

Pathfinder

6213 W. Interstate 20
Midland, Texas. 79706
Tel. 432 687.1647
Fax 432 687 1544



February 17, 2011

Devon Energy
20 N. Broadway
Oklahoma City, OK

HOBBS OCD

MAY 10 2011

RE: Devon Energy
Cockburn G Federal #5H
API: 30-025-39961
Lea County, NM
RIG: McVay 8
FIELD: Mescalero Escarpe; Bone Spring
PES FILE NO.: 700001447-WT-WT

RECEIVED

To whom it may concern:

We hereby certify that the enclosed Original Field Survey Data contained in this report represents to the best of our knowledge, a true and accurate survey of the well at the time the survey was run.

DIRECTIONAL SURVEY DATA

- 1 – Original survey report
- 2 – Survey report copies

We appreciate the opportunity to work with you and we look forward to your business support. If you have any questions, I can be reached at (432) 687-1647

Sincerely,

A handwritten signature in black ink, appearing to read "Francisco Sinisterra".

FRANCISCO SINISTERRA
M/LWD Service Coordinator
PathFinder Energy Services

ML:sh



An Operating Unit of Smith International, Inc.

HOBBS OCD

MAY 10 2011

RECEIVED

DIRECTIONAL SURVEY REPORT

30-025-39961

DEVON ENERGY
COCKBURN G FEDERAL #5H
LEA COUNTY, NEW MEXICO

PREPARED BY: FRANCISCO SINISTERRA

Pathfinder

6213 W. Interstate 20
Midland, Texas, 79706
Tel. 432.687.1647
Fax 432.687.1544



DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JAY FULTON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 01-28-11 TO 02-13-11
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: LEA COUNTY
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

DEVON ENERGY
COCKBURN G FEDERAL #5H
LEA COUNTY, NM
RIG: MCVAY 8

9. SURVEY CERTIFIED FROM: 8590 TO 12196 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 3349.83 FEET ON A BEARING OF 9.78 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 12249 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

A handwritten signature in black ink, appearing to read "Francisco Sinisterra".

FRANCISCO SINISTERRA
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 01/26/2011
Date Completed: 02/13/2011

DEVON ENERGY CORPORATION
COCKBURN G FEDERAL #5H
LEA COUNTY , NEW MEXICO
Rig:McVAY 8

PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: J. HOLMES
B. BLAKEMORE
J. FULTON

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.45.33.7871 N LON:103.39.30.3708 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 748806.8820 Y: 640657.4940
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.35° EAST TO GRID
Vertical Section Plane: 10.05
Survey Vert. Reference: 19.00' Kelly Bushing To Ground
Altitude:3957.00' Ground To MSL

Measured Depth	12249.00	(feet)
Inclination	93.47	(deg)
Azimuth	9.28	(deg)
True Vertical Depth	9079.73	(feet)
Vertical Section	3349.80	(feet)
Survey X cord	749376.02	(feet)
Survey Y cord	643958.62	(feet)
Survey Lat	32.76844842 N	(deg)
Survey Lon	103.65651639 W	(deg)
Rectangular Corr. N/S	3301.13 N	(feet)
Rectangular Corr. E/W	569.14 E	(feet)
Closure Distance	3349.83	(feet)
Direction of Closure	9.78	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc. Survey Report

DEVON ENERGY CORPORATION
COCKBURN G FEDERAL #5H
LEA COUNTY, NEW MEXICO
Rig:McVAY 8

PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: J. HOLMES
B. BLAKEMORE
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Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.45,33.7871 N LON:103.39,30.3708 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 748806.8820 Y: 640657.4940
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.35° EAST TO GRID
Vertical Section Plane: 10.05
Survey Vert. Reference: 19.00' Kelly Bushing To Ground
Altitude:3957.00' Ground To MSL

Survey Calculations by RX5 V6.03D using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rectangular Offsets (ft)	TOTAL (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
THE FOLLOWING ARE SCIENTIFIC DRILLING GYRO SURVEYS.									
100.00	0.41	292.30	100.00	0.00	0.18	0.27 N	0.47 W	0.54@ 299.95	0.00
200.00	0.31	292.66	199.99	100.00	0.32	0.51 N	1.05 W	1.17@ 295.93	0.10
300.00	0.71	291.44	299.99	100.00	0.50	0.84 N	1.88 W	2.06@ 294.15	0.40
400.00	1.07	290.44	399.98	100.00	0.79	1.39 N	3.33 W	3.61@ 292.73	0.36
500.00	1.07	290.39	499.96	100.00	1.13	2.05 N	5.08 W	5.48@ 291.94	0.00
600.00	1.32	304.71	599.94	100.00	1.78	3.03 N	6.90 W	7.54@ 293.68	0.39
700.00	1.59	307.48	699.91	100.00	2.90	4.53 N	8.95 W	10.03@ 296.83	0.28
800.00	1.82	307.10	799.86	100.00	4.26	6.33 N	11.32 W	12.97@ 299.22	0.23
900.00	1.84	307.97	899.81	100.00	5.73	8.27 N	13.85 W	16.13@ 300.86	0.03
1000.00	1.75	306.31	999.76	100.00	7.16	10.17 N	16.35 W	19.25@ 301.88	0.10
1100.00	1.09	311.73	1099.73	100.00	8.33	11.70 N	18.29 W	21.71@ 302.62	0.67
1200.00	0.77	311.06	1199.72	100.00	9.18	12.78 N	19.50 W	23.32@ 303.23	0.32
1300.00	0.55	296.40	1299.71	100.00	9.66	13.43 N	20.44 W	24.46@ 303.32	0.28
1400.00	0.53	282.75	1399.71	100.00	9.82	13.75 N	21.32 W	25.37@ 302.82	0.13
1500.00	0.40	285.60	1499.70	100.00	9.87	13.94 N	22.11 W	26.14@ 302.24	0.13
1600.00	0.41	287.30	1599.70	100.00	9.95	14.14 N	22.78 W	26.82@ 301.83	0.02
1700.00	0.14	327.99	1699.70	100.00	10.09	14.35 N	23.19 W	27.27@ 301.76	0.32
1800.00	0.05	13.97	1799.70	100.00	10.22	14.50 N	23.25 W	27.40@ 301.96	0.11
1900.00	0.06	1.69	1899.70	100.00	10.32	14.60 N	23.23 W	27.44@ 302.14	0.02
2000.00	0.07	23.50	1999.70	100.00	10.43	14.70 N	23.21 W	27.47@ 302.36	0.03
2100.00	0.11	13.23	2099.70	100.00	10.58	14.85 N	23.16 W	27.51@ 302.67	0.04
2200.00	0.25	352.42	2199.70	100.00	10.89	15.17 N	23.17 W	27.69@ 303.21	0.16
2300.00	0.12	22.48	2299.70	100.00	11.20	15.48 N	23.16 W	27.86@ 303.76	0.16
2400.00	0.37	32.45	2399.70	100.00	11.60	15.85 N	22.94 W	27.89@ 304.64	0.25
2500.00	0.78	42.16	2499.69	100.00	12.48	16.63 N	22.31 W	27.83@ 306.69	0.42

PathFinder Energy Services, Inc. Survey Report

DEVON ENERGY CORPORATION
COCKBURN G FEDERAL #5H
LEA COUNTY, NEW MEXICO
RIG:McVAY 8

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
2600.00	0.94	43.17	2599.68	100.00	13.74	17.73 N 21.30 W	27.71@ 309.78	0.16
2700.00	1.31	43.93	2699.66	100.00	15.38	19.15 N 19.94 W	27.65@ 313.84	0.37
2800.00	1.77	50.91	2799.63	100.00	17.50	20.95 N 17.95 W	27.59@ 319.41	0.50
2900.00	1.58	51.39	2899.58	100.00	19.70	22.78 N 15.67 W	27.65@ 325.47	0.19
3000.00	1.47	48.36	2999.55	100.00	21.74	24.50 N 13.64 W	28.04@ 330.89	0.14
3100.00	1.37	53.41	3099.52	100.00	23.62	26.06 N 11.72 W	28.57@ 335.79	0.16
3200.00	1.15	49.55	3199.49	100.00	25.26	27.42 N 10.00 W	29.19@ 339.97	0.24
3300.00	1.01	49.08	3299.47	100.00	26.72	28.65 N 8.57 W	29.91@ 343.35	0.14
3400.00	0.96	44.14	3399.46	100.00	28.10	29.83 N 7.32 W	30.71@ 346.22	0.10
3500.00	1.00	43.29	3499.45	100.00	29.52	31.07 N 6.14 W	31.67@ 348.83	0.04
3600.00	0.92	43.35	3599.43	100.00	30.92	32.29 N 4.99 W	32.67@ 351.22	0.08
3700.00	0.96	44.66	3699.42	100.00	32.28	33.47 N 3.85 W	33.69@ 353.44	0.05
3800.00	0.97	41.53	3799.40	100.00	33.69	34.70 N 2.70 W	34.80@ 355.56	0.05
3900.00	0.82	40.46	3899.39	100.00	35.03	35.87 N 1.67 W	35.91@ 357.33	0.15
4000.00	0.79	42.70	3999.38	100.00	36.23	36.92 N 0.74 W	36.93@ 358.85	0.04
4100.00	0.72	39.54	4099.37	100.00	37.36	37.92 N 0.13 E	37.92@ 0.20	0.08
4200.00	0.61	42.17	4199.37	100.00	38.35	38.79 N 0.89 E	38.80@ 1.31	0.11
4300.00	0.41	38.87	4299.36	100.00	39.12	39.47 N 1.47 E	39.50@ 2.13	0.20
4400.00	0.53	45.49	4399.36	100.00	39.81	40.07 N 2.02 E	40.12@ 2.89	0.13
4500.00	0.53	48.45	4499.35	100.00	40.55	40.70 N 2.70 E	40.79@ 3.79	0.03
4600.00	0.45	42.81	4599.35	100.00	41.24	41.30 N 3.31 E	41.43@ 4.58	0.09
4700.00	0.43	45.49	4699.35	100.00	41.88	41.85 N 3.85 E	42.02@ 5.25	0.03
4800.00	0.43	50.57	4799.35	100.00	42.47	42.35 N 4.40 E	42.58@ 5.94	0.04
4900.00	0.50	51.21	4899.34	100.00	43.08	42.86 N 5.03 E	43.16@ 6.70	0.07
5000.00	0.49	55.55	4999.34	100.00	43.71	43.38 N 5.73 E	43.75@ 7.52	0.04
5100.00	0.43	49.54	5099.33	100.00	44.30	43.86 N 6.36 E	44.32@ 8.26	0.08
5200.00	0.44	53.22	5199.33	100.00	44.87	44.33 N 6.96 E	44.88@ 8.92	0.03
5300.00	0.35	55.92	5299.33	100.00	45.36	44.74 N 7.52 E	45.36@ 9.54	0.09

PathFinder Energy Services, Inc. Survey Report

DEVON ENERGY CORPORATION
COCKBURN G FEDERAL #5H
LEA COUNTY, NEW MEXICO
RIG: McVAY 8

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
5400.00	0.32	49.88	5399.33	100.00	45.79	45.09 N 7.99 E	45.79@ 10.04	0.05
5500.00	0.35	55.92	5499.33	100.00	46.22	45.44 N 8.45 E	46.22@ 10.54	0.05
5600.00	0.31	49.66	5599.32	100.00	46.64	45.79 N 8.91 E	46.65@ 11.02	0.05
5700.00	0.31	25.81	5699.32	100.00	47.11	46.21 N 9.24 E	47.12@ 11.31	0.13
5800.00	0.36	42.10	5799.32	100.00	47.64	46.68 N 9.57 E	47.65@ 11.58	0.11
5900.00	0.37	35.87	5899.32	100.00	48.19	47.18 N 9.97 E	48.22@ 11.93	0.04
6000.00	0.38	35.87	5999.32	100.00	48.78	47.71 N 10.35 E	48.82@ 12.24	0.01
6100.00	0.23	35.42	6099.32	100.00	49.26	48.14 N 10.66 E	49.31@ 12.49	0.15
6200.00	0.24	28.69	6199.31	100.00	49.64	48.49 N 10.88 E	49.69@ 12.64	0.03
6300.00	0.39	52.12	6299.31	100.00	50.09	48.88 N 11.25 E	50.16@ 12.96	0.20
6400.00	0.53	49.67	6399.31	100.00	50.70	49.39 N 11.87 E	50.79@ 13.51	0.14
6500.00	0.56	46.72	6499.31	100.00	51.45	50.02 N 12.58 E	51.58@ 14.11	0.04
6600.00	0.56	52.59	6599.30	100.00	52.20	50.65 N 13.32 E	52.38@ 14.73	0.06
6700.00	0.58	53.30	6699.30	100.00	52.93	51.25 N 14.11 E	53.16@ 15.40	0.02
6800.00	1.28	43.73	6799.28	100.00	54.23	52.36 N 15.29 E	54.55@ 16.28	0.71
6900.00	1.65	43.03	6899.25	100.00	56.37	54.22 N 17.05 E	56.84@ 17.45	0.37
7000.00	2.19	41.17	6999.19	100.00	59.21	56.71 N 19.29 E	59.90@ 18.78	0.54
7100.00	3.03	57.93	7099.09	100.00	62.62	59.56 N 22.78 E	63.77@ 20.94	1.13
7200.00	3.80	63.23	7198.91	100.00	66.38	62.45 N 27.98 E	68.43@ 24.14	0.83
7300.00	3.94	68.31	7298.68	100.00	70.17	65.21 N 34.13 E	73.61@ 27.63	0.37
7400.00	3.77	70.46	7398.46	100.00	73.60	67.58 N 40.42 E	78.75@ 30.89	0.22
7500.00	3.35	70.30	7498.26	100.00	76.67	69.67 N 46.27 E	83.63@ 33.59	0.42
7600.00	2.18	63.89	7598.15	100.00	79.25	71.49 N 50.73 E	87.66@ 35.36	1.21
7700.00	1.87	79.34	7698.08	100.00	80.94	72.63 N 54.04 E	90.53@ 36.65	0.63
7800.00	1.70	79.34	7798.04	100.00	82.05	73.20 N 57.10 E	92.84@ 37.96	0.17
7900.00	1.56	71.64	7898.00	100.00	83.22	73.91 N 59.85 E	95.10@ 39.00	0.26
8000.00	1.38	77.44	7997.96	100.00	84.33	74.60 N 62.32 E	97.21@ 39.88	0.23
8100.00	1.31	71.03	8097.93	100.00	85.35	75.23 N 64.58 E	99.15@ 40.64	0.17

PathFinder Energy Services, Inc. Survey Report

DEVON ENERGY CORPORATION
COCKBURN G FEDERAL #5H
LEA COUNTY, NEW MEXICO
RIG:McVAY 8

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
8200.00	1.53	65.72	8197.90	100.00	86.65	76.15 N 66.88 E	101.35@ 41.29	0.26
8300.00	1.11	63.72	8297.88	100.00	87.98	77.13 N 68.96 E	103.46@ 41.80	0.42
8400.00	1.01	61.74	8397.86	100.00	89.10	77.98 N 70.61 E	105.19@ 42.16	0.11
8500.00	0.98	50.73	8497.85	100.00	90.30	78.93 N 72.04 E	106.87@ 42.39	0.19
** TIE IN TO SCIENTIFIC DRILLING GYRO SURVEYS @ 8565' MD.								
8565.00	0.50	30.94	8562.84	65.00	90.98	79.53 N 72.62 E	107.70@ 42.40	0.83
8590.00	0.62	35.31	8587.84	25.00	91.21	79.73 N 72.75 E	107.94@ 42.38	0.51
8622.00	0.53	344.46	8619.84	32.00	91.50	80.02 N 72.81 E	108.19@ 42.30	1.56
8654.00	1.76	355.62	8651.83	32.00	92.11	80.65 N 72.74 E	108.61@ 42.05	3.89
8686.00	3.96	9.04	8683.79	32.00	93.69	82.23 N 72.87 E	109.88@ 41.55	7.14
8718.00	6.77	15.95	8715.65	32.00	96.67	85.14 N 73.57 E	112.52@ 40.83	8.99
8750.00	10.73	12.49	8747.27	32.00	101.52	89.86 N 74.73 E	116.87@ 39.75	12.48
8782.00	14.25	7.80	8778.51	32.00	108.44	96.67 N 75.91 E	122.91@ 38.14	11.44
8813.00	17.15	5.43	8808.35	31.00	116.81	105.01 N 76.86 E	130.13@ 36.20	9.58
8845.00	20.05	3.89	8838.67	32.00	126.97	115.18 N 77.68 E	138.92@ 34.00	9.19
8877.00	22.95	4.70	8868.44	32.00	138.63	126.87 N 78.56 E	149.22@ 31.77	9.11
8909.00	26.20	5.99	8897.54	32.00	151.90	140.12 N 79.81 E	161.25@ 29.67	10.29
8941.00	28.93	6.63	8925.90	32.00	166.67	154.83 N 81.44 E	174.95@ 27.74	8.58
8973.00	31.66	6.38	8953.53	32.00	182.78	170.87 N 83.27 E	190.08@ 25.98	8.54
9006.00	34.73	6.26	8981.14	33.00	200.81	188.83 N 85.26 E	207.18@ 24.30	9.30
9038.00	37.64	6.57	9006.97	32.00	219.66	207.60 N 87.37 E	225.23@ 22.82	9.11
9070.00	40.54	6.66	9031.80	32.00	239.80	227.64 N 89.69 E	244.67@ 21.51	9.06
9102.00	43.62	7.49	9055.55	32.00	261.21	248.92 N 92.34 E	265.49@ 20.35	9.78
9134.00	46.69	9.22	9078.12	32.00	283.89	271.36 N 95.64 E	287.72@ 19.42	10.33
9166.00	49.77	9.83	9099.43	32.00	307.75	294.89 N 99.60 E	311.26@ 18.66	9.73
9198.00	53.38	9.88	9119.31	32.00	332.81	319.59 N 103.89 E	336.05@ 18.01	11.28
9230.00	56.37	9.62	9137.72	32.00	358.98	345.38 N 108.32 E	361.97@ 17.41	9.37

THE FOLLOWING ARE PATHFINDER MWD SURVEYS.

PathFinder Energy Services, Inc. Survey Report

DEVON ENERGY CORPORATION
COCKBURN G FEDERAL #5H
LEA COUNTY, NEW MEXICO
RIG:McVAY 8

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
9262.00	58.74	9.71	9154.89	32.00	385.99	372.00 N 112.85 E	388.74@ 16.88	7.41
9294.00	61.55	10.40	9170.82	32.00	413.74	399.32 N 117.70 E	416.31@ 16.42	8.98
9326.00	65.16	10.86	9185.17	32.00	442.33	427.43 N 122.97 E	444.77@ 16.05	11.35
9358.00	68.24	10.42	9197.82	32.00	471.72	456.31 N 128.40 E	474.03@ 15.72	9.71
9390.00	70.79	10.03	9209.02	32.00	501.69	485.81 N 133.72 E	503.88@ 15.39	8.05
9422.00	73.51	9.87	9218.83	32.00	532.15	515.81 N 138.98 E	534.20@ 15.08	8.51
9454.00	76.59	9.50	9227.08	32.00	563.06	546.28 N 144.18 E	564.99@ 14.79	9.69
9487.00	79.23	9.69	9233.99	33.00	595.32	578.10 N 149.56 E	597.13@ 14.50	8.02
9519.00	81.78	9.50	9239.27	32.00	626.88	609.21 N 154.82 E	628.58@ 14.26	7.99
9551.00	84.94	9.52	9242.97	32.00	658.66	640.56 N 160.07 E	660.25@ 14.03	9.88
9581.00	88.02	9.86	9244.81	30.00	688.60	670.07 N 165.11 E	690.11@ 13.84	10.33
9613.00	91.19	10.29	9245.03	32.00	720.60	701.57 N 170.71 E	722.04@ 13.68	10.00
9644.00	94.18	10.24	9243.58	31.00	751.56	732.04 N 176.22 E	752.95@ 13.54	9.65
9675.00	94.62	10.39	9241.20	31.00	782.47	762.45 N 181.76 E	783.81@ 13.41	1.50
9706.00	94.79	10.21	9238.66	31.00	813.36	792.84 N 187.28 E	814.66@ 13.29	0.80
9737.00	95.06	10.39	9236.00	31.00	844.25	823.23 N 192.81 E	845.51@ 13.18	1.05
9767.00	95.32	10.16	9233.29	30.00	874.12	852.63 N 198.13 E	875.35@ 13.08	1.15
9860.00	95.41	8.46	9224.59	93.00	966.70	944.00 N 213.11 E	967.76@ 12.72	1.82
9890.00	95.50	7.87	9221.74	30.00	996.55	973.56 N 217.36 E	997.53@ 12.59	1.98
9921.00	95.67	7.96	9218.72	31.00	1027.38	1004.12 N 221.60 E	1028.28@ 12.45	0.62
9952.00	95.14	8.01	9215.80	31.00	1058.23	1034.68 N 225.89 E	1059.05@ 12.32	1.72
9984.00	94.97	8.21	9212.98	32.00	1090.08	1066.24 N 230.39 E	1090.85@ 12.19	0.82
10016.00	93.03	8.49	9210.75	32.00	1121.99	1097.82 N 235.02 E	1122.70@ 12.08	6.12
10046.00	92.68	8.41	9209.25	30.00	1151.94	1127.46 N 239.43 E	1152.60@ 11.99	1.20
10075.00	92.86	8.36	9207.85	29.00	1180.89	1156.12 N 243.65 E	1181.51@ 11.90	0.64
10106.00	93.12	8.25	9206.24	31.00	1211.84	1186.75 N 248.12 E	1212.41@ 11.81	0.91
10137.00	92.59	7.94	9204.69	31.00	1242.78	1217.40 N 252.48 E	1243.31@ 11.72	1.98
10168.00	92.59	7.88	9203.29	31.00	1273.73	1248.08 N 256.74 E	1274.21@ 11.62	0.19

PathFinder Energy Services, Inc. Survey Report

DEVON ENERGY CORPORATION
COCKBURN G FEDERAL #5H
LEA COUNTY, NEW MEXICO
RIG:McVAY 8

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rectangular Offsets (ft)	TOTAL (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
10202.00	90.57	8.38	9202.35	34.00	1307.69	1281.72 N	261.55 E	1308.13@ 11.53	6.12
10230.00	90.22	8.42	9202.16	28.00	1335.68	1309.42 N	265.64 E	1336.09@ 11.47	1.26
10261.00	90.92	8.78	9201.85	31.00	1366.67	1340.07 N	270.28 E	1367.05@ 11.40	2.54
10292.00	91.71	9.27	9201.14	31.00	1397.66	1370.68 N	275.14 E	1398.02@ 11.35	3.00
10323.00	92.33	9.41	9200.05	31.00	1428.64	1401.25 N	280.16 E	1428.98@ 11.31	2.05
10353.00	92.59	9.21	9198.76	30.00	1458.61	1430.82 N	285.01 E	1458.93@ 11.27	1.09
10384.00	92.59	9.22	9197.36	31.00	1489.57	1461.39 N	289.97 E	1489.88@ 11.22	0.03
10415.00	92.59	9.04	9195.96	31.00	1520.53	1491.97 N	294.89 E	1520.83@ 11.18	0.58
10446.00	93.03	9.05	9194.44	31.00	1551.49	1522.54 N	299.75 E	1551.77@ 11.14	1.42
10477.00	93.30	8.63	9192.73	31.00	1582.44	1553.13 N	304.51 E	1582.70@ 11.09	1.61
10507.00	93.83	8.70	9190.86	30.00	1612.37	1582.73 N	309.02 E	1612.62@ 11.05	1.78
10538.00	93.21	8.53	9188.96	31.00	1643.30	1613.32 N	313.66 E	1643.53@ 11.00	2.07
10569.00	92.24	8.57	9187.49	31.00	1674.26	1643.94 N	318.26 E	1674.47@ 10.96	3.13
10600.00	92.51	8.26	9186.20	31.00	1705.22	1674.58 N	322.79 E	1705.41@ 10.91	1.33
10631.00	92.68	8.06	9184.80	31.00	1736.17	1705.24 N	327.19 E	1736.34@ 10.86	0.85
10661.00	92.77	7.70	9183.37	30.00	1766.11	1734.92 N	331.30 E	1766.27@ 10.81	1.24
10692.00	91.63	8.20	9182.18	31.00	1797.07	1765.60 N	335.58 E	1797.21@ 10.76	4.01
10723.00	90.84	8.97	9181.51	31.00	1828.05	1796.24 N	340.21 E	1828.18@ 10.72	3.56
10754.00	90.66	8.64	9181.11	31.00	1859.04	1826.88 N	344.95 E	1859.16@ 10.69	1.21
10784.00	91.10	8.75	9180.65	30.00	1889.03	1856.53 N	349.49 E	1889.14@ 10.66	1.51
10815.00	91.63	8.79	9179.91	31.00	1920.01	1887.16 N	354.21 E	1920.11@ 10.63	1.71
10846.00	92.15	9.01	9178.89	31.00	1950.99	1917.77 N	359.01 E	1951.08@ 10.60	1.82
10877.00	92.33	9.04	9177.67	31.00	1981.96	1948.36 N	363.86 E	1982.05@ 10.58	0.59
10907.00	92.59	8.47	9176.39	30.00	2011.93	1977.98 N	368.43 E	2012.00@ 10.55	2.09
10938.00	93.12	8.74	9174.84	31.00	2042.88	2008.60 N	373.06 E	2042.95@ 10.52	1.92
10969.00	93.56	8.84	9173.04	31.00	2073.82	2039.18 N	377.79 E	2073.88@ 10.50	1.45
11000.00	93.39	9.24	9171.16	31.00	2104.75	2069.74 N	382.65 E	2104.81@ 10.47	1.40
11030.00	93.65	9.04	9169.32	30.00	2134.69	2099.30 N	387.41 E	2134.75@ 10.46	1.09

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
COCKBURN G FEDERAL #5H
LEA COUNTY, NEW MEXICO
RIG:McVAY 8

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rectangular Offsets (ft)	TOTAL (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
11062.00	94.53	9.25	9167.03	32.00	2166.61	2130.81 N	392.48 E	2166.66@ 10.44	2.83
11093.00	94.97	8.94	9164.47	31.00	2197.50	2161.32 N	397.36 E	2197.54@ 10.42	1.73
11124.00	95.41	9.20	9161.66	31.00	2228.37	2191.81 N	402.23 E	2228.41@ 10.40	1.65
11154.00	95.41	9.11	9158.83	30.00	2258.23	2221.29 N	406.98 E	2258.27@ 10.38	0.30
11185.00	94.62	8.76	9156.12	31.00	2289.10	2251.80 N	411.78 E	2289.14@ 10.36	2.79
11216.00	95.06	9.04	9153.51	31.00	2319.99	2282.31 N	416.56 E	2320.02@ 10.34	1.68
11247.00	95.58	8.94	9150.63	31.00	2350.85	2312.80 N	421.38 E	2350.88@ 10.33	1.71
11277.00	96.20	8.97	9147.55	30.00	2380.68	2342.28 N	426.02 E	2380.71@ 10.31	2.07
11308.00	95.85	8.70	9144.30	31.00	2411.51	2372.74 N	430.76 E	2411.53@ 10.29	1.42
11339.00	96.11	8.37	9141.07	31.00	2442.33	2403.23 N	435.34 E	2442.34@ 10.27	1.35
11370.00	96.29	8.18	9137.72	31.00	2473.13	2433.73 N	439.77 E	2473.14@ 10.24	0.84
11401.00	94.70	8.43	9134.75	31.00	2503.97	2464.26 N	444.23 E	2503.98@ 10.22	5.19
11431.00	94.88	8.40	9132.25	30.00	2533.86	2493.84 N	448.60 E	2533.86@ 10.20	0.61
11462.00	94.70	8.15	9129.66	31.00	2564.73	2524.41 N	453.05 E	2564.74@ 10.17	0.99
11492.00	94.97	7.79	9127.13	30.00	2594.61	2554.01 N	457.19 E	2594.61@ 10.15	1.50
11524.00	94.62	7.66	9124.46	32.00	2626.47	2585.61 N	461.48 E	2626.47@ 10.12	1.17
11555.00	94.97	7.61	9121.87	31.00	2657.33	2616.23 N	465.58 E	2657.33@ 10.09	1.14
11586.00	93.39	7.52	9119.61	31.00	2688.22	2646.87 N	469.66 E	2688.22@ 10.06	5.10
11616.00	92.86	8.27	9117.97	30.00	2718.15	2676.55 N	473.77 E	2718.15@ 10.04	3.06
11647.00	92.95	8.09	9116.40	31.00	2749.10	2707.19 N	478.17 E	2749.10@ 10.02	0.65
11677.00	93.30	8.02	9114.76	30.00	2779.03	2736.85 N	482.37 E	2779.04@ 10.00	1.19
11709.00	93.30	8.15	9112.92	32.00	2810.96	2768.48 N	486.87 E	2810.96@ 9.97	0.41
11740.00	93.21	8.78	9111.16	31.00	2841.90	2799.09 N	491.42 E	2841.90@ 9.96	2.05
11770.00	93.39	8.32	9109.44	30.00	2871.84	2828.71 N	495.87 E	2871.85@ 9.94	1.64
11801.00	93.56	8.45	9107.56	31.00	2902.77	2859.32 N	500.39 E	2902.78@ 9.93	0.69
11833.00	93.83	8.40	9105.49	32.00	2934.69	2890.91 N	505.07 E	2934.70@ 9.91	0.86
11864.00	93.74	8.10	9103.45	31.00	2965.61	2921.52 N	509.50 E	2965.62@ 9.89	1.01
11895.00	93.21	8.71	9101.57	31.00	2996.54	2952.13 N	514.03 E	2996.55@ 9.88	2.60

PathFinder Energy Services, Inc. Survey Report

DEVON ENERGY CORPORATION
COCKBURN G FEDERAL #5H
LEA COUNTY, NEW MEXICO
RIG:McVAY 8

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rectangular Offsets (ft)	TOTAL (ft)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
11926.00	93.39	8.81	9099.78	31.00	3027.48	2982.72 N	518.74 E	3027.49@	9.87
11956.00	93.65	8.97	9097.94	30.00	3057.42	3012.30 N	523.37 E	3057.43@	9.86
11987.00	93.74	8.75	9095.94	31.00	3088.34	3042.87 N	528.13 E	3088.36@	9.85
12019.00	93.56	8.81	9093.91	32.00	3120.27	3074.43 N	533.01 E	3120.29@	9.84
12049.00	93.65	8.73	9092.02	30.00	3150.20	3104.02 N	537.57 E	3150.23@	9.83
12080.00	93.65	8.80	9090.05	31.00	3181.13	3134.60 N	542.29 E	3181.16@	9.82
12111.00	93.47	9.13	9088.12	31.00	3212.07	3165.16 N	547.11 E	3212.10@	9.81
12142.00	93.47	9.11	9086.25	31.00	3243.01	3195.71 N	552.01 E	3243.04@	9.80
12173.00	93.56	9.18	9084.35	31.00	3273.95	3226.26 N	556.93 E	3273.98@	9.79
12196.00	93.47	9.28	9082.94	23.00	3296.90	3248.92 N	560.61 E	3296.93@	9.79
12249.00	93.47	9.28	9079.73	53.00	3349.80	3301.13 N	569.14 E	3349.83@	9.78
STRAIGHT LINE PROJECTION TO BIT @ 12249' MD.									

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.



A Schlumberger Company

TIE-IN SURVEY INFORMATION SHEET**CLIENT INFORMATION**

CLIENT:	DEVON ENERGY		
LEASE / WELL No.:	COCKBURN G FED	#5H	
WELL LOCATION:	LEA COUNTY, NM		
COUNTY / STATE / COUNTRY:	LEA	NM	USA
RIG:	McVAY 8		
API WELL No:	30-025-39961		
JOB No:	700001447 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PATHFINDER ENERGY SERVICES		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.34	LWD Calculated:	7.348337 Agreed Upon: 7.35
X =	748806.882000	Feet	Y = 640657.494000 Feet
SITE LATITUDE:	32.759385 N	SITE LONGITUDE:	103.658436 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	new mexico east
PROPOSED DRIFT DIRECTION:	10.05		
KELLY BUSHING ELEVATION:	19'		
ALTITUDE:	3957	Feet	WATER DEPTH: Feet

TIE-IN SURVEY

MEASURED DEPTH:	8565		
DRIFT ANGLE:	0.5		
DRIFT DIRECTION:	30.94		
TRUE VERTICAL DEPTH:	8562.84		
VERTICAL SECTION:	90.98		
RECTANGULAR COORDINATE (N / S) :	79.53		
RECTANGULAR COORDINATE (E / W) :	72.62		
CLOSURE DISTANCE / DIRECTION:	107.7	42.4	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	SCIENTIFIC DRILLING		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	8679	TOTAL DEPTH:	12280.62
KICKOFF ANGLE:	0.5	MAX ANGLE:	94.99

PES Engineers: JEREMY HOLMES
BRYANT BLAKEMORE

**Signature of both field engineers required if applicable

Directional Driller: MICHAEL BLAKEDATE: 26-Jan-2011

Scientific Drilling

Gyroscopic Survey Report for DEVON

Well Location	LEA COUNTY, NEW MEXICO
Well Name	COCKBURN G FEDERAL #5H
Rig Name	McVAY #8
Survey Date	1/24/2011
Latitude	32.76 deg
North Reference	Grid North
Grid Correction	-0.37 deg
Depth Reference	RKB
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 10.05Azim (deg)
Definitive Survey	FINAL OUTRUN SURVEY
Operator	A.MADRID

Comments

Scientific Drilling Survey Report

Well Name: COCKBURN G FEDERAL #5H

Survey: FINAL OUTRUN SURVEY

Survey Date: 1/24/2011

MD ft	Inc deg	Azim deg	TVD ft	VS ft	Northing ft	Easting ft	DLS deg/100ft	Closure Distance ft	Closure Angle deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.41	293.30	100.00	0.08	0.14	-0.33	0.41	0.36	293.30
200.00	0.31	292.66	200.00	0.22	0.39	-0.91	0.10	0.98	293.12
300.00	0.71	291.44	299.99	0.40	0.72	-1.73	0.41	1.87	292.50
400.00	1.07	290.44	399.98	0.70	1.27	-3.19	0.36	3.43	291.74
500.00	1.07	290.39	499.96	1.03	1.92	-4.94	0.00	5.30	291.27
600.00	1.32	304.71	599.94	1.68	2.91	-6.77	0.39	7.37	293.25
700.00	1.59	307.48	699.91	2.80	4.41	-8.82	0.27	9.86	296.56
800.00	1.82	307.10	799.86	4.16	6.21	-11.18	0.24	12.79	299.04
900.00	1.84	307.97	899.81	5.64	8.15	-13.71	0.03	15.96	300.73
1000.00	1.75	306.31	999.76	7.06	10.04	-16.21	0.10	19.07	301.79
1100.00	1.09	311.73	1099.73	8.24	11.58	-18.15	0.68	21.53	302.54
1200.00	0.77	311.06	1199.72	9.08	12.65	-19.36	0.32	23.13	303.17
1300.00	0.55	296.40	1299.71	9.56	13.31	-20.30	0.27	24.27	303.25
1400.00	0.53	282.75	1399.71	9.72	13.62	-21.18	0.13	25.18	302.75
1500.00	0.40	285.60	1499.71	9.77	13.82	-21.97	0.13	25.95	302.17
1600.00	0.41	287.30	1599.70	9.85	14.02	-22.65	0.02	26.64	301.76
1700.00	0.14	327.99	1699.70	9.99	14.24	-23.06	0.32	27.10	301.69
1800.00	0.05	13.97	1799.70	10.13	14.39	-23.12	0.12	27.23	301.90
1900.00	0.06	1.69	1899.70	10.23	14.48	-23.11	0.01	27.27	302.08
2000.00	0.07	23.50	1999.70	10.34	14.59	-23.08	0.03	27.30	302.30
2100.00	0.11	13.23	2099.70	10.50	14.74	-23.03	0.04	27.35	302.62
2200.00	0.25	352.42	2199.70	10.80	15.05	-23.04	0.16	27.52	303.16
2300.00	0.12	22.48	2299.70	11.11	15.37	-23.03	0.16	27.69	303.71
2400.00	0.37	32.45	2399.70	11.51	15.73	-22.82	0.26	27.72	304.58
2500.00	0.78	42.16	2499.69	12.38	16.51	-22.19	0.42	27.66	306.65
2600.00	0.94	43.17	2599.68	13.65	17.61	-21.17	0.17	27.54	309.76
2700.00	1.31	43.93	2699.66	15.29	19.04	-19.81	0.37	27.48	313.86
2800.00	1.77	50.91	2799.63	17.41	20.84	-17.82	0.49	27.42	319.47
2900.00	1.58	51.39	2899.58	19.61	22.67	-15.54	0.19	27.49	325.56
3000.00	1.47	48.36	2999.55	21.65	24.38	-13.51	0.13	27.87	331.01
3100.00	1.37	53.41	3099.52	23.53	25.95	-11.59	0.16	28.42	335.93
3200.00	1.15	49.55	3199.49	25.17	27.31	-9.87	0.24	29.04	340.14
3300.00	1.01	49.08	3299.48	26.63	28.54	-8.44	0.14	29.76	343.53
3400.00	0.96	44.14	3399.46	28.01	29.72	-7.19	0.10	30.57	346.40
3500.00	1.00	43.29	3499.45	29.43	30.96	-6.00	0.04	31.53	349.02
3600.00	0.92	43.35	3599.43	30.83	32.17	-4.86	0.08	32.54	351.42
3700.00	0.96	44.66	3699.42	32.19	33.35	-3.72	0.05	33.55	353.63
3800.00	0.97	41.53	3799.41	33.59	34.57	-2.57	0.05	34.67	355.74

Scientific Drilling Survey Report

Well Name: COCKBURN G FEDERAL #5H
 Survey: FINAL OUTRUN SURVEY
 Survey Date: 1/24/2011

MD ft	Inc deg	Azim deg	TVD ft	VS ft	Northing ft	Easting ft	DLS deg/100ft	Closure Distance ft	Closure Angle deg
3900.00	0.82	40.46	3899.39	34.93	35.75	-1.55	0.14	35.79	357.52
4000.00	0.79	42.70	3999.38	36.13	36.80	-0.62	0.05	36.81	359.04
4100.00	0.72	39.54	4099.37	37.26	37.79	0.25	0.08	37.79	0.38
4200.00	0.61	42.17	4199.37	38.26	38.67	1.01	0.11	38.69	1.49
4300.00	0.41	38.87	4299.36	39.02	39.35	1.59	0.20	39.38	2.32
4400.00	0.53	45.49	4399.36	39.71	39.95	2.15	0.13	40.01	3.08
4500.00	0.45	48.45	4499.36	40.40	40.54	2.77	0.09	40.63	3.91
4600.00	0.45	42.81	4599.35	41.04	41.09	3.33	0.04	41.22	4.64
4700.00	0.43	47.38	4699.35	41.67	41.63	3.88	0.04	41.81	5.32
4800.00	0.43	50.57	4799.35	42.25	42.13	4.44	0.02	42.36	6.02
4900.00	0.50	51.21	4899.34	42.86	42.63	5.07	0.07	42.93	6.78
5000.00	0.49	55.55	4999.34	43.49	43.14	5.76	0.04	43.53	7.60
5100.00	0.43	49.54	5099.34	44.07	43.63	6.39	0.08	44.09	8.34
5200.00	0.44	53.22	5199.34	44.64	44.10	6.98	0.03	44.65	9.00
5300.00	0.35	59.74	5299.33	45.12	44.48	7.55	0.10	45.12	9.64
5400.00	0.32	49.88	5399.33	45.53	44.82	8.03	0.06	45.53	10.16
5500.00	0.35	55.92	5499.33	45.95	45.16	8.49	0.04	45.96	10.65
5600.00	0.31	49.66	5599.33	46.37	45.51	8.95	0.05	46.38	11.13
5700.00	0.31	25.81	5699.33	46.84	45.93	9.28	0.13	46.85	11.42
5800.00	0.36	42.10	5799.32	47.37	46.40	9.60	0.11	47.39	11.69
5900.00	0.37	35.87	5899.32	47.93	46.90	10.01	0.04	47.96	12.05
6000.00	0.38	35.87	5999.32	48.52	47.43	10.39	0.01	48.56	12.36
6100.00	0.23	35.42	6099.32	49.00	47.87	10.71	0.14	49.05	12.61
6200.00	0.24	28.69	6199.32	49.39	48.22	10.92	0.03	49.44	12.77
6300.00	0.39	52.12	6299.32	49.84	48.61	11.30	0.20	49.91	13.08
6400.00	0.53	49.67	6399.31	50.45	49.12	11.92	0.14	50.55	13.64
6500.00	0.56	46.72	6499.31	51.20	49.76	12.63	0.05	51.33	14.24
6600.00	0.56	52.59	6599.30	51.95	50.39	13.37	0.06	52.13	14.86
6700.00	0.58	53.30	6699.30	52.67	50.99	14.16	0.02	52.92	15.52
6800.00	1.28	43.73	6799.29	53.97	52.10	15.34	0.72	54.31	16.40
6900.00	1.65	43.03	6899.25	56.11	53.95	17.09	0.37	56.60	17.58
7000.00	2.19	41.17	6999.20	58.95	56.45	19.33	0.55	59.66	18.91
7100.00	3.03	57.93	7099.09	62.37	59.29	22.83	1.12	63.53	21.06
7200.00	3.80	63.23	7198.91	66.12	62.19	28.03	0.83	68.21	24.26
7300.00	3.94	68.31	7298.69	69.92	64.95	34.18	0.37	73.39	27.75
7400.00	3.77	70.46	7398.46	73.34	67.32	40.46	0.22	78.54	31.01
7500.00	3.35	70.30	7498.27	76.42	69.40	46.31	0.41	83.44	33.72
7600.00	2.18	63.89	7598.15	78.99	71.23	50.78	1.21	87.47	35.49

Scientific Drilling Survey Report

Well Name: COCKBURN G FEDERAL #5H

Survey: FINAL OUTFRAN SURVEY

Survey Date: 1/24/2011

MD ft	Inc deg	Azim deg	TVD ft	VS ft	Northing ft	Easting ft	DLS deg/100ft	Closure Distance ft	Closure Angle deg
7700.00	1.87	79.34	7698.09	80.70	72.37	54.10	0.63	90.35	36.78
7800.00	1.70	74.20	7798.04	81.92	73.07	57.13	0.24	92.76	38.02
7900.00	1.56	71.64	7898.00	83.22	73.91	59.85	0.16	95.10	39.00
8000.00	1.38	77.44	7997.97	84.33	74.60	62.32	0.23	97.20	39.88
8100.00	1.31	71.03	8097.94	85.35	75.23	64.58	0.16	99.15	40.64
8200.00	1.53	65.72	8197.91	86.65	76.15	66.88	0.25	101.35	41.29
8300.00	1.11	63.72	8297.88	87.98	77.13	68.96	0.42	103.46	41.80
8400.00	1.01	61.74	8397.86	89.10	77.98	70.61	0.11	105.20	42.16
8500.00	0.98	50.73	8497.85	90.30	78.93	72.05	0.19	106.87	42.39
8565.00	0.50	30.94	8562.84	90.98	79.53	72.62	0.82	107.70	42.40



A Schlumberger Company

PathFinder Energy Services, Inc. Magnetic & Grid Calculations

DEVON ENERGY
COCKBURN G FED #5H
LEA COUNTY, NEW MEXICO
Rig: McVAY 8

Thu Jan 20 15:38:48 2011

Coordinates

Latitude: 32.759385 N (32 deg. 45 min. 33.7871 sec.)
Longitude: 103.658436 W (-103 deg. 39 min. 30.3708 sec.)
Elevation: 3976.00 feet.
Calculation Date: Jan/20/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.6778 degrees
Total Magnetic Field: 0.48966 gauss
Magnetic Declination: 7.715231 degrees
Horizontal Intensity: 0.239797 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.715231 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 748806.8820 feet
Y: 640657.4940 feet
True to Grid: (convergence) -0.365207 degrees
Magnetic to Grid: 7.350024 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.350024 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

DEVON ENERGY
COCKBURN G FED #5H
LEA COUNTY, NM
Rig:McVAY 8

Tue Jan 25 06:44:09 2011

Coordinates

Latitude: 32.759385 N (32 deg. 45 min. 33.7871 sec.)
Longitude: 103.658436 W (-103 deg. 39 min. 30.3708 sec.)
Elevation: 3976.00 feet.
Calculation Date: Jan/25/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.6774 degrees
Total Magnetic Field: 0.48965 gauss
Magnetic Declination: 7.713545 degrees
Horizontal Intensity: 0.239793 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.713545 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 748806.8820 feet
Y: 640657.4940 feet
True to Grid: (convergence) -0.365207 degrees
Magnetic to Grid: 7.348337 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.348337 Degr.