



30.015.36932

DIRECTIONAL SURVEY REPORT

OGX RESOURCES

COOPER "29" FED # 1H

EDDY COUNTY, NEW MEXICO

PREPARED BY: FRANCISCO SINISTERRA

Pathfinder Energy Services, Inc.
6213 W. County Road 112 • Midland, TX • 79706
(432)681-6000

DIRECTIONAL SURVEY COMPANY REPORT:

1. NAME OF SURVEYING COMPANY: PATHFINDER ENERGY SERVICES
2. NAME OF PERSON(S) PERFORMING SURVEY:
A) JUSTIN FALLIN
3. POSITION OF SAID PERSON(S): (A-F) SURVEYORS (FIELD ENGINEERS)
4. DATE(S) ON WHICH SURVEY WAS PERFORMED: 3/8/09 TO 3/19/09
5. STATE IN WHICH SURVEY WAS PERFORMED: NEW MEXICO
6. LOCATION OF WELL: EDDY COUNTY, NM
7. TYPE OF SURVEY(S) PERFORMED: MWD
8. COMPLETE IDENTIFICATION OF WELL:

OGX RESOURCES
COOPER "29" FED # 1H
EDDY COUNTY, NM
RIG: JW #1
9. SURVEY CERTIFIED FROM: 6914 TO 11327 FEET MEASURED DEPTH.

THIS IS TO VERIFY THAT ATTACHED DOCUMENTS SHOWING THE WELL TO BE DISPLACED AT 4091.86 FEET ON A BEARING OF 93.7 DEGREES FROM THE CENTER OF THE ROTARY TABLE AT A PROJECTED BIT DEPTH OF 11400 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: 03/08/2009
Date Completed: 03/19/2009

OGX RESOURCES, LLC.
COOPER "29" FEDERAL #1H
EDDY COUNTY, NM
Rig:JW #1
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers:J.FALLIN
B.BLAKEMORE

Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.5.58.7237 N LON:104.0.45.9259 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 599269.5000 Y: 400121.9000
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.87° EAST TO GRID
Vertical Section Plane: 93.53
Survey Vert. Reference: 17.00' Rotary Table To Ground
Altitude:2949.00' Ground To MSL

Measured Depth	11400.00	(feet)
Inclination	90.57	(deg)
Azimuth	91.84	(deg)
True Vertical Depth	7548.78	(feet)
Vertical Section	4091.84	(feet)
Survey X cord	603352.83	(feet)
Survey Y cord	399857.91	(feet)
Survey Lat	32.09888572 N	(deg)
Survey Lon	103.99957351 W	(deg)
Rectangular Corr. N/S	263.99 S	(feet)
Rectangular Corr. E/W	4083.33 E	(feet)
Closure Distance	4091.86	(feet)
Direction of Closure	93.70	(deg)
Dogleg Severity	0.00	(deg/100ft)

PathFinder Energy Services, Inc.

Survey Report

Page 01/04
Tie-in Date: 03/08/2009
Date Completed: 03/19/2009

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EDDY COUNTY, NM
Rig:JW #1
PathFinder Office Supervisor: FRANCISCO SINISTERRA
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Vertical Section Plane: 93.53
Survey Vert. Reference: 17.00' Rotary Table To Ground
Altitude:2949.00' Ground To MSL

Survey Calculations by RX5 V5.11i 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 IS SCIENTIFIC DRILLING TIE IN @ 6882' MD.										
6882.00	2.95	159.40	6880.95	0.00	-20.33	58.88 S	24.00 W	63.58@	202.18	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
6914.00	2.29	156.75	6912.92	32.00	-19.70	60.24 S	23.46 W	64.64@	201.28	2.10
6946.00	2.29	158.73	6944.89	32.00	-19.15	61.42 S	22.97 W	65.58@	200.51	0.25
6977.00	2.73	144.80	6975.86	31.00	-18.43	62.60 S	22.32 W	66.46@	199.63	2.42
7008.00	5.54	116.07	7006.78	31.00	-16.58	63.86 S	20.55 W	67.09@	197.84	10.99
7039.00	8.71	120.96	7037.54	31.00	-13.12	65.73 S	17.20 W	67.94@	194.66	10.40
7071.00	12.13	119.00	7069.01	32.00	-7.93	68.61 S	12.18 W	69.68@	190.06	10.74
7102.00	15.74	118.81	7099.09	31.00	-1.18	72.21 S	5.64 W	72.43@	184.47	11.65
7133.00	18.99	118.14	7128.67	31.00	7.21	76.62 S	2.49 E	76.66@	178.14	10.50
7165.00	22.25	116.27	7158.62	32.00	17.53	81.76 S	12.52 E	82.71@	171.29	10.39
7195.00	25.15	114.31	7186.08	30.00	28.73	86.90 S	23.43 E	90.00@	164.91	10.02
7226.00	27.87	112.05	7213.82	31.00	41.76	92.33 S	36.15 E	99.15@	158.62	9.36
7257.00	30.78	110.26	7240.85	31.00	56.23	97.80 S	50.31 E	109.98@	152.78	9.80
7289.00	33.77	107.72	7267.90	32.00	72.70	103.34 S	66.46 E	122.87@	147.25	10.26
7321.00	37.37	107.33	7293.93	32.00	90.76	108.94 S	84.21 E	137.70@	142.30	11.27
7352.00	40.71	106.95	7318.00	31.00	109.74	114.69 S	102.87 E	154.07@	138.11	10.80
7383.00	43.62	104.84	7340.98	31.00	130.06	120.38 S	122.88 E	172.02@	134.41	10.44
7415.00	46.87	102.16	7363.51	32.00	152.44	125.67 S	144.97 E	191.86@	130.92	11.77
7446.00	50.65	100.58	7383.94	31.00	175.53	130.26 S	167.82 E	212.44@	127.82	12.78
7477.00	54.34	98.85	7402.81	31.00	199.97	134.40 S	192.06 E	234.41@	124.98	12.70
7509.00	57.86	97.94	7420.66	32.00	226.43	138.27 S	218.33 E	258.43@	122.35	11.25
7540.00	61.20	97.41	7436.38	31.00	253.07	141.83 S	244.81 E	282.93@	120.09	10.87
7571.00	63.93	96.06	7450.66	31.00	280.54	145.06 S	272.13 E	308.37@	118.06	9.62
7603.00	66.74	95.41	7464.01	32.00	309.60	147.96 S	301.06 E	335.45@	116.17	8.97

PathFinder Energy Services, Inc.

Survey Report

OGX RESOURCES, LLC.
COOPER "29" FEDERAL #1H
EDDY COUNTY, NM
RIG:JW #1

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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)
7634.00	69.38	95.20	7475.59	31.00	338.34	150.62 S	329.69 E	362.46@	114.55	8.54
7665.00	70.35	94.49	7486.26	31.00	367.43	153.08 S	358.69 E	389.99@	113.11	3.80
7696.00	73.25	93.79	7495.94	31.00	396.88	155.20 S	388.06 E	417.94@	111.80	9.60
7728.00	75.27	92.13	7504.63	32.00	427.67	156.79 S	418.81 E	447.20@	110.52	8.05
7759.00	78.96	89.51	7511.54	31.00	457.85	157.22 S	449.02 E	475.75@	109.30	14.48
7791.00	81.34	89.05	7517.01	32.00	489.29	156.82 S	480.55 E	505.49@	108.07	7.57
7822.00	83.36	88.79	7521.14	31.00	519.91	156.24 S	511.26 E	534.60@	106.99	6.57
7853.00	85.38	89.09	7524.18	31.00	550.66	155.67 S	542.11 E	564.02@	106.02	6.59
7883.00	86.79	89.33	7526.23	30.00	580.51	155.26 S	572.03 E	592.73@	105.18	4.77
7946.00	86.26	89.27	7530.05	63.00	643.22	154.49 S	634.91 E	653.44@	103.68	0.85
8009.00	87.32	90.41	7533.57	63.00	705.99	154.31 S	697.81 E	714.67@	102.47	2.47
8072.00	86.26	89.84	7537.10	63.00	768.78	154.45 S	760.71 E	776.23@	101.48	1.91
8103.00	85.91	89.77	7539.22	31.00	799.64	154.35 S	791.64 E	806.55@	101.03	1.15
8163.00	88.02	89.52	7542.39	60.00	859.41	153.97 S	851.55 E	865.36@	100.25	3.54
8195.00	90.04	90.19	7542.94	32.00	891.34	153.89 S	883.54 E	896.85@	99.88	6.65
8257.00	88.64	88.95	7543.65	62.00	953.19	153.43 S	945.54 E	957.90@	99.22	3.02
8320.00	89.25	87.63	7544.81	63.00	1015.91	151.55 S	1008.49 E	1019.82@	98.55	2.31
8383.00	91.10	88.23	7544.62	63.00	1078.61	149.27 S	1071.45 E	1081.80@	97.93	3.09
8446.00	91.71	88.77	7543.07	63.00	1141.35	147.62 S	1134.41 E	1143.97@	97.41	1.29
8508.00	90.84	87.08	7541.69	62.00	1203.03	145.38 S	1196.35 E	1205.15@	96.93	3.06
8601.00	89.52	87.73	7541.40	93.00	1295.50	141.17 S	1289.25 E	1296.96@	96.25	1.58
8633.00	88.72	86.88	7541.89	32.00	1327.30	139.66 S	1321.21 E	1328.57@	96.03	3.65
8696.00	88.20	87.57	7543.59	63.00	1389.90	136.62 S	1384.11 E	1390.84@	95.64	1.37
8727.00	89.43	89.26	7544.23	31.00	1420.77	135.76 S	1415.09 E	1421.59@	95.48	6.74
8758.00	90.48	92.36	7544.25	31.00	1451.73	136.20 S	1446.09 E	1452.49@	95.38	10.56
8789.00	91.28	93.33	7543.78	31.00	1482.72	137.74 S	1477.05 E	1483.45@	95.33	4.06

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Survey Report

OGX RESOURCES, LLC.
COOPER "29" FEDERAL #1H
EDDY COUNTY, NM
RIG:JW #1

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8851.00	92.59	94.32	7541.68	62.00	1544.68	141.87 S	1538.87 E	1545.39@	95.27	2.65
8883.00	92.51	94.31	7540.26	32.00	1576.65	144.27 S	1570.75 E	1577.36@	95.25	0.25
8913.00	92.51	93.85	7538.94	30.00	1606.62	146.41 S	1600.64 E	1607.32@	95.23	1.53
8976.00	92.07	93.46	7536.43	63.00	1669.57	150.42 S	1663.46 E	1670.25@	95.17	0.93
9006.00	90.40	93.73	7535.78	30.00	1699.56	152.30 S	1693.40 E	1700.23@	95.14	5.64
9069.00	90.57	93.34	7535.25	63.00	1762.56	156.18 S	1756.27 E	1763.21@	95.08	0.68
9162.00	90.04	93.40	7534.75	93.00	1855.56	161.65 S	1849.11 E	1856.16@	95.00	0.57
9193.00	90.31	93.84	7534.66	31.00	1886.56	163.61 S	1880.05 E	1887.16@	94.97	1.67
9256.00	90.66	94.97	7534.12	63.00	1949.55	168.45 S	1942.86 E	1950.15@	94.96	1.88
9288.00	89.87	94.98	7533.98	32.00	1981.54	171.22 S	1974.74 E	1982.15@	94.96	2.47
9351.00	88.46	95.67	7534.90	63.00	2044.50	177.07 S	2037.46 E	2045.14@	94.97	2.49
9413.00	87.85	94.92	7536.89	62.00	2106.43	182.79 S	2099.16 E	2107.10@	94.98	1.56
9476.00	87.85	94.57	7539.25	63.00	2169.37	187.99 S	2161.90 E	2170.06@	94.97	0.56
9538.00	87.93	94.62	7541.54	62.00	2231.32	192.96 S	2223.66 E	2232.02@	94.96	0.15
9600.00	88.37	94.15	7543.54	62.00	2293.28	197.70 S	2285.45 E	2293.98@	94.94	1.04
9663.00	88.72	93.92	7545.14	63.00	2356.26	202.13 S	2348.27 E	2356.95@	94.92	0.67
9724.00	89.08	93.48	7546.31	61.00	2417.25	206.06 S	2409.13 E	2417.93@	94.89	0.93
9787.00	89.52	93.02	7547.08	63.00	2480.24	209.63 S	2472.02 E	2480.90@	94.85	1.01
9848.00	89.60	92.71	7547.55	61.00	2541.24	212.68 S	2532.95 E	2541.86@	94.80	0.53
9910.00	89.96	92.95	7547.79	62.00	2603.23	215.74 S	2594.87 E	2603.82@	94.75	0.70
9972.00	88.37	91.75	7548.69	62.00	2665.21	218.29 S	2656.81 E	2665.76@	94.70	3.21
10033.00	88.29	91.39	7550.47	61.00	2726.15	219.96 S	2717.76 E	2726.65@	94.63	0.60
10095.00	88.11	89.99	7552.41	62.00	2788.04	220.70 S	2779.72 E	2788.47@	94.54	2.28
10157.00	87.76	89.36	7554.65	62.00	2849.86	220.35 S	2841.68 E	2850.21@	94.43	1.16
10220.00	87.76	91.30	7557.11	63.00	2912.71	220.71 S	2904.63 E	2913.00@	94.35	3.08
10282.00	87.67	90.97	7559.58	62.00	2974.60	221.94 S	2966.57 E	2974.86@	94.28	0.55

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Survey Report

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EDDY COUNTY, NM
RIG:JW #1

Page 04/04

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						(ft)	(ft)	(ft)	(deg)	(dg/100ft)
10344.00	87.49	90.20	7562.20	62.00	3036.47	222.57 S	3028.51 E	3036.68@	94.20	1.27
10407.00	87.49	91.61	7564.96	63.00	3099.34	223.57 S	3091.44 E	3099.51@	94.14	2.24
10468.00	89.52	91.54	7566.55	61.00	3160.28	225.24 S	3152.39 E	3160.43@	94.09	3.33
10529.00	90.57	91.87	7566.50	61.00	3221.25	227.06 S	3213.36 E	3221.38@	94.04	1.80
10591.00	91.36	92.33	7565.46	62.00	3283.22	229.33 S	3275.31 E	3283.33@	94.01	1.47
10654.00	91.54	92.85	7563.87	63.00	3346.19	232.18 S	3338.23 E	3346.29@	93.98	0.87
10717.00	91.54	92.96	7562.17	63.00	3409.16	235.37 S	3401.12 E	3409.26@	93.96	0.17
10779.00	91.45	92.82	7560.55	62.00	3471.14	238.49 S	3463.02 E	3471.23@	93.94	0.27
10841.00	91.71	92.78	7558.85	62.00	3533.11	241.52 S	3524.93 E	3533.19@	93.92	0.42
10902.00	91.98	92.51	7556.88	61.00	3594.07	244.33 S	3585.83 E	3594.14@	93.90	0.63
10964.00	91.89	92.39	7554.79	62.00	3656.02	246.98 S	3647.74 E	3656.09@	93.87	0.24
11027.00	91.98	92.17	7552.66	63.00	3718.97	249.49 S	3710.65 E	3719.03@	93.85	0.38
11121.00	90.22	92.90	7550.86	94.00	3812.94	253.64 S	3804.54 E	3812.98@	93.81	2.03
11213.00	90.31	92.09	7550.43	92.00	3904.92	257.65 S	3896.45 E	3904.96@	93.78	0.89
11307.00	90.57	91.97	7549.71	94.00	3998.88	260.98 S	3990.39 E	3998.91@	93.74	0.30
11327.00	90.57	91.84	7549.51	20.00	4018.88	261.64 S	4010.38 E	4018.90@	93.73	0.65
STRAIGHT LINE PROJECTION TO BIT @ 11400' MD.										
11400.00	90.57	91.84	7548.78	73.00	4091.84	263.99 S	4083.33 E	4091.86@	93.70	0.00

ENERGY SERVICES

TIE-IN SURVEY INFORMATION SHEET

CLIENT INFORMATION

CLIENT:	OGX RESOURCES, LLC		
LEASE / WELL No.:	COOPER "29" FED	#1H	
WELL LOCATION:	ROCK SPUR-BONE SPRING		
COUNTY / STATE / COUNTRY:	EDDY	NEW MEXICO	USA
RIG:	JW 1		
API WELL No:	30-015-36932		
JOB No:	101008287 WT-WT		
P.O. / AFE No.	0106-0001245-000		
DIRECTIONAL COMPANY:	PATHFINDER ENERGY SERVICES		

WELL SITE INFORMATION

TOTAL MAGNETIC CORRECTION (TMC):			
On Wall Plat:	7.9	LWD Calculated:	7.868924
		Agreed Upon:	7.868924
X =	599269.500000	Feet	Y = 400121.900000
			Feet
SITE LATITUDE:	32.099645 N	SITE LONGITUDE:	104.012757 W
GRID SYSTEM:	TRUE ☐ UTM ☐ LAMBERT ☒	ZONE:	New Mexico East
PROPOSED DRIFT DIRECTION:	93.53		
KELLY BUSHING ELEVATION:	17		
ALTITUDE:	2949	Feet	WATER DEPTH: N/A
			Feet

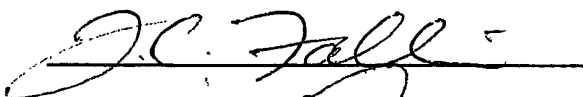
TIE-IN SURVEY

MEASURED DEPTH:	6882		
DRIFT ANGLE:	2.95		
DRIFT DIRECTION:	159.4		
TRUE VERTICAL DEPTH:	6880.95		
VERTICAL SECTION:	-20.33		
RECTANGULAR COORDINATE (N / S):	-58.88		
RECTANGULAR COORDINATE (E / W):	-24		
CLOSURE DISTANCE / DIRECTION:	63.58	202.18	
SURVEY CALCULATION METHOD:	AA ☐	MC ☒	RC ☐ BT ☐
SOURCE OF TIE-IN DATA (COMPANY):	SCIENTIFIC DRILLING CONTROLS		
COPY OF TIE-IN SURVEY REPORT	☒ YES ☐ NO		

WELL PLAN

KICKOFF DEPTH:	7443.1	TOTAL DEPTH:	12122.21
KICKOFF ANGLE:	0	MAX ANGLE:	87.68

PES Engineers:



**Signature of both field engineers required if applicable

Directional Driller:



DATE: _____