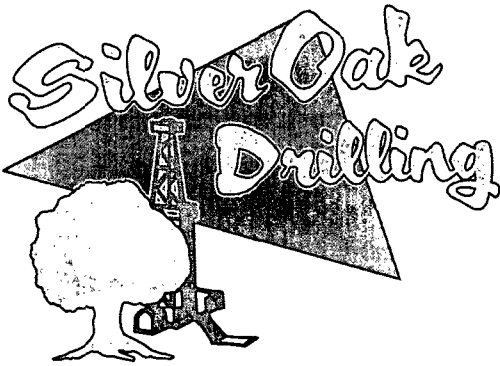




PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

30 015 42136

August 8, 2014

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

RE: Lava Fee #1
990' FSL & 990' FEL
Sec. 3, T23S, R27E
Eddy County, New Mexico

Dear Sir,

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

Very truly yours,

A handwritten signature in cursive script, appearing to read "Chris Graham".

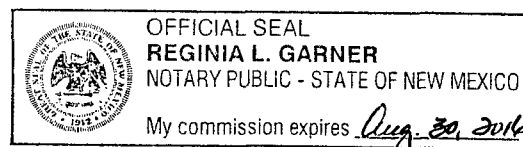
Chris Graham
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 8th day of August, 2014.

A handwritten signature in cursive script, appearing to read "Regina L. Garner".

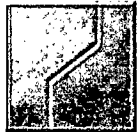
Notary Public



LAVA FEE #1

Date	Depth	Deviation	Direction
7/26/2014	250	0.10	0.00
7/27/2014	387	1.20	0.00
7/28/2014	558	1.00	209.80
7/28/2014	734	0.90	201.30
7/28/2014	921	1.20	198.00
7/29/2014	1110	0.60	222.50
7/29/2014	1299	1.10	131.50
7/29/2014	1487	1.90	112.80
7/29/2014	1673	3.20	0.00
7/29/2014	1861	3.60	102.10
7/29/2014	1973	1.70	104.10
7/30/2014	2101	2.80	129.10
7/30/2014	2227	6.20	139.30
7/30/2014	2320	6.20	138.10
7/31/2014	2445	6.40	139.40
7/31/2014	2538	6.40	138.40
7/31/2014	2632	6.30	139.70
7/31/2014	2756	5.90	138.70
7/31/2014	2856	6.40	138.30
7/31/2014	3043	4.90	136.90
8/1/2014	3231	6.40	134.10
8/1/2014	3419	6.40	131.20
8/1/2014	3608	5.60	129.80
8/1/2014	3747	6.40	135.50
8/1/2014	3985	5.60	136.90
8/1/2014	4173	4.20	141.70
8/1/2014	4362	4.20	132.70
8/1/2014	4550	1.40	166.40
8/1/2014	4739	0.70	188.90
8/1/2014	4927	0.70	214.20
8/1/2014	5116	0.70	186.10
8/1/2014	5305	0.70	194.50
8/2/2014	5493	0.70	179.10
8/2/2014	5682	0.70	267.70
8/2/2014	5870	1.40	263.40
8/2/2014	6060	2.10	203.00
8/2/2014	6247	0.70	166.40
8/2/2014	6435	1.40	173.40
8/2/2014	6623	1.40	167.80
8/3/2014	6812	0.70	233.90
8/3/2014	6999	0.70	219.80
8/3/2014	7188	0.70	240.90
8/3/2014	7376	1.40	132.70

Date	Depth	Deviation	Direction
8/3/2014	7564	0.70	65.20
8/3/2014	7752	0.00	186.10
8/4/2014	7940	3.50	159.40
8/4/2014	8130	3.50	180.50
8/4/2014	8318	0.70	186.10
8/4/2014	8504	1.40	218.40
8/5/2014	8693	1.40	84.80
8/5/2014	8882	0.70	80.60
8/5/2014	9069	1.00	91.90
8/5/2014	9245	2.10	218.40



Job Number: 14-0071
Company: Mack Energy
Lease/Well: Lava Fee # 1
Location: Carlsbad
Rig Name: Silver Oak 6
State/County: New Mexico/ Eddy
Country: USA
API Number: 30-015-42136

Elevation GL: 3093.11 ft **RKB:** 17.00 ft
Projection System: US State Plane 1983
Projection Group: New Mexico Eastern Zone
Projection Datum: GRS80
Mag. Declination: 7.49° (C:\HawkEye\IGRF2005.MIF)
Grid Convergence: 0.08559 E
Date: Tuesday, August 05, 2014

Calculated by HawkEye Software
Minimum Curvature Method
Vertical Section Plane 135.47°

Northing (US ft): 483893.09 Easting (US ft): 590767.92
Latitude: 32°19'48.6932" N Longitude: -104°10'23.8733" W

Well Location: 1220.53 FSL, 1210.68 FEL, Section 3, T23S, R27E, New Mexico Principal Meridian, Eddy County, NM
Direction Reference: Grid North

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS %/100 Ft	LR/EW From-Plan (Ft)	UD/NS From-Plan (Ft)	Comment	CL (Ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 (W)	0.00 (S)		0.00
387.00	1.50	0.00	386.96	5.07	0.00	-3.61	0.39	0.00 (W)	0.00 (N)		387.00
558.00	1.00	209.80	557.94	6.01	-0.74	-4.80	1.41	0.00 (W)	0.00 (S)		171.00
734.00	0.90	201.30	733.92	3.39	-2.01	-3.82	0.10	0.00 (W)	0.00 (S)		176.00
921.00	1.20	198.00	920.88	0.16	-3.15	-2.32	0.16	0.00 (W)	0.00 (S)		187.00
1110.00	0.60	222.50	1109.86	-2.45	-4.43	-1.35	0.37	0.00 (E)	0.00 (S)		189.00
1299.00	0.90	200.00	1298.85	-4.58	-5.60	-0.66	0.22	0.00 (E)	0.00 (S)		189.00
1487.00	1.90	112.80	1486.80	-7.17	-3.23	2.85	1.10	0.00 (E)	0.00 (S)		188.00
1673.00	3.20	107.90	1672.62	-9.96	4.55	10.29	0.71	0.00 (E)	0.00 (N)		186.00
1861.00	3.60	102.10	1860.29	-12.81	15.31	19.87	0.28	0.00 (E)	0.01 (N)		188.00
1973.00	1.70	104.10	1972.16	-13.96	20.36	24.23	1.70	0.01 (E)	0.01 (N)		112.00
2039.00	1.40	110.70	2038.14	-14.48	22.07	25.80	0.53	0.45 (E)	-0.16 (S)		66.00
2070.00	1.50	112.40	2069.13	-14.77	22.80	26.52	0.35	0.77 (E)	-0.33 (S)	Tie In From Childress	31.00
2108.00	2.80	129.80	2107.10	-15.55	23.97	27.90	3.79	1.75 (E)	-0.99 (S)	Nexus Surveys	38.00
2295.00	6.40	136.90	2293.46	-26.09	34.60	42.87	1.95	7.90 (E)	-6.74 (S)		187.00
2482.00	6.40	138.30	2479.30	-41.48	48.66	63.69	0.08	9.63 (E)	-8.97 (S)		187.00
2669.00	6.40	138.30	2665.13	-57.04	62.52	84.51	0.00	9.28 (E)	-9.36 (S)		187.00
2856.00	6.40	138.30	2850.97	-72.61	76.39	105.33	0.00	8.93 (E)	-9.74 (S)		187.00
3043.00	4.90	136.90	3037.05	-86.22	88.78	123.73	0.81	7.14 (E)	-8.21 (S)		187.00
3231.00	6.40	134.10	3224.14	-99.38	101.79	142.23	0.81	5.84 (E)	-6.08 (S)		188.00
3419.00	6.40	131.20	3410.96	-113.57	117.20	163.15	0.17	6.96 (E)	-5.02 (S)		188.00
3608.00	5.60	129.80	3598.93	-126.41	132.21	182.84	0.43	7.61 (E)	-2.53 (S)		189.00
3797.00	6.40	135.50	3786.89	-139.83	146.68	202.55	0.53	7.71 (E)	-0.60 (S)		189.00
3985.00	5.60	136.90	3973.86	-154.00	160.29	222.19	0.43	7.04 (E)	0.47 (N)		188.00
4173.00	4.20	141.10	4161.17	-166.06	170.88	238.22	0.77	3.34 (E)	3.67 (N)		188.00
4362.00	4.20	132.70	4349.66	-176.14	180.32	252.02	0.33	2.06 (E)	5.04 (N)		189.00
4550.00	1.40	166.40	4537.43	-183.04	185.92	260.87	1.67	4.68 (E)	1.32 (N)		188.00
4739.00	0.70	188.90	4726.40	-186.42	186.28	263.53	0.42	5.04 (E)	-2.06 (S)		189.00
4927.00	0.70	214.20	4914.39	-188.51	185.46	264.44	0.16	4.22 (E)	-4.15 (S)		188.00
5116.00	0.70	186.10	5103.37	-190.61	184.69	265.40	0.18	3.45 (E)	-6.25 (S)		189.00
5305.00	0.70	194.50	5292.36	-192.88	184.28	266.73	0.05	3.03 (E)	-8.52 (S)		189.00
5493.00	0.70	179.10	5480.34	-195.14	184.01	268.15	0.10	2.77 (E)	-10.78 (S)		188.00
5682.00	0.70	267.70	5669.33	-196.34	182.87	268.21	0.52	1.63 (E)	-11.98 (S)		189.00
5870.00	1.40	263.40	5857.30	-196.65	179.44	266.03	0.37	-1.80 (W)	-12.29 (S)		188.00
6060.00	2.10	203.00	6047.23	-200.12	175.78	265.93	0.98	-5.47 (W)	-15.76 (S)		190.00
6247.00	0.70	166.40	6234.17	-204.38	174.71	268.22	0.85	-6.54 (W)	-20.02 (S)		187.00
6435.00	1.40	173.40	6422.14	-207.78	175.24	271.02	0.38	-6.00 (W)	-23.42 (S)		188.00
6623.00	1.40	168.80	6610.08	-212.31	175.95	274.75	0.06	-5.29 (W)	-27.96 (S)		188.00
6812.00	0.70	233.90	6799.05	-215.26	175.47	276.51	0.67	-5.78 (W)	-30.90 (S)		189.00
6999.00	0.70	219.80	6986.04	-216.81	173.81	276.45	0.09	-7.43 (W)	-32.45 (S)		187.00
7188.00	0.70	240.90	7175.02	-218.26	172.06	276.26	0.14	-9.18 (W)	-33.90 (S)		189.00
7376.00	1.40	132.70	7363.00	-220.38	172.75	278.25	0.93	-8.49 (W)	-36.02 (S)		188.00
7564.00	0.70	65.20	7550.98	-221.45	175.48	280.93	0.69	-5.76 (W)	-37.09 (S)		188.00

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	NS (Ft)	EW (Ft)	VS (Ft)	DLS °/100 Ft	LR/EW From-Plan (Ft)	UD/NS From-Plan (Ft)	Comment	CL (Ft)
7752.00	0.00	186.10	7738.97	-220.97	176.52	281.32	0.37	-4.72 (W)	-36.61 (S)		188.00
7940.00	3.50	159.40	7926.86	-226.34	178.54	286.56	1.86	-2.70 (W)	-41.98 (S)		188.00
8130.00	3.50	180.50	8116.51	-237.57	180.53	295.96	0.67	-0.71 (W)	-53.21 (S)		190.00
8318.00	0.70	186.10	8304.36	-244.45	180.36	300.75	1.49	-0.88 (W)	-60.09 (S)		188.00
8504.00	1.40	218.40	8490.33	-247.36	178.83	301.75	0.48	-2.41 (W)	-63.00 (S)		186.00
8693.00	1.40	84.80	8679.31	-248.96	179.69	303.50	1.36	-1.55 (W)	-64.61 (S)		189.00
8882.00	0.70	80.60	8868.28	-248.57	183.13	305.62	0.37	1.89 (E)	-64.21 (S)		189.00
9069.00	0.00	91.90	9055.27	-248.38	184.26	306.28	0.37	3.02 (E)	-64.02 (S)		187.00
9245.00	2.10	218.40	9231.23	-250.91	182.26	306.68	1.19	1.02 (E)	-66.55 (S)		176.00
9296.00	2.10	218.40	9282.20	-252.37	181.10	306.91	0.00	-0.15 (W)	-68.01 (S)	SLPTB	51.00