



An Operating Unit of Smith International, Inc.

DIRECTIONAL SURVEY REPORT

30-015-38059

DEVON ENERGY
SPUD 16 STATE #9H
EDDY COUNTY, NEW MEXICO

RECEIVED

JUN 27 2011

NMOCD ARTESIA

PREPARED BY: FRANCISCO SINISTERRA

Pathfinder

6213 W Interstate 20
Midland, Texas 79706
Tel 432 687 1647
Fax 432 687 1544

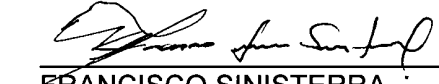


DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JAMES BURLESON
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 12-19-10 TO 12-28-10
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
SPUD 16 STATE #9H
EDDY COUNTY, NM
RIG: H&P 416
9. SURVEY CERTIFIED FROM: 6832 TO 10937 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE
DISPLACED AT 3721.34 FEET ON A BEARING OF 358.72 DEGREES FROM THE
CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 10990 FEET,
ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



FRANCISCO SINISTERRA
M/LWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 12/19/2010
Date Completed: 12/28/2010

DEVON ENERGY CORPORATION

SPUD 16 STATE #9H

EDDY COUNTY, NM

Rig:H&P 416

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers:J. BURLESON

K. THURMAN

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.18.4.8543 N LON:103.59.14.4332 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 648238.5240 Y: 473535.5560

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.66° EAST TO GRID

Vertical Section Plane: 358.89

Survey Vert. Reference: 25.00' Rotary Table To Ground

Altitude:2956.00' Ground To MSL

Measured Depth	10990.00	(feet)
Inclination	90.40	(deg)
Azimuth	357.38	(deg)
True Vertical Depth	7436.93	(feet)
Vertical Section	3721.32	(feet)
Survey X cord	648155.29	(feet)
Survey Y cord	477255.95	(feet)
Survey Lat	32.31157586 N	(deg)
Survey Lon	103.98757311 W	(deg)
Rectangular Corr. N/S	3720.41 N	(feet)
Rectangular Corr. E/W	83.22 W	(feet)
Closure Distance	3721.34	(feet)
Direction of Closure	358.72	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION

SPUD 16 STATE #9H

EDDY COUNTY, NM

Rig:H&P 416

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: J. BURLESON

K. THURMAN

Survey Horiz. Reference:WELLHEAD

Ref Coordinates: LAT:32.18.4.8543 N LON:103.59.14.4332 W

GRID Reference:NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 648238.5240 Y: 473535.5560

North Aligned To:GRID NORTH

Total Magnetic Correction: 7.66° EAST TO GRID

Vertical Section Plane: 358.89

Survey Vert. Reference: 25.00' Rotary Table To Ground

Altitude:2956.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

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)
TIE IN TO SCIENTIFIC DRILLING GYRO SURVEY @ 6800' MD.										
6800.00	1.15	209.38	6797.89	0.00	-109.54	109.23 S	17.30 E	110.59@	171.00	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS:										
6832.00	2.46	336.79	6829.88	32.00	-109.18	108.88 S	16.87 E	110.18@	171.19	10.28
6864.00	5.72	344.07	6861.80	32.00	-107.01	106.71 S	16.16 E	107.93@	171.39	10.29
6895.00	10.38	348.53	6892.48	31.00	-102.76	102.49 S	15.18 E	103.61@	171.57	15.16
6927.00	14.42	349.85	6923.73	32.00	-95.99	95.74 S	13.91 E	96.74@	171.73	12.66
6958.00	17.24	351.26	6953.55	31.00	-87.62	87.40 S	12.53 E	88.29@	171.84	9.18
6989.00	20.05	352.22	6982.92	31.00	-77.79	77.59 S	11.11 E	78.38@	171.85	9.12
7021.00	22.77	352.69	7012.71	32.00	-66.18	66.01 S	9.58 E	66.70@	171.74	8.52
7052.00	24.71	353.53	7041.08	31.00	-53.77	53.62 S	8.09 E	54.23@	171.42	6.35
7084.00	26.91	355.09	7069.89	32.00	-39.88	39.76 S	6.71 E	40.32@	170.42	7.20
7115.00	29.11	356.99	7097.26	31.00	-25.34	25.24 S	5.72 E	25.88@	167.24	7.66
7147.00	31.83	358.64	7124.84	32.00	-9.12	9.02 S	5.11 E	10.37@	150.49	8.89
7178.00	35.17	359.37	7150.69	31.00	7.99	8.08 N	4.82 E	9.41@	30.79	10.85
7210.00	38.34	359.83	7176.32	32.00	27.13	27.23 N	4.68 E	27.63@	9.76	9.94
7241.00	42.38	358.41	7199.94	31.00	47.20	47.29 N	4.37 E	47.50@	5.27	13.37
7273.00	43.53	359.76	7223.36	32.00	69.00	69.10 N	4.02 E	69.21@	3.33	4.60
7304.00	45.46	359.50	7245.47	31.00	90.73	90.82 N	3.88 E	90.90@	2.45	6.25
7336.00	47.75	359.77	7267.45	32.00	113.98	114.07 N	3.73 E	114.13@	1.87	7.18
7367.00	51.00	359.50	7287.63	31.00	137.50	137.60 N	3.58 E	137.64@	1.49	10.50
7399.00	53.20	359.42	7307.29	32.00	162.75	162.84 N	3.34 E	162.88@	1.18	6.88
7430.00	55.40	359.63	7325.38	31.00	187.92	188.02 N	3.13 E	188.04@	0.96	7.12
7462.00	57.24	358.50	7343.12	32.00	214.55	214.64 N	2.70 E	214.66@	0.72	6.46
7493.00	59.18	357.78	7359.45	31.00	240.89	240.97 N	1.84 E	240.98@	0.44	6.56

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SPUD 16 STATE #9H
EDDY COUNTY, NM
RIG:H&P 416

Page 02/03

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)
7525.00	61.11	357.55	7375.38	32.00	268.64	268.70 N	0.71 E	268.70@	0.15	6.06
7556.00	64.54	357.44	7389.54	31.00	296.20	296.25 N	0.50 W	296.25@	359.90	11.07
7588.00	68.59	358.19	7402.26	32.00	325.55	325.58 N	1.61 W	325.59@	359.72	12.84
7619.00	71.67	358.68	7412.80	31.00	354.70	354.72 N	2.41 W	354.73@	359.61	10.05
7651.00	74.04	359.01	7422.23	32.00	385.28	385.29 N	3.02 W	385.30@	359.55	7.47
7682.00	77.65	359.16	7429.81	31.00	415.33	415.34 N	3.50 W	415.36@	359.52	11.66
7714.00	81.69	359.31	7435.55	32.00	446.81	446.81 N	3.92 W	446.83@	359.50	12.63
7745.00	85.12	359.81	7439.11	31.00	477.59	477.60 N	4.16 W	477.62@	359.50	11.18
7803.00	90.92	359.61	7441.11	58.00	535.53	535.54 N	4.45 W	535.56@	359.52	10.01
7897.00	91.80	0.04	7438.88	94.00	629.49	629.52 N	4.74 W	629.53@	359.57	1.04
7992.00	90.31	358.84	7437.13	95.00	724.46	724.49 N	5.67 W	724.51@	359.55	2.01
8086.00	91.63	358.51	7435.54	94.00	818.45	818.45 N	7.84 W	818.49@	359.45	1.45
8181.00	90.66	358.76	7433.64	95.00	913.43	913.40 N	10.10 W	913.46@	359.37	1.05
8276.00	89.08	358.52	7433.86	95.00	1008.42	1008.37 N	12.36 W	1008.45@	359.30	1.68
8370.00	88.29	358.44	7436.01	94.00	1102.39	1102.31 N	14.85 W	1102.41@	359.23	0.85
8465.00	89.08	358.30	7438.19	95.00	1197.36	1197.25 N	17.55 W	1197.38@	359.16	0.85
8560.00	88.81	357.62	7439.94	95.00	1292.33	1292.17 N	20.93 W	1292.34@	359.07	0.77
8654.00	88.55	356.85	7442.11	94.00	1386.27	1386.04 N	25.47 W	1386.27@	358.95	0.86
8749.00	89.16	356.87	7444.01	95.00	1481.19	1480.87 N	30.67 W	1481.19@	358.81	0.64
8843.00	89.34	358.84	7445.24	94.00	1575.16	1574.80 N	34.19 W	1575.17@	358.76	2.10
8938.00	89.96	358.46	7445.82	95.00	1670.16	1669.77 N	36.43 W	1670.17@	358.75	0.76
9033.00	90.75	358.72	7445.23	95.00	1765.16	1764.74 N	38.76 W	1765.16@	358.74	0.87
9127.00	91.63	359.28	7443.28	94.00	1859.13	1858.70 N	40.40 W	1859.14@	358.75	1.11
9222.00	90.57	359.60	7441.45	95.00	1954.11	1953.68 N	41.33 W	1954.11@	358.79	1.16
9317.00	91.89	359.44	7439.41	95.00	2049.08	2048.65 N	42.13 W	2049.08@	358.82	1.40
9411.00	88.99	0.54	7438.69	94.00	2143.05	2142.63 N	42.14 W	2143.05@	358.87	3.30
9506.00	88.90	359.67	7440.44	95.00	2238.01	2237.62 N	41.97 W	2238.01@	358.93	0.92
9600.00	88.81	0.12	7442.32	94.00	2331.98	2331.60 N	42.14 W	2331.98@	358.96	0.49
9695.00	89.25	0.07	7443.93	95.00	2426.94	2426.58 N	41.98 W	2426.95@	359.01	0.47
9790.00	90.13	0.26	7444.44	95.00	2521.92	2521.58 N	41.71 W	2521.93@	359.05	0.95

PathFinder Energy Services, Inc.

Survey Report

DEVON ENERGY CORPORATION
SPUD 16 STATE #9H
EDDY COUNTY, NM
RIG:H&P 416

Page 03/03

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)	(deg)	(deg)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(deg)	(dg/100ft)
9884.00	90.92	359.92	7443.58	94.00	2615.89	2615.58 N	41.56 W	2615.91@	359.09	0.92
9979.00	91.89	359.85	7441.25	95.00	2710.85	2710.55 N	41.75 W	2710.87@	359.12	1.02
10073.00	91.36	359.47	7438.59	94.00	2804.80	2804.51 N	42.31 W	2804.83@	359.14	0.69
10168.00	89.60	358.21	7437.79	95.00	2899.79	2899.48 N	44.23 W	2899.82@	359.13	2.28
10262.00	91.71	358.69	7436.72	94.00	2993.78	2993.43 N	46.78 W	2993.80@	359.10	2.30
10357.00	90.40	357.76	7434.97	95.00	3088.75	3088.37 N	49.72 W	3088.77@	359.08	1.69
10452.00	88.37	357.30	7435.99	95.00	3183.71	3183.27 N	53.81 W	3183.72@	359.03	2.19
10547.00	89.08	357.21	7438.10	95.00	3278.65	3278.14 N	58.36 W	3278.66@	358.98	0.75
10641.00	89.69	356.86	7439.11	94.00	3372.60	3372.00 N	63.22 W	3372.60@	358.93	0.75
10736.00	90.13	356.58	7439.26	95.00	3467.53	3466.85 N	68.66 W	3467.53@	358.87	0.55
10830.00	90.92	356.14	7438.40	94.00	3561.43	3560.65 N	74.63 W	3561.44@	358.80	0.96
10925.00	90.31	357.11	7437.38	95.00	3656.35	3655.48 N	80.22 W	3656.36@	358.74	1.21
10937.00	90.40	357.38	7437.30	12.00	3668.34	3667.47 N	80.80 W	3668.36@	358.74	2.37
STRAIGHT LINE PROJECTION TO BIT @ 10990' MD.										
10990.00	90.40	357.38	7436.93	53.00	3721.32	3720.41 N	83.22 W	3721.34@	358.72	0.00



A Schlumberger Company

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	DEVON ENERGY		
LEASE / WELL No.:	SPUD 16	STATE 9H	
WELL LOCATION:	EDDY COUNTY		
COUNTY / STATE / COUNTRY:	EDDY	NM	US
RIG:	H&P 416		
API WELL No:	30-015-38059		
JOB No:	700001141 WT-WT		
P.O. / AFE No.			
DIRECTIONAL COMPANY:	PES		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.65	LWD Calculated:	7.65
		Agreed Upon:	7.65
X =	648238.524000	Feet	Y = 473535.556000
			Feet
SITE LATITUDE:	32.301348 N	SITE LONGITUDE:	103.987343 W
GRID SYSTEM:	TRUE ☐ UTM ☒ LAMBERT ☐	ZONE:	NEW MEXICO EAST
PROPOSED DRIFT DIRECTION:	358.89		
KELLY BUSHING ELEVATION:	25'		
ALTITUDE:	2956'	Feet	WATER DEPTH:
			N/A
			Feet

TIE-IN SURVEY

MEASURED DEPTH:	6800'		
DRIFT ANGLE:	1.15		
DRIFT DIRECTION:	209.38		
TRUE VERTICAL DEPTH:	6797.89		
VERTICAL SECTION:	-109.54		
RECTANGULAR COORDINATE (N / S) :	-109.23		
RECTANGULAR COORDINATE (E / W) :	17.3		
CLOSURE DISTANCE / DIRECTION:	110.59	171	
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:	6800	TOTAL DEPTH:	11030
KICKOFF ANGLE:	1.15	MAX ANGLE:	90

PES Engineers:

**Signature of both field engineers required if applicable

Directional Driller:

DATE: _____

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

DEVON ENRGY
SPUD 16 STATE 9H
EDDY COUNTY, NEW MEXICO
Rig:HP 416

Wed Dec 15 14:27:58 2010

Coordinates

Latitude: 32.301348 N (32 deg. 18 min. 4.8543 sec.)
Longitude: 103.987343 W (-103 deg. 59 min. 14.4332 sec.)
Elevation: 2981.00 feet.
Calculation Date: Dec/15/2010

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.1983 degrees
Total Magnetic Field: 0.48670 gauss
Magnetic Declination: 7.842866 degrees
Horizontal Intensity: 0.241887 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.842866 Degs

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 648238.5240 feet
Y: 473535.5560 feet
True to Grid: (convergence) -0.184890 degrees
Magnetic to Grid: 7.657977 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.657977 Degs.

PathFinder Energy Services, Inc.

Magnetic & Grid Calculations

DEVON ENERGY CORPORATION
SPUD 16 STATE #9H
LAGUNA SALADO; BONE SPRING
Rig:HP 416

Mon Dec 27 14:43:44 2010

Coordinates

Latitude: 32.301348 N (32 deg. 18 min. 4.8543 sec.)
Longitude: 103.987343 W (-103 deg. 59 min. 14.4332 sec.)
Elevation: 2981.00 feet.
Calculation Date: Dec/15/2010

Magnetic Calculations

Model: IGRF2010
Dip Angle: 60.1983 degrees
Total Magnetic Field: 0.48670 gauss
Magnetic Declination: 7.842866 degrees
Horizontal Intensity: 0.241887 gauss
To Convert a Magnetic Dir. to a TRUE North Dir. Add 7.842866 Degs

Transverse Mercator Grid Calculations NAD83

Grid System: Transverse Mercator: new mexico east
Ellipsoid: GRS80
X: 648238.5240 feet
Y: 473535.5560 feet
True to Grid: (convergence) -0.184890 degrees
Magnetic to Grid: 7.657977 degrees
To Convert a Magnetic Dir. to a GRID dir. Add 7.657977 Degs.

Pathfinder

6213 W Interstate 20
Midland, Texas 79706
Tel 432 687 1647
Fax 432 687 1544



January 6, 2011

Devon Energy
20 N. Broadway
Oklahoma City, OK

RE: Devon Energy
Spud 16 State #9H
API: 30-015-38059
Eddy County, NM
RIG: H&P 416
FIELD: Laguna Salado; Bone Spring
PES FILE NO.: 700001141-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,



FRANCISCO SINISTERRA
M/LWD Service Coordinator
PathFinder Energy Services

ML:sh