

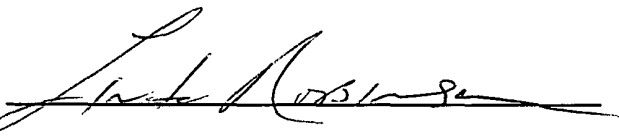
OPERATOR
WELL/LEASE
COUNTY

DEVON ENERGY PRODUCTION CO, LLP
EMERALD PWU 20 #2H
EDDY

STATE OF NEW MEXICO
DEVIATION REPORT

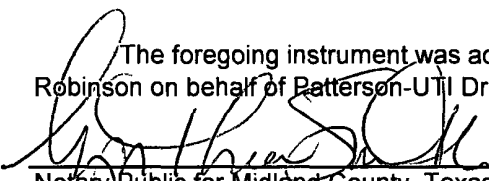
224	0.25
325	0.25
567	1.00
869	1.00
1,184	1.00
1,564	1.00
1,849	1.00
2,455	1.00
2,956	1.00
3,463	1.00
3,987	0.00
4,494	1.00
4,626	2.00
5,095	2.00
5,636	5.00

STATE OF TEXAS

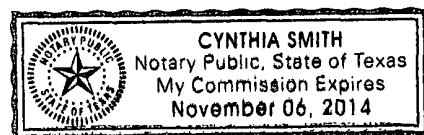
BY: 

COUNTY OF MIDLAND

The foregoing instrument was acknowledged before me on
Robinson on behalf of Patterson-UTL Drilling Company LLC.


Notary Public for Midland County, Texas
My Commission Expires:

Sept. 1, 2011, by Linda



A Gyrodata Directional Survey

for

DEVON ENERGY

Lease: EMERALD PWU 20 Well: #2H, 4 1/2" DRILLPIPE
Location: PATTERSON #41, EDDY COUNTY, NEW MEXICO

Job Number: MD0711GVCW320

Run Date: 7/11/2011 1:06:28 PM

Surveyor: Jason Solomon, Mike Hattar

Calculation Method: MINIMUM CURVATURE

Survey surface coordinates obtained from: Hand Held GPS

Survey Latitude: 32.648667 deg. N Longitude: 104.104417 deg. W

Azimuth Correction:

Gyro: -0.12000 deg to Grid North

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

A Gyrodata Directional Survey

DEVON ENERGY

Lease: EMERALD PWU 20 Well: #2H, 4 1/2" DRILLPIPE

Location: PATTERSON #41, EDDY COUNTY, NEW MEXICO

Job Number: MD0711GVCW320

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet	
0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.00 N	0.00 E

0 TO 5600 FT RATE GYROSCOPIC VERTICAL CONTINUOUS RUN INSIDE 4 1/2" DRILLPIPE								
ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO PATTERSON #41 RKB 16 FT								

50.00	0.55	146.30	1.09	50.00	0.2	146.3	0.20 S	0.13 E
100.00	0.46	127.03	0.38	100.00	0.7	140.6	0.52 S	0.43 E
150.00	0.41	98.14	0.45	150.00	1.0	131.1	0.67 S	0.76 E
200.00	0.38	69.85	0.39	199.99	1.3	120.1	0.63 S	1.09 E
250.00	0.48	40.14	0.48	249.99	1.4	106.8	0.42 S	1.38 E
300.00	0.66	34.15	0.37	299.99	1.7	90.7	0.02 S	1.68 E
350.00	0.70	32.70	0.09	349.99	2.1	76.7	0.47 N	2.00 E
400.00	0.98	35.52	0.56	399.98	2.6	66.0	1.08 N	2.41 E
450.00	1.07	39.48	0.24	449.97	3.5	58.9	1.78 N	2.96 E
500.00	1.11	40.06	0.09	499.97	4.4	54.8	2.52 N	3.57 E
550.00	1.10	46.02	0.23	549.96	5.3	52.7	3.22 N	4.23 E
600.00	1.20	43.00	0.24	599.95	6.3	51.4	3.94 N	4.93 E
650.00	1.40	53.14	0.60	649.93	7.4	50.9	4.69 N	5.78 E
700.00	1.50	53.21	0.20	699.92	8.7	51.3	5.45 N	6.79 E
750.00	1.92	63.52	1.04	749.89	10.2	52.4	6.22 N	8.07 E
800.00	1.92	63.38	0.01	799.87	11.8	53.9	6.96 N	9.56 E
850.00	1.96	66.26	0.21	849.84	13.5	55.3	7.68 N	11.09 E
900.00	1.94	69.23	0.21	899.81	15.2	56.7	8.33 N	12.67 E
950.00	1.91	67.37	0.14	949.78	16.8	57.8	8.95 N	14.23 E
1000.00	1.91	67.28	0.01	999.75	18.5	58.7	9.59 N	15.77 E

A Gyrodata Directional Survey

DEVON ENERGY

Lease: EMERALD PWU 20 Well: #2H, 4 1/2" DRILLPIPE

Location: PATTERSON #41, EDDY COUNTY, NEW MEXICO

Job Number: MD0711GVCW320

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
1050.00	2.00	68.42	0.20	1049.72	20.1 59.5	10.23 N 17.35 E
1100.00	1.94	67.93	0.13	1099.69	21.8 60.1	10.87 N 18.94 E
1150.00	2.28	66.88	0.69	1149.66	23.7 60.7	11.58 N 20.64 E
1200.00	2.42	65.40	0.30	1199.62	25.7 61.1	12.41 N 22.51 E
1250.00	2.40	66.89	0.13	1249.57	27.8 61.5	13.26 N 24.43 E
1300.00	2.35	65.11	0.18	1299.53	29.9 61.8	14.10 N 26.32 E
1350.00	2.15	64.56	0.41	1349.49	31.8 62.0	14.93 N 28.10 E
1400.00	2.02	66.51	0.29	1399.46	33.6 62.2	15.69 N 29.75 E
1450.00	1.97	66.39	0.11	1449.43	35.4 62.4	16.38 N 31.34 E
1500.00	1.96	67.27	0.06	1499.40	37.1 62.6	17.05 N 32.92 E
1550.00	1.97	68.31	0.07	1549.37	38.8 62.8	17.70 N 34.50 E
1600.00	2.00	69.12	0.08	1599.34	40.5 63.1	18.33 N 36.11 E
1650.00	1.94	69.82	0.12	1649.31	42.2 63.4	18.93 N 37.72 E
1700.00	2.08	71.54	0.31	1699.28	43.9 63.6	19.51 N 39.38 E
1750.00	2.07	71.74	0.02	1749.25	45.7 64.0	20.08 N 41.10 E
1800.00	2.01	73.03	0.15	1799.22	47.5 64.3	20.62 N 42.80 E
1850.00	1.99	74.11	0.09	1849.19	49.2 64.6	21.12 N 44.48 E
1900.00	1.87	77.79	0.35	1899.16	50.9 65.0	21.53 N 46.11 E
1950.00	1.86	77.61	0.02	1949.13	52.5 65.4	21.87 N 47.70 E
2000.00	1.92	80.46	0.22	1999.10	54.1 65.8	22.19 N 49.32 E
2050.00	1.87	84.44	0.28	2049.08	55.7 66.3	22.40 N 50.95 E
2100.00	1.86	88.02	0.23	2099.05	57.2 66.8	22.51 N 52.58 E
2150.00	1.85	88.02	0.02	2149.02	58.7 67.4	22.57 N 54.20 E
2200.00	1.70	89.41	0.31	2199.00	60.2 67.9	22.60 N 55.75 E

A Gyrodata Directional Survey

DEVON ENERGY

Lease: EMERALD PWU 20 Well: #2H, 4 1/2" DRILLPIPE

Location: PATTERSON #41, EDDY COUNTY, NEW MEXICO

Job Number: MD0711GVCW320

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
2250.00	1.39	94.81	0.68	2248.98	61.4 68.4	22.56 N 57.10 E
2300.00	1.38	95.84	0.06	2298.97	62.5 68.9	22.45 N 58.30 E
2350.00	1.26	103.40	0.42	2348.95	63.5 69.5	22.26 N 59.44 E
2400.00	1.14	110.57	0.38	2398.94	64.3 70.0	21.96 N 60.44 E
2450.00	1.22	113.67	0.20	2448.93	65.1 70.6	21.57 N 61.39 E
2500.00	1.19	115.51	0.10	2498.92	65.8 71.3	21.13 N 62.35 E
2550.00	1.20	114.90	0.04	2548.91	66.6 71.9	20.69 N 63.29 E
2600.00	1.22	117.44	0.12	2598.90	67.3 72.5	20.22 N 64.24 E
2650.00	1.13	120.11	0.23	2648.89	68.1 73.2	19.73 N 65.14 E
2700.00	1.08	122.39	0.13	2698.88	68.7 73.7	19.23 N 65.96 E
2750.00	0.99	123.63	0.18	2748.87	69.3 74.3	18.74 N 66.72 E
2800.00	0.91	129.57	0.26	2798.86	69.8 74.9	18.24 N 67.39 E
2850.00	0.81	130.99	0.21	2848.86	70.2 75.4	17.76 N 67.96 E
2900.00	0.78	134.40	0.11	2898.85	70.6 75.8	17.29 N 68.47 E
2950.00	0.71	136.00	0.15	2948.85	71.0 76.3	16.83 N 68.93 E
3000.00	0.61	147.47	0.32	2998.85	71.2 76.7	16.38 N 69.28 E
3050.00	0.53	147.10	0.16	3048.84	71.4 77.1	15.97 N 69.55 E
3100.00	0.50	144.64	0.08	3098.84	71.5 77.4	15.59 N 69.80 E
3150.00	0.48	150.49	0.11	3148.84	71.7 77.7	15.23 N 70.03 E
3200.00	0.42	158.99	0.18	3198.84	71.8 78.0	14.88 N 70.20 E
3250.00	0.44	156.89	0.05	3248.84	71.8 78.3	14.54 N 70.34 E
3300.00	0.41	168.67	0.18	3298.83	71.9 78.6	14.18 N 70.45 E
3350.00	0.34	178.91	0.19	3348.83	71.8 78.9	13.86 N 70.49 E
3400.00	0.50	173.30	0.33	3398.83	71.8 79.2	13.49 N 70.52 E

A Gyrodata Directional Survey

DEVON ENERGY

Lease: EMERALD PWU 20 Well: #2H, 4 1/2" DRILLPIPE

Location: PATTERSON #41, EDDY COUNTY, NEW MEXICO

Job Number: MD0711GVCW320

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
3450.00	0.28	185.51	0.48	3448.83	71.7 79.4	13.15 N 70.53 E
3500.00	0.31	214.28	0.30	3498.83	71.6 79.6	12.91 N 70.44 E
3550.00	0.34	202.72	0.15	3548.83	71.4 79.8	12.66 N 70.31 E
3600.00	0.37	217.83	0.20	3598.83	71.2 80.0	12.40 N 70.15 E
3650.00	0.40	233.36	0.22	3648.83	71.0 80.1	12.16 N 69.91 E
3700.00	0.52	258.38	0.46	3698.83	70.6 80.2	12.01 N 69.55 E
3750.00	0.65	273.57	0.40	3748.82	70.1 80.2	11.98 N 69.04 E
3800.00	0.79	269.99	0.29	3798.82	69.5 80.1	12.00 N 68.41 E
3850.00	1.00	274.09	0.44	3848.81	68.7 79.9	12.03 N 67.63 E
3900.00	1.32	281.26	0.69	3898.80	67.7 79.6	12.17 N 66.63 E
3950.00	1.44	284.88	0.30	3948.79	66.6 79.2	12.45 N 65.45 E
4000.00	1.57	285.55	0.26	3998.77	65.5 78.7	12.79 N 64.19 E
4050.00	1.80	285.72	0.47	4048.75	64.1 78.1	13.19 N 62.77 E
4100.00	2.12	283.27	0.65	4098.72	62.6 77.4	13.62 N 61.11 E
4150.00	2.32	279.94	0.47	4148.68	60.8 76.7	14.00 N 59.22 E
4200.00	2.42	276.51	0.35	4198.64	58.9 76.0	14.30 N 57.17 E
4250.00	2.46	275.64	0.11	4248.59	56.9 75.2	14.52 N 55.05 E
4300.00	2.61	274.32	0.31	4298.55	54.9 74.4	14.71 N 52.85 E
4350.00	2.83	271.71	0.51	4348.49	52.6 73.6	14.84 N 50.48 E
4400.00	3.15	266.89	0.82	4398.42	50.1 72.8	14.80 N 47.88 E
4450.00	3.58	264.67	0.89	4448.33	47.3 72.0	14.58 N 44.95 E
4500.00	3.66	264.39	0.16	4498.24	44.2 71.1	14.28 N 41.81 E
4550.00	3.80	263.58	0.30	4548.13	41.0 70.1	13.94 N 38.58 E
4600.00	3.87	263.95	0.15	4598.02	37.8 68.9	13.57 N 35.26 E

A Gyrodata Directional Survey

DEVON ENERGY

Lease: EMERALD PWU 20 Well: #2H, 4 1/2" DRILLPIPE

Location: PATTERSON #41, EDDY COUNTY, NEW MEXICO

Job Number: MD0711GVCW320

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
4650.00	3.95	262.61	0.24	4647.90	34.5 67.5	13.17 N 31.87 E
4700.00	3.45	262.58	0.99	4697.80	31.4 66.0	12.76 N 28.67 E
4750.00	3.34	261.92	0.24	4747.71	28.6 64.4	12.36 N 25.74 E
4800.00	3.09	262.04	0.49	4797.63	25.9 62.5	11.97 N 22.96 E
4850.00	2.96	255.79	0.71	4847.56	23.4 60.6	11.46 N 20.37 E
4900.00	3.00	253.44	0.26	4897.49	20.9 58.9	10.77 N 17.87 E
4950.00	2.90	242.29	1.17	4947.43	18.3 57.6	9.81 N 15.49 E
5000.00	3.29	223.87	2.13	4997.36	15.7 58.5	8.19 N 13.38 E
5050.00	3.43	208.35	1.83	5047.27	13.1 63.4	5.84 N 11.67 E
5100.00	3.55	190.14	2.22	5097.18	11.1 74.3	3.00 N 10.69 E
5150.00	3.84	178.27	1.63	5147.08	10.5 91.1	0.20 S 10.47 E
5200.00	3.92	160.31	2.43	5196.96	11.6 107.4	3.48 S 11.09 E
5250.00	4.47	132.13	4.22	5246.83	14.6 116.0	6.40 S 13.12 E
5300.00	4.64	118.00	2.26	5296.68	18.5 117.9	8.66 S 16.35 E
5350.00	5.34	107.22	2.34	5346.49	22.8 116.8	10.30 S 20.36 E
5400.00	6.89	95.78	3.92	5396.20	27.9 113.8	11.29 S 25.56 E
5450.00	8.59	85.08	4.44	5445.75	34.2 109.3	11.27 S 32.27 E
5500.00	10.47	78.80	4.29	5495.06	41.7 104.0	10.07 S 40.44 E
5550.00	11.78	76.30	2.79	5544.12	50.5 99.1	7.98 S 49.86 E
5600.00	11.47	73.37	1.33	5593.09	59.8 95.1	5.35 S 59.58 E

Final Station Closure: Distance: 59.82 ft Az: 95.13 deg.

DEVON ENERGY

WELL NUMBER : EMERALD PWU 20 #2H

4 1/2" DRILLPIPE SURVEY

DATE RUN : 110711

JOB NUMBER : MD0711GVCW320

MD	INC	AZ	TVD	LOCAL N	LOCAL E	V/S	DOG/ 100FT
50	0.55	146.3	50	-0.2	0.13	-0.2	1.09
100	0.46	127.03	100	-0.52	0.43	-0.5	0.38
150	0.41	98.14	150	-0.67	0.76	-0.7	0.45
200	0.38	69.85	199.99	-0.63	1.09	-0.6	0.39
250	0.48	40.14	249.99	-0.42	1.38	-0.4	0.48
300	0.66	34.15	299.99	-0.02	1.68	0	0.37
350	0.7	32.7	349.99	0.47	2	0.5	0.09
400	0.98	35.52	399.98	1.08	2.41	1.1	0.56
450	1.07	39.48	449.97	1.78	2.96	1.8	0.24
500	1.11	40.06	499.97	2.52	3.57	2.5	0.09
550	1.1	46.02	549.96	3.22	4.23	3.2	0.23
600	1.2	43	599.95	3.94	4.93	3.9	0.24
650	1.4	53.14	649.93	4.69	5.78	4.7	0.6
700	1.5	53.21	699.92	5.45	6.79	5.4	0.2
750	1.92	63.52	749.89	6.22	8.07	6.2	1.04
800	1.92	63.38	799.87	6.96	9.56	7	0.01
850	1.96	66.26	849.84	7.68	11.09	7.7	0.21
900	1.94	69.23	899.81	8.33	12.67	8.3	0.21
950	1.91	67.37	949.78	8.95	14.23	8.9	0.14
1000	1.91	67.28	999.75	9.59	15.77	9.6	0.01
1050	2	68.42	1049.72	10.23	17.35	10.2	0.2
1100	1.94	67.93	1099.69	10.87	18.94	10.9	0.13
1150	2.28	66.88	1149.66	11.58	20.64	11.6	0.69
1200	2.42	65.4	1199.62	12.41	22.51	12.4	0.3
1250	2.4	66.89	1249.57	13.26	24.43	13.3	0.13
1300	2.35	65.11	1299.53	14.1	26.32	14.1	0.18
1350	2.15	64.56	1349.49	14.93	28.1	14.9	0.41
1400	2.02	66.51	1399.46	15.69	29.75	15.7	0.29
1450	1.97	66.39	1449.43	16.38	31.34	16.4	0.11
1500	1.96	67.27	1499.4	17.05	32.92	17.1	0.06
1550	1.97	68.31	1549.37	17.7	34.5	17.7	0.07
1600	2	69.12	1599.34	18.33	36.11	18.3	0.08
1650	1.94	69.82	1649.31	18.93	37.72	18.9	0.12
1700	2.08	71.54	1699.28	19.51	39.38	19.5	0.31
1750	2.07	71.74	1749.25	20.08	41.1	20.1	0.02
1800	2.01	73.03	1799.22	20.62	42.8	20.6	0.15
1850	1.99	74.11	1849.19	21.12	44.48	21.1	0.09
1900	1.87	77.79	1899.16	21.53	46.11	21.5	0.35
1950	1.86	77.61	1949.13	21.87	47.7	21.9	0.02
2000	1.92	80.46	1999.1	22.19	49.32	22.2	0.22

2050	1.87	84.44	2049.08	22.4	50.95	22.4	0.28
2100	1.86	88.02	2099.05	22.51	52.58	22.5	0.23
2150	1.85	88.02	2149.02	22.57	54.2	22.6	0.02
2200	1.7	89.41	2199	22.6	55.75	22.6	0.31
2250	1.39	94.81	2248.98	22.56	57.1	22.6	0.68
2300	1.38	95.84	2298.97	22.45	58.3	22.4	0.06
2350	1.26	103.4	2348.95	22.26	59.44	22.3	0.42
2400	1.14	110.57	2398.94	21.96	60.44	22	0.38
2450	1.22	113.67	2448.93	21.57	61.39	21.6	0.2
2500	1.19	115.51	2498.92	21.13	62.35	21.1	0.1
2550	1.2	114.9	2548.91	20.69	63.29	20.7	0.04
2600	1.22	117.44	2598.9	20.22	64.24	20.2	0.12
2650	1.13	120.11	2648.89	19.73	65.14	19.7	0.23
2700	1.08	122.39	2698.88	19.23	65.96	19.2	0.13
2750	0.99	123.63	2748.87	18.74	66.72	18.7	0.18
2800	0.91	129.57	2798.86	18.24	67.39	18.2	0.26
2850	0.81	130.99	2848.86	17.76	67.96	17.8	0.21
2900	0.78	134.4	2898.85	17.29	68.47	17.3	0.11
2950	0.71	136	2948.85	16.83	68.93	16.8	0.15
3000	0.61	147.47	2998.85	16.38	69.28	16.4	0.32
3050	0.53	147.1	3048.84	15.97	69.55	16	0.16
3100	0.5	144.64	3098.84	15.59	69.8	15.6	0.08
3150	0.48	150.49	3148.84	15.23	70.03	15.2	0.11
3200	0.42	158.99	3198.84	14.88	70.2	14.9	0.18
3250	0.44	156.89	3248.84	14.54	70.34	14.5	0.05
3300	0.41	168.67	3298.83	14.18	70.45	14.2	0.18
3350	0.34	178.91	3348.83	13.86	70.49	13.9	0.19
3400	0.5	173.3	3398.83	13.49	70.52	13.5	0.33
3450	0.28	185.51	3448.83	13.15	70.53	13.1	0.48
3500	0.31	214.28	3498.83	12.91	70.44	12.9	0.3
3550	0.34	202.72	3548.83	12.66	70.31	12.7	0.15
3600	0.37	217.83	3598.83	12.4	70.15	12.4	0.2
3650	0.4	233.36	3648.83	12.16	69.91	12.2	0.22
3700	0.52	258.38	3698.83	12.01	69.55	12	0.46
3750	0.65	273.57	3748.82	11.98	69.04	12	0.4
3800	0.79	269.99	3798.82	12	68.41	12	0.29
3850	1	274.09	3848.81	12.03	67.63	12	0.44
3900	1.32	281.26	3898.8	12.17	66.63	12.2	0.69
3950	1.44	284.88	3948.79	12.45	65.45	12.4	0.3
4000	1.57	285.55	3998.77	12.79	64.19	12.8	0.26
4050	1.8	285.72	4048.75	13.19	62.77	13.2	0.47
4100	2.12	283.27	4098.72	13.62	61.11	13.6	0.65
4150	2.32	279.94	4148.68	14	59.22	14	0.47
4200	2.42	276.51	4198.64	14.3	57.17	14.3	0.35
4250	2.46	275.64	4248.59	14.52	55.05	14.5	0.11
4300	2.61	274.32	4298.55	14.71	52.85	14.7	0.31
4350	2.83	271.71	4348.49	14.84	50.48	14.8	0.51

4400	3.15	266.89	4398.42	14.8	47.88	14.8	0.82
4450	3.58	264.67	4448.33	14.58	44.95	14.6	0.89
4500	3.66	264.39	4498.24	14.28	41.81	14.3	0.16
4550	3.8	263.58	4548.13	13.94	38.58	13.9	0.3
4600	3.87	263.95	4598.02	13.57	35.26	13.6	0.15
4650	3.95	262.61	4647.9	13.17	31.87	13.2	0.24
4700	3.45	262.58	4697.8	12.76	28.67	12.8	0.99
4750	3.34	261.92	4747.71	12.36	25.74	12.4	0.24
4800	3.09	262.04	4797.63	11.97	22.96	12	0.49
4850	2.96	255.79	4847.56	11.46	20.37	11.5	0.71
4900	3	253.44	4897.49	10.77	17.87	10.8	0.26
4950	2.9	242.29	4947.43	9.81	15.49	9.8	1.17
5000	3.29	223.87	4997.36	8.19	13.38	8.2	2.13
5050	3.43	208.35	5047.27	5.84	11.67	5.8	1.83
5100	3.55	190.14	5097.18	3	10.69	3	2.22
5150	3.84	178.27	5147.08	-0.2	10.47	-0.2	1.63
5200	3.92	160.31	5196.96	-3.48	11.09	-3.5	2.43
5250	4.47	132.13	5246.83	-6.4	13.12	-6.4	4.22
5300	4.64	118	5296.68	-8.66	16.35	-8.7	2.26
5350	5.34	107.22	5346.49	-10.3	20.36	-10.3	2.34
5400	6.89	95.78	5396.2	-11.29	25.56	-11.3	3.92
5450	8.59	85.08	5445.75	-11.27	32.27	-11.3	4.44
5500	10.47	78.8	5495.06	-10.07	40.44	-10.1	4.29
5550	11.78	76.3	5544.12	-7.98	49.86	-8	2.79
5600	11.47	73.37	5593.09	-5.35	59.58	-5.3	1.33



Weatherford[®]

Evaluation, Drilling & Intervention
10000 West County Rd. 116
P.O. Box 61028
Midland, TX USA 79711
Tel. (432) 561-8892 Fax (432) 561-8895

Devon Energy
20 North Broadway
Oklahoma City, OK, 73102

Date: August 25, 2011

Attention: Johnathan Ashcraft

Re: Devon Energy
Well: Emerald PWU 20-2H
Eddy County, New Mexico

Enclosed, please find the original survey performed on the referenced well by Precision Energy Services, Inc. (P-5 No. 676004), a Weatherford company. Other information required by your office is as follows:

<u>Name & Title Of Surveyor</u>	<u>Well Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Patrick Rudolph MWD Supervisor	20-2H	8193' MD 12030' MD	8/9/2011 8/23/2011	Measurement While Drilling

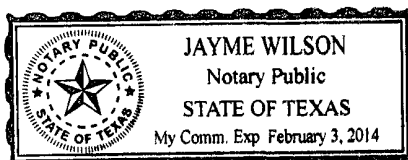
A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Jesse Aguilar
Area Manager

On this, the 25th day of August, 2011, before me a notary public, the undersigned officer, personally appeared Jesse Aguilar, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.

Notary Public





Emerald PWU 20 #2H
Eddy Co, NM

KBELEV: 3354
GLELEV: 3338

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	10253.00	85.01	90.10	7853.37	-36.06	2798.25	0.00	0.00	2798.28	
2	10290.02	90.00	89.00	7854.98	-35.77	2835.22	13.80	-12.42	2835.25	
3	12093.92	90.00	89.00	7855.00	-4.30	4638.84	0.00	0.00	4638.84	Pbhl

FIELD DETAILS

Eddy Co., NM (NAD 83)

Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Eastern Zone
Magnetic Model: IGRF2010

System Datum: Mean Sea Level
Local North: Grid North

SITE DETAILS

Emerald PWU 20 #2H

Site Centre Northing: 599799.32
Easting: 611759.00

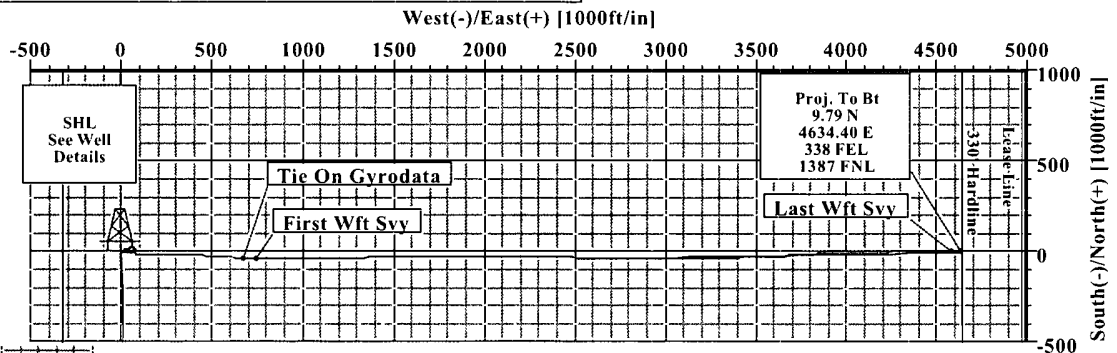
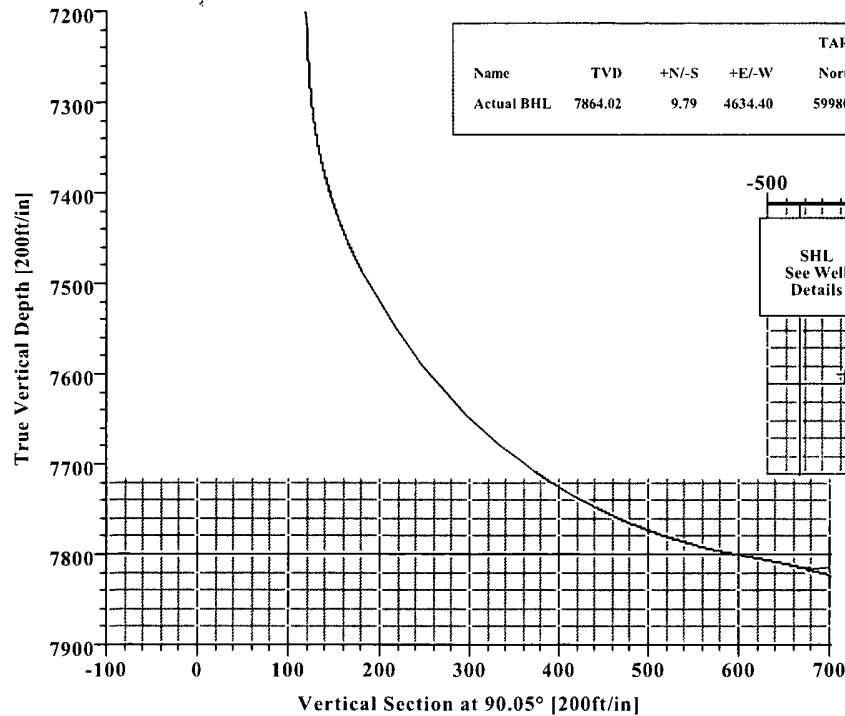
Ground Level: 3338.00
Positional Uncertainty: 0.00
Convergence: 0.12

WELL DETAILS

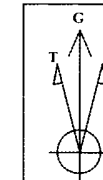
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
PWU 20 #2H	0.00	0.00	599799.32	611759.00	32°38'55.263N	104°06'16.334W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Actual BHL	7864.02	9.79	4634.40	599809.11	616393.40	32°38'55.258N	104°05'22.128W	Point



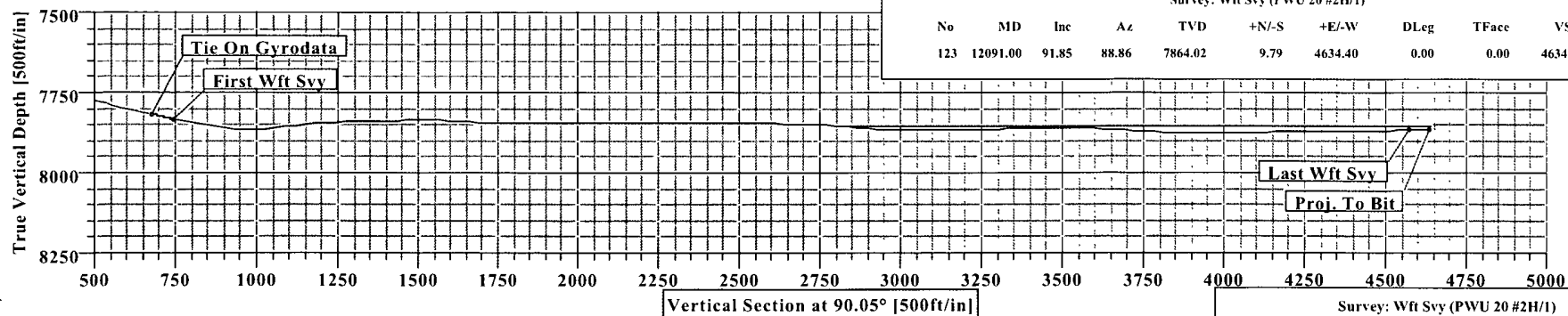
LEGEND
PWU 20 #2H.1. Plan #5
PWU 20 #2H.1. Gyro
Wft Svy



Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.72°

Magnetic Field
Strength: 48823nT
Dip Angle: 60.48°
Date: 8/9/2011
Model: IGRF2010

Total Correction to Grid North: 7.72°



Survey: Wft Svy (PWU 20 #2H/1)

No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
123	12091.00	91.85	88.86	7864.02	9.79	4634.40	0.00	0.00	4634.39

Survey: Wft Svy (PWU 20 #2H/1)

Created By: Russell W. Joyner

Date: 8/22/2011



Weatherford International Ltd.

WFT Survey Report X & Y's

**Weatherford®**

Company: Devon Energy	Date: 8/22/2011	Time: 09:58:19	Page: 1
Field: Eddy Co., NM (NAD 83)	Co-ordinate(NE) Reference: Well. PWU 20 #2H, Grid North		
Site: Emerald PWU 20 #2H	Vertical (TVD) Reference: SITE 3354.0		
Well: PWU 20 #2H	Section (VS) Reference: Well (0.00N,0.00E,90.05Azi)		
Wellpath: 1	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey: Wft Svy	Start Date: 8/12/2011
Company: Weatherford International Ltd	Engineer: Russell W Joyner
Tool: MWD,MWD - Standard	Tied-to: User Defined

Field: Eddy Co., NM (NAD 83)**Map System:** US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level**Map Zone:** New Mexico, Eastern Zone
Coordinate System: Well Centre
Geomagnetic Model: IGRF2010**Site:** Emerald PWU 20 #2H

Site Position:	Northing: 599799.32 ft	Latitude: 32 38 55.263 N
From: Map	Easting: 611759.00 ft	Longitude: 104 6 16.334 W
Position Uncertainty: 0.00 ft		North Reference: Grid
Ground Level: 3338.00 ft		Grid Convergence: 0.12 deg

Well: PWU 20 #2H**Slot Name:**

Well Position: +N/-S 0.00 ft	Northing: 599799.32 ft	Latitude: 32 38 55.263 N
+E/-W 0.00 ft	Easting: 611759.00 ft	Longitude: 104 6 16.334 W
Position Uncertainty: 0.00 ft		

Wellpath: 1

Current Datum: SITE	Height: 3354.00 ft	Drilled From: Surface
Magnetic Data: 8/9/2011		Tie-on Depth: 0.00 ft
Field Strength: 48823 nT		Above System Datum: Mean Sea Level
Vertical Section: Depth From (TVD)		Declination: 7.85 deg
ft	+N/-S ft	Mag Dip Angle: 60.48 deg
		+E/-W ft
		Direction deg
0.00	0.00	0.00 90.05

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
8125.00	75.45	95.25	7816.71	-36.26	676.88	0.00	676.91	599763.06	612435.88	Tie On Gyrodata First Wft Svy
8193.00	78.06	90.04	7832.30	-39.30	742.97	8.39	743.01	599760.02	612501.97	
8225.00	78.41	89.93	7838.82	-39.29	774.30	1.14	774.33	599760.03	612533.30	
8257.00	78.85	89.81	7845.13	-39.22	805.67	1.42	805.71	599760.10	612564.67	
8289.00	78.77	89.63	7851.34	-39.06	837.06	0.61	837.10	599760.26	612596.06	
8320.00	81.13	89.53	7856.75	-38.84	867.58	7.62	867.62	599760.48	612626.58	
8352.00	84.15	89.21	7860.85	-38.49	899.31	9.49	899.35	599760.83	612658.31	
8384.00	86.68	89.06	7863.41	-38.01	931.20	7.92	931.24	599761.31	612690.20	
8415.00	89.06	89.01	7864.56	-37.49	962.18	7.68	962.21	599761.83	612721.18	
8447.00	92.34	88.65	7864.17	-36.83	994.16	10.31	994.20	599762.49	612753.16	
8479.00	95.01	89.11	7862.12	-36.21	1026.09	8.47	1026.12	599763.11	612785.09	
8510.00	95.64	88.96	7859.24	-35.69	1056.95	2.09	1056.98	599763.63	612815.95	
8542.00	96.20	89.15	7855.94	-35.17	1088.77	1.85	1088.81	599764.15	612847.77	
8574.00	96.91	88.89	7852.29	-34.62	1120.56	2.36	1120.59	599764.70	612879.56	
8605.00	96.77	89.48	7848.59	-34.18	1151.34	1.94	1151.37	599765.14	612910.34	
8637.00	94.66	89.07	7845.41	-33.78	1183.17	6.72	1183.20	599765.54	612942.17	
8668.00	92.41	89.01	7843.50	-33.26	1214.11	7.26	1214.14	599766.06	612973.11	
8700.00	92.06	89.32	7842.25	-32.80	1246.08	1.46	1246.11	599766.52	613005.08	
8732.00	92.55	89.11	7840.96	-32.36	1278.05	1.67	1278.08	599766.96	613037.05	
8763.00	93.18	89.00	7839.41	-31.85	1309.01	2.06	1309.04	599767.47	613068.01	
8795.00	92.41	88.87	7837.85	-31.25	1340.96	2.44	1340.99	599768.07	613099.96	
8827.00	90.66	88.98	7836.99	-30.65	1372.95	5.48	1372.97	599768.67	613131.95	
8858.00	90.45	89.04	7836.69	-30.12	1403.94	0.70	1403.97	599769.20	613162.94	
8890.00	91.01	88.87	7836.29	-29.53	1435.93	1.83	1435.96	599769.79	613194.93	



Weatherford International Ltd.

WFT Survey Report X & Y's

**Weatherford**

Company: Devon Energy
Field: Eddy Co., NM (NAD 83)
Site: Emerald PWU 20 #2H
Well: PWU 20 #2H
Wellpath: 1

Date: 8/22/2011 Time: 09:58:19 Page: 2
Co-ordinate(NE) Reference: Well: PWU 20 #2H, Grid North
Vertical (TVD) Reference: SITE 3354 0
Section (VS) Reference: Well (0 00N,0.00E,90 05Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
8922.00	90.73	89.83	7835.80	-29.17	1467.93	3.12	1467.95	599770.15	613226.93	
8953.00	90.38	89.48	7835.50	-28.98	1498.92	1.60	1498.95	599770.34	613257.92	
8985.00	89.97	89.88	7835.40	-28.81	1530.92	1.79	1530.95	599770.51	613289.92	
9017.00	88.85	90.38	7835.73	-28.88	1562.92	3.83	1562.95	599770.44	613321.92	
9048.00	87.80	90.22	7836.64	-29.04	1593.91	3.43	1593.93	599770.28	613352.91	
9080.00	86.81	89.82	7838.14	-29.05	1625.87	3.34	1625.90	599770.27	613384.87	
9112.00	87.24	89.86	7839.80	-28.96	1657.83	1.35	1657.85	599770.36	613416.83	
9144.00	87.94	89.36	7841.15	-28.75	1689.80	2.69	1689.82	599770.57	613448.80	
9175.00	88.50	89.34	7842.11	-28.39	1720.78	1.81	1720.81	599770.93	613479.78	
9207.00	89.34	89.16	7842.72	-27.97	1752.77	2.68	1752.80	599771.35	613511.77	
9239.00	89.97	88.37	7842.91	-27.29	1784.76	3.16	1784.79	599772.03	613543.76	
9271.00	89.41	88.70	7843.08	-26.47	1816.75	2.03	1816.78	599772.85	613575.75	
9302.00	89.41	89.04	7843.40	-25.86	1847.74	1.10	1847.77	599773.46	613606.74	
9334.00	89.97	88.75	7843.57	-25.24	1879.74	1.97	1879.76	599774.08	613638.74	
9366.00	90.45	88.68	7843.46	-24.52	1911.73	1.52	1911.75	599774.80	613670.73	
9397.00	91.08	88.56	7843.04	-23.77	1942.72	2.07	1942.74	599775.55	613701.72	
9429.00	91.64	88.95	7842.28	-23.08	1974.70	2.13	1974.72	599776.24	613733.70	
9461.00	90.24	89.71	7841.76	-22.71	2006.69	4.98	2006.71	599776.61	613765.69	
9493.00	90.66	89.66	7841.51	-22.53	2038.69	1.32	2038.71	599776.79	613797.69	
9524.00	89.62	89.99	7841.43	-22.43	2069.69	3.52	2069.71	599776.89	613828.69	
9556.00	89.27	90.30	7841.74	-22.52	2101.69	1.46	2101.71	599776.80	613860.69	
9588.00	89.90	90.00	7841.97	-22.60	2133.69	2.18	2133.71	599776.72	613892.69	
9619.00	90.52	89.73	7841.86	-22.53	2164.69	2.18	2164.71	599776.79	613923.69	
9651.00	89.55	90.82	7841.84	-22.68	2196.69	4.56	2196.71	599776.64	613955.69	
9683.00	89.13	91.54	7842.21	-23.34	2228.68	2.60	2228.70	599775.98	613987.68	
9714.00	89.62	91.34	7842.55	-24.12	2259.67	1.71	2259.69	599775.20	614018.67	
9746.00	90.31	91.10	7842.57	-24.80	2291.66	2.28	2291.68	599774.52	614050.66	
9777.00	89.41	91.88	7842.64	-25.61	2322.65	3.84	2322.67	599773.71	614081.65	
9810.00	89.13	92.03	7843.06	-26.73	2355.63	0.96	2355.65	599772.59	614114.63	
9841.00	89.55	91.98	7843.42	-27.82	2386.60	1.36	2386.63	599771.50	614145.60	
9873.00	90.03	91.76	7843.54	-28.86	2418.59	1.65	2418.61	599770.46	614177.59	
9905.00	90.45	91.84	7843.40	-29.86	2450.57	1.34	2450.60	599769.46	614209.57	
9937.00	91.02	91.86	7842.99	-30.90	2482.55	1.78	2482.58	599768.42	614241.55	
9968.00	88.85	91.53	7843.03	-31.81	2513.54	7.08	2513.56	599767.51	614272.54	
10000.00	87.87	91.11	7843.94	-32.55	2545.51	3.33	2545.54	599766.77	614304.51	
10032.00	88.15	90.96	7845.05	-33.13	2577.49	0.99	2577.52	599766.19	614336.49	
10064.00	88.50	90.82	7845.99	-33.63	2609.47	1.18	2609.50	599765.69	614368.47	
10095.00	88.92	90.58	7846.69	-34.00	2640.46	1.56	2640.49	599765.32	614399.46	
10127.00	89.27	90.63	7847.19	-34.34	2672.46	1.10	2672.49	599764.98	614431.46	
10159.00	88.92	90.58	7847.70	-34.68	2704.45	1.10	2704.48	599764.64	614463.45	
10190.00	87.03	90.61	7848.79	-35.00	2735.43	6.10	2735.46	599764.32	614494.43	
10222.00	85.63	91.58	7850.84	-35.61	2767.35	5.32	2767.39	599763.71	614526.35	
10254.00	84.99	90.05	7853.46	-36.07	2799.24	5.17	2799.28	599763.25	614558.24	
10286.00	85.28	91.20	7856.17	-36.41	2831.13	3.69	2831.16	599762.91	614590.13	
10318.00	86.12	89.86	7858.57	-36.71	2863.03	4.93	2863.07	599762.61	614622.03	
10349.00	86.88	90.19	7860.46	-36.72	2893.97	2.67	2894.01	599762.60	614652.97	
10381.00	87.38	90.17	7862.07	-36.82	2925.93	1.56	2925.97	599762.50	614684.93	
10413.00	87.94	90.17	7863.37	-36.92	2957.91	1.75	2957.94	599762.40	614716.91	
10445.00	88.84	89.87	7864.27	-36.93	2989.89	2.96	2989.93	599762.39	614748.89	
10476.00	89.55	89.78	7864.71	-36.83	3020.89	2.31	3020.92	599762.49	614779.89	
10508.00	89.90	89.67	7864.86	-36.68	3052.89	1.15	3052.92	599762.64	614811.89	
10540.00	90.10	89.31	7864.86	-36.40	3084.89	1.29	3084.92	599762.92	614843.89	



Weatherford International Ltd.

WFT Survey Report X & Y's

**Weatherford**

Company: Devon Energy
Field: Eddy Co., NM (NAD 83)
Site: Emerald PWU 20 #2H
Well: PWU 20 #2H
Wellpath: 1

Date: 8/22/2011 Time: 09:58.19 Page: 3
Co-ordinate(NE) Reference: Well. PWU 20 #2H, Grid North
Vertical (TVD) Reference: SITE 3354.0
Section (VS) Reference: Well (0 00N,0 00E,90.05Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
10571.00	90 17	89 44	7864 79	-36 06	3115 89	0 48	3115 92	599763 26	614874.89	
10603.00	89 97	89.07	7864 75	-35 64	3147 88	1 31	3147 92	599763 68	614906 88	
10635 00	90 52	88.72	7864 61	-35.02	3179.88	2.04	3179.91	599764.30	614938 88	
10666 00	90 80	89 38	7864 26	-34 51	3210.87	2.31	3210.90	599764.81	614969.87	
10699.00	91 01	89.33	7863 73	-34 14	3243 86	0 65	3243 90	599765 18	615002.86	
10731.00	91 22	89.13	7863 11	-33 71	3275 86	0 91	3275 89	599765 61	615034 86	
10763 00	91 64	89.04	7862 31	-33 20	3307 84	1 34	3307 87	599766 12	615066 84	
10794.00	91 99	88.92	7861.33	-32.65	3338.82	1 19	3338.85	599766.67	615097 82	
10826 00	91 57	89.34	7860 34	-32 16	3370 80	1 86	3370 83	599767 16	615129 80	
10858 00	90.59	88.91	7859 73	-31.67	3402 79	3 34	3402 82	599767 65	615161.79	
10890.00	89 69	88.19	7859 66	-30.86	3434.78	3.60	3434.81	599768.46	615193 78	
10921.00	88.78	87 81	7860 07	-29 78	3465 76	3 18	3465 79	599769 54	615224 76	
10953.00	89 13	87 68	7860 65	-28 52	3497 73	1.17	3497 75	599770 80	615256 73	
10985.00	89 30	87 88	7861 09	-27 28	3529 70	0.82	3529 73	599772 04	615288 70	
11016.00	89 55	87.76	7861 40	-26.10	3560.68	0.89	3560.70	599773 22	615319 68	
11048 00	88.70	87.38	7861 89	-24.75	3592.65	2.91	3592.67	599774.57	615351.65	
11080 00	87.24	86.72	7863.02	-23.10	3624.58	5.01	3624 60	599776 22	615383 58	
11112 00	86.26	86 45	7864 84	-21.20	3656.47	3 18	3656.49	599778.12	615415.47	
11143 00	86 39	86 01	7866 83	-19 16	3687 34	1 48	3687.36	599780.16	615446.34	
11175 00	86.67	86 19	7868.76	-16 99	3719 21	1 04	3719.22	599782.33	615478.21	
11207 00	87.31	86 59	7870 44	-14.98	3751.10	2 36	3751.11	599784.34	615510 10	
11238.00	87.38	86 65	7871.88	-13 15	3782 01	0 30	3782 03	599786.17	615541 01	
11270 00	87.73	86.85	7873.24	-11.34	3813.93	1 26	3813.94	599787.98	615572.93	
11302.00	88.29	86 71	7874.36	-9 54	3845.86	1 80	3845 87	599789 78	615604 86	
11333 00	88.64	87.07	7875.19	-7 86	3876 81	1 62	3876 81	599791 46	615635 81	
11365.00	88 92	87 58	7875.87	-6 37	3908.76	1 82	3908 77	599792 95	615667 76	
11397.00	89 41	87 89	7876.33	-5 11	3940 74	1 81	3940 74	599794 21	615699 74	
11429.00	90 03	88.09	7876 49	-3 98	3972 72	2 04	3972 72	599795.34	615731 72	
11460 00	90.73	88.66	7876 28	-3 10	4003 70	2 91	4003 70	599796.22	615762 70	
11492.00	91 15	89.57	7875 76	-2 61	4035 69	3 13	4035.69	599796.71	615794 69	
11524.00	91.43	89.43	7875 04	-2 33	4067 68	0 98	4067 69	599796.99	615826 68	
11555 00	91 64	89.40	7874 21	-2 01	4098 67	0 68	4098 67	599797.31	615857 67	
11587.00	92 06	89.29	7873.18	-1 65	4130 65	1 36	4130.65	599797 67	615889 65	
11619.00	91 92	89.22	7872 06	-1 23	4162 63	0 49	4162.63	599798.09	615921 63	
11651.00	90.39	89.10	7871 42	-0 76	4194 62	4 80	4194 62	599798 56	615953 62	
11682.00	89.90	88.64	7871 34	-0 15	4225 61	2 17	4225 61	599799.17	615984 61	
11714.00	90.10	88.63	7871 34	0 61	4257 60	0 63	4257 60	599799 93	616016 60	
11746 00	90.17	88.67	7871 27	1 36	4289 60	0 25	4289 59	599800.68	616048 60	
11777.00	90.32	88 78	7871 13	2 05	4320 59	0 60	4320 58	599801.37	616079.59	
11809.00	90.52	88 55	7870.90	2 80	4352 58	0 95	4352.57	599802 12	616111.58	
11841 00	90.73	88.34	7870 55	3 67	4384 56	0 93	4384.56	599802.99	616143.56	
11872.00	90 94	88 31	7870 10	4 57	4415 55	0 68	4415.54	599803 89	616174.55	
11936 00	91 36	88 38	7868.81	6 42	4479 51	0 67	4479.50	599805 74	616238 51	
11967 00	91 57	88.51	7868 02	7 26	4510 49	0 80	4510.48	599806.58	616269 49	
11999.00	91 99	88.92	7867 03	7 98	4542 46	1 83	4542 45	599807.30	616301 46	
12030 00	91 85	88 86	7865 99	8 58	4573 44	0 49	4573 43	599807 90	616332 44	Last Wft Svy
12091 00	91 85	88 86	7864 02	9 79	4634 40	0 00	4634.39	599809.11	616393 40	Proj To Bit



Weatherford International Ltd.

WFT Survey Report X & Y's



Company: Devon Energy	Date: 8/22/2011	Time: 09:58:19	Page: 4
Field: Eddy Co., NM (NAD 83)	Co-ordinate(NE) Reference: Well PWU 20 #2H, Grid North		
Site: Emerald PWU 20 #2H	Vertical (TVD) Reference: SITE 3354.0		
Well: PWU 20 #2H	Section (VS) Reference: Well (0.00N,0.00E,90.05Azi)		
Wellpath: 1	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Annotation

MD ft	TVD ft	
8125 00	7816.71	Tie On Gyrodata
8193 00	7832 30	First Wft Svy
12030 00	7865 99	Last Wft Svy
12091 00	7864 02	Proj To Bit