

Form 3160-4
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

OCD - ARIZONA

FORM APPROVED
OMB NO. 1004-0137
Expires: March 31, 2007

a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion: ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.,
Other _____

2. Name of Operator **COG Operating LLC**

3. Address **550 W. Texas, Suite 1300, Midland, TX 79701**

3a. Phone No. (include area code)
432-685-4340

4. Location of Well (Report location clearly and in accordance with Federal requirements)*

At surface **675' FSL & 1120' FEL, Unit P**

At top prod. interval reported below

At total depth **996' FSL & 970' FEL, Unit P**

14. Date Spudded
11/06/2006

15. Date T.D. Reached
11/24/2006

16. Date Completed **01/06/2007**
☐ D & A ☒ Ready to Prod.

17. Elevations (DF, RKB, RT, GL)*
3627' GL

18. Total Depth: MD **7120'**
TVD

19. Plug Back T.D.: MD **6840'**
TVD

20. Depth Bridge Plug Set: MD
TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)

CN / HNGS, Micro CFL / HNGS

22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit report)
Directional Survey? ☒ No ☐ Yes (Submit copy)

23. Casing and Liner Record (Report all strings set in well)

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
17-1/2	13-3/8	48		440		980 sx Cl C		Surface	
12-1/4	8-5/8	24		1201		700 sx Cl C		Surface	
7-7/8	5-1/2	17		7112		1970 sx Cl C		Surface	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2-7/8	6688'							

25. Producing Intervals

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) Yeso			5876' - 6019'	2 SPF	70	Open
B) Yeso			6120.5' - 6330'	2 SPF	54	Open
C) Yeso			6462.5' - 6656.5'	2 SPF	68	Open
D) Abo	6868' -	6955' and	7057' - 7086'	2 SPF	20 and 14	Plg CIBP @ 7010 & 6840

26. Perforation Record

27. Acid, Fracture, Treatment, Cement Squeeze, etc.

Depth Interval	Amount and Type of Material
5876' - 6019'	See Attachment
6120.5' - 6330'	See Attachment
6462.5' - 6656.5'	See Attachment
6868' - 7086'	See Attachment

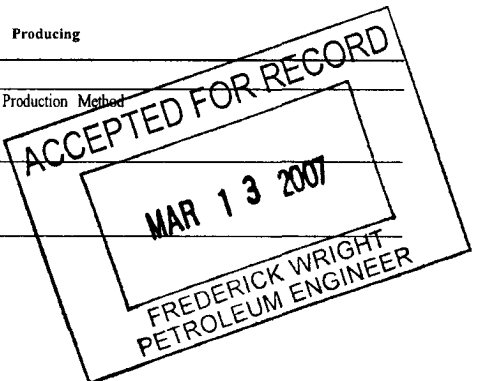
28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
01/12/2007	02/01/2007	24	→	39	182	150	38.2		Pumping
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	Producing
			→						

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	
			→						

*(See instructions and spaces for additional data on page 2)



28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production →	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate →	Oil BBL	Gas MCF	Water BBL	Gas/Oil Ratio	Well Status	

29. Disposition of Gas (Sold, used for fuel, vented, etc.)

SOLD

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas. Depth
Queen	2223				
Grayburg	2648				
San Andres	3000				
Glorieta	4474				
Yeso	4548				

32. Additional remarks (include plugging procedure):

33. Indicate which items have been attached by placing a check in the appropriate boxes:

- ☐ Electrical/Mechanical Logs (1 full set req'd.) ☐ Geologic Report ☐ DST Report ☐ Directional Survey
☐ Sundry Notice for plugging and cement verification ☐ Core Analysis ☒ Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print) Phyllis A. EdwardsTitle Regulatory Analyst

Signature

Date 02/20/2007

*Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

McINTYRE A EAST #19
API#: 30-015-34806
EDDY, NM

C-105 (#27) ADDITIONAL INFORMATION

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.	
DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
5876' - 6019'	Acidize w/ 2500 gals acid.
	Frac w/ 105,524 gals gel, 8327# LiteProp,
	& 86,872# 16/30 sand.

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.	
DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
6120.5' - 6330'	Acidize w/ 2500 gals acid.
	Frac w/97,415 gals gel, 8133# LiteProp,
	& 87,867# 16/30 white sand.

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.	
DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
6462.5' - 6656.5'	Acidize w/ 2500 gals acid.
	Frac w/90,266 gals gel, 8531# LiteProp,
	& 83,568# 16/30 white sand.

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.	
DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
6868' - 6955'	Acidize w/ 1500 gals acid.

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.	
DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
7057' - 7086'	Acidize w/ 1500 gals acid.



PO Box 1370
Artesia, NM 88211-1370
(505) 748-1288

November 29, 2006

COG, LLC
Fasken Center, Tower II
550 West Texas Ave, Suite 1300
Midland, TX 79701

RE: McIntyre A East #19
890' FSL & 990' FEL
Sec. 20, T17S, R30E
Eddy County, New Mexico

Dear Sir,

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

<u>DEPTH</u>	<u>DEVIATION</u>	<u>DEPTH</u>	<u>DEVIATION</u>
190'	1/2°	1042'	1 1/4°
497'	1/2°	1205'	1°
796'	1°		

The remainder of the well was drilled directionally and supplied by another company.

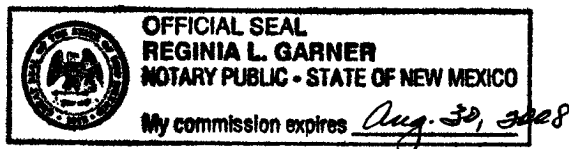
Very truly yours,

Eddie C. LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 29th day of November, 2006.

Notary Public





Scientific Drilling

MACK ENERGY

Field: Loco Hills
Site: Eddy County, NM
Well: McIntyre A East #19
Wellpath: DH - Job #32D1106916
Survey: 11/09/06-11/22/06

LC 054280 - DN

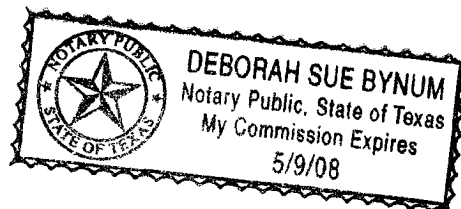
This survey is correct to the best of my knowledge
and is supported by actual field data.

.....*Deborah Sue Bynum*.....Company Representative

Notorized this date 11th of January, 2007.

Deborah Sue Bynum
Notary Signature

County of Midland
State of Texas





Scientific
Drilling

Scientific Drilling International

Survey Report

Company: MACK ENERGY	Date: 01/08/2007	Time: 22:01:20	Page: 1
Field: Loco Hills	Co-ordinate(NE) Reference:	Site: Eddy County, NM, Grid North	
Site: Eddy County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: McIntyre A East #19	Section (VS) Reference:	Well (0.00N,0.00E,22.43Azi)	
Wellpath: VH - Job #32K1106921	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 11/10/06	Start Date:	11/10/2006
KSRG 0'-1155'		
Company: Scientific Drilling Internatio	Engineer:	Guebara/Pena w/GeoGyro
Tool: Keeper;Keeper Gyro	Tied-to:	From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.00	0.00	359.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.06	153.25	100.00	-0.03	-0.05	0.02	0.06	0.05	153.25
200.00	0.32	122.85	200.00	-0.12	-0.24	0.28	0.27	0.37	131.01
300.00	0.64	151.01	300.00	-0.52	-0.88	0.79	0.39	1.18	138.35
400.00	0.61	146.41	399.99	-1.16	-1.82	1.35	0.06	2.26	143.34
500.00	0.49	272.93	499.99	-1.60	-2.24	1.22	0.98	2.55	151.42
600.00	0.64	274.00	599.98	-1.92	-2.18	0.24	0.15	2.19	173.83
700.00	0.72	276.60	699.98	-2.27	-2.07	-0.95	0.09	2.27	204.59
800.00	0.61	285.83	799.97	-2.50	-1.85	-2.08	0.15	2.78	228.39
900.00	0.26	6.80	899.97	-2.35	-1.48	-2.57	0.62	2.96	240.06
1000.00	0.69	59.21	999.96	-1.65	-0.95	-2.02	0.57	2.23	244.96
1100.00	0.99	63.16	1099.95	-0.51	-0.25	-0.74	0.31	0.78	251.44
1155.00	1.04	62.08	1154.94	0.24	0.20	0.13	0.10	0.24	32.81



Scientific
Drilling

Scientific Drilling International

Survey Report

Company: MACK ENERGY
Field: Loco Hills
Site: Eddy County, NM
Well: McIntyre A East #19
Wellpath: DH - Job #32D1106916

Date: 01/08/2007 Time: 22:04:43 Page: 2
Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,22.43Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

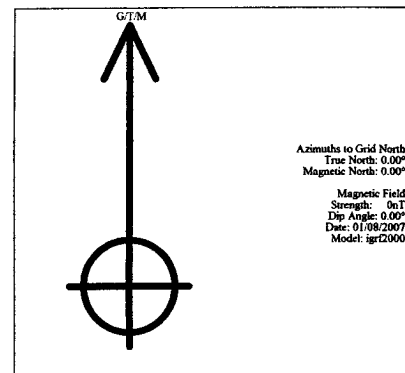
Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
5983.00	0.52	301.60	5950.69	340.73	315.08	129.69	0.38	340.73	22.37
6109.00	0.95	61.67	6076.68	341.63	315.88	130.12	1.02	341.63	22.39
6203.00	1.44	65.44	6170.66	343.10	316.74	131.88	0.53	343.10	22.61
6296.00	1.03	68.54	6263.64	344.53	317.53	133.73	0.45	344.54	22.84
6359.00	0.93	96.34	6326.63	345.06	317.68	134.76	0.76	345.08	22.99
6420.00	1.31	152.50	6387.62	344.75	317.01	135.57	1.81	344.78	23.16
6544.00	0.96	69.08	6511.60	344.55	316.12	137.20	1.24	344.61	23.46
6606.00	1.35	68.40	6573.59	345.42	316.57	138.36	0.63	345.49	23.61

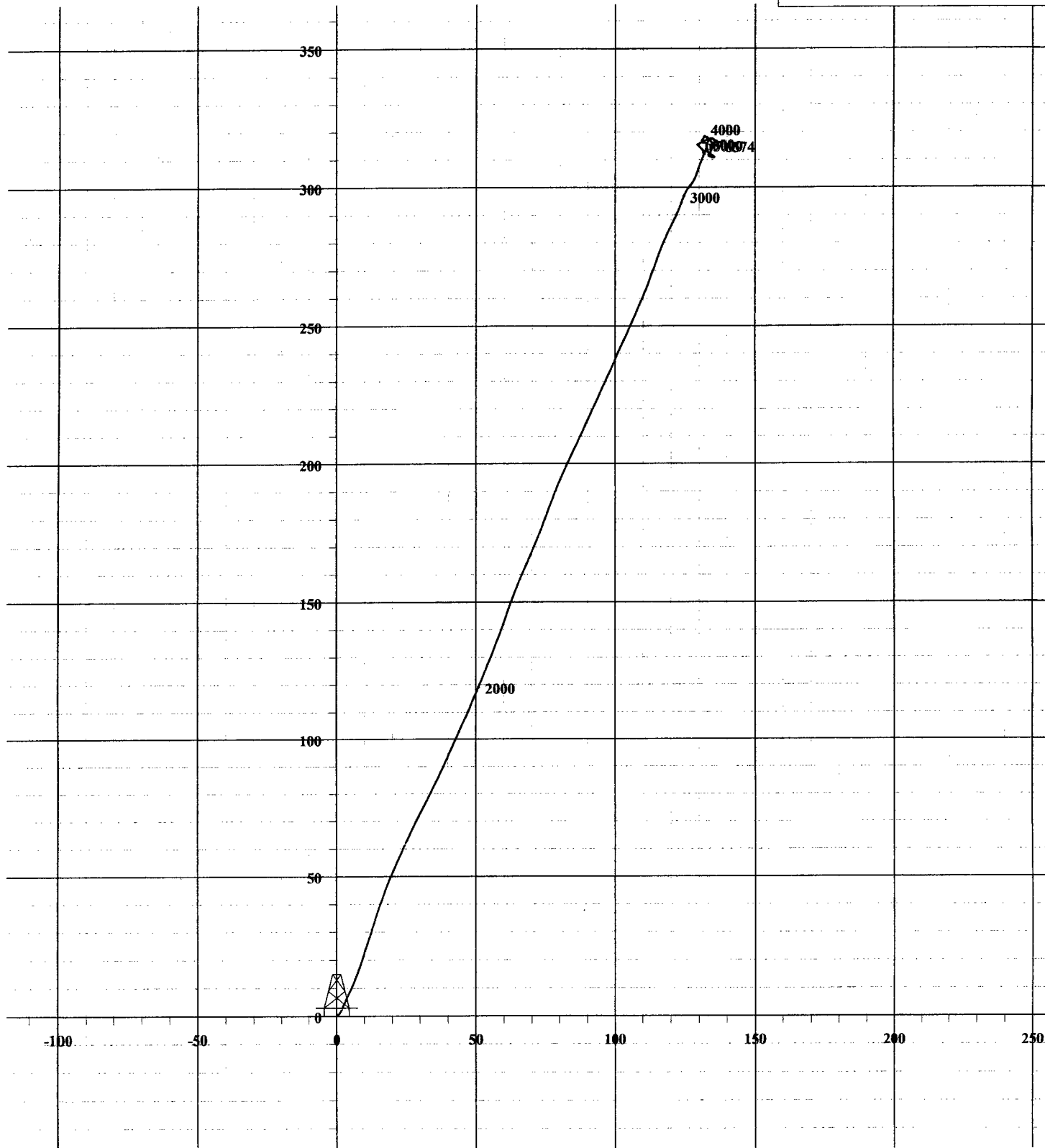


Scientific
Drilling

Field: Loco Hills
Site: Eddy County, NM
Well: McIntyre A East #19
Wellpath: DH - Job #32D1106916
Survey: 11/09/06-11/22/06



South(-)/North(+) [50ft/in]



West(-)/East(+) [50ft/in]



Scientific
Drilling

Scientific Drilling International

Survey Report

Company: MACK ENERGY	Date: 02/07/2007	Time: 11:29:15	Page: 1
Field: Loco Hills	Co-ordinate(NE) Reference:	Site: Eddy County, NM, Grid North	
Site: Eddy County, NM	Vertical (PVD) Reference:	SITE 0.0	
Well: McIntyre A East #19	Section (VS) Reference:	Well (0.00N 0.00E, 22.43Az)	
Wellpath: DH - Job #32D1106916	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 11/09/06-11/22/06	Start Date: 11/09/2006
MWD 1282'-6606'	
Company: Scientific Drilling Internatio	Engineer: Calvert/Puntney/Foster
Tool: MWD;MWD	Tied-to: From: Definitive Path

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
1155.00	1.04	62.08	1154.94	0.24	0.20	0.13	0.00	0.24	32.81
1282.00	1.92	22.67	1281.90	3.25	2.70	1.97	1.02	3.34	36.05
1407.00	5.02	25.77	1406.66	10.81	9.56	5.15	2.48	10.86	28.32
1500.00	8.67	18.30	1498.98	21.86	19.89	9.13	4.03	21.88	24.65
1592.00	12.73	17.99	1589.36	38.89	36.12	14.44	4.41	38.90	21.79
1686.00	12.89	23.99	1681.03	59.70	55.55	21.90	1.42	59.71	21.51
1777.00	13.23	26.70	1769.67	80.23	74.12	30.70	0.77	80.23	22.50
1871.00	12.09	23.84	1861.39	100.80	92.74	39.52	1.38	100.81	23.08
1965.00	11.43	23.46	1953.42	119.95	110.29	47.20	0.71	119.96	23.17
2058.00	12.12	21.17	2044.46	138.93	127.84	54.40	0.90	138.94	23.05
2151.00	11.55	18.81	2135.48	157.98	145.76	60.92	0.80	157.98	22.68
2244.00	11.57	23.95	2226.60	176.60	163.10	67.71	1.11	176.60	22.55
2347.00	12.65	19.71	2327.31	198.19	183.16	75.71	1.36	198.19	22.46
2440.00	12.49	25.27	2418.08	218.41	201.84	83.44	1.31	218.41	22.46
2532.00	11.86	24.26	2508.01	237.79	219.45	91.57	0.72	237.79	22.65
2627.00	12.22	24.55	2600.92	257.60	237.50	99.76	0.38	257.60	22.78
2722.00	11.99	23.26	2693.81	277.51	255.71	107.83	0.37	277.52	22.86
2816.00	9.97	18.94	2786.08	295.40	272.38	114.33	2.32	295.40	22.77
2908.00	7.91	26.13	2876.96	309.66	285.60	119.70	2.54	309.67	22.74
3002.00	4.46	18.41	2970.40	319.77	294.88	123.71	3.77	319.77	22.76
3094.00	2.43	40.46	3062.24	325.19	299.75	126.10	2.60	325.20	22.82
3188.00	1.79	26.57	3156.17	328.55	302.58	128.05	0.87	328.56	22.94
3282.00	2.81	19.73	3250.10	332.32	306.07	129.49	1.12	332.33	22.93
3343.00	2.60	21.25	3311.03	335.19	308.76	130.49	0.36	335.21	22.91
3405.00	3.08	19.97	3372.95	338.26	311.64	131.57	0.78	338.28	22.89
3436.00	2.89	25.18	3403.91	339.88	313.13	132.19	1.07	339.89	22.89
3500.00	1.32	357.80	3467.87	342.16	315.33	132.85	2.85	342.17	22.85
3561.00	0.82	274.60	3528.86	342.66	316.06	132.38	2.41	342.67	22.73
3621.00	0.83	266.50	3588.85	342.34	316.07	131.52	0.19	342.34	22.59
3682.00	0.56	343.50	3649.85	342.38	316.33	131.00	1.46	342.38	22.50
3745.00	0.71	23.49	3712.85	343.01	316.98	131.07	0.72	343.01	22.46
3807.00	0.55	44.02	3774.84	343.67	317.55	131.43	0.44	343.67	22.48
3868.00	0.63	14.55	3835.84	344.28	318.08	131.71	0.51	344.28	22.49
3963.00	0.28	111.70	3930.84	344.80	318.50	132.06	0.76	344.80	22.52
4055.00	1.45	124.90	4022.82	344.55	317.76	133.22	1.28	344.55	22.75
4149.00	1.26	160.30	4116.80	343.52	316.10	134.55	0.90	343.54	23.06
4244.00	1.31	197.10	4211.78	341.67	314.08	134.58	0.86	341.70	23.19
4337.00	1.11	216.90	4304.76	339.74	312.34	133.73	0.49	339.77	23.18
4430.00	0.36	122.80	4397.75	338.81	311.47	133.43	1.28	338.84	23.19
4554.00	0.30	112.20	4521.75	338.74	311.13	134.06	0.07	338.78	23.31
4710.00	0.54	109.10	4677.74	338.79	310.74	135.13	0.15	338.85	23.50
4866.00	0.50	322.70	4833.74	339.17	311.04	135.41	0.64	339.24	23.53
5021.00	0.74	292.40	4988.73	339.51	311.96	134.08	0.26	339.55	23.26
5147.00	0.41	344.60	5114.73	339.87	312.70	133.21	0.47	339.89	23.07
5299.00	0.71	269.90	5266.72	339.94	313.22	132.12	0.47	339.95	22.87
5451.00	0.45	163.70	5418.72	339.11	312.65	131.35	0.62	339.12	22.79
5608.00	0.30	99.80	5575.71	338.72	311.99	131.92	0.27	338.73	22.92
5734.00	0.68	331.60	5701.71	339.27	312.59	131.89	0.71	339.28	22.88
5859.00	0.95	318.40	5826.70	340.19	314.02	130.85	0.26	340.19	22.62



Scientific Drilling International

Survey Report

Company: MACK ENERGY	Date: 02/07/2007	Time: 11:29:15	Page: 2
Field: Loco Hills	Co-ordinate (NE) Reference:	Site: Eddy County, NM, Gnd North	
Site: Eddy County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: McIntyre A East #19	Section (VS) Reference:	Well (0.00N 0.00E 22.43Azi)	
Wellpath: DH - Job #32D1106916	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	CISD ft	CISA deg
5983.00	0.52	301.60	5950.69	340.73	315.08	129.69	0.38	340.73	22.37
6109.00	0.95	61.67	6076.68	341.63	315.88	130.12	1.02	341.63	22.39
6203.00	1.44	65.44	6170.66	343.10	316.74	131.88	0.53	343.10	22.61
6296.00	1.03	68.54	6263.64	344.53	317.53	133.73	0.45	344.54	22.84
6359.00	0.93	96.34	6326.63	345.06	317.68	134.76	0.76	345.08	22.99
6420.00	1.31	152.50	6387.62	344.75	317.01	135.57	1.81	344.78	23.16
6544.00	0.96	69.08	6511.60	344.55	316.12	137.20	1.24	344.61	23.46
6606.00	1.35	68.40	6573.59	345.42	316.57	138.36	0.63	345.49	23.61
7112.00	1.35	68.40	7079.45	353.70	320.96	149.45	0.00	354.05	24.97