	635	33	80	298

a/ Sulphate less than 5 parts per million.

Partial analyses of water from wells in Mansford County--Continued

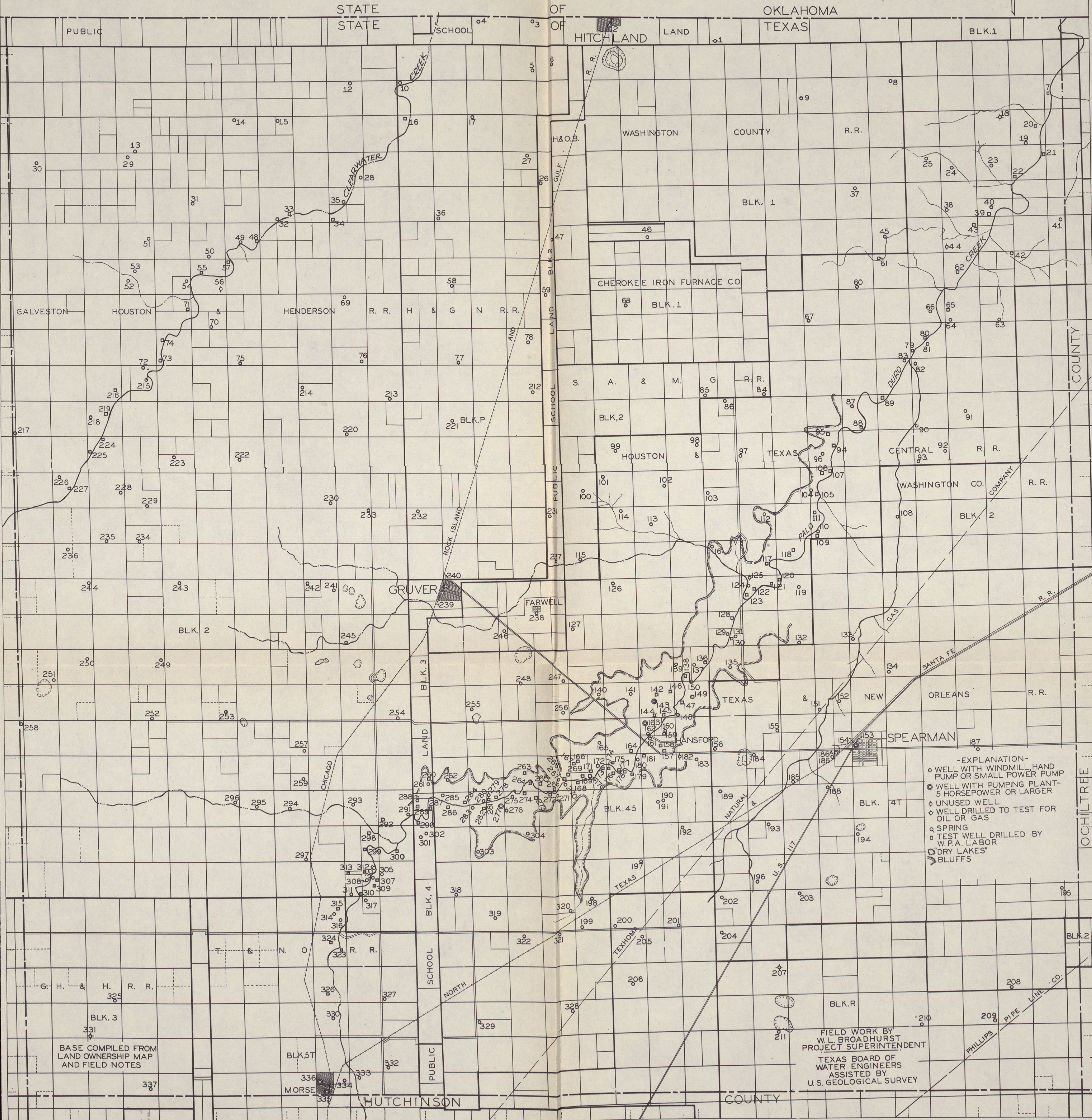
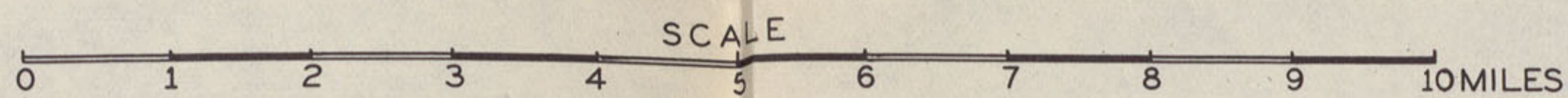
Well No.	Owner	Depth of well (feet)	Date of collection	Total dissolved solids (calculated)	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calculated)	Bicarbonate (HCO <sub>3</sub> )	Sulphate (SO <sub>4</sub> )	Chloride (Cl)	Total hardness as Ca CO <sub>3</sub> (calculated)
322	- Sites	282	Apr. 22, 1936	283	38	30	30	287	29	13	219
325	J. C. Sangston	153	Aug. 14, 1936	266	31	21	43	244	35	14	163
327	J.J. Hamre	175	Apr. 24, 1936	328	-	-	-	318	19	24	-
328	G. H. Cole	-	May 6, 1936	287	-	-	-	293	13	17	-
329	H. N. Kelley	281	Apr. 24, 1936	289	-	-	-	293	21	11	-
330	J.A. Balentine	38	do.	392	-	-	-	403	15	24	-
333	do.	66	do.	372	27	45	50	244	63	65	250
334	A.M. Coffey	63	do.	523	-	-	-	195	112	126	-
335	C.R.I. & P. RR. Co.	321	Aug. 14, 1936	234	44	28	9	256	6	19	224
337	Pete Caton	139	Aug. 18, 1936	-	-	-	-	256	a/	11	-

a/ Sulphate less than 5 parts per million.



# MAP OF HANSFORD COUNTY

## SHOWING LOCATION OF WATER WELLS LISTED IN THIS REPORT



- EXPLANATION-
- WELL WITH WINDMILL HAND PUMP OR SMALL POWER PUMP
  - WELL WITH PUMPING PLANT - 5 HORSEPOWER OR LARGER
  - ◇ UNUSED WELL
  - ◇ WELL DRILLED TO TEST FOR OIL OR GAS
  - SPRING
  - TEST WELL DRILLED BY W.P.A. LABOR
  - DRY LAKES
  - BLUFFS

BASE COMPILED FROM LAND OWNERSHIP MAP AND FIELD NOTES

FIELD WORK BY  
W.L. BROADHURST  
PROJECT SUPERINTENDENT  
TEXAS BOARD OF  
WATER ENGINEERS  
ASSISTED BY  
U.S. GEOLOGICAL SURVEY