

Results of Directional Survey

API number:	30-025-39925		
OGRID:		Operator:	MACK ENERGY CORP
		Property:	HAWKEYE STATE COM # 1H

surface	ULSTR:	P	06	T 16S	R 32E
				330 FSL	455 FEL

BH Loc	ULSTR:	A { A(1) }	06	T 16S	R 32E
15289	MD	8901.2	TVD	6890 FSL	391 FEL

Top Perf/OH	ULSTR:	I { A(9) }	06	T 16S	R 32E
13650	MD	8963.4	TVD	5253 FSL	420 FEL

Bot Perf/OH	ULSTR:	H { A(8) }	06	T 16S	R 32E
14931	MD	8912.4	TVD	6533 FSL	387 FEL

	MD	N/S	E/W	VD
	13642	4915.40	34.44	8964.44
TOP PERFS/OH	13650	4923.39	34.65	8963.39
	13673	4946.37	35.24	8960.38
	14903	6174.67	68.66	8913.10
BOT PERFS/OH	14931	6202.66	68.42	8912.36
	14935	6206.66	68.39	8912.25

NEXT TO LAST	15188	6459.47	65.45	8903.51
LAST READING	15220	6491.46	64.91	8902.78
TD	15289	6560.44	63.75	8901.21

Surface Location	330	FS	455	FE
Projected BHL	6890	FS	391	FE
Location of				
Top Perfs/OH	5253	FS	420	FE
Bottom Perfs/OH	6533	FS	387	FE

SUMMARY of Subsurface Locations

Surface Location	P-06-16S-32E	330	FS	455	FE	Vert. Depth
Top Perfs/OH	I-06-16S-32E	5253	FS	420	FE	8963.39
Bottom Perfs/OH	H-06-16S-32E	6533	FS	387	FE	8912.36
Projected TD	A-06-16S-32E	6890	FS	391	FE	8901.21

JUL 06 2011

3329 W. Pinhook Rd.
Lafayette, LA 70508
Tel. (337) 233-3982
Fax (337) 234-2988

HOBBS OCD

JUN 16 2011

RECEIVED

PATHFINDER

A Schlumberger Company

SUR: P-6-16S-32E, 330/S & 455/E
BHL: A-6-16S-32/E, 6890/S & 391/E
API # 30-025-39925

DIRECTIONAL SURVEY REPORT

MACK ENERGY CORPORATION

HAWKEYE STATE COM #1H

LEA COUNTY, NM

PREPARED BY: PHIL LEBLANC

3329 W Pinhook Rd.
Lafayette, LA 70508
Tel. (337) 233-3982
Fax (337) 234-2988



April 14, 2011

MACK ENERGY CORPORATION
Mr. Matt Brewer
11352 Lovington Hwy
Box 960
Artesia, NM 88211-1288

RE: MACK ENERGY CORPORATION
HAWKEYE STATE COM #1H
LEA COUNTY, NM
RIG: SILVER OAK #7
API Well No.: 30-025-39925
PES Job No.: 700001313-GC-WT

Dear Mr. Brewer:

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 Directional Survey Report

1 – Email PDF to:

charless@mec.com

carisadler@mec.com

chrismoreno@mec.com

mbrewer@mec.com

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 (337) 233-3982.

Sincerely,

A handwritten signature in black ink that reads "Phil LeBlanc - For -".

Phil LeBlanc
M/LWD Service Coordinator
PathFinder Energy Services

PL:ll

3329 W. Pinhook Rd
Lafayette, LA 70508
Tel. (337) 233-3982
Fax (337) 234-2988

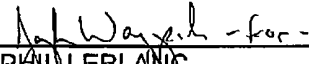


DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JOHN OVERTON
B) STEVE BIBB
C) RAFAEL DONARUMMA
D) BANNON ELDRIDGE
E) MICHAEL SWINNEY
F) JEFF HULL
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 01/21/11 TO 03/15/11
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: LEA COUNTY
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

MACK ENERGY CORPORATION
HAWKEYE STATE COM #1H
LEA COUNTY, NM
RIG: SILVER OAK #7
API Well No.: 30-025-39925
9. SURVEY(S) CERTIFIED FROM: 5,435 TO 15,289 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 6,560.74 FEET ON A BEARING OF 0.56 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 15,289 FEET, ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.



PAUL LEBLANC
MWD SERVICE COORDINATOR

PathFinder Energy Services, Inc.

BHL Report

Page 01/01
Tie-in Date: 01/21/2011
Date Completed: 03/14/2011

MACK ENERGY CORPORATION**HAWKEYE STATE COM #1H****LEA COUNTY, NEW MEXICO****API#: 30-025-39925 Rig: SILVER OAK 7****PathFinder Office Supervisor: PHIL LEBLANC****PathFinder Field Engineers: JOHN OVERTON****STEVE BIBB****RAFAEL DONARUMA****Survey Horiz. Reference:WELLHEAD****Ref Coordinates: LAT:32.56.39.4287 N LON:103.47.53.8373 W****GRID Reference:NAD27 new mexico east Transverse Mercator****Ref GRID Coord: X: 664139.9000 Y: 707660.0000****North Aligned To:GRID NORTH****Total Magnetic Correction: 7.50° EAST TO GRID****Vertical Section Plane: 0.48****Survey Vert. Reference: 17.00' Kelly Bushing To Ground****Altitude:4371.00' Ground To MSL**

Measured Depth	15289.00	(feet)
Inclination	91.57	(deg)
Azimuth	359.10	(deg)
True Vertical Depth	8900.89	(feet)
Vertical Section	6560.73	(feet)
Survey X cord	664203.73	(feet)
Survey Y cord	714220.43	(feet)
Survey Lat	32.96231653 N	(deg)
Survey Lon	103.79797140 W	(deg)
Rectangular Corr. N/S	6560.43 N	(feet)
Rectangular Corr. E/W	63.83 E	(feet)
Closure Distance	6560.74	(feet)
Direction of Closure	0.56	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

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Tie-in Date: 01/21/2011
Date Completed: 03/14/2011

MACK ENERGY CORPORATION
HAWKEYE STATE COM #1H
LEA COUNTY, NEW MEXICO
API#: 30-025-39925 Rlg: SILVER OAK 7
PathFinder Office Supervisor: PHIL LEBLANC
PathFinder Field Engineers: JOHN OVERTON
STEVE BIBB
RAFAEL DONARUMA

BANNON ELDRIDGE
MICHAEL SWINNEY

Survey Horiz. Reference: WELLHEAD
Ref Coordinates: LAT: 32.56.39.4287 N LON: 103.47.53.8373 W
GRID Reference: NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 664139.9000 Y: 707660.0000
North Aligned To: GRID NORTH
Total Magnetic Correction: 7.50° EAST TO GRID
Vertical Section Plane: 0.48
Survey Vert. Reference: 17.00' Kelly Bushing To Ground
Altitude: 4371.00' Ground To MSL

Survey Calculations by PathCalc v2.04.00.01 (Experimental) using Minimum

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)	
THE FOLLOWING ARE NAVIGATE ENERGY SERVICES SWD SURVEYS.												
202.00	0.18	358.44	202.00	202.00	0.35	0.35 N	0.04 E	32.94428670 N	103.79828800 W	0.35@ 6.72	0.00	
382.00	0.26	82.99	382.00	180.00	0.68	0.68 N	0.44 E	32.94428761 N	103.79828670 W	0.81@ 32.80	0.17	
560.00	0.04	13.55	560.00	178.00	0.80	0.79 N	0.85 E	32.94428791 N	103.79828535 W	1.16@ 47.22	0.14	
745.00	0.09	205.68	745.00	185.00	0.73	0.72 N	0.81 E	32.94428772 N	103.79828550 W	1.08@ 48.15	0.07	
1004.00	0.35	9.25	1004.00	259.00	1.33	1.32 N	0.85 E	32.94428936 N	103.79828537 W	1.57@ 32.64	0.17	
1190.00	0.09	174.83	1190.00	186.00	1.74	1.74 N	0.95 E	32.94429050 N	103.79828502 W	1.98@ 28.70	0.24	
1332.00	0.35	343.49	1332.00	142.00	2.05	2.04 N	0.84 E	32.94429134 N	103.79828538 W	2.20@ 22.30	0.31	
1514.00	0.18	241.80	1514.00	182.00	2.44	2.44 N	0.43 E	32.94429244 N	103.79828671 W	2.47@ 9.93	0.23	
1745.00	0.22	116.82	1745.00	231.00	2.07	2.07 N	0.50 E	32.94429142 N	103.79828647 W	2.13@ 13.67	0.15	
1919.00	0.13	302.71	1918.99	174.00	2.03	2.02 N	0.63 E	32.94429129 N	103.79828604 W	2.12@ 17.43	0.20	
2106.00	0.66	216.49	2105.99	187.00	1.27	1.27 N	0.18 W	32.94428924 N	103.79828872 W	1.28@ 351.75	0.36	
2292.00	0.57	113.13	2291.98	186.00	0.05	0.05 N	0.03 E	32.94428587 N	103.79828805 W	0.05@ 32.52	0.52	
2539.00	0.62	93.01	2538.97	247.00	-0.49	0.51 S	2.49 E	32.94428432 N	103.79828002 W	2.54@ 101.48	0.09	
2663.00	0.18	96.26	2662.97	124.00	-0.53	0.56 S	3.36 E	32.94428415 N	103.79827721 W	3.40@ 99.52	0.36	
2850.00	0.09	64.18	2849.97	187.00	-0.50	0.53 S	3.78 E	32.94428423 N	103.79827583 W	3.82@ 98.00	0.06	
3071.00	0.26	110.50	3070.97	221.00	-0.59	0.63 S	4.41 E	32.94428395 N	103.79827379 W	4.45@ 98.15	0.09	
3287.00	0.13	133.44	3286.96	216.00	-0.93	0.97 S	5.04 E	32.94428301 N	103.79827172 W	5.14@ 100.90	0.07	
3472.00	0.13	105.05	3471.96	185.00	-1.12	1.17 S	5.40 E	32.94428245 N	103.79827056 W	5.52@ 102.23	0.03	
3659.00	0.57	32.71	3658.96	187.00	-0.39	0.44 S	6.11 E	32.94428444 N	103.79826824 W	6.12@ 94.15	0.29	
4065.00	0.75	278.81	4064.95	406.00	1.70	1.66 N	4.57 E	32.94429025 N	103.79827321 W	4.87@ 70.01	0.27	
4283.00	1.14	286.72	4282.92	218.00	2.52	2.51 N	1.09 E	32.94429262 N	103.79828456 W	2.73@ 23.42	0.19	
4530.00	0.75	275.29	4529.88	247.00	3.34	3.36 N	2.88 W	32.94429503 N	103.79829747 W	4.43@ 319.44	0.17	
4716.00	0.66	301.13	4715.87	186.00	3.99	4.03 N	5.01 W	32.94429689 N	103.79830440 W	6.43@ 308.82	0.18	
4873.00	0.66	316.51	4872.86	157.00	5.10	5.15 N	6.40 W	32.94429999 N	103.79830893 W	8.22@ 308.82	0.11	
5060.00	0.66	326.97	5059.85	187.00	6.77	6.84 N	7.73 W	32.94430464 N	103.79831323 W	10.32@ 311.48	0.06	

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY CORPORATION
HAWKEYE STATE COM #1H
LEA COUNTY, NEW MEXICO
API#: 30-025-39925 Rig: SILVER OAK 7

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist (ft)	Dir (deg)	DLS (dg/100ft)
5248.00	0.26	22.34	5247.84	188.00	8.07	8.14 N	8.16 W	32.94430823 N	103.79831460 W	11.52@	314.93	0.30
** TIED INTO NAVIGATE ENERGY SERVICES SWD SURVEYS AT 5435' MD.												
5435.00	0.13	269.84	5434.84	187.00	8.46	8.53 N	8.21 W	32.94430931 N	103.79831476 W	11.84@	316.10	0.18
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.												
5670.00	0.53	7.40	5669.84	235.00	9.54	9.61 N	8.34 W	32.94431227 N	103.79831516 W	12.72@	319.05	0.24
5854.00	0.53	26.64	5853.83	184.00	11.15	11.21 N	7.85 W	32.94431667 N	103.79831353 W	13.68@	325.02	0.10
5947.00	0.35	151.63	5946.83	93.00	11.28	11.35 N	7.52 W	32.94431704 N	103.79831246 W	13.61@	326.47	0.84
6041.00	0.44	191.67	6040.83	94.00	10.68	10.74 N	7.45 W	32.94431537 N	103.79831226 W	13.07@	325.24	0.30
6134.00	1.06	177.97	6133.82	93.00	9.47	9.53 N	7.50 W	32.94431205 N	103.79831242 W	12.13@	321.81	0.69
6228.00	1.06	190.94	6227.80	94.00	7.74	7.81 N	7.63 W	32.94430731 N	103.79831288 W	10.92@	315.66	0.25
6321.00	1.06	196.45	6320.78	93.00	6.07	6.14 N	8.04 W	32.94430273 N	103.79831424 W	10.11@	307.37	0.11
6414.00	0.97	207.87	6413.77	93.00	4.55	4.62 N	8.65 W	32.94429856 N	103.79831626 W	9.80@	298.10	0.24
6507.00	1.06	208.53	6506.76	93.00	3.09	3.17 N	9.43 W	32.94429458 N	103.79831882 W	9.94@	288.56	0.10
6600.00	0.53	161.04	6599.75	93.00	1.92	2.00 N	9.70 W	32.94429139 N	103.79831972 W	9.90@	281.67	0.86
6693.00	1.23	124.98	6692.74	93.00	0.95	1.02 N	8.74 W	32.94428868 N	103.79831662 W	8.80@	276.68	0.92
6787.00	1.49	116.55	6786.71	94.00	-0.16	0.10 S	6.82 W	32.94428557 N	103.79831038 W	6.82@	269.16	0.35
6880.00	1.41	119.07	6879.68	93.00	-1.24	1.20 S	4.74 W	32.94428252 N	103.79830361 W	4.89@	255.83	0.11
6973.00	1.14	115.03	6972.66	93.00	-2.17	2.14 S	2.90 W	32.94427989 N	103.79829763 W	3.61@	233.53	0.31
7067.00	1.06	121.16	7066.64	94.00	-3.00	2.99 S	1.31 W	32.94427755 N	103.79829246 W	3.26@	203.66	0.15
7191.00	1.14	116.73	7190.62	124.00	-4.13	4.14 S	0.77 E	32.94427436 N	103.79828569 W	4.21@	169.41	0.09
7284.00	0.88	111.67	7283.60	93.00	-4.80	4.82 S	2.26 E	32.94427247 N	103.79828085 W	5.32@	154.84	0.30
7378.00	0.97	116.55	7377.59	94.00	-5.41	5.44 S	3.65 E	32.94427074 N	103.79827635 W	6.55@	146.17	0.13
7471.00	0.79	104.84	7470.58	93.00	-5.91	5.96 S	4.97 E	32.94426931 N	103.79827204 W	7.76@	140.16	0.27
7565.00	0.44	57.02	7564.57	94.00	-5.88	5.93 S	5.90 E	32.94426938 N	103.79826901 W	8.36@	135.13	0.63
7658.00	0.62	62.34	7657.57	93.00	-5.44	5.50 S	6.64 E	32.94427054 N	103.79826658 W	8.62@	129.60	0.20
7752.00	0.62	56.74	7751.56	94.00	-4.92	4.98 S	7.52 E	32.94427195 N	103.79826371 W	9.02@	123.53	0.06
7845.00	0.70	37.52	7844.56	93.00	-4.19	4.26 S	8.29 E	32.94427393 N	103.79826120 W	9.32@	117.18	0.25

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY CORPORATION
HAWKEYE STATE COM #1H
LEA COUNTY, NEW MEXICO
API#: 30-025-39925 Rig: SILVER OAK 7

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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)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
7938.00	0.62	27.63	7937.55	93.00	-3.29	3.36 S	8.87 E	32.94427639 N	103.79825930 W	9.48@	110.75	0.15
8032.00	0.62	36.14	8031.55	94.00	-2.42	2.50 S	9.40 E	32.94427875 N	103.79825754 W	9.73@	104.88	0.10
8125.00	0.62	31.22	8124.54	93.00	-1.58	1.66 S	9.96 E	32.94428104 N	103.79825571 W	10.10@	99.47	0.06
8187.00	0.88	347.77	8186.54	62.00	-0.83	0.91 S	10.03 E	32.94428311 N	103.79825546 W	10.07@	95.18	0.98
8280.00	0.88	348.19	8279.53	93.00	0.57	0.49 N	9.74 E	32.94428695 N	103.79825640 W	9.75@	87.13	0.01
8374.00	0.97	356.50	8373.51	94.00	2.07	1.99 N	9.54 E	32.94429108 N	103.79825702 W	9.74@	78.23	0.17
8391.00	3.52	3.98	8390.50	17.00	2.73	2.65 N	9.57 E	32.94429290 N	103.79825692 W	9.93@	74.50	15.07
8422.00	7.47	4.51	8421.35	31.00	5.69	5.61 N	9.79 E	32.94430103 N	103.79825614 W	11.29@	60.18	12.74
8453.00	10.46	4.89	8451.97	31.00	10.51	10.43 N	10.19 E	32.94431426 N	103.79825476 W	14.58@	44.34	9.65
8484.00	11.61	4.75	8482.39	31.00	16.43	16.34 N	10.69 E	32.94433050 N	103.79825304 W	19.52@	33.19	3.71
8515.00	14.33	5.17	8512.60	31.00	23.36	23.27 N	11.29 E	32.94434954 N	103.79825095 W	25.86@	25.89	8.78
8547.00	16.71	5.17	8543.43	32.00	31.90	31.80 N	12.06 E	32.94437297 N	103.79824830 W	34.01@	20.78	7.44
8578.00	18.55	6.07	8572.98	31.00	41.25	41.14 N	12.99 E	32.94439864 N	103.79824513 W	43.14@	17.52	6.00
8609.00	21.28	5.74	8602.12	31.00	51.76	51.64 N	14.07 E	32.94442749 N	103.79824142 W	53.52@	15.24	8.81
8640.00	23.74	3.63	8630.75	31.00	63.59	63.47 N	15.03 E	32.94445998 N	103.79823811 W	65.22@	13.32	8.35
8671.00	26.47	2.31	8658.82	31.00	76.73	76.60 N	15.70 E	32.94449607 N	103.79823569 W	78.19@	11.58	8.99
8702.00	28.84	1.42	8686.28	31.00	91.11	90.98 N	16.17 E	32.94453559 N	103.79823394 W	92.41@	10.08	7.76
8734.00	31.48	359.37	8713.95	32.00	107.19	107.05 N	16.27 E	32.94457976 N	103.79823335 W	108.28@	8.64	8.85
8765.00	35.35	357.82	8739.82	31.00	124.24	124.12 N	15.83 E	32.94462667 N	103.79823447 W	125.12@	7.27	12.78
8796.00	39.31	357.41	8764.46	31.00	143.02	142.89 N	15.05 E	32.94467829 N	103.79823672 W	143.68@	6.01	12.80
8858.00	43.88	357.83	8810.82	62.00	184.11	184.01 N	13.35 E	32.94479132 N	103.79824159 W	184.49@	4.15	7.38
8889.00	48.28	357.39	8832.32	31.00	206.41	206.31 N	12.41 E	32.94485263 N	103.79824426 W	206.69@	3.44	14.23
8911.00	51.62	358.06	8846.47	22.00	223.23	223.14 N	11.75 E	32.94489889 N	103.79824616 W	223.45@	3.01	15.36
8943.00	52.32	359.22	8866.19	32.00	248.42	248.34 N	11.15 E	32.94496815 N	103.79824769 W	248.59@	2.57	3.60
8975.00	53.46	359.86	8885.49	32.00	273.94	273.85 N	10.95 E	32.94503829 N	103.79824793 W	274.07@	2.29	3.90
9006.00	56.72	0.87	8903.23	31.00	299.35	299.27 N	11.11 E	32.94510815 N	103.79824696 W	299.48@	2.13	10.85

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY CORPORATION
HAWKEYE STATE COM #1H
LEA COUNTY, NEW MEXICO
API#: 30-025-39925 Rig: SILVER OAK 7

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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)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
9038.00	61.20	1.42	8919.73	32.00	326.76	326.68 N	11.66 E	32.94518347 N	103.79824472 W	326.88@	2.04	14.08
9070.00	64.81	1.23	8934.25	32.00	355.27	355.18 N	12.32 E	32.94526179 N	103.79824210 W	355.39@	1.99	11.29
9101.00	67.44	0.73	8946.80	31.00	383.61	383.52 N	12.81 E	32.94533969 N	103.79824005 W	383.73@	1.91	8.61
9133.00	70.35	359.50	8958.32	32.00	413.46	413.37 N	12.86 E	32.94542173 N	103.79823937 W	413.57@	1.78	9.78
9165.00	72.11	358.55	8968.61	32.00	443.75	443.66 N	12.35 E	32.94550499 N	103.79824056 W	443.83@	1.59	6.18
9196.00	74.04	358.15	8977.64	31.00	473.38	473.30 N	11.49 E	32.94558648 N	103.79824285 W	473.44@	1.39	6.35
9228.00	76.94	357.80	8985.65	32.00	504.33	504.26 N	10.40 E	32.94567158 N	103.79824591 W	504.37@	1.18	9.12
9259.00	79.58	358.09	8991.96	31.00	534.65	534.59 N	9.31 E	32.94575496 N	103.79824895 W	534.67@	1.00	8.57
9291.00	81.07	357.11	8997.34	32.00	566.15	566.10 N	7.99 E	32.94584160 N	103.79825274 W	566.16@	0.81	5.55
9323.00	84.15	358.09	9001.46	32.00	597.84	597.81 N	6.66 E	32.94592876 N	103.79825654 W	597.84@	0.64	10.09
9354.00	87.23	359.67	9003.78	31.00	628.74	628.71 N	6.06 E	32.94601370 N	103.79825800 W	628.74@	0.55	11.16
9386.00	89.08	0.67	9004.82	32.00	660.72	660.69 N	6.15 E	32.94610160 N	103.79825716 W	660.72@	0.53	6.57
9405.00	89.16	0.49	9005.11	19.00	679.72	679.69 N	6.34 E	32.94615381 N	103.79825621 W	679.72@	0.53	1.04
9437.00	90.00	0.82	9005.34	32.00	711.71	711.68 N	6.71 E	32.94624175 N	103.79825449 W	711.71@	0.54	2.82
9468.00	90.34	0.91	9005.25	31.00	742.71	742.68 N	7.18 E	32.94632694 N	103.79825245 W	742.71@	0.55	1.13
9499.00	90.22	0.99	9005.10	31.00	773.71	773.67 N	7.69 E	32.94641213 N	103.79825027 W	773.71@	0.57	0.47
9531.00	90.06	0.82	9005.02	32.00	805.71	805.67 N	8.20 E	32.94650006 N	103.79824809 W	805.71@	0.58	0.73
9563.00	90.50	0.93	9004.86	32.00	837.71	837.67 N	8.68 E	32.94658800 N	103.79824597 W	837.71@	0.59	1.42
9594.00	90.67	0.95	9004.55	31.00	868.71	868.66 N	9.19 E	32.94667318 N	103.79824379 W	868.71@	0.61	0.55
9626.00	90.50	1.23	9004.22	32.00	900.70	900.65 N	9.80 E	32.94676110 N	103.79824128 W	900.71@	0.62	1.02
9657.00	90.39	1.19	9003.98	31.00	931.70	931.64 N	10.46 E	32.94684628 N	103.79823863 W	931.70@	0.64	0.38
9689.00	90.22	1.41	9003.81	32.00	963.70	963.64 N	11.18 E	32.94693420 N	103.79823574 W	963.70@	0.66	0.87
9721.00	90.17	1.38	9003.70	32.00	995.69	995.63 N	11.96 E	32.94702211 N	103.79823267 W	995.70@	0.69	0.18
9752.00	90.95	0.81	9003.40	31.00	1026.69	1026.62 N	12.55 E	32.94710729 N	103.79823022 W	1026.70@	0.70	3.12
9784.00	91.17	0.66	9002.81	32.00	1058.68	1058.61 N	12.96 E	32.94719521 N	103.79822836 W	1058.69@	0.70	0.83
9816.00	90.95	0.61	9002.21	32.00	1090.68	1090.60 N	13.32 E	32.94728314 N	103.79822667 W	1090.68@	0.70	0.71

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY CORPORATION
HAWKEYE STATE COM #1H
LEA COUNTY, NEW MEXICO
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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
9847.00	90.73	0.51	9001.76	31.00	1121.67	1121.60 N	13.62 E	32.94736833 N	103.79822517 W	1121.68@	0.70	0.78
9879.00	90.62	0.29	9001.38	32.00	1153.67	1153.60 N	13.85 E	32.94745627 N	103.79822391 W	1153.68@	0.69	0.77
9910.00	90.39	0.51	9001.11	31.00	1184.67	1184.59 N	14.06 E	32.94754147 N	103.79822269 W	1184.68@	0.68	1.03
9942.00	91.12	0.50	9000.69	32.00	1216.67	1216.59 N	14.34 E	32.94762941 N	103.79822125 W	1216.67@	0.68	2.28
9973.00	91.12	0.48	9000.08	31.00	1247.66	1247.58 N	14.61 E	32.94771459 N	103.79821987 W	1247.67@	0.67	0.06
10005.00	90.28	0.12	8999.69	32.00	1279.66	1279.58 N	14.78 E	32.94780253 N	103.79821879 W	1279.66@	0.66	2.86
10037.00	89.89	0.31	8999.64	32.00	1311.66	1311.58 N	14.90 E	32.94789048 N	103.79821787 W	1311.66@	0.65	1.36
10068.00	90.67	0.39	8999.49	31.00	1342.66	1342.58 N	15.09 E	32.94797568 N	103.79821674 W	1342.66@	0.64	2.53
10100.00	90.34	0.40	8999.21	32.00	1374.66	1374.58 N	15.31 E	32.94806363 N	103.79821549 W	1374.66@	0.64	1.03
10132.00	89.83	0.59	8999.16	32.00	1406.66	1406.57 N	15.58 E	32.94815158 N	103.79821406 W	1406.66@	0.63	1.70
10163.00	90.56	0.58	8999.06	31.00	1437.65	1437.57 N	15.90 E	32.94823677 N	103.79821252 W	1437.66@	0.63	2.36
10195.00	90.34	0.32	8998.80	32.00	1469.65	1469.57 N	16.15 E	32.94832472 N	103.79821117 W	1469.66@	0.63	1.06
10227.00	90.95	0.59	8998.44	32.00	1501.65	1501.57 N	16.41 E	32.94841266 N	103.79820981 W	1501.66@	0.63	2.08
10258.00	91.40	0.68	8997.81	31.00	1532.65	1532.56 N	16.75 E	32.94849783 N	103.79820818 W	1532.65@	0.63	1.48
10290.00	91.40	0.71	8997.03	32.00	1564.64	1564.55 N	17.14 E	32.94858575 N	103.79820638 W	1564.64@	0.63	0.09
10322.00	91.46	0.89	8996.23	32.00	1596.62	1596.53 N	17.58 E	32.94867366 N	103.79820440 W	1596.63@	0.63	0.59
10353.00	91.62	0.90	8995.40	31.00	1627.61	1627.52 N	18.07 E	32.94875882 N	103.79820230 W	1627.62@	0.64	0.52
10385.00	91.79	1.21	8994.44	32.00	1659.60	1659.50 N	18.66 E	32.94884671 N	103.79819985 W	1659.60@	0.64	1.10
10417.00	91.18	1.18	8993.61	32.00	1691.58	1691.48 N	19.32 E	32.94893460 N	103.79819715 W	1691.59@	0.65	1.91
10448.00	91.06	1.28	8993.01	31.00	1722.57	1722.47 N	19.99 E	32.94901976 N	103.79819447 W	1722.58@	0.66	0.50
10480.00	91.18	1.44	8992.38	32.00	1754.56	1754.45 N	20.75 E	32.94910767 N	103.79819146 W	1754.58@	0.68	0.62
10511.00	90.28	1.26	8991.99	31.00	1785.56	1785.44 N	21.48 E	32.94919283 N	103.79818857 W	1785.57@	0.69	2.96
10543.00	89.94	1.02	8991.93	32.00	1817.56	1817.43 N	22.11 E	32.94928076 N	103.79818597 W	1817.57@	0.70	1.30
10575.00	89.94	1.01	8991.96	32.00	1849.55	1849.43 N	22.68 E	32.94936869 N	103.79818359 W	1849.57@	0.70	0.03
10606.00	90.73	0.72	8991.78	31.00	1880.55	1880.43 N	23.15 E	32.94945387 N	103.79818155 W	1880.57@	0.71	2.71
10638.00	91.01	0.69	8991.29	32.00	1912.55	1912.42 N	23.54 E	32.94954181 N	103.79817974 W	1912.56@	0.71	0.88

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY CORPORATION
HAWKEYE STATE COM #1H
LEA COUNTY, NEW MEXICO
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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
10670.00	91.12	0.86	8990.70	32.00	1944.54	1944.41 N 23.98 E	32.94962973 N	103.79817779 W	1944.56@ 0.71	0.63
10701.00	91.12	0.97	8990.09	31.00	1975.54	1975.40 N 24.47 E	32.94971490 N	103.79817567 W	1975.55@ 0.71	0.35
10733.00	91.18	0.84	8989.45	32.00	2007.53	2007.39 N 24.98 E	32.94980282 N	103.79817349 W	2007.55@ 0.71	0.45
10764.00	90.84	0.54	8988.90	31.00	2038.52	2038.38 N 25.35 E	32.94988800 N	103.79817176 W	2038.54@ 0.71	1.46
10796.00	90.90	0.87	8988.42	32.00	2070.52	2070.38 N 25.74 E	32.94997593 N	103.79816995 W	2070.54@ 0.71	1.05
10828.00	90.39	1.84	8988.06	32.00	2102.51	2102.37 N 26.50 E	32.95006384 N	103.79816695 W	2102.53@ 0.72	3.42
10859.00	90.06	2.03	8987.94	31.00	2133.50	2133.35 N 27.55 E	32.95014899 N	103.79816303 W	2133.53@ 0.74	1.23
10891.00	89.83	1.63	8987.97	32.00	2165.49	2165.33 N 28.57 E	32.95023688 N	103.79815917 W	2165.52@ 0.76	1.44
10923.00	89.89	1.24	8988.04	32.00	2197.49	2197.32 N 29.37 E	32.95032479 N	103.79815602 W	2197.52@ 0.77	1.23
10954.00	90.17	1.39	8988.03	31.00	2228.49	2228.31 N 30.08 E	32.95040996 N	103.79815319 W	2228.52@ 0.77	1.02
10986.00	90.50	1.36	8987.84	32.00	2260.48	2260.30 N 30.85 E	32.95049788 N	103.79815016 W	2260.51@ 0.78	1.04
11018.00	90.90	1.44	8987.45	32.00	2292.48	2292.29 N 31.63 E	32.95058579 N	103.79814708 W	2292.51@ 0.79	1.27
11049.00	90.50	1.12	8987.07	31.00	2323.47	2323.28 N 32.32 E	32.95067096 N	103.79814431 W	2323.51@ 0.80	1.65
11081.00	90.28	0.78	8986.85	32.00	2355.47	2355.28 N 32.85 E	32.95075889 N	103.79814205 W	2355.50@ 0.80	1.27
11112.00	90.00	0.06	8986.78	31.00	2386.47	2386.27 N 33.08 E	32.95084409 N	103.79814080 W	2386.50@ 0.79	2.49
11143.00	89.61	359.67	8986.88	31.00	2417.47	2417.27 N 33.01 E	32.95092930 N	103.79814052 W	2417.50@ 0.78	1.78
11175.00	89.78	359.50	8987.05	32.00	2449.46	2449.27 N 32.78 E	32.95101725 N	103.79814075 W	2449.49@ 0.77	0.75
11207.00	89.78	359.46	8987.18	32.00	2481.46	2481.27 N 32.49 E	32.95110520 N	103.79814116 W	2481.48@ 0.75	0.12
11238.00	89.61	359.36	8987.34	31.00	2512.45	2512.27 N 32.17 E	32.95119041 N	103.79814169 W	2512.47@ 0.73	0.64
11270.00	89.61	359.52	8987.56	32.00	2544.44	2544.27 N 31.85 E	32.95127836 N	103.79814218 W	2544.47@ 0.72	0.50
11301.00	90.22	359.48	8987.61	31.00	2575.44	2575.27 N 31.58 E	32.95136356 N	103.79814255 W	2575.46@ 0.70	1.97
11333.00	90.56	359.32	8987.39	32.00	2607.43	2607.26 N 31.25 E	32.95145151 N	103.79814311 W	2607.45@ 0.69	1.17
11365.00	90.67	359.35	8987.04	32.00	2639.43	2639.26 N 30.88 E	32.95153946 N	103.79814379 W	2639.44@ 0.67	0.36
11396.00	90.67	359.19	8986.68	31.00	2670.42	2670.25 N 30.48 E	32.95162466 N	103.79814457 W	2670.43@ 0.65	0.52
11428.00	91.01	358.99	8986.21	32.00	2702.40	2702.25 N 29.97 E	32.95171260 N	103.79814569 W	2702.41@ 0.64	1.23
11460.00	90.06	358.90	8985.91	32.00	2734.39	2734.24 N 29.38 E	32.95180054 N	103.79814708 W	2734.40@ 0.62	2.98

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY CORPORATION
HAWKEYE STATE COM #1H
LEA COUNTY, NEW MEXICO
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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)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)	
11491.00	90.11	358.60	8985.87	31.00	2765.38	2765.23 N	28.71 E	32.95188574 N	103.79814877 W	2765.38@	0.59	0.98
11523.00	90.22	358.34	8985.78	32.00	2797.36	2797.22 N	27.85 E	32.95197367 N	103.79815103 W	2797.36@	0.57	0.88
11554.00	90.22	358.27	8985.66	31.00	2828.33	2828.21 N	26.94 E	32.95205885 N	103.79815351 W	2828.34@	0.55	0.23
11586.00	90.22	358.21	8985.53	32.00	2860.31	2860.19 N	25.95 E	32.95214678 N	103.79815618 W	2860.31@	0.52	0.19
11617.00	90.34	357.91	8985.38	31.00	2891.28	2891.17 N	24.90 E	32.95223195 N	103.79815909 W	2891.28@	0.49	1.04
11649.00	90.67	357.83	8985.10	32.00	2923.25	2923.15 N	23.72 E	32.95231985 N	103.79816243 W	2923.25@	0.46	1.06
11681.00	91.74	358.45	8984.43	32.00	2955.21	2955.12 N	22.68 E	32.95240775 N	103.79816529 W	2955.21@	0.44	3.86
11712.00	92.35	358.41	8983.32	31.00	2986.17	2986.09 N	21.83 E	32.95249288 N	103.79816754 W	2986.17@	0.42	1.97
11744.00	92.63	357.97	8981.93	32.00	3018.12	3018.05 N	20.82 E	32.95258072 N	103.79817031 W	3018.12@	0.40	1.63
11775.00	92.91	357.82	8980.43	31.00	3049.05	3048.99 N	19.68 E	32.95266579 N	103.79817350 W	3049.05@	0.37	1.02
11807.00	91.62	358.18	8979.17	32.00	3080.99	3080.95 N	18.57 E	32.95275363 N	103.79817661 W	3081.00@	0.35	4.18
11839.00	91.23	358.52	8978.37	32.00	3112.96	3112.92 N	17.64 E	32.95284153 N	103.79817908 W	3112.97@	0.32	1.62
11870.00	91.51	358.12	8977.63	31.00	3143.93	3143.90 N	16.74 E	32.95292669 N	103.79818153 W	3143.94@	0.30	1.57
11902.00	90.34	358.49	8977.11	32.00	3175.90	3175.88 N	15.79 E	32.95301461 N	103.79818409 W	3175.92@	0.28	3.83
11933.00	89.83	358.81	8977.07	31.00	3206.89	3206.87 N	15.06 E	32.95309980 N	103.79818595 W	3206.91@	0.27	1.94
11965.00	90.00	358.64	8977.12	32.00	3238.87	3238.86 N	14.35 E	32.95318774 N	103.79818775 W	3238.90@	0.25	0.75
11997.00	90.06	358.47	8977.10	32.00	3270.85	3270.85 N	13.54 E	32.95327568 N	103.79818985 W	3270.88@	0.24	0.56
12028.00	89.61	359.34	8977.19	31.00	3301.84	3301.85 N	12.95 E	32.95336087 N	103.79819126 W	3301.87@	0.22	3.16
12060.00	89.61	359.85	8977.41	32.00	3333.84	3333.85 N	12.72 E	32.95344882 N	103.79819147 W	3333.87@	0.22	1.59
12092.00	89.83	359.68	8977.56	32.00	3365.83	3365.85 N	12.59 E	32.95353678 N	103.79819137 W	3365.87@	0.21	0.87
12123.00	90.06	359.51	8977.59	31.00	3396.83	3396.84 N	12.37 E	32.95362198 N	103.79819157 W	3396.87@	0.21	0.92
12155.00	90.11	359.33	8977.54	32.00	3428.82	3428.84 N	12.05 E	32.95370994 N	103.79819210 W	3428.86@	0.20	0.58
12187.00	90.06	359.35	8977.50	32.00	3460.82	3460.84 N	11.68 E	32.95379789 N	103.79819277 W	3460.86@	0.19	0.17
12218.00	90.17	359.06	8977.44	31.00	3491.81	3491.84 N	11.25 E	32.95388309 N	103.79819366 W	3491.86@	0.18	1.00
12250.00	90.50	359.71	8977.25	32.00	3523.80	3523.84 N	10.91 E	32.95397105 N	103.79819425 W	3523.85@	0.18	2.28
12281.00	90.67	359.83	8976.93	31.00	3554.80	3554.83 N	10.78 E	32.95405625 N	103.79819414 W	3554.85@	0.17	0.67

PathFinder Energy Services, Inc.

Survey Report

MACK ENERGY CORPORATION
HAWKEYE STATE COM #1H
LEA COUNTY, NEW MEXICO
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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
12313.00	90.73	359.83	8976.54	32.00	3586.79	3586.83 N	10.69 E	32.95414419 N	103.79819392 W	3586.85@	0.17	0.19
12345.00	90.84	359.35	8976.10	32.00	3618.79	3618.83 N	10.46 E	32.95423214 N	103.79819413 W	3618.84@	0.17	1.54
12376.00	91.29	359.62	8975.53	31.00	3649.78	3649.82 N	10.18 E	32.95431733 N	103.79819453 W	3649.83@	0.16	1.69
12408.00	91.74	359.39	8974.68	32.00	3681.76	3681.81 N	9.90 E	32.95440525 N	103.79819490 W	3681.82@	0.15	1.58
12440.00	90.95	0.17	8973.93	32.00	3713.75	3713.80 N	9.78 E	32.95449318 N	103.79819477 W	3713.81@	0.15	3.47
12471.00	90.62	0.92	8973.50	31.00	3744.75	3744.79 N	10.07 E	32.95457837 N	103.79819330 W	3744.81@	0.15	2.64
12503.00	90.73	0.63	8973.13	32.00	3776.74	3776.79 N	10.51 E	32.95466630 N	103.79819136 W	3776.80@	0.16	0.97
12534.00	90.84	0.29	8972.70	31.00	3807.74	3807.78 N	10.76 E	32.95475150 N	103.79819003 W	3807.80@	0.16	1.15
12566.00	90.06	1.14	8972.45	32.00	3839.74	3839.78 N	11.15 E	32.95483943 N	103.79818820 W	3839.80@	0.17	3.61
12598.00	89.94	1.69	8972.45	32.00	3871.73	3871.77 N	11.94 E	32.95492735 N	103.79818509 W	3871.79@	0.18	1.76
12629.00	90.28	1.59	8972.39	31.00	3902.73	3902.76 N	12.83 E	32.95501250 N	103.79818169 W	3902.78@	0.19	1.14
12661.00	90.28	1.51	8972.24	32.00	3934.72	3934.75 N	13.70 E	32.95510041 N	103.79817834 W	3934.77@	0.20	0.25
12692.00	90.28	1.37	8972.08	31.00	3965.72	3965.74 N	14.48 E	32.95518558 N	103.79817528 W	3965.76@	0.21	0.45
12724.00	90.22	1.23	8971.94	32.00	3997.71	3997.73 N	15.20 E	32.95527350 N	103.79817239 W	3997.76@	0.22	0.48
12756.00	90.17	1.07	8971.84	32.00	4029.71	4029.72 N	15.84 E	32.95536143 N	103.79816976 W	4029.75@	0.23	0.52
12787.00	90.17	0.83	8971.74	31.00	4060.71	4060.72 N	16.36 E	32.95544661 N	103.79816757 W	4060.75@	0.23	0.77
12819.00	90.90	1.30	8971.44	32.00	4092.71	4092.71 N	16.95 E	32.95553454 N	103.79816511 W	4092.74@	0.24	2.71
12851.00	91.12	1.71	8970.88	32.00	4124.70	4124.69 N	17.79 E	32.95562244 N	103.79816184 W	4124.73@	0.25	1.45
12882.00	91.18	1.48	8970.26	31.00	4155.68	4155.67 N	18.66 E	32.95570758 N	103.79815851 W	4155.72@	0.26	0.77
12914.00	91.34	1.34	8969.55	32.00	4187.67	4187.66 N	19.44 E	32.95579547 N	103.79815541 W	4187.70@	0.27	0.66
12946.00	91.74	1.17	8968.69	32.00	4219.66	4219.64 N	20.14 E	32.95588336 N	103.79815260 W	4219.69@	0.27	1.36
12977.00	92.07	0.80	8967.66	31.00	4250.64	4250.62 N	20.68 E	32.95596850 N	103.79815035 W	4250.67@	0.28	1.60
13009.00	90.95	1.29	8966.82	32.00	4282.63	4282.60 N	21.26 E	32.95605640 N	103.79814792 W	4282.65@	0.28	3.82
13041.00	90.34	1.49	8966.46	32.00	4314.62	4314.59 N	22.04 E	32.95614431 N	103.79814486 W	4314.64@	0.29	2.01
13072.00	90.56	1.20	8966.22	31.00	4345.62	4345.58 N	22.76 E	32.95622948 N	103.79814197 W	4345.64@	0.30	1.17
13104.00	90.95	1.12	8965.80	32.00	4377.61	4377.57 N	23.41 E	32.95631740 N	103.79813933 W	4377.63@	0.31	1.24

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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)	Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
13136.00	90.06	1.40	8965.51	32.00	4409.61	4409.56 N 24.12 E	32.95640532 N	103.79813651 W	4409.62@ 0.31	2.92
13167.00	89.83	1.66	8965.54	31.00	4440.60	4440.55 N 24.94 E	32.95649048 N	103.79813330 W	4440.62@ 0.32	1.12
13199.00	90.22	1.31	8965.53	32.00	4472.60	4472.54 N 25.77 E	32.95657839 N	103.79813006 W	4472.61@ 0.33	1.64
13230.00	90.50	1.25	8965.33	31.00	4503.59	4503.53 N 26.47 E	32.95666356 N	103.79812729 W	4503.61@ 0.34	0.92
13262.00	89.94	1.36	8965.21	32.00	4535.59	4535.52 N 27.19 E	32.95675148 N	103.79812439 W	4535.60@ 0.34	1.78
13294.00	89.72	1.49	8965.31	32.00	4567.58	4567.51 N 27.99 E	32.95683940 N	103.79812126 W	4567.60@ 0.35	0.80
13325.00	89.94	1.22	8965.40	31.00	4598.58	4598.50 N 28.72 E	32.95692457 N	103.79811836 W	4598.59@ 0.36	1.12
13357.00	90.06	1.11	8965.40	32.00	4630.58	4630.49 N 29.37 E	32.95701250 N	103.79811571 W	4630.59@ 0.36	0.51
13388.00	90.11	1.15	8965.35	31.00	4661.58	4661.49 N 29.98 E	32.95709767 N	103.79811320 W	4661.58@ 0.37	0.21
13420.00	90.34	1.02	8965.23	32.00	4693.57	4693.48 N 30.59 E	32.95718560 N	103.79811070 W	4693.58@ 0.37	0.83
13452.00	90.50	1.00	8964.99	32.00	4725.57	4725.48 N 31.15 E	32.95727353 N	103.79810833 W	4725.58@ 0.38	0.50
13483.00	90.39	0.78	8964.75	31.00	4756.57	4756.47 N 31.64 E	32.95735872 N	103.79810624 W	4756.58@ 0.38	0.79
13515.00	90.50	0.63	8964.50	32.00	4788.57	4788.47 N 32.03 E	32.95744666 N	103.79810443 W	4788.58@ 0.38	0.58
13547.00	90.78	0.41	8964.15	32.00	4820.57	4820.46 N 32.32 E	32.95753460 N	103.79810295 W	4820.57@ 0.38	1.11
13578.00	91.90	1.32	8963.42	31.00	4851.56	4851.45 N 32.79 E	32.95761976 N	103.79810092 W	4851.56@ 0.39	4.65
13610.00	91.68	1.48	8962.42	32.00	4883.54	4883.43 N 33.57 E	32.95770764 N	103.79809784 W	4883.54@ 0.39	0.85
13642.00	91.85	1.64	8961.44	32.00	4915.52	4915.40 N 34.44 E	32.95779550 N	103.79809447 W	4915.52@ 0.40	0.73
13673.00	92.07	1.33	8960.38	31.00	4946.49	4946.37 N 35.24 E	32.95788062 N	103.79809134 W	4946.50@ 0.41	1.23
13705.00	91.96	1.30	8959.25	32.00	4978.47	4978.34 N 35.98 E	32.95796848 N	103.79808842 W	4978.47@ 0.41	0.36
13737.00	92.01	1.13	8958.14	32.00	5010.45	5010.32 N 36.66 E	32.95805635 N	103.79808568 W	5010.45@ 0.42	0.55
13768.00	91.90	0.90	8957.08	31.00	5041.43	5041.29 N 37.20 E	32.95814149 N	103.79808337 W	5041.43@ 0.42	0.82
13800.00	91.85	0.84	8956.04	32.00	5073.41	5073.27 N 37.69 E	32.95822938 N	103.79808126 W	5073.41@ 0.43	0.24
13832.00	92.01	0.68	8954.96	32.00	5105.39	5105.25 N 38.11 E	32.95831727 N	103.79807935 W	5105.39@ 0.43	0.71
13863.00	92.52	0.57	8953.73	31.00	5136.37	5136.23 N 38.45 E	32.95840240 N	103.79807773 W	5136.37@ 0.43	1.68
13895.00	92.86	0.17	8952.23	32.00	5168.33	5168.19 N 38.66 E	32.95849025 N	103.79807653 W	5168.33@ 0.43	1.64
13927.00	93.31	0.09	8950.51	32.00	5200.29	5200.14 N 38.73 E	32.95857807 N	103.79807576 W	5200.29@ 0.43	1.43

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)	DLS (dg/100ft)
13958.00	92.57	0.48	8948.92	31.00	5231.24	5231.10 N 38.88 E	32.95866316 N	103.79807475 W	5231.25@ 0.43	2.70
13990.00	92.18	1.31	8947.59	32.00	5263.21	5263.07 N 39.38 E	32.95875102 N	103.79807259 W	5263.22@ 0.43	2.86
14021.00	92.69	1.15	8946.28	31.00	5294.18	5294.03 N 40.05 E	32.95883612 N	103.79806991 W	5294.19@ 0.43	1.72
14053.00	92.74	1.08	8944.76	32.00	5326.15	5325.99 N 40.67 E	32.95892395 N	103.79806735 W	5326.15@ 0.44	0.27
14086.00	93.02	0.75	8943.10	33.00	5359.10	5358.95 N 41.20 E	32.95901452 N	103.79806509 W	5359.10@ 0.44	1.31
14118.00	91.90	1.02	8941.73	32.00	5391.07	5390.91 N 41.69 E	32.95910237 N	103.79806295 W	5391.07@ 0.44	3.60
14150.00	91.68	1.47	8940.73	32.00	5423.05	5422.89 N 42.39 E	32.95919025 N	103.79806016 W	5423.05@ 0.45	1.56
14181.00	92.30	1.68	8939.65	31.00	5454.03	5453.86 N 43.24 E	32.95927536 N	103.79805687 W	5454.03@ 0.45	2.11
14213.00	92.91	1.82	8938.20	32.00	5485.99	5485.81 N 44.21 E	32.95936317 N	103.79805316 W	5485.99@ 0.46	1.96
14244.00	93.08	2.06	8936.58	31.00	5516.94	5516.75 N 45.26 E	32.95944819 N	103.79804923 W	5516.94@ 0.47	0.95
14276.00	92.91	2.01	8934.91	32.00	5548.88	5548.69 N 46.40 E	32.95953596 N	103.79804500 W	5548.88@ 0.48	0.55
14308.00	93.30	2.08	8933.17	32.00	5580.82	5580.62 N 47.54 E	32.95962371 N	103.79804075 W	5580.82@ 0.49	1.24
14339.00	93.70	2.42	8931.28	31.00	5611.75	5611.54 N 48.75 E	32.95970867 N	103.79803628 W	5611.75@ 0.50	1.69
14371.00	93.14	2.18	8929.37	32.00	5643.68	5643.45 N 50.03 E	32.95979638 N	103.79803157 W	5643.68@ 0.51	1.90
14403.00	93.25	1.92	8927.59	32.00	5675.61	5675.38 N 51.18 E	32.95988412 N	103.79802731 W	5675.61@ 0.52	0.88
14434.00	93.30	2.05	8925.82	31.00	5706.55	5706.32 N 52.25 E	32.95996913 N	103.79802331 W	5706.56@ 0.52	0.45
14466.00	93.08	2.23	8924.04	32.00	5738.49	5738.24 N 53.44 E	32.96005686 N	103.79801889 W	5738.49@ 0.53	0.89
14498.00	92.69	2.48	8922.43	32.00	5770.43	5770.18 N 54.75 E	32.96014461 N	103.79801408 W	5770.44@ 0.54	1.45
14524.00	92.97	2.80	8921.14	26.00	5796.38	5796.12 N 55.95 E	32.96021589 N	103.79800975 W	5796.39@ 0.55	1.63
14556.00	92.80	2.90	8919.53	32.00	5828.31	5828.04 N 57.54 E	32.96030361 N	103.79800404 W	5828.32@ 0.57	0.62
14588.00	92.69	2.98	8918.00	32.00	5860.25	5859.96 N 59.18 E	32.96039132 N	103.79799817 W	5860.26@ 0.58	0.42
14619.00	93.19	3.08	8916.41	31.00	5891.18	5890.87 N 60.82 E	32.96047627 N	103.79799232 W	5891.19@ 0.59	1.64
14650.00	91.23	2.71	8915.21	31.00	5922.12	5921.81 N 62.38 E	32.96056128 N	103.79798671 W	5922.14@ 0.60	6.43
14682.00	89.33	2.39	8915.06	32.00	5954.10	5953.78 N 63.80 E	32.96064912 N	103.79798153 W	5954.12@ 0.61	6.02
14714.00	89.22	2.33	8915.46	32.00	5986.08	5985.75 N 65.12 E	32.96073697 N	103.79797671 W	5986.10@ 0.62	0.39
14745.00	90.00	1.92	8915.67	31.00	6017.07	6016.72 N 66.27 E	32.96082210 N	103.79797245 W	6017.09@ 0.63	2.84

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 (ft)		Survey Latitude (deg)	Survey Longitude (deg)	Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
14777.00	90.50	1.15	8915.53	32.00	6049.06	6048.71 N	67.13 E	32.96091001 N	103.79796912 W	6049.08@	0.64	2.87
14808.00	90.90	1.25	8915.16	31.00	6080.06	6079.70 N	67.78 E	32.96099518 N	103.79796649 W	6080.08@	0.64	1.33
14840.00	91.29	1.32	8914.54	32.00	6112.05	6111.69 N	68.49 E	32.96108308 N	103.79796362 W	6112.07@	0.64	1.24
14871.00	91.29	359.94	8913.85	31.00	6143.04	6142.68 N	68.84 E	32.96116825 N	103.79796200 W	6143.06@	0.64	4.45
14903.00	91.40	359.43	8913.10	32.00	6175.03	6174.67 N	68.66 E	32.96125619 N	103.79796204 W	6175.05@	0.64	1.63
14935.00	91.62	359.60	8912.25	32.00	6207.01	6206.66 N	68.39 E	32.96134411 N	103.79796240 W	6207.03@	0.63	0.87
14966.00	91.85	359.51	8911.31	31.00	6237.99	6237.64 N	68.15 E	32.96142928 N	103.79796267 W	6238.01@	0.63	0.80
14998.00	92.18	0.09	8910.19	32.00	6269.97	6269.62 N	68.04 E	32.96151717 N	103.79796250 W	6269.99@	0.62	2.08
15030.00	92.63	0.03	8908.85	32.00	6301.94	6301.59 N	68.07 E	32.96160505 N	103.79796186 W	6301.96@	0.62	1.42
15061.00	92.24	359.52	8907.53	31.00	6332.91	6332.56 N	67.95 E	32.96169018 N	103.79796174 W	6332.93@	0.61	2.07
15093.00	91.85	358.94	8906.39	32.00	6364.88	6364.54 N	67.52 E	32.96177807 N	103.79796262 W	6364.90@	0.61	2.18
15125.00	92.29	358.62	8905.23	32.00	6396.85	6396.51 N	66.84 E	32.96186596 N	103.79796431 W	6396.86@	0.60	1.70
15156.00	91.46	358.67	8904.22	31.00	6427.82	6427.49 N	66.11 E	32.96195111 N	103.79796618 W	6427.83@	0.59	2.68
15188.00	91.06	358.98	8903.51	32.00	6459.79	6459.47 N	65.45 E	32.96203903 N	103.79796779 W	6459.80@	0.58	1.58
15220.00	91.57	359.10	8902.78	32.00	6491.78	6491.46 N	64.91 E	32.96212695 N	103.79796901 W	6491.78@	0.57	1.64
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 15289' MD.												
15289.00	91.57	359.10	8900.89	69.00	6560.73	6560.43 N	63.83 E	32.96231653 N	103.79797140 W	6560.74@	0.56	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.

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