

SCANNED

DATA SHEET AND DISCUSSION



LOCATION: SE SW (661 feet North of South line and 1989 feet East of West line), Section 22, Township 2 North, Range 34 West, Washington County, Colorado

COMMENCED: July 29, 1959

COMPLETED: Set 5½" Casing, August 4, 1959

CONTRACTOR: Exeter Drilling Company, Denver, Colorado

CASING: Set 3 joints, 92 feet of 8 5/8 inch, 24 pound 8 rough thread new casing at 103 feet with 80 sacks of cement, 2% Calcium Chloride, 4% Gel. Set 124 joints, 4904.81 feet of 5½ inch, 15.5 pound 8 round thread J-55 L.S. casing at 4915 with 100 sacks of 50-50 Posmix 2% Gel, Centralizers 4912-4971-4825 and 4782. 7 Sections Halliburton Roto Wall Scratchers 4910 to 4872. 13 Sections Halliburton Roto Wall Scratchers 4848 to 4775. Plug at 4867. Casing head was 8.5 feet below Kelly Bushing.

MEASUREMENTS: All measurements are taken from the Kelly Bushing approximately 8 feet above the ground elevation. A 5 foot downward correction is necessary to make drilled depths match log depths in the "D" Sand.

ELEVATION: 4503 Ground (Powers) - 4511 Kelly Bushing

<u>Formation</u>	<u>Sample Tops</u>	<u>Log Tops</u>	<u>Datums</u>
Niobrara	3915	3914	+ 397
Timpas	4309	4314	-/197
Carlile	4352	4370	+ 141
Greenhorn	4456	4456	+ 55
Mowry	4588	4689	- 178
Brown Lime	4692	4694	- 183
"D" Sand	4769	4774	- 263
"J" Siltstone	---	4854	- 343
"J" Sand	4845	4863	- 357
Total Depth	4915	4916	- 405

DISCUSSION: The "D" Sand, 4774 (-263), ran level with the well to the north instead of higher as had been expected. The sand was cored from 4780 to 4827. The sand from 4780 to 88 was reworked with some shows and can be considered as poor gas sand. Good sand was recovered from 88 to 93 and fair sand from 4793 to 95½. Drill Stem Test #2 4784 to 96, tested this zone at 4,500,00 cubic feet per day with a fog of muddy water that could have been filtrate water. This zone should complete for over 6 million cubic feet per day with very little if any water. There were shows to 4811½ which Drill Stem Test #1, 4794 to 4811, proved to be water bearing with the gas in this test probably coming from 4794 to 95½. This was unexpected since the oil water contact in the wells to the west is between a -300 to -305 and the bottom of this test was a -300. The base sand from 4804 to 43 is a water sand with a few stringers of

Discussion ( Continued)

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oil trapped below shale or tight streaks in the top 7 feet, which can not be produced commercially.

The "J" Sand, 4863 (-357) was drilled and the samples checked, with no shows being noted, in the small amount of sand recovered in the samples. The electric log indicated all water bearing sand.

Submitted by,

*George D. Volk*

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Petroleum Geologist

GDV:sh

## DRILL STEM TEST RECORD

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Drill Stem Test #1      4789 to 4806  
Corrected to Log    4794 to 4811

The tool was open one minute shut in for 30 minutes, open one hour, then shut in for 30 minutes. It had a good blow with gas reaching the surface in 3 minutes, gauged at 12000 cubic feet per day. The test started flowing water with the gas after 75 minutes which was during the final shut in period and 15 minutes after the tool was closed. The test recovered 2185 feet of gas out water with no show of oil.

Initial Shut in pressure	1115	pounds	per	square	inch
Final shut in pressure	990	"	"	"	"
Initial flow pressure	315	"	"	"	"
Final flow pressure	1085	"	"	"	"
Initial hydrostatic pressure	2615	"	"	"	"
Final hydrostatic pressure	2595	"	"	"	"
Bleed off pressure	1500	"	"	"	"
Bottom Hole temperature	138°	"	"	"	"

Drill Stem Test #2      4784 to 4796

Straddle packer test from log at total depth of 4916. The tool was open one minute shut in for 30 minutes, open one hour, then shut in for 30 minutes. It had a strong blow with gas to the surface in one minute gauging at 1,800,000 cubic feet per day in 11 minutes building to 4,500,000 in 20 minutes and holding steady during test period (13.5¢ on 2" side static nipple). A fog of water and mud reached the surface in 20 minutes and failed to clear. The test recovered 10 feet of muddy water.

Initial Shut in pressure	1180	pounds	per	square	inch
Final shut in pressure	1160	"	"	"	"
Initial flow pressure	535	"	"	"	"
Final flow pressure	800	"	"	"	"
Initial hydrostatic pressure	2600	"	"	"	"
Final hydrostatic pressure	2672	"	"	"	"
Bleed off pressure	1500	"	"	"	"
Bottom hole temperature	148°	"	"	"	"



## DRILLING TIME RECORD

From - To:Minutes per 5-foot intervalsRemarks

3800-50	3-3-3-3-3-3-3-3-3-3
3850-3900	3-3-4-4-3-3-3-3-3-3
3900-50	3-3-3-4-5-4-4-4-3-3
3950-4000	3-3-3-3-3-3-3-3-3-3
4000-50	3-3-4-4-4-4-4-4-4-4
4050-4100	4-4-4-4-4-4-4-4-4-4
4100-50	4-4-4-4-4-4-4-4-4-4
4150-4200	4-4-5-4-5-5-5-5-5-5
4200-50	5-5-5-5-5-5-5-5-4-4
4250-4300	4-4-4-4-4-4-4-4-4-4
4300-50	4-5-7-8-6-7-6-6-4-5
4350-4400	5-5-5-3-5-5-5-4-4-5
4400-50	4-4-4-4-4-4-4-3-3-4
4450-4500	4-5-6-6-6-6-6-6-6-6
4500-50	5-6-6-6-5-4-4-3-3-3
4550-4600	3-3-3-3-3-3-3-3-3-3
4600-50	3-3-3-3-3-4-4-3-3-3
4650-4700	3-3-3-3-3-3-3-3-5-4
4700-50	4-5-3-4-4-4-3-3-6-5

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Minutes per 1-foot intervals

4750-60	1-1-1-1-1-1-1-1-1-1
4760-70	1-1-1-1-1-1-1-1-1-1
4770-75	1-1-1-1-1-1-1-1-1-1
4775-80	10-7-6-7-5
4780-90	6-6-10-12-11-12-12-6-5-6
4790-1800	9-8-11-9-9-7-10-11-5-7
4800-10	6-6-6-10-10-10-13-8-9-9
4810-20	9-10-9-10-11-10-11-9-9-9
4820-26	11-7-6-7-10-21*

Core #1

Core #1

Core #1

Core #1

Core #1

Note: Core barrel jammed with 52 feet of core in barrel  
all recovered

4826-30	1-1-1-4
4830-40	5-3-3-5-4-4-3-4-5-3
4840-50	5-6-4-5-5-2-2-3-3-3
4850-60	3-3-3-7-5-9-7-7-8-8
4860-70	8-9-5-4-6-5-3-2-1-4
4870-80	1-9-8-1-8-4-3-4-4-1
4880-90	1-1-1-1-1-1-5-2-4-5
4890-1800	5-5-4-5-8-11-12-11-9-4
4900-10	7-6-5-6-8-8-5-5-4-5
4910-15	3-4-8-15-15*

(\* - Trip)

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BIT RECORD

No	Make	Size	Type	From	To	Footage Drilled	Hours Run	Condition
1	CP	7 7/8	SIC	125	- 3408	3283	17	Dull
2	Hughes	"	OSC-3	3408	- 4332	924	11	Dull
3	Hughes	"	OSC-3	4332	- 4775	443	9	Dull
4	Diamond	6 5/8	Core	4775	- 4827	52	8	Not Hurt
4	CP	7 7/8	SMIV	4875	- 4915	40	9	NO

LOG RECORD

Date	Depth	Wt	Vis	St. Vis	Sol. Strength		pH	Water Loss in cc	Wall Cake in 32nds	Tester		
7/30/59	1610									Plains Mud Co		
8/1/59	4775	10	78	37	3	36	9	5.6	2	"	"	"
8/2/59	4847	10	73	42	2	16	9	5.6	2	"	"	"

# SAMPLE LOG



3800-10	Shale dark gray
20	Ditto
30	Ditto
40	Ditto
50	Ditto
60	Ditto
70	Ditto
80	Ditto
90	Ditto
3900	Ditto
3900-10	Ditto
3915	<u>Nebraska</u>
20	Ditto
30	Ditto; trace shale gray to dark gray mottled white to brown calcareous
40	Ditto; trace ditto
50	Ditto; little ditto
60	Ditto; little ditto
70	Shale gray to dark gray mottled white to brown calcareous and shale dark gray
80	Ditto; little ditto
90	Ditto; little ditto
4000	Same
4000-10	Same
20	Same
30	Same
40	Same
50	Same
60	Same
70	Same
80	Same
90	Same
4100	Same
4100-10	Same
20	Same
30	Same
40	Same
50	Same
60	Same
70	Same
80	Same
90	Same
4200	Same
4200-10	Same
20	Same
30	Same
40	Same
50	Same; trace limestone gray shaley dense
60	Same
70	Same
80	Same
90	Same; trace limestone gray shaley dense
4300	Same; trace ditto
4309	<u>Timpa</u>
4300-10	Same; trace ditto
20	Same; trace ditto
30	Same; trace ditto



## Sample Log (Continued)

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4330-40	Shale dark gray; trace limestone white dense; some calcareous shale as before
50	Ditto; trace ditto; some ditto
4352	<u>Carlile</u>
60	Ditto; trace ditto; trace ditto
70	Ditto; little ditto
80	Ditto; little ditto
90	Ditto; little ditto
4400	Ditto; little ditto; trace siltstone
4400-10	Shale dark gray; trace limestone white dense
20	Ditto; trace ditto
30	Ditto; trace ditto
40	Ditto; trace ditto
50	Ditto; trace ditto
4450	<u>Greenhorn</u>
60	Ditto
70	Ditto
80	Ditto; trace siltstone gray
90	Ditto; trace ditto
4500	Ditto, partly calcareous; trace ditto
4500-10	Ditto, partly calcareous; little ditto; trace limestone buff crystalline
20	Ditto, partly calcareous; little ditto; trace ditto
30	Ditto, partly calcareous; little ditto; trace ditto
40	Ditto, partly calcareous; trace ditto
50	Ditto; little ditto; trace limestone crystalline
60	Ditto; trace ditto; trace ditto
70	Ditto; trace ditto; trace ditto
80	Ditto; trace ditto; trace ditto
90	Ditto; trace ditto; trace ditto
4600	Ditto; trace ditto; trace ditto
4600-10	Ditto; trace ditto; trace ditto
20	Ditto; trace ditto
30	Ditto; trace ditto
40	Ditto; trace ditto
50	Ditto
60	Ditto
70	Ditto
80	Ditto
4688	<u>Mary</u>
4692	<u>Brown Line</u>
90	Ditto
4700	Ditto
4700-05	Shale dark gray
10	Ditto
15	Ditto
20	Ditto; trace limestone buff to brown crystalline
25	Ditto; trace ditto
30	Ditto; little ditto
35	Ditto; trace ditto
40	Ditto; trace siltstone gray
45	Ditto
50	Ditto
55	Ditto
60	Ditto
65	Ditto

Sample Log (Continued)



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4769 (-258)	<u>"D" Sand</u>
70	Shale dark gray
75	Ditto
4775a Circ. 30	
Min.	Ditto; little sand gray fine silty tight, partly fluorescence
4775 Circ. 60	
Min.	Ditto; little ditto
4775 to 4827	See Core Description
4827 to 30	Ditto; little ditto
35	Ditto; little ditto
40	Ditto; little ditto; trace fluorescence
45	Ditto; little ditto; no show
4845	<u>"J" Sand</u>
50	Ditto; little ditto; no show
55	Ditto; little sand gray fine to medium partly silty, no show
60	Ditto; little ditto
65	Ditto; trace ditto; surface sand after working on pump
70	Ditto; trace ditto; some ditto
75	Ditto; trace ditto; some ditto
80	Ditto; little sand gray fine porous, no show
85	Ditto; trace ditto some unconsolidated
90	Ditto; trace ditto, some unconsolidated
95	Ditto; trace ditto, some unconsolidated
1000	Ditto; trace ditto, some unconsolidated
1000-05	Ditto; trace ditto; some unconsolidated, no show
10	Ditto; trace ditto
15	Ditto; trace ditto
1015 Circ. 30	
Min.	Ditto; trace ditto
1015 Circ. 60 Min.	Ditto; trace ditto



BEST IMAGE  
AVAILABLE

## CORE DESCRIPTION AND CORE ANALYSIS RECORD



Core #1      4775 - 4827    Full Recovery  
              4780 - 4833    Log Measurements

4775-83 (8' - 0")	Sand gray fine silty tight, slightly reworked with streaks thinly laminated with shale dark gray streaks of fluorescence. Possible poor gas sand.
4783-88 (5' - 0")	Sand gray fine porous few thin shale laminations pen point fluorescence weak gas odor in spots. (Possible gas sand.)
4788-90½ (2' - 6")	Sand gray fine silty slightly reworked with shale dark gray streaks of fluorescence. (Possible fair gas sand.)
4790½ - 99½ (9' - 0")	Thinly laminated sand gray fine silty tight, shale dark gray siltstone gray and chert brown, few thin beds of sand with good fluorescence (90.7 to 91, 93.3-95.5, and 96 to 96.5).
4799½ - 4804½ (5' - 0")	Thin beds of sand gray fine partly silty porous with some of the beds having good fluorescence staining and odor, rest no show.
4704½ - 06½ (2' - 0")	Sand gray fine porous, good odor, partly stained.
4706½ - 27 (20' - 6")	Sand gray fine porous, no show, occasional thin shale bed or right streak with few streaks thinly laminated with shale near bottom.

# CASING SUPPLEMENT



	4915
1	<u>46.10</u>
	4868.90
2	<u>43.42</u>
	4825.48
3	<u>43.10</u>
	4782.38
4	<u>40.38</u>
	4742.00
5	<u>42.33</u>
	4699.67
6	<u>37.88</u>
	4661.70
7	<u>42.55</u>
	4619.24
8	<u>38.52</u>
	4580.72
9	<u>42.09</u>
	4538.63
10	<u>42.29</u>
	4496.34
11	<u>42.09</u>
	4454.25
12	<u>40.18</u>
	4414.07
13	<u>42.51</u>
	4371.56
14	<u>42.59</u>
	4328.97
15	<u>42.48</u>
	4286.49
16	<u>40.88</u>
	4245.61

Centralizer 4912

7 Sections Roto wall Scratchers 4918 to 4870

Centralizer 4870 to 72 - Plug 4867

Centralizer

13 Sections Halliburton Roto wall Scratchers 4848 to 4775

Centralizer