

Results of Directional Survey

API number:	30-025-41050		
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP
		Property:	IRONHOUSE 19 STATE COM # 3H

surface	ULSTR:	O	19	T 18S	R 35E
				175 FSL	1810 FEL

BH Loc	ULSTR:	B	19	T 18S	R 35E
14036	MD	9383.8	TVD	312 FNL	2051 FEL
				4968 FSL	

Top Perf/OH	ULSTR:	O	19	T 18S	R 35E
10000	MD	9727.1	TVD	971 FSL	1706 FEL

Bot Perf/OH	ULSTR:	B	19	T 18S	R 35E
13969	MD	9396.9	TVD	377 FNL	2046 FEL
				4903 FSL	

	MD	N/S	E/W	VD
	9992	788.24	104.64	9725.61
TOP PERFS/OH	10000	796.07	104.02	9727.12
	10023	818.58	102.25	9731.48
	13937	4696.62	-234.19	9403.00
BOT PERFS/OH	13969	4727.96	-236.38	9396.92
	13978	4736.77	-237.00	9395.21

NEXT TO LAST	13978	4736.77	-237.00	9395.21
LAST READING	14036	4793.49	-240.97	9383.76
TD	14036	4793.49	-240.97	9383.76

Surface Location	175 FS	1810 FE
Projected BHL	4968 FS	2051 FE
Location of		
Top Perfs/OH	971 FS	1706 FE
Bottom Perfs/OH	4903 FS	2046 FE

SUMMARY of Subsurface Locations

Surface Location	O-19-18S-35E	175 FS	1810 FE	Vert. Depth
Top Perfs/OH	O-19-18S-35E	971 FS	1706 FE	9727.12
Bottom Perfs/OH	B-19-18S-35E	4903 FS	2046 FE	9396.92
Projected TD	B-19-18S-35E	4968 FS	2051 FE	9383.76

OCT 22 2013



A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

May 6, 2013

11/18/2013

AUG 18 2013

Devon Energy Production Co., L. P.
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

11/18/2013

Attn: Patti Riechers

Re: Ironhouse 19 State Com No. 003H

Please find enclosed a copy of the survey from 0.00' to 8225.00' ran on the above referenced well.

If I can be of any further service please do not hesitate to call me at 800-606-4976.

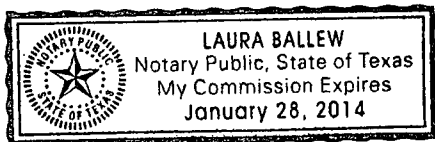
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 6th day of May, A.D., 2013, by Keith Havelka.

Laura Ballew
Notary Public, State of Texas



Company: Devon Energy Production Company
Lease/Well: Ironhouse 19 State Com / No. 003H



Rig Name: McVay 8
State/County: New Mexico/Lea
Latitude: 32.73, Longitude: -103.49
GRID North is 0.45 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : RKB=18'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: survey.ut
Minimum Curvature Method
Report Date/Time: 5/6/2013 / 09:31

Vaughn Energy Services
Gardendale, Texas
432-563-5444

Survey Engineer: Kyle Willis
Ironhouse 19 State Com No. 003H / API 30-025-41050

HOEBS OCD

AUG 13 2013

RECEIVED

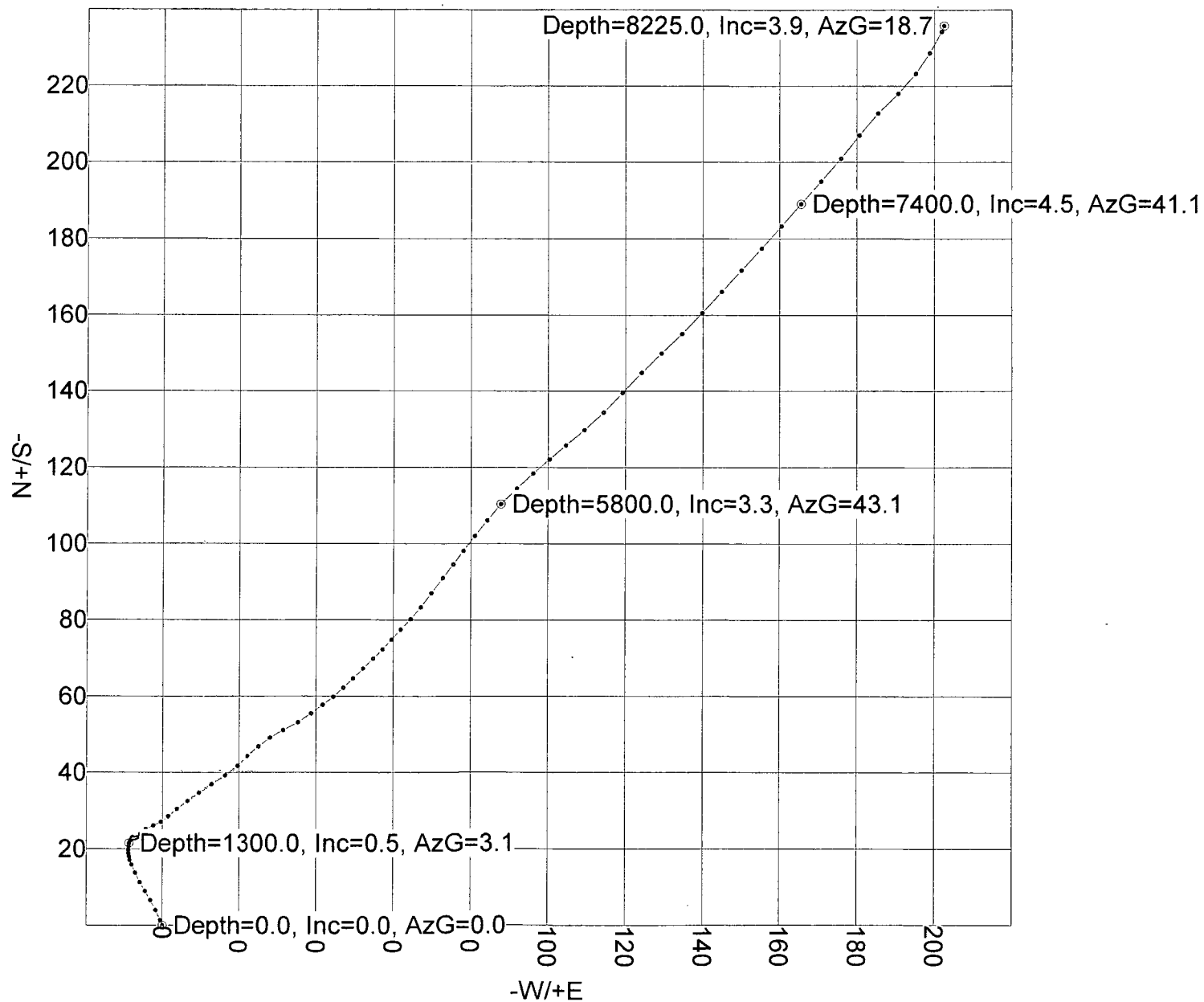
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	1.65	335.36	99.99	1.31	-0.60	1.31	1.44	335.36	1.65
200.00	1.74	336.03	199.94	4.01	-1.82	4.01	4.40	335.59	0.09
300.00	1.62	328.41	299.90	6.60	-3.18	6.60	7.32	334.30	0.25
400.00	1.53	329.82	399.86	8.96	-4.59	8.96	10.07	332.88	0.10
500.00	1.59	329.19	499.82	11.30	-5.97	11.30	12.78	332.16	0.06
600.00	1.59	337.68	599.79	13.78	-7.21	13.78	15.55	332.39	0.24
700.00	1.05	332.59	699.76	15.87	-8.16	15.87	17.85	332.81	0.55
800.00	0.49	350.07	799.75	17.11	-8.65	17.11	19.17	333.17	0.61
900.00	0.59	348.54	899.75	18.03	-8.83	18.03	20.08	333.92	0.11
1000.00	0.49	355.65	999.74	18.97	-8.96	18.97	20.98	334.71	0.12
1100.00	0.44	2.71	1099.74	19.79	-8.98	19.79	21.73	335.60	0.08
1200.00	0.53	7.70	1199.73	20.63	-8.90	20.63	22.47	336.68	0.10
1300.00	0.52	3.13	1299.73	21.55	-8.81	21.55	23.28	337.77	0.04
1400.00	0.40	55.94	1399.73	22.21	-8.49	22.21	23.77	339.07	0.43
1500.00	0.13	343.40	1499.73	22.51	-8.23	22.51	23.97	339.91	0.38
1600.00	0.28	38.24	1599.73	22.80	-8.12	22.80	24.21	340.41	0.23
1700.00	0.10	28.27	1699.72	23.07	-7.92	23.07	24.40	341.04	0.17
1800.00	0.12	162.76	1799.72	23.05	-7.85	23.05	24.36	341.19	0.20

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.05	166.51	1899.72	22.91	-7.81	22.91	24.21	341.18	0.07
2000.00	0.11	158.32	1999.72	22.78	-7.77	22.78	24.07	341.18	0.06
2100.00	0.27	80.66	2099.72	22.73	-7.50	22.73	23.94	341.74	0.27
2200.00	0.22	70.08	2199.72	22.84	-7.09	22.84	23.91	342.76	0.06
2300.00	0.34	66.68	2299.72	23.02	-6.63	23.02	23.96	343.94	0.12
2400.00	1.05	31.45	2399.71	23.93	-5.87	23.93	24.64	346.21	0.80
2500.00	1.25	60.72	2499.69	25.25	-4.44	25.25	25.63	350.03	0.61
2600.00	1.28	70.57	2599.67	26.15	-2.43	26.15	26.26	354.68	0.22
2700.00	1.22	58.31	2699.65	27.08	-0.48	27.08	27.09	358.99	0.27
2800.00	1.58	48.44	2799.62	28.56	1.46	28.56	28.59	2.93	0.43
2900.00	1.84	52.00	2899.57	30.46	3.76	30.46	30.69	7.04	0.28
3000.00	2.06	54.16	2999.51	32.50	6.48	32.50	33.14	11.28	0.22
3100.00	2.22	54.58	3099.44	34.68	9.52	34.68	35.96	15.35	0.17
3200.00	2.43	56.90	3199.36	36.96	12.87	36.96	39.14	19.21	0.23
3300.00	2.48	56.74	3299.27	39.30	16.46	39.30	42.61	22.72	0.05
3400.00	2.16	47.45	3399.19	41.77	19.66	41.77	46.16	25.21	0.49
3500.00	2.13	47.87	3499.12	44.29	22.43	44.29	49.64	26.86	0.04
3600.00	2.18	47.89	3599.05	46.81	25.22	46.81	53.17	28.31	0.05
3700.00	2.12	57.35	3698.98	49.08	28.18	49.08	56.60	29.87	0.36
3800.00	2.41	61.70	3798.90	51.07	31.59	51.07	60.05	31.74	0.33
3900.00	2.52	61.10	3898.81	53.13	35.36	53.13	63.82	33.65	0.12
4000.00	2.22	49.86	3998.72	55.44	38.77	55.44	67.65	34.96	0.55
4100.00	2.05	55.81	4098.65	57.69	41.72	57.69	71.20	35.87	0.28
4200.00	1.92	46.98	4198.59	59.84	44.43	59.84	74.53	36.59	0.33
4300.00	2.04	48.24	4298.53	62.17	46.98	62.17	77.93	37.08	0.12
4400.00	2.02	43.57	4398.47	64.64	49.53	64.64	81.43	37.46	0.17
4500.00	2.12	44.84	4498.41	67.23	52.05	67.23	85.02	37.75	0.10
4600.00	2.15	46.16	4598.34	69.83	54.70	69.83	88.71	38.07	0.06
4700.00	1.85	44.54	4698.28	72.28	57.18	72.28	92.16	38.35	0.30
4800.00	2.08	40.49	4798.22	74.81	59.49	74.81	95.58	38.49	0.27
4900.00	2.07	43.13	4898.15	77.51	61.91	77.51	99.20	38.61	0.10
5000.00	2.24	42.76	4998.08	80.26	64.47	80.26	102.95	38.77	0.17
5100.00	2.41	37.10	5098.00	83.38	67.07	83.38	107.01	38.81	0.29
5200.00	2.83	36.01	5197.89	87.06	69.79	87.06	111.58	38.72	0.42
5300.00	2.83	37.22	5297.77	91.02	72.74	91.02	116.52	38.63	0.06
5400.00	2.32	37.86	5397.67	94.59	75.47	94.59	121.01	38.59	0.51
5500.00	2.71	35.00	5497.57	98.13	78.08	98.13	125.40	38.51	0.41
5600.00	2.91	39.01	5597.45	102.04	81.03	102.04	130.30	38.45	0.28
5700.00	3.08	37.08	5697.32	106.15	84.25	106.15	135.52	38.44	0.20

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	3.29	43.07	5797.16	110.39	87.83	110.39	141.07	38.51	0.39
5900.00	3.34	47.40	5896.99	114.46	91.93	114.46	146.81	38.77	0.26
6000.00	3.30	46.26	5996.83	118.42	96.16	118.42	152.55	39.08	0.08
6100.00	3.11	51.18	6096.67	122.11	100.35	122.11	158.06	39.41	0.33
6200.00	3.39	47.86	6196.51	125.80	104.66	125.80	163.64	39.76	0.34
6300.00	3.76	50.90	6296.31	129.85	109.40	129.85	169.79	40.11	0.41
6400.00	4.01	43.72	6396.08	134.45	114.36	134.45	176.51	40.38	0.55
6500.00	4.08	42.83	6495.83	139.59	119.20	139.59	183.56	40.49	0.09
6600.00	4.18	43.36	6595.57	144.85	124.12	144.85	190.76	40.59	0.10
6700.00	4.14	47.65	6695.31	149.94	129.30	149.94	197.99	40.77	0.31
6800.00	4.31	44.32	6795.04	155.06	134.60	155.06	205.33	40.96	0.30
6900.00	4.38	43.04	6894.75	160.55	139.83	160.55	212.90	41.05	0.12
7000.00	4.26	41.73	6994.47	166.11	144.91	166.11	220.43	41.10	0.16
7100.00	4.47	43.33	7094.18	171.71	150.05	171.71	228.04	41.15	0.25
7200.00	4.49	41.61	7193.87	177.47	155.32	177.47	235.84	41.19	0.14
7300.00	4.41	41.39	7293.57	183.28	160.46	183.28	243.59	41.20	0.08
7400.00	4.47	41.06	7393.27	189.10	165.56	189.10	251.33	41.20	0.07
7500.00	4.55	41.88	7492.96	194.99	170.77	194.99	259.20	41.21	0.10
7600.00	4.46	39.21	7592.65	200.96	175.88	200.96	267.06	41.19	0.23
7700.00	4.36	36.79	7692.36	207.02	180.62	207.02	274.74	41.10	0.22
7800.00	4.31	42.40	7792.07	212.84	185.42	212.84	282.28	41.06	0.43
7900.00	4.08	47.81	7891.80	218.00	190.59	218.00	289.57	41.16	0.46
8000.00	4.01	33.80	7991.56	223.30	195.18	223.30	296.57	41.16	0.99
8100.00	3.47	33.49	8091.34	228.72	198.79	228.72	303.04	40.99	0.54
8200.00	3.89	24.24	8191.14	234.34	201.85	234.34	309.29	40.74	0.73
8225.00	3.85	18.72	8216.08	235.91	202.47	235.91	310.88	40.64	1.50



Vaughn Energy Services
Gardendale, Texas
432-563-5444
Survey Engineer: Kyle Willis
Ironhouse 19 State Com No. 003H / API 30-025-41050



VES Survey Date: 05/02/2013



A Schlumberger Company

DIRECTIONAL SURVEY REPORT

HOBS OCD
AUG 13 2013
RECEIVED

DEVON ENERGY PRODUCTION CO., L.P.

IRONHOUSE 19 STATE COM 3H

LEA COUNTY, NEW MEXICO

PREPARED BY: KIRK DAVIS



A Schlumberger Company

August 9, 2013

Devon Energy
20 N. Broadway
Oklahoma City, OK

RE: DEVON ENERGY PRODUCTION CO., L.P.
IRONHOUSE 19 STATE COM 3H
LEA COUNTY, NEW MEXICO
API No: 30-025-41050
Rig: MCVAY 8
PES File No.: 13MLD0089

Dear Sir or Madam:

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
1 – 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 be "K.D." or similar, written over a horizontal line.

KIRK DAVIS
M/LWD Field Service Manager
Schlumberger Technology Corp.



A Schlumberger Company

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: SCHLUMBERGER TECHNOLOGY CORP.
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) MATT SCHWARTZ
B) MATT SABIN
3. POSITION OF SAID PERSON(S): (A) SURVEYORS (FIELD ENGINEER)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 5/3/13 TO 5/16/13
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 PRODUCTION CO., L.P.
IRONHOUSE 19 STATE COM 3H
LEA COUNTY, NEW MEXICO
API NO.: 30-025-41050
RIG: MCVAY 8
9. SURVEY CERTIFIED FROM: 8272 TO 13978 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4799.55 FEET ON A BEARING OF 357.12 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED DEPTH OF 14036.00 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



KIRK DAVIS
M/LWD Field Service Manager



A Schlumberger Company

**STATE OF TEXAS
MIDLAND COUNTY**

I, **MATT SCHWARTZ** certify that; I am employed by PathFinder, a Schlumberger company.; that I did on the day(s) of **5/3/13** through **5/16/13** conduct or supervise the taking of a **Measurement While Drilling** survey from a depth of **8272 feet** to a depth of **13978 feet**; that the data is true, correct, complete and within the limitations of the tool as set forth by PathFinder, a Schlumberger company.; that I am authorized and qualified to make this report; that this survey was conducted at the request of **DEVON ENERGY PRODUCTION CO., L.P.** for the **IRONHOUSE 19 STATE COM 3H** Well API No. **30-025-41050** in **LEA COUNTY, NEW MEXICO**; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by PathFinder, a Schlumberger company.

A handwritten signature in black ink, appearing to read "Matt Schwartz", written in a cursive style.

MATT SCHWARTZ
Field Engineer

PathFinder – a Schlumberger company

BHL Report

Page 01/01
Tie-in Date: 05/03/2013
Date Completed: 05/16/2013

DEVON ENERGY PRODUCTION COMPANY, LP
IRONHOUSE 19 STATE COM 3H
LEA COUNTY, NM
API#: 30-025-41050 Rig: MCVAY 8
PathFinder Office Supervisor: JOE HOGAN
PathFinder Field Engineers: M. SCHWARTZ
M. SABIN

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.43.35.3883 N LON: 103.29.38.8619 W
GRID Reference: NAD83 new mexico east Transverse Mercator
Ref GRID Coord: X: 799412.8100 Y: 629052.9000
North Aligned To: GRID NORTH
Total Magnetic Correction: 6.90° EAST TO GRID
Vertical Section Plane: 355.41
Survey Vert. Reference: 18.00' Rotary Table To Ground
Altitude: 3946.10' Ground To MSL

Measured Depth	14036.00	(feet)
Inclination	101.39	(deg)
Azimuth	356.00	(deg)
True Vertical Depth	9383.76	(feet)
Vertical Section	4797.40	(feet)
Survey X cord	799171.82	(feet)
Survey Y cord	633846.37	(feet)
Survey Lat	32.73967633 N	(deg)
Survey Lon	103.49478853 W	(deg)
Rectangular Corr. N/S	4793.49 N	(feet)
Rectangular Corr. E/W	240.97 W	(feet)
Closure Distance	4799.55	(feet)
Direction of Closure	357.12	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder – a Schlumberger company

Survey Report

DEVON ENERGY PRODUCTION COMPANY, LP
 IRONHOUSE 19 STATE COM 3H
 LEA COUNTY, NM
 API#: 30-025-41050 Rig: MCVAY 8
 PathFinder Office Supervisor: JOE HOGAN
 PathFinder Field Engineers: M. SCHWARTZ
 M. SABIN

Survey Horiz. Reference: WELLHEAD
 Ref Coordinates: LAT: 32.43.35.3883 N LON: 103.29.38.8619 W
 GRID Reference: NAD83 new mexico east Transverse Mercator
 Ref GRID Coord: X: 799412.8100 Y: 629052.9000
 North Aligned To: GRID NORTH
 Total Magnetic Correction: 6.90° EAST TO GRID
 Vertical Section Plane: 355.41
 Survey Vert. Reference: 18.00' Rotary Table To Ground
 Altitude: 3946.10' 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)
THE FOLLOWING ARE VAUGHN ENERGY SERVICES GYRO SURVEYS.										
100.00	1.65	335.36	99.98	0.00	1.43	1.39 N	0.55 W	1.50@	338.37	0.00
200.00	1.74	336.03	199.94	100.00	4.22	4.09 N	1.77 W	4.45@	336.60	0.09
300.00	1.62	328.41	299.90	100.00	6.91	6.68 N	3.13 W	7.37@	334.92	0.25
400.00	1.53	329.82	399.86	100.00	9.37	9.04 N	4.54 W	10.11@	333.34	0.10
500.00	1.59	329.19	499.82	100.00	11.82	11.38 N	5.92 W	12.83@	332.52	0.06
600.00	1.59	337.68	599.78	100.00	14.39	13.86 N	7.16 W	15.60@	332.69	0.24
700.00	1.05	332.59	699.76	100.00	16.55	15.95 N	8.11 W	17.90@	333.07	0.55
800.00	0.49	350.07	799.75	100.00	17.82	17.19 N	8.60 W	19.22@	333.42	0.60
900.00	0.59	348.54	899.74	100.00	18.76	18.12 N	8.78 W	20.13@	334.15	0.10
1000.00	0.49	355.65	999.74	100.00	19.70	19.05 N	8.91 W	21.03@	334.92	0.12
1100.00	0.44	2.71	1099.73	100.00	20.51	19.86 N	8.93 W	21.77@	335.79	0.08
1200.00	0.53	7.70	1199.73	100.00	21.34	20.70 N	8.85 W	22.51@	336.86	0.10
1300.00	0.52	3.13	1299.73	100.00	22.24	21.61 N	8.76 W	23.32@	337.93	0.04
1400.00	0.40	55.94	1399.72	100.00	22.86	22.26 N	8.45 W	23.81@	339.22	0.42
1500.00	0.13	343.40	1499.72	100.00	23.15	22.56 N	8.19 W	24.00@	340.05	0.38
1600.00	0.28	38.24	1599.72	100.00	23.44	22.86 N	8.07 W	24.25@	340.56	0.23
1700.00	0.10	28.27	1699.72	100.00	23.69	23.13 N	7.88 W	24.44@	341.19	0.18
1800.00	0.12	162.76	1799.72	100.00	23.66	23.11 N	7.81 W	24.39@	341.34	0.20
1900.00	0.05	166.51	1899.72	100.00	23.51	22.97 N	7.76 W	24.24@	341.32	0.07
2000.00	0.11	158.32	1999.72	100.00	23.38	22.83 N	7.72 W	24.10@	341.32	0.06
2100.00	0.27	80.66	2099.72	100.00	23.31	22.78 N	7.45 W	23.97@	341.89	0.27
2200.00	0.22	70.08	2199.72	100.00	23.38	22.89 N	7.04 W	23.94@	342.91	0.07
2300.00	0.34	66.68	2299.72	100.00	23.52	23.07 N	6.58 W	23.99@	344.07	0.12

PathFinder – a Schlumberger company

Survey Report

DEVON ENERGY PRODUCTION COMPANY, LP
 IRONHOUSE 19 STATE COM 3H
 LEA COUNTY, NM
 API#: 30-025-41050 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) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2400.00	1.05	31.45	2399.71	100.00	24.36	23.97 N	5.83 W	24.67@	346.32	0.80
2500.00	1.25	60.72	2499.69	100.00	25.56	25.28 N	4.40 W	25.66@	350.12	0.61
2600.00	1.28	70.57	2599.67	100.00	26.30	26.19 N	2.40 W	26.30@	354.76	0.22
2700.00	1.22	58.31	2699.64	100.00	27.07	27.12 N	0.44 W	27.12@	359.07	0.27
2800.00	1.58	48.44	2799.61	100.00	28.38	28.59 N	1.50 E	28.63@	3.00	0.43
2900.00	1.84	52.00	2899.57	100.00	30.10	30.50 N	3.79 E	30.73@	7.09	0.28
3000.00	2.06	54.16	2999.51	100.00	31.91	32.54 N	6.52 E	33.18@	11.32	0.23
3100.00	2.22	54.58	3099.44	100.00	33.84	34.71 N	9.55 E	36.00@	15.38	0.16
3200.00	2.43	56.90	3199.36	100.00	35.84	36.99 N	12.91 E	39.18@	19.23	0.23
3300.00	2.48	56.74	3299.27	100.00	37.89	39.34 N	16.49 E	42.65@	22.74	0.05
3400.00	2.16	47.45	3399.19	100.00	40.09	41.80 N	19.69 E	46.20@	25.22	0.49
3500.00	2.13	47.87	3499.12	100.00	42.38	44.32 N	22.45 E	49.68@	26.87	0.03
3600.00	2.18	47.89	3599.04	100.00	44.67	46.84 N	25.24 E	53.21@	28.32	0.05
3700.00	2.12	57.35	3698.97	100.00	46.70	49.11 N	28.21 E	56.64@	29.87	0.36
3800.00	2.41	61.70	3798.90	100.00	48.41	51.11 N	31.62 E	60.10@	31.74	0.34
3900.00	2.52	61.10	3898.80	100.00	50.16	53.17 N	35.40 E	63.87@	33.65	0.11
4000.00	2.22	49.86	3998.72	100.00	52.20	55.48 N	38.80 E	67.70@	34.97	0.55
4100.00	2.05	55.81	4098.65	100.00	54.21	57.73 N	41.76 E	71.25@	35.88	0.28
4200.00	1.92	46.98	4198.59	100.00	56.13	59.88 N	44.47 E	74.58@	36.60	0.33
4300.00	2.04	48.24	4298.53	100.00	58.25	62.21 N	47.02 E	77.98@	37.08	0.13
4400.00	2.02	43.57	4398.47	100.00	60.50	64.67 N	49.56 E	81.48@	37.46	0.17
4500.00	2.12	44.84	4498.40	100.00	62.88	67.26 N	52.08 E	85.07@	37.75	0.11
4600.00	2.15	46.16	4598.33	100.00	65.27	69.87 N	54.74 E	88.76@	38.08	0.06
4700.00	1.85	44.54	4698.27	100.00	67.51	72.32 N	57.22 E	92.22@	38.35	0.31
4800.00	2.08	40.49	4798.21	100.00	69.85	74.85 N	59.53 E	95.64@	38.50	0.27
4900.00	2.07	43.13	4898.15	100.00	72.34	77.55 N	61.95 E	99.25@	38.62	0.10
5000.00	2.24	42.76	4998.08	100.00	74.88	80.30 N	64.51 E	103.00@	38.78	0.17

PathFinder – a Schlumberger company

Survey Report

DEVON ENERGY PRODUCTION COMPANY, LP
 IRONHOUSE 19 STATE COM 3H
 LEA COUNTY, NM
 API#: 30-025-41050 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) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
5100.00	2.41	37.10	5097.99	100.00	77.78	83.41 N	67.10 E	107.05@	38.81	0.28
5200.00	2.83	36.01	5197.89	100.00	81.22	87.09 N	69.82 E	111.62@	38.72	0.42
5300.00	2.83	37.22	5297.77	100.00	84.94	91.05 N	72.77 E	116.56@	38.63	0.06
5400.00	2.32	37.86	5397.67	100.00	88.27	94.61 N	75.50 E	121.05@	38.59	0.51
5500.00	2.71	35.00	5497.57	100.00	91.58	98.15 N	78.10 E	125.43@	38.51	0.41
5600.00	2.91	39.01	5597.45	100.00	95.24	102.06 N	81.05 E	130.33@	38.46	0.28
5700.00	3.08	37.08	5697.31	100.00	99.09	106.17 N	84.27 E	135.55@	38.44	0.20
5800.00	3.29	43.07	5797.16	100.00	103.03	110.41 N	87.85 E	141.10@	38.51	0.39
5900.00	3.34	47.40	5896.99	100.00	106.75	114.48 N	91.95 E	146.84@	38.77	0.25
6000.00	3.30	46.26	5996.82	100.00	110.37	118.44 N	96.18 E	152.57@	39.08	0.08
6100.00	3.11	51.18	6096.67	100.00	113.71	122.13 N	100.37 E	158.08@	39.41	0.33
6200.00	3.39	47.86	6196.51	100.00	117.04	125.82 N	104.68 E	163.67@	39.76	0.34
6300.00	3.76	50.90	6296.31	100.00	120.70	129.87 N	109.41 E	169.82@	40.11	0.42
6400.00	4.01	43.72	6396.08	100.00	124.88	134.46 N	114.38 E	176.53@	40.38	0.55
6500.00	4.08	42.83	6495.83	100.00	129.61	139.60 N	119.21 E	183.57@	40.50	0.09
6600.00	4.18	43.36	6595.57	100.00	134.46	144.86 N	124.13 E	190.77@	40.59	0.11
6700.00	4.14	47.65	6695.31	100.00	139.11	149.94 N	129.30 E	197.99@	40.77	0.31
6800.00	4.31	44.32	6795.04	100.00	143.79	155.06 N	134.59 E	205.33@	40.96	0.30
6900.00	4.38	43.04	6894.75	100.00	148.83	160.54 N	139.83 E	212.89@	41.05	0.12
7000.00	4.26	41.73	6994.47	100.00	153.97	166.10 N	144.90 E	220.42@	41.10	0.16
7100.00	4.47	43.33	7094.18	100.00	159.15	171.71 N	150.05 E	228.03@	41.15	0.24
7200.00	4.49	41.61	7193.87	100.00	164.47	177.47 N	155.32 E	235.84@	41.19	0.14
7300.00	4.41	41.39	7293.57	100.00	169.85	183.28 N	160.46 E	243.60@	41.20	0.08
7400.00	4.47	41.06	7393.27	100.00	175.25	189.10 N	165.57 E	251.34@	41.20	0.06
7500.00	4.55	41.88	7492.96	100.00	180.70	194.99 N	170.77 E	259.20@	41.21	0.10
7600.00	4.46	39.21	7592.65	100.00	186.24	200.96 N	175.88 E	267.06@	41.19	0.23
7700.00	4.36	36.79	7692.36	100.00	191.90	207.02 N	180.61 E	274.73@	41.10	0.21

PathFinder – a Schlumberger company

Survey Report

DEVON ENERGY PRODUCTION COMPANY, LP
 IRONHOUSE 19 STATE COM 3H
 LEA COUNTY, NM
 API#: 30-025-41050 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) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
7800.00	4.31	42.40	7792.07	100.00	197.32	212.84 N	185.42 E	282.28@	41.06	0.43
7900.00	4.08	47.81	7891.80	100.00	202.05	218.00 N	190.59 E	289.57@	41.16	0.46
8000.00	4.01	33.80	7991.56	100.00	206.96	223.30 N	195.17 E	296.57@	41.16	0.99
8100.00	3.47	33.49	8091.34	100.00	212.08	228.72 N	198.79 E	303.04@	40.99	0.54
8200.00	3.89	24.24	8191.14	100.00	217.44	234.34 N	201.85 E	309.29@	40.74	0.73
** TIED INTO VAUGHN ENERGY SERVICES GYRO SURVEY AT 8225' MD.										
8225.00	3.85	18.72	8216.08	25.00	218.95	235.91 N	202.47 E	310.88@	40.64	1.50
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
8272.00	3.87	15.60	8262.97	47.00	221.89	238.93 N	203.40 E	313.79@	40.41	0.45
8366.00	3.78	324.89	8356.79	94.00	227.54	244.52 N	202.47 E	317.47@	39.63	3.48
8461.00	2.90	297.29	8451.63	95.00	231.50	248.19 N	198.54 E	317.83@	38.66	1.90
8556.00	3.17	285.07	8546.50	95.00	233.66	249.97 N	193.86 E	316.34@	37.80	0.74
8651.00	3.69	286.04	8641.33	95.00	235.62	251.50 N	188.39 E	314.23@	36.84	0.55
8745.00	3.61	322.60	8735.15	94.00	239.17	254.69 N	183.68 E	314.02@	35.80	2.44
8840.00	2.81	1.71	8830.01	95.00	244.00	259.39 N	181.94 E	316.84@	35.05	2.40
8934.00	2.02	345.72	8923.93	94.00	247.92	263.30 N	181.60 E	319.85@	34.59	1.10
9027.00	4.92	301.86	9016.76	93.00	251.91	266.99 N	177.80 E	320.78@	33.66	4.02
9116.00	4.57	284.81	9105.46	89.00	255.35	269.92 N	171.14 E	319.60@	32.38	1.63
9170.00	4.40	280.50	9159.30	54.00	256.61	270.84 N	167.02 E	318.20@	31.66	0.70
9201.00	6.24	312.41	9190.17	31.00	258.15	272.20 N	164.60 E	318.10@	31.16	11.02
9233.00	10.02	329.28	9221.85	32.00	261.92	275.76 N	161.90 E	319.78@	30.42	13.85
9264.00	14.77	337.19	9252.12	31.00	268.10	281.73 N	158.99 E	323.49@	29.44	16.24
9296.00	19.61	341.06	9282.68	32.00	277.19	290.57 N	155.66 E	329.64@	28.18	15.53
9327.00	23.92	344.31	9311.46	31.00	288.40	301.55 N	152.27 E	337.81@	26.79	14.43
9359.00	25.85	348.62	9340.49	32.00	301.69	314.64 N	149.14 E	348.19@	25.36	8.27
9390.00	28.14	350.38	9368.11	31.00	315.69	328.47 N	146.58 E	359.70@	24.05	7.82
9422.00	31.13	351.61	9395.93	32.00	331.46	344.10 N	144.11 E	373.06@	22.72	9.54
9453.00	34.12	353.19	9422.03	31.00	348.15	360.66 N	141.91 E	387.58@	21.48	10.03

PathFinder – a Schlumberger company

Survey Report

DEVON ENERGY PRODUCTION COMPANY, LP
 IRONHOUSE 19 STATE COM 3H
 LEA COUNTY, NM
 API#: 30-025-41050 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		Closure Dist Dir		DLS (dg/100ft)
						(ft)	(ft)	(ft)	(deg)	
9485.00	36.32	354.60	9448.17	32.00	366.60	379.01 N	139.96 E	404.03@	20.27	7.33
9517.00	39.48	355.74	9473.42	32.00	386.25	398.60 N	138.31 E	421.91@	19.14	10.12
9548.00	42.38	356.00	9496.84	31.00	406.56	418.85 N	136.85 E	440.64@	18.09	9.37
9580.00	44.49	356.00	9520.07	32.00	428.56	440.80 N	135.31 E	461.10@	17.07	6.59
9611.00	44.93	355.65	9542.11	31.00	450.36	462.55 N	133.73 E	481.49@	16.12	1.63
9644.00	45.55	354.16	9565.34	33.00	473.79	485.89 N	131.64 E	503.40@	15.16	3.72
9675.00	48.72	353.19	9586.43	31.00	496.50	508.47 N	129.14 E	524.61@	14.25	10.48
9707.00	52.94	352.40	9606.64	32.00	521.28	533.07 N	126.02 E	547.77@	13.30	13.32
9739.00	55.84	353.01	9625.27	32.00	547.26	558.88 N	122.72 E	572.19@	12.38	9.19
9770.00	57.77	354.51	9642.24	31.00	573.19	584.66 N	119.90 E	596.83@	11.59	7.43
9802.00	59.36	355.74	9658.93	32.00	600.49	611.86 N	117.59 E	623.06@	10.88	5.95
9834.00	61.91	356.25	9674.62	32.00	628.38	639.68 N	115.64 E	650.05@	10.25	8.09
9865.00	65.60	355.95	9688.33	31.00	656.17	667.42 N	113.75 E	677.04@	9.67	11.93
9897.00	70.35	355.93	9700.32	32.00	685.83	697.00 N	111.65 E	705.88@	9.10	14.84
9929.00	73.86	355.81	9710.15	32.00	716.27	727.37 N	109.45 E	735.56@	8.56	10.97
9960.00	75.71	355.21	9718.29	31.00	746.19	757.19 N	107.11 E	764.72@	8.05	6.25
9992.00	77.82	355.67	9725.61	32.00	777.33	788.24 N	104.64 E	795.15@	7.56	6.74
10023.00	80.37	355.32	9731.48	31.00	807.77	818.58 N	102.25 E	824.94@	7.12	8.30
10055.00	82.39	355.40	9736.27	32.00	839.41	850.11 N	99.69 E	855.94@	6.69	6.32
10149.00	88.99	355.50	9743.34	94.00	933.09	943.50 N	92.25 E	948.00@	5.58	7.02
10244.00	89.78	355.36	9744.35	95.00	1028.08	1038.19 N	84.69 E	1041.64@	4.66	0.85
10339.00	93.56	354.68	9741.59	95.00	1123.02	1132.78 N	76.44 E	1135.35@	3.86	4.04
10434.00	95.23	353.95	9734.31	95.00	1217.72	1227.03 N	67.06 E	1228.86@	3.13	1.92
10528.00	95.50	353.91	9725.52	94.00	1311.28	1320.09 N	57.17 E	1321.33@	2.48	0.29
10623.00	95.50	353.84	9716.41	95.00	1405.81	1414.11 N	47.08 E	1414.90@	1.91	0.07
10718.00	95.23	353.75	9707.53	95.00	1500.36	1508.14 N	36.85 E	1508.59@	1.40	0.30
10812.00	97.17	355.65	9697.38	94.00	1593.79	1601.18 N	28.22 E	1601.43@	1.01	2.88

PathFinder – a Schlumberger company

Survey Report

DEVON ENERGY PRODUCTION COMPANY, LP
 IRONHOUSE 19 STATE COM 3H
 LEA COUNTY, NM
 API#: 30-025-41050 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		Closure Dist Dir		DLS (dg/100ft)
(ft)	(deg)	(deg)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(deg)	(dg/100ft)
10907.00	97.34	355.99	9685.38	95.00	1688.03	1695.17 N	21.35 E	1695.31@	0.72	0.40
11002.00	98.13	356.11	9672.59	95.00	1782.16	1789.08 N	14.87 E	1789.15@	0.48	0.84
11096.00	96.99	357.30	9660.23	94.00	1875.31	1882.11 N	9.51 E	1882.13@	0.29	1.74
11191.00	97.96	357.20	9647.87	95.00	1969.45	1976.19 N	4.99 E	1976.20@	0.14	1.03
11285.00	95.94	358.48	9636.49	94.00	2062.67	2069.43 N	1.48 E	2069.43@	0.04	2.54
11380.00	94.35	358.39	9627.97	95.00	2157.16	2164.01 N	1.11 W	2164.01@	359.97	1.68
11474.00	95.06	357.96	9620.26	94.00	2250.73	2257.64 N	4.09 W	2257.65@	359.90	0.88
11569.00	96.02	356.93	9611.09	95.00	2345.22	2352.10 N	8.30 W	2352.12@	359.80	1.48
11664.00	94.53	357.50	9602.36	95.00	2439.77	2446.59 N	12.90 W	2446.62@	359.70	1.68
11759.00	94.88	357.65	9594.57	95.00	2534.38	2541.18 N	16.91 W	2541.24@	359.62	0.40
11854.00	95.14	357.97	9586.27	95.00	2628.94	2635.75 N	20.52 W	2635.83@	359.55	0.43
11948.00	93.47	357.88	9579.21	94.00	2722.58	2729.42 N	23.92 W	2729.52@	359.50	1.78
12043.00	92.86	357.59	9573.97	95.00	2817.35	2824.20 N	27.67 W	2824.33@	359.44	0.71
12138.00	92.42	356.05	9569.59	95.00	2912.22	2918.95 N	32.93 W	2919.13@	359.35	1.68
12232.00	93.30	354.95	9564.90	94.00	3006.10	3012.54 N	40.29 W	3012.81@	359.23	1.50
12327.00	93.91	355.56	9558.93	95.00	3100.91	3107.03 N	48.14 W	3107.40@	359.11	0.91
12421.00	94.70	355.74	9551.87	94.00	3194.65	3200.49 N	55.25 W	3200.97@	359.01	0.86
12516.00	94.00	354.33	9544.67	95.00	3289.37	3294.86 N	63.45 W	3295.47@	358.90	1.65
12611.00	92.68	351.70	9539.13	95.00	3384.11	3388.98 N	74.98 W	3389.81@	358.73	3.09
12705.00	93.74	350.82	9533.87	94.00	3477.72	3481.74 N	89.24 W	3482.89@	358.53	1.47
12800.00	94.53	350.46	9527.02	95.00	3572.14	3575.23 N	104.65 W	3576.76@	358.32	0.91
12894.00	94.97	350.46	9519.23	94.00	3665.47	3667.61 N	120.18 W	3669.58@	358.12	0.47
12989.00	95.58	349.85	9510.50	95.00	3759.67	3760.82 N	136.35 W	3763.29@	357.92	0.91
13084.00	95.94	349.85	9500.97	95.00	3853.74	3853.86 N	153.01 W	3856.89@	357.73	0.38
13178.00	96.20	352.22	9491.02	94.00	3946.94	3946.18 N	167.57 W	3949.74@	357.57	2.52
13273.00	94.70	353.28	9482.00	95.00	4041.40	4039.99 N	179.51 W	4043.98@	357.46	1.93
13367.00	94.53	354.51	9474.44	94.00	4135.06	4133.15 N	189.47 W	4137.50@	357.38	1.32

PathFinder – a Schlumberger company

Survey Report

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 IRONHOUSE 19 STATE COM 3H
 LEA COUNTY, NM
 API#: 30-025-41050 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		Closure Dist Dir		DLS
						(ft)	(ft)	(ft)	(deg)	(dg/100ft)
13464.00	95.50	354.60	9465.96	97.00	4231.68	4229.35 N	198.64 W	4234.01@	357.31	1.00
13559.00	97.08	354.42	9455.55	95.00	4326.09	4323.34 N	207.67 W	4328.32@	357.25	1.67
13653.00	96.38	356.09	9444.53	94.00	4419.44	4416.37 N	215.39 W	4421.62@	357.21	1.92
13748.00	97.69	356.44	9432.90	95.00	4513.71	4510.45 N	221.54 W	4515.89@	357.19	1.43
13842.00	99.10	356.00	9419.18	94.00	4606.69	4603.24 N	227.67 W	4608.86@	357.17	1.57
13937.00	100.51	356.00	9403.00	95.00	4700.30	4696.62 N	234.19 W	4702.45@	357.15	1.48
13978.00	101.39	356.00	9395.21	41.00	4740.55	4736.77 N	237.00 W	4742.70@	357.14	2.15
STRAIGHT LINE PROJECTION TO BIT AT 14036' MD.										
14036.00	101.39	356.00	9383.76	58.00	4797.40	4793.49 N	240.97 W	4799.55@	357.12	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 – a Schlumberger company and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.