

Results of Directional Survey

API number:	30-005-27994		
OGRID:		Operator:	CHESAPEAKE OPERATING
		Property:	WRINKLE FEDERAL COM # 1H

surface	ULSTR:	I	13	T	15S	R	31E
				1980	FSL	330	FEL

BH Loc	ULSTR:	L	13	T	15S	R	31E
13139	MD	8897.2	TVD	1952	FSL	4749	FEL

Top Perf/OH	ULSTR:	I	13	T	15S	R	31E
9208	MD	8933.1	TVD	1973	FSL	821	FEL

Bot Perf/OH	ULSTR:	L	13	T	15S	R	31E
13079	MD	8896.5	TVD	1954	FSL	4689	FEL

	MD	N/S	E/W	VD
	9207	-6.93	-490.16	8932.97
TOP PERFS/OH	9208	-6.88	-491.15	8933.11
	9238	-5.43	-520.84	8937.18
	12930	-21.66	-4210.26	8894.97
BOT PERFS/OH	13079	-26.34	-4359.18	8896.54
	13023	-24.58	-4303.21	8895.95

NEXT TO LAST	12930	-21.66	-4210.26	8894.97
LAST READING	13023	-24.58	-4303.21	8895.95
TD	13139	-28.22	-4419.15	8897.17

Surface Location	1980	FS	330	FE
Projected BHL	1952	FS	4749	FE
Location of				
Top Perfs/OH	1973	FS	821	FE
Bottom Perfs/OH	1954	FS	4689	FE

SUMMARY of Subsurface Locations

Surface Location	I-13-15S-31E	1980	FS	330	FE	Vert. Depth
Top Perfs/OH	I-13-15S-31E	1973	FS	821	FE	8933.11
Bottom Perfs/OH	L-13-15S-31E	1954	FS	4689	FE	8896.54
Projected TD	L-13-15S-31E	1952	FS	4749	FE	8897.17

A Gyrodata Directional Survey

Field Copy Only. not definitive

for

CHESAPEAKE ENERGY

Location: JW DRILLING #1, CHAVES COUNTY, NEW MEXICO
Lease: WRINKLE #13 FEDERAL COM Well: #1H, 4 1/2" DRILLPIPE

Job Number: MD0110GBM115

Run Date: 1/24/2010 9:16:59 PM

Surveyor: JASON SOLOMON

Calculation Method: MINIMUM CURVATURE

Survey surface coordinates obtained from: Directional Drilling Company
Survey Latitude: 33.014222 deg. N Longitude: 103.767333 deg. W

Azimuth Correction:
Gyro: -0.31000 deg to Grid North

Proposed Well Direction: 269.720 deg

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

SUR: L-13-15S-31e, 1980/S & 330/E
BHL: L-13-15S-31e, 1952/S & 4749/E
API # 30-005-27994

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MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	VERTICAL SECTION feet	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet	
0.00	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00 N	0.00 E
0 TO 7983 FT RATE GYROSCOPIC MULTISHOT SURVEY RUN INSIDE 4 1/2" DRILLPIPE ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO JW DRILLING #1 RKB 18 FT									
183.13	0.35	104.70	-0.5	0.19	183.13	0.6	104.7	0.14 S	0.54 E
365.93	0.37	105.08	-1.6	0.01	365.93	1.7	104.8	0.44 S	1.65 E
548.73	0.34	102.38	-2.8	0.02	548.72	2.8	104.4	0.71 S	2.75 E
735.89	0.27	132.69	-3.6	0.09	735.88	3.8	107.3	1.13 S	3.62 E
920.52	0.25	154.45	-4.1	0.05	920.51	4.5	113.5	1.78 S	4.11 E
1105.22	0.28	186.27	-4.2	0.08	1105.21	5.0	121.5	2.60 S	4.24 E
1293.66	0.46	265.33	-3.4	0.26	1293.64	4.6	132.2	3.11 S	3.43 E
1484.45	0.65	248.30	-1.6	0.13	1484.42	3.9	155.1	3.58 S	1.66 E
1675.38	0.26	258.23	-0.2	0.21	1675.35	4.1	176.7	4.07 S	0.23 E
1866.21	0.14	222.03	0.7	0.09	1866.18	4.3	184.6	4.33 S	0.35 W
2056.65	0.06	77.00	0.4	0.10	2056.62	4.5	185.2	4.48 S	0.41 W
2247.36	0.82	40.06	-0.6	0.41	2247.32	3.5	170.5	3.41 S	0.57 E
2437.47	0.66	60.84	-2.4	0.16	2437.41	3.0	127.4	1.84 S	2.40 E
2627.41	0.54	88.78	-4.2	0.16	2627.34	4.4	106.8	1.28 S	4.25 E
2818.47	0.50	94.41	-5.0	0.03	2818.40	6.1	102.5	1.33 S	5.98 E
3009.73	0.33	100.25	-7.3	0.09	3009.65	7.5	101.5	1.49 S	7.36 E
3200.66	0.35	109.40	-8.4	0.03	3200.58	8.6	101.9	1.78 S	8.45 E
3391.82	0.37	141.90	-9.4	0.11	3391.73	9.7	104.7	2.46 S	9.38 E
3582.76	0.30	132.69	-10.1	0.05	3582.67	10.6	108.0	3.29 S	10.13 E

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Job Number: MD0110GBM115

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	VERTICAL SECTION feet	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
3773.59	0.14	178.51	-10.5	0.12	3773.50	11.2 110.2	3.86 S 10.50 E
3964.87	0.23	236.69	-10.2	0.10	3964.78	11.1 112.9	4.30 S 10.18 E
4155.75	0.45	272.08	-9.1	0.15	4155.65	10.2 116.2	4.49 S 9.12 E
4346.76	0.41	288.91	-7.7	0.07	4346.66	8.8 118.8	4.24 S 7.72 E
4537.09	0.36	273.45	-6.5	0.06	4536.99	7.6 121.6	3.98 S 6.48 E
4727.43	0.40	303.14	-5.3	0.10	4727.32	6.4 123.9	3.58 S 5.33 E
4917.54	0.48	352.47	-4.7	0.20	4917.43	5.3 117.5	2.43 S 4.67 E
5107.66	0.36	314.35	-4.1	0.16	5107.54	4.3 106.5	1.22 S 4.13 E
5297.91	0.40	267.06	-3.0	0.16	5297.79	3.2 105.4	0.84 S 3.04 E
5488.26	0.40	285.97	-1.7	0.07	5488.13	1.9 111.6	0.69 S 1.74 E
5678.32	0.21	265.43	-0.8	0.11	5678.19	0.9 125.3	0.54 S 0.76 E
5868.59	0.29	282.04	0.1	0.06	5868.46	0.5 187.7	0.46 S 0.06 W
6058.84	0.39	259.83	1.2	0.09	6058.71	1.3 247.9	0.48 S 1.17 W
6248.07	0.26	261.63	2.2	0.07	6247.93	2.3 253.7	0.65 S 2.23 W
6436.97	0.40	246.90	3.3	0.09	6436.83	3.4 253.4	0.97 S 3.26 W
6625.42	0.49	249.62	4.6	0.05	6625.27	4.9 251.9	1.51 S 4.62 W
6814.11	0.30	243.11	5.8	0.10	6813.96	6.2 250.9	2.02 S 5.82 W
7002.71	0.49	244.31	7.0	0.10	7002.55	7.4 249.7	2.59 S 6.98 W
7191.30	0.62	253.68	8.7	0.08	7191.14	9.3 249.6	3.23 S 8.69 W
7379.59	0.66	256.96	10.7	0.03	7379.41	11.4 250.7	3.76 S 10.72 W
7568.14	0.44	210.97	12.2	0.25	7567.96	13.0 249.2	4.62 S 12.16 W
7756.96	0.32	117.49	12.1	0.30	7756.77	13.3 245.5	5.49 S 12.06 W
7945.37	0.61	122.81	10.8	0.16	7945.18	12.4 239.7	6.27 S 10.75 W

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7983.37	0.68	120.67	10.4	0.19	7983.17	12.3 238.0	6.50 S 10.39 W

Final Station Closure: Distance: 12.25 ft Az: 237.97 deg.

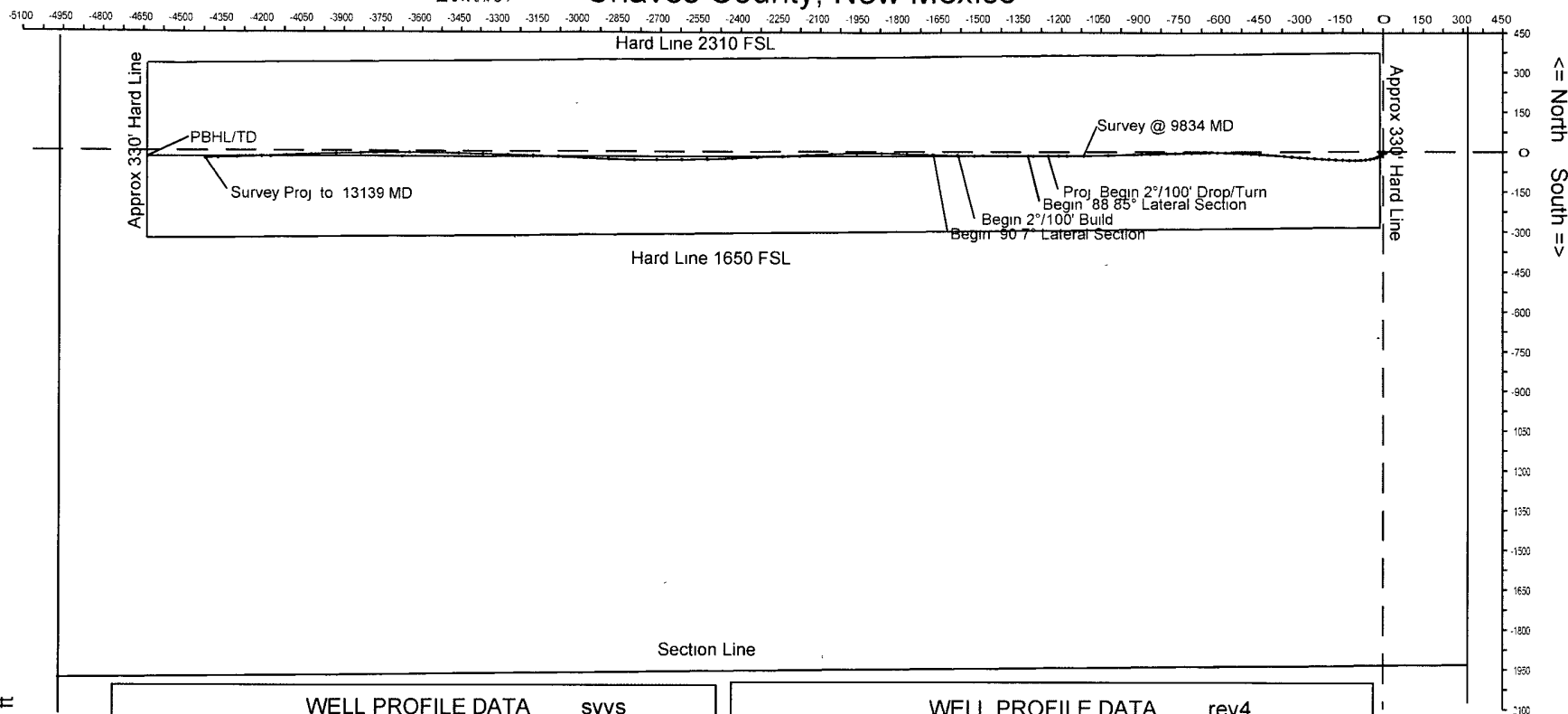
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Wrinkle 13 Federal Com 1H Chaves County, New Mexico

1 inch = 600 ft <= West East =>



True Vertical Depth 1 inch = 600 ft

WELL PROFILE DATA svys							
MD	Inc.	Azi.	TVD	N/-S	E/-W	DLS	Comment
13139	89.60	267.60	8897	-29	-4419	0.00	Survey Proj. to 13139 MD



Survey @ 9834 MD
Chk shot @ 9898 MD
Proj. Begin 2°/100' Drop/Turn
Begin 88.85° Lateral Section
Begin 2°/100' Build
Begin 90.7° Lateral Section

WELL PROFILE DATA rev4							
MD	Inc.	Azi	TVD	N/-S	E/-W	DLS	Comment
9834	90.90	269.60	8928	-14	-1116	0.00	Survey @ 9834 MD
9898	91.60	269.30	8926	-15	-1180	1.19	Chk shot @ 9898 MD
9968	90.30	269.50	8925	-15	-1250	1.88	Proj. Begin 2°/100' Drop/Turn
10043	88.85	269.88	8926	-16	-1325	2.00	Begin 88.85° Lateral Section
10303	88.85	269.88	8931	-16	-1585	0.00	Begin 2°/100' Build
10395	90.69	269.88	8931	-16	-1677	2.00	Begin 90.7° Lateral Section
13352	90.69	269.88	8895	-23	-4634	0.00	PBHL/TD

+10
-10

Target Line 8952 TVD @ 0° VS with 0.7° up dip (90.7°)

Survey Proj to 13139 MD

PBHL/TD

Vertical Section on 269.72 deg azimuth with reference 0.00 N, 0.00 E