

Results of Directional Survey

DD

API number:	30-025-40338		
OGRID:		Operator:	MACK ENERGY CORP
		Property:	BROOK FEDERAL # 3

surface	ULSTR:	A	30	T	17S	R	32E
				785	FNL	10	FEL

BH Loc	ULSTR:	A	30	T	17S	R	32E
10242	MD	10206.9	TVD	983	FNL	363	FEL

Top Perf/OH	ULSTR:	A	30	T	17S	R	32E
9501	MD	9466.1	TVD	969	FNL	372	FEL

Bot Perf/OH	ULSTR:	A	30	T	17S	R	32E
9542	MD	9507.1	TVD	970	FNL	372	FEL

	MD	N/S	E/W	VD
	9350	-180.05	-361.33	9315.17
TOP PERFS/OH	9501	-183.58	-361.58	9466.12
	9541	-184.52	-361.64	9506.11
	9541	-184.52	-361.64	9506.11
BOT PERFS/OH	9542	-184.54	-361.64	9507.11
	9732	-188.90	-360.81	9697.06

NEXT TO LAST	10192	-196.58	-354.29	10156.94
LAST READING	10242	-197.55	-352.93	10206.91
TD	10242	-197.55	-352.93	10206.91

Surface Location	785	FN	10	FE
Projected BHL	983	FN	363	FE
Location of				
Top Perfs/OH	969	FN	372	FE
Bottom Perfs/OH	970	FN	372	FE

SUMMARY of Subsurface Locations

Surface Location	A-30-17S-32E	785	FN	10	FE	Vert. Depth
Top Perfs/OH	A-30-17S-32E	969	FN	372	FE	9466.12
Bottom Perfs/OH	A-30-17S-32E	970	FN	372	FE	9507.11
Projected TD	A-30-17S-32E	983	FN	363	FE	10206.91

MAR 25 2013

HOBBS OCD

MAR 18 2013

RECEIVED

Archer

Archer Directional Drilling Services.
911 Regional Park Drive
Houston, Texas 77060
Tel: 281-934-9600
Fax: 281-951-2101

Mack Energy Corporation
PO Box 960
Artesia, New Mexico 88211-0960

RECEIVED

JAN 22 2013

MAILROOM

January 15, 2013

Re: Brook Federal #3
Field: Maljamar
Rig: Silver Oak 2
Lea County, New Mexico
API # 30-025-40338

Enclosed please find the original of the surveys performed on the referenced well by Archer Directional Drilling Services. Other information required by your office is as follows:

<u>Name & Title Of Surveyor</u>	<u>Wellhole Number</u>	<u>Survey Depths</u>	<u>Dates Performed</u>	<u>Type Survey</u>
Jared Jackson Field Engineer	Original Hole	212-10242	11/27/12-12/13/12	MWD

If additional information is required, please contact the undersigned at the letterhead address and phone number.



Amador Baggerly
MWD Coordinator

SUR: A-30-17s-32e, 785/N & 10/E
BHL: A-30-17s-32e, 983/N & 363/E
API # 30-025-40338



Archer Directional Drilling Services.
911 Regional Park Drive
Houston, Texas 77060
Tel: 281-934-9600
Fax: 281-951-2101

MWD Survey Certification

State of New Mexico
County of Lea

I, Amador Baggerly, certify that; I am employed by Archer Directional Drilling Services; that I did on the day(s) of 11/27/12 through 12/13/12, conduct or supervise the taking of MWD survey from a depth of 212 feet to a depth of 10242 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Archer Directional Drilling Services; that I am authorized and qualified to make this report; that these surveys were conducted at the request of Mack Energy Corporation for the Brook Federal #3 (API # 30-025-40338) Well located 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 Archer Directional Drilling Services.

A handwritten signature in black ink, appearing to read "Amador Baggerly", written over a horizontal line.

Amador Baggerly
MWD Coordinator



Company: Mack Energy Corporation

Job Number: 03989-433-21

Calculation Method

Minimum Curvature

Well: Brook Federal #3

Mag Decl.: 7.27

Proposed Azimuth

242.9

Location: Lea County, New Mexico

Dir Driller: Steve Gray

Depth Reference

KBG

Rig: Silver Oak 2

MWD Eng:

Jared Jackson

Tie Into: Assumed Vertical

Job Date: 11/27/12 - 12/13/12

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth			
Tie In	0.00	0	0	0	0	0	0.00	0	0.00	0			
1	212	0.1	17.0	212	212.00	-0.13	0.18 N	0.05 E	0.19	17.00	0.05	0.05	8.02
2	449	0.3	330.0	237	449.00	-0.24	0.91 N	0.20 W	0.93	347.89	0.10	0.08	132.07
3	650	0.4	281.0	201	649.99	0.34	1.50 N	1.15 W	1.89	322.61	0.15	0.05	-24.38
4	809	0.4	289.5	159	808.99	1.15	1.79 N	2.22 W	2.85	308.98	0.04	0.00	5.35
5	967	0.4	295.2	158	966.99	1.87	2.21 N	3.23 W	3.92	304.36	0.03	0.00	3.61
6	1158	0.5	343.1	191	1157.98	2.13	3.29 N	4.08 W	5.24	308.91	0.20	0.05	25.08
7	1348	0.7	9.9	190	1347.97	1.28	5.23 N	4.12 W	6.66	321.76	0.18	0.11	-175.37
8	1538	0.7	8.7	190	1537.96	-0.10	7.52 N	3.75 W	8.40	333.52	0.01	0.00	-0.63
9	1728	1.1	26.8	190	1727.93	-2.25	10.30 N	2.75 W	10.66	345.05	0.26	0.21	9.53
10	1918	1.3	47.2	190	1917.89	-5.80	13.39 N	0.34 W	13.39	358.52	0.25	0.11	10.74
11	2073	1.5	42.4	155	2072.85	-9.39	16.08 N	2.31 E	16.25	8.19	0.15	0.13	-3.10
12	2146	1.5	50.7	73	2145.82	-11.22	17.39 N	3.70 E	17.78	12.00	0.30	0.00	11.37
13	2209	1.3	50.6	63	2208.80	-12.73	18.37 N	4.89 E	19.01	14.90	0.32	-0.32	-0.16
14	2273	0.8	270.5	64	2272.80	-13.04	18.83 N	5.00 E	19.48	14.87	3.10	-0.78	343.59
15	2337	3.3	258.8	64	2336.75	-10.87	18.48 N	2.75 E	18.68	8.46	3.94	3.91	-18.28
16	2400	5.8	251.6	63	2399.55	-5.98	17.12 N	2.05 W	17.24	353.16	4.06	3.97	-11.43
17	2495	6.9	244.0	95	2493.97	4.47	13.10 N	11.74 W	17.59	318.15	1.45	1.16	-8.00
18	2591	7.8	244.3	96	2589.18	16.75	7.75 N	22.79 W	24.07	288.78	0.94	0.94	0.31
19	2686	8.9	240.5	95	2683.17	30.53	1.34 N	35.00 W	35.02	272.19	1.29	1.16	-4.00
20	2781	10.2	241.1	95	2776.85	46.28	6.35 S	48.76 W	49.17	262.58	1.37	1.37	0.63
21	2876	9.2	243.1	95	2870.49	62.29	13.85 S	62.89 W	64.40	257.58	1.11	-1.05	2.11
22	2971	9.8	239.4	95	2964.19	77.95	21.40 S	76.62 W	79.56	254.40	0.90	0.63	-3.89
23	3066	9.2	239.1	95	3057.89	93.60	29.42 S	90.10 W	94.78	251.92	0.63	-0.63	-0.32
24	3161	9.3	238.9	95	3151.65	108.83	37.28 S	103.19 W	109.72	250.14	0.11	0.11	-0.21
25	3256	11.2	238.9	95	3245.13	125.70	46.01 S	117.66 W	126.34	248.64	2.00	2.00	0.00
26	3352	11.2	237.4	96	3339.30	144.28	55.85 S	133.50 W	144.71	247.30	0.30	0.00	-1.56
27	3447	11.0	237.5	95	3432.52	162.49	65.69 S	148.92 W	162.76	246.20	0.21	-0.21	0.11
28	3542	10.7	237.8	95	3525.83	180.30	75.26 S	164.02 W	180.47	245.35	0.32	-0.32	0.32
29	3637	10.8	238.1	95	3619.16	197.95	84.66 S	179.04 W	198.05	244.69	0.12	0.11	0.32
30	3733	10.9	240.2	96	3713.44	215.98	93.93 S	194.56 W	216.04	244.23	0.42	0.10	2.19
31	3828	10.2	239.6	95	3806.84	233.35	102.65 S	209.61 W	233.39	243.91	0.75	-0.74	-0.63
32	3923	10.0	237.9	95	3900.36	249.97	111.29 S	223.85 W	249.99	243.57	0.38	-0.21	-1.79
33	4019	9.9	237.3	96	3994.92	266.49	120.18 S	237.85 W	266.49	243.19	0.15	-0.10	-0.62
34	4114	10.0	236.1	95	4088.49	282.80	129.19 S	251.57 W	282.80	242.82	0.24	0.11	-1.26
35	4209	9.2	241.3	95	4182.16	298.59	137.44 S	265.08 W	298.59	242.59	1.24	-0.84	5.47
36	4304	9.1	241.0	95	4275.95	313.69	144.73 S	278.31 W	313.69	242.53	0.12	-0.11	-0.32



Company: Mack Energy Corporation

Job Number: 03989-433-21

Calculation Method

Minimum Curvature

Well: Brook Federal #3

Mag Decl.: 7.27

Proposed Azimuth

242.9

Location: Lea County, New Mexico

Dir Driller: Steve Gray

Depth Reference

KBG

Rig: Silver Oak 2

MWD Eng:

Jared Jackson

Tie Into: Assumed Vertical

Job Date: 11/27/12 - 12/13/12

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth			
37	4399	8.9	240.7	95	4369.78	328.54	151.96 S	291.29 W	328.55	242.45	0.22	-0.21	-0.32
38	4495	8.7	241.2	96	4464.65	343.22	159.10 S	304.13 W	343.23	242.39	0.22	-0.21	0.52
39	4590	7.0	248.6	95	4558.76	356.16	164.67 S	315.82 W	356.17	242.46	2.08	-1.79	7.79
40	4685	7.1	249.7	95	4653.04	367.75	168.82 S	326.71 W	367.75	242.67	0.18	0.11	1.16
41	4781	5.7	245.0	96	4748.44	378.41	172.89 S	336.60 W	378.41	242.81	1.56	-1.46	-4.90
42	4876	4.2	240.6	95	4843.09	386.60	176.59 S	343.91 W	386.60	242.82	1.63	-1.58	-4.63
43	4971	3.2	237.4	95	4937.89	392.71	179.73 S	349.17 W	392.71	242.76	1.07	-1.05	-3.37
44	5066	1.7	241.8	95	5032.80	396.76	181.83 S	352.65 W	396.76	242.72	1.59	-1.58	4.63
45	5257	0.8	277.4	191	5223.75	400.69	182.99 S	356.47 W	400.69	242.83	0.60	-0.47	18.64
46	5447	0.9	284.1	190	5413.73	402.91	182.46 S	359.23 W	402.91	243.07	0.07	0.05	3.53
47	5644	1.1	278.1	197	5610.70	405.61	181.81 S	362.60 W	405.63	243.37	0.11	0.10	-3.05
48	5834	1.0	278.5	190	5800.67	408.45	181.31 S	366.05 W	408.49	243.65	0.05	-0.05	0.21
49	6025	1.0	305.6	191	5991.64	410.57	180.10 S	369.05 W	410.65	243.99	0.25	0.00	14.19
50	6214	1.0	6.2	189	6180.62	410.42	177.50 S	370.21 W	410.56	244.38	0.53	0.00	-158.41
51	6405	2.1	36.0	191	6371.55	406.38	173.01 S	367.98 W	406.62	244.82	0.70	0.58	15.60
52	6596	1.8	355.9	191	6562.45	402.08	167.18 S	366.13 W	402.50	245.46	0.72	-0.16	167.49
53	6786	3.0	288.3	190	6752.31	404.40	162.65 S	371.07 W	405.15	246.33	1.50	0.63	-35.58
54	6881	2.4	254.1	95	6847.21	408.10	162.41 S	375.34 W	408.97	246.60	1.78	-0.63	-36.00
55	6977	3.5	220.8	96	6943.09	412.79	165.18 S	379.19 W	413.60	246.46	2.07	1.15	-34.69
56	7040	4.1	204.9	63	7005.95	416.35	168.68 S	381.39 W	417.03	246.14	1.92	0.95	-25.24
57	7072	4.3	197.8	32	7037.86	418.10	170.86 S	382.24 W	418.69	245.92	1.74	0.63	-22.19
58	7135	3.2	190.4	63	7100.73	420.84	174.84 S	383.28 W	421.28	245.48	1.90	-1.75	-11.75
59	7199	2.3	145.8	64	7164.66	421.77	177.66 S	382.88 W	422.09	245.11	3.51	-1.41	-69.69
60	7262	1.8	107.1	63	7227.62	420.90	178.99 S	381.23 W	421.16	244.85	2.28	-0.79	-61.43
61	7453	2.0	81.7	191	7418.52	415.60	179.39 S	375.06 W	415.76	244.44	0.45	0.10	-13.30
62	7644	1.6	42.5	191	7609.43	409.94	176.95 S	369.96 W	410.10	244.44	0.66	-0.21	-20.52
63	7834	1.2	63.1	190	7799.38	405.47	174.09 S	366.40 W	405.65	244.59	0.34	-0.21	10.84
64	8025	1.0	68.0	191	7990.34	401.81	172.56 S	363.07 W	401.99	244.58	0.12	-0.10	2.57
65	8215	1.0	84.0	190	8180.31	398.61	171.77 S	359.88 W	398.77	244.49	0.15	0.00	8.42
66	8406	0.6	62.7	191	8371.29	396.06	171.13 S	357.33 W	396.20	244.41	0.26	-0.21	-11.15
67	8597	0.4	153.9	191	8562.29	395.07	171.27 S	356.15 W	395.19	244.32	0.38	-0.10	47.75
68	8787	0.2	229.0	190	8752.29	395.40	172.09 S	356.11 W	395.51	244.21	0.21	-0.11	39.53
69	8978	0.4	169.3	191	8943.28	395.91	172.96 S	356.24 W	396.01	244.10	0.18	0.10	-31.26
70	9160	1.7	226.2	182	9125.25	398.68	175.45 S	358.07 W	398.74	243.90	0.83	0.71	31.26
71	9256	1.9	220.4	96	9221.21	401.51	177.65 S	360.13 W	401.56	243.74	0.28	0.21	-6.04
72	9350	1.5	189.0	94	9315.17	403.68	180.05 S	361.33 W	403.71	243.51	1.06	-0.43	-33.40
73	9541	1.2	177.7	191	9506.11	405.99	184.52 S	361.64 W	406.00	242.97	0.21	-0.16	-5.92
74	9732	1.5	162.5	191	9697.06	407.25	188.90 S	360.81 W	407.27	242.37	0.24	0.16	-7.96

Archer

Company: Mack Energy Corporation

Job Number:

03989-433-21

Calculation Method

Minimum Curvature

Well: Brook Federal #3

Mag Decl.:

7.27

Proposed Azimuth

242.9

Location: Lea County, New Mexico

Dir Driller:

Steve Gray

Depth Reference

KBG

Rig: Silver Oak 2

MWD Eng:

Jared Jackson

Tie Into: Assumed Vertical

Job Date: 11/27/12 - 12/13/12

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth			
75	9922	1.5	147.4	190	9887.00	407.43	193.37 S	358.72 W	407.52	241.67	0.21	0.00	-7.95
76	10113	0.9	105.4	191	10077.96	406.09	195.87 S	355.93 W	406.27	241.18	0.54	-0.31	-21.99
77	10192	1.7	117.7	79	10156.94	404.96	196.58 S	354.29 W	405.18	240.98	1.07	1.01	15.57
Proj.	10242	2.0	125.5	50	10206.91	404.13	197.44 S	352.93 W	404.40	240.78	0.78	0.60	15.60



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

HOBBS OCD

MAR 18 2013

RECEIVED

December 18, 2012

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

RE: Brook Federal #3
990' FNL & 330' FEL
Sec. 30, T17S, R32E
Lea County, New Mexico

Dear Sir,

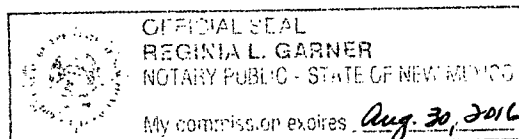
The attached is the Deviation Survey for the above captioned well.

Very truly yours,

Chris Graham
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 18th day of December, 2012.

Notary Public

Pason DataHub Deviation Survey

Well Dossier 1353938989 - Brook Fed #3

# Date	Depth	Deviation	Direction	TVD
11/26/2012	212	0.10	0.00	0.00
11/26/2012	449	0.30	0.00	0.00
11/26/2012	650	0.40	280.70	0.00
11/28/2012	809	0.40	289.50	0.00
11/28/2012	967	0.40	295.40	0.00
11/28/2012	1158	0.50	343.10	1157.98
11/28/2012	1348	0.70	9.90	1347.97
11/28/2012	1538	0.70	8.70	1537.96
11/29/2012	1728	1.10	26.80	1727.93
11/29/2012	1918	1.30	47.20	1917.89
11/29/2012	2073	1.50	42.40	2072.85
11/30/2012	2146	1.50	50.70	2145.82
12/1/2012	2273	0.80	270.50	2272.00
12/1/2012	2400	5.80	251.60	2399.00
12/1/2012	2495	6.90	244.00	2493.97
12/1/2012	2686	8.90	240.50	268.30
12/1/2012	2781	10.20	241.10	277.60
12/1/2012	2971	9.80	239.40	2964.00
12/1/2012	3066	9.20	239.10	3057.89
12/1/2012	3161	9.30	238.90	3151.65
12/1/2012	3256	11.20	238.90	3245.13
12/1/2012	3352	11.20	237.40	3339.30
12/1/2012	3447	11.00	237.50	3432.52
12/2/2012	3542	10.70	237.80	3525.00
12/2/2012	3637	10.80	238.10	3619.00
12/2/2012	3733	10.90	240.20	3713.00
12/2/2012	3923	10.00	237.90	3900.00
12/2/2012	4019	9.90	237.30	3994.00
12/2/2012	4209	9.20	241.30	4182.00
12/2/2012	4399	8.90	240.70	4369.78
12/2/2012	4495	8.70	241.20	4464.65
12/2/2012	4590	7.00	248.60	4558.76
12/2/2012	4781	5.70	245.00	4748.44
12/3/2012	4876	4.20	240.60	4843.09
12/3/2012	4971	3.20	237.40	4937.80
12/3/2012	5257	0.80	277.40	5223.00
12/4/2012	5644	1.10	278.10	5610.00
12/4/2012	5834	1.00	278.50	5800.00
12/4/2012	6025	1.00	305.60	5991.00
12/4/2012	6214	1.00	6.20	0.00
12/5/2012	6405	2.10	36.00	6371.55
12/5/2012	6596	1.80	355.90	6562.00

#	Date	Depth	Deviation	Direction	TVD
	12/5/2012	6786	3.00	288.30	6752.00
	12/5/2012	6881	2.40	254.10	6847.21
	12/5/2012	6977	3.50	220.80	6943.09
	12/5/2012	7040	4.10	204.90	7005.95
	12/6/2012	7135	3.20	190.40	7100.00
	12/6/2012	7199	2.30	145.80	7164.00
	12/6/2012	7262	1.80	107.10	7227.62
	12/6/2012	7453	2.00	81.70	7418.52
	12/7/2012	7644	1.60	42.50	7609.43
	12/7/2012	7834	1.20	63.10	7799.38
	12/7/2012	8025	1.00	68.00	7990.00
	12/7/2012	8215	1.00	84.00	8180.00
	12/8/2012	8406	0.60	62.70	8371.00
	12/8/2012	8597	0.40	153.90	8562.29
	12/9/2012	8787	0.20	229.00	8752.29
	12/9/2012	8978	0.40	169.30	8943.00
	12/10/2012	9160	1.70	226.20	9125.26
	12/10/2012	9256	1.90	220.40	9221.21
	12/11/2012	9350	1.50	189.00	9315.17
	12/11/2012	9541	1.20	177.70	9506.12
	12/12/2012	9732	1.50	162.50	9697.06
	12/13/2012	9922	1.50	147.40	9887.00
	12/13/2012	10113	0.90	105.40	10077.96
	12/13/2012	10192	1.70	117.70	10115.94

EOF