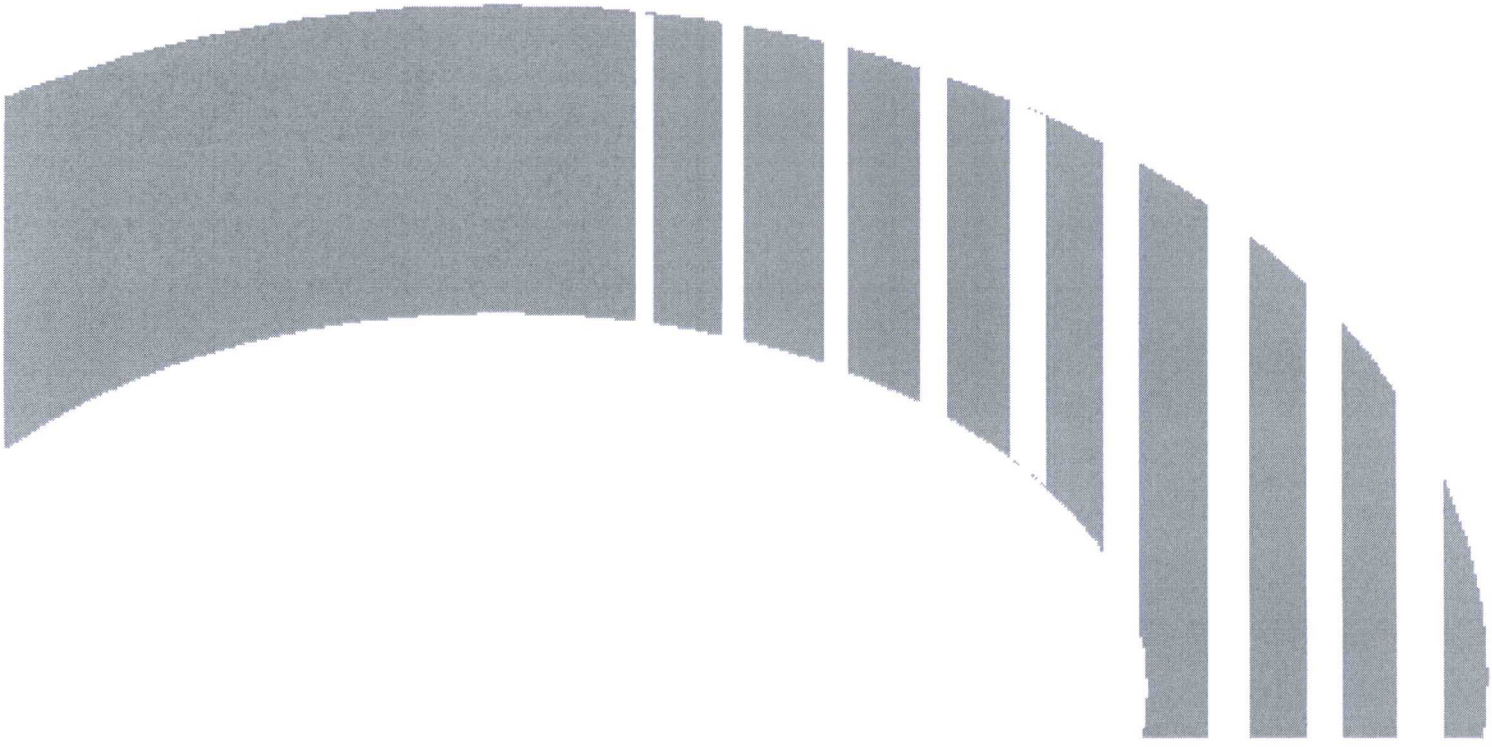
Techwell Surveys Corporation

Production Profile Interpretation Report

Company:	**Amtex Energy, Inc.**
Field:	**Bone Spring - Wolfcamp**
Well:	**Dagger State Unit #1**
Survey Date:	**12-12-2016**
Service Company:	**Techwell Surveys Corporation**
Interpretation Date:	**12-14-2016**
Analyst:	**JD Taylor**
	CL Grumbles Co. Rep.



Techwell Surveys Corporation	Job Information	Dagger State_1
	Company: Amtex Energy, Inc. Field: Bone Spring - Wolfcamp Well: Dagger State Unit #1	Test: Flowing 21/64 Choke Date: 12-12-2016 Survey: Survey # 1

Survey date	12-12-2016	Interpretation date	12/14/2016
Service company	Techwell Surveys Corporation	Done by	JD Taylor
SURVEY	Survey # 1		
Surface rates		Gas	175 Mscf/D
Oil	110 STB/D	Water	561 STB/D
TOOLS			
String O.D.	1.375 in	Capacitance	
Spinner blade O.D.	3. in	Calib. type	Yw vs norm. resp.
Density	Corrected	Default chart	CWH Water-Hydrocarbon
		100% Water	11227 cps
		100% HC	16301 cps
INTERPRETATION	Interpretation # 1		
Density offset	0 g/cc		
Capacitance offset	0 cps		
Flow type	3-Phase L-G		
Flow model L-G	Dukler		
Flow model W-O	ABB - Deviated		
Vpcf mult.	1		
Vslip mult.	1		
Vslip mult.W-O	1		

Comments

Run #1: Gauge run to 12580 (no tag) with simulated tool string with well flowing, 400 psi on the tubing string. Run #2, RIH with PL Stack, well flowing on a 21/64 choke with 400 psi on tubing. Record multiple passes in both directions to obtain data for flow profile (30,60,90 fpm). All intervals are contributing with percentage of inflow for each stage labeled on plot at reservoir conditions. Inflow zones are numbered from the top down while frac stages are numbered from the bottom up. Bottom hole pressure was decreasing over time as survey progressed. See graphical presentation below for analysis detail! Depth corrected to Halliburton CHI Porosity log dated 8-4-16.

Dagger State Unit #1 API # 30-025-27222
1980' FNL & 1980' FWL of Sec. 30, Range 33E, T21S
Lea County, New Mexico

JD Taylor Techwell Surveys Corporation 432-664-4978

Techwell
Surveys Corporation
Measurement & Analysis

Production Profile

Dagger State_1

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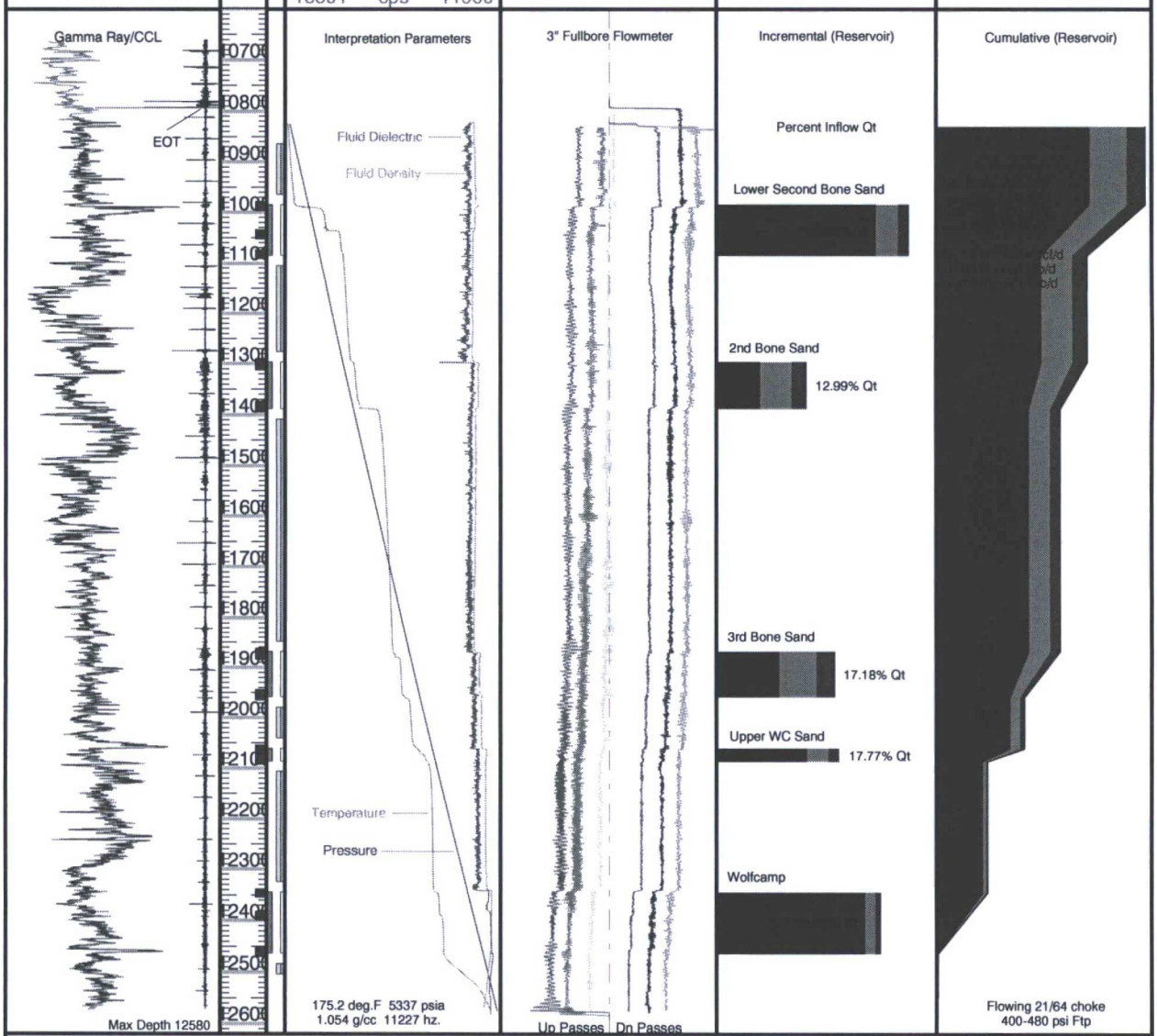
Gamma Ray-CCL	Depth (ft)	Interpretation # 1	Flowmeter	Rates	Rates
GR S1,U6		TEMP S1,I1	CFLOW (rps)	Rates (QZI) (B/D)	Rates (QZT) (B/D)
0 GAPI 200		160 °F 176	-8 8	0 250	0 800
CCL S1,U6		PRESS S1,I1			
40000. 48500.		4600 psia 5350			
GR S1,D5		GRAD S1,I1			
0 GAPI 200		0 g/cc 1.1			
		CWH S1,I1			
		16301 cps 11000			



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Pressure-Temp-FM

Dagger State_1

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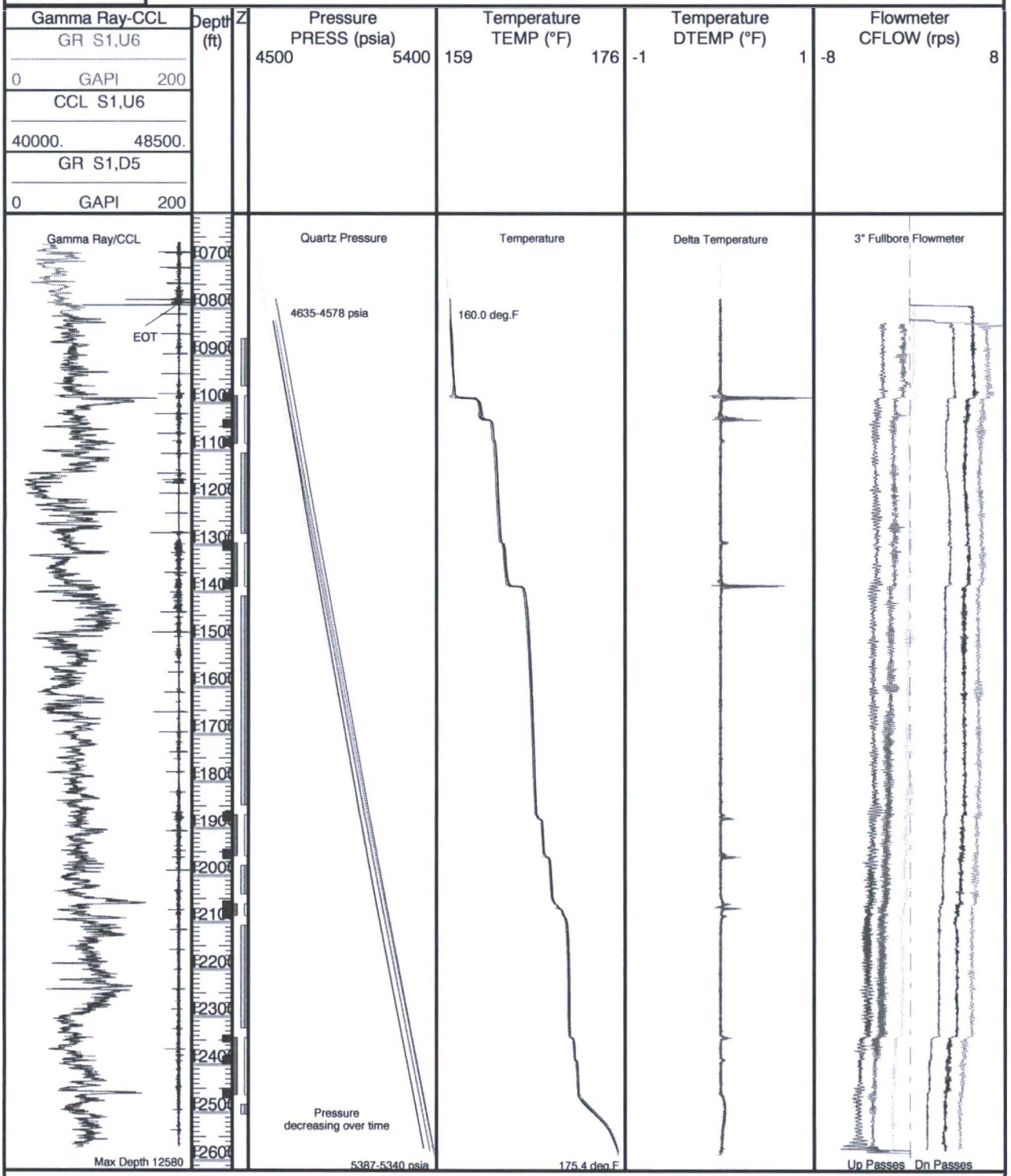

Techwell Surveys Corporation
Measurement & Analysis

Fluid Density-Dielectric-FM

Dagger State_1

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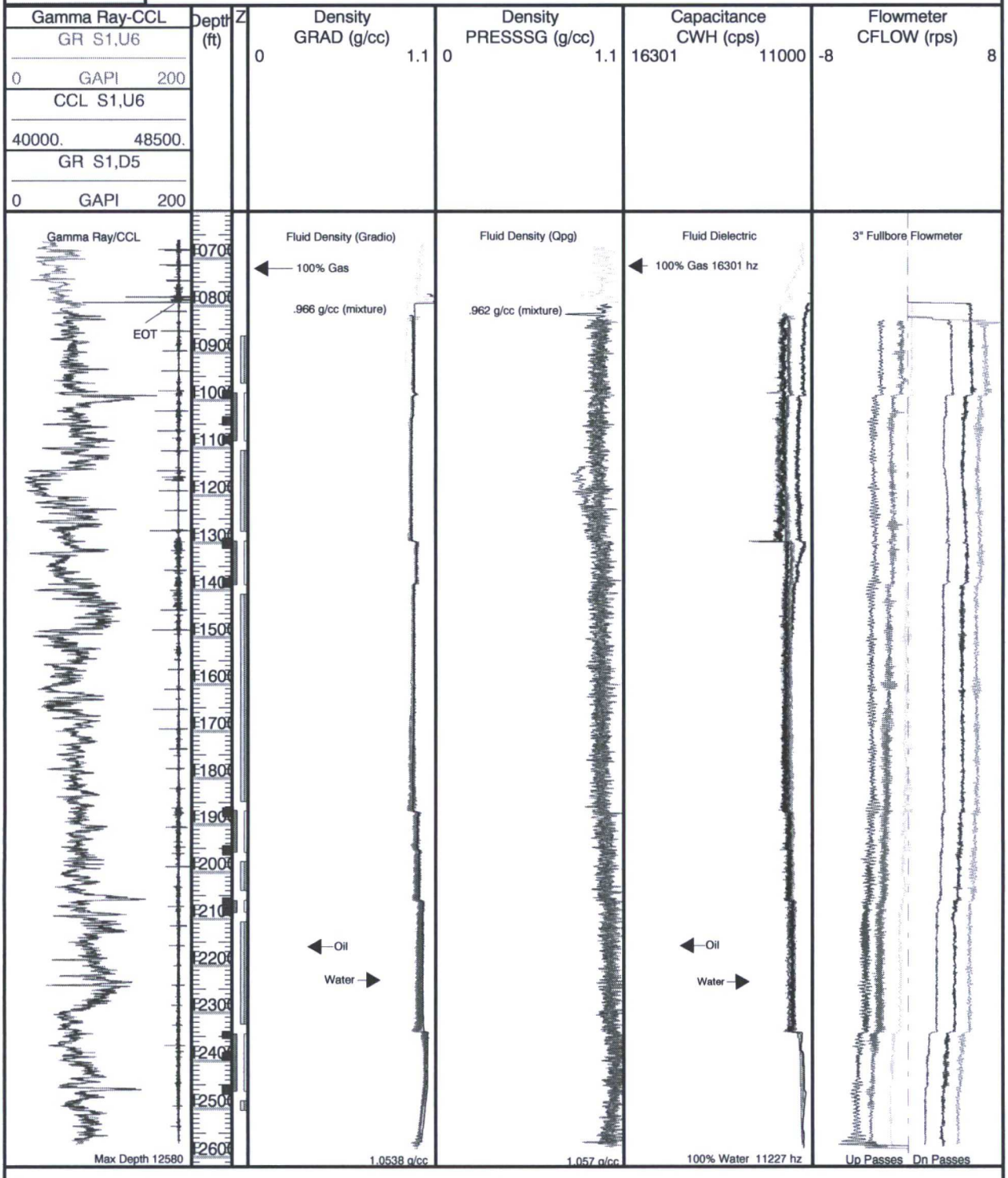

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Well Sketch-ID-LS-FM

Dagger State_1

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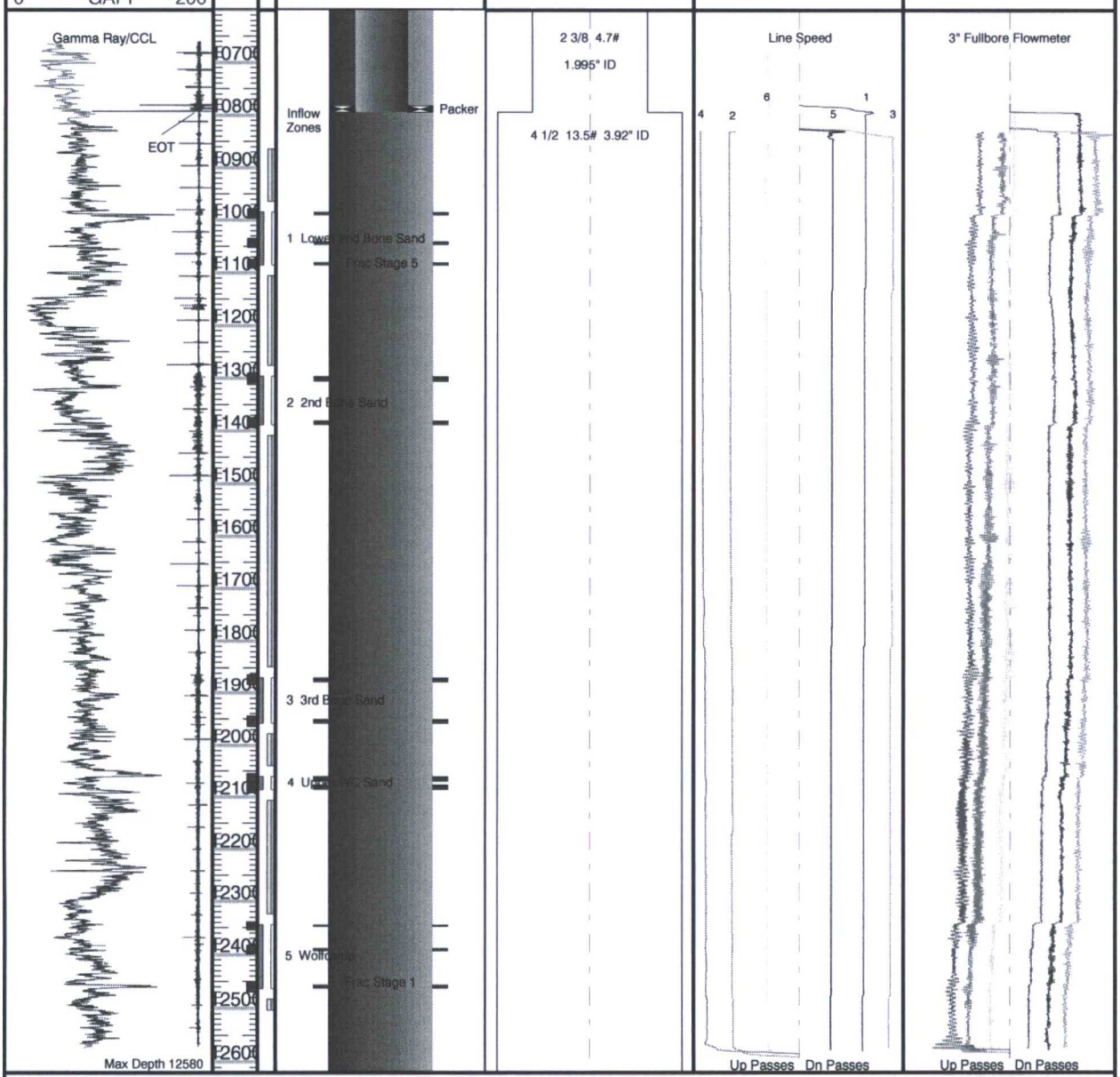
Gamma Ray-CCL	Depth (ft)	Z	Well Sketch (in)	Int. Diam. ID (in)	Cable Speed LSPD (ft/min)	Flowmeter CFLOW (rps)
GR S1,U6			-3.937 3.937	-2.2 2.2	-100 100	-8 8
0 GAPI 200						
CCL S1,U6						
40000. 48500.						
GR S1,D5						
0 GAPI 200						



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Field: Bone Spring - Wolfcamp
Well: Dagger State Unit #1

Test: Flowing 21/64 Choke
Date: 12-12-2016
Survey: Survey # 1

Zones ft	Water STB/D	Oil STB/D	Gas Mscf/D
10984.0-11085.0	178.43	20.07	31.97
11296.0-11388.0	47.38	28.10	43.04
11868.0-11958.0	68.92	33.52	52.63
12060.0-12086.0	100.24	19.10	31.01
12344.0-12463.0	165.70	9.31	16.13
Total	560.66	110.10	174.78

Zones ft	Qt res. B/D	Production %
10984.0-11085.0	218.41	28.13
11296.0-11388.0	100.89	12.99
11868.0-11958.0	133.43	17.18
12060.0-12086.0	138.02	17.77
12344.0-12463.0	185.80	23.93

Contributions by phase

Zones ft	Qw res. B/D	Qo res. B/D	Qg res. B/D	W O G
10984.0-11085.0	180.60	25.57	12.23	
11296.0-11388.0	48.01	35.86	17.02	
11868.0-11958.0	69.87	42.81	20.75	
12060.0-12086.0	101.65	24.41	11.96	
12344.0-12463.0	168.10	11.90	5.80	

Zone ft	Corr. factor	Vm ft/min	Q downhole B/D	Contribution %
10984.0-11085.0	0.90	36.133	776.70	28.13
11296.0-11388.0	0.89	25.987	558.60	12.99
11868.0-11958.0	0.89	21.279	457.40	17.18
12060.0-12086.0	0.89	15.064	323.80	17.77
12344.0-12463.0	0.88	8.644	185.80	23.93

Total rates by phase

Zone ft	Qw res. B/D	Qw s.c. STB/D	Qo res. B/D	Qo s.c. STB/D	Qg res. B/D	Qg s.c. Mscf/D
10984.0-11085.0	567.50	560.66	140.30	110.10	68.90	174.78
11296.0-11388.0	387.30	382.23	114.90	90.03	56.40	142.80
11868.0-11958.0	339.50	334.86	79.10	61.93	38.80	99.77
12060.0-12086.0	269.70	265.94	36.30	28.41	17.80	47.14
12344.0-12463.0	168.10	165.70	11.90	9.31	5.80	16.13

#	From-To ft	ID in	Deviation °	Rt	T °F	P psia
1	10864.0-10964.0	3.9200	0.0000	4.592E-4	160.0000	4647.4000
2	11105.0-11276.0	3.9200	0.0000	4.592E-4	164.0000	4756.6000
3	11408.0-11848.0	3.9200	0.0000	4.592E-4	168.0000	4932.3000
4	11978.0-12040.0	3.9200	0.0000	4.592E-4	169.0000	5089.1000

#	Bw	Muw cp	Rhow g/cc	Bo	Muo cp	Rhoo g/cc	Bg	Mug cp	Rhog g/cc
1	1.0122	0.4862	1.0400	1.2744	0.7148	0.7100	0.0036	0.0267	0.2300
2	1.0133	0.4696	1.0400	1.2763	0.7034	0.7100	0.0036	0.0269	0.2300
3	1.0139	0.4581	1.0400	1.2773	0.7045	0.7100	0.0035	0.0273	0.2400
4	1.0141	0.4514	1.0400	1.2777	0.7104	0.7100	0.0035	0.0278	0.2400

#	Correl.	Correl. W-O	Regime	Slip ft/min	Slip W-O ft/min
1	Dukler	ABB - Deviated	Bubble	59.945	20.537
2	Dukler	ABB - Deviated	Bubble	59.951	20.548
3	Dukler	ABB - Deviated	Bubble	59.965	20.552
4	Dukler	ABB - Deviated	Bubble	59.977	20.553

#	Yw	Yo	Yg	Vw ft/min	Vo ft/min	Vg ft/min
1	0.8400	0.1200	0.0341	31.4000	52.6000	94.0000
2	0.8400	0.1300	0.0312	21.4000	42.6000	84.1000
3	0.8800	0.0946	0.0226	17.9000	38.9000	79.9000
4	0.9400	0.0495	0.0111	13.4000	34.1000	74.4000

#	From-To ft	ID in	Deviation °	Rt	T °F	P psia
5	12106.0-12324.0	3.9200	0.0000	4.592E-4	171.0000	5177.9000
6	12483.0-12503.0	3.9200	0.0000	4.592E-4	173.0000	5302.7000

#	Bw	Muw cp	Rhow g/cc	Bo	Muo cp	Rhoo g/cc	Bg	Mug cp	Rhog g/cc
5	1.0145	0.4457	1.0400	1.2782	0.7109	0.7100	0.0034	0.0280	0.2400
6	1.0148	0.4391	1.0400	1.2789	0.7133	0.7100	0.0034	0.0283	0.2400

#	Correl.	Correl. W-O	Regime	Slip ft/min	Slip W-O ft/min
5	Dukler	ABB - Deviated	Bubble	59.980	20.555
6	Dukler	ABB - Deviated	No flow	0.000	N/A

#	Yw	Yo	Yg	Vw ft/min	Vo ft/min	Vg ft/min
5	0.9800	0.0193	0.0040	8.0100	28.6000	68.4000
6	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

FLUID TYPE	Water - Oil+Gas
GAS	
Specific gravity	0.68
N2 %	0
CO2 %	0
H2S %	0
Z	Beggs and Brill
Mug	Lee et al.
OIL	
Gravity	0.82 sp. gr.
GOR	561.458 cf/bbl
Pb	Standing
Rs	Standing
Bo	Standing
co	Vasquez and Beggs
Muo	Beggs and Robinson
WATER	
Salinity, ppm	71000.
Rsw	Katz
cw	Dodson and Standing
Muw	Van-Wingen+Frick

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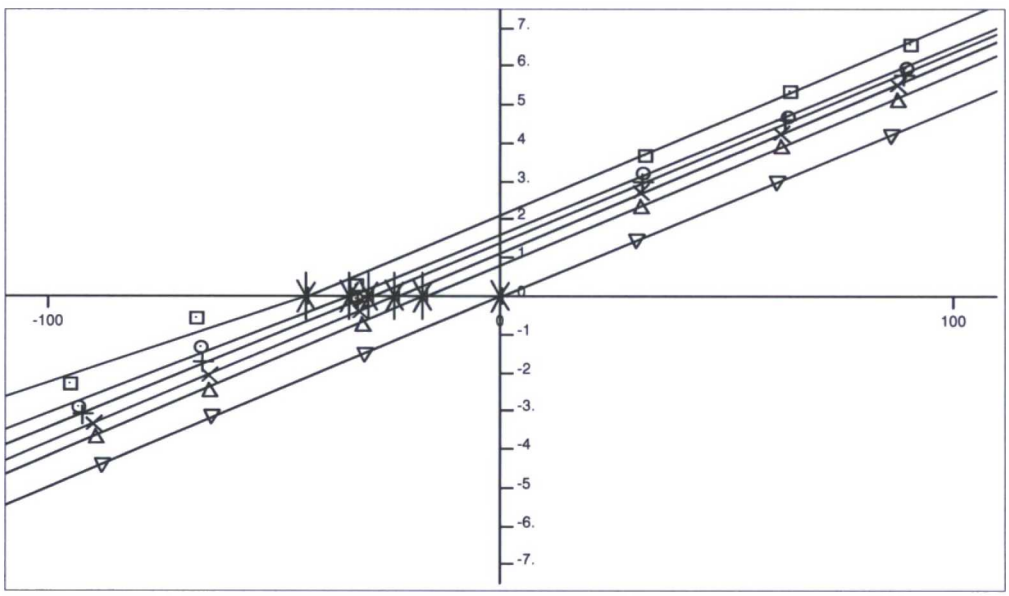

rps versus ft/min

Threshold (+) 0.712 ft/min

Threshold (-) -0.1199 ft/min

	Calib. Zone ft	Slope (+)	Slope (-)	Int (+) ft/min	Int (-) ft/min	Int. Diff. ft/min
□	10864.0-10964.0	0.050	0.040	-42.24	-43.07	0.83
○	11105.0-11276.0	0.049	0.046	-32.67	-33.50	0.83
+	11408.0-11848.0	0.050	0.048	-28.32	-29.15	0.83
×	11978.0-12040.0	0.050	0.050	-22.54	-23.37	0.83
△	12106.0-12324.0	0.050	0.050	-16.36	-17.19	0.83
▽	12483.0-12503.0	0.049	0.050	0.71	-0.12	0.83