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> * * * TEXAS

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STATE BOARD OF WATER ENGINEERS

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* * *

RANDALL COUNTY, TEXAS

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

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WORKS PROGRESS ADMINISTRATION

GROUND-WATER SURVEY

PROJECT 5674

W. G. Christian and L. C. Smyers, Project Superintendents

* * *

Analyses made, data assembled and report mimeographed by WORKS PROGRESS ADMINISTRATION PROJECT 6507-5112

* * *

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 Feb. 2, 1938

RANDALL COULTY

* * *

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

The purpose of this survey was to obtain information concerning existing wells and springs and the quantity and quality of water they yield, and to put down test holes where additional information was needed.

This project was part of a statewide Works Progress Administration project known as a "Statewide Inventory of Nater 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 6507-5112 at Austin, Texas, sponsored by the State Board of Mater Engineers. Typists employed on this project typed and assembled this release.

The field work in Randall County was started on April 11, 1937, and completed September 4, 1937. This work was done as Project 5674 of Administrative Field office 16 of the Works Progress Administration, Amarillo, Texas. W. G. Christian and L. C. Snyers, geologists, were project superintendents. Mr. Christian left the project in July to accept other employment and Mr. Snyers completed the project. Both Mr. Christian and Mr. Snyers should be given credit for their interest in the work and for the many extra hours they spent on the project. The Amarillo office of the Morks Progress Administration made this work possible by their constant help and cooperation. The Randall County Commissioners' Court cooperated by furnishing transportation for the workers during the project.

This release contains the well and spring records and well logs obtained by the project superintendents, logs of the test holes drilled by the V. P. A. labor, and the chemical analyses of water from privately owned wells and springs. Locations of all wells and springs listed are shown on the map in the back of the release.

The test wells were drilled by U. P. A. labor using a soil auger, drop auger, churn drill, and a sand bucket. Samples were collected at one foot intervals by the well driller in charge of the party. The project superintendents studied these samples and compiled the logs. Records of wells and springs in Randall County, Texas (All wells are drilled unless otherwise noted in "Remarks" column.)

		(See "]	Logs of	W. P. A.	test wells" for	all records	of test w	vells	.)	
No	•	Distance from Canyon	Sec- tion	Survey and Block	Owner	Driller	Topo- graphic situ- ation	Date com- ple- ted	Depth of well (ft.)	Diam- eter of well (in.)
·	1	13] miles north	41, NE <u>1NE</u> 1	B.S.& F. blk. 9	Mrs O'brion		Upland flat		150	
	2	13 miles north	62, NW <u>1</u> SE <u>1</u>	do.	John Menke	Joe Conner	Flat	1923	183	5
<u>d/</u>	2a	125 miles north	29, NE <u>1NW1</u>	do.	City of <u>A</u> marillo			1931	289	
<u>d/</u>	2b	do.	do.	do.	do.			1931	267	18
<u>d</u> /	2c	do.	do.	do.	do.			1931	260	
<u>d/</u>	2đ	12 miles north	29, SE ¹ NW1	do.	do.			1931	270	
<u>d/</u>	2e	do.	do.	do.	do.			1931	270	
<u>d/</u>	3	do.	40, NW1SE1	do.	Mrs. Florence Vassett		Flat	1910	200	5
<u>d</u> /	7	14 <u>1</u> miles north	172, NW <u>1</u> NE <u>1</u>	A.B.& M. blk. 2	Stanley Folland		; d o.	1912	300	
<u>d/</u>	8	13 <u>1</u> miles northeast	141, SW1SW1	do.	Nunn				203	4호
حدوبي.	9	$12\frac{1}{2}$ miles northeast	150, SE <u>1NE</u>	do.	R. T. Beaman				187	6
	15	15 miles northeast	7, SE <u>1</u> SE <u>1</u>	I. &G.N. blk. 8	E. Garrison		Flat		224	4
	17	18 miles northeast	55, NW <u>1</u>	A.B.& M. blk. 2	L. H. Koenig		do.	1919	275	4
<u>a</u> /	18	18支 miles northeast	54, SW <u>1</u> NW <u>1</u>	do.	C. B. King		do.	1925	220	6
<u>d/</u>	23	17 miles east	3, NE ¹ / ₄ NE ¹ / ₄	I. &G.N. blk. 6	Charlie Erwin		do.		225	4
<u>d/</u>	24	16 miles east	4, NW1NE1	do.	J. N. Vernon		do.		238	6
<u>d/</u>	27	16½ miles east	130, SE 1 SW 1	d o.	State Parks Board		Side of Canyon		Sprin	g
<u>ā/</u>	32	13 miles east	101, NWHNWH	do.	do.	D. L. McDonald	Flat	1933	160	6
فيسيني	33	ll 코 miles east	103, NE <u>1NE</u> 1	do.	C. F. Marshall				91	
₫/ 	34	10 <u> </u> miles southeast	202, NE <u>1</u> NE <u>1</u>	do.	D. P. Ross		Upland flat		127	
<u>đ/</u>	35	10 miles southeast	17 0, SE ¹ _SE ¹	do.	R. L. McSpadden		do.		150	
	36	8 miles southeast	172, SE1SE1	do.	S. B. Orton	Jim Ham	do.		148	5
<u>d/</u>	37	7支 miles east	140, SE ¹ / ₂ SE ¹	do.	S. M. Jay		do.			
	38	7 miles east	140, NW <u>1NE</u>	do.	W. J. Olver				171	

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

b/ C, cylinder; E, electric; G, gasoline engine; W, windmill; Cf, centrifugal; T,turbine; number indicates horsepower. Records obtained by W. G. Christian and L. C. Smyers, Project Superintendents (Chemical analyses of water from these wells and springs are in the table of analyses.)

-						
	Height of	Wate	r Level			
No.	measuring	Depth	Date of	Pump	Use	Remarks
	point	below	measure-	and	of	
	above	measu	r- Iment	power	water	
	ground	ing no	oint	h/	c/	
	$f = \frac{1}{2} \frac{1}{2}$	116 P	1		<u> </u>	
	110.1 2'	11990	/ 	7 77		
1				0,W	D,S	Wear Supply.
2	0.8	154.5	Aug. 17,	С,W	D,S	183 feet iron casing. Other reports well
			1937			sanded up in spring of 1937. Weak supply.
2a		163	e/		P	Strong supply.
2b				-,E,	q	Do.
				75	-	
20		163	e/		P	Do.
20	-	100	<u></u>			501
03		100				
za		100	<u>e/</u>	-	P P	DO.
<u></u>						
2e		162	<u>e/</u>		P	Do.
3				C,W	D,S	
7	0.5	207.8	A110. 6.	None	N	որ կողեր ա արձու վա պետաբե պատ պատգաներացան պետաբարցեր բացվեր մենեն։ Անենեւ հեռանե հեռանե հեռանե հեռանե են են օ տես տես հեռանեներությունը է։ Այստանությ
•		~	1027	11-11-0		
		100 0	101 91		Da	
¢		102.0	May SI,	Ο,₩	D,5	perone suppry.
			1937			
9	0.3	180	<u>e/</u>	C,W	D,S	187 feet wrought iron casing. Strong supply.
15	0.5	211.5	July 28,	C,W	D,S	Temperature, 58° F.
			1937			
17	0.7	195.5	do.	C.W	D.S	Strong supply.
					-,-	
78	0.5	214 4	0.5	CW	ng	12 fast of 6-inch stepl casing at ton: 40
				`` ,	1,0	foot of 6 inch stocl esging near bottom: 10
				Į		feet of 4 inch seeing at better Orren re
						Teet of 4-inen casing at bottom. Cwnor re-
	_,					ports water from sand, 205 to 220 feet.
23		'		C,₩	D	
24	1.5	215.4	July 28,	C,77	D,S	Strong supply.
			1937			
- 27		Flows	May 11.	None	D	Reported flow, 6 gallons a minute from sand-
~ '		1	1037	1 de la		etono
70		+	1201	0 0 7	- <u>_</u>	154 fact mought iron praina Macaurad
02				0,6,0	F	104 leet wrought from casing. Measured
						vicia, 4 gailons a minute.
33	0.3	84.2	May 8,	C,₩	S	Strong supply.
			1937			
34	0.5	105.5	June 9,	C,W	D,S	
			1937			
35		† <u> </u>		C.W	1 1	
~~			l	, , , , , , , , , ,		
76		123 0	More 19			
90	1 +•1	101.7	INCLY IN,	∨,₩	ס,ע	
·····	l		17937	+		
37				℃,₩	D,S	
	<u> </u>	1	L			
38	0.2	149	May 21,	C,W	D	Strong supply.
	1	1	1937	1		
c/ 1	, irrigat:	ion: II	nd, indus	trial:	P, rul	blic: D, domestic: S. stock: N. not used.

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

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Records of wells and springs in Randall County--Continued

No	•	Distance from Canyon	Sec- tion	Survey and Block	Owner	Driller	Topo- graphic situ- ation	Date com- ple- ted	Depth of well (ft.)	Diam- eter of well
đ/	41	8 miles	75,	I. &G.N.	R. S. Macfaãden				152	(in.) 4 ¹ / ₂
	42	do.	54,	do.	R. P. Boehning				176	
<u>d/</u>	43	7호 miles northeast	44, SE ¹ SE ¹	do.	Ben W. Moore		Upland flat		181	6
<u>d</u> /	48	7 miles northeast	2(., SW-1NW-1	do.	E. S. Burgess				146	412
<u>d/</u>	49	6 miles northeast	18, SE ¹ SE ¹	do.	do.		Flat		160	6
	51	7 miles northeast	44, SV1-SW1	do.	W. F. Bochning		Upland flat		180	4 <u>1</u>
	52	5불 miles northeast	53, NW ¹ SW 1	do.	Carl Overton		do.		180	4 <u>1</u> 2
<u>đ</u> /	53	do.	52, SW <u>1</u> SW <u>1</u>	do.	T. C. Jennings	Hall	Flat	1909	181	
<u>ā</u> /	55	6 miles east	77, SE ¹ SE ¹	do.	J. E. Albers		Upland flat	1926	180	
	57	5] miles east	109, NW ³ NE ¹	do.	do.		d o.	1914	171	4
	58	do.	84, SElswi	đo.	do.	Wyatt	do.	1914	185	4
<u>d/</u>	61	5 <mark>늘</mark> miles southeast] ±7, NY <u>1</u> NE <u>1</u>	do.	S. L. Lewis		Flat		144	6
	65	3 ¹ / ₂ miles southeast	144, SW <u>1</u> SE <u>1</u>	do.	L. H. Crawford	No.4 Rpg			39	
<u>d/</u>	68	do.	143, NW-NW-	do.	W. A. Mac Spadden		Upland flat		95	
	69	$3\frac{1}{4}$ miles east	114, NW <u>1</u> SM <u>1</u>	do.	J. P. Hicks	Leo McDade	do.	1924	90	6
<u>d</u> /	71	21 miles east	112, NE ¹ SW1	do.	L. Thomas		Valley flat		24	8
	72	3 miles east	111, NW1NW1	do.	Loan Co.		Upland flat		58	
<u>d/</u>	74	4 miles east	83, <u>SW]SW</u>]	do.	C. E. Osgood		d0.		150	4 <u>ई</u>
<u>a/</u>	76	$4\frac{3}{4}$ miles north	33, NV 2 -SVI	T.T.R.R. blk. 1	C. H. Ray	500 000.	do.		115	5
₫/ 	77	5 늘 milos north	33, <u>NW_NW_</u>	do.	J. C. Pipkin				73	6
<u>d/</u>	78	6 miles north	63, <u>NW1N71</u>	do.	J. E. Dickinson		Upland flat	1908	149	
<u>d/</u>	79	do.	61, SE <u>1NE</u>	do.	J. B. Latham	Munsey	do.	1892	148	
<u>d/</u>	80	3호 miles north	31, SW1-SW1	do.	Oferell		do.		112	
	81	3 miles northwest	5, NWINEL	H. &G.N. blk.B-5	G. W. Cox		do.		150	
	82	do.	5, NVISEI	do.	do.	W. K. Cox	Slope		25	4
<u>d/</u>	83	do.	5, SW 1 SE 1	do.	do.		Flat	1930	21	
	84	23 miles northwest	5, NE ¹ SE ¹	do.	do.		Slope		37	5

						-ô-
		<i>w</i> . G.	Christia	n and 1	L. C. S	Smyors, Project Superintendents
~~~~	Height of	Water	Level			որը էրջանությունը, այսօր ՝ ը պատություն, այսպեսը, ըստըստության այստանագետան և ու տեսուստ տաստանագետանանում անօգ 
No.	messuring	Danth	Date of	Puttin	Use	Romerks
	point	bolow	masure-	and	of	
	above	moasui	r- ment	noucr	water	
	ground	ing no	pint	<u>b</u> /	<u>c/</u>	
	(ft.) <u>a</u> /	(feat				
41	1	145.8	May 20, 1937	C,7	I.	
42				0,ण	D,S	Strong surply.
43	٩.2	168	May 20, 1937	С,₩	N	18] feet wrought iron c.sing.
48	1.7	136.4	Apr. 24, 1937	C,77	D,S	namen innen ander ander ander en ander ander ander anderen innen de anderen ander
49			-	C,W	D,S	
51	0.2	172	May 2, 1937	C, W	D,S	180 feet wrought iron casing. Measured vield. 2 gallons a minute.
52	1	131.9	May 20, 1937	C,√	n.	
53	1	167	Anr. 24, 1937	<b>८,</b> ए	D,S	Strong supply.
55				€,₩	S	а та мали алистикан на продолжно и инструмиралия у такадана такадана (такадана) (болана) и прополности такадани 
57				С, W	D,S	ана жана или селан и ардиналистика. Чана дарара на дарара на дарара на или такието и конструкционното налистика 
58				€,₩	D,S	130 feet wrought iron casing.
61	1	132.1	Apr. 21, 1937	C,W	D,S	Measured 85 feet drawdown after pumping 3 gallons a minute for 5 hour.
65	1.5	32.6	Apr. 19, 1937	C, 17	D,S	Strong supply.
68			800 UN.	C, 17	D,S	
69	1	45	<u>e/</u>	С, Ш	D,S	97 feet wrought iron casing. Measured yield, 1.7 gallons a minute.
71	0	14.5	May 8, 1937	С, М	I	Strong supply.
72				С, т	D,S	

0	14.5	May 8, 1937	С,Ж	I	Strong supply.
			С, т	D,S	
			C, 17	D,S	140 feet steel casing. Strong supply.
1	107.8	June 11, 1937	None	N	
			C,77	N	
0.3	136.8	June 11, 1937	С, Ш	D,S	Measured yield, 75 gallons a minute.
	131	<u>e/</u>	С, т	D,S	Strong sumply.
0.1	100.3	June 11, 1937	None	N	
			C,W	I	
2	21.8	May 7, 1937	С, W	D	25 feet wrought iron casing. Strong supply.
0.4	17	May 1, 1937	C,W	I	Measured yield, 6 gallons a minute.
2	36.8	May 7, 1937	C, 型	D,S	Strong supply.
	0  1  0.3  0.1  2 0.4 2	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0   14.5   May 8, 1937       1937     1   107.8   June 11, 1937          0.3   136.8   June 11, 1937      131 <u>e</u> /     0.1   100.3   June 11, 1937     2   21.8   May 7, 1937     0.4   17   May 1, 1937     2   36.8   May 7, 1937	0   14.5   May 8, 1937   C, W     1937    C, W       C, W     1   107.8   June 11, None     1937    C, W     0.3   136.8   June 11, C, W     1937    C, W     0.3   136.8   June 11, C, W     1937    C, W     0.1   100.3   June 11, None     1937    C, W     2   21.8   May 7, C, W     1937   C, W   1937     0.4   17   May 1, C, W     1937   2   36.8	0   14.5   May 8, $1:37$ C, $\mathbb{M}$ I       C, $\mathbb{M}$ D, S       C, $\mathbb{M}$ D, S     1   107.8   June 11, None   N     1   107.8   June 11, None   N     1   107.8   June 11, None   N     0.3   136.8   June 11, C, $\mathbb{W}$ D, S     1937    I31 $\underline{e}/$ C, $\mathbb{W}$ D, S     0.1   100.3   June 11, None   N   N     1937     C, $\mathbb{W}$ D, S     0.1   100.3   June 11, None   N     1937     C, $\mathbb{W}$ D     2   21.8   May 7, C, $\mathbb{W}$ D     1937     C, $\mathbb{W}$ I     2   36.8   May 7, C, $\mathbb{W}$ D, S     1937     S   S     2   36.8   May 7, C, $\mathbb{W}$ D, S

-7-Records of wells and springs in Randall County--Continued

No.	Distance from Canyon	Sec- tion	Survey and Block	Owner	Driller	Topo- gra <u>p</u> hic situ-	Date com- ple-	Depth of well	Diam- eter of
						ation	ted	(ft.)	well (in.)
<u>d</u> / 85	l <b>4</b> miles northwest	29, NE <u>lne</u> l	H. &G.N. blk.B-5	Myers	aga wa	Upland flat		114	4
86	3 miles northwest	30, SE ¹ SW1	do.	J. G. Ford		do.		320	8
88	1호 miles north	2, SW1SW1	do.	Phyllis I. Stanfield	gang dini	do.			
<u>ā/ 89</u>	l ^늘 miles northeast	31, NELNEL	do.	R. G. Oldham				251	4 ¹ / ₂
<u>d/</u> 91	$l_4^{-}$ miles	32, SW1SW1	đo.	J. M. Reeves		Flat		28	
<u>d/95a</u>	In Canyon	34, NE <u>1NE1</u>	đo.	C. M. Dowlen	C. M. Dowlen	Upland flat		75	
96	do.	35, NE1NE1	do.	City of Canyon	Cmer Kersey	do.	1930	488	122
97	do.	do.	do.	do.	do.	do.	1930	490	121
<u>d/ 98</u>	do.	do.	do.	West Texas Utilities Co.		do.	1927	490	122
100	늘 mile south	63, NW <del>1</del> NV <del>1</del>	do.	J. N. Sea		do.		52	6
<u>d/103</u>	14 miles southeast	64, NW-NV-	do.	W. H. Bush Estate		Creek bank			
<u>d/106</u>	$2\frac{1}{4}$ miles southeast	65, SW <del>1</del> NW1	do.	J. J. Ballengee		Flat		60	
110	1호 miles south	66, NWINVI	do.	Price Brothers		Upland flat		75	4
<u>a</u> 7111	2 ¹ / ₂ miles southwest	68, SE <u>1NE1</u>	do.	I. S. Mullins					41
112	2 miles south	67, SW <del>1</del> NE‡	do.	A. B. Heynes				83	10
113	3 miles southeast	96, NE <del>1</del> NW1	do.	J. R. Hicks		Upland flat			
<u>a/114</u>	3 <b>2</b> miles south	97, NW1NW1	do.	C. M. Dowlen				125	
<u>a</u> /115	3늘 miles south	98, NW ¹ NW ¹	do.	J. B. Lipe			-5	73	
116	4 <mark>호 miles south</mark>	126, NE ¹ NV ¹	do.	Melton Dooley				40	10
<u>d/117</u>	$4\frac{3}{4}$ miles south	128, NE ¹ NW ¹	do.	do.				52	14
<u>d</u> /118	6호 miles south	130, SE ¹ SE ¹	do.	M. O. Slack	Redfern		1903	142	
<u>a</u> /119	5 <u>1</u> miles south	131, NULINUL	do.	Mrs Young	Lovejoy		1918	93	52
<u>d/120</u>	6 miles	133,	do.	State Life				59	
<u>d/121</u>	6 miles	123,	do.	John Knight				120	
122	5 miles	124,	do.	Tim Bible		Upland flot		103	5
<u>d/125</u>	31 miles west	38, NW ¹ SE ¹	do.	L. A. Darnell			1935	28	

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W. G. Christian and L. C. Smyors, Project Superintendents

_		<u> </u>	UIII ISUIA	11. 011.0	L. V.	moers, rreject Supermoendends
	Height of	Water	r Levol			
No.	measuring	Depth	Date of	Pump	Use	Romarks
	point	below	measure-	and	of	
	above	measu	r- ment	power	water	
	ground	ing n	oint	<u>b/</u>	<u>c/</u>	
	(ft.) <u>a</u> /	(feet	)			
85				C,W	D,S	
86				C,W	D,S	C20 feet casing.
88	<b>Not un</b>			С, W	D,S	Strong sumply.
89	4	154.7	May 6, 1937	C, 77	D,S	Measured 61 feet drawdown after pumping 23 gallons a minute for 55 minutes.
91	0.4	22.5	do.	C,77	D	Weak supply.
95a				C,W	I	Strong supply.
96		338	<u>e</u> /	T,E, 40	P	Reported altitude, 3,551.3 feet. See log.
97				Τ,Ε, 40	P	438 feet wrought iron casing. Water reported in white sand, 535 to 350 feet, 425 to 440
98		251	<u>e/</u>	T,E, 40	P, Ind	Reported yield, 195 gallons a minute. feet. Sec log.
100	0.3	50.5	May 14, 1937	C,W	D,S	
103	0.7	8.8	June 14, 1937	None	N	
106				℃,₩	<del></del>	
110	0.7	52.9	Apr. 15, 1937	C,77	D,S	Strong supply.
111				С,Ш	D,S	anna-agus a daaraa daalaa ah anaanna gadaan san kana sayaa yadaadaa darkar daha beere gadaa waxaada adalad de g
112		<b></b>		C, W	D,S	
113				C, W	I	Strong supply.
114				C, W	D,S	Do.
115		67.3	Apr. 15, 1937	C,W	D,S	
116	0	37.6	May 7, 1937	None	11	ар ниме и ланалития философия особларии. «Алек на накона изволять числова», число в на селоно на на накона на н
117	l	40.1	June 18, 1937		S	Reported unfit for domestic use.
118	1.5	134.5	June 3, 1937	C,ए	D,S	Strong supply.
119	0	86.8	June 2, 1937 June 24, 1937	None	N	
120				С,₩	N	Dry well.
121				С,71	D,S	n de faile de la gen a versentile. Verset a comme de verse de anten de antende en appear verset en anten mande
122	0.3	90.3	May 7, 1937	С, W	D,S	
125		16	<u>e/</u>	C,W	S	

-9	
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Records of wells and springs in Randall County--Continued

								r	T
No.	Distance from Cenvor	Sec tion	Survey and Block	Owner	Driller	Topo- graphic	Date com-	Depth of	Diam- eter
	Caryon		DICCK			ation	ted	(ft.)	well (in.)
126	$\frac{3\frac{2}{4}}{4}$ miles west	59, SE <u>1</u> NW1	H. &G.N. blk. B-5	F <b>a</b> y McIntire Estate		Slope		25	7
<u>đ</u> /128	4 miles west	39, SE ¹ SE ¹	do.		pant, gant,			40	
<u>d/130</u>	5 miles west	71, NW <u>1NW1</u>	do.	J. M. Carruth		Small Canyon		Spring	
132	6 miles west	56, NE <del>l</del> SE ¹	do.	Bill Black				121	6
<u>d</u> /135	5호 miles west	25, SW <del>1</del> SE1	do.	Mrs. Lena Tucek		Upland flat		103	
136	6 <del>1</del> miles west	41, NWINEI	do.	Baber		do.		134	41
<u>d/137</u>	6 miles northwest	8, se¦ne <u></u>	T.T.R.R. blk. 1	Ray Metcalf		dc.		128	
<u>d/138</u>	do.	25, SE ¹ SE ¹	do.	Ward	Brazil			145	
<u>d</u> /139	6 ¹ / ₂ miles northwest	do.	do.	do.	do.	=-		197	
<u>d/140</u>	do.	25, NE ¹	do.	do.	do.			167	
<u>d/141</u>	do.	25, NE1NE1	do.	do.				117	
<u>d/142</u>	do.	do.	do.	do.	Brazil			158	
<u>d/143</u>	do.	do.	do.	do.	do.			110	
<u>d/144</u>	7 miles northwest	40, SE1SW1	do.	do.	do.			140	
<u>d/145</u>	8 miles northwest	23, SE ¹ SE ¹	do.	do.	do.			140	
<u>d</u> /146	do.	41, NELNEI	do.	do.	do.			134	
147	10 miles	170, NELNEL	B.S.& F. blk. 9	Belles	Leo McDade			190	
<u>d/149</u>	12 miles northwest	10, SE1SE1	B.S.& F. blk. 11	Jesse Pierce	Terrentine			216	
<u>d/150</u>	14 miles northwest	55, NW <del>1</del> NW1	B.S.& F. blk. 7	L. A. Pierce	Brazil			238	
<u>d/152</u>	14 <u>년</u> miles northwest	54, NW1	do.	do.	do.			245	
<u>d</u> /153	13 <mark>호 miles northwest</mark>	55, SW1SW1	do.	do.	Terrentine			250	
<u>d</u> /154	14 miles northwest	50 SWISWI	T.T.R.R. blk. 1	do.	Brazil			154	
<u>d</u> /155	13 miles northwest	51, SWISWI	do.	do.	do.			151	
156	do.	46, NW1NW1	do.	California Life Insurance Co.		Upland flat		118	5
157	123 miles	51, SE1SE1	do.	L. A. Pierce	Terrentine			234	
<u>d/158</u>	112 miles	45,	dō.	T. B. Slaughter	do.			215	
<u>d/159</u>	10 miles northwest	21, NE <u>1</u> NE <u>1</u>	do.	Word	do.			153	

-10-Smyers Christian and T ኮ Project Superintendents

		1. G.	Unristia	i and i	ن ول ول	Smyers, Project Superintendents
No	Height of	Water	r Level	Dump	TTep	Remarks
NO.	measuring	Depon	Date of	runp	000	<u>Remarks</u>
	point	DeTom	measure-	and	01	
	above	measu	r- ment	power	water	
	ground	ing po	oint	<u>b</u> /	<u>c/</u>	
100	(10.) 8/		Jor 14	<u> </u>		Ctrong oundly
120	6	3.0	May 14, 1937	0,11	D	Strong suppry.
128				None	N	
130		Flows	June 15,	None	Ş	
132	2	114.7	1937 May 14,	C,W	I	Measured yield, 3 gallons a minute. Irri-
			1937			gates small garden.
135	0	65.5	Juno 29, 1937	℃,₩	D,S	Strong supply.
136			May 31.	C.W	D.S	134 feet wrought iron casing. Pumping level
			1937		-,-	110.6 feet.
137	0	103.1	June 16, 1937	С,Ш	D,S	
138		65	<u>e/</u>			Drilled as test well 30. See log.
139		78	<u>e/</u>			Drilled as test well 32. See log.
140		91	<u>e/</u>			Drilled as tost well 31. See log.
141	tann Agin	18	<u>e/</u>			Drilled as test well 34. See log.
142		35	<u>e/</u>			Drillod as tost woll 35. See log.
143		12	<u>e/</u>			Drilled as test well 29. See log.
144		32	<u>e/</u>			Drillcd as test well 36. See log.
145	<b>8</b> 44 cm	81	<u>e/</u>			Drilled as test well 33. See log.
146		52	<u>e/</u>			Drilled as test well 37. See log.
147		135	<u>e/</u>			Drillod as test well 1. Sec log.
149		118	<u>o/</u>			Drilled as test well 12. See log.
150		118	<u>e/</u>			Drilled as test well 25. See log.
152		111	<u>e/</u>			Drilled as test well 23. See log.
153		115	<u>e/</u>			Drilled as test well 24. See log.
154		105	<u>e/</u>			Drilled as test well 4. See log.
155		60	<u>e/</u>			Drilled as test well 17. See log.
156	0.5	99.8	May 18,	C,W	D,S	
157		110	1937 e/			Drilled as test well 3. See log.
158		108	<u>e/</u>			Drilled as test well 16. See log.
1 60	<b></b>			ļ		
108		94	<u>e</u> /			primed as vest well 20. See Log.

-ll-Records of wells and springs in Randall County--Continued

				and the second designed and th	and the second se	the second s			
No.	Distance from Canyon	Sec⊷ tion	Survey and Block	Owner	Driller	Topo- graphic situ- ation	Date com- ple- ted	Depth of well (ft.)	Diam- eter of well (in.)
<u>d/161</u>	9불 miles west	12, NE <u>1NE1</u>	T.T.R.R. blk. 1	Word	Brazil	900 AP-		95	
<u>d</u> /162	l2 miles west	19, center	do.	T. B. Slaughter	đo,	927, 974		173	
<u>d</u> /163	12 <del>1</del> miles west	19, SW <u>1</u> SW <u>1</u>	do.	do.	do.			91	
<u>d</u> /164	ll <del>]</del> miles ørest	14, SE <u>1</u> SE <u>1</u>	do.	do.	Terrentine			211	
<u>a</u> /165	13 miles west	17, SE <u>1</u> SE <u>1</u>	H. &G.N. blk.B-5	J. C. Coker	Owen	<b>5</b> 22		188	
167	9 miles west	43, S₩ <u>1</u> S₩ <u>1</u>	do.	Mrs. Louise Simms		Upland fl <b>at</b>		120	
<u>d/168</u>	9½ miles west	76, NW1NE1	do.	Santa Fe R. R. Co.		do.		158	6
170	lO miles west	85, NW1NW1	do.	Henry Battenhorst		do.			
<u>d</u> /172	10 <u>1</u> miles west	108, SW1NW1	do.	H. B. Conner		do.			
<u>d</u> /173	ll ¹ miles southwest	116, NE1	do.					Sprin	g <b></b>
<u>d/176</u>	16호 miles southwest	279, NE <u>+</u> NE <u>+</u>	S.K.& K. blk. M-6	Walter Graham				410	4
177	do.	238, NW <del>1</del>	do.	do.		Flat		400	6
178	15 ¹ / ₂ miles southwest	202, NWLSE1	do.	J. L. Sullivan	McDade	do.		145	5
<u>d</u> /179	17 miles southwest	237, SE <del>i</del> ne <del>i</del>	do.	Walter Graham		do.		200	5
<u>d/180</u>	14 <u></u> miles southwest	162, SE <del>1</del> SW <del>1</del>	do.	Fred Collier		do.		174	4
<u>d/181</u>	14호 miles south	159, SE ¹ SW <del>1</del>	do.			do.		225	4
<u>d/182</u>	비遗 miles south	78, NE ¹ NE ¹	T.T.R.R. blk.K-14	P. T. Doss	Jim Ham	do.		182	5
<u>d</u> /183	9 <del>1</del> miles south	17, SE ¹ SE ¹	J G blk.2z			do.		160	
184	102 miles south	26, SE <mark>1</mark> SE <mark>1</mark>	do.	Mrs Cook		Upland flat		112	5
<u>d/185</u>	15 miles south	44, SW <u>1</u> SE <u>1</u>	S.K.& K. blk. M-6	Ed Jones	Ed Jones	do.	1917	193	6
d/186	15 <u>년</u> miles south	4, SW1SE1	do.	N. Grimes	do.	do.		151	
187	do.	59, SW1_SW1	A.B.& M. blk. M-8	J. W. Stubblefield		do.		134	6
189	l6 miles south	92, SW <del>1</del> SE1	do.	Embry Finley		do.		123	6
<u>d/190</u>	14 miles south	57, SW <del>1</del> SW1	do.	G. R. Forbus		do.	1926	97	
1/194	9 <u>1</u> miles south	3, S₩¹-SE1	do,	P. V. Winstead				149	4 <del>1</del> 2
195	75 miles southeast	50, SW1NW1	do.	Chas. J. Beckman		Upland flat		89	
196	82 miles southeast	205, SW1SE1	I. &G.N. blk. 6	Jasper Jennings		do.		160	

						-12-
	TTajale - 0	W. G.	Christian	n and 1	L. C.	Smyers, Project Superintendents
No	Height of	Wate:	r Level	Dumn	Hee	Domarka
110.	noint	below	measure-	end	of	Remar No
	above	measu	r- ment	nower	water	
	ground	ing p	oint	b/	c/	
	(ft.) a/	(feet	)	<u> </u>		
161		13	<u>e/</u>			Drilled as test well 28. See log.
162	~~~	60	<u>e/</u>			Drilled as test well 10. See log.
163		14	<u>o/</u>			Drilled as test well 15. See log.
164		98	<u>e/</u>			Drilled as tost well 27. See log.
165		84	<u>e/</u>			Drilled as test well 18. See log.
167				C,W	D,S	Strong supply.
168	1.2	107.5	May 13, 1937	C,W	D, Ind	
170				C,W	D,S	Weak supply.
172				C,W	Ď,S	
173		Flows	Aug. 21, 1937	None	S	Estimated flow, $\frac{1}{4}$ gallon a minute.
176				℃,₩	S	Supplies 200 head of stock.
177				C,W	S	Estimated yield, 4 gallons a minute.
178	0	130.6	Aug. 18, 1937	C,W	D,S	Iron casing, 110 to 130 feet. Tenant re- ports sand, 110 to 130 feet. Pumping level,
179				C,W	D,S	Estimated yield, 8 gallons a : 137.8 feet. minute.
180	0.2	155.5	Aug. 18, 1937	None	N	
181	1.3	214.5	đo.	C,W	D,S	Estimated yield, 2 gallons a minute.
182	2	175.1	May 7, 1937	C,W	D,S	
183	1.5	153.1	do.	С, Ш	D,S	
184	1	94.5	do.	C,W	D	112 feet wrought iron casing.
185	1	145.9	May 26, 1937	C,W	D,S	10 foet wrought iron casing.
186	0.5	127.4	do.	C,W	D,S	
187		108.9	do.	C, W	D,S	
<u>188</u>	0.5	94	May 19, 1937	C,₩	D,S	
19 <b>0</b>		45	<u>e/</u>	℃,₩	D,S	
194	0.5	137.8	Apr. 21, 1937	C,W	D	15 feet wrought iron casing. Irrigates small garden.
195	0.5	72.3	May 31, 1937	C,W	D,S	Strong supply.
196	1	151.9	June 1, 1937	C, W	D,S	Do.

Records of wells and springs in Randall County--Continued

			the second se	- A second s					
No.	Distance from Canyon	Sec- tion	Survey and Block	Owner	Driller	Topo- graphic situ- ation	Date com- ple- ted	Depth of well (ft.)	Diam- eter of well (in.)
d7197	9 <del>]</del> miles soutreast	1, NW <u>1</u> NW <u>1</u>	J. H. G. blk. M-9	R. B. Gist	-* =:	Upland flat		185	
198	ll miles southeast	37, NW1NW4	do.	E. W. Miller		do.		150	5
199	ll <u>‡</u> miles southeast	3, SW <u>1</u> SW <u>1</u>	do.	R. B. Gist		do.	1917	152	~-
199a	do.	96, NW <del>1</del> NW <del>1</del>	A.B.& M. blk. M-8	Welter Derlington		do.		157	
199b	12 <u>2</u> miles southeest	96, SE <u>1</u> SW <u>1</u>	do.	do.		do.		141	8
202	18 miles southesst	45, SE $\frac{1}{4}$ SE $\frac{1}{4}$	J. H. G. blk.M-9	Elmer Bauer				140	6
<u>a/203</u>	19 miles southeest	100, NW <u>1</u> NW <u>1</u>	do.	L. E. F. Johnson		<b>_</b> ~	1907	100	
204	20 miles southeast	117, SE ₁ SW ₁	do.	J. A. Tibbets				120	6
<u>d</u> /205	18 <del>]</del> miles southeast	101, NE <u>1</u> SW <u>1</u>	do.	Trevis Gillion	Peerless Co.	Flat	1935	196	16
<u>a/206</u>	15 miles southeest	68, NE <mark>1</mark> SW1	do.	W. Fowler		đo.	1926	124	4
<u>d/207</u>	l6 miles southeast	77, SW <u>1</u> SW <u>1</u>	do.	George Schaoffer	Bill Glover	đo.	1930	142	
ā/208	19 miles southeast	139, NE <u>1</u> NE <u>1</u>	do.	Lester Bryan	Lester Bryan	đó.	1932	142	
d/209	20 miles southeast	$\frac{151}{\mathrm{SW}_{+}^{1}\mathrm{SW}_{+}^{1}}$	do.	E. W. Schaeffer		do.	1915	107	
210	21 miles southeast	$152,$ $NE_{4}^{1}SE_{4}^{1}$	do.	Mrs. Allie Buzbee	Glover	Upland flet	1935		

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

b/ C, cylinder; E, electric; G, gesoline engine; W, windmill; Cf, centrifugel; T, turbine; number indicates horsepower.

					-	-14
		W. G.	Christia	n and 1	L. C. S	Smyers, Project Superintendents
	Height of	Wate:	r Level			
No.	measuring	Depth	Date of	Pump	Use	Remarks
	point	below	measure-	and	of	
	above	measu	r-  ment	power	water	,
	ground	ing p	oint	<u>b</u> /	<u>c/</u>	
	(ft.) <u>a</u> /	(feet	)			
197				C,W	D,S	
198				C,W	D,S	20 fect wrought iron casing.
199				C,W	D,S	Estimated yield, 5 gallons a minute.
1998	a 1	134.6	June 1, 1937	C, W	D,S	Strong supply.
1991		123.6	do.	C,W	D,S	Do.
202		116.4	May 31, 1937	C,W	D,S	Estimated yield, 3 gallons a minute.
203	0	91.5	Aug. 20,	C,W	D,S	
204	2	86.6	May 19, 1937	C,W	D,S	10 feet of 6-inch wrought iron casing.
205	1		Aug. 20, 1937	Cf,20	I	Reported yield, 600 gallons a minute. Pump- ing level, 148 feet. Owner reports test well 26 feet southwest. Struck water at 80 feet
206	0.3		do.	C,W	D,S	Galvanized iron casing. Pump- and 120 feet. ing level, 122.3 feet. Estimated yield, 3
207	0	123.1	do.	С, Ж	D,S,I	Irrigates 4-acre garden, gallons a minute.
208	1	124.2	do.	С, Ж	D,S	Owner reports water in sandy clay and sand rock, 120 to 142 feet.
2 <b>0</b> 9	0.3	91.4	do.	€,₩	D,S	Strong supply.
210	0	75.8	May 19, 1937	C,W	D,S	Pumping level, 80.12 fect. Measured yield, $3\frac{1}{2}$ gallons a minute.
$\frac{c}{d}$ 1 $\frac{d}{d}$ 1 $\frac{c}{v}$ 1	[, irrigati 10 water sa Vater level	on; Ti mple ( repoi	nd, indus collected rted.	trial; for a	P, pul nalysis	olic; D, domestic; S, stock; N, not used.

# -15-Table of Drillers' Logs, Rondall County, Texas

$ \begin{array}{c} \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Thickness (feet)	Depth (feet)	Thickness (feet)	Depth (feet)
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		(10007		(10007
$ \begin{array}{c} \mbox{Constrated matrix} Constra$	City of Canyon In Januar		Driller's log of well 138Cont	inued 12
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Surface materials	7	Pod alow good and rock 6	18
$ \begin{array}{c} \text{Grand matrix rok.} & Grand matrix$	$G_{\text{VDSVM}} =$	65	Clay cond and white mack 6	24
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Pink shalo=	84	Hend white mode 2	26
$ \begin{array}{c} Act and shale$		04	Hard white rock $= $	20
Act shills   Shills </td <td>Bod condu cholo</td> <td>125</td> <td>Red packed send and 11</td> <td>00 70</td>	Bod condu cholo	125	Red packed send and 11	00 70
Blue shift shift   Act shift shif	Recursion shall $e^{-1} = e^{-1} = e^{-1} = e^{-1}$	145	White rock and salue = = = = 11	60
Life shale	Brown share $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ $=$ 20	100	Real same and $POCK = 10$	64
Acd shale   235   100 shale   71     Pink sandy shale   20   265   12a   79     Vight-brown shale   20   357   118   79     Pink sandy shale   20   357   118   122     Muite water sand   20   357   128   122     Modelo   364   333   122   125     Brown shale   334   443   122   125     White water sand   334   122   125   125     Water sand   334   446	Ditte Sallay Shale	130	Packed Sind =	רית 04
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c} \text{Reu Shale-} =$	215	Locse water said /	·
$ \begin{array}{c} 1 \text{ min} \text{ samip shale} = 72 & 337 \\ White water sand 20 & 357 \\ \text{White water sand 30 & 335 \\ \text{Hard sandy shale 30 & 335 \\ \text{Hard sandy shale 33 & 443 \\ \text{Blue shale 33 & 443 \\ \text{Water sand 33 & 443 \\ \text{Water sand 33 & 445 \\ \text{Water sand 29 & 455 \\ \text{Blue sandy shale 34 & 446 \\ \text{Water sand 29 & 455 \\ \text{Blue sandy shale 34 & 446 \\ \text{Water sand 29 & 455 \\ \text{Blue sandy shale 34 & 446 \\ \text{Water sand 29 & 455 \\ \text{Blue sandy shale 34 & 446 \\ \text{Water sand 54 & 486 \\ \text{Hard shale 10 & 13 \\ \text{Watte read 10 & 13 \\ \text{Watte read 10 & 15 \\ \text{Mite sond and rock 7 & 42 \\ \text{Watte read strike rock 17 & 35 \\ \text{Red sand 55 & 56 \\ \text{Red sand 55 \\ \text{Surface materials 5 & 55 \\ \text{Red sand 55 \\ \text{Caliche, lime and sand 10 & 55 \\ \text{Red sand 56 \\ \text{Hard, red water sand, water - 8 \\ \text{Hard, red water sand, water - 8 \\ \text{Hard, red water sand, water 10 \\ \text{Hard, red sand, water 14 \\ \text{Hard proked sand, water 14 \\ \text{Hard sand and rock 3 \\ 17 \\ \text{White sandstone 55 \\ 18 \\ \text{Hard gray sandstone 55 \\ 19 \\ \text{Red sand e 5$	Dive shale- $         -$	265	alow	70
Hite water sand20   357   Filed i sint and only3   122     Red shale30   357   Red clay	$\begin{array}{c} \text{Fills Sallay Shale-} = 20\\ \text{Fight-brown shale-} = 72\\ \end{array}$	000 777	Decked and and clow a 39	179
Number of the stateNumber of the stateNumber of the stateNumber of the stateNumber of the stateHard sandy shale	White water canda $=$ $=$ $=$ 20	357	$\begin{array}{c} \text{Packed Sind and Chiy} = 55\\ \text{Blue clew} = 4\\ \end{array}$	199
Not with the water sand	Red shales $         -$	363	Bille Clay $         -$	125-
Bind of the state   Construction   Constenest and and construction   Co	Hard sendy shale	393		145
White water send	Brown shale- $     17$	410		<u> </u>
Blue shale	White water sand 33	443	Driller's log of well 139	
Water sand 29   445   northwest of Canyon.     Blue sandy shale	Blue shale $     3$	446	Word test well No. 32. $6\pm$ mile	S
Blue sandy shale $3\frac{1}{2}$ $493\frac{1}{2}$ Red clayRed clay $3$ 3TOTAL DEFTH(ASING RECORD: 125 feet 15 $\frac{1}{2}$ -inch casing.Had $493\frac{1}{2}$ Red clay $-1$ 13(ASING RECORD: 125 feet 15 $\frac{1}{2}$ -inch casing.Hard white rock $-1$ 13(Matte Stand and rock $$ 518Hard white rock $$ 518(Matte Stand and rock $$ 742(Light-red send rock $$ 742(Light-red send rock $$ 743(Red send1015Khite sand and rock $$ (Saliche, lime and sand1055Soft sand and rock, water -8(Red shale $$ 2590Hard, red water sand $$ (Red shale $$ 25115water $$ 20(Hard, red packed sand, water 14164Hard predish packed sand, water 14164(Red shale $$ 23328 $Driller's \log of well 140$ (Caray sandstone $$ 23324 $Driller's \log of well 140$ (Caray sandstone $$ 24445(ASING RECORD: 102 feet 15 $\frac{1}{2}$ -inch casing, Height-red clay $$ 13(ASING RECORD: 102 feet 15 $\frac{1}{2}$ -inch casing, Height-red clay $$ 4(ASING RECORD: 102 feet 15 $\frac{1}{2}$ -inch casing, Height-red clay $$ 4(ASING RECORD: 102 feet 15 $\frac{1}{2}$ -inch casing, Height-red clay $$ 4(ASING RECORD: 102 feet 15 $\frac{1}{2}$ -inch casing, Height-red	Water sand 29	485	northwest of Canvon.	-
TOTAL DEPTH	Blue sandy shale $3\frac{1}{5}$	488 ¹	Red clave 3	3
CASING RECORD: 125 feet $15\frac{1}{2}$ -inch casing.   White sund and rock 5   18     493 feet $12\frac{1}{2}$ -inch casing.   White sund and rock 7   35     Driller's log of well 98   Wast Texas Utilities Co. In Canyon.   Surface materials 5   5     Surface materials 5   5   Feed sund and rock 3   45     Caliche, lime and sand - 10   55   Soft sund and rock 11   76     Caliche, lime and sand 10   55   Soft sund and rock 7   83     Red and gray sand and caliche 10   65   White sund and rock 7   83     Red sand end rock 30   45   Hard, red water sund 7   83     Red sand end rock 30   45   Hard, red water sund 7   83     Red sand end rock 30   10   Hard, red water sund 7   83     Brown shale 33   328   Water sund and rock 10   140     Ible shale 33   328   TOTAL DEFTH 10   14     Red sand end gray sandstone 16   456   Light-red lay 3   17     Mite sandstone 5 ¹ / ₄ 490 ¹ / ₄ Red sand 10   14     Red sa	TOTAL DEPTH	488	White rock $ 10$	13
493 feet $12\frac{1}{2}$ -inch casing.Hard white rock 1736Driller's log of well 98West Texas Utilities Co. In Canyon.Surface materials 55Surface materials 55Red sund and rock 117Red and gray sand and caliche 1065Soft sand and rock, water - 891Red and gray sand and caliche 1065Soft sand and rock, water - 783Caliche, lime and sand 1055Red and gray sand and caliche 1065Brew shale 2590Hard, red water sand 783Soft sand and rock, water - 891Brew shale 2590Hard, red packed sand, water 14164Water 2390Priller's log of well 164Caliche, lime and stone 23190Driller's log of well 140Caliche shale	CASING RECORD: 125 feet 15-inch	casing.	White sand and rock 5	18
Red sund and rock 742Driller's log of well 98West Texas Utilities Co. In Canyon.Surface materials 5Surface materials 5Surface materials 5Surface materials 5Surface materials	493 feet 12 ¹ -inch casing.		Hard white rock 17	35
Driller's log of well 98Light-red sand rock 345West Texas Utilities Co. In Canyon.Light-red sand rock 345Surface materials 55Pink clay 1015Caliche and lime rock 3045Caliche, lime and sand 1055Soft sand and rock, water - 8Red and gray sand and caliche 1065Brown shale 2590Hard, red maked sand, water 29120White shale 25115Brown shale 30190Blue shale 30190Brown shale 33328White sandstone 34344Cray sandstone and littleDriller's log of well 140red shale 34344Cray sandstone and littleDriller's log of well 140red shale 23350Red shale 34344Cray sandstone and littleDriller's log of well 140red shale 3444Red shale 3444Red shale 3444Red shale			Red sand and rock 7	42
West Texas Utilities Co. In Canyon.Loss yellow sand 550Surface materials 55Red snd 550Surface materials 715Ked snd and rock 1176Caliche, lime and sand 1055Soft sand and rock, water - 891Red and gray send and caliche 1065Hard, red water sand 783Red shale 2590Hard, red kater sand, water 29120White shale 45160Light-red packed sand, water 10150Blue shale 30190Hard, red packed sand, water 14164Red shale 33328TOTAL DEPTH 10157Brown shale 33328Driller's log of well 140- Word test well No. 31, 67 milesRed shale 34414Surface materials 44Gray sandstone and little 1014red shale 23440Surface materials 44Red shale 1014Light-red clay 1014Red shale	Driller's log of well 98		Light-red sand rock 3	45
Surface materials   5   5   Red send   65     Pink clay	West Texas Utilities Co. In Canyo	n.	Loose yellow sand 5	50
Pink clay   10   15   White sand and rock   11   76     Caliche and lime rock30   45   Hard, red water sund7   83     Caliche, lime and sand10   55   Soft sand and rock, water -8   91     Red and gray sand and caliche 10   65   Hard, red packed sand, water 29   120     White shale25   90   Hard, red packed sand, water 29   120     Brown shale30   190   Hard, red packed sand, water 14   164     Red shale	Surface materials 5	5	Red send 15	65
Caliche and lime rock 30   45   Hard, red water sand 7   83     Caliche, lime and sand 10   55   Soft sand and rock, water - 8   91     Red and gray sand and caliche 10   65   Hard, red water sand 8   91     White shale 25   90   Hard, reddish packed sand, water 29   120     White shale 25   115   water 20   140     Brown shale 30   190   Hard, red packed sand, water 10   150     Blue shale 33   328   TOTAL DEPTH 9   140     Cray sandstone and little   34   384   Driller's log of well 140     Cray sandstone	Pink clay 10	15	White sand and rock 11	76
Caliche, lime and sand 10   55   Soft sand and rock, water - 8   91     Red and gray send and caliche 10   65   Hard, rod packed send, water 29   120     White shale 25   105   Hard, reddish packed send,   120     Red shale 25   115   water 20   140     Brown shale 30   190   Hard, red packed send, water 14   164     Red shale 33   328   Water 20   140     Brown shale 33   328   TOTAL DEPTH 10   150     Bray sandstone and little   Fred shale	Caliche and lime rock 30	45	Hard, red water sand 7	83
Red and gray send and caliche 1065Hard, red packed send, water 29120White shale 2590Hard, reddish packed sand, water 20Hard, reddish packed sand, water 20Hard, reddish packed sand, water 10Hard, reddish packed sand, water 10Hard, reddish packed sand, water 14Hard, reddish packed sand, water 14Hard Hard packed sand, water 14Hard 	Caliche, lime and sand 10	55	Soft sand and rock, water - 8	91
White shale	Red and gray sand and caliche 10	65	Hard, red packed sand, water 29	120
Red shale	White shale 25	90	Hard, reddish packed sand,	
Brown shale	Red shale 25	115	water 20	140
Blue shale	Brown shale 45	160	Light-red packed sand, water 10	150
Red shaleImage: red	Blue shale 30	190	Hard, red packed sand, water 14	164
Brown shale-Image: Signal content of the state of the sta	Red shale 105	295	Hard packed sand and clay - 33	197
White sandstone $$ $23$ $350$ Red shale $$ $34$ $384$ Gray sandstone and little $$ $$ Word test well No. 31, $6\frac{1}{3}$ milesred shale $$ $$ $$ Word test well No. 31, $6\frac{1}{3}$ milesBlue shale $$ $$ $$ $$ Blue shale $$ $$ $414$ Red shale $$	Brown shale	328	TOTAL DEPTH	197
Red shaleDriller's log of well 140Gray sandstone and little Word test well No. 31, 65 milesred shale Word test well No. 31, 65 milesBlue shale Word test well No. 31, 65 milesnorthwest of Canyon.Blue shale 23Gray sandstone414Gray sandstone645Red shale and gray sandstone6456White sandstone 29White sandstone 29Red shale 29White sandstone 51/2Morth LDEPTH 4Gray sandstone490 $\frac{1}{5}$ Red shale 4TOTAL DEPTH 4Sufface materials30Red sand and white rock 4Gray sand and clay 4Gray sand and clay 4Gray sand and clay 4Gray sand, water 4Gray and and rock 4Inch casing 4Driller's log of well 138 5 Word vess well No. 30. 6 miles north 4West of Canyon 4Surface materials 4Surface materials 4Gray and and rock 4Gray and and rock 4Gray and and rock 4Gray and sand 4Gray and sand 4 <td>White sandstone 23</td> <td>350</td> <td></td> <td></td>	White sandstone 23	350		
Gray sandstone and littlered shale	Rea snale	384	Driller's log of well 140	
Fed ShaleFed Shale <td>mod shale - 70</td> <td>47.4</td> <td> Word test well No. 31, 65 mile</td> <td>S</td>	mod shale - 70	47.4	Word test well No. 31, 65 mile	S
BiteSurfaceMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathematicalMathe	$\frac{1}{100} \frac{1}{100} \frac{1}$	414	northwest of Canyon.	
Red shale and gray sandstone 16440Red clay	Dide Share- $         -$	417	Surrace materials 4	4
Next share and gray sandstone 10430Light-Fed Cray-field cray-fie	Red shale and grav conditions 16	440	Red Clay 10	14
Milter fock and elayer1330Red shaler $5\frac{1}{2}$ $490\frac{1}{2}$ Red sand $4$ 34TOTAL DEPTH- $4$ $490\frac{1}{2}$ Red sand and white rock $25$ 59CASING RECORD:102 feet $15\frac{1}{2}$ -inch casing;Red sand and clay- $4$ 63399 feet 3-inch column pipe; $490\frac{1}{2}$ feet $12\frac{1}{2}$ White sand and clay- $6$ 69inch casing.Red sand- $6$ 691685 $$ Word tess well No. 30. 6 miles north-Loose sand, water- $22$ 116west of Canyon.Red sand and rock- $22$ 116Surface materials- $3$ $3$ Reddish sand, water- $24$ TOTAL DEPTH- $4$ $167$ 167	White sandstone 29	400	$\frac{\text{Light} - red \text{ cigy}$	17
TOTAL DEPTH-General and and and and white rock25TOTAL DEPTH-102 feet $15\frac{1}{2}$ -inch casing;Red sand and clayCASING RECORD:102 feet $15\frac{1}{2}$ -inch casing;Red sand and claySystemsSet sand and clay6SystemsGeneral and clay6Inch casing.Red sand6Driller's log of well 138Red sand6 Word test well No. 30. 6 miles north-Loose sand, water3Surface materials-33Red sand4Clay and sand4163Clay and sand4167TOTAL DEPTH167	Red shales $5^{1}$	100 1001	$\begin{array}{c} white rock and clay $	30
CASING RECORD:102 feet $15\frac{1}{2}$ -inch casing;Red sand and clay453399 feet & inch column pipe; $490\frac{1}{2}$ feet $12\frac{1}{2}$ -Red sand and clay69inch casing.Red sand69Driller's log of well 138Red sand691 Word test well No. 30. 6 miles north-Loose sand, water94Surface materials	TOTAL DEPTH	4901	Red sand and white rock $=$ 25	59
399 feet 3-inch column pipe; 4901/2 feet 12/2 -   Inch casing.   White sand and clay6   69 <u>Driller's log of well 138</u> Red sand6   91     Word vess well No. 30. 6 miles north-   Hard gray sand, water	CASING RECORD: 102 feet 151 -inch	casing:	Red sand and alow $=$ $=$ $=$ $=$ $=$ $=$	63
inch casing.   Red sand   16     Driller's log of well 138   Hard gray sand, water   91     Word test well No. 30. 6 miles north-   Loose sand, water   94     Surface materials	399 feet 8 inch column pipe: 4901 fe	et $12\frac{1}{2}$	White sand and clave $         -$	69
Driller's log of well 138Hard gray sand91 Word test well No. 30. 6 miles north- west of Canyon.Hard gray sand, water91Surface materials	inch casing.		Red sand- $         -$	85
Driller's log of well 138Hard gray sand, water			Hard gray send- $    -$ 6	91
Word test well No. 30. 6 miles north- West of Canyon. Surface materials	Driller's log of well 138		Hard gray sand. water 3	94
west of Canyon.   Red sand and rock4   120     Surface materials3   Reddish sand, water43   163     Clay and sand4   167     TOTAL DEPTH   167	Word Jess well No. 30. 6 miles	north-	Loose sand, water $22$	116
Surface materials	west of Canyon.		Red sand and rock 4	120
Clay and sand 4 167 TOTAL DEPTH 167	Surface materials 3	3	Reddish sand, water 43	163
TOTAL DEPTH 167			Clay and sand 4	167
			TOTAL DEPTH	167

-16-Table of Drillers' Logs, Randall County--Continued

Thicknes (feet)	s Depth (feet)	Thickness (feet)	Depth (feet)
Word test well No. 34. 64 mil	es	Driller's log of well 144Conti- Hard red packed sand 26	<u>nued</u> 108
northwest of Canyon		Fard packed sand 17	125
Plack and material a 4		$\begin{array}{c} \text{Red} \text{ sendu of } \text{sendu of } s$	133
Sandy alow $=$ 26	30	Pod alow	140
	50	moment DIEVILL	140
Hard gray sand, clay and rock,		TOTAL DEPTRI	140
water 14	44		
Hard gray sand, water 10	54	Driller's log of well 145	
Red sand and rock 10	64	Word test well No. 33. 8 miles	
Hard packed sand, little		northwest of Canyon.	-
water 53	117	Surface materials 3	3
TOTAL DEPTH	117	Red clay 9	12
		White rock and sand 6	18
Driller's log of well 142		Red clay 4	22
Word test well No. 35. 61 mil	es	Red sand and rock 8	30
northwest of Canyon.		White rock and clay 9	39
Red surface materials 12	12	Soft rock and sand 8	47
Red sandy clay 6	18	Sand and clay 8	55
Loose sand and rock 4	22	Soft sand rock 15	70
Red sand and rock 13	35	Hard red sand 7	77
Hard red sand and rock.		Sand and clay 4	81
water 11	46	Loose red sand and rock.	
Loose red sand and rock.		water 15	96
water	57	White mck clay and sand - 22	118
Loose red sand, water $ 12$	69	Soft sand and clay	122
Tight red sand 1]	80	Boddish clave $         -$	125
Red gand clay and rock		Vellowich diverse a set 10	135
tight $         -$	110	Pod alow	140
$\mathbb{T}icht ned cond 1$	191	MORAT DEDTU	140
Hend grow packed gond 11	179	IOTAL DEPTIN	1'±V
Blue alow	102		
	141		
TOTAL DEPTR	, 100	Word test Well No. 57. 8 miles	
		northwest of Canyon.	10
Driller's log of well 143		Red sandy materials 12	12
Word test Well No. 29. 62 mil	es	Black sandy clay 6	18
northwest of Canyon.		White rock and sand 7	25
Sandy clay materials 12	12	Red sandy clay 13	38
Red sand and mud 5	17	Light-red sandy clay, water 14	52
Packed sand and rock, water - 28	45	Light-red sand and clay 30	82
Loose water sand 19	64	Soft red sand, water 11	93
Red packed sand, water 16	80	Hard red sand 21	114
Gray packed sand, water 10	90	Blue clay 16	. 130
Red packed sand, water 5	95	Red clay 4	134
Gray packed sand, water 14	109	TOTAL DEPTH	134
Loose water sand 1	110		
TOTAL DEPTH	110	Driller's log of well 147	
		Belles test well No. 1. 10 mil	es
Driller's log of well 144		northwest of Canyon.	1
Word test well No. 36. 7 mile	s north-	Surface materials 5	5
west of Canyon.		Chalky materials 15	20
Dark-colored sandy surface		Lime, sand, rock and clay - 100	120
materials 14	14	Red packed sand 11	131
Light-colored sand and clay- 4	18	Hard red sand rock 4	135
White rock and sand 14	32	Tight sand, little water - 10	145
White rock and water sand 16	48	Reddish sandy clav 30	175
Red packed sand, water 34	82	Blue clay 5	180
- ,		Red clay 10	190
		TOTAL DEPTH	190

-17-Table of Drillers' Logs, Randall County--Continued

		· · · · · · · · · · · · · · · · · · ·	
Thickness	Depth	Thickness	Depth
(Ieet)	(reet)	(Teet)	(feet)
	1		
Driller's log of well 149	1	Driller's log of well 152Conti	nued
Jesse Pierce test well No. 12. 12	miles	Loose soft sand, water 6	188
northwest of Canyon.	1	Packed sand, little clay 50	238
Surface materials 4	4	White clavey sand 4	242
Vollowich diswa = = = = = = = = = = = = = = = = = = =	40	Loose soft red sand water - 3	245
$\frac{1}{100}$	Ŧ	TOTAL DEDTU	245
White rock, hard and solt		IVIAL DEPTH	2 4 J
layers	75		
White rock, clay and sand 25	100	Driller's log of well 153	-
Hard white rock 3	103	L. A. Pierce test well No. 24. 13	污
White rock, clay and sand 15	118	miles northwest of Canyon.	
Reddish sand. water 18	136	Surface materials 4	4
Hard sand rock water = - 4	140	Yellowish clay- $    -$ 36	40
Dooked gand little glaw	1.0	Soft white make $         -$	95
Tacked Sand, IICCIE CIAy,	.150	Vollew alors and white make 10	110
	.150	Tellow clay, sand white rock if	112
Reddish sand, water 25	175	Honeycomb lime rock and sand 3	115
Soft sand, loose, water 8	183	Honeycomb lime rock, water 5	120
Loose soft sand, honeycomb		Loose soft sand, water 7	127
sand rock, sand pebbles.		Packed sand and lime rock.	
water. soft $   3]$	214	water = 13	140
Hond hould on a set of a	216	Clause and water = 10	150
	210	Clayey Sand, water = = = = 10	1.00
TOTAL DEPTH	216	Loose soft sand, water 11	TOT
		Packed sand and white rock,	
Driller's log of well 150		water 4	165
L. A. Pierce test well No. 25. 14	miles	Packed sand and sand pebbles.	ļ
northwest of Canvon.		water 27	192
Surface materials = = = 3	3	Tooso soft pend water = - 38	230
Vollowich alow - 57	60	Clay and nacked and	077
$\frac{1}{2} = \frac{1}{2} = \frac{1}$	- 00 - 10	Clay and packed sand 5	200
Red clay and rock 10	-70	Packed sand and gravel, water 5	238
Hard white rock2	72	Red clay 12	250
White clay and rock 46	118	TOTAL DEPTH	250
Packed sand, water 22	140		
Clay and packed sand 10	150	Driller's log of well 154	
Packed sand, water 15	165	L. A. Pierce test well No. 4. 14 r	miles
Packed sand and sand nebbles	200	northwest of Canyon	12 100
wators and band poblicb,	202	Currence metorials	1 7
	102		3
Loose soit sand, water 18	200	Unalky materials 12	15
Packed sand and sand pebbles,		Yellowish clay 13	28
water 4	204	Reddish clay- $-$ 10	38
Packed sand, water 18	222	Grayish clay 20	58
Packed sand. little clav.		Hard rock 3	61
water	238	Soft reddish clay 4	65
	220	Hond to als	60
TOTAL DEFINE	200		00
		Soit white clay 22	90
Driller's log of well 152	-	Red packed sand 10	100
L. A. Pierce test well No. 23. 14	출 miles	Hard rock 5	105
northwest of Canyon.		Honeycomb rock, porous lime,	
Surface materials 3	3	little sand little water- 22	127
Reddish clave 49	52	Packed cond	1/10
White glave $=$ $=$ $=$ $=$ $=$ $=$ $10$	ט <i>בי</i> ריק	$\begin{array}{c} 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\ 1 + 0 \\$	140
		Blue clay- $       12$	154
white rock $$	- 77	TOTAL DEPTH	154
Ked sand 30	107		
Honeycomb lime rock 4	111		
Honeycomb lime rock, water- 3	114		
Loose soft sand water 4	118		
Packed sand, sand nebbles			
and light hnown alor halls 64	100		
and right-prown cray parts 04	TON		

-18-Table of Drillers' Logs, R.ndall County--Continued

Thickness	Depth	Thickness (freet)	Depth (foot)
(I'eet)	(ICCT)	(Idet)	(1660)
Driller's log of well 155		Driller's log of well 159	
L A Pierce test well No. 17, 13	miles	Word test well No. 26. 10 miles	9
northwest of Canyon	mTTO2	Word test werring. Do. 10 miro.	
Surface material a 2	2	Sunfo ac materials	3
Challer materials $ 2$	~ ۱۹	Doddich olever and a set of a	35
Unaiky materials 10	12 90	Reduits character $= $	50
Packed cond	~~~ 79	Deplod cond and alow a = 72	82
Packed sand = = = = = = = 10	02 50	Packed sand and clay $ 32$	04
Sand and small hauldons	52 60	Honey comb lime rock 15	9 <del>1</del> 08
Sand and small boulders = = 0	00	Declared and meter 17	115
right sand and sand peoples,	07	Facked Sand, Water	120
Water	305	Loose solt sand $$	147
Tellow clay 12	705	Haro Clay4	140
White clay and sand 40	TOT	TOTAL DEPTH	100
TOTAL DEPTH	191		
		Driller's log of well 161	_
Driller's log of well 157		Word test well No. 28. 95 miles	5
L. A. Pierce test Well No. 5. 125	miles	west of Canyon.	10
northwest of Canyon.	~	Black sand and mud 13	13
Surface materials	3	Mud	18
Chalky materials 2	5	White rock and sand, water - 21	39
Lime, sand rock and clay 52	57	Clayey sand 15	54
Packed sand 3	60	Packed sand and rock, water 21	75
Lime rock $4$	64	Packed sand, water 20	95
Packed sand and clay 16	80	TOTAL DEPTH	95
Lime rock $ 4$	84		
Packed sand and clay 18	102	Driller's log of well 162	
Soft sand and sand pebbles,		T. B. Slaughter test well No. 10.	12
water 8	110	miles west of Canyon.	
Sandy clay	140	Surface materials 2	2
No record 10	150	Reddish clay 24	26
Soft caving sand, water 14	164	Sand2	28
Sandy clay 22	186	Hard white rock2	30
Soft sand and sand pebbles - 10	196	Yellowish clay 10	40
No record 19	215	White rock 2	42
Soft caving sand, water 5	220	Packed sand 18	60
Soft sand and pebbles, water 7	227	Tight packed sand, water - 18	78
Sandy clay 7	234	Soft sand and sond rock,	
		water	109
Driller's log of well 158	-	Sand and sand pubbles, water 15	124
Slaughter test well No. 16. 11-	g miles	Sand and sand rock, water 10	134
northwest of Canyon.		Loose soft sand, water 14	148
Surface matorials 4	4	Sand and sand pobbles, water 4	152
Yellowish clay 31	35	Loose soft sand, water 18	170
White rock 25	60	Hard packed sand and clay 3	173
White rock and clay 15	75	TOTAL DEPTH	173
Hard rock 28	103		
Soft white rock 21	124	Driller's log of well 163	
Packed sand 10	134	Slaughter test well No. 15. 12	1 miles
Reddish sand and sand pebbles,		west of Canyon.	~
water25	159	Black soil 14	14
Coarse sand, water 6	165	Sand and gravel. water 3	17
Packed sand, little clay 12	177	Blue mud 13	30
Loose soft sand and sand		Sand and gravel. water 10	40
pebbles, water 64	241	Honeycomb sand rock and	
TOTAL DEPTH	241	loose sand 51	91
		TOTAL DEPTH	01

Table of Drillers' Logs, Randall County--Continued

Thickness	Denth	Thicknes	Depth
(feet)	(feet)	(feet)	(feet)
	110000		110007
Driller's log of well 164 Slaughter test well No. 27. 11 west of Canyon. Surface materials 3	1 miles	Driller's log of well 165 J. C. Coker test well No. 18. 13 west of Canyon. Surface materials 4	miles
$\begin{array}{c} \text{Control of the matrix} \\ Control of t$	4-∞ 17-0	Chalky materials 15	19
Packed sand and white rock - 26	98	Loose sand, honeycomb rock,	84
Honeycomb sand rock and sand,		sand pebbles, water 96	180
water22	120	Soapstone 8	188
Clayey sand and lime rock 7	127	TOTAL DEPTH	188
Honeycomb sand rock, lime and			
sand, water 41	168		
Hard packed sand, water 10	178		
Loose soft sand, water 12	190		
Clay and packed sand 6	196		
Loose soft sand, water 15	211		
TOTAL DEPTH	211		

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Logs of test wells drilled by W. P. A. labor in Randall County, Texas

Samples examined and classified by W. G. Christian and L. C. Snyers,

P	roject S	uperintendents
Thickness	Depth	Thickness Depth
(feet)	(feet)	(feet) (feet)
Well 4		Well 10 Continued
Upland flat, $NW_{4}^{1}NW_{4}^{1}$ sec. 34, blk.	9, B.	Reddish-brown clay with cali-
S. & F. survey, $7\frac{1}{2}$ miles north of	Canyon.	che8 22
Sandy clay 3	3	Struck rock at 22 feat.
Tan sandy clay with caliche- 1	4	No water sample collected. July 1,1937.
Reddish-brown sand 1	5	
Brown sandy clay 1	6	Well 11
Caliche with some clay 4	10	Upland flat, SW1SW1W1 sec. 146, blk. 2,
Red alay with caliche 5	15	A. B. & M. survey, 10 miles northeast of
Brown sandy clay1	16	Canyon.
Fine-grained brown sand 4	20	Surface meterials 1 1
Struck rock at 20 feet.	1	Sandy clay1 2
No water sample collected. July '	7,1937.	Brown sendy clay1 3
		Tan clay with caliche- 3 6
Well 5	-	Clay ith some caliche - 5 11
Upland flat, SE4SE4 sec. 33, blk.	9, B.	Reddish-brown cley with
S. & F. survey,85 miles north of (	Canyor.	caliche 3 14
Sendy surface materials 2	2	Tan clay with caliche- 2 16
Dark-brown silty clay 2	4	Light-brown clay with some
Reddish-brown clay 1	5	caliche5 21
Callche and sand 1	6	Reddish-brown clay 6 27
Light-brown sandy clay 1		Reddish-brown clay with
Brown sand 1	8	some caliche 9 36
Tan sandy clay with call-		Struck rock at 36 feet.
	3	No water sample collected, June 23, 1937.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	17	
Wen condu alou with coli	10	Well 1?
che	15	Flat, northwest corner sec. 115, blk. 2,
Brown gendy aler-	37	A. B. & M. survey, 11 miles northeast of
Stmick makest 37 feat		Canyon.
No vater sample collected Tuly 7	1937	Brown sandy surface mate-
No varoi Dampio corrected. July v	1.507	rials 2 2 2
Well 6		Caliche 8 10
Flat NW1 sec. 4 blk. 9 B. S. &	F.	Light-brown sandy clay and
survey, 10 ¹ miles north of Canvon.	<u> </u>	caliche15 25
Dark-colored waxy surface		Tight red clay 7 32
materials 4	4	No water sample collected. July 20, 1937.
Caliche and clav 4	8	
Red clave $      13$	21	
No water sample collected. Aug. 16	5.1937.	Flat, southwest corner sec. 113, blk. 2,
		A. B. & M. survey, 12 miles northeast of
Well 10		Canyon.
Upland flat. NW1NW1 sec. 146. blk.	2.	Surface materials
A. B. & M. survey. 10 [±] miles north	icest	Brown sandy clay 8
of Canyon.		Callene 4 10
Silty surface materials 2	2	Brown sandy city and carr-
Caliche and pink clay 1	3	No match comple collected Tuly 20 $10^{24}$
Tan clay with caliche 4	7	WO WALGE Sample Corrector. July 20, 1907.
Reddish-brown clay with		
trace of caliche 1	8	
Light-brown clay with cali-		
che5	13	
Light-tan clay 1	14	· · · · · · · · · · · · · · · · · · ·

-21-Logs of W. P. A. test wells in Rendell Gounty-mCodtinued

	Thisterson Donth
Thickness Depth	(feet) (feet)
Woll 14	Well 22 Continued
Well 14	Brown sendy clave $= = 10$ 1 20
Flat, Southwest corner sec. of, Din. 2,	Brown Sandy Clay 10 20
A. D. & M. Survey, 122 miles horoneast	No water sample collected Tuly 28 1937.
Proven condu logma a a a a a 3 1 3	No water sample corrected, sally so, ise.
Brown clay and some cali-	well 25
ches a start solid ball	Flat northwest corner sec. 4. blk. 6.
No water semple collected. July 20,1937.	I. & G. N. R.B. Co. survey. 15± miles
	east of Canvon.
Well 16	Dark-brown surface mate-
Flat. NW1NW1 sec. 17. blk. 8. I. & C.	rials 3 3
N. R.R. Co. survey. 16 miles north-	Caliche7 10
east of Canyon.	Brown sandy clay 5 15
Dark-brown top soil 2   2	Red study clay 30 45
Brown clay 2 4	No water sample collected. July 23,1937.
Sandy caliche clay 10 14	
Light-brown clay 3 17	Well 26
No water sample collected. Aug. 2,1937.	Flat, southeast corner sec. 29, blk. 6,
	I. & G. N. R.R. Co. survey, 15 ¹ / ₂ miles
<u>Well 19</u>	east of Canyon.
Flat, $SE_{4}^{1}SE_{4}^{1}$ sec. 23, blk. 8, I. & G. N.	Derk-brown surface mate-
R.R. Co. survey, 19 miles northeast of	rials 3 3
Canyon.	Brown sandy clay 12 15
Surface materials 4 4	No water sample collected. July 23, 1937.
Caliche materials 3 7	
Light-brown caliche clay- 11   18	Well 28
No water sample collected. Aug. 8, 1937.	Floor of canyon, SW4NWHEEE sec. 164,
- 11 00	blk. 6, I. & G. N. R.R. Co survey, 15
Well 20	miles east of Canyon.
Flat, $\underline{NE_{4}}NW_{2}$ sec. 15, Dik. 6, 1. & G.	Sand and gravel 5 5
N. R.R. GO. SURVEY, 18 miles horon-	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
east of Ganyon.	No meter completed in 97 1087
Gray satury riage $2$ $         -$	Wo water sample collected. Apr. 27,1937.
Craw clave a set of the set of th	Woll 20
No water semple collected, Aug.6, 1937.	In canyon STANIA and 164 hly 6
No advor bangro construction, services	$T_{1} \& G_{1} N_{1} B B C_{1} Survey 14 miles$
Well 21	cast of Canvon.
Flat. southeast corner sec. 15, blk. 8,	Sandy surface materials. gravel.
I. & G. N. R.R. Co. survey, 18 miles	and caliche 21   21
northeast of Canyon.	Dark-brown shale 4 25
Dark-brown surface mate-	Brown shale and gravel 4 29
rials3 3	Light-brown shale 7 36
Brown clay 2 5	Struck rock at 36 feet.
Light-brown caliche and	No water sample collected. Apr. 26,1937.
clay 13 18	
Brown sandy clay 13   31	<u>Wc11 30</u>
No water sample collected. July 28,1937.	Upland flat, SWINEL sec. 165, blk. 6,
	I. & G. N. R.R. Co. survey, 14 miles
Well 22	ecst of Canyon.
Flat, northwest corner sec. 2, Dik. 6,	Brown clay material 5 5
1. & G. N. K.H. CO. Survey, 175 miles	Brown sandy clay 26 31
east of Canyon.	Brown sona $      10$ 41
Surface materials $         -$	No work and a collected the OF 107
Figur-prown cartene cray o ; to	No water sample collected. Apr. 27, 1937.
	•

## Logs of W. P. A. test wells in Randall County--Continued

Thickness Depth	Thickness Depth
(feet) (feet)	(fect) (feet)
Wall Gl	Wall 45 continued
Unland flat NFISWI sec. 165 blk. 6.	Light brown alow
T 2 G N B B Co survey 14 miles	Cond and colliche
east of Convon.	$\begin{array}{c c} \text{Sand and callene} & - & - & 0 \\ \text{Gray play} & \text{Sand and callene} & - & - & 0 \\ \end{array}$
Dork-colored clay material- 5 5	Grey cray 2 10
Brown sheles = = = = 8 13	Sand and carrene $$
Light-brown send-	No motor semple collected Turn 20
Struck rock at 21 feet	No water sample collected. June 28,
No water sample collected. Apr. 30 1937.	T20/.
No water stappe corrected april co, 2001	шојј <i>46</i>
Well 39	In Canyon CWIMHICWI see 11 bly 6
Flat. NW1NW1 sec. 106. blk. 6. I. & G.	T = C = N = C = C = C = C = C = C = C = C
N. R.R. Co. survey. 85 miles east of	northeast of Canyon
Canvon.	Sandy
Brown surface materials 1 1	Fine_grained light_brown
Red clay 4 5	sand
Caliche, clay and caliche	Gravish-brown clay with
rock13 18	sand 4
No water sample collected. Aug.17, 1937.	Sand with some calicher 4 12
	Grav clav with sand - 4 16
Well 40	Light-grav sand 2 18
Upland flat, NW1NW1 sec. 86, blk. 6,	Fine-grained gray sand- 2 20
I. & G. N. R.R. Co. survey, 7 miles erst	Light-grav sandy clay 1 21
of Canyon.	Dark-gray sand with
Silty clay materials 3   3	clay2 23
Caliche materials 3 6	Dark-gray sand 4 27
Light-brown sandy clay with	Struck rock at 27 feet.
some caliche 4 10	No water sample collected. June 28.
Tan clay and caliche 2 12	1957.
Brown sandy clay and cali-	
che 2 14	Well 47
Reddish-brown clay and	Valley flat, NWISWISWI sec. 11, blk. 6.
caliche 6 20	I. & G. N. R.R. Co. survey, 9 miles
Struck rock at 20 feet.	northeast of Canyon.
No water sample collected. June 29,1937.	Sandy surface materials- 4 4
	Brown sand and gravel 2 6
Well 44	Fine-grained reddish-brown
In draw, north side of Palo Duro Creck,	sand3 9
$SE_{4}NW_{4}S.I_{4}$ . Sec., IL, DIK, D, 1.8G.M. H.R.	Struck rock at 9 feet.
Co. survey, 92 miles northeast of Can-	No water sample collected. June 28,
youre	1937.
Solid and griver = = = = = = 2 2	
Reduism-brown sand	Well 50
Struck rock at 17 foot	Creek bank, south side of bridge in
No vater sample collected Tune 28 1037	SE ₄ SE [±] sec. 46, blk. 6, I. & G. N.
No water bangre corrected. June 20,1397.	R.R. Co. survey, 6 miles northeast
Well 45	of Canyon.
Upland flat, north side Palo Duro Creek	Dark-cotored sandy surface
SWISWI sec. 11, blk. 6. T. & G. N. R.R.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Co. survey. 9 miles northeast of Canvon.	materials
Sandy surface materials - 2   2	Inductitats 4 8
Light-brown clay1 3	$\begin{bmatrix} 0 & 10 & 0 & 0 \\ 0 & 10 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & $
Dark-brown clay 4 7	NO WOTER REWEIS COLLECT.
·	No waver sample collected. May 18,1937.
I	1

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#### -23-Logs of W. P. A. test wells in Randall County--Continued

Thickness Depth	Thickness Depth
(feet) (feet)	(feet) (feet)
Well 54	Well 62 continued
Upland flat. SEISWI sec. 76, blk. 6,	Brown sand 5 1 12
T. & G. N. R.R. Co. survey. 65 miles	Sand and calicher = 5 17
east of Canvon.	Brown and and and a 17
Surface clay materials 3 3	$\frac{\text{Drown Sand}}{\text{White cond}} = \frac{1}{2} = \frac{1}{2} + \frac{1}{2}$
Sandy celichon	white same $$
Brown conductioner = = = = = = = = = = = = = = = = = = =	Struck rock at 22 feet.
Brown sandy clay = = = = 10 17	No water sample collected. Apr. 21,
Light-colored sandy clay	1937.
and callche 4 21	
Struck rock at 21 feet.	Well 63
No water sample collected.May 17,1937.	Rolling land, SW1SW1SE1 sec. 143, blk.
	6, I. & G. N. R.R. Co. survey, 44
Well 56	miles southeast of Canvon.
Flat, NEA sec. 109, blk. 6, I. & G. N.	Surface materials 1 1 1
R.R. Co. survey, 6 miles east of Canyon.	Sandy materials 3
Brown surface materials 2 / 2	Sandy alay
Red clav 2 4	$\begin{array}{c} \text{Send} \\ \text{Send} \end{array}$
Brown sandy clave 9 13	
Onlight alay and colight	Sandy materials 5 20
mals E 19	Sand and callche 1 21
	Caliche 1 22
No water sample collected. Aug. 16,1957.	Send and caliche 1 23
	Caliche 4 27
We11 59	Struck rock at 27 feet.
Flat, $SN_{4} SE_{4}$ sec. 83, blk. 6, I. & G. N.	No water sample collected. Apr. 30,1937.
R.R. Co. survey, $4\frac{3}{4}$ miles east of Canyon.	
Dark-brown surface mate-	Well 64
rials 3 3	Upland flat, NEINET sec. 145, blk. 6.
Caliche and clay 8 11	I. & G. N. B.R. Co. survey 33 miles
Brown sandy clay 7 18	southeast of Canvon
No water sample collected. Aug. 16,1937.	Black surface material a 1
	Light-colored condu meto
Well 60	might=cororor sandy thete=
Unland flat, NEINWI sec. 148, blk, 6,	
T & G N R.R. Co. survey 6 miles	$\begin{array}{c} \text{Brown same of elay 10} \\ \text{Sprin saturate} \end{array}$
southeast of Canyon	Sandy materials $ 1$ 14
Dark-colored surface mate-	Light-colored sandy
miola	Clay 11 25
	White sand 4 29
Brown sandy materials 4 9	Light-colored sand and
Sandy clay and callene - 5 12	ccliche 11 40
Light-brown sand 5 17	Brown sand 6 46
Medium-grained brown sand- 9 26	White sand 8 54
Brown sandy cley and	Struck water at 52 feet.
caliche2 28	Struck rock at 54 feet.
Fine-grained brown sand 18 46	Water level. 51.5 feet below top of
Caving at 46 feet.	ground. 4 hour after hole completed
No water sample collected. May 17, 1937.	No mater cample collected Apr 15 1055
	No water sample collected. Apr. 10,1937.
well 62	
Flat Sulsulsul sec. 142 blk 6 T &	Well 66
C = N = P = C = survey 43 miles south	In arow, $SE_{\pm}SW_{\pm}$ sec. 144, blk. 6, I. &
on the test, born survey, $\frac{1}{4}$ milles south-	G. N. R.R. Co. survey, 3th miles south-
Drown alow and colicity 0	east of Canyon.
Brown ctay and carlene	Black surface materials 5 5
Sanuy callene Z b	Sandy materials 3 8
Light-colored sandy cali-	Brown clay 7 15
cne 2 7	Caliche and brown cley 5 20
	(Continued on next page)

### -24-Logs of W. P. A. test wells in Randall County--Continued

Michalman - Daughi	mbiologo Denth
Thickness Depth	(feet) (feet)
	(1600) (1000)
well 66 continued	<b>10</b> 1773
Tight_colored clay and	Gently rolling land STI sec 82 hlk.
caliche 2 21	6. I. & G. N. R.E. Co. survey 4 miles
Fire-grained grav sand 4 25	east of Canyon.
Fine-grained sand $  -$ 5 30	Brown sandy surface
Light-colored send and	materials 3 3
clav 5 35	Caliche and clav 8 11
Light-brown sendy cley 5 40	Brown sandy clav 6 17
Sand and caliche 10 50	No water sample collected. Aug. 16,1937.
Light-colored sand 5 55	
Struck water at 18 feet.	Well 75
Struck rock at 55 feet.	Upland flat, NWINEI sec. 82, blk. 6,
Water lavel, 16.8 feet below top of	I. & G. N. R.R. Co. survey, $3\frac{3}{4}$ miles
ground, 36 hours after hole completed.	east of Canyon.
No water sample collected. Apr. 16, 1937.	Surface materials 2 2
	Caliche 4 6
Well 67	Struck rock at 6 feet.
In draw, $NE_4^{1}NE_4^{1}SE_4^{1}$ sec. 144, blk. 6, I.	No water sample collected. May 14, 1937.
& G. N. R.R. Co. survey, 35 miles south-	
east of Canyon.	Well 87
Dark-colored surface mate-	Creek bank, $NE_{4}SE_{4}$ sec. 30, blk. B-5,
$rlals 4 \qquad 4$	H. & G. N. R.R. Co. survey, $\frac{3}{4}$ mile
Sandy callene 3 7	north of Canyon.
Sand 8 15	Sandy surface materials - 2 2
$\begin{array}{c} Yellow (lay$	Dark-brown sandy clay 2 4
Brown cond and alow 10 40	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$\frac{18}{100}$	Yellow sandy clay 5 10
Struck mater at 36 feet	vollow and 2 12
Caving at 38 feet.	Light brown condu alay 3 15
Water level. 34.3 feet below top of	Crev sanda 1 16
ground. 18 hours after hole completed.	Fine-grained send 10 26
No water sample collected. Apr. 16. 1937.	Struck water at 11 feet
	Struck rock at 26 foot.
Well 70	Water level. 10 feet below top of
Rolling lend, NWINWI sec. 114, blk. 6,	ground. I hour after hole completed.
I. & G. N. R.R. Co. survey, 3 miles east	No water sample collected. June 23.1937.
of Canyon.	
Dark-colored surface mate-	Well 90
rials 1   1	Valley flat, $SE_{4}^{1}SW_{4}^{1}$ sec. 1, blk. B-5,
Sandy caliche 2 3	H. & G. N. R.R. Co. survey, $2\frac{1}{4}$ miles
White sand 12 15	northeast of Canyon.
Light-colored clay 3 18	Light-brown clay 8 8
Reddish-brown clay 3 21	Gray clay 6 14
Brown sandy clay 5 26	Fine-grained brown clayey
Sandy clay and callche - 7 33	sand4 18
Brown sandy clay and	Fine-grained light-brown
Callene 4 37	sand 6 24
	Struck water at 7 feet.
$\begin{array}{c} \text{Carrier} 0 \\ \text{Centing at AS feet} \end{array} $	Uaving at 24 feet.
Water level 40 feet helder ton of ground	water level, 4.5 reet below top of
1 hour after hole completed	ground, za nours after hole completed.
Rater sample collected. May 4 1937	NO water sample collected. May 13, 1937.
Mator pompro correctent Mat 4, That.	1

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Logs of W. P. A. test wells in Randall County--Continued

Thickness Depth	Thickness Depth
(feet) (feet)	(feet) (feet)
<b>調査11 Q9</b>	Well 95 continued
Clichtly polling long CW1NU1CW1 sec.	Sandy alay and argual = + 14 1 23
Dirghtiy foring rand, Swawaaswa see.	$\begin{array}{c} \text{Bindy Clay and graver = 11} \\ \text{Dive olow = -6} \\ \end{array}$
be, Dik. D-J, n. & G. N. A.R. U. Bui	Vollow alswort cond 3 32
white also and poliche 3 3	Light alever and 12
white clay and callene = = 5 5	Light Clayey Sand 12 44
Blue clay 10 13	Yellow-colored sandy
$\begin{array}{c} 1 \text{ gnt-colored clay 21} \\ 0 \text{ light-colored clay 21} \\ 0  light-colored clay$	
$\begin{array}{c} \text{Clayey sand 10} \\ \text{F} \end{array}$	Light-gray City 1 01
Brown clay 5 49	$Dark-Drown Sand 9 \qquad 00$
Struck rock at 49 leet.	Light-colored sand $ 2$ 02
No water sample collected. May 12,1957.	Struck water at 51 leet.
vr-11 07	Struck rock it b2 loet.
Well 90	No writer sample collected. May 51,1957.
Flat, $SW_{4}DE_{4}$ Sec. 32, DIK. B-0, H. a. U.	Well 00
N. R.R. CO. Survey, $1\frac{1}{4}$ miles east of	Weller flet WEINEInel oog 61 blk
Dank colored surface mate	DE U O N D D O monor 11
par - outoreu surface mate-	$p=0, n \in \alpha$ G. N. R.R. $U = Survey, L_{\frac{1}{4}}$
$\begin{array}{c c} r_{1a_1s}$	miles southwest of Genyon.
Light brown old and	Dram sende aler 1
anliabo-	Brown Schuy (129 1 2 Light brown condu ploy 2
$\frac{1}{2}$	Light+Oroan Schuy Clay- I O
Duff colored clays 9 20	Find-grained light-brown
$\begin{array}{c} \text{Bull-colored clay=====} \\ \text{Sandy olev} \\ \hline \end{array} \\ \begin{array}{c} 7 \\ 36 \\ \hline \end{array} \\ \end{array}$	$\begin{array}{c} \text{Still} \mathbf{u} = \mathbf{u} = \mathbf{u} = \mathbf{u} = \mathbf{u} = \mathbf{u} = \mathbf{u} \\ \text{Still} \mathbf{u} = \mathbf{u} = \mathbf{u} = \mathbf{u} = \mathbf{u} \\ \text{Still} \mathbf{u} = \mathbf{u} = \mathbf{u} \\ \text{Still} \mathbf{u} \\ Still$
Baddich wellow conders = 1 37	Struck Water at 5 10et.
Alay and fine-grained sand- 14 51	Weter level A 9 fout below ter of
White sands a same a 5 56	mound 1 hour often hole completed
Struck water at 46 feet.	No rater sample collected Tune 23
Cawing at 56 feet.	1937
Water level 45 feet below top of ground.	1001.
15 minutes after hole completed.	Well 101
No water sample collected. May 12,1937.	Flat near creek, NWINVI sec. 63, blk.
	B-5. H. & G. N. R.R. Co. survey. 3
Well 94	mile south of Canvon.
Rolling land, SEINE sec. 33, blk. B-5,	Black surface materials- 6 6
H. & G. N. R.R. Co. survey, 2 miles east	Light-brown send 2 8
of Canyon.	White sand 5 13
Clay materials 4 4	Struck water at 9 feet.
Clay and caliche 3 7	Javing at 13 feet.
Blue clay 6 13	Water level, 7.9 feet below top of
Light-colored clay 4 17	ground, 52 hours after hole completed.
Sand 8 25	Water sample collected. Apr. 14, 1937.
White clay and caliche 4 29	
Sandy caliche 15 44	Well 102
Sandy clay and caliche 5 49	Flat near crock, NHZNH sec. 63, blk.
White sand 11 60	B-5, H. & G. N. survey, $\frac{3}{4}$ mile south
Struck water at 57 feet.	of Canyon.
Caving at 60 feet.	Light-brown clay 5 5
Water sample collected. May 4, 1937.	Dark-colored clay 2 7
	Fino-grained sand 6 13
Well 95	Corrse-grained sand 7 20
Upland flat, 1805 5th. Ave. In Canyon.	Struck water at 8 feet.
Silty clay materials 2 2	Caving et 20 flet.
Dark-brown sandy clay 1 3	Water level, 6.b fect below top of
Clay and callene 6 9	ground, 48 hours after hole completed.
	NO TOTER SAMPLE Collected. Apr. 14, 1937.

## Logs of W. P. A. test wells in Randall County--Continued

Thickness Depth	Thickness Depth							
(feet) (feet)	(foct) (feet)							
Well 104Rolling lend, $SE_{4}^{1}NE_{4}^{1}NE_{4}^{1}$ sec. 65, blk.B-5, H. & G. N. R.R. Co. survey, $2\frac{1}{2}$ miles southeast of Canyon.Dark-colored surface mate- rials	(feet) (feet)Well 108 ContinuedFine-grained sandy surfacematerials22Light-brown clayey sand-68Sand and caliche311Sandy caliche311Sandy caliche415Coarse-grained white sand15and caliche823Fine-grained white sand-528Light-brown sand1038Struck water at 2.3 feet.28Caving at 38 feet.38Water level, 21.2 feet below top ofground, 1 hour after hole completed.							
caliche 7 32	Water sample collected. Apr. 13,1937.							
Light-colored sand 1 33 Struck water at 20 feet. Struck rock at 33 feet. Water level 19.6 feet below top of ground $\frac{1}{4}$ hour after hole completed. No water sample collected. Apr.14,1937.	Well 109 Rolling land, $\overline{\text{NE}_{1}^{1}\text{NE}_{4}^{1}\text{NW}_{4}^{1}}$ sec. 66, blk. B-5, H. & G. N. R.R. Co. survey, $1\frac{3}{2}$ miles south of Canyon. Surface materials 2 2							
	Brown clay and caliche 4 6							
Well 105Rolling land, $SE_{4}^{1}NW_{4}^{1}$ sec. 65, blk. B-5,H. & G. N. R.R. Co. survey, $2\frac{1}{2}$ milessoutheast of Canyon.Black surface materials 6	Light-colored sandy clay-7 13 Sandy caliche7 20 Caliche and sand9 29 Sand13 42 Struck water at 30 feet.							
Send 4   10     Light-colored sandy clay- 5   15     Sand and caliche 1   16     Sandy clay 2   18     Send and clay 2   20	Struck rock at 42 feet. Water level, 29.5 feet below top of ground, 48 hours after hole completed. No water sample collected. Apr. 14,1937.							
Clay and caliche 7 27 Struck water at 17 feet. Struck rock at 27 feet. Water level 16 feet below top of ground, 45 hours after hole completed	Well 123 Slope, SEINWI sec. 60, blk. B-5, H. & G. N. R.R. Co. survey, 21 miles west of Canyon.							
No water sample collected. Apr. 13.1937.	Sandy Surface materiais 3 3							
Well 107 Valley flat, $NE_{4}^{1}SW_{4}^{1}NW_{4}^{1}$ sec. 65, blk. B-5, H. & G. N. B.B. Co. survey. 3 miles south-	Gray sandy clay 1 6 Light-brown sandy clay 1 7 Fine-grained light-brown							
east of Canyon.	Yellow sand 3 13							
Brown clay 4 8 8 Light-colored sandy clay- 4 12	Yellow clayey sand 2 15 Stratified red and light-							
Sand and gravel 1 13 Struck mater at 3 feet. Struck rock at 13 feet. Water level, 1.5 feet below top of ground, 6 ¹ / ₂ hours after hole completed. No water sample collected. Apr. 13,1937. Well 108 Rolling land. SETSETNWT sec. 65. blk.	. brown shale 13 28 Struck water at 11 feet. Struck rock at 28 feet. Water level, 10.3 fest below top of ground, 120 hours after hole completed. No water semple collected. June 13,1937.							
B-5, H. & G. N. R.R. Co. survey, $2\frac{1}{4}$ miles southeast of Canyon.								

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#### -27-Logs of W. P. A. test wells in Randall County--Continued

This cleast (fact)	'Inickness Depth
Woll 194	
Unland flat SW1SW1 200 37 blk B-5	Well 155
U = 0 N P P CO survey 3 miles	Uptand Hat, Swa502 sec. 40, Dik. B-5,
meet of Convon	H. & G. N. R.H. CO. survey, 6 miles
Condy surface materials	west of Canyon.
Calicha materiala	Sandy clay materials 2 2
	Light-brown sandy cicy and
Struck rock at 9 feet	$callent 1 \qquad 3$
No weter comple collected Tune 18 1037	Callche 2 5
No water sample corrected. June 10, 1907.	Light-Drown sandy clay and
W-11 100	$caliche 1 \qquad 6$
Well 127.	Brown sandy clay 2 8
Upland flat, $SW_{4}^{2}SW_{4}^{2}$ sec. 38, blk. B-C,	Brown sandy clay and
H. & G. N. R.R. Co. survey, 4 miles	caliche 3 11
west of Canyon.	Brown sandy clay 2 13
Sandy surface materials 2 2	Brown sand and clay 2 15
$\begin{array}{c} \text{Callenge} \\ Calleng$	Brown sandy clay 5 20
Brown clay and callene - 8 14	Struck rock at 20 feet.
Brown sandy clay 1 15	No water sample collected. June 16,1937.
Light-brown sand and	
	Woll 134
Calicne and sandy prown	Upland flat, $SE_4^1SE_4^1$ sec. 40, blk.
Clay =	B-5, H. & G. N. R.R. Co. survey, 5
Calleneer	miles west of Canyon.
Struck FOCK Et 21 leet.	Sandy clay materials 2 2
No water sample collected. June 15,1937.	Reddish-brown sandy clay- 2 4
Well 190	Sandy caliche 3 7
Gland Objom and 20 blt D & H & G	Brown sendy cley and
Stope, Shadwa sec. 30, bik. B-5, H. & G.	caliche 20 27
N. R.R. CO. Survey, 47 miles west of	Struck rock at 27 feet.
Conduction Contraction Conduction	No water sample collected. June 15, 1937.
Jahuy Clay materials 0 0	
White and and alow 6 21	Well 148
While same and $Cray = 2 = 2$ 0 21 Dod and buff colored shale 21 (2)	Upland flat, SE [±] ₄ SE [±] ₄ sec. 9, blk. 11,
Red and buil-colored shale- $\mathcal{L}$ $\mathcal{L}$	B. S. & F. survey, 11 miles northwest
Struck water at 15 feet.	of Canyon.
No motor comple collected Tune 17 1057	Sandy surface materials - 1 1
No water Sample Collected, June 17,1557.	Caliche 2 3
ואין גרחזו	Clay and celiche 2 5
CWICWI SAC 57 HIL D 5 H & O N	Callcho1
$BW_{4}BW_{4}$ Sec. 37, DIK. B-3, n. & G. N. P. D. 30 survey 51 miles most of	Reddish clay and caliche - 1 7
A.R. 00. Survey, 05 miles west of	Red clay and gravel 3 10
Candy curface metonicl and	Reddish-yellow clay 3 13
anourol ace material and	Red clay and caliche 3 16
graver	Struck rock at 16 feet.
Sand with some clay 5 5	No water sample collected. July 1,1937.
Danu and carrender I D	
$\frac{1}{2}$	W-11 151
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Upland flat, $SE_{x}^{1}SE_{z}^{1}SE_{4}^{1}$ sec. 53, blk. 7,
Duruck Maru Share at 00 reet.	B. S. & F. survey, 15 miles northwest
waver rever, ru. ree below top of	or Canyon.
ground, o nours after note completed.	Silty cley metoriels 4 4
No water sample corrected. June 18,1937.	Reddish-yellow elsy and
4	coliche 9 13

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Logs of W. P. A. test tells Randall County-Continued

Thickness Depth (feet) (feet)Thickness Depth (feet) (feet)Thickness Depth (feet) (feet)Well 161 continuedBrown clay and saliche 114Struck rock at 14 feet.14No water sample collected. July 1, 1937.In draw, $NW_{\pm}^{\pm}$ sec. 117, blk. B-5, H. &Well 160Well 160Creek terrace, $SW_{\pm}^{\pm}NW_{\pm}^{\pm}$ sec. 11, blk. 1,Blue gumbo 1T. T. R.R. Co. survey, $9\frac{1}{3}$ miles westGrey sandy clay 7of Canyon.3Sandy clay materials 33Brown sandy clay 14Tan sandy clay 210				
(Teet) (Teet)Well 151 continuedBrown clay and maliche - 114Struck rock at 14 feet.In draw, $NW_{\pm}^{\pm}$ sec. 117, blk. B-5, H. &No water sample collected. July 1, 1957.In draw, $NW_{\pm}^{\pm}$ sec. 117, blk. B-5, H. &Well 160Well 160Creek terrace, $SW_{\pm}NW_{\pm}$ sec. 11, blk. 1,Blue gumbo 1T. T. R.R. Co. survey, $9\frac{1}{2}$ miles westGray sandy clay 5of Canyon.Sandy clay materials 3Sandy clay materials 43Gray clay 210	Thickness Depth	Thickness Depth		
Well 151 continuedBrown clay and skliche 114Struck rock at 14 feet.In draw, $NW_{\pm}^{1}$ sec. 117, blk. B-5, H. &No water sample collected. July 1, 1957.G. N. R.R. Co. survey, 11 miles southwast of Conyon.Well 160Blue gumbo 1Creek terrace, $SW_{\pm}NW_{\pm}$ sec. 11, blk. 1,Blue gumbo 9T. T. R.R. Co. survey, $9\frac{1}{2}$ miles westGray sandy clay 5of Canyon.Struck water at 7 feet.Sandy clay materials 33Brown sandy clay 14Tan sandy clay 210	(feet) (feet)	(leet) (leet)		
Light-brown eley212Well 175Dark-brown eley1313Light-brown send922Reddish-yellow elay325Struck water at 13 feet.Gray sandy waxy elay8Caving at 25 feet.Gray sandy waxy elay8Water level, 12.1 feet below top ofFine-grained pink sund2ground, $\frac{1}{4}$ hour after hole completed.Gray sand md clay2No water sample collected. July 1, 1937.Gray sand md clay2Woll 166Gray sandy waxy elay5Upland flat, NE4NE4 sec. 52, blk. B-5,Gray sand rock3H. & G. N. R.R. Co. survey, 10 milesGray sand rock3Well 169Gray sand rock	Thickness Depth (feet) (feet)Well 151 continuedBrown clay and ocliche- 114Struck rock at 14 feet.14Well 160Creek terrace, SW4NW4 sec. 11, blk. 1,T. T. R.R. Co. survey, 9½ miles westof Canyon.Sandy clay materials 33Brown sandy clay 112Dark-brown clay 212Dark-brown clay 212Dark-brown clay 212Dark-brown clay 212Derk-brown sand 922Reddish-yellow clay 325Struck water at 13 feet.Cereit 200 Struck water at 13 feet.Caring at 25 feet.Well 166Upland flat, NE4/NE4 sec. 52, blk. B-5,H. & G. N. R.R. Co. survey, 10 mileswest of Conyon.Silty clay meterials 33Servek at 28 feet.No water sample collected. June 19, 1937.Well 169Flat, NW4 sec. 76, blk. B-5, H. & G. N.R.R. Co. survey, 10 miles west of Canyon.Sity clay meterials 3SSurvek at 28 feet. <td colspan<="" th=""><th>Thickness Depth (feet) (feet)Well 174In drew, NW1 sec. 117, blk. B-5, H. &amp;G. N. R.R. Co. survey, 11 miles south- west of Conyon.Black wary clay 11Blue shale 522Struck water at 7 feet.Well 175Rolling land, SW1NW1 sec. 57, blk. K-14T. T. R.R. Co. survey, 12 miles south- west of Canyon.Gray sandy wary clay - 88Fine-grained yellow sendand clay 1220Fine-grained yellow sendand clay 224Gray sandy wary clay 529Tight gray sand 635Gray sand mod clay 1220Fine-grained pink sund - 222Gray sand mod clay 1220Fight gray sand 339Gray sand mod clay 1220Fight gray sand 3Gray sand mod clay 1220Fight gray sand 3Gray sand mod clay 2246Well 188Upland flat, NW2NE1 sec. 60, blk. M-8,<td col<="" th=""></td></th></td>	<th>Thickness Depth (feet) (feet)Well 174In drew, NW1 sec. 117, blk. B-5, H. &amp;G. N. R.R. Co. survey, 11 miles south- west of Conyon.Black wary clay 11Blue shale 522Struck water at 7 feet.Well 175Rolling land, SW1NW1 sec. 57, blk. K-14T. T. R.R. Co. survey, 12 miles south- west of Canyon.Gray sandy wary clay - 88Fine-grained yellow sendand clay 1220Fine-grained yellow sendand clay 224Gray sandy wary clay 529Tight gray sand 635Gray sand mod clay 1220Fine-grained pink sund - 222Gray sand mod clay 1220Fight gray sand 339Gray sand mod clay 1220Fight gray sand 3Gray sand mod clay 1220Fight gray sand 3Gray sand mod clay 2246Well 188Upland flat, NW2NE1 sec. 60, blk. M-8,<td col<="" th=""></td></th>	Thickness Depth (feet) (feet)Well 174In drew, NW1 sec. 117, blk. B-5, H. &G. N. R.R. Co. survey, 11 miles south- west of Conyon.Black wary clay 11Blue shale 522Struck water at 7 feet.Well 175Rolling land, SW1NW1 sec. 57, blk. K-14T. T. R.R. Co. survey, 12 miles south- west of Canyon.Gray sandy wary clay - 88Fine-grained yellow sendand clay 1220Fine-grained yellow sendand clay 224Gray sandy wary clay 529Tight gray sand 635Gray sand mod clay 1220Fine-grained pink sund - 222Gray sand mod clay 1220Fight gray sand 339Gray sand mod clay 1220Fight gray sand 3Gray sand mod clay 1220Fight gray sand 3Gray sand mod clay 2246Well 188Upland flat, NW2NE1 sec. 60, blk. M-8, <td col<="" th=""></td>	
Red clay and caliche 3   19    Standar mark of 15 Aret	Not offer and outfold   10   10     Brown clay and caliche - 10   29     Reddish-brown clay 4   33     No water sample collected. Aug. 17,1937.     Well 171     Flat, NE ¹ / ₄ SE ¹ / ₄ sec. 82, blk. B-5, I. & G.     N. R.R. Co. survey, 12 ¹ / ₃ miles west of     Canyon.     Black surface materials 3     And clay 3     Red sandy clay 6     No water sample collected. Aug. 21,1937.	No water sample collected.Mo water sample collected.Mell 191Upland flat, NW4NE4 sec. 44, blk. M-8,A. B. & M. survey, 13 miles south ofCanyon.Sendy clay materials 3Caliche and sondy clay 4Brown clay end caliche 19Struck rock at 26 feet.No water sample collected.May 25, 1937.		

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-29-Logs of W. P. A. test wells in Randall County--Continued

Thickness	Depth	Thickness (feet)	Depth (feet)
Well 192 Upland flat, SWINEL sec. 47, blk. A. B. & M. survey, 101 miles south Canyon. Dark-colored clay materials- 3 Light-brown clay and cali- che	M-8, 1 of 3 14 25 , 1937.	Well 200 Upland flat, SEISEI sec. 96, blk A. B. & M. survey, J2 ¹ miles sou of Canyon. Dark-chlored clay mate- rials	c. M-8, atheast 4 13 19 26,1937
Well 193 Upland flat, $NW_{\pm}^{1}NE_{\pm}^{1}$ sec. 4, blk. M A. B. & M. survey, 10 miles south Canyon. Silty clay materials 2	4-8, of 2	Well 201 Upland flat, $SE_4^1SE_4^1$ sec. 32, bl J. H. G. survey, $14\frac{1}{2}$ miles south of Canyon. Dark-colored clay mate-	(. M-9, least
Clay and caliche1 Caliche5	3 8	rials 4 Light-brown clay and cali-	4
Light-brown clay 12 Dark-brown clay and cali-	20	che 5 Dark-brown clay and cali-	9
che 8	28	che 1 Light-brown clay and cali-	10
No water sample collected. May 25,	1937.	che2	12
		che 4 Struck rock at 16 feet.	16
		No water sample collected. June	1,1937

#### Partial analyses of water from wells in Randall County, Texas

(Ana)	Analyzed at the University of Texas under the direction of Dr. E. P. Schoch, Director of the Bureau of Industrial														
Cher	Chemistry; by J. E. Stulken, D. F. Riddell, H. T. Davidson, Floyd H. Ward, and F. G. Steer, Chemists; and J. A.														
	Harmaza, Martin	Wieland,	and Ja	ick F	lamse	y, Assistant	Chemis	sts. Nit	rate determin	ned by ]	E. W. 1	Lohr, l	J. S.	,	
Geol	ogical Survey. R	esults ar	e in p	arts	per	million. We	ll num	ibers cor	respond to n	umbers i	n tab	<u>le of v</u>	rell re	cords.)	
		Depth	D	)ate		Total	Cal-	Magne-	Socium and	Bicar-	Sul-	Chlo-	Ni-	Total	
Well	Owner	of		of		dissolved	cium	sium	Potassium	bonate	phate	ride	trate	hardness	
No.		well	coll	ecti	on	solids	(Ca)	(Mg)	(Na ≠ K)	(먹CO3)	$(S0_4)$	(C1)	(MO3)	as CaCO ₃	
		(ft.)				(calculated)			(calculated)					(calculated)	
1	Mrs O'Brien	150	June	10,	1937	245				232	29	9	b/	-	
2	John Menke	183	Aug.	17,	1937	282	47	29	19	256	47	14	<u>b</u> /	238	
9	R. T. Beaman	187	May	21,	1937	273	-		-	262	25	14	.b/	-	
15	E. Garrison	224	July	28,	1937	280	37	38	20	275	39	19	b/	248	
17	L. F. Koenig	275		do.		320	44	33	30	256	59	28	<u>b</u> /	245	
33	C. F. Marshall	91	May	8,	1937	-	-	-		-	15	19	b/	-	
36	S. B. Orton	148	May	12,	1937	280		08		256	25	22	b/	-	
38	W. J. Olver	171	May	21,	1937			-		_	190	28	<u>b</u> /	-	
42	R. P. Boehning	176	May	20,	1937	284	÷-			268	22	21	b/		
51	W. F. Boehning	180	May	8,	1937		-	-		**	25	56	b/		
52	Carl Overton	180	May	20,	1937	274			-	250	34	13			4
57	J. E. Albers	171	May	8,	1937	311		-		238	37	41	<u>b</u> /	-	9
58	do.	185		do.		295				232	29	41	<u>b/</u>		
65	L. H. Crawford	39	Apr.	19,	1937	362	-		-	354	25	23	b/		
69	J. P. Hicks	90	May	12,	1937	778	~~		**	256	306	86	<u>b/</u>	-	
70	W. P. A. test	43	May	4,	1937	966	-			366	299	155	<u>b/</u>	~	
72	Loan Co.	58	May	8,	1937	1,267	-	-	-	323	525	165	<u>b</u> /	-	
81	G. W. Cox	150	May	1,	1937		÷.				25	8	<u>b</u> /	-	
82	do.	25	May	7,	1937	462	-		-	433	48	25	<u>b</u> /		
84	do.	37		do.		463	58	43	64	464	48	22	<u>b</u> /	321	
86	J. G. Ford	320	May	1,	1937	467	-	÷-	-	354	92	30	b/		
88	Phillis I. Stanf	ield -	******	do.		425		-		336	65	37	<u>b</u> /		
94	W. P. A. test	60	May	4,	1937	189	~	-		195	15	5	<u>b</u> /		
96	City of Canyon	488	Apr.	23,	1937	415	11	5	151	360	51	20	<u>b</u> /	48	
97	do.	490		do.		408	11	4	150	354	51	18	b/	42	
100	J. N. Sea	52	Mav	14.	1937	720		+=		427	175	78	b/		
101	W. P. A. test	13	Apr.	$\frac{14}{14}$	1937					-	806	180	41		
108	do.	38	Apr.	13,	1937						14	8	<u>b</u> /		
110	Price Brothers	75	Apr.	15,	1937	318				262	22	46	<u>b</u> /		
112	A. B. Haynes	83		do.	****	534	-	······		287	84	115	<u>b</u> /		
113	J. R. Hicks	-	May	1.	1937	333				305	29	27	<u>b/</u>		

b/ Nitrate less than 20 parts per million.

Partial analyses of water from wells in Randall County--Continued Results are in parts per million.

					2000									
		Depth		Date		Total	Cal-	Magne-	Sodium and	Bicar-	Sul-	Chlo-	Ni-	Total
Well	Owner	of		of		dissolved	cium	sium	Potassium	bonate	phate	ride	trate	hardness
No.		well	col	lect	ion	solids	(Ca)	(Mg)	(Na 🖌 K)	$(HCO_3)$	$(S0_4)$	(C1)	$(NO_3)$	as CaCO ₃
		(ft.)				(calculated)	ļ		(calculated)				Ŭ	(calculated)
116	Melton Dooley	40	May	7,	1937	360				384	23	8	<u>b/</u>	
122	Tim Bible	103		do.		355	-		-	256	55	43	b/	
126	Fay McIntire Est.	25	May	14,	1937	453	-		-	342	40	32	50	-
132	Bill Blac ^v	121		do.		322	-		-	293	40	16	<u>b</u> /	-
136	Baber	134	May	31,	1937	**	-	-	-144	-	33	16	<u></u>	-
147	Belles	190	June	16,	1937	**	-		-	-	40	90	<u>b</u> /	
156	California Life In	s.118	May	18,	1937	200			-	195	20	9	<u>b</u> /	
	Co.			-										
157	L. A. Pierce	234	June	16,	1937	423			ميد	403	44	20	b/	-
167	Mrs. Louise Simms	120	July	1,	1937	280	34	34	25	256	43	18	<u>b</u> /	226
170	Fenry Battenhorst	-	June	9,	1937	401		-		293	55	47	b/	-
177	Walter Graham	410	Aug.	17,	1937	1,930	33	13	661	329	521	540	<u>b</u> /	138
178	J. L. Sullivan	145	Aug.	18,	1937	497	76	49	38	287	97	96	<u>b/</u>	390
]84	Mrs Cook	112	May	7,	1937	428	-	-	-	403	48	19	<u>b/</u>	
187	J. W. Stubblefield	134	May	26,	1937	232		-		171	23	39	b/	
189	Embry Finley	123	May	19,	1937	288			-	262	33	17	<u>b</u> /	- 1
195	Chas. J. Beckman	89	May	31,	1937	330	-		-	305	37	18	<u>b</u> /	
196	Jasper Jennings	160	June	1,	1937	233	-		-	214	29	11	b/	-
198	E. V. Miller	150	June	9,	1937	258	-	-		268	15	11	<u>b</u> /	-
199	R. B. Gist	152	June	15,	1937	267	***			244	25	20	<u>b</u> /	
199A	Walter Darlington	157	June	1,	1937			-	-	***	20	17	<u>b</u> /	-
199B	do.	141		do.		249		-	-	207	37	17	<u>b</u> /	**
202	Elmer Bauer	140	May	31,	1937	324	-	-	-	231	51	14	<u>b</u> /	***
204	J. A. Tibbets	120	May	19,	1937	328		-	-	329	33	7	<u>b/</u>	
210	Mrs. Allie Buzbee	***		do.		-	-	-	-	-	37	12	<u>b</u> /	-

b/ Nitrate less than 20 parts per million.

