

PCGC: Pressure Case Gamma
PCDC: Pressure Case Directional

[illegible]

WELL INFORMATION

MWD Run Number	100				
Date run completed	30-Apr-14				
Rig Bit Number	2				
Bit Size (in)	8.750				
Tool Nominal OD (in)	6.750				
Log Start Depth (TVD, ft)	799.96				
Log End Depth (TVD, ft)	6,950.31				
Drill or Wipe	Drill				
Drill/Wipe Start Date and Time	28-Apr-14 12:10				
Drill/Wipe End Date and Time	29-Apr-14 23:40				
Min Inc (deg) @ Depth (TVD, ft)	0.21 @ 1,571.84				
Max Inc (deg) @ Depth (TVD, ft)	80.12 @ 6,943.80				
Bit TFA(in2) / Bit Type	1.84 / PDC				
Flow Rate (gpm)	623.76				
Max AV (fpm) / CV (fpm) @ MWD	N/A / N/A				
Fluid Type	Polymer				
Density (ppg) / Viscosity (spqt)	10.20 / 40.00				
Filtrate CL (ppm)	1,200.00				
pH / Fluid Loss (mptm)	8.50 / 16				
PV (cP) / YP (lbf2)	13 / 11.00				
% Solids / % Sand	4.3 / 0.35				
% Oil / Oil:Water Ratio	N/A / N/A				
Rm @ Measured Temp (degF)	N/A @ N/A				
Rmf @ Measured Temp (degF)	N/A @ N/A				
Rmc @ Measured Temp (degF)	N/A @ N/A				
Max Tool Temp (deg F) @ C	170.07 / 326.13				

Max Tool Temp (degF) / Source	170.37 / PCM				
Rm @ Max Tool Temp (degF)	N/A @ N/A				
Lead MWD Engineer	Henry Schmeidler				
Customer Representative	Steve Record				

SENSOR INFORMATION

Downhole Processor Information

Tool Type	PCM				
Software Version	5.84				
Sub Serial Number	11254959				
Insert Serial Number	11620295				
Date and Time Initialized	28-Apr-14 06:51				
Date and Time Read	30-Apr-14 06:41				
ECMB SW Version	N/A				

Directional Sensor Information

Tool Type	PCDC				
Distance From Bit (ft)	56.50				
Software Version	6.21				
Sub Serial Number	11254959				
Sonde Serial Number	11297574				
Sensor ID Number	N/A				
Toolface Offset (deg)	19.70				

Gamma Ray Sensor Information

Tool Type	PCG				
Distance From Bit (ft)	51.50				
Recorded Sample Period (sec)	10				
Software Version	8.15				
Sub Serial Number	11254959				
Insert/Sonde Serial Number	11293380				

REMARKS

1. All depths are calibrated to the driller's pipe tally and are measured from the Rig drill floor.
2. No depth corrections have been made for pipe stretch or compression.
3. All data presented is recorded (memory data) unless otherwise stated.
 - ROPA: Average Rate of Penetration is real time data.
 - PGRC: Smooth Pressure Case Gamma Ray Borehole corrected is recorded data.
4. The following smoothing parameters have been applied to the data:
 - All 2" (1:600) logs - 1 ft. interval, 3 ft. coercion distance.
 - All 5" (1:240) logs - .5 ft. interval, .6 ft. coercion distance.
5. INSITE version 8.0.0

WARRANTY

HALLIBURTON WILL USE ITS BEST EFFORTS TO FURNISH CUSTOMERS WITH ACCURATE INFORMATION AND INTERPRETATIONS THAT ARE PART OF, AND INCIDENT TO, THE SERVICES PROVIDED. HOWEVER, HALLIBURTON CANNOT AND DOES NOT WARRANT THE ACCURACY OR CORRECTNESS OF SUCH INFORMATION AND INTERPRETATIONS. UNDER NO CIRCUMSTANCES SHOULD ANY SUCH INFORMATION OR INTERPRETATION BE RELIED UPON AS THE SOLE BASIS FOR ANY DRILLING.

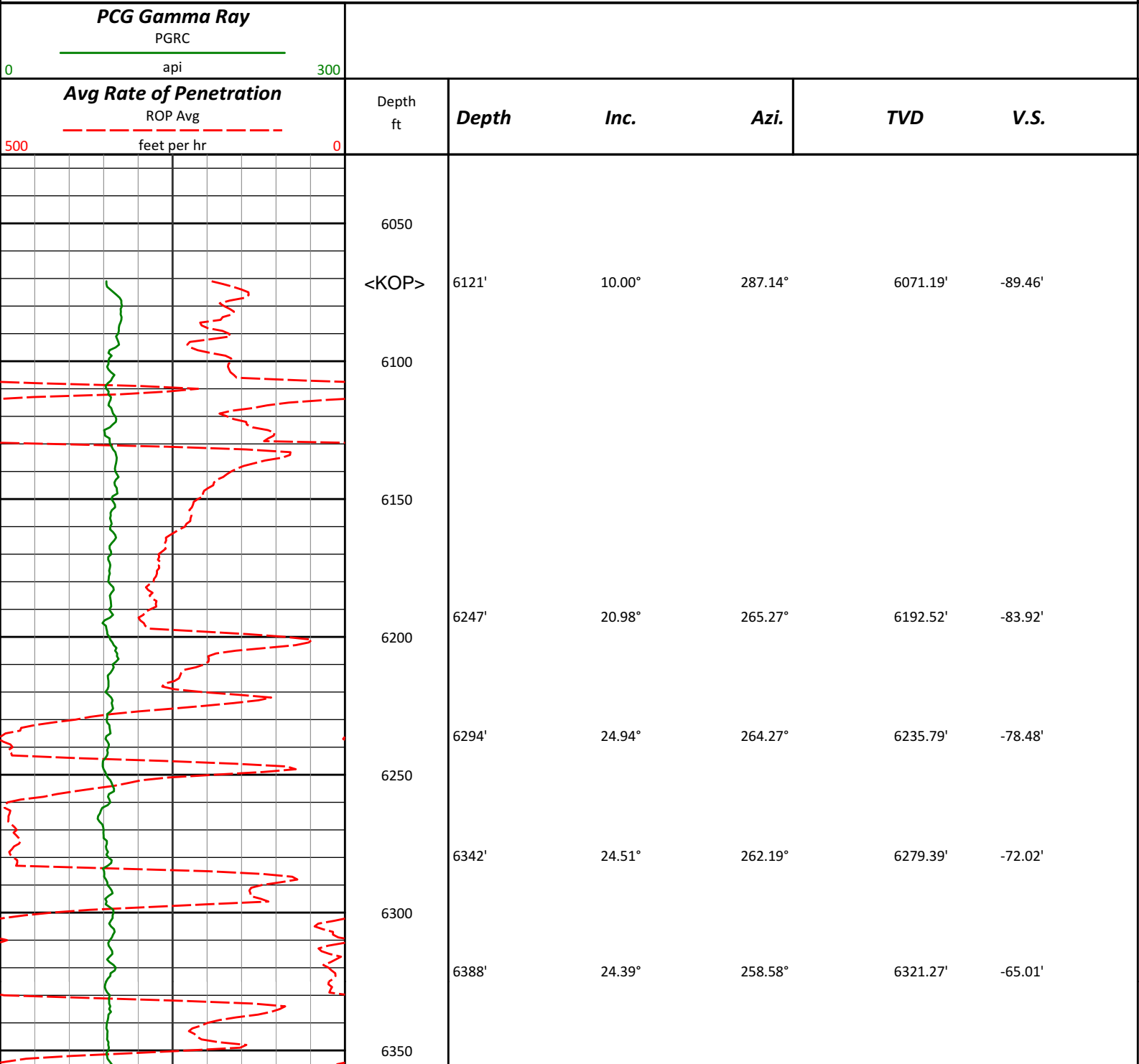
COMPLETION, PRODUCTION, OR FINANCIAL DECISION OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING VENTURE, DRILLING RIG OR ITS CREW OR ANY OTHER THIRD PARTY. THE CUSTOMER HAS FULL RESPONSIBILITY FOR ALL DRILLING, COMPLETION AND PRODUCTION OPERATION. HALLIBURTON MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES RENDERED. IN NO EVENT WILL HALLIBURTON BE LIABLE FOR FAILURE TO OBTAIN ANY PARTICULAR RESULTS OR FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OF ANY INFORMATION OR INTERPRETATION PROVIDED BY HALLIBURTON.

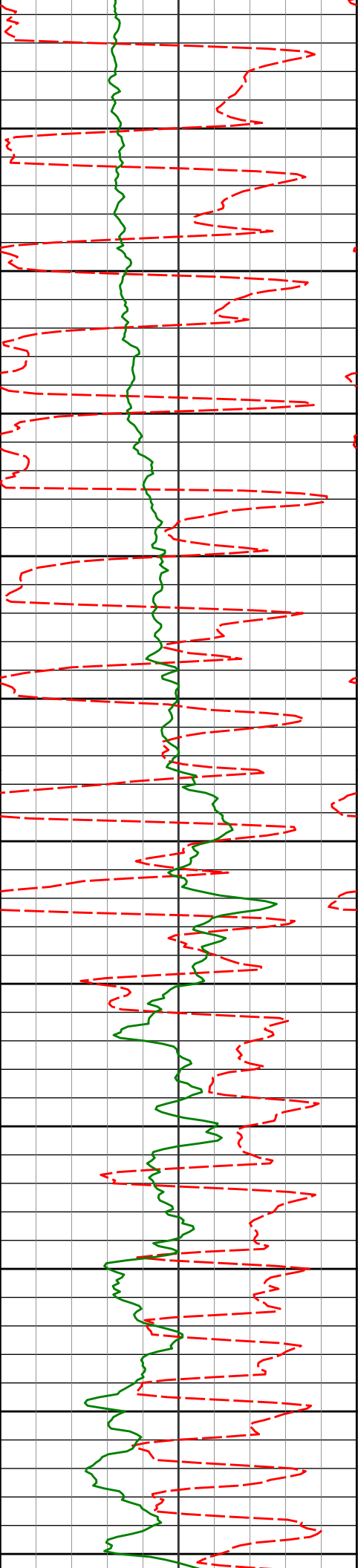
HALLIBURTON

Sperry Drilling Services

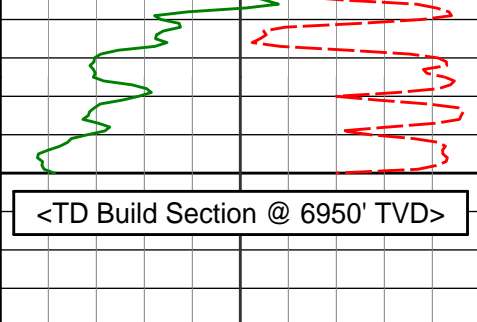
TVD Detail Log 1:600

Noble Energy, Inc
Storis E24-75-1HC
H&P 315
T6N R65W





6400	6436'	25.94°	256.53°	6364.72'	-56.55'
	6483'	30.62°	251.99°	6406.10'	-46.13'
6450	6531'	34.91°	246.74°	6446.46'	-32.07'
	6578'	36.09°	242.90°	6484.73'	-15.57'
6500	6626'	36.16°	241.81°	6523.50'	2.48'
	6674'	36.74°	235.43°	6562.12'	22.06'
6550	6722'	38.86°	230.50°	6600.06'	44.28'
	6769'	41.07°	227.19°	6636.08'	68.45'
6600	6817'	44.32°	225.38°	6671.36'	95.35'
	6863'	47.07°	222.22°	6703.49'	123.33'
6650	6911'	48.23°	216.78°	6735.84'	154.78'
	6959'	51.12°	209.69°	6766.93'	188.86'
6700	7007'	56.09°	202.72°	6795.42'	226.29'
	7054'	59.20°	196.88°	6820.58'	265.60'
6750	7102'	61.98°	191.23°	6844.16'	307.36'
	7149'	64.48°	186.29°	6865.34'	349.23'
6800	7197'	67.36°	185.31°	6884.92'	392.79'
	7244'	70.15°	184.89°	6901.95'	436.28'

	6950	7292'	72.63°	184.84°	6917.27'	481.41'
		7339'	76.24°	184.44°	6929.87'	526.30'
		7407'	80.12°	182.21°	6943.80'	592.08'
		<TD Build Section @ 6950' TVD>				

<div> <div>Avg Rate of Penetration</div> <div>ROP Avg</div> <div> <div>500</div> <div>feet per hr</div> <div>0</div> </div> </div>		Depth					
<div> <div>PCG Gamma Ray</div> <div>PGRC</div> <div> <div>0</div> <div>api</div> <div>300</div> </div> </div>		ft	Depth	Inc.	Azi.	TVD	V.S.

HALLIBURTON

Sperry Drilling Services

TVD Detail Log 1:240

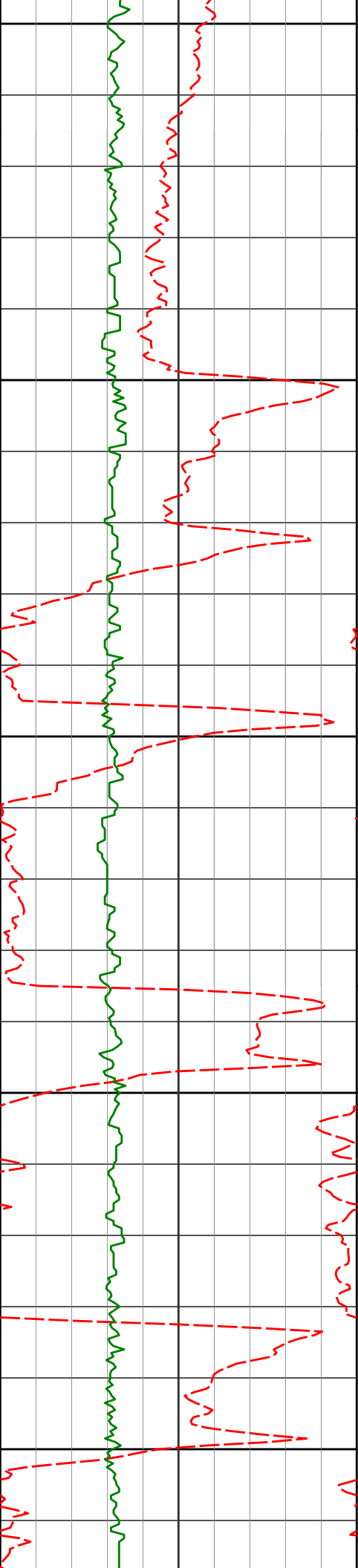
Noble Energy, Inc

Storis E24-75-1HC

H&P 315

T6N R65W

<div><div>PCG Gamma Ray</div><div>PGRC</div><div><div>0</div><div>api</div><div>300</div></div></div>												
<div><div>Avg Rate of Penetration</div><div>ROP Avg</div><div><div>500</div><div>feet per hr</div><div>0</div></div></div>		Depth ft	Depth	Inc.	Azi.	TVD	V.S.					
		6050										
		<KOP>	6121'	10.00°	287.14°	6071.19'	-89.46'					
		6100										



6150

6247'

20.98°

265.27°

6192.52'

-83.92'

6200

6294'

24.94°

264.27°

6235.79'

-78.48'

6250

6342'

24.51°

262.19°

6279.39'

-72.02'

6300

6388'

24.39°

258.58°

6321.27'

-65.01'

6350

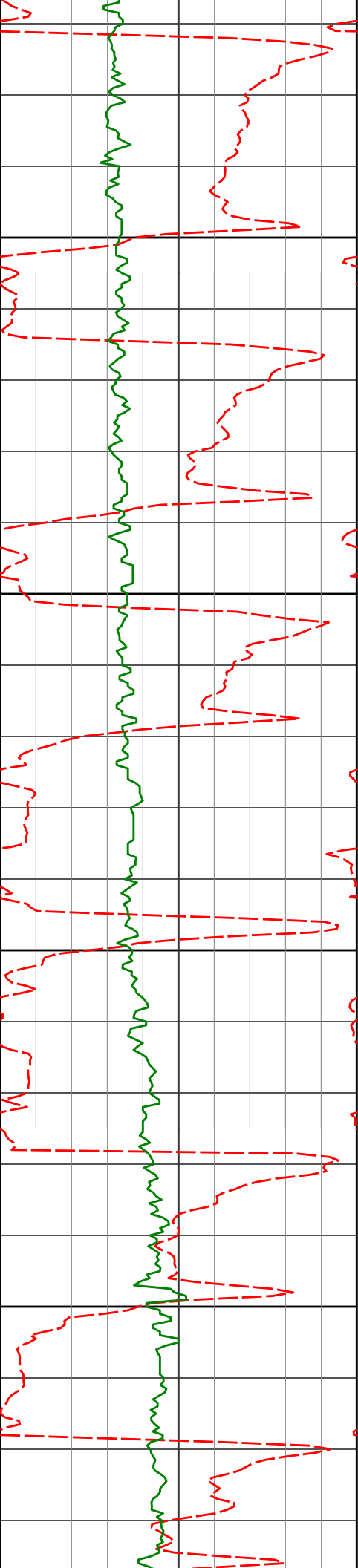
6436'

25.94°

256.53°

6364.72'

-56.55'



6400

6483'	30.62°	251.99°	6406.10'	-46.13'
-------	--------	---------	----------	---------

6450

6531'	34.91°	246.74°	6446.46'	-32.07'
-------	--------	---------	----------	---------

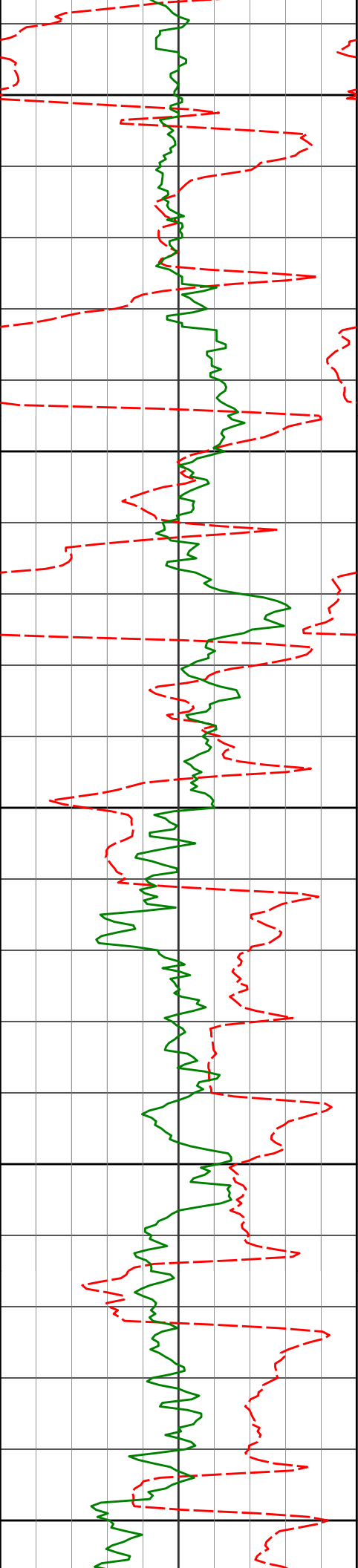
6500

6578'	36.09°	242.90°	6484.73'	-15.57'
-------	--------	---------	----------	---------

6550

6626'	36.16°	241.81°	6523.50'	2.48'
-------	--------	---------	----------	-------

6674'	36.74°	235.43°	6562.12'	22.06'
-------	--------	---------	----------	--------



6600

6722'

38.86°

230.50°

6600.06'

44.28'

6769'

41.07°

227.19°

6636.08'

68.45'

6650

6817'

44.32°

225.38°

6671.36'

95.35'

6700

6863'

47.07°

222.22°

6703.49'

123.33'

6911'

48.23°

216.78°

6735.84'

154.78'

6750

6959'

51.12°

209.69°

6766.93'

188.86'

7007'

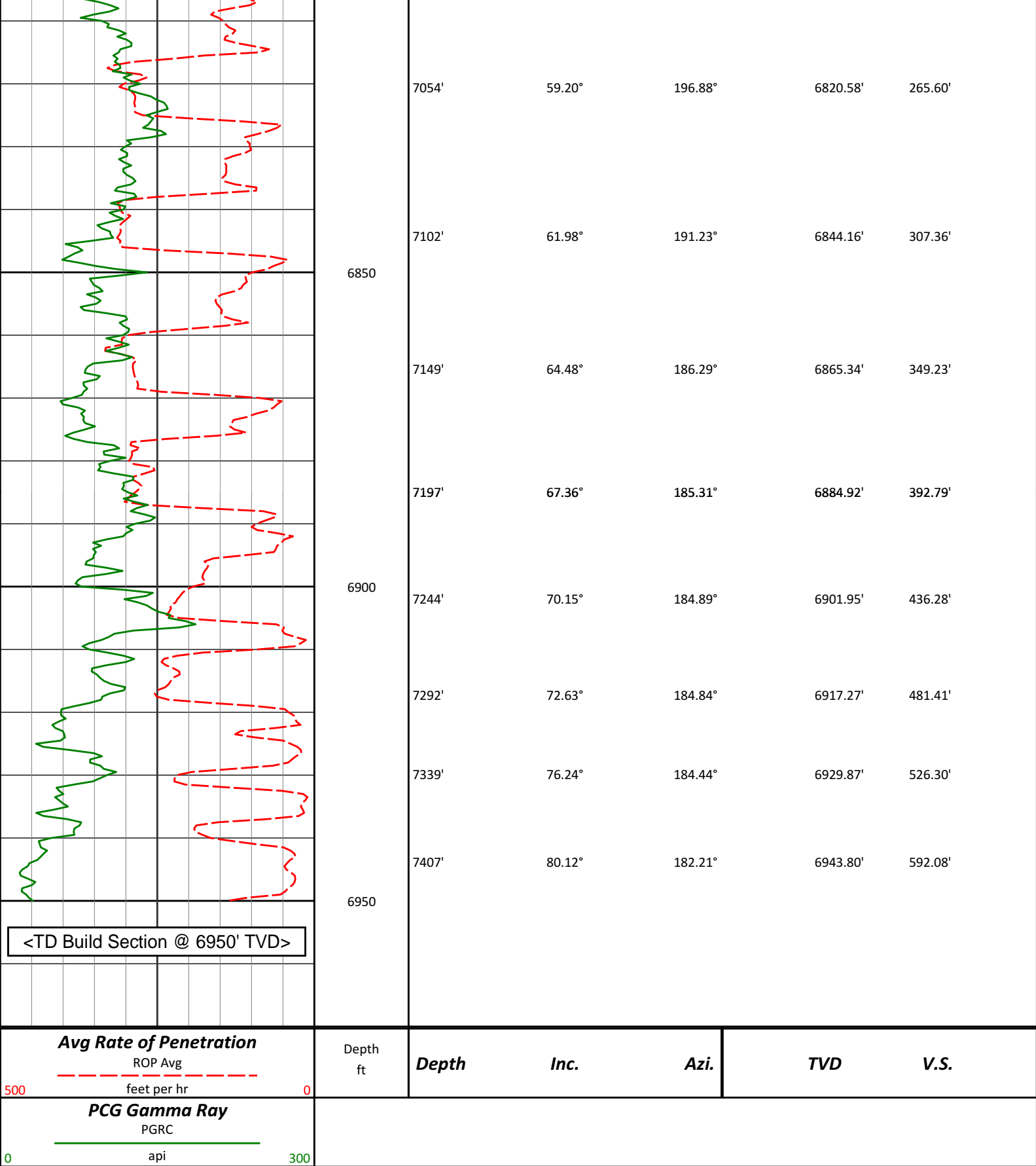
56.09°

202.72°

6795.42'

226.29'

6800



HALLIBURTON

DIRECTIONAL SURVEY REPORT

**Noble Energy
Storis E24-75-1HC
Wattenberg
Weld, Colorado**

Well Colorado USA CA-XX-0901173064							
Measured Depth (feet)	Inclination (degrees)	Direction (degrees)	Vertical Depth (feet)	Latitude (feet)	Departure (feet)	Vertical Section (feet)	Dogleg (deg/100ft)
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	TIE-IN
280.00	0.60	311.86	279.99	0.98 N	1.09 W	-0.73	0.21
562.00	0.40	274.86	561.98	2.05 N	3.17 W	-1.34	0.13
771.00	1.40	10.30	770.96	4.62 N	3.44 W	-3.80	0.71
913.00	1.27	274.58	912.94	6.45 N	4.70 W	-5.33	1.40
1098.00	1.15	267.43	1097.90	6.53 N	8.59 W	-4.60	0.11
1284.00	1.13	247.05	1283.86	5.73 N	12.14 W	-3.08	0.22
1387.00	0.94	253.34	1386.84	5.10 N	13.89 W	-2.09	0.22
1480.00	0.54	267.35	1479.84	4.86 N	15.05 W	-1.62	0.47
1572.00	0.21	173.04	1571.84	4.67 N	15.46 W	-1.35	0.64
1665.00	3.90	300.37	1664.77	6.10 N	18.17 W	-2.19	4.33
1758.00	3.75	279.01	1757.56	8.18 N	23.90 W	-3.03	1.53
1851.00	4.78	290.59	1850.31	10.02 N	30.54 W	-3.44	1.43
1943.00	5.26	283.80	1941.95	12.37 N	38.22 W	-4.15	0.83
2036.00	5.74	294.82	2034.53	15.34 N	46.58 W	-5.31	1.25
2128.00	5.59	289.93	2126.08	18.80 N	54.97 W	-6.95	0.55
2313.00	5.16	292.90	2310.27	25.11 N	71.10 W	-9.76	0.28
2407.00	4.86	300.22	2403.91	28.76 N	78.44 W	-11.81	0.75
2500.00	5.14	288.53	2496.56	32.07 N	85.80 W	-13.51	1.14
2591.00	6.80	282.79	2587.06	34.56 N	94.92 W	-14.05	1.93
2686.00	7.43	281.84	2681.33	37.06 N	106.41 W	-14.11	0.68
2781.00	8.27	287.48	2775.44	40.37 N	118.94 W	-14.74	1.19
2876.00	9.11	291.85	2869.35	45.23 N	132.44 W	-16.68	1.13
2971.00	9.19	291.27	2963.14	50.78 N	146.49 W	-19.18	0.12
3066.00	9.28	290.81	3056.91	56.25 N	160.71 W	-21.58	0.12
3161.00	8.62	289.95	3150.75	61.40 N	174.56 W	-23.73	0.71
3256.00	7.39	284.31	3244.83	65.34 N	187.17 W	-24.96	1.53
3351.00	7.55	279.59	3339.02	67.89 N	199.25 W	-24.94	0.66
3446.00	8.29	270.96	3433.12	69.04 N	212.24 W	-23.37	1.47
3541.00	9.17	286.81	3527.03	71.34 N	226.34 W	-22.69	2.68
3636.00	9.00	294.75	3620.84	76.64 N	240.33 W	-24.96	1.33
3731.00	10.37	298.83	3714.49	83.88 N	254.57 W	-29.07	1.61
3826.00	11.40	297.23	3807.78	92.29 N	270.40 W	-34.01	1.13
4016.00	12.26	296.16	3993.74	109.78 N	305.20 W	-43.87	0.47
4111.00	11.18	292.52	4086.76	117.76 N	322.77 W	-48.02	1.38
4206.00	10.59	289.00	4180.05	124.13 N	339.53 W	-50.76	0.93
4301.00	9.46	283.91	4273.60	128.85 N	355.37 W	-52.08	1.51
4396.00	8.44	278.34	4367.44	131.74 N	369.85 W	-51.89	1.41
4491.00	8.59	282.90	4461.40	134.33 N	383.67 W	-51.56	0.73
4585.00	8.36	288.60	4554.37	138.08 N	396.99 W	-52.45	0.93
4680.00	8.68	299.54	4648.33	143.82 N	409.78 W	-55.40	1.74
4775.00	8.32	301.31	4742.29	150.92 N	421.89 W	-59.83	0.47
4870.00	8.68	298.47	4836.24	157.92 N	434.06 W	-64.14	0.58
4965.00	9.34	297.87	4930.07	164.94 N	447.18 W	-68.28	0.70
5060.00	9.95	298.41	5023.73	172.45 N	461.22 W	-72.70	0.64
5155.00	8.13	298.43	5117.54	179.55 N	474.34 W	-76.92	1.92
5250.00	8.70	295.50	5211.52	185.84 N	486.73 W	-80.49	0.75
5345.00	8.62	288.82	5305.44	191.23 N	499.95 W	-83.01	1.06
5440.00	8.63	279.68	5399.37	194.73 N	513.72 W	-83.57	1.44
5534.00	10.41	286.54	5492.07	198.33 N	528.81 W	-83.95	2.24
5629.00	8.69	283.28	5585.75	202.42 N	544.02 W	-84.79	1.90
5724.00	9.12	283.78	5679.61	205.87 N	558.32 W	-85.18	0.47
5819.00	9.52	285.58	5773.35	209.77 N	573.20 W	-85.90	0.51
5914.00	9.84	286.38	5867.00	214.17 N	588.56 W	-87.01	0.37
6009.00	8.97	285.42	5960.72	218.43 N	603.48 W	-88.07	0.93
6121.00	10.00	287.14	6071.19	223.61 N	621.19 W	-89.46	0.95
6247.00	20.98	265.27	6192.52	224.98 N	654.25 W	-83.92	9.72
6294.00	24.94	264.27	6235.79	223.30 N	672.50 W	-78.48	8.46
6342.00	24.51	262.19	6279.39	220.94 N	692.43 W	-72.02	2.02
6388.00	24.39	258.58	6321.27	217.76 N	711.19 W	-65.01	3.25
6436.00	25.94	256.53	6364.72	213.35 N	731.12 W	-56.55	3.71
6483.00	30.62	251.99	6406.10	207.25 N	752.51 W	-46.13	10.95
6531.00	34.91	246.74	6446.46	198.04 N	776.78 W	-32.07	10.71
6578.00	36.09	242.90	6484.73	186.42 N	801.46 W	-15.57	5.36
6626.00	36.16	241.81	6523.50	173.29 N	826.52 W	2.48	1.34

6674.00	36.74	235.43	6562.12	158.45 N	850.83 W	22.06	7.99
6722.00	38.86	230.50	6600.06	140.72 N	874.28 W	44.28	7.69
6769.00	41.07	227.19	6636.08	120.84 N	896.99 W	68.45	6.51
6817.00	44.32	225.38	6671.36	98.35 N	920.50 W	95.35	7.23
6863.00	47.07	222.22	6703.49	74.58 N	943.26 W	123.33	7.74
6911.00	48.23	216.78	6735.84	47.22 N	965.80 W	154.78	8.72
6959.00	51.12	209.69	6766.93	16.63 N	985.78 W	188.86	12.77
7007.00	56.09	202.72	6795.42	18.03 S	1002.75 W	226.29	15.61
7054.00	59.20	196.88	6820.58	55.37 S	1016.16 W	265.60	12.40
7102.00	61.98	191.23	6844.16	95.91 S	1026.28 W	307.36	11.78
7149.00	64.48	186.29	6865.34	137.36 S	1032.64 W	349.23	10.78
7197.00	67.36	185.31	6884.92	180.96 S	1037.06 W	392.79	6.28
7244.00	70.15	184.89	6901.95	224.59 S	1040.95 W	436.28	6.00
7292.00	72.63	184.84	6917.27	269.91 S	1044.81 W	481.41	5.15
7339.00	76.24	184.44	6929.87	315.03 S	1048.47 W	526.30	7.73
7407.00	80.12	182.21	6943.80	381.46 S	1052.32 W	592.08	6.54
7465.00	87.00	180.00	6950.31	439.05 S	1053.43 W	648.63	12.46

CALCULATION BASED ON MINIMUM CURVATURE METHOD

**SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT**

**VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 192.01 DEGREES (GRID)
A TOTAL CORRECTION OF 7.86 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED**

**HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 7465.00 FEET
IS 1141.26 FEET ALONG 247.37 DEGREES (GRID)**

Surface surveys at 280 ft, 562 ft and 771 ft have had azimuths corrected to grid north, but were not taken by Halliburton.

Last survey is a projection from 7407 ft MD to bit at 7465 ft MD.