



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

DEVON ENERGY

SNAPPING 2 STATE #4H

EDDY COUNTY, NEW MEXICO

PREPARED BY: STEVE BIBB

Pathfinder

3213 WCR 112
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) JAMES BURLESON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 09-13-11 TO 09-21-11
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

DEVON ENERGY
SNAPPING 2 STATE #4H
EDDY COUNTY, NM
RIG: H&P 416

9. SURVEY CERTIFIED FROM: 8370 TO 13484 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 4671.63 FEET ON A BEARING OF 4.03 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 13539 FEET,
ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

A handwritten signature in black ink, appearing to read "Steve Bibb".

STEVE BIBB
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 09/12/2011
Date Completed: 09/22/2011

DEVON ENERGY CORPORATION
SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
Rig:H&P 416
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:J.BURLESON
S.MOORE
J.EARLS

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.356.8299 N LON:103.44.33.5688 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 724310.3700 Y: 388171.2600
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.31° EAST TO GRID
Vertical Section Plane: 3.92
Survey Vert. Reference: 25.00' Kelly Bushing To Ground
Altitude:3267.00' Ground To MSL

Measured Depth	13539.00	(feet)
Inclination	90.75	(deg)
Azimuth	1.60	(deg)
True Vertical Depth	9054.40	(feet)
Vertical Section	4671.62	(feet)
Survey X cord	724638.79	(feet)
Survey Y cord	392831.28	(feet)
Survey Lat	32.07859074 N	(deg)
Survey Lon	103.74151535 W	(deg)
Rectangular Corr. N/S	4660.07 N	(feet)
Rectangular Corr. E/W	328.44 E	(feet)
Closure Distance	4671.63	(feet)
Direction of Closure	4.03	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION

SNAPPING 2 STATE #4H

EDDY COUNTY COUNTY, NM

Rig:H&P 416

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: J.BURLESON

L.NATIVIDAD

S.MOORE

J.EARLS

Survey Calculations by RX5 V6.03E using Minimum Curvature

Page 01/07

Tie-in Date: 09/12/2011

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Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.356.8299 N LON:103.44.33.5688 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 724310.3700 Y: 388171.2600

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.31° EAST TO GRID

Vertical Section Plane: 3.92

Survey Vert. Reference: 25.00' Kelly Bushing To Ground

Altitude:3267.00' Ground To MSL

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL		Closure		DLS
						Rectangular (ft)	Offsets (ft)	Dist (ft)	Dir (deg)	
THE FOLLOWING ARE SCIENTIFIC GYRO SURVEYS.										
0.00	0.00	0.00	0.00	0.00	-0.00	0.00 N	0.00 W	0.00@	272.11	0.00
100.00	0.63	324.48	100.00	100.00	0.42	0.45 N	0.32 W	0.55@	324.17	0.63
200.00	0.58	301.33	200.00	100.00	1.08	1.16 N	1.08 W	1.58@	317.14	0.25
300.00	0.69	311.64	299.99	100.00	1.68	1.82 N	1.96 W	2.67@	312.94	0.16
400.00	0.79	292.45	399.98	100.00	2.27	2.48 N	3.04 W	3.93@	309.22	0.27
500.00	1.42	267.64	499.96	100.00	2.35	2.70 N	4.92 W	5.61@	298.73	0.78
600.00	1.72	254.29	599.93	100.00	1.71	2.24 N	7.60 W	7.93@	286.42	0.47
700.00	1.64	256.56	699.88	100.00	0.78	1.50 N	10.44 W	10.55@	278.18	0.10
800.00	1.81	256.35	799.84	100.00	-0.12	0.80 N	13.37 W	13.39@	273.41	0.17
900.00	1.90	254.98	899.79	100.00	-1.13	0.01 S	16.50 W	16.50@	269.98	0.10
1000.00	1.73	258.17	999.73	100.00	-2.08	0.75 S	19.58 W	19.59@	267.82	0.20
1100.00	1.67	266.22	1099.69	100.00	-2.69	1.15 S	22.51 W	22.54@	267.07	0.25
1200.00	1.84	272.17	1199.64	100.00	-2.93	1.19 S	25.57 W	25.60@	267.34	0.25
1300.00	1.72	274.85	1299.60	100.00	-2.96	1.00 S	28.67 W	28.69@	268.00	0.15
1400.00	2.04	284.37	1399.54	100.00	-2.61	0.43 S	31.89 W	31.89@	269.23	0.45
1500.00	2.09	291.75	1499.48	100.00	-1.73	0.69 N	35.31 W	35.31@	271.11	0.27
1600.00	2.15	295.33	1599.41	100.00	-0.49	2.17 N	38.70 W	38.76@	273.20	0.14
1700.00	2.34	288.54	1699.33	100.00	0.71	3.62 N	42.33 W	42.48@	274.88	0.33
1800.00	2.49	289.21	1799.24	100.00	1.80	4.98 N	46.31 W	46.58@	276.14	0.15
1900.00	2.62	283.17	1899.14	100.00	2.74	6.22 N	50.59 W	50.97@	277.01	0.30
2000.00	2.55	283.23	1999.04	100.00	3.47	7.25 N	54.98 W	55.46@	277.51	0.07
2100.00	2.13	282.96	2098.96	100.00	4.12	8.17 N	58.96 W	59.52@	277.89	0.42
2200.00	2.23	275.79	2198.89	100.00	4.48	8.79 N	62.70 W	63.32@	277.98	0.29
2300.00	2.12	266.13	2298.82	100.00	4.29	8.86 N	66.49 W	67.07@	277.59	0.38
2400.00	1.92	268.55	2398.75	100.00	3.88	8.69 N	70.01 W	70.54@	277.08	0.22

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
RIG:H&P 416

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2500.00	1.27	257.62	2498.71	100.00	3.42	8.41 N	72.76 W	73.25@	276.59	0.71
2600.00	1.53	254.97	2598.68	100.00	2.67	7.83 N	75.13 W	75.54@	275.95	0.27
2700.00	1.62	255.77	2698.65	100.00	1.80	7.13 N	77.79 W	78.12@	275.24	0.09
2800.00	1.66	262.45	2798.61	100.00	1.07	6.59 N	80.60 W	80.87@	274.68	0.20
2900.00	1.53	251.99	2898.57	100.00	0.28	5.99 N	83.31 W	83.52@	274.11	0.32
3000.00	1.38	255.16	2998.53	100.00	-0.60	5.27 N	85.74 W	85.90@	273.52	0.17
3100.00	0.86	218.90	3098.52	100.00	-1.61	4.38 N	87.37 W	87.48@	272.87	0.85
3200.00	0.28	268.44	3198.51	100.00	-2.24	3.79 N	88.09 W	88.17@	272.46	0.71
3300.00	0.24	285.95	3298.51	100.00	-2.22	3.84 N	88.54 W	88.62@	272.48	0.09
3400.00	0.56	342.58	3398.51	100.00	-1.73	4.36 N	88.88 W	88.99@	272.81	0.47
3500.00	1.23	71.71	3498.50	100.00	-0.86	5.16 N	88.01 W	88.16@	273.36	1.34
3600.00	2.20	93.92	3598.45	100.00	-0.46	5.37 N	85.08 W	85.25@	273.61	1.16
3700.00	2.55	98.53	3698.37	100.00	-0.64	4.91 N	80.96 W	81.11@	273.47	0.40
3800.00	3.36	105.58	3798.23	100.00	-1.41	3.79 N	75.94 W	76.03@	272.86	0.89
3900.00	4.65	122.05	3897.99	100.00	-3.91	0.85 N	69.68 W	69.68@	270.70	1.72
4000.00	4.88	128.27	3997.65	100.00	-8.22	3.93 S	62.90 W	63.03@	266.42	0.57
4100.00	3.65	131.96	4097.37	100.00	-12.58	8.69 S	57.20 W	57.86@	261.36	1.26
4200.00	2.52	127.54	4197.22	100.00	-15.76	12.16 S	53.09 W	54.46@	257.10	1.15
4300.00	2.00	128.81	4297.14	100.00	-17.98	14.60 S	49.98 W	52.07@	253.72	0.52
4400.00	2.29	122.96	4397.07	100.00	-19.95	16.78 S	46.95 W	49.86@	250.34	0.36
4500.00	1.98	127.70	4497.00	100.00	-21.88	18.92 S	43.91 W	47.81@	246.69	0.36
4600.00	2.06	112.18	4596.94	100.00	-23.40	20.65 S	40.87 W	45.80@	243.19	0.55
4700.00	2.03	113.98	4696.88	100.00	-24.57	22.05 S	37.59 W	43.58@	239.60	0.07
4800.00	1.67	111.95	4796.83	100.00	-25.63	23.32 S	34.62 W	41.74@	236.04	0.36
4900.00	1.75	105.26	4896.78	100.00	-26.38	24.26 S	31.80 W	40.00@	232.65	0.21
5000.00	1.61	101.19	4996.74	100.00	-26.86	24.94 S	28.95 W	38.21@	229.25	0.18
5100.00	1.54	96.85	5096.70	100.00	-27.11	25.37 S	26.23 W	36.50@	225.96	0.14
5200.00	0.95	91.25	5196.68	100.00	-27.14	25.55 S	24.07 W	35.10@	223.29	0.60

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
RIG:H&P 416

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5300.00	0.89	77.11	5296.66	100.00	-26.87	25.39 S	22.49 W	33.92@	221.52	0.23
5400.00	0.93	75.30	5396.65	100.00	-26.39	25.02 S	20.94 W	32.62@	219.94	0.05
5500.00	0.85	62.80	5496.64	100.00	-25.75	24.47 S	19.50 W	31.29@	218.55	0.21
5600.00	0.86	70.49	5596.63	100.00	-25.06	23.88 S	18.13 W	29.98@	217.21	0.12
5700.00	0.68	66.88	5696.62	100.00	-24.50	23.40 S	16.88 W	28.85@	215.81	0.19
5800.00	1.01	60.32	5796.61	100.00	-23.74	22.73 S	15.57 W	27.55@	214.41	0.34
5900.00	0.66	73.38	5896.60	100.00	-23.05	22.13 S	14.25 W	26.32@	212.78	0.40
6000.00	0.26	165.83	5996.60	100.00	-23.06	22.18 S	13.64 W	26.04@	211.59	0.72
6100.00	0.22	189.00	6096.59	100.00	-23.47	22.59 S	13.62 W	26.38@	211.08	0.10
6200.00	0.64	163.15	6196.59	100.00	-24.18	23.32 S	13.48 W	26.93@	210.04	0.45
6300.00	0.45	181.80	6296.59	100.00	-25.10	24.24 S	13.33 W	27.67@	208.81	0.26
6400.00	0.36	197.09	6396.58	100.00	-25.80	24.94 S	13.44 W	28.33@	208.32	0.14
6500.00	0.57	197.08	6496.58	100.00	-26.59	25.71 S	13.68 W	29.12@	208.01	0.21
6600.00	0.96	220.37	6596.57	100.00	-27.74	26.83 S	14.37 W	30.43@	208.17	0.49
6700.00	0.92	220.79	6696.56	100.00	-29.06	28.07 S	15.43 W	32.03@	208.80	0.04
6800.00	1.09	220.75	6796.54	100.00	-30.46	29.40 S	16.58 W	33.75@	209.42	0.17
6900.00	0.91	207.84	6896.53	100.00	-31.95	30.82 S	17.57 W	35.48@	209.69	0.29
7000.00	0.88	219.71	6996.52	100.00	-33.30	32.12 S	18.43 W	37.03@	209.85	0.19
7100.00	1.04	217.67	7096.50	100.00	-34.68	33.42 S	19.48 W	38.69@	210.23	0.16
7200.00	1.18	214.56	7196.48	100.00	-36.32	34.99 S	20.62 W	40.61@	210.51	0.15
7300.00	1.11	208.28	7296.46	100.00	-38.09	36.69 S	21.66 W	42.61@	210.55	0.14
7400.00	1.20	209.13	7396.44	100.00	-39.92	38.46 S	22.63 W	44.62@	210.47	0.09
7500.00	1.24	205.49	7496.42	100.00	-41.87	40.35 S	23.60 W	46.75@	210.33	0.09
7600.00	1.41	200.22	7596.39	100.00	-44.06	42.48 S	24.49 W	49.04@	209.97	0.21
7700.00	1.49	203.44	7696.36	100.00	-46.46	44.83 S	25.44 W	51.54@	209.57	0.11
7800.00	1.35	203.35	7796.33	100.00	-48.80	47.10 S	26.42 W	54.01@	209.29	0.14
7900.00	1.20	193.96	7896.31	100.00	-50.94	49.20 S	27.14 W	56.19@	208.88	0.26
8000.00	1.24	175.04	7996.28	100.00	-53.04	51.30 S	27.30 W	58.11@	208.02	0.40

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
RIG:H&P 416

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
8100.00	1.10	173.26	8096.26	100.00	-55.05	53.33 S	27.09 W	59.81@	206.93	0.14
8200.00	1.05	188.67	8196.25	100.00	-56.91	55.19 S	27.12 W	61.49@	206.17	0.29
8300.00	0.92	220.73	8296.23	100.00	-58.47	56.70 S	27.78 W	63.14@	206.10	0.56
** TIE-IN TO SCIENTIFIC GYRO @ 8370 MD'.										
8324.70	0.75	209.90	8320.93	24.70	-58.77	56.99 S	27.99 W	63.49@	206.16	0.94
THE FOLLOWING ARE PATHFINDER SURVEYS										
8370.00	0.79	208.76	8366.23	45.30	-59.32	57.52 S	28.29 W	64.10@	206.19	0.09
8402.00	0.88	35.96	8398.22	32.00	-59.31	57.52 S	28.25 W	64.08@	206.16	5.21
8433.00	4.40	35.26	8429.19	31.00	-58.09	56.35 S	27.42 W	62.67@	205.95	11.35
8465.00	7.56	31.22	8461.01	32.00	-55.17	53.55 S	25.62 W	59.36@	205.57	9.96
8496.00	11.43	28.40	8491.58	31.00	-50.57	49.10 S	23.10 W	54.26@	205.20	12.57
8528.00	14.77	28.76	8522.74	32.00	-43.98	42.73 S	19.63 W	47.03@	204.67	10.44
8560.00	17.50	28.76	8553.48	32.00	-35.91	34.94 S	15.35 W	38.16@	203.72	8.53
8591.00	20.31	28.40	8582.80	31.00	-26.78	26.12 S	10.55 W	28.17@	202.00	9.07
8622.00	23.13	27.09	8611.60	31.00	-16.28	15.96 S	5.22 W	16.79@	198.11	9.23
8654.00	25.59	27.26	8640.75	32.00	-4.16	4.22 S	0.81 E	4.30@	169.15	7.69
8685.00	28.58	24.80	8668.35	31.00	8.92	8.46 N	6.99 E	10.98@	39.54	10.30
8717.00	31.13	22.87	8696.10	32.00	23.90	23.04 N	13.41 E	26.66@	30.21	8.52
8748.00	33.15	19.35	8722.35	31.00	39.65	38.42 N	19.34 E	43.01@	26.72	8.88
8780.00	34.82	17.94	8748.88	32.00	56.95	55.37 N	25.05 E	60.77@	24.34	5.77
8811.00	36.76	18.03	8774.02	31.00	74.54	72.61 N	30.65 E	78.81@	22.88	6.26
8843.00	39.48	18.56	8799.20	32.00	93.67	91.36 N	36.85 E	98.52@	21.97	8.56
8875.00	42.47	20.32	8823.36	32.00	113.88	111.14 N	43.84 E	119.48@	21.53	10.02
8906.00	45.37	21.64	8845.68	31.00	134.43	131.22 N	51.55 E	140.98@	21.45	9.81
8938.00	48.28	22.69	8867.58	32.00	156.59	152.82 N	60.36 E	164.31@	21.55	9.40
8969.00	52.14	23.13	8887.41	31.00	179.11	174.76 N	69.63 E	188.12@	21.72	12.50
9001.00	55.31	23.22	8906.34	32.00	203.46	198.47 N	79.78 E	213.91@	21.90	9.91
9032.00	57.68	23.13	8923.45	31.00	227.86	222.23 N	89.95 E	239.75@	22.04	7.65
9064.00	58.92	22.08	8940.27	32.00	253.65	247.37 N	100.42 E	266.97@	22.09	4.78

PathFinder Energy Services, Inc.

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SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
RIG:H&P 416

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
9096.00	60.23	21.64	8956.47	32.00	279.90	272.98 N	110.69 E	294.56@	22.07	4.26
9127.00	62.96	22.08	8971.22	31.00	305.84	298.28 N	120.84 E	321.83@	22.05	8.89
9158.00	66.57	23.04	8984.43	31.00	332.41	324.17 N	131.60 E	349.86@	22.10	11.98
9190.00	68.76	23.66	8996.59	32.00	360.32	351.34 N	143.33 E	379.46@	22.19	7.07
9222.00	71.49	23.75	9007.47	32.00	388.63	378.89 N	155.43 E	409.54@	22.30	8.54
9253.00	71.75	24.54	9017.25	31.00	416.24	405.74 N	167.46 E	438.94@	22.43	2.56
9285.00	73.78	23.92	9026.73	32.00	444.90	433.61 N	180.01 E	469.49@	22.54	6.61
9316.00	75.71	23.66	9034.88	31.00	473.03	460.97 N	192.07 E	499.39@	22.62	6.28
9348.00	79.58	22.60	9041.73	32.00	502.54	489.71 N	204.34 E	530.64@	22.65	12.52
9379.00	82.92	21.28	9046.45	31.00	531.67	518.13 N	215.79 E	561.27@	22.61	11.57
9411.00	84.33	19.79	9050.00	32.00	562.14	547.91 N	226.94 E	593.05@	22.50	6.39
9442.00	84.33	19.18	9053.06	31.00	591.86	576.99 N	237.23 E	623.86@	22.35	1.96
9474.00	86.26	18.38	9055.69	32.00	622.68	607.19 N	247.50 E	655.69@	22.18	6.53
9505.00	88.81	18.91	9057.02	31.00	652.64	636.53 N	257.40 E	686.60@	22.02	8.40
9537.00	90.04	19.61	9057.34	32.00	683.49	666.74 N	267.95 E	718.57@	21.89	4.42
9568.00	90.40	19.79	9057.22	31.00	713.33	695.92 N	278.40 E	749.54@	21.80	1.30
9600.00	90.04	18.56	9057.10	32.00	744.20	726.14 N	288.91 E	781.51@	21.70	4.00
9631.00	90.13	15.92	9057.05	31.00	774.36	755.75 N	298.10 E	812.42@	21.53	8.52
9663.00	90.92	13.11	9056.76	32.00	805.81	786.72 N	306.12 E	844.18@	21.26	9.12
9695.00	91.01	10.74	9056.22	32.00	837.49	818.03 N	312.73 E	875.77@	20.92	7.41
9718.00	91.45	8.28	9055.73	23.00	860.37	840.70 N	316.53 E	898.32@	20.63	10.86
9812.00	90.40	4.85	9054.21	94.00	954.25	934.06 N	327.27 E	989.73@	19.31	3.82
9907.00	88.81	2.39	9054.86	95.00	1049.23	1028.86 N	333.27 E	1081.49@	17.95	3.08
10002.00	88.99	0.45	9056.69	95.00	1144.12	1123.81 N	335.62 E	1172.85@	16.63	2.05
10097.00	89.34	0.27	9058.07	95.00	1238.93	1218.79 N	336.22 E	1264.32@	15.42	0.41
10192.00	89.69	0.79	9058.88	95.00	1333.76	1313.78 N	337.10 E	1356.34@	14.39	0.66
10286.00	89.60	359.55	9059.46	94.00	1427.55	1407.78 N	337.38 E	1447.64@	13.48	1.32
10381.00	89.83	359.49	9059.93	95.00	1522.27	1502.78 N	336.58 E	1540.01@	12.62	0.25

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
RIG:H&P 416

Page 06/07

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
10475.00	89.96	359.18	9060.10	94.00	1615.97	1596.77 N	335.49 E	1631.63@	11.87	0.36
10570.00	89.78	359.40	9060.32	95.00	1710.66	1691.76 N	334.31 E	1724.48@	11.18	0.30
10664.00	89.89	359.52	9060.59	94.00	1804.37	1785.76 N	333.43 E	1816.62@	10.58	0.17
10759.00	89.96	359.41	9060.71	95.00	1899.09	1880.75 N	332.54 E	1909.93@	10.03	0.14
10853.00	90.22	359.81	9060.57	94.00	1992.82	1974.75 N	331.90 E	2002.45@	9.54	0.51
10948.00	90.57	359.71	9059.91	95.00	2087.57	2069.75 N	331.50 E	2096.13@	9.10	0.38
11042.00	91.45	0.32	9058.25	94.00	2181.33	2163.73 N	331.53 E	2188.98@	8.71	1.14
11137.00	89.87	359.27	9057.16	95.00	2276.08	2258.72 N	331.19 E	2282.87@	8.34	2.00
11231.00	89.16	358.63	9057.96	94.00	2369.72	2352.70 N	329.47 E	2375.66@	7.97	1.02
11325.00	88.72	358.88	9059.69	94.00	2463.32	2446.66 N	327.42 E	2468.47@	7.62	0.54
11420.00	88.81	359.22	9061.74	95.00	2557.96	2541.63 N	325.85 E	2562.43@	7.31	0.37
11515.00	88.46	359.22	9064.01	95.00	2652.61	2636.59 N	324.56 E	2656.49@	7.02	0.37
11609.00	88.90	359.11	9066.17	94.00	2746.26	2730.56 N	323.19 E	2749.61@	6.75	0.48
11704.00	88.72	359.87	9068.14	95.00	2840.96	2825.53 N	322.34 E	2843.86@	6.51	0.82
11798.00	90.92	0.00	9068.44	94.00	2934.72	2919.52 N	322.23 E	2937.25@	6.30	2.35
11893.00	91.19	0.28	9066.69	95.00	3029.50	3014.51 N	322.47 E	3031.71@	6.11	0.41
11987.00	91.28	0.28	9064.66	94.00	3123.29	3108.48 N	322.93 E	3125.21@	5.93	0.10
12082.00	90.75	359.34	9062.98	95.00	3218.03	3203.47 N	322.61 E	3219.67@	5.75	1.14
12177.00	90.40	358.77	9062.03	95.08	3312.76	3298.53 N	321.04 E	3314.12@	5.56	0.70
12271.00	90.31	359.05	9061.45	93.92	3406.32	3392.43 N	319.26 E	3407.42@	5.38	0.31
12366.00	90.40	359.22	9060.86	95.00	3500.99	3487.42 N	317.82 E	3501.87@	5.21	0.20
12460.00	90.48	359.55	9060.13	94.00	3594.69	3581.41 N	316.81 E	3595.39@	5.06	0.36
12555.00	90.13	359.67	9059.63	95.00	3689.42	3676.41 N	316.17 E	3689.98@	4.92	0.39
12649.00	89.60	359.56	9059.85	94.00	3783.15	3770.40 N	315.54 E	3783.58@	4.78	0.58
12744.00	88.11	359.13	9061.75	95.00	3877.83	3865.37 N	314.45 E	3878.14@	4.65	1.63
12839.00	89.52	359.77	9063.71	95.00	3972.52	3960.35 N	313.54 E	3972.74@	4.53	1.63
12933.00	89.96	0.66	9064.14	94.00	4066.32	4054.34 N	313.89 E	4066.48@	4.43	1.06
13028.00	90.84	1.22	9063.48	95.00	4161.19	4149.33 N	315.45 E	4161.30@	4.35	1.10

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
RIG:H&P 416

Page 07/07

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS
						(ft)	(ft)	(ft)	(deg)	(dg/100ft)
13121.00	91.54	1.25	9061.55	93.00	4254.06	4242.29 N	317.45 E	4254.15@	4.28	0.75
13215.00	91.54	1.33	9059.02	94.00	4347.93	4336.23 N	319.57 E	4347.99@	4.21	0.09
13310.00	90.75	1.95	9057.12	95.00	4442.83	4431.17 N	322.29 E	4442.87@	4.16	1.06
13404.00	90.57	1.25	9056.04	94.00	4536.75	4525.13 N	324.91 E	4536.77@	4.11	0.77
13484.00	90.75	1.60	9055.12	80.00	4616.67	4605.10 N	326.90 E	4616.68@	4.06	0.49
STRAIGHT LINE PROJECTION TO BIT @ 13539' MD.										
13539.00	90.75	1.60	9054.40	55.00	4671.62	4660.07 N	328.44 E	4671.63@	4.03	0.00

** 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.:	SNAPPING 2 STATE	#4H	
WELL LOCATION:	EDDY COUNTY		
COUNTY / STATE / COUNTRY:	EDDY COUNTY	NEW MEXICO	USA
RIG:	H&P 416		
API WELL No:	30-015-39071		
JOB No:	700003708-WT-WT		
P.O. / AFE No.	160477		
DIRECTIONAL COMPANY:	P.E.S.		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
<i>On Wall Plot:</i>		<i>LWD Calculated:</i>	
X = 724310 370000		Y = 388171.260000	
Feet		Feet	
SITE LATITUDE:	56.8299 N	SITE LONGITUDE:	33.5688 W
GRID SYSTEM:	TRUE ☐ UTM ☐ LAMBERT ☒	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	0.42		
KELLY BUSHING ELEVATION:	26.2 FT		
ALTITUDE:	3267.1	WATER DEPTH:	N/A
	Feet		Feet

TIE-IN SURVEY

MEASURED DEPTH:	8324.7		
DRIFT ANGLE:	0.75		
DRIFT DIRECTION:	209.9		
TRUE VERTICAL DEPTH:	8320.93		
VERTICAL SECTION:	-57.13		
RECTANGULAR COORDINATE (N / S) :	-56.93		
RECTANGULAR COORDINATE (E / W) :	-28.03		
CLOSURE DISTANCE / DIRECTION:	63.46	206.22	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	SCIENTIFIC		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	TOTAL DEPTH:
KICKOFF ANGLE:	MAX ANGLE:

PES Engineers: S. MOORE

**Signature of both field engineers required if applicable

Directional Driller: MANUEL CERVANTES

DATE: _____



Scientific Drilling

Gyroscopic Survey Report
for
DEVON ENERGY

Well Location	EDDY COUNTY, NEW MEXICO
Well Name	SNAPPING 2 SATE #4H
Rig Name	H&P #416
Survey Date	9/11/2011
Latitude	32.07 deg
North Reference	Grid North
Grid Correction	-0.31 deg
Depth Reference	26.2' KB
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 0.42Azim (deg)
Definitive Survey	FINAL OUTURN SURVEY
Operator	A.MADRID

Comments



Scientific Drilling

Survey Report

Well Name:		SNAPPING 2 SATE #4H							
Survey:		FINAL OUTURN SURVEY							
Survey Date:		9/11/2011							
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg
0 00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.63	324.48	100.00	0.44	0.45	-0.32	0.63	0 55	324.48
200.00	0.58	301.33	199.99	1.15	1.15	-1.07	0.25	1.57	317.22
300 00	0.69	311 64	299.99	1.81	1.82	-1.95	0.16	2.67	312.98
400 00	0.79	292.45	399.98	2.46	2.49	-3.04	0.27	3.93	309.24
500.00	1.42	267.64	499.96	2.66	2.70	-4.92	0.77	5.61	298.76
600 00	1.72	254.29	599.92	2.18	2.24	-7.60	0.48	7 92	286.42
700.00	1 64	256 56	699.88	1.42	1 50	-10 44	0.11	10.55	278.17
800.00	1.81	256.35	799.83	0.70	0.79	-13.37	0.16	13.39	273 40
900.00	1.90	254.98	899.78	-0.13	-0.01	-16 50	0 11	16 50	269.97
1000.00	1.73	258.17	999.73	-0.89	-0.75	-19.58	0.20	19.60	267.82
1100 00	1 67	266.22	1099.69	-1 32	-1.15	-22.51	0.25	22.54	267 07
1200.00	1.84	272.17	1199.64	-1.37	-1.19	-25.57	0.25	25 59	267.34
1300 00	1.72	274.85	1299.59	-1.21	-1.00	-28.66	0.14	28.68	268.00
1400.00	2.04	284.37	1399.54	-0.66	-0.43	-31.88	0.44	31.89	269.23
1500.00	2.09	291 75	1499.47	0.43	0.69	-35.30	0.27	35.30	271 11
1600 00	2.15	295.33	1599 41	1.88	2.16	-38.68	0.15	38.74	273.20
1700 00	2.34	288.54	1699.33	3.30	3.61	-42.31	0 33	42.46	274.88
1800.00	2.49	289.21	1799 24	4 64	4.98	-46 29	0 15	46.56	276 13
1900.00	2.62	283.17	1899.14	5 84	6.21	-50.57	0.30	50.95	277.00
2000.00	2.55	283.23	1999 04	6.84	7 24	-54.96	0.07	55.43	277.50
2100.00	2.13	282.96	2098.96	7.73	8.17	-58.94	0.42	59.50	277.89
2200 00	2.23	275.79	2198.88	8.32	8.78	-62.69	0.29	63.30	277.97
2300.00	2.12	266.13	2298.81	8.36	8.85	-66.47	0 38	67.06	277.58
2400.00	1.92	268.55	2398.75	8.17	8.68	-69.99	0.22	70.53	277.07
2500.00	1.27	257.62	2498.71	7.87	8.40	-72.75	0.71	73.24	276.59
2600.00	1.53	254.97	2598.68	7.27	7.82	-75.12	0.26	75 53	275 94
2700.00	1.62	255.77	2698.64	6.56	7.13	-77.78	0.10	78.11	275 23
2800.00	1 66	262.45	2798.60	6.00	6.59	-80.59	0.19	80.86	274.67
2900.00	1.53	251.99	2898.56	5.37	5.98	-83.30	0.32	83.52	274.11
3000 00	1.38	255.16	2998.53	4.63	5.26	-85.74	0 17	85 90	273 51
3100 00	0.86	218.90	3098.51	3.73	4 37	-87.37	0.85	87.48	272.86
3200.00	0.28	268.44	3198.51	3.13	3.78	-88.08	0.71	88.17	272.46
3300.00	0.24	285.95	3298.51	3.18	3.83	-88.53	0.09	88.61	272.48
3400.00	0.56	342.58	3398.50	3.70	4.36	-88.88	0.48	88 99	272.81
3500.00	1.23	71.71	3498.50	4.51	5.16	-88.01	1.34	88.16	273.36
3600.00	2.20	93.92	3598 45	4.74	5.36	-85.08	1.16	85 25	273.61
3700 00	2.55	98.53	3698.36	4.31	4.90	-80.97	0.39	81.11	273.47
3800 00	3.36	105 58	3798.23	3.23	3.79	-75.95	0.89	76.04	272.85



Scientific Drilling

Survey Report

Well Name:		SNAPPING 2 SATE #4H							
Survey:		FINAL OUTURN SURVEY							
Survey Date:		9/11/2011							
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg
3900.00	4.65	122.05	3897.99	0.34	0.85	-69.69	1.72	69.69	270.70
4000.00	4.88	128.27	3997.64	-4.40	-3.94	-62.91	0.57	63.04	266.42
4100.00	3.65	131.96	4097.36	-9.12	-8.70	-57.21	1.27	57.86	261.35
4200.00	2.52	127.54	4197.22	-12.56	-12.17	-53.10	1.15	54.47	257.09
4300.00	2.00	128.81	4297.14	-14.97	-14.60	-49.99	0.53	52.08	253.72
4400.00	2.29	122.96	4397.07	-17.12	-16.78	-46.96	0.36	49.87	250.34
4500.00	1.98	127.70	4497.00	-19.24	-18.92	-43.93	0.36	47.83	246.70
4600.00	2.06	112.18	4596.94	-20.95	-20.65	-40.90	0.55	45.81	243.21
4700.00	2.03	113.98	4696.88	-22.32	-22.05	-37.62	0.07	43.60	239.63
4800.00	1.67	111.95	4796.82	-23.56	-23.31	-34.65	0.36	41.76	236.07
4900.00	1.75	105.26	4896.78	-24.49	-24.25	-31.83	0.21	40.02	232.69
5000.00	1.61	101.19	4996.74	-25.14	-24.93	-28.99	0.18	38.23	229.30
5100.00	1.54	96.85	5096.70	-25.55	-25.36	-26.28	0.14	36.52	226.02
5200.00	0.95	91.25	5196.68	-25.71	-25.54	-24.11	0.60	35.12	223.36
5300.00	0.89	77.11	5296.66	-25.55	-25.38	-22.53	0.23	33.94	221.59
5400.00	0.93	75.30	5396.65	-25.16	-25.01	-20.99	0.05	32.65	220.01
5500.00	0.85	62.80	5496.64	-24.60	-24.46	-19.55	0.21	31.31	218.63
5600.00	0.86	70.49	5596.63	-24.00	-23.87	-18.18	0.12	30.00	217.29
5700.00	0.68	66.88	5696.62	-23.51	-23.39	-16.92	0.19	28.87	215.89
5800.00	1.01	60.32	5796.61	-22.83	-22.72	-15.61	0.34	27.56	214.50
5900.00	0.66	73.38	5896.60	-22.22	-22.12	-14.30	0.40	26.34	212.88
6000.00	0.26	165.83	5996.59	-22.27	-22.17	-13.69	0.72	26.06	211.70
6100.00	0.22	189.00	6096.59	-22.68	-22.58	-13.67	0.10	26.39	211.19
6200.00	0.64	163.15	6196.59	-23.40	-23.30	-13.54	0.46	26.95	210.15
6300.00	0.45	181.80	6296.59	-24.32	-24.22	-13.39	0.26	27.68	208.92
6400.00	0.36	197.09	6396.58	-25.01	-24.91	-13.49	0.14	28.33	208.43
6500.00	0.57	197.08	6496.58	-25.78	-25.68	-13.73	0.21	29.12	208.12
6600.00	0.96	220.37	6596.57	-26.90	-26.79	-14.42	0.50	30.43	208.28
6700.00	0.92	220.79	6696.56	-28.16	-28.04	-15.48	0.04	32.03	208.91
6800.00	1.09	220.75	6796.54	-29.49	-29.37	-16.63	0.17	33.76	209.52
6900.00	0.91	207.84	6896.53	-30.92	-30.79	-17.62	0.29	35.48	209.78
7000.00	0.88	219.71	6996.51	-32.22	-32.08	-18.48	0.19	37.02	209.94
7100.00	1.04	217.67	7096.50	-33.53	-33.39	-19.52	0.16	38.68	210.32
7200.00	1.18	214.56	7196.48	-35.11	-34.95	-20.66	0.16	40.61	210.59
7300.00	1.11	208.28	7296.46	-36.81	-36.65	-21.70	0.15	42.60	210.63
7400.00	1.20	209.13	7396.44	-38.59	-38.42	-22.67	0.10	44.61	210.55
7500.00	1.24	205.49	7496.42	-40.49	-40.32	-23.65	0.09	46.74	210.40
7600.00	1.41	200.22	7596.39	-42.63	-42.45	-24.54	0.20	49.03	210.04



Scientific Drilling

Survey Report

Well Name: SNAPPING 2 SATE #4H
Survey: FINAL OUTURN SURVEY
Survey Date: 9/11/2011

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	1.49	203.44	7696.36	-44.97	-44.79	-25.48	0.11	51.53	209.64
7800.00	1.35	203.35	7796.33	-47.25	-47.06	-26.46	0.14	53.99	209.35
7900.00	1.20	193.96	7896.30	-49.35	-49.16	-27.18	0.26	56.17	208.94
8000.00	1.24	175.04	7996.28	-51.44	-51.24	-27.34	0.40	58.08	208.08
8100.00	1.10	173.26	8096.26	-53.47	-53.27	-27.14	0.14	59.78	206.99
8200.00	1.05	188.67	8196.24	-55.32	-55.13	-27.16	0.29	61.45	206.23
8300.00	0.92	220.73	8296.23	-56.84	-56.64	-27.82	0.56	63.10	206.16
8324.70	0.75	209.90	8320.93	-57.13	-56.93	-28.03	0.93	63.46	206.22



A Schlumberger Company **PathFinder Energy Services, Inc.**

Magnetic & Grid Calculations

Devon Energy Production Company, L.P.
Snapping 2 State #4 H
Eddy County New Mexico
Rig:HP 416

Wed Sep 07 14:48:20 2011

Coordinates

Latitude: 32.065786 N (32 deg. 3 min. 56.8299 sec.)
Longitude: 103.742658 W (-103 deg. 44 min. 33.5688 sec.)
Elevation: 3292.10 feet.
Calculation Date: Sep/07/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.0044 degrees
Total Magnetic Field: 0.48480 gauss
Magnetic Declination: 7.624189 degrees
Horizontal Intensity: 0.242366 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.624189 Degs

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 724310.3700 feet
Y: 388171.2600 feet
True to Grid: (convergence) -0.313593 degrees
Magnetic to Grid: 7.310596 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.310596 Degs.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

Mon Sep 12 10:21:55 2011

Coordinates

Latitude: 32.065786 N (32 deg. 3 min. 56.8299 sec.)
Longitude: 103.742658 W (-103 deg. 44 min. 33.5688 sec.)
Elevation: 3292.00 feet.
Calculation Date: Sep/12/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.0041 degrees
Total Magnetic Field: 0.48478 gauss
Magnetic Declination: 7.622518 degrees
Horizontal Intensity: 0.242361 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.622518 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 724310.3700 feet
Y: 388171.2600 feet
True to Grid: (convergence) -0.313593 degrees
Magnetic to Grid: 7.308925 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.308925 Degr.

Pathfinder

6213 WCH 112
Midland, Texas 79706
Tel (432)687-1647
Fax (432)687-1544



October 18, 2011

15- 39071

Devon Energy
20 N. Broadway
Oklahoma City, OK

RE: Devon Energy
Snapping 2 State #4H
API: 30-015-39071
Eddy County, NM
RIG: H & P 416
FIELD: Wildcat; Bone Spring
PES FILE NO.: 700003708-WT-WT

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 that reads "Steve Bibb".

STEVE BIBB
M/LWD Service Coordinator
PathFinder Energy Services

ML:sh

30-015-39071

DEVON ENERGY

Wildcat (Eddy County, NM)

Eddy County, NM

Snapping 2 State #4H

VH - Job #32K0911872

Survey: Actual

SDI Standard Survey Report

This survey is correct to the best of my knowledge and is supported by actual field data.

Richard

Notarized this date 4th of October, 2011.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Snapping 2 State #4H
Project:	Wildcat (Eddy County, NM)	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Snapping 2 State #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911872	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911872	Database:	EDM-Regulatory

Project	Wildcat (Eddy County, NM)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:		Eddy County, NM			
Site Position:		Northing:	387,530 63 usft	Latitude:	32° 3' 50 850 N
From:	Lat/Long	Easting:	717,555 20 usft	Longitude:	103° 45' 52 110 W
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0 30 °

Well:	Snapping 2 State #4H, Directional (Pathfinder)					
Well Position	+N/-S	0.0 usft	Northing:	388,171 26 usft	Latitude:	32° 3' 56 830 N
	+E/-W	0.0 usft	Easting:	724,310 37 usft	Longitude:	103° 44' 33 569 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft

Wellbore	VH - Job #32K0911872				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/11/2011	7 62	60 00	48,503

Design	VH - Job #32K0911872			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0 0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 0	0 0	0 0	0 42

Survey Program		Date	10/23/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100 0	8,324 7	Actual (VH - Job #32K0911872)	Keeper	Keeper Gyro	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0 0	0 00	0 00	0 0	0 0	0 0	0 00	0 0
100 0	0 63	324 48	100 0	0 4	-0 3	324 48	0 5
200 0	0 58	301 33	200 0	1 2	-1 1	317 23	1 6
300 0	0 69	311 64	300 0	1 8	-2 0	313 00	2 7
400 0	0 79	292 45	400 0	2 5	-3 0	309 25	3 9
500 0	1 42	267 64	500 0	2 7	-4 9	298 75	5 6
600 0	1 72	254 29	599 9	2 2	-7 6	286 42	7 9
700 0	1 64	256 56	699 9	1 5	-10 4	278 18	10 5
800 0	1 81	256 35	799 8	0 8	-13 4	273 41	13 4
900 0	1 90	254 98	899 8	0 0	-16 5	269 98	16 5
1,000 0	1 73	258 17	999 7	-0 7	-19 6	267 82	19 6
1,100 0	1 67	266 22	1,099 7	-1 2	-22 5	267 07	22 5

Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Snapping 2 State #4H
Project:	Wildcat (Eddy County, NM)	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Snapping 2 State #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911872	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911872	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,200 0	1 84	272 17	1,199 6	-1 2	-25 6	267 34	25 6	
1,300 0	1 72	274 85	1,299 6	-1 0	-28 7	268 00	28 7	
1,400 0	2 04	284 37	1,399 5	-0 4	-31 9	269 23	31 9	
1,500 0	2 09	291 75	1,499 5	0 7	-35 3	271 11	35 3	
1,600 0	2 15	295 33	1,599 4	2 2	-38 7	273 20	38 8	
1,700 0	2 34	288 54	1,699 3	3 6	-42 3	274 88	42 5	
1,800 0	2 49	289 21	1,799 2	5 0	-46 3	276 14	46 6	
1,900 0	2 62	283 17	1,899 1	6 2	-50 6	277 01	51 0	
2,000 0	2 55	283 23	1,999 0	7 2	-55 0	277 51	55 5	
2,100 0	2 13	282 96	2,099 0	8 2	-59 0	277 89	59 5	
2,200 0	2 23	275 79	2,198 9	8 8	-62 7	277 98	63 3	
2,300 0	2 12	266 13	2,298 8	8 9	-66 5	277 59	67 1	
2,400 0	1 92	268 55	2,398 7	8 7	-70 0	277 08	70 5	
2,500 0	1 27	257 62	2,498 7	8 4	-72 8	276 59	73 2	
2,600 0	1 53	254 97	2,598 7	7 8	-75 1	275 95	75 5	
2,700 0	1 62	255 77	2,698 6	7 1	-77 8	275 24	78 1	
2,800 0	1 66	262 45	2,798 6	6 6	-80 6	274 68	80 9	
2,900 0	1 53	251 99	2,898 6	6 0	-83 3	274 11	83 5	
3,000 0	1 38	255 16	2,998 5	5 3	-85 7	273 52	85 9	
3,100 0	0 86	218 90	3,098 5	4 4	-87 4	272 87	87 5	
3,200 0	0 28	268 44	3,198 5	3 8	-88 1	272 46	88 2	
3,300 0	0 24	285 95	3,298 5	3 8	-88 5	272 48	88 6	
3,400 0	0 56	342 58	3,398 5	4 4	-88 9	272 81	89 0	
3,500 0	1 23	71 71	3,498 5	5 2	-88 0	273 36	88 2	
3,600 0	2 20	93 92	3,598 5	5 4	-85 1	273 61	85 2	
3,700 0	2 55	98 53	3,698 4	4 9	-81 0	273 47	81 1	
3,800 0	3 36	105 58	3,798 2	3 8	-75 9	272 86	76 0	
3,900 0	4 65	122 05	3,898 0	0 9	-69 7	270 70	69 7	
4,000 0	4 88	128 27	3,997 6	-3 9	-62 9	266 42	63 0	
4,100 0	3 65	131 96	4,097 4	-8 7	-57 2	261 36	57 9	
4,200 0	2 52	127 54	4,197 2	-12 2	-53 1	257 09	54 5	
4,300 0	2 00	128 81	4,297 1	-14 6	-50 0	253 72	52 1	
4,400 0	2 29	122 96	4,397 1	-16 8	-46 9	250 33	49 9	
4,500 0	1 98	127 70	4,497 0	-18 9	-43 9	246 69	47 8	
4,600 0	2 06	112 18	4,596 9	-20 7	-40 9	243 19	45 8	
4,700 0	2 03	113 98	4,696 9	-22 1	-37 6	239 60	43 6	
4,800 0	1 67	111 95	4,796 8	-23 3	-34 6	236 04	41 7	
4,900 0	1 75	105 26	4,896 8	-24 3	-31 8	232 65	40 0	
5,000 0	1 61	101 19	4,996 7	-24 9	-28 9	229 25	38 2	
5,100 0	1 54	96 85	5,096 7	-25 4	-26 2	225 95	36 5	
5,200 0	0 95	91 25	5,196 7	-25 6	-24 1	223 29	35 1	
5,300 0	0 89	77 11	5,296 7	-25 4	-22 5	221 52	33 9	
5,400 0	0 93	75 30	5,396 6	-25 0	-20 9	219 93	32 6	
5,500 0	0 85	62 80	5,496 6	-24 5	-19 5	218 54	31 3	

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Snapping 2 State #4H
Project:	Wildcat (Eddy County, NM)	TYD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Snapping 2 State #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911872	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911872	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600 0	0 86	70 49	5,596 6	-23 9	-18 1	217 20	30 0
5,700 0	0 68	66 88	5,696 6	-23 4	-16 9	215 80	28 8
5,800 0	1 01	60 32	5,796 6	-22 7	-15 6	214 40	27 5
5,900 0	0 66	73 38	5,896 6	-22 1	-14 2	212 77	26 3
6,000 0	0 26	165 83	5,996 6	-22 2	-13 6	211 58	26 0
6,100 0	0 22	189 00	6,096 6	-22 6	-13 6	211 07	26 4
6,200 0	0 64	163 15	6,196 6	-23 3	-13 5	210 03	26 9
6,300 0	0 45	181 80	6,296 6	-24 2	-13 3	208 81	27 7
6,400 0	0 36	197 09	6,396 6	-24 9	-13 4	208 32	28 3
6,500 0	0 57	197 08	6,496 6	-25 7	-13 7	208 00	29 1
6,600 0	0 96	220 37	6,596 6	-26 8	-14 4	208 16	30 4
6,700 0	0 92	220 79	6,696 6	-28 1	-15 4	208 80	32 0
6,800 0	1 09	220 75	6,796 5	-29 4	-16 6	209 41	33 8
6,900 0	0 91	207 84	6,896 5	-30 8	-17 6	209 68	35 5
7,000 0	0 88	219 71	6,996 5	-32 1	-18 4	209 85	37 0
7,100 0	1 04	217 67	7,096 5	-33 4	-19 5	210 23	38 7
7,200 0	1 18	214 56	7,196 5	-35 0	-20 6	210 50	40 6
7,300 0	1 11	208 28	7,296 5	-36 7	-21 7	210 55	42 6
7,400 0	1 20	209 13	7,396 4	-38 5	-22 6	210 47	44 6
7,500 0	1 24	205 49	7,496 4	-40 4	-23 6	210 32	46 7
7,600 0	1 41	200 22	7,596 4	-42 5	-24 5	209 96	49 0
7,700 0	1 49	203 44	7,696 4	-44 8	-25 4	209 57	51 5
7,800 0	1 35	203 35	7,796 3	-47 1	-26 4	209 28	54 0
7,900 0	1 20	193 96	7,896 3	-49 2	-27 1	208 88	56 2
8,000 0	1 24	175 04	7,996 3	-51 3	-27 3	208 02	58 1
8,100 0	1 10	173 26	8,096 3	-53 3	-27 1	206 93	59 8
8,200 0	1 05	188 67	8,196 2	-55 2	-27 1	206 17	61 5
8,300 0	0 92	220 73	8,296 2	-56 7	-27 8	206 10	63 1
8,324 7	0 75	209 90	8,320 9	-57 0	-28 0	206 15	63 5



Scientific Drilling
Directional Drilling Operations

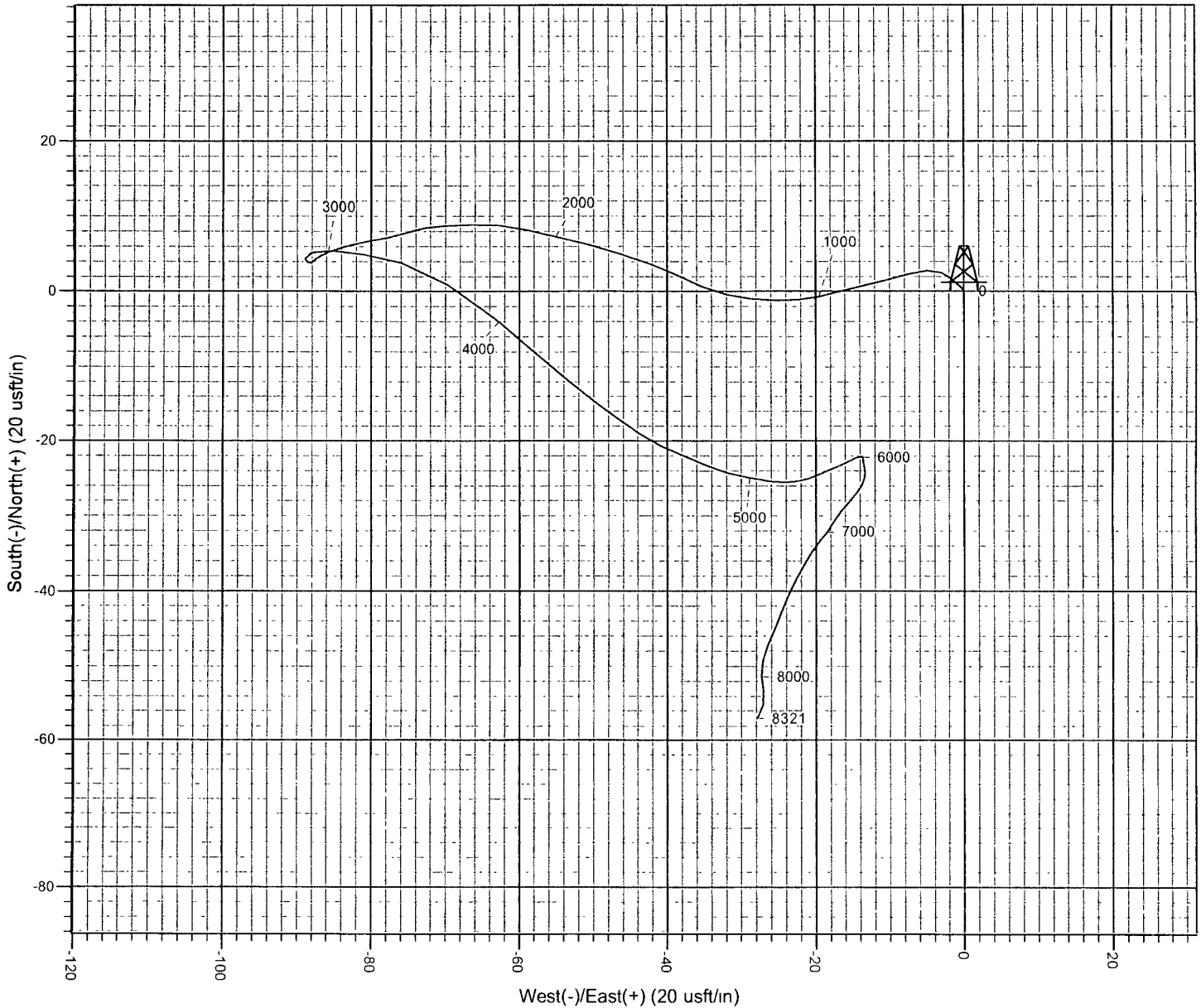
Project: Wildcat (Eddy County, NM)
Eddy County, NM
Well: Snapping 2 State #4H
Wellbore: VH - Job #32K0911872
Design: VH - Job #32K0911872



Azimuths to Grid North
True North -0 31°
Magnetic North 7 31°
Magnetic Field
Strength 48503 3snT
Dip Angle 60 00°
Date 9/11/2011
Model IGRF2010

WELL DETAILS Snapping 2 State #4H
WELL @ 0.0usft (Original Well Elev)
Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	388171.26	724310.37	32° 3' 56.830 N	103° 44' 33.569 W	



PROJECT DETAILS: Wildcat (Eddy County, NM)
Geodetic System US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

SITE DETAILS Eddy County, NM
Site Centre Latitude 32° 3' 50.850 N
Longitude: 103° 45' 52.110 W
Positional Uncertainty: 0 0
Convergence 0 30
Local North: Grid



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

DEVON ENERGY

SNAPPING 2 STATE #4H

EDDY COUNTY, NEW MEXICO

PREPARED BY: STEVE BIBB

Pathfinder

8213 WCR 112
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) JAMES BURLESON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 09-13-11 TO 09-21-11
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

DEVON ENERGY
SNAPPING 2 STATE #4H
EDDY COUNTY, NM
RIG: H&P 416

9. SURVEY CERTIFIED FROM: 8370 TO 13484 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 4671.63 FEET ON A BEARING OF 4.03 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 13539 FEET,
ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

A handwritten signature in black ink, appearing to read "Steve Bibb".

STEVE BIBB
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 09/12/2011
Date Completed: 09/22/2011

DEVON ENERGY CORPORATION
SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
Rig:H&P 416
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:J.BURLESON
S.MOORE
J.EARLS

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.3.56.8299 N LON:103.44.33.5688 W
GRID Reference:NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 724310.3700 Y: 388171.2600
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.31° EAST TO GRID
Vertical Section Plane: 3.92
Survey Vert. Reference: 25.00' Kelly Bushing To Ground
Altitude:3267.00' Ground To MSL

Measured Depth	13539.00	(feet)
Inclination	90.75	(deg)
Azimuth	1.60	(deg)
True Vertical Depth	9054.40	(feet)
Vertical Section	4671.62	(feet)
Survey X cord	724638.79	(feet)
Survey Y cord	392831.28	(feet)
Survey Lat	32.07859074 N	(deg)
Survey Lon	103.74151535 W	(deg)
Rectangular Corr. N/S	4660.07 N	(feet)
Rectangular Corr. E/W	328.44 E	(feet)
Closure Distance	4671.63	(feet)
Direction of Closure	4.03	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION

SNAPPING 2 STATE #4H

EDDY COUNTY COUNTY, NM

Rig:H&P 416

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: J.BURLESON

L.NATIVIDAD

S.MOORE

J.EARLS

Survey Calculations by RX5 V6.03E using Minimum Curvature

Page 01/07

Tie-in Date: 09/12/2011

Date Completed: 09/22/2011

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.356.8299 N LON:103.44.33.5688 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 724310.3700 Y: 388171.2600

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.31 ° EAST TO GRID

Vertical Section Plane: 3.92

Survey Vert. Reference: 25.00' Kelly Bushing To Ground

Altitude:3267.00' Ground To MSL

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
THE FOLLOWING ARE SCIENTIFIC GYRO SURVEYS.										
0.00	0.00	0.00	0.00	0.00	-0.00	0.00 N	0.00 W	0.00@	272.11	0.00
100.00	0.63	324.48	100.00	100.00	0.42	0.45 N	0.32 W	0.55@	324.17	0.63
200.00	0.58	301.33	200.00	100.00	1.08	1.16 N	1.08 W	1.58@	317.14	0.25
300.00	0.69	311.64	299.99	100.00	1.68	1.82 N	1.96 W	2.67@	312.94	0.16
400.00	0.79	292.45	399.98	100.00	2.27	2.48 N	3.04 W	3.93@	309.22	0.27
500.00	1.42	267.64	499.96	100.00	2.35	2.70 N	4.92 W	5.61@	298.73	0.78
600.00	1.72	254.29	599.93	100.00	1.71	2.24 N	7.60 W	7.93@	286.42	0.47
700.00	1.64	256.56	699.88	100.00	0.78	1.50 N	10.44 W	10.55@	278.18	0.10
800.00	1.81	256.35	799.84	100.00	-0.12	0.80 N	13.37 W	13.39@	273.41	0.17
900.00	1.90	254.98	899.79	100.00	-1.13	0.01 S	16.50 W	16.50@	269.98	0.10
1000.00	1.73	258.17	999.73	100.00	-2.08	0.75 S	19.58 W	19.59@	267.82	0.20
1100.00	1.67	266.22	1099.69	100.00	-2.69	1.15 S	22.51 W	22.54@	267.07	0.25
1200.00	1.84	272.17	1199.64	100.00	-2.93	1.19 S	25.57 W	25.60@	267.34	0.25
1300.00	1.72	274.85	1299.60	100.00	-2.96	1.00 S	28.67 W	28.69@	268.00	0.15
1400.00	2.04	284.37	1399.54	100.00	-2.61	0.43 S	31.89 W	31.89@	269.23	0.45
1500.00	2.09	291.75	1499.48	100.00	-1.73	0.69 N	35.31 W	35.31@	271.11	0.27
1600.00	2.15	295.33	1599.41	100.00	-0.49	2.17 N	38.70 W	38.76@	273.20	0.14
1700.00	2.34	288.54	1699.33	100.00	0.71	3.62 N	42.33 W	42.48@	274.88	0.33
1800.00	2.49	289.21	1799.24	100.00	1.80	4.98 N	46.31 W	46.58@	276.14	0.15
1900.00	2.62	283.17	1899.14	100.00	2.74	6.22 N	50.59 W	50.97@	277.01	0.30
2000.00	2.55	283.23	1999.04	100.00	3.47	7.25 N	54.98 W	55.46@	277.51	0.07
2100.00	2.13	282.96	2098.96	100.00	4.12	8.17 N	58.96 W	59.52@	277.89	0.42
2200.00	2.23	275.79	2198.89	100.00	4.48	8.79 N	62.70 W	63.32@	277.98	0.29
2300.00	2.12	266.13	2298.82	100.00	4.29	8.86 N	66.49 W	67.07@	277.59	0.38
2400.00	1.92	268.55	2398.75	100.00	3.88	8.69 N	70.01 W	70.54@	277.08	0.22

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
RIG:H&P 416

Page 02/07

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2500.00	1.27	257.62	2498.71	100.00	3.42	8.41 N	72.76 W	73.25@	276.59	0.71
2600.00	1.53	254.97	2598.68	100.00	2.67	7.83 N	75.13 W	75.54@	275.95	0.27
2700.00	1.62	255.77	2698.65	100.00	1.80	7.13 N	77.79 W	78.12@	275.24	0.09
2800.00	1.66	262.45	2798.61	100.00	1.07	6.59 N	80.60 W	80.87@	274.68	0.20
2900.00	1.53	251.99	2898.57	100.00	0.28	5.99 N	83.31 W	83.52@	274.11	0.32
3000.00	1.38	255.16	2998.53	100.00	-0.60	5.27 N	85.74 W	85.90@	273.52	0.17
3100.00	0.86	218.90	3098.52	100.00	-1.61	4.38 N	87.37 W	87.48@	272.87	0.85
3200.00	0.28	268.44	3198.51	100.00	-2.24	3.79 N	88.09 W	88.17@	272.46	0.71
3300.00	0.24	285.95	3298.51	100.00	-2.22	3.84 N	88.54 W	88.62@	272.48	0.09
3400.00	0.56	342.58	3398.51	100.00	-1.73	4.36 N	88.88 W	88.99@	272.81	0.47
3500.00	1.23	71.71	3498.50	100.00	-0.86	5.16 N	88.01 W	88.16@	273.36	1.34
3600.00	2.20	93.92	3598.45	100.00	-0.46	5.37 N	85.08 W	85.25@	273.61	1.16
3700.00	2.55	98.53	3698.37	100.00	-0.64	4.91 N	80.96 W	81.11@	273.47	0.40
3800.00	3.36	105.58	3798.23	100.00	-1.41	3.79 N	75.94 W	76.03@	272.86	0.89
3900.00	4.65	122.05	3897.99	100.00	-3.91	0.85 N	69.68 W	69.68@	270.70	1.72
4000.00	4.88	128.27	3997.65	100.00	-8.22	3.93 S	62.90 W	63.03@	266.42	0.57
4100.00	3.65	131.96	4097.37	100.00	-12.58	8.69 S	57.20 W	57.86@	261.36	1.26
4200.00	2.52	127.54	4197.22	100.00	-15.76	12.16 S	53.09 W	54.46@	257.10	1.15
4300.00	2.00	128.81	4297.14	100.00	-17.98	14.60 S	49.98 W	52.07@	253.72	0.52
4400.00	2.29	122.96	4397.07	100.00	-19.95	16.78 S	46.95 W	49.86@	250.34	0.36
4500.00	1.98	127.70	4497.00	100.00	-21.88	18.92 S	43.91 W	47.81@	246.69	0.36
4600.00	2.06	112.18	4596.94	100.00	-23.40	20.65 S	40.87 W	45.80@	243.19	0.55
4700.00	2.03	113.98	4696.88	100.00	-24.57	22.05 S	37.59 W	43.58@	239.60	0.07
4800.00	1.67	111.95	4796.83	100.00	-25.63	23.32 S	34.62 W	41.74@	236.04	0.36
4900.00	1.75	105.26	4896.78	100.00	-26.38	24.26 S	31.80 W	40.00@	232.65	0.21
5000.00	1.61	101.19	4996.74	100.00	-26.86	24.94 S	28.95 W	38.21@	229.25	0.18
5100.00	1.54	96.85	5096.70	100.00	-27.11	25.37 S	26.23 W	36.50@	225.96	0.14
5200.00	0.95	91.25	5196.68	100.00	-27.14	25.55 S	24.07 W	35.10@	223.29	0.60

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
RIG:H&P 416

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5300.00	0.89	77.11	5296.66	100.00	-26.87	25.39 S	22.49 W	33.92@	221.52	0.23
5400.00	0.93	75.30	5396.65	100.00	-26.39	25.02 S	20.94 W	32.62@	219.94	0.05
5500.00	0.85	62.80	5496.64	100.00	-25.75	24.47 S	19.50 W	31.29@	218.55	0.21
5600.00	0.86	70.49	5596.63	100.00	-25.06	23.88 S	18.13 W	29.98@	217.21	0.12
5700.00	0.68	66.88	5696.62	100.00	-24.50	23.40 S	16.88 W	28.85@	215.81	0.19
5800.00	1.01	60.32	5796.61	100.00	-23.74	22.73 S	15.57 W	27.55@	214.41	0.34
5900.00	0.66	73.38	5896.60	100.00	-23.05	22.13 S	14.25 W	26.32@	212.78	0.40
6000.00	0.26	165.83	5996.60	100.00	-23.06	22.18 S	13.64 W	26.04@	211.59	0.72
6100.00	0.22	189.00	6096.59	100.00	-23.47	22.59 S	13.62 W	26.38@	211.08	0.10
6200.00	0.64	163.15	6196.59	100.00	-24.18	23.32 S	13.48 W	26.93@	210.04	0.45
6300.00	0.45	181.80	6296.59	100.00	-25.10	24.24 S	13.33 W	27.67@	208.81	0.26
6400.00	0.36	197.09	6396.58	100.00	-25.80	24.94 S	13.44 W	28.33@	208.32	0.14
6500.00	0.57	197.08	6496.58	100.00	-26.59	25.71 S	13.68 W	29.12@	208.01	0.21
6600.00	0.96	220.37	6596.57	100.00	-27.74	26.83 S	14.37 W	30.43@	208.17	0.49
6700.00	0.92	220.79	6696.56	100.00	-29.06	28.07 S	15.43 W	32.03@	208.80	0.04
6800.00	1.09	220.75	6796.54	100.00	-30.46	29.40 S	16.58 W	33.75@	209.42	0.17
6900.00	0.91	207.84	6896.53	100.00	-31.95	30.82 S	17.57 W	35.48@	209.69	0.29
7000.00	0.88	219.71	6996.52	100.00	-33.30	32.12 S	18.43 W	37.03@	209.85	0.19
7100.00	1.04	217.67	7096.50	100.00	-34.68	33.42 S	19.48 W	38.69@	210.23	0.16
7200.00	1.18	214.56	7196.48	100.00	-36.32	34.99 S	20.62 W	40.61@	210.51	0.15
7300.00	1.11	208.28	7296.46	100.00	-38.09	36.69 S	21.66 W	42.61@	210.55	0.14
7400.00	1.20	209.13	7396.44	100.00	-39.92	38.46 S	22.63 W	44.62@	210.47	0.09
7500.00	1.24	205.49	7496.42	100.00	-41.87	40.35 S	23.60 W	46.75@	210.33	0.09
7600.00	1.41	200.22	7596.39	100.00	-44.06	42.48 S	24.49 W	49.04@	209.97	0.21
7700.00	1.49	203.44	7696.36	100.00	-46.46	44.83 S	25.44 W	51.54@	209.57	0.11
7800.00	1.35	203.35	7796.33	100.00	-48.80	47.10 S	26.42 W	54.01@	209.29	0.14
7900.00	1.20	193.96	7896.31	100.00	-50.94	49.20 S	27.14 W	56.19@	208.88	0.26
8000.00	1.24	175.04	7996.28	100.00	-53.04	51.30 S	27.30 W	58.11@	208.02	0.40

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SNAPPING 2 STATE #4H
EDDY COUNTY COUNTY, NM
RIG:H&P 416

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
8100.00	1.10	173.26	8096.26	100.00	-55.05	53.33 S	27.09 W	59.81@	206.93	0.14
8200.00	1.05	188.67	8196.25	100.00	-56.91	55.19 S	27.12 W	61.49@	206.17	0.29
8300.00	0.92	220.73	8296.23	100.00	-58.47	56.70 S	27.78 W	63.14@	206.10	0.56
** TIE-IN TO SCIENTIFIC GYRO @ 8370 MD'.										
8324.70	0.75	209.90	8320.93	24.70	-58.77	56.99 S	27.99 W	63.49@	206.16	0.94
THE FOLLOWING ARE PATHFINDER SURVEYS										
8370.00	0.79	208.76	8366.23	45.30	-59.32	57.52 S	28.29 W	64.10@	206.19	0.09
8402.00	0.88	35.96	8398.22	32.00	-59.31	57.52 S	28.25 W	64.08@	206.16	5.21
8433.00	4.40	35.26	8429.19	31.00	-58.09	56.35 S	27.42 W	62.67@	205.95	11.35
8465.00	7.56	31.22	8461.01	32.00	-55.17	53.55 S	25.62 W	59.36@	205.57	9.96
8496.00	11.43	28.40	8491.58	31.00	-50.57	49.10 S	23.10 W	54.26@	205.20	12.57
8528.00	14.77	28.76	8522.74	32.00	-43.98	42.73 S	19.63 W	47.03@	204.67	10.44
8560.00	17.50	28.76	8553.48	32.00	-35.91	34.94 S	15.35 W	38.16@	203.72	8.53
8591.00	20.31	28.40	8582.80	31.00	-26.78	26.12 S	10.55 W	28.17@	202.00	9.07
8622.00	23.13	27.09	8611.60	31.00	-16.28	15.96 S	5.22 W	16.79@	198.11	9.23
8654.00	25.59	27.26	8640.75	32.00	-4.16	4.22 S	0.81 E	4.30@	169.15	7.69
8685.00	28.58	24.80	8668.35	31.00	8.92	8.46 N	6.99 E	10.98@	39.54	10.30
8717.00	31.13	22.87	8696.10	32.00	23.90	23.04 N	13.41 E	26.66@	30.21	8.52
8748.00	33.15	19.35	8722.35	31.00	39.65	38.42 N	19.34 E	43.01@	26.72	8.88
8780.00	34.82	17.94	8748.88	32.00	56.95	55.37 N	25.05 E	60.77@	24.34	5.77
8811.00	36.76	18.03	8774.02	31.00	74.54	72.61 N	30.65 E	78.81@	22.88	6.26
8843.00	39.48	18.56	8799.20	32.00	93.67	91.36 N	36.85 E	98.52@	21.97	8.56
8875.00	42.47	20.32	8823.36	32.00	113.88	111.14 N	43.84 E	119.48@	21.53	10.02
8906.00	45.37	21.64	8845.68	31.00	134.43	131.22 N	51.55 E	140.98@	21.45	9.81
8938.00	48.28	22.69	8867.58	32.00	156.59	152.82 N	60.36 E	164.31@	21.55	9.40
8969.00	52.14	23.13	8887.41	31.00	179.11	174.76 N	69.63 E	188.12@	21.72	12.50
9001.00	55.31	23.22	8906.34	32.00	203.46	198.47 N	79.78 E	213.91@	21.90	9.91
9032.00	57.68	23.13	8923.45	31.00	227.86	222.23 N	89.95 E	239.75@	22.04	7.65
9064.00	58.92	22.08	8940.27	32.00	253.65	247.37 N	100.42 E	266.97@	22.09	4.78

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
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EDDY COUNTY COUNTY, NM
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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
9096.00	60.23	21.64	8956.47	32.00	279.90	272.98 N	110.69 E	294.56@	22.07	4.26
9127.00	62.96	22.08	8971.22	31.00	305.84	298.28 N	120.84 E	321.83@	22.05	8.89
9158.00	66.57	23.04	8984.43	31.00	332.41	324.17 N	131.60 E	349.86@	22.10	11.98
9190.00	68.76	23.66	8996.59	32.00	360.32	351.34 N	143.33 E	379.46@	22.19	7.07
9222.00	71.49	23.75	9007.47	32.00	388.63	378.89 N	155.43 E	409.54@	22.30	8.54
9253.00	71.75	24.54	9017.25	31.00	416.24	405.74 N	167.46 E	438.94@	22.43	2.56
9285.00	73.78	23.92	9026.73	32.00	444.90	433.61 N	180.01 E	469.49@	22.54	6.61
9316.00	75.71	23.66	9034.88	31.00	473.03	460.97 N	192.07 E	499.39@	22.62	6.28
9348.00	79.58	22.60	9041.73	32.00	502.54	489.71 N	204.34 E	530.64@	22.65	12.52
9379.00	82.92	21.28	9046.45	31.00	531.67	518.13 N	215.79 E	561.27@	22.61	11.57
9411.00	84.33	19.79	9050.00	32.00	562.14	547.91 N	226.94 E	593.05@	22.50	6.39
9442.00	84.33	19.18	9053.06	31.00	591.86	576.99 N	237.23 E	623.86@	22.35	1.96
9474.00	86.26	18.38	9055.69	32.00	622.68	607.19 N	247.50 E	655.69@	22.18	6.53
9505.00	88.81	18.91	9057.02	31.00	652.64	636.53 N	257.40 E	686.60@	22.02	8.40
9537.00	90.04	19.61	9057.34	32.00	683.49	666.74 N	267.95 E	718.57@	21.89	4.42
9568.00	90.40	19.79	9057.22	31.00	713.33	695.92 N	278.40 E	749.54@	21.80	1.30
9600.00	90.04	18.56	9057.10	32.00	744.20	726.14 N	288.91 E	781.51@	21.70	4.00
9631.00	90.13	15.92	9057.05	31.00	774.36	755.75 N	298.10 E	812.42@	21.53	8.52
9663.00	90.92	13.11	9056.76	32.00	805.81	786.72 N	306.12 E	844.18@	21.26	9.12
9695.00	91.01	10.74	9056.22	32.00	837.49	818.03 N	312.73 E	875.77@	20.92	7.41
9718.00	91.45	8.28	9055.73	23.00	860.37	840.70 N	316.53 E	898.32@	20.63	10.86
9812.00	90.40	4.85	9054.21	94.00	954.25	934.06 N	327.27 E	989.73@	19.31	3.82
9907.00	88.81	2.39	9054.86	95.00	1049.23	1028.86 N	333.27 E	1081.49@	17.95	3.08
10002.00	88.99	0.45	9056.69	95.00	1144.12	1123.81 N	335.62 E	1172.85@	16.63	2.05
10097.00	89.34	0.27	9058.07	95.00	1238.93	1218.79 N	336.22 E	1264.32@	15.42	0.41
10192.00	89.69	0.79	9058.88	95.00	1333.76	1313.78 N	337.10 E	1356.34@	14.39	0.66
10286.00	89.60	359.55	9059.46	94.00	1427.55	1407.78 N	337.38 E	1447.64@	13.48	1.32
10381.00	89.83	359.49	9059.93	95.00	1522.27	1502.78 N	336.58 E	1540.01@	12.62	0.25

PathFinder Energy Services, Inc.

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
10475.00	89.96	359.18	9060.10	94.00	1615.97	1596.77 N	335.49 E	1631.63@	11.87	0.36
10570.00	89.78	359.40	9060.32	95.00	1710.66	1691.76 N	334.31 E	1724.48@	11.18	0.30
10664.00	89.89	359.52	9060.59	94.00	1804.37	1785.76 N	333.43 E	1816.62@	10.58	0.17
10759.00	89.96	359.41	9060.71	95.00	1899.09	1880.75 N	332.54 E	1909.93@	10.03	0.14
10853.00	90.22	359.81	9060.57	94.00	1992.82	1974.75 N	331.90 E	2002.45@	9.54	0.51
10948.00	90.57	359.71	9059.91	95.00	2087.57	2069.75 N	331.50 E	2096.13@	9.10	0.38
11042.00	91.45	0.32	9058.25	94.00	2181.33	2163.73 N	331.53 E	2188.98@	8.71	1.14
11137.00	89.87	359.27	9057.16	95.00	2276.08	2258.72 N	331.19 E	2282.87@	8.34	2.00
11231.00	89.16	358.63	9057.96	94.00	2369.72	2352.70 N	329.47 E	2375.66@	7.97	1.02
11325.00	88.72	358.88	9059.69	94.00	2463.32	2446.66 N	327.42 E	2468.47@	7.62	0.54
11420.00	88.81	359.22	9061.74	95.00	2557.96	2541.63 N	325.85 E	2562.43@	7.31	0.37
11515.00	88.46	359.22	9064.01	95.00	2652.61	2636.59 N	324.56 E	2656.49@	7.02	0.37
11609.00	88.90	359.11	9066.17	94.00	2746.26	2730.56 N	323.19 E	2749.61@	6.75	0.48
11704.00	88.72	359.87	9068.14	95.00	2840.96	2825.53 N	322.34 E	2843.86@	6.51	0.82
11798.00	90.92	0.00	9068.44	94.00	2934.72	2919.52 N	322.23 E	2937.25@	6.30	2.35
11893.00	91.19	0.28	9066.69	95.00	3029.50	3014.51 N	322.47 E	3031.71@	6.11	0.41
11987.00	91.28	0.28	9064.66	94.00	3123.29	3108.48 N	322.93 E	3125.21@	5.93	0.10
12082.00	90.75	359.34	9062.98	95.00	3218.03	3203.47 N	322.61 E	3219.67@	5.75	1.14
12177.00	90.40	358.77	9062.03	95.08	3312.76	3298.53 N	321.04 E	3314.12@	5.56	0.70
12271.00	90.31	359.05	9061.45	93.92	3406.32	3392.43 N	319.26 E	3407.42@	5.38	0.31
12366.00	90.40	359.22	9060.86	95.00	3500.99	3487.42 N	317.82 E	3501.87@	5.21	0.20
12460.00	90.48	359.55	9060.13	94.00	3594.69	3581.41 N	316.81 E	3595.39@	5.06	0.36
12555.00	90.13	359.67	9059.63	95.00	3689.42	3676.41 N	316.17 E	3689.98@	4.92	0.39
12649.00	89.60	359.56	9059.85	94.00	3783.15	3770.40 N	315.54 E	3783.58@	4.78	0.58
12744.00	88.11	359.13	9061.75	95.00	3877.83	3865.37 N	314.45 E	3878.14@	4.65	1.63
12839.00	89.52	359.77	9063.71	95.00	3972.52	3960.35 N	313.54 E	3972.74@	4.53	1.63
12933.00	89.96	0.66	9064.14	94.00	4066.32	4054.34 N	313.89 E	4066.48@	4.43	1.06
13028.00	90.84	1.22	9063.48	95.00	4161.19	4149.33 N	315.45 E	4161.30@	4.35	1.10

PathFinder Energy Services, Inc.

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets		Closure Dist Dir		DLS
						(ft)	(ft)	(ft)	(deg)	(dg/100ft)
13121.00	91.54	1.25	9061.55	93.00	4254.06	4242.29 N	317.45 E	4254.15@	4.28	0.75
13215.00	91.54	1.33	9059.02	94.00	4347.93	4336.23 N	319.57 E	4347.99@	4.21	0.09
13310.00	90.75	1.95	9057.12	95.00	4442.83	4431.17 N	322.29 E	4442.87@	4.16	1.06
13404.00	90.57	1.25	9056.04	94.00	4536.75	4525.13 N	324.91 E	4536.77@	4.11	0.77
13484.00	90.75	1.60	9055.12	80.00	4616.67	4605.10 N	326.90 E	4616.68@	4.06	0.49
STRAIGHT LINE PROJECTION TO BIT @ 13539' MD.										
13539.00	90.75	1.60	9054.40	55.00	4671.62	4660.07 N	328.44 E	4671.63@	4.03	0.00

** 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.:	SNAPPING 2 STATE	#4H	
WELL LOCATION:	EDDY COUNTY		
COUNTY / STATE / COUNTRY:	EDDY COUNTY	NEW MEXICO	USA
RIG:	H&P 416		
API WELL No:	30-015-39071		
JOB No:	700003708-WT-WT		
P.O. / AFE No.	160477		
DIRECTIONAL COMPANY:	P.E.S.		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
<i>On Wall Plat:</i>		<i>LWD Calculated:</i>	
<i>Agreed Upon:</i>			
X =	724310.370000	Feet	Y = 388171.260000
			Feet
SITE LATITUDE:	56.8299 N	SITE LONGITUDE:	33.5688 W
GRID SYSTEM:	TRUE ☐ UTM ☐ LAMBERT ☒	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	0.42		
KELLY BUSHING ELEVATION:	26.2 FT		
ALTITUDE:	3267.1	Feet	WATER DEPTH: N/A
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	8324.7		
DRIFT ANGLE:	0.75		
DRIFT DIRECTION:	209.9		
TRUE VERTICAL DEPTH:	8320.93		
VERTICAL SECTION:	-57.13		
RECTANGULAR COORDINATE (N / S) :	-56.93		
RECTANGULAR COORDINATE (E / W) :	-28.03		
CLOSURE DISTANCE / DIRECTION:	63.46	206.22	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	SCIENTIFIC		
COPY OF TIE-IN SURVEY REPORT	☒ YES		☐ NO

WELL PLAN

KICKOFF DEPTH:	TOTAL DEPTH:
KICKOFF ANGLE:	MAX ANGLE:

PES Engineers: S. MOORE

**Signature of both field engineers required if applicable

Directional Driller: MANUEL CERVANTES

DATE: _____



Scientific Drilling

Gyroscopic Survey Report for DEVON ENERGY

Well Location	EDDY COUNTY, NEW MEXICO
Well Name	SNAPPING 2 SATE #4H
Rig Name	H&P #416
Survey Date	9/11/2011
Latitude	32.07 deg
North Reference	Grid North
Grid Correction	-0.31 deg
Depth Reference	26.2' KB
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 0.42Azim (deg)
Definitive Survey	FINAL OUTURN SURVEY
Operator	A.MADRID

Comments



Scientific Drilling

Survey Report

Well Name:		SNAPPING 2 SATE #4H							
Survey:		FINAL OUTURN SURVEY							
Survey Date:		9/11/2011							
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.63	324.48	100.00	0.44	0.45	-0.32	0.63	0.55	324.48
200.00	0.58	301.33	199.99	1.15	1.15	-1.07	0.25	1.57	317.22
300.00	0.69	311.64	299.99	1.81	1.82	-1.95	0.16	2.67	312.98
400.00	0.79	292.45	399.98	2.46	2.49	-3.04	0.27	3.93	309.24
500.00	1.42	267.64	499.96	2.66	2.70	-4.92	0.77	5.61	298.76
600.00	1.72	254.29	599.92	2.18	2.24	-7.60	0.48	7.92	286.42
700.00	1.64	256.56	699.88	1.42	1.50	-10.44	0.11	10.55	278.17
800.00	1.81	256.35	799.83	0.70	0.79	-13.37	0.16	13.39	273.40
900.00	1.90	254.98	899.78	-0.13	-0.01	-16.50	0.11	16.50	269.97
1000.00	1.73	258.17	999.73	-0.89	-0.75	-19.58	0.20	19.60	267.82
1100.00	1.67	266.22	1099.69	-1.32	-1.15	-22.51	0.25	22.54	267.07
1200.00	1.84	272.17	1199.64	-1.37	-1.19	-25.57	0.25	25.59	267.34
1300.00	1.72	274.85	1299.59	-1.21	-1.00	-28.66	0.14	28.68	268.00
1400.00	2.04	284.37	1399.54	-0.66	-0.43	-31.88	0.44	31.89	269.23
1500.00	2.09	291.75	1499.47	0.43	0.69	-35.30	0.27	35.30	271.11
1600.00	2.15	295.33	1599.41	1.88	2.16	-38.68	0.15	38.74	273.20
1700.00	2.34	288.54	1699.33	3.30	3.61	-42.31	0.33	42.46	274.88
1800.00	2.49	289.21	1799.24	4.64	4.98	-46.29	0.15	46.56	276.13
1900.00	2.62	283.17	1899.14	5.84	6.21	-50.57	0.30	50.95	277.00
2000.00	2.55	283.23	1999.04	6.84	7.24	-54.96	0.07	55.43	277.50
2100.00	2.13	282.96	2098.96	7.73	8.17	-58.94	0.42	59.50	277.89
2200.00	2.23	275.79	2198.88	8.32	8.78	-62.69	0.29	63.30	277.97
2300.00	2.12	266.13	2298.81	8.36	8.85	-66.47	0.38	67.06	277.58
2400.00	1.92	268.55	2398.75	8.17	8.68	-69.99	0.22	70.53	277.07
2500.00	1.27	257.62	2498.71	7.87	8.40	-72.75	0.71	73.24	276.59
2600.00	1.53	254.97	2598.68	7.27	7.82	-75.12	0.26	75.53	275.94
2700.00	1.62	255.77	2698.64	6.56	7.13	-77.78	0.10	78.11	275.23
2800.00	1.66	262.45	2798.60	6.00	6.59	-80.59	0.19	80.86	274.67
2900.00	1.53	251.99	2898.56	5.37	5.98	-83.30	0.32	83.52	274.11
3000.00	1.38	255.16	2998.53	4.63	5.26	-85.74	0.17	85.90	273.51
3100.00	0.86	218.90	3098.51	3.73	4.37	-87.37	0.85	87.48	272.86
3200.00	0.28	268.44	3198.51	3.13	3.78	-88.08	0.71	88.17	272.46
3300.00	0.24	285.95	3298.51	3.18	3.83	-88.53	0.09	88.61	272.48
3400.00	0.56	342.58	3398.50	3.70	4.36	-88.88	0.48	88.99	272.81
3500.00	1.23	71.71	3498.50	4.51	5.16	-88.01	1.34	88.16	273.36
3600.00	2.20	93.92	3598.45	4.74	5.36	-85.08	1.16	85.25	273.61
3700.00	2.55	98.53	3698.36	4.31	4.90	-80.97	0.39	81.11	273.47
3800.00	3.36	105.58	3798.23	3.23	3.79	-75.95	0.89	76.04	272.85



Scientific Drilling

Survey Report

Well Name:		SNAPPING 2 SATE #4H							
Survey:		FINAL OUTURN SURVEY							
Survey Date:		9/11/2011							
MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg
3900.00	4.65	122.05	3897.99	0.34	0.85	-69.69	1.72	69.69	270.70
4000.00	4.88	128.27	3997.64	-4.40	-3.94	-62.91	0.57	63.04	266.42
4100.00	3.65	131.96	4097.36	-9.12	-8.70	-57.21	1.27	57.86	261.35
4200.00	2.52	127.54	4197.22	-12.56	-12.17	-53.10	1.15	54.47	257.09
4300.00	2.00	128.81	4297.14	-14.97	-14.60	-49.99	0.53	52.08	253.72
4400.00	2.29	122.96	4397.07	-17.12	-16.78	-46.96	0.36	49.87	250.34
4500.00	1.98	127.70	4497.00	-19.24	-18.92	-43.93	0.36	47.83	246.70
4600.00	2.06	112.18	4596.94	-20.95	-20.65	-40.90	0.55	45.81	243.21
4700.00	2.03	113.98	4696.88	-22.32	-22.05	-37.62	0.07	43.60	239.63
4800.00	1.67	111.95	4796.82	-23.56	-23.31	-34.65	0.36	41.76	236.07
4900.00	1.75	105.26	4896.78	-24.49	-24.25	-31.83	0.21	40.02	232.69
5000.00	1.61	101.19	4996.74	-25.14	-24.93	-28.99	0.18	38.23	229.30
5100.00	1.54	96.85	5096.70	-25.55	-25.36	-26.28	0.14	36.52	226.02
5200.00	0.95	91.25	5196.68	-25.71	-25.54	-24.11	0.60	35.12	223.36
5300.00	0.89	77.11	5296.66	-25.55	-25.38	-22.53	0.23	33.94	221.59
5400.00	0.93	75.30	5396.65	-25.16	-25.01	-20.99	0.05	32.65	220.01
5500.00	0.85	62.80	5496.64	-24.60	-24.46	-19.55	0.21	31.31	218.63
5600.00	0.86	70.49	5596.63	-24.00	-23.87	-18.18	0.12	30.00	217.29
5700.00	0.68	66.88	5696.62	-23.51	-23.39	-16.92	0.19	28.87	215.89
5800.00	1.01	60.32	5796.61	-22.83	-22.72	-15.61	0.34	27.56	214.50
5900.00	0.66	73.38	5896.60	-22.22	-22.12	-14.30	0.40	26.34	212.88
6000.00	0.26	165.83	5996.59	-22.27	-22.17	-13.69	0.72	26.06	211.70
6100.00	0.22	189.00	6096.59	-22.68	-22.58	-13.67	0.10	26.39	211.19
6200.00	0.64	163.15	6196.59	-23.40	-23.30	-13.54	0.46	26.95	210.15
6300.00	0.45	181.80	6296.59	-24.32	-24.22	-13.39	0.26	27.68	208.92
6400.00	0.36	197.09	6396.58	-25.01	-24.91	-13.49	0.14	28.33	208.43
6500.00	0.57	197.08	6496.58	-25.78	-25.68	-13.73	0.21	29.12	208.12
6600.00	0.96	220.37	6596.57	-26.90	-26.79	-14.42	0.50	30.43	208.28
6700.00	0.92	220.79	6696.56	-28.16	-28.04	-15.48	0.04	32.03	208.91
6800.00	1.09	220.75	6796.54	-29.49	-29.37	-16.63	0.17	33.76	209.52
6900.00	0.91	207.84	6896.53	-30.92	-30.79	-17.62	0.29	35.48	209.78
7000.00	0.88	219.71	6996.51	-32.22	-32.08	-18.48	0.19	37.02	209.94
7100.00	1.04	217.67	7096.50	-33.53	-33.39	-19.52	0.16	38.68	210.32
7200.00	1.18	214.56	7196.48	-35.11	-34.95	-20.66	0.16	40.61	210.59
7300.00	1.11	208.28	7296.46	-36.81	-36.65	-21.70	0.15	42.60	210.63
7400.00	1.20	209.13	7396.44	-38.59	-38.42	-22.67	0.10	44.61	210.55
7500.00	1.24	205.49	7496.42	-40.49	-40.32	-23.65	0.09	46.74	210.40
7600.00	1.41	200.22	7596.39	-42.63	-42.45	-24.54	0.20	49.03	210.04



Scientific Drilling

Survey Report

Well Name: SNAPPING 2 SATE #4H
Survey: FINAL OUTURN SURVEY
Survey Date: 9/11/2011

MD	Inc	Azim	TVD	VS	Northing	Easting	DLS	Closure Distance	Closure Angle
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	deg
7700.00	1.49	203.44	7696.36	-44.97	-44.79	-25.48	0.11	51.53	209.64
7800.00	1.35	203.35	7796.33	-47.25	-47.06	-26.46	0.14	53.99	209.35
7900.00	1.20	193.96	7896.30	-49.35	-49.16	-27.18	0.26	56.17	208.94
8000.00	1.24	175.04	7996.28	-51.44	-51.24	-27.34	0.40	58.08	208.08
8100.00	1.10	173.26	8096.26	-53.47	-53.27	-27.14	0.14	59.78	206.99
8200.00	1.05	188.67	8196.24	-55.32	-55.13	-27.16	0.29	61.45	206.23
8300.00	0.92	220.73	8296.23	-56.84	-56.64	-27.82	0.56	63.10	206.16
8324.70	0.75	209.90	8320.93	-57.13	-56.93	-28.03	0.93	63.46	206.22



A Schlumberger Company **PathFinder Energy Services, Inc.**

Magnetic & Grid Calculations

Devon Energy Production Company, L.P.
Snapping 2 State #4 H
Eddy County New Mexico
Rig:HP 416

Wed Sep 07 14:48:20 2011

Coordinates

Latitude: 32.065786 N (32 deg. 3 min. 56.8299 sec.)
Longitude: 103.742658 W (-103 deg. 44 min. 33.5688 sec.)
Elevation: 3292.10 feet.
Calculation Date: Sep/07/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.0044 degrees
Total Magnetic Field: 0.48480 gauss
Magnetic Declination: 7.624189 degrees
Horizontal Intensity: 0.242366 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.624189 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 724310.3700 feet
Y: 388171.2600 feet
True to Grid: (convergence) -0.313593 degrees
Magnetic to Grid: 7.310596 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.310596 Degr.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

Mon Sep 12 10:21:55 2011

Coordinates

Latitude: 32.065786 N (32 deg. 3 min. 56.8299 sec.)
Longitude: 103.742658 W (-103 deg. 44 min. 33.5688 sec.)
Elevation: 3292.00 feet.
Calculation Date: Sep/12/2011

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.0041 degrees
Total Magnetic Field: 0.48478 gauss
Magnetic Declination: 7.622518 degrees
Horizontal Intensity: 0.242361 gauss

To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.622518 Degr

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 724310.3700 feet
Y: 388171.2600 feet
True to Grid: (convergence) -0.313593 degrees
Magnetic to Grid: 7.308925 degrees

To Convert a Magnetic Dir. to a GRID dir. Add 7.308925 Degr.

Pathfinder

6213 WCR 112
Midland, Texas 79706
Tel (432)687-1647
Fax (432)687-1544



October 18, 2011

15-39071

Devon Energy
20 N. Broadway
Oklahoma City, OK

RE: Devon Energy
Snapping 2 State #4H
API: 30-015-39071
Eddy County, NM
RIG: H & P 416
FIELD: Wildcat; Bone Spring
PES FILE NO.: 700003708-WT-WT

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 that reads "Steve Bibb".

STEVE BIBB
M/LWD Service Coordinator
PathFinder Energy Services

ML:sh

DEVON ENERGY

Wildcat (Eddy County, NM)

Eddy County, NM

Snapping 2 State #4H

VH - Job #32K0911872

Survey: Actual

SDI Standard Survey Report

This survey is correct to the best of my knowledge and is supported by actual field data.

Richard

Notarized this date 4th of October, 2011.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Snapping 2 State #4H
Project:	Wildcat (Eddy County, NM)	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Snapping 2 State #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911872	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911872	Database:	EDM-Regulatory

Project	Wildcat (Eddy County, NM)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Eddy County, NM			
Site Position.		Northing:	387,530 63 usft	Latitude:	32° 3' 50 850 N
From:	Lat/Long	Easting:	717,555 20 usft	Longitude:	103° 45' 52 110 W
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0 30 °

Well	Snapping 2 State #4H, Directional (Pathfinder)					
Well Position	+N/-S	0 0 usft	Northing:	388,171.26 usft	Latitude:	32° 3' 56.830 N
	+E/-W	0 0 usft	Easting:	724,310.37 usft	Longitude:	103° 44' 33.569 W
Position Uncertainty		0 0 usft	Wellhead Elevation:	usft	Ground Level:	0 0 usft

Wellbore	VH - Job #32K0911872				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/11/2011	7 62	60 00	48,503

Design	VH - Job #32K0911872			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0 0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 0	0 0	0 0	0 42

Survey Program		Date	10/23/2011		
From (usft)	To (usft)	Survey (Wellbore)		Tool Name	Description
100 0	8,324 7	Actual (VH - Job #32K0911872)		Keeper	Keeper Gyro

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0 0	0 00	0 00	0 0	0 0	0 0	0 00	0 0
100 0	0 63	324 48	100 0	0 4	-0 3	324 48	0 5
200 0	0 58	301 33	200 0	1 2	-1 1	317 23	1 6
300 0	0 69	311 64	300 0	1 8	-2 0	313 00	2 7
400 0	0 79	292 45	400 0	2 5	-3 0	309 25	3 9
500 0	1 42	267 64	500 0	2 7	-4 9	298 75	5 6
600 0	1 72	254 29	599 9	2 2	-7 6	286 42	7 9
700 0	1 64	256 56	699 9	1 5	-10 4	278 18	10 5
800 0	1 81	256 35	799 8	0 8	-13 4	273 41	13 4
900 0	1 90	254 98	899 8	0 0	-16 5	269 98	16 5
1,000 0	1 73	258 17	999 7	-0 7	-19 6	267 82	19 6
1,100 0	1 67	266 22	1,099 7	-1 2	-22 5	267 07	22 5

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Snapping 2 State #4H
Project:	Wildcat (Eddy County, NM)	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Snapping 2 State #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911872	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911872	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,200 0	1 84	272 17	1,199 6	-1 2	-25 6	267 34	25 6	
1,300 0	1 72	274 85	1,299 6	-1 0	-28 7	268 00	28 7	
1,400 0	2 04	284 37	1,399 5	-0 4	-31 9	269 23	31 9	
1,500 0	2 09	291 75	1,499 5	0 7	-35 3	271 11	35 3	
1,600 0	2 15	295 33	1,599 4	2 2	-38 7	273 20	38 8	
1,700 0	2 34	288 54	1,699 3	3 6	-42 3	274 88	42 5	
1,800 0	2 49	289 21	1,799 2	5 0	-46 3	276 14	46 6	
1,900 0	2 62	283 17	1,899 1	6 2	-50 6	277 01	51 0	
2,000 0	2 55	283 23	1,999 0	7 2	-55 0	277 51	55 5	
2,100 0	2 13	282 96	2,099 0	8 2	-59 0	277 89	59 5	
2,200 0	2 23	275 79	2,198 9	8 8	-62 7	277 98	63 3	
2,300 0	2 12	266 13	2,298 8	8 9	-66 5	277 59	67 1	
2,400 0	1 92	268 55	2,398 7	8 7	-70 0	277 08	70 5	
2,500 0	1 27	257 62	2,498 7	8 4	-72 8	276 59	73 2	
2,600 0	1 53	254 97	2,598 7	7 8	-75 1	275 95	75 5	
2,700 0	1 62	255 77	2,698 6	7 1	-77 8	275 24	78 1	
2,800 0	1 66	262 45	2,798 6	6 6	-80 6	274 68	80 9	
2,900 0	1 53	251 99	2,898 6	6 0	-83 3	274 11	83 5	
3,000 0	1 38	255 16	2,998 5	5 3	-85 7	273 52	85 9	
3,100 0	0 86	218 90	3,098 5	4 4	-87 4	272 87	87 5	
3,200 0	0 28	268 44	3,198 5	3 8	-88 1	272 46	88 2	
3,300 0	0 24	285 95	3,298 5	3 8	-88 5	272 48	88 6	
3,400 0	0 56	342 58	3,398 5	4 4	-88 9	272 81	89 0	
3,500 0	1 23	71 71	3,498 5	5 2	-88 0	273 36	88 2	
3,600 0	2 20	93 92	3,598 5	5 4	-85 1	273 61	85 2	
3,700 0	2 55	98 53	3,698 4	4 9	-81 0	273 47	81 1	
3,800 0	3 36	105 58	3,798 2	3 8	-75 9	272 86	76 0	
3,900 0	4 65	122 05	3,898 0	0 9	-69 7	270 70	69 7	
4,000 0	4 88	128 27	3,997 6	-3 9	-62 9	266 42	63 0	
4,100 0	3 65	131 96	4,097 4	-8 7	-57 2	261 36	57 9	
4,200 0	2 52	127 54	4,197 2	-12 2	-53 1	257 09	54 5	
4,300 0	2 00	128 81	4,297 1	-14 6	-50 0	253 72	52 1	
4,400 0	2 29	122 96	4,397 1	-16 8	-46 9	250 33	49 9	
4,500 0	1 98	127 70	4,497 0	-18 9	-43 9	246 69	47 8	
4,600 0	2 06	112 18	4,596 9	-20 7	-40 9	243 19	45 8	
4,700 0	2 03	113 98	4,696 9	-22 1	-37 6	239 60	43 6	
4,800 0	1 67	111 95	4,796 8	-23 3	-34 6	236 04	41 7	
4,900 0	1 75	105 26	4,896 8	-24 3	-31 8	232 65	40 0	
5,000 0	1 61	101 19	4,996 7	-24 9	-28 9	229 25	38 2	
5,100 0	1 54	96 85	5,096 7	-25 4	-26 2	225 95	36 5	
5,200 0	0 95	91 25	5,196 7	-25 6	-24 1	223 29	35 1	
5,300 0	0 89	77 11	5,296 7	-25 4	-22 5	221 52	33 9	
5,400 0	0 93	75 30	5,396 6	-25 0	-20 9	219 93	32 6	
5,500 0	0 85	62 80	5,496 6	-24 5	-19 5	218 54	31 3	

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Snapping 2 State #4H
Project:	Wildcat (Eddy County, NM)	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Snapping 2 State #4H	North Reference:	Grid
Wellbore:	VH - Job #32K0911872	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0911872	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
5,600 0	0 86	70 49	5,596 6	-23 9	-18 1	217 20	30 0	
5,700 0	0 68	66 88	5,696 6	-23 4	-16 9	215 80	28 8	
5,800 0	1 01	60 32	5,796 6	-22 7	-15 6	214 40	27 5	
5,900 0	0 66	73 38	5,896 6	-22 1	-14 2	212 77	26 3	
6,000 0	0 26	165 83	5,996 6	-22 2	-13 6	211 58	26 0	
6,100 0	0 22	189 00	6,096 6	-22 6	-13 6	211 07	26 4	
6,200 0	0 64	163 15	6,196 6	-23 3	-13 5	210 03	26 9	
6,300 0	0 45	181 80	6,296 6	-24 2	-13 3	208 81	27 7	
6,400 0	0 36	197 09	6,396 6	-24 9	-13 4	208 32	28 3	
6,500 0	0 57	197 08	6,496 6	-25 7	-13 7	208 00	29 1	
6,600 0	0 96	220 37	6,596 6	-26 8	-14 4	208 16	30 4	
6,700 0	0 92	220 79	6,696 6	-28 1	-15 4	208 80	32 0	
6,800 0	1 09	220 75	6,796 5	-29 4	-16 6	209 41	33 8	
6,900 0	0 91	207 84	6,896 5	-30 8	-17 6	209 68	35 5	
7,000 0	0 88	219 71	6,996 5	-32 1	-18 4	209 85	37 0	
7,100 0	1 04	217 67	7,096 5	-33 4	-19 5	210 23	38 7	
7,200 0	1 18	214 56	7,196 5	-35 0	-20 6	210 50	40 6	
7,300 0	1 11	208 28	7,296 5	-36 7	-21 7	210 55	42 6	
7,400 0	1 20	209 13	7,396 4	-38 5	-22 6	210 47	44 6	
7,500 0	1 24	205 49	7,496 4	-40 4	-23 6	210 32	46 7	
7,600 0	1 41	200 22	7,596 4	-42 5	-24 5	209 96	49 0	
7,700 0	1 49	203 44	7,696 4	-44 8	-25 4	209 57	51 5	
7,800 0	1 35	203 35	7,796 3	-47 1	-26 4	209 28	54 0	
7,900 0	1 20	193 96	7,896 3	-49 2	-27 1	208 88	56 2	
8,000 0	1 24	175 04	7,996 3	-51 3	-27 3	208 02	58 1	
8,100 0	1 10	173 26	8,096 3	-53 3	-27 1	206 93	59 8	
8,200 0	1 05	188 67	8,196 2	-55 2	-27 1	206 17	61 5	
8,300 0	0 92	220 73	8,296 2	-56 7	-27 8	206 10	63 1	
8,324 7	0 75	209 90	8,320 9	-57 0	-28 0	206 15	63 5	



Scientific Drilling
Directional Drilling Operations

Project: Wildcat (Eddy County, NM)
Eddy County, NM
Well: Snapping 2 State #4H
Wellbore: VH - Job #32K0911872
Design: VH - Job #32K0911872

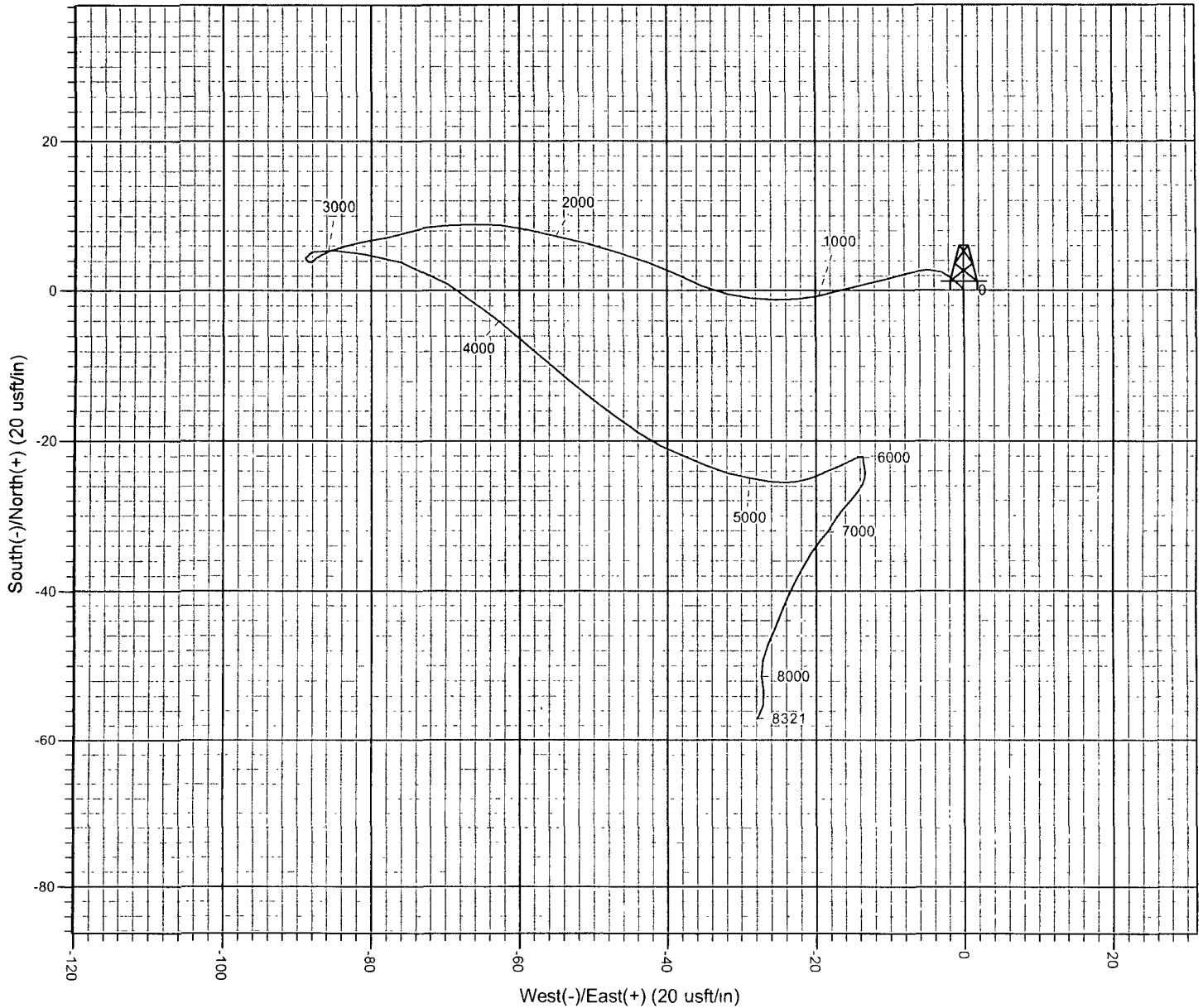


Azimuths to Grid North
True North -0° 31'
Magnetic North 7° 31'

Magnetic Field
Strength 48503 3snT
Dip Angle 60° 00'
Date 9/11/2011
Model IGRF2010

WELL DETAILS: Snapping 2 State #4H
WELL @ 0.0usft (Original Well Elev)
Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	388171.26	724310.37	32° 3' 56.830 N	103° 44' 33.569 W	



PROJECT DETAILS Wildcat (Eddy County, NM)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

SITE DETAILS Eddy County, NM
Site Centre Latitude: 32° 3' 50.850 N
Longitude: 103° 45' 52.110 W
Positional Uncertainty: 0.0
Convergence: 0.30
Local North: Grid