

RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease- 4 Copies
Fee Lease- 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-	Pool Code 44500	Pool Name MALJAMAR; YESO, WEST
Property Code 302519	Property Name MC FEDERAL	Well Number 33
OGRID No. 229137	Operator Name COG OPERATING LLC.	Elevation 4029.4'

Surface Location

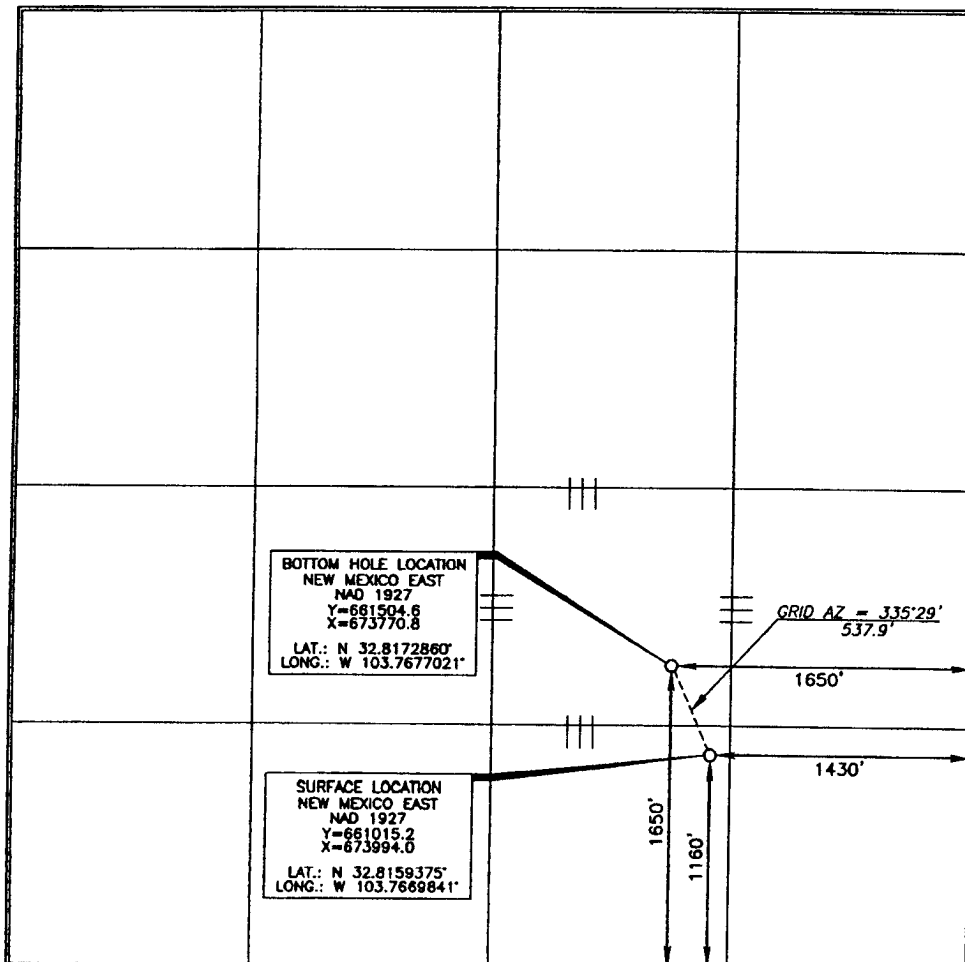
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	21	17 SOUTH	32 EAST, N.M.P.M.		1160'	SOUTH	1430'	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	21	17 SOUTH	32 EAST, N.M.P.M.		1650'	SOUTH	1650'	EAST	LEA

Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Phyllis A. Edwards
Signature Date

Phyllis A. Edwards
Printed Name Regulatory Analyst

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.

Terry J. Paul
Date of Survey

Signature and Seal of Professional Surveyor

Terry J. Paul
Certificate Number 15079

WO# 080311WL-e (Rev. A) (KA)

COG Operating

Lea County, NM (NAD27 NME)

MC Federal #33

MC Federal #33

OH

Plan: Plan #1 - 7 7/8" Hole

Standard Planning Report

20 June, 2008



Scientific Drilling

Planning Report



Database: EDM 2003 16 Single User Db
Company: COG Operating
Project: Lea County, NM (NAD27 NME)
Site: MC Federal #33
Well: MC Federal #33
Wellbore: OH
Design: Plan #1 - 7 7/8" Hole

Local Co-ordinate Reference: Well MC Federal #33
TVD Reference: Ground Elev @ 4029 40ft (Rig ?)
MD Reference: Ground Elev @ 4029 40ft (Rig ?)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	MC Federal #33		
Site Position:		Northing:	661,015 200 ft
From:	Map	Easting:	673,994 000 ft
Position Uncertainty:	0 00 ft	Slot Radius:	"
		Latitude:	32° 48' 57 375 N
		Longitude:	103° 46' 1 143 W
		Grid Convergence:	0 31 °

Well	MC Federal #33		
Well Position	+N/-S	0 00 ft	Northing: 661,015 200 ft
	+E/-W	0 00 ft	Easting: 673,994 000 ft
Position Uncertainty	0 00 ft	Wellhead Elevation:	ft
		Latitude:	32° 48' 57 375 N
		Longitude:	103° 46' 1 143 W
		Ground Level:	4,029 40 ft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	6/20/2008	8 07
			Dip Angle
			60 79
			Field Strength
			49,270

Design	Plan #1 - 7 7/8" Hole		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0 00	0 00	0 00
			Direction
			335 48

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0 00	0 00	0 00	0 00	
2,531 03	6 62	335 48	2,530 29	17 38	-7 93	2 00	2 00	-7 41	335 48	
7,030 74	6 62	335 48	7,000 00	489 40	-223 20	0 00	0 00	0 00	0 00	PBHL-MC Fed #33

Scientific Drilling

Planning Report



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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start 2.00°/100'									
2,300 00	2 00	335 48	2,299 98	1 59	-0 72	1 75	2 00	2 00	0 00
2,400 00	4 00	335 48	2,399 84	6 35	-2 90	6 98	2 00	2 00	0 00
2,500 00	6 00	335 48	2,499 45	14 28	-6 51	15 69	2 00	2 00	0 00
2,531 03	6 62	335 48	2,530 29	17 38	-7 93	19 10	2 00	2 00	0 00
EOC hold 6.62°									
2,600 00	6 62	335 48	2,598 80	24 62	-11 23	27 06	0 00	0 00	0 00
2,700 00	6 62	335 48	2,698 14	35 11	-16 01	38 59	0 00	0 00	0 00
2,800 00	6 62	335 48	2,797 47	45 60	-20 80	50 11	0 00	0 00	0 00
2,900 00	6 62	335 48	2,896 80	56 09	-25 58	61 64	0 00	0 00	0 00
3,000 00	6 62	335 48	2,996 14	66 58	-30 36	73 17	0 00	0 00	0 00
3,100 00	6 62	335 48	3,095 47	77 07	-35 15	84 70	0 00	0 00	0 00
3,200 00	6 62	335 48	3,194 80	87 56	-39 93	96 23	0 00	0 00	0 00
3,300 00	6 62	335 48	3,294 14	98 05	-44 72	107 76	0 00	0 00	0 00
3,400 00	6 62	335 48	3,393 47	108 54	-49 50	119 29	0 00	0 00	0 00
3,500 00	6 62	335 48	3,492 80	119 03	-54 28	130 82	0 00	0 00	0 00
3,600 00	6 62	335 48	3,592 14	129 52	-59 07	142 35	0 00	0 00	0 00
3,700 00	6 62	335 48	3,691 47	140 01	-63 85	153 88	0 00	0 00	0 00
3,800 00	6 62	335 48	3,790 80	150 50	-68 64	165 41	0 00	0 00	0 00
3,900 00	6 62	335 48	3,890 13	160 99	-73 42	176 94	0 00	0 00	0 00
4,000 00	6 62	335 48	3,989 47	171 48	-78 20	188 47	0 00	0 00	0 00
4,100 00	6 62	335 48	4,088 80	181 97	-82 99	200 00	0 00	0 00	0 00
4,200 00	6 62	335 48	4,188 13	192 46	-87 77	211 53	0 00	0 00	0 00
4,300 00	6 62	335 48	4,287 47	202 95	-92 56	223 06	0 00	0 00	0 00
4,400 00	6 62	335 48	4,386 80	213 44	-97 34	234 59	0 00	0 00	0 00
4,500 00	6 62	335 48	4,486 13	223 93	-102 13	246 11	0 00	0 00	0 00
4,600 00	6 62	335 48	4,585 47	234 42	-106 91	257 64	0 00	0 00	0 00
4,700 00	6 62	335 48	4,684 80	244 91	-111 69	269 17	0 00	0 00	0 00
4,800 00	6 62	335 48	4,784 13	255 40	-116 48	280 70	0 00	0 00	0 00
4,900 00	6 62	335 48	4,883 47	265 89	-121 26	292 23	0 00	0 00	0 00
5,000 00	6 62	335 48	4,982 80	276 38	-126 05	303 76	0 00	0 00	0 00
5,100 00	6 62	335 48	5,082 13	286 87	-130 83	315 29	0 00	0 00	0 00
5,200 00	6 62	335 48	5,181 47	297 36	-135 61	326 82	0 00	0 00	0 00
5,300 00	6 62	335 48	5,280 80	307 85	-140 40	338 35	0 00	0 00	0 00
5,400 00	6 62	335 48	5,380 13	318 34	-145 18	349 88	0 00	0 00	0 00
5,500 00	6 62	335 48	5,479 46	328 83	-149 97	361 41	0 00	0 00	0 00
5,600 00	6 62	335 48	5,578 80	339 32	-154 75	372 94	0 00	0 00	0 00
5,700 00	6 62	335 48	5,678 13	349 81	-159 54	384 47	0 00	0 00	0 00
5,800 00	6 62	335 48	5,777 46	360 30	-164 32	396 00	0 00	0 00	0 00
5,900 00	6 62	335 48	5,876 80	370 79	-169 10	407 53	0 00	0 00	0 00
6,000 00	6 62	335 48	5,976 13	381 28	-173 89	419 06	0 00	0 00	0 00
6,100 00	6 62	335 48	6,075 46	391 77	-178 67	430 59	0 00	0 00	0 00
6,200 00	6 62	335 48	6,174 80	402 26	-183 46	442 11	0 00	0 00	0 00
6,300 00	6 62	335 48	6,274 13	412 75	-188 24	453 64	0 00	0 00	0 00
6,400 00	6 62	335 48	6,373 46	423 24	-193 02	465 17	0 00	0 00	0 00
6,500 00	6 62	335 48	6,472 80	433 73	-197 81	476 70	0 00	0 00	0 00
6,600 00	6 62	335 48	6,572 13	444 22	-202 59	488 23	0 00	0 00	0 00
6,700 00	6 62	335 48	6,671 46	454 71	-207 38	499 76	0 00	0 00	0 00
6,800 00	6 62	335 48	6,770 80	465 20	-212 16	511 29	0 00	0 00	0 00
6,900 00	6 62	335 48	6,870 13	475 69	-216 95	522 82	0 00	0 00	0 00
7,000 00	6 62	335 48	6,969 46	486 18	-221 73	534 35	0 00	0 00	0 00

Scientific Drilling

Planning Report



Database: EDM 2003 16 Single User Db
Company: COG Operating
Project: Lea County, NM (NAD27 NME)
Site: MC Federal #33
Well: MC Federal #33
Wellbore: OH
Design: Plan #1 - 7 7/8" Hole

Local Co-ordinate Reference: Well MC Federal #33
TVD Reference: Ground Elev @ 4029 40ft (Rig ?)
MD Reference: Ground Elev @ 4029 40ft (Rig ?)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,030 74	6 62	335 48	7,000 00	489 40	-223 20	537 89	0 00	0 00	0 00

PBHL-MC Fed #33

Targets

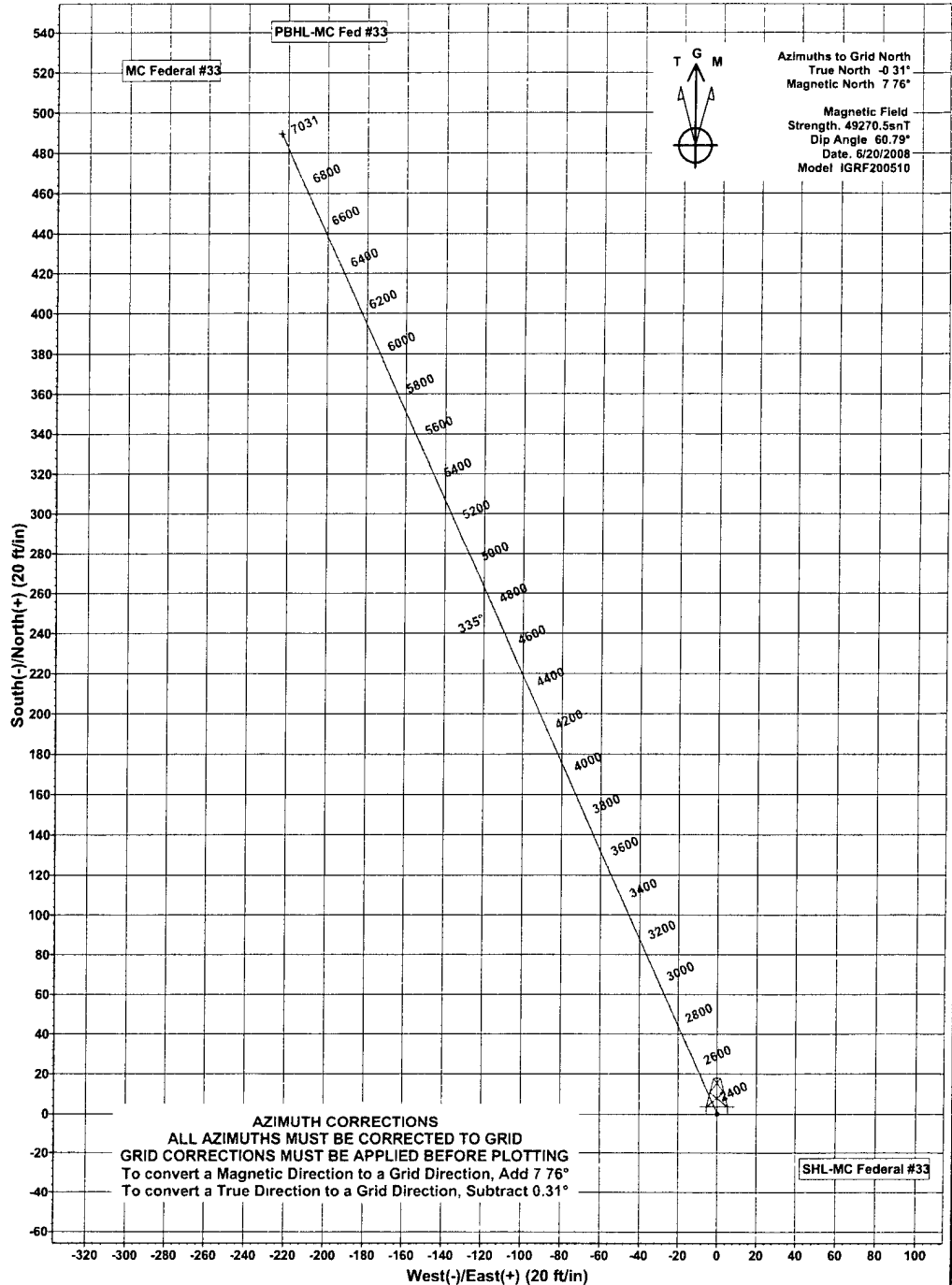
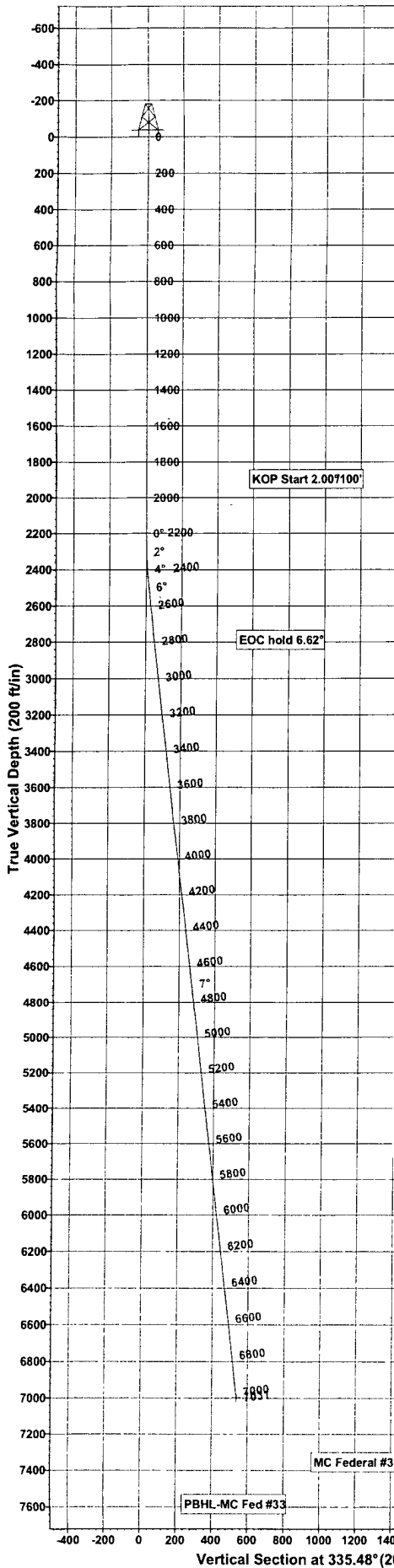
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
hit/miss target									
Shape									
PBHL-MC Fed #33	0 00	0 00	7,000 00	489 40	-223 20	661,504 600	673,770 800	32° 49' 2 230 N	103° 46' 3 727 W
- plan hits target									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
2,200 00	2,200 00	0 00	0 00	KOP Start 2 00°/100'
2,531 03	2,530 29	17 38	-7 93	EOC hold 6 62°

COG Operating

Scientific Drilling for COG Operating
Site: Lea County, NM (NAD27 NME)
Well: MC Federal #33
Wellbore: OH
Design: Plan #1 - 7 7/8" Hole



AZIMUTH CORRECTIONS
ALL AZIMUTHS MUST BE CORRECTED TO GRID
GRID CORRECTIONS MUST BE APPLIED BEFORE PLOTTING
To convert a Magnetic Direction to a Grid Direction, Add 7.76°
To convert a True Direction to a Grid Direction, Subtract 0.31°

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL-MC Fed #33	7000.00	489.40	-223.20	661504.600	673770.800	32°49' 2.230 N	103°46' 3.727 W	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2531.03	6.62	335.48	2530.29	17.38	-7.93	2.00	335.48	19.10	
4	7030.74	6.62	335.48	7000.00	489.40	-223.20	0.00	0.00	537.89	PBHL-MC Fed #33

WELL DETAILS MC Federal #33

Ground Level				4029.40			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Spot	
0.00	0.00	661015.200	673994.000	32°48' 57.375 N	103°46' 1.143 W		

PROJECT DETAILS: Lea County, NM (NAD27 NME) Plan Plan #1 - 7 7/8" Hole (MC Federal #33/OH)

Geodetic System: US State Plane 1927 (Exact solution)	Created By: Julio Pina	Date: 20-Jun-08
Datum: NAD 1927 (NADCON CONUS)	Checked: _____	Date: _____
Ellipsoid: Clarke 1866	Reviewed: _____	Date: _____
Zone: New Mexico East 3001	Approved: _____	Date: _____
System Datum: Mean Sea Level		

**MC Federal 33
30-025-39001
COG Operating LLC
October 2, 2008
Conditions of Approval**

- 1. The BHL lease number is NMLC-029509A.**
- 2. The well is only orthodox for the bottom-hole location.**
- 3. A recompletion to the Grayburg formation would require a review of the spacing requirements as it would overlap two leases.**

WWI 100208