

Results of Directional Survey

API number:	30-025-40426		
OGRID:		Operator:	MACK ENERGY CORP
		Property:	MAGPIE STATE # 1H

surface	ULSTR:	E	26	T	18S	R	34E
				1980	FNL	330	FWL

BH Loc	ULSTR:	H	26	T	18S	R	34E
13713	MD	10035.6	TVD	1956	FNL	976	FEL
						4304	FWL

Top Perf/OH	ULSTR:	E	26	T	18S	R	34E
10490	MD	10043.2	TVD	1920	FNL	1083	FWL

Bot Perf/OH	ULSTR:	H	26	T	18S	R	34E
13620	MD	10038.9	TVD	1953	FNL	1069	FEL
						4211	FWL

	MD	N/S	E/W	VD
	10469	60.98	731.96	10042.79
TOP PERFS/OH	10490	59.81	752.93	10043.21
	10501	59.20	763.91	10043.43
	13598	28.14	3858.79	10039.41
BOT PERFS/OH	13620	27.39	3880.78	10038.93
	13630	27.05	3890.77	10038.71

NEXT TO LAST	13648	26.41	3908.75	10038.12
LAST READING	13713	24.12	3973.68	10035.61
TD	13713	24.12	3973.68	10035.61

Surface Location	1980	FN	330	FW
Projected BHL	1956	FN	4304	FW
Location of				
Top Perfs/OH	1920	FN	1083	FW
Bottom Perfs/OH	1953	FN	4211	FW

SUMMARY of Subsurface Locations

Surface Location	E-26-18S-34E	1980	FN	330	FW	Vert. Depth
Top Perfs/OH	E-26-18S-34E	1920	FN	1083	FW	10043.21
Bottom Perfs/OH	H-26-18S-34E	1953	FN	4211	FW	10038.93
Projected TD	H-26-18S-34E	1956	FN	4304	FW	10035.61



PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

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SEP 06 2012

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June 20, 2012

Mack Energy Corporation
PO Box 960
Artesia, NM 88211-0960

RE: Magpie State #1
2310' FNL & 330' FWL
Sec. 26, T18S, R34E
Lea County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

Very truly yours,

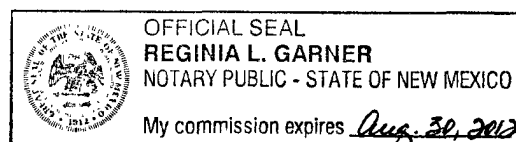
SUR: E-26-18s-34e, 1980/N & 330/W
BHL: H-26-18s-34e, 1956/N & 4304/W
API # 30-025-40426


Eddie C. LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 20th day of June, 2012.


Regina L. Garner
Notary Public



SCANNED

Pason DataHub Deviation Surve,
 # Well Dossier 1333774531 - Magpie St#1
 #

# Date	Depth	Deviation	Direction	TVD	Horiz
4/7/2012	111	0.60	0.00	0.00	0
4/8/2012	359	0.30	130.00	0.00	0
4/8/2012	517	0.50	0.00	0.00	0
4/8/2012	678	0.80	97.00	738.00	0
4/8/2012	864	0.20	98.00	924.00	0
4/8/2012	1052	0.20	55.00	1113.00	0
4/9/2012	1203	0.40	350.60	0.00	0
4/9/2012	1476	0.20	12.60	0.00	0
4/9/2012	1613	0.10	323.00	1673.00	0
4/13/2012	1878	0.40	255.60	0.00	0
4/13/2012	2121	0.40	355.00	0.00	0
4/13/2012	2309	0.10	3.00	2349.00	0
4/13/2012	2497	0.30	87.00	2537.00	0
4/14/2012	2627	0.30	67.60	0.00	0
4/14/2012	2815	1.40	53.60	0.00	0
4/14/2012	3058	1.40	58.00	0.00	0
4/14/2012	3245	1.90	48.00	0.00	0
4/14/2012	3433	2.10	64.60	3473.00	0
4/15/2012	3784	1.06	135.83	3831.00	0
4/15/2012	3878	0.79	145.85	3925.00	0
4/15/2012	3971	0.81	165.01	4018.00	0
4/16/2012	4065	0.79	166.68	0.00	0
4/16/2012	4158	0.62	178.90	0.00	0
4/16/2012	4439	0.70	202.10	0.00	0
4/16/2012	4906	0.53	239.36	0.00	0
4/16/2012	5000	0.62	232.69	0.00	0
4/16/2012	5093	0.62	242.97	0.00	0
4/17/2012	6217	0.97	295.35	0.00	0
4/18/2012	7152	0.44	150.86	0.00	0
4/18/2012	6217	0.97	295.35	0.00	0
4/19/2012	7246	0.20	237.80	0.00	0
4/19/2012	7344	0.44	320.22	0.00	0
4/20/2012	7625	1.06	320.31	7677.00	0
4/21/2012	7814	1.23	283.93	0.00	0
4/21/2012	8004	1.32	271.60	8056.00	0
4/22/2012	8192	0.62	7.25	0.00	0
4/23/2012	8380	1.58	341.85	0.00	0
4/24/2012	8569	1.06	325.76	0.00	0
4/24/2012	8758	0.18	296.76	8805.00	0
4/25/2012	8943	0.88	333.06	0.00	0
4/26/2012	9030	0.70	358.60	0.00	0
4/26/2012	9219	1.00	335.00	9259.00	0

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# Date	Depth	Deviation	Direction	TVD	Horiz
4/27/2012	9366	0.50	106.00	0.00	0
4/28/2012	9536	2.90	94.00	9606.00	0
4/29/2012	9636	1.90	96.00	9670.00	0
4/29/2012	9693	1.50	99.00	9733.00	0
4/30/2012	9788	1.50	126.00	9828.00	0
5/1/2012	9950	2.00	149.00	9981.00	0
5/2/2012	10064	2.30	154.60	0.00	0
5/5/2012	10247	2.40	130.60	0.00	0
5/5/2012	10269	2.70	143.60	0.00	0
5/7/2012	10339	2.70	135.00	0.00	0
5/8/2012	10432	1.90	126.60	10472.00	0
5/9/2012	10620	1.30	133.00	10660.00	0
5/17/2012	9441	1.54	102.70	0.00	0
5/20/2012	9505	2.62	92.61	0.00	0
5/21/2012	9534	4.47	90.64	9531.15	0
5/22/2012	9566	9.46	93.89	9652.90	0
5/22/2012	9595	13.69	91.92	0.00	0
5/23/2012	9628	16.16	91.59	0.00	0
5/23/2012	9659	18.49	93.54	0.00	0
5/23/2012	9691	21.09	94.64	0.00	0
5/26/2012	9753	27.30	93.15	0.00	0
5/26/2012	9784	31.58	92.03	9766.00	0
5/26/2012	9815	36.41	91.84	9792.00	0
5/27/2012	9846	41.68	90.87	9816.27	0
5/27/2012	9878	45.90	90.84	9839.00	0
5/27/2012	9892	46.88	90.69	9849.03	0
5/31/2012	9976	51.92	88.25	9903.00	0
6/1/2012	9990	53.21	88.94	9912.00	0
6/1/2012	10021	56.17	89.42	9929.00	0
6/1/2012	10041	61.56	89.25	9937.00	0
6/1/2012	10073	64.52	88.90	9952.00	0
6/4/2012	10202	71.61	90.66	10000.00	0
6/4/2012	10234	72.95	91.59	10010.00	0
6/4/2012	10266	74.50	92.37	10019.00	0
6/4/2012	10282	95.97	92.68	10023.54	0
6/5/2012	10298	76.98	93.11	10027.00	0
6/5/2012	10362	84.87	93.83	10037.50	0
6/6/2012	10405	87.40	93.65	10040.00	0
6/7/2012	10469	88.64	93.39	10042.00	0
6/7/2012	10533	90.12	92.88	10043.00	0
6/7/2012	10693	93.58	93.41	10035.00	0
6/7/2012	10725	92.84	93.14	10033.00	0
6/7/2012	10741	91.85	92.54	10033.00	0
6/7/2012	10757	91.11	92.25	10032.00	0
6/7/2012	10773	90.80	91.89	10032.00	0
6/8/2012	10821	90.74	91.85	10032.00	0

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#	Date	Depth	Deviation	Direction	TVD	Horiz
	6/8/2012	10853	90.86	91.78	10032.00	0
	6/8/2012	10981	89.07	93.99	10031.00	0
	6/8/2012	11013	88.89	93.87	10032.00	0
	6/8/2012	11045	89.38	93.67	10032.00	0
	6/8/2012	11077	88.27	92.75	10033.00	0
	6/8/2012	11091	88.58	92.36	10033.00	0
	6/8/2012	11108	88.95	92.31	10034.00	0
	6/8/2012	11140	89.44	92.56	10034.00	0
	6/8/2012	11172	90.19	92.23	10034.00	0
	6/8/2012	11188	90.43	92.33	10034.00	0
	6/9/2012	11204	91.05	92.22	10034.50	0
	6/9/2012	11268	91.24	92.49	10032.00	0
	6/9/2012	11363	89.20	89.95	10032.51	0
	6/9/2012	11427	89.94	89.92	10033.00	0
	6/9/2012	11555	88.02	88.35	10035.00	0
	6/9/2012	11587	88.52	88.83	10036.00	0
	6/10/2012	11619	88.76	88.72	10037.70	0
	6/10/2012	11683	90.43	89.11	10037.99	0
	6/11/2012	11715	90.06	88.67	10037.00	0
	6/11/2012	11747	87.75	88.87	10037.00	0
	6/11/2012	11906	88.27	88.66	10043.08	0
	6/11/2012	12034	89.88	89.23	10045.00	0
	6/11/2012	12066	90.37	89.25	10045.00	0
	6/12/2012	12226	90.25	89.25	10044.63	0
	6/12/2012	12298	90.25	89.11	10044.42	0
	6/12/2012	12322	89.69	89.57	10044.44	0
	6/12/2012	12450	90.68	90.64	10045.00	0
	6/12/2012	12578	92.04	90.58	10043.00	2839.27
	6/12/2012	12609	92.28	90.66	10042.00	2870.25
	6/13/2012	12641	92.53	90.45	10091.03	0
	6/13/2012	12833	89.57	89.38	10039.94	0
	6/13/2012	12865	89.69	89.48	10040.15	0
	6/13/2012	13026	90.49	89.37	10040.00	0
	6/13/2012	13057	91.23	89.94	10039.00	0
	6/14/2012	13089	91.30	89.89	10038.00	0
	6/14/2012	13105	90.99	89.53	10038.59	0
	6/14/2012	13121	91.11	89.52	10038.00	0
	6/14/2012	13311	83.83	91.05	10039.00	0
	6/14/2012	13343	89.38	90.89	10039.60	0
	6/14/2012	13470	90.19	91.36	10040.00	3731.01
	6/14/2012	13502	90.31	91.92	10040.00	3762.99
	6/15/2012	13566	91.05	91.74	10039.00	0
	6/15/2012	13598	91.05	91.88	10039.40	0
	6/15/2012	13630	91.48	92.03	10038.00	0

EOF

Mack Energy Corporation

LEA COUNTY, New Mexico

Sec. 26-T18S-R34E

Magpie State #1

Plan B Rev 0

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Survey: Sperry MWD Survey #1

SEP 06 2012

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Sperry Drilling Services Standard Report

15 June, 2012

SUR: E-26-18s-34e, 1980/N & 330/W
BHL: H-26-18s-34e, 1956/N & 4304/W
API # 30-025-40426

Well Coordinates 626,724.32 N, 744,596.30 E (32° 43' 13.58" N, 103° 32' 16.90" W)
Ground Level 3,997.00 ft

Local Coordinate Origin	Centered on Well Magpie State #1
Viewing Datum	RKB 19.00 ft. @ 4016.00ft (Silver Oak Rig 11)
TVDs to System	N
North Reference	Grid
Unit System	API - US Survey Feet - Custom
Geodetic Scale Factor Applied	
Version 2003.16 Build 431	

HALLIBURTON

Survey Report for Magpie State #1 - Sperry MWD Survey #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
9,366.00	0.50	113.60	9,363.26	77.03	50.16	50.75	0.00
9,410.00	1.22	107.54	9,407.26	76.81	50.78	51.37	1.65
9,441.00	1.54	102.70	9,438.25	76.62	51.50	52.09	1.10
9,505.00	2.62	92.61	9,502.20	76.37	53.80	54.39	1.78
9,534.00	4.47	90.64	9,531.15	76.32	55.60	56.18	6.39
9,566.00	9.46	93.89	9,562.90	76.13	59.47	60.05	15.64
9,597.00	13.69	91.92	9,593.26	75.84	65.68	66.26	13.70
9,628.00	16.16	91.59	9,623.21	75.59	73.66	74.24	7.97
9,659.00	18.49	93.54	9,652.81	75.17	82.88	83.45	7.75
9,691.00	21.09	94.64	9,682.91	74.39	93.68	94.25	8.21
9,722.00	23.82	94.03	9,711.56	73.50	105.49	106.05	8.84
9,748.00	26.74	93.17	9,735.07	72.81	116.57	117.13	11.32
9,753.00	27.30	93.15	9,739.52	72.68	118.84	119.39	11.20
9,784.00	31.58	92.03	9,766.51	72.00	134.06	134.60	13.92
9,815.00	36.41	91.84	9,792.21	71.42	151.37	151.92	15.58
9,846.00	41.68	90.87	9,816.28	70.97	170.89	171.43	17.11
9,878.00	45.90	90.84	9,839.37	70.64	193.03	193.56	13.19
9,892.00	46.88	90.69	9,849.03	70.50	203.16	203.70	7.04
9,964.00	51.92	88.25	9,895.87	71.05	257.80	258.34	7.46
9,978.00	53.21	88.94	9,904.38	71.32	268.91	269.45	10.01
10,009.00	58.17	89.42	9,921.85	71.69	294.51	295.05	16.05
10,022.00	59.35	89.45	9,928.59	71.80	305.62	306.17	9.08
10,041.00	61.56	89.25	9,937.96	71.98	322.15	322.69	11.67
10,073.00	64.52	88.90	9,952.47	72.45	350.67	351.21	9.30
10,105.00	66.58	87.92	9,965.71	73.26	379.78	380.33	7.02
10,137.00	67.33	87.92	9,978.24	74.32	409.21	409.77	2.34
10,170.00	69.96	89.97	9,990.25	74.88	439.93	440.50	9.85
10,202.00	71.61	90.66	10,000.79	74.72	470.15	470.71	5.54
10,234.00	72.95	91.59	10,010.53	74.12	500.62	501.18	5.02
10,254.00	73.99	92.16	10,016.22	73.49	519.79	520.34	5.87
10,266.00	74.50	92.37	10,019.47	73.03	531.33	531.87	4.57
10,282.00	75.97	92.68	10,023.55	72.35	546.78	547.32	9.38
10,298.00	76.98	93.11	10,027.29	71.57	562.32	562.85	6.83
10,314.00	78.62	93.47	10,030.67	70.67	577.93	578.46	10.48
10,330.00	80.82	93.58	10,033.53	69.70	593.64	594.16	13.77
10,362.00	84.87	93.83	10,037.51	67.65	625.32	625.82	12.68
10,405.00	87.04	93.65	10,040.55	64.85	668.12	668.60	5.06
10,437.00	88.15	93.42	10,041.89	62.88	700.03	700.49	3.54
10,469.00	88.64	93.39	10,042.79	60.98	731.96	732.41	1.53
10,501.00	89.07	93.00	10,043.43	59.20	763.91	764.34	1.81
10,533.00	90.12	92.88	10,043.65	57.56	795.86	796.28	3.30
10,546.00	90.99	92.86	10,043.53	56.91	808.85	809.26	6.69
10,565.00	91.79	92.95	10,043.07	55.94	827.82	828.22	4.24
10,597.00	92.53	92.78	10,041.86	54.34	859.75	860.14	2.37
10,629.00	93.59	93.49	10,040.15	52.60	891.66	892.04	3.99
10,661.00	94.20	93.67	10,037.98	50.60	923.52	923.88	1.99
10,677.00	94.01	93.34	10,036.83	49.63	939.45	939.80	2.38
10,693.00	93.58	93.41	10,035.77	48.69	955.39	955.73	2.72
10,709.00	93.21	93.16	10,034.83	47.77	971.33	971.67	2.79
10,725.00	92.84	93.14	10,033.98	46.90	987.29	987.62	2.32

Survey Report for Magpie State #1 - Sperry MWD Survey #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
10,741.00	91.85	92.54	10,033.33	46.10	1,003.25	1,003.58	7.23
10,757.00	91.11	92.25	10,032.91	45.43	1,019.23	1,019.55	4.97
10,773.00	90.80	91.89	10,032.65	44.86	1,035.22	1,035.54	2.97
10,789.00	90.74	91.85	10,032.43	44.33	1,051.21	1,051.52	0.45
10,801.00	90.68	91.66	10,032.28	43.97	1,063.21	1,063.51	1.66
10,821.00	91.54	91.93	10,031.90	43.34	1,083.19	1,083.49	4.51
10,837.00	90.99	91.71	10,031.54	42.83	1,099.18	1,099.48	3.70
10,853.00	90.86	91.78	10,031.28	42.35	1,115.17	1,115.46	0.92
10,869.00	91.48	92.28	10,030.96	41.78	1,131.16	1,131.44	4.98
10,885.00	90.62	92.60	10,030.66	41.10	1,147.14	1,147.42	5.73
10,917.00	89.88	92.79	10,030.52	39.59	1,179.10	1,179.37	2.39
10,949.00	88.27	93.36	10,031.04	37.88	1,211.05	1,211.31	5.34
10,981.00	89.07	93.99	10,031.78	35.83	1,242.98	1,243.22	3.18
11,013.00	88.89	93.87	10,032.35	33.63	1,274.90	1,275.12	0.68
11,045.00	89.38	93.67	10,032.84	31.53	1,306.82	1,307.03	1.65
11,077.00	88.27	92.75	10,033.49	29.74	1,338.77	1,338.96	4.50
11,093.00	88.58	92.36	10,033.93	29.03	1,354.74	1,354.93	3.11
11,108.00	88.95	92.31	10,034.26	28.41	1,369.73	1,369.91	2.49
11,140.00	89.44	92.56	10,034.71	27.06	1,401.70	1,401.86	1.72
11,172.00	90.19	92.23	10,034.81	25.72	1,433.67	1,433.82	2.56
11,188.00	90.43	92.33	10,034.72	25.08	1,449.65	1,449.80	1.62
11,204.00	91.05	92.22	10,034.52	24.45	1,465.64	1,465.79	3.94
11,236.00	91.73	92.23	10,033.74	23.20	1,497.61	1,497.74	2.13
11,268.00	91.24	92.49	10,032.91	21.89	1,529.57	1,529.69	1.73
11,284.00	91.11	92.03	10,032.58	21.26	1,545.55	1,545.67	2.99
11,300.00	90.56	92.40	10,032.35	20.64	1,561.54	1,561.65	4.14
11,331.00	89.81	91.97	10,032.25	19.46	1,592.52	1,592.62	2.79
11,363.00	89.20	89.95	10,032.53	18.92	1,624.51	1,624.61	6.59
11,395.00	89.44	90.34	10,032.91	18.84	1,656.51	1,656.60	1.43
11,427.00	89.94	89.92	10,033.08	18.77	1,688.51	1,688.60	2.04
11,459.00	89.69	89.31	10,033.18	18.98	1,720.50	1,720.60	2.06
11,491.00	88.40	89.28	10,033.71	19.38	1,752.50	1,752.59	4.03
11,523.00	87.71	88.74	10,034.80	19.93	1,784.47	1,784.57	2.74
11,555.00	88.02	88.35	10,035.99	20.74	1,816.44	1,816.55	1.56
11,587.00	88.52	88.83	10,036.96	21.53	1,848.42	1,848.53	2.17
11,619.00	88.76	88.72	10,037.72	22.21	1,880.40	1,880.52	0.82
11,651.00	89.88	89.26	10,038.10	22.77	1,912.39	1,912.51	3.89
11,683.00	90.43	89.11	10,038.01	23.23	1,944.39	1,944.51	1.78
11,715.00	90.06	88.67	10,037.88	23.85	1,976.38	1,976.51	1.80
11,747.00	89.75	88.87	10,037.93	24.54	2,008.37	2,008.50	1.15
11,779.00	87.96	88.00	10,038.57	25.41	2,040.36	2,040.49	6.22
11,811.00	88.02	88.09	10,039.69	26.50	2,072.32	2,072.46	0.34
11,842.00	87.96	88.18	10,040.78	27.51	2,103.28	2,103.43	0.35
11,874.00	87.71	88.28	10,041.99	28.50	2,135.24	2,135.40	0.84
11,906.00	88.27	88.66	10,043.11	29.35	2,167.21	2,167.37	2.11
11,938.00	88.64	88.81	10,043.97	30.06	2,199.19	2,199.36	1.25
11,970.00	88.52	88.90	10,044.76	30.70	2,231.18	2,231.35	0.47
12,002.00	88.89	88.87	10,045.49	31.32	2,263.16	2,263.34	1.16
12,034.00	89.88	89.23	10,045.83	31.85	2,295.16	2,295.33	3.29
12,066.00	90.37	89.25	10,045.76	32.27	2,327.15	2,327.33	1.53

Survey Report for Magpie State #1 - Sperry MWD Survey #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
12,098.00	90.49	89.34	10,045.52	32.67	2,359.15	2,359.33	0.47
12,130.00	90.62	89.36	10,045.21	33.03	2,391.15	2,391.33	0.41
12,162.00	90.37	89.18	10,044.93	33.44	2,423.14	2,423.33	0.96
12,194.00	90.19	89.07	10,044.78	33.93	2,455.14	2,455.33	0.66
12,226.00	90.25	89.25	10,044.66	34.40	2,487.13	2,487.32	0.59
12,258.00	90.12	89.25	10,044.55	34.82	2,519.13	2,519.32	0.41
12,290.00	90.25	89.11	10,044.45	35.27	2,551.13	2,551.32	0.60
12,322.00	89.69	89.57	10,044.47	35.64	2,583.12	2,583.32	2.26
12,354.00	89.14	89.86	10,044.79	35.80	2,615.12	2,615.32	1.94
12,386.00	89.32	89.82	10,045.22	35.89	2,647.12	2,647.32	0.58
12,418.00	90.31	90.32	10,045.33	35.85	2,679.12	2,679.32	3.47
12,450.00	90.68	90.64	10,045.05	35.58	2,711.12	2,711.31	1.53
12,482.00	89.44	90.76	10,045.02	35.19	2,743.11	2,743.30	3.89
12,514.00	90.37	90.58	10,045.07	34.82	2,775.11	2,775.30	2.96
12,546.00	91.48	90.73	10,044.55	34.45	2,807.10	2,807.29	3.50
12,578.00	92.04	90.58	10,043.57	34.09	2,839.09	2,839.26	1.81
12,609.00	92.28	90.66	10,042.40	33.75	2,870.06	2,870.24	0.82
12,641.00	92.53	90.45	10,041.06	33.44	2,902.03	2,902.20	1.02
12,674.00	92.10	90.27	10,039.73	33.23	2,935.01	2,935.17	1.41
12,705.00	90.31	89.99	10,039.07	33.16	2,966.00	2,966.16	5.84
12,737.00	89.51	89.73	10,039.12	33.24	2,998.00	2,998.16	2.63
12,769.00	89.51	89.59	10,039.40	33.43	3,030.00	3,030.16	0.44
12,801.00	89.44	89.54	10,039.69	33.68	3,061.99	3,062.16	0.27
12,833.00	89.57	89.38	10,039.97	33.98	3,093.99	3,094.16	0.64
12,865.00	89.69	89.48	10,040.17	34.30	3,125.99	3,126.16	0.49
12,897.00	89.69	89.34	10,040.35	34.62	3,157.99	3,158.16	0.44
12,913.00	89.88	89.22	10,040.41	34.83	3,173.98	3,174.16	1.40
12,929.00	90.25	89.33	10,040.39	35.03	3,189.98	3,190.16	2.41
12,961.00	90.00	89.28	10,040.32	35.42	3,221.98	3,222.16	0.80
12,993.00	90.12	89.25	10,040.29	35.83	3,253.98	3,254.16	0.39
13,025.00	90.49	89.37	10,040.11	36.21	3,285.98	3,286.16	1.22
13,057.00	91.23	89.94	10,039.63	36.40	3,317.97	3,318.15	2.92
13,089.00	91.30	89.89	10,038.93	36.45	3,349.96	3,350.14	0.27
13,105.00	90.99	89.53	10,038.61	36.53	3,365.96	3,366.14	2.97
13,121.00	91.11	89.52	10,038.32	36.67	3,381.96	3,382.14	0.75
13,137.00	91.11	89.61	10,038.01	36.79	3,397.95	3,398.13	0.56
13,153.00	91.30	89.67	10,037.67	36.89	3,413.95	3,414.13	1.25
13,185.00	90.49	90.06	10,037.17	36.96	3,445.94	3,446.13	2.81
13,217.00	88.95	90.05	10,037.33	36.93	3,477.94	3,478.12	4.81
13,248.00	89.01	90.55	10,037.88	36.77	3,508.94	3,509.12	1.62
13,280.00	88.83	90.64	10,038.48	36.44	3,540.93	3,541.11	0.63
13,311.00	88.83	91.05	10,039.11	35.98	3,571.92	3,572.09	1.32
13,343.00	89.38	90.89	10,039.61	35.44	3,603.91	3,604.08	1.79
13,375.00	89.20	91.75	10,040.01	34.70	3,635.90	3,636.06	2.75
13,407.00	89.88	91.46	10,040.27	33.81	3,667.89	3,668.04	2.31
13,439.00	89.51	91.73	10,040.44	32.92	3,699.87	3,700.02	1.43
13,470.00	90.19	91.36	10,040.52	32.08	3,730.86	3,731.00	2.50
13,502.00	90.31	91.92	10,040.38	31.16	3,762.85	3,762.98	1.79
13,534.00	90.00	91.78	10,040.29	30.13	3,794.83	3,794.95	1.06
13,566.00	91.05	91.74	10,040.00	29.15	3,826.81	3,826.93	3.28
13,598.00	91.05	91.88	10,039.41	28.14	3,858.79	3,858.90	0.44

Survey Report for Magpie State #1 - Sperry MWD Survey #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
13,630.00	91.48	92.03	10,038.71	27.05	3,890.77	3,890.86	1.42
13,648.00	92.22	92.02	10,038.12	26.41	3,908.75	3,908.83	4.11
13,713.00	92.22	92.02	10,035.61	24.12	3,973.66	3,973.73	0.00

Vertical Section Information

	Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User		No Target (Freehand)	89.56	Slot	0.00	0.00	0.00
9,060.00	10,620.00	Teledrift MWD Surveys #2				MWD	
9,410.00	13,713.00	Sperry MWD Survey #1				MWD	

Survey Report for Magpie State #1 - Sperry MWD Survey #1

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Drilling Target 6-10-1 - survey misses target center by 10.26ft at 11999.91ft MD (10045.45 TVD, 31.28 N, 2261.07 E) - Point	0.00	0.00	10,036.00	27.28	2,261.36	626,751.60	746,857.61	32° 43' 13.682 N	103° 31' 50.435 W
Magpie State #1 PBI - survey misses target center by 14.97ft at 12738.76ft MD (10039.14 TVD, 33.25 N, 2999.76 E) - Point	0.00	0.00	10,028.00	23.25	2,999.91	626,747.57	747,596.14	32° 43' 13.586 N	103° 31' 41.791 W
Magpie State #1 PBI - survey misses target center by 8.60ft at 10737.70ft MD (10033.44 TVD, 46.25 N, 999.96 E) - Point	0.00	0.00	10,042.00	47.02	1,000.35	626,771.34	745,596.62	32° 43' 13.971 N	103° 32' 5.192 W
Drilling Target 6-13-1 - survey misses target center by 5.13ft at 13300.06ft MD (10038.89 TVD, 36.17 N, 3560.99 E) - Point	0.00	0.00	10,043.00	39.24	3,560.95	626,763.56	748,157.17	32° 43' 13.702 N	103° 31' 35.223 W
Drilling Target 6-7-1 - survey misses target center by 13.70ft at 11100.14ft MD (10034.10 TVD, 28.73 N, 1361.88 E) - Point	0.00	0.00	10,032.00	15.20	1,361.37	626,739.52	745,957.64	32° 43' 13.629 N	103° 32' 0.969 W
Magpie State #1 PBI - survey misses target center by 16.32ft at 10339.31ft MD (10034.92 TVD, 69.12 N, 602.83 E) - Point	0.00	0.00	10,048.00	59.63	600.57	626,783.95	745,196.85	32° 43' 14.126 N	103° 32' 9.870 W
Magpie State #1 PB - survey misses target center by 10.11ft at 13713.00ft MD (10035.61 TVD, 24.12 N, 3973.66 E) - Point	0.00	0.00	10,028.00	30.78	3,973.79	626,755.10	748,570.00	32° 43' 13.588 N	103° 31' 30.392 W
Magpie State #1 Se - survey misses target center by 9363.71ft at 9366.00ft MD (9363.26 TVD, 77.03 N, 50.16 E) - Polygon	0.00	0.00	0.00	0.00	0.00	626,724.32	744,596.30	32° 43' 13.580 N	103° 32' 16.904 W
Drilling Target 6-8-1 - survey misses target center by 4.60ft at 11499.83ft MD (10033.98 TVD, 19.50 N, 1761.33 E) - Point	0.00	0.00	10,030.00	17.19	1,761.50	626,741.51	746,357.76	32° 43' 13.619 N	103° 31' 56.286 W
Magpie State #1 PBI - survey misses target center by 10.65ft at 11738.36ft MD (10037.90 TVD, 24.36 N, 1999.74 E) - Point	0.00	0.00	10,032.00	15.50	1,999.94	626,739.82	746,596.19	32° 43' 13.585 N	103° 31' 53.495 W
Drilling Target 6-7-0 - survey misses target center by 3.77ft at 10717.00ft MD (10034.39 TVD, 47.33 N, 979.31 E) - Circle (radius 0.00)	0.00	0.00	10,038.00	48.38	979.56	626,772.70	745,575.83	32° 43' 13.986 N	103° 32' 5.435 W
Drilling Target 6-11-1 - survey misses target center by 7.91ft at 12999.93ft MD (10040.27 TVD, 35.92 N, 3260.90 E) - Point	0.00	0.00	10,036.00	29.25	3,260.96	626,753.57	747,857.18	32° 43' 13.626 N	103° 31' 38.735 W
Magpie State #1 Se - survey misses target center by 9363.71ft at 9366.00ft MD (9363.26 TVD, 77.03 N, 50.16 E) - Polygon	0.00	0.00	0.00	0.00	0.00	626,724.32	744,596.30	32° 43' 13.580 N	103° 32' 16.904 W
Magpie State #1 Se - survey misses target center by 9363.71ft at 9366.00ft MD (9363.26 TVD, 77.03 N, 50.16 E) - Polygon	0.00	0.00	0.00	0.00	0.00	626,724.32	744,596.30	32° 43' 13.580 N	103° 32' 16.904 W
Drilling Target 6-7-1 - survey misses target center by 281.70ft at 9878.00ft MD (9839.37 TVD, 70.64 N, 193.03 E) - Point	0.00	0.00	10,032.00	0.00	0.00	626,724.32	744,596.30	32° 43' 13.580 N	103° 32' 16.904 W
Drilling Target 6-7-9 - survey misses target center by 4.09ft at 11100.16ft MD (10034.10 TVD, 28.73 N, 1361.89 E) - Point	0.00	0.00	10,038.00	29.96	1,361.86	626,754.28	745,958.13	32° 43' 13.775 N	103° 32' 0.962 W

North Reference Sheet for Sec. 26-T18S-R34E - Magpie State #1 - Plan B Rev 0

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB 19.00 ft. @ 4016.00ft (Silver Oak Rig 11) Northing and Easting are relative to Magpie State #1

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 3001 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is 104° 20' 0.000 W°, Longitude Origin: 0° 0' 0.000 E°, Latitude Origin: 0° 0' 0.000 N°

False Easting: 500,000.00ft, False Northing: 0.00ft, Scale Reduction 0.99997760

Grid Coordinates of Well 626,724 32 ft N, 744,596 30 ft E

Geographical Coordinates of Well 32° 43' 13.58" N, 103° 32' 16.90" W

Grid Convergence at Surface is 0.43°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,713.00ft
the Bottom Hole Displacement is 3,973.73ft in the Direction of 89.65° (Grid).

Magnetic Convergence at surface is -7.15° (14 May 2012, BGGM2011)

