



COG Operating LLC

Lea County, NM (NAD27 NME)

MC Federal #57

MC Federal #57

HOBBS OCD

OH

JAN 23 2012

RECEIVED

Plan: Plan #3 - 7-7/8" Hole

SHL = 2561' FSL & 1567' FEL

BHL = 2300' FSL & 980' FEL

Top of Paddock = 164' S of Surface & 373' E of Surface @ 5375' TVD

Standard Planning Report

10 January, 2012



JAN 25 2012



SDI
Planning Report



EDM 5000.1 Single User Db COG Operating LLC Lea County, NM (NAD27 NME) MC Federal #57 OH Plan #3 - 7-7/8" Hole	Well MC Federal #57 GL Elev @ 4053.00usft GL Elev @ 4053.00usft Grid Minimum Curvature
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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	

MC Federal #57			
Site Position:	Map	Northing:	662,415.00 usft
From:	Map	Easting:	673,848.10 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 49' 11.234 N
		Longitude:	103° 46' 2.764 W
		Grid Convergence:	0.31°

MC Federal #57			
Well Position	+N/-S	0.00 usft	Northing: 662,415.00 usft
	+E/-W	0.00 usft	Easting: 673,848.10 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level: 4,053.00 usft
			Latitude: 32° 49' 11.234 N
			Longitude: 103° 46' 2.764 W

OH			
IGRF2010	2011/11/10	7.67	60.69
			48,909

Plan #3 - 7-7/8" Hole			
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
	0.00	0.00	0.00
			113.79

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
2,589.25	7.79	113.79	2,588.06	-10.65	24.16	2.00	2.00	29.23	113.79
7,143.17	7.79	113.79	7,100.00	-259.50	588.60	0.00	0.00	0.00	0.00 PBHL-MC Fed #57



SDI
Planning Report



EDM 5000.1 Single User Db
COG Operating LLC
Lea County, NM (NAD27 NME)
MC Federal #57
MC Federal #57
OH
Plan #3 - 7-7/8" Hole

Well MC Federal #57
GL Elev @ 4053.00usft
GL Elev @ 4053.00usft
Grid
Minimum Curvature

Station	Offset	Depth	True	Apparent	True	Apparent	True	Apparent	True	Apparent
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
East HL-MC Fed #68 - North HL-MC Fed #68										
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8-5/8" Casing										
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 2.00"/100"										
2,300.00	2.00	113.79	2,299.98	-0.70	1.60	1.75	2.00	2.00	0.00	0.00
2,400.00	4.00	113.79	2,399.84	-2.82	6.39	6.98	2.00	2.00	0.00	0.00
2,500.00	6.00	113.79	2,499.45	-6.33	14.36	15.69	2.00	2.00	0.00	0.00
2,589.25	7.78	113.79	2,588.05	-10.65	24.16	26.40	2.00	2.00	0.00	0.00
EOC hold 7.79°										
2,600.00	7.79	113.79	2,598.70	-11.24	25.49	27.86	0.00	0.00	0.00	0.00
2,700.00	7.79	113.79	2,697.78	-16.70	37.89	41.41	0.00	0.00	0.00	0.00
2,800.00	7.79	113.79	2,796.86	-22.17	50.28	54.95	0.00	0.00	0.00	0.00
2,900.00	7.79	113.79	2,895.94	-27.63	62.68	68.50	0.00	0.00	0.00	0.00
3,000.00	7.79	113.79	2,995.02	-33.10	75.07	82.04	0.00	0.00	0.00	0.00
3,100.00	7.79	113.79	3,094.10	-38.56	87.47	95.59	0.00	0.00	0.00	0.00
3,200.00	7.79	113.79	3,193.17	-44.03	99.86	109.13	0.00	0.00	0.00	0.00
3,300.00	7.79	113.79	3,292.25	-49.49	112.25	122.68	0.00	0.00	0.00	0.00
3,400.00	7.79	113.79	3,391.33	-54.95	124.65	136.23	0.00	0.00	0.00	0.00
3,500.00	7.79	113.79	3,490.41	-60.42	137.04	149.77	0.00	0.00	0.00	0.00
3,600.00	7.79	113.79	3,589.49	-65.88	149.44	163.32	0.00	0.00	0.00	0.00
3,700.00	7.79	113.79	3,688.57	-71.35	161.83	176.86	0.00	0.00	0.00	0.00
3,800.00	7.79	113.79	3,787.64	-76.81	174.23	190.41	0.00	0.00	0.00	0.00
3,900.00	7.79	113.79	3,886.72	-82.28	186.62	203.95	0.00	0.00	0.00	0.00
4,000.00	7.79	113.79	3,985.80	-87.74	199.02	217.50	0.00	0.00	0.00	0.00
4,100.00	7.79	113.79	4,084.88	-93.21	211.41	231.05	0.00	0.00	0.00	0.00
4,200.00	7.79	113.79	4,183.96	-98.67	223.81	244.59	0.00	0.00	0.00	0.00
4,300.00	7.79	113.79	4,283.04	-104.14	236.20	258.14	0.00	0.00	0.00	0.00
4,400.00	7.79	113.79	4,382.11	-109.60	248.60	271.68	0.00	0.00	0.00	0.00
4,500.00	7.79	113.79	4,481.19	-115.06	260.99	285.23	0.00	0.00	0.00	0.00
4,600.00	7.79	113.79	4,580.27	-120.53	273.38	298.77	0.00	0.00	0.00	0.00
4,700.00	7.79	113.79	4,679.35	-125.99	285.78	312.32	0.00	0.00	0.00	0.00
4,800.00	7.79	113.79	4,778.43	-131.46	298.17	325.87	0.00	0.00	0.00	0.00
4,900.00	7.79	113.79	4,877.51	-136.92	310.57	339.41	0.00	0.00	0.00	0.00
5,000.00	7.79	113.79	4,976.58	-142.39	322.96	352.96	0.00	0.00	0.00	0.00
5,100.00	7.79	113.79	5,075.66	-147.85	335.36	366.50	0.00	0.00	0.00	0.00
5,200.00	7.79	113.79	5,174.74	-153.32	347.75	380.05	0.00	0.00	0.00	0.00
5,300.00	7.79	113.79	5,273.82	-158.78	360.15	393.59	0.00	0.00	0.00	0.00
5,400.00	7.79	113.79	5,372.90	-164.24	372.54	407.14	0.00	0.00	0.00	0.00
5,402.12	7.79	113.79	5,375.00	-164.36	372.80	407.43	0.00	0.00	0.00	0.00
Top of Paddock										
5,500.00	7.79	113.79	5,471.98	-169.71	384.94	420.69	0.00	0.00	0.00	0.00
5,600.00	7.79	113.79	5,571.05	-175.17	397.33	434.23	0.00	0.00	0.00	0.00
5,700.00	7.79	113.79	5,670.13	-180.64	409.72	447.78	0.00	0.00	0.00	0.00
5,800.00	7.79	113.79	5,769.21	-186.10	422.12	461.32	0.00	0.00	0.00	0.00
5,900.00	7.79	113.79	5,868.29	-191.57	434.51	474.87	0.00	0.00	0.00	0.00
6,000.00	7.79	113.79	5,967.37	-197.03	446.91	488.41	0.00	0.00	0.00	0.00
6,100.00	7.79	113.79	6,066.45	-202.50	459.30	501.96	0.00	0.00	0.00	0.00
6,200.00	7.79	113.79	6,165.52	-207.96	471.70	515.51	0.00	0.00	0.00	0.00
6,300.00	7.79	113.79	6,264.60	-213.43	484.09	529.05	0.00	0.00	0.00	0.00
6,400.00	7.79	113.79	6,363.68	-218.89	496.49	542.60	0.00	0.00	0.00	0.00
6,500.00	7.79	113.79	6,462.76	-224.35	508.88	556.14	0.00	0.00	0.00	0.00
6,600.00	7.79	113.79	6,561.84	-229.82	521.28	569.69	0.00	0.00	0.00	0.00



SDI
Planning Report



EDM 5000.1 Single User Db	Well MC Federal #57
COG Operating LLC	GL Elev @ 4053.00usft
Lea County, NM (NAD27 NME)	GL Elev @ 4053.00usft
MC Federal #57	Grid
MC Federal #57	Minimum Curvature
OH	
Plan #3 - 7-7/8" Hole	

Station	Offset	Depth	True	App	True	App	True	App	True
6,700.00	7.79	113.79	6,660.92	-235.28	533.67	583.23	0.00	0.00	0.00
6,800.00	7.79	113.79	6,759.99	-240.75	546.07	596.78	0.00	0.00	0.00
6,900.00	7.79	113.79	6,859.07	-246.21	558.46	610.33	0.00	0.00	0.00
7,000.00	7.79	113.79	6,958.15	-251.68	570.85	623.87	0.00	0.00	0.00
7,100.00	7.79	113.79	7,057.23	-257.14	583.25	637.42	0.00	0.00	0.00
7,143.17	7.79	113.79	7,100.00	-259.50	588.60	643.27	0.00	0.00	0.00
PBHL-MC Fed #57									

Station	Offset	Depth	True	App	True	App	True	App	True
East HL-MC Fed #68	0.00	0.00	-1.00	-249.50	578.60	662,165.50	674,426.70	32° 49' 8.734 N	103° 45' 56.000 W
- plan misses target center by 630.10usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Rectangle (sides W0.00 H100.00 D0.00)									
North HL-MC Fed #68	0.00	0.01	-1.00	-249.50	578.60	662,165.50	674,426.70	32° 49' 8.734 N	103° 45' 56.000 W
- plan misses target center by 630.10usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Rectangle (sides W100.00 H0.00 D0.00)									
PBHL-MC Fed #57	0.00	0.00	7,100.00	-259.50	588.60	662,155.50	674,436.70	32° 49' 8.635 N	103° 45' 55.884 W
- plan hits target center									
- Circle (radius 10.00)									

Station	Offset	Depth	True	App	True	App	True	App	True
2,100.00	2,100.00	8-5/8" Casing						8-5/8	12-1/4

Station	Offset	Depth	True	App	True	App	True	App	True
5,402.12	5,375.00	Top of Paddock						0.00	

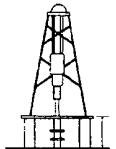
Station	Offset	Depth	True	App	True	App	True	App	True
2,200.00	2,200.00	0.00	0.00	KOP Start Build 2.00°/100'					
2,589.25	2,588.05	-10.65	24.16	EOC hold 7.79°					



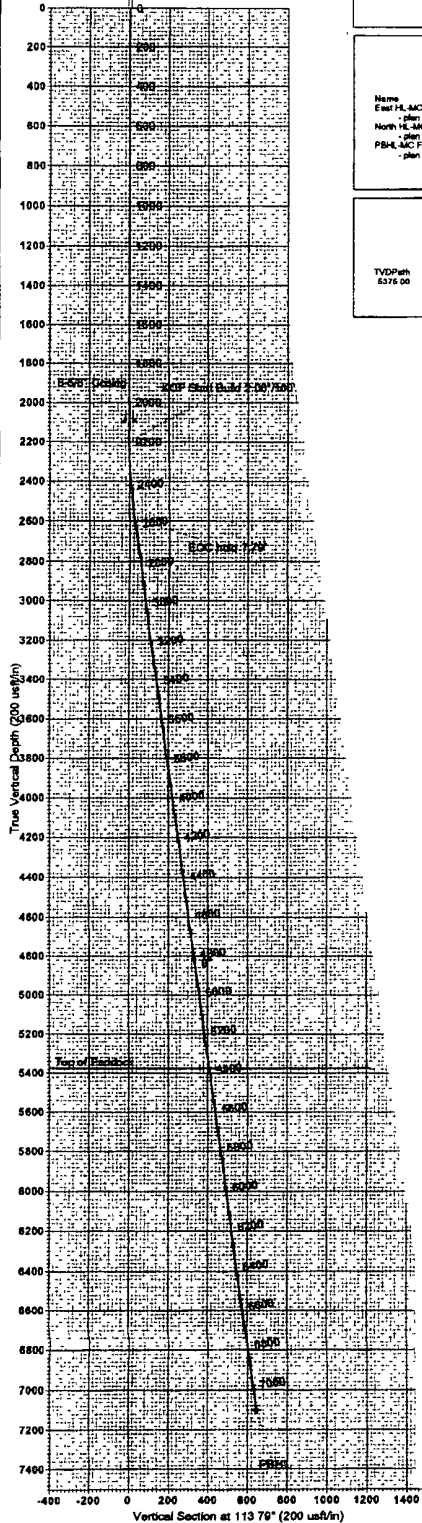
MC Federal #57
Lea County, NM (NAD27 NME)
Northing (Y) 662415.00
Easting (X) 673848.10
Plan #3 - 7-7/8" Hole



Azimuth to Grid North
True North -0.31°
Magnetic North -7.36°
Magnetic Field
Strength 48008 Gauss
Dip Angle 80.89°
Date 2011/11/15
Model IGRF2010



GL 4053.00



WELL DETAILS: MC Federal #57

	North	East	Depth	Angle	Length	Area
Ground Level	4053.00					
Well Head	662415.00	673848.10	32° 46' 11.294 N	103° 45' 2.784 W		

SECTION DETAILS

Sec	MD	Inc	Asn	TVD	HW-S	HW-W	HW-D	HW-T	HW-V	HW-A
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00	0.00
3	2382.25	7.79	113.79	2382.25	-10.85	24.18	2.00	113.79	28.40	
4	7143.17	7.79	113.79	7100.00	-250.00	588.00	0.00	0.00	943.27	PBH-MC Fed #57

DESIGN TARGET DETAILS

Name	TVD	HW-S	HW-W	North	East	Depth	Angle	Length	Area	Shape
East H-MC Fed #57	1.00	-240.50	678.50	662184.50	674428.70	32° 46' 8.734 N	103° 45' 58.000 W	Rectangle (Sides 1100.00 W100.00)		
North H-MC Fed #57	1.00	-240.50	678.50	662184.50	674428.70	32° 46' 8.734 N	103° 45' 58.000 W	Rectangle (Sides 10.00 W100.00)		
PBH-MC Fed #57	7100.00	-250.00	588.00	662155.00	674436.70	32° 46' 8.835 N	103° 45' 55.864 W	Circle (Radius 10.00)		

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
5375.00	5402.12	Top of Production	0.00	

CASING DETAILS

TVD	MD	Name	Size
2100.00	2100.00	6-5/8" Casing	8-5/8"

SITE DETAILS: MC Federal #57

Site Centre Northing 662415.00
Easting 673848.10
Positional Uncertainty 0.00
Convergence 0.31
Local North Grid

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Elevation: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Well MC Federal #57 Grid North

Latitude 32° 46' 11.294 N
Longitude 103° 45' 2.784 W

Grid East 673848.10
Grid North 662415.00

Scale Factor 1.000

Geographic Model: IGRF2010
Sample Date: 10-Nov-11

Magnetic Declination: 7.36°

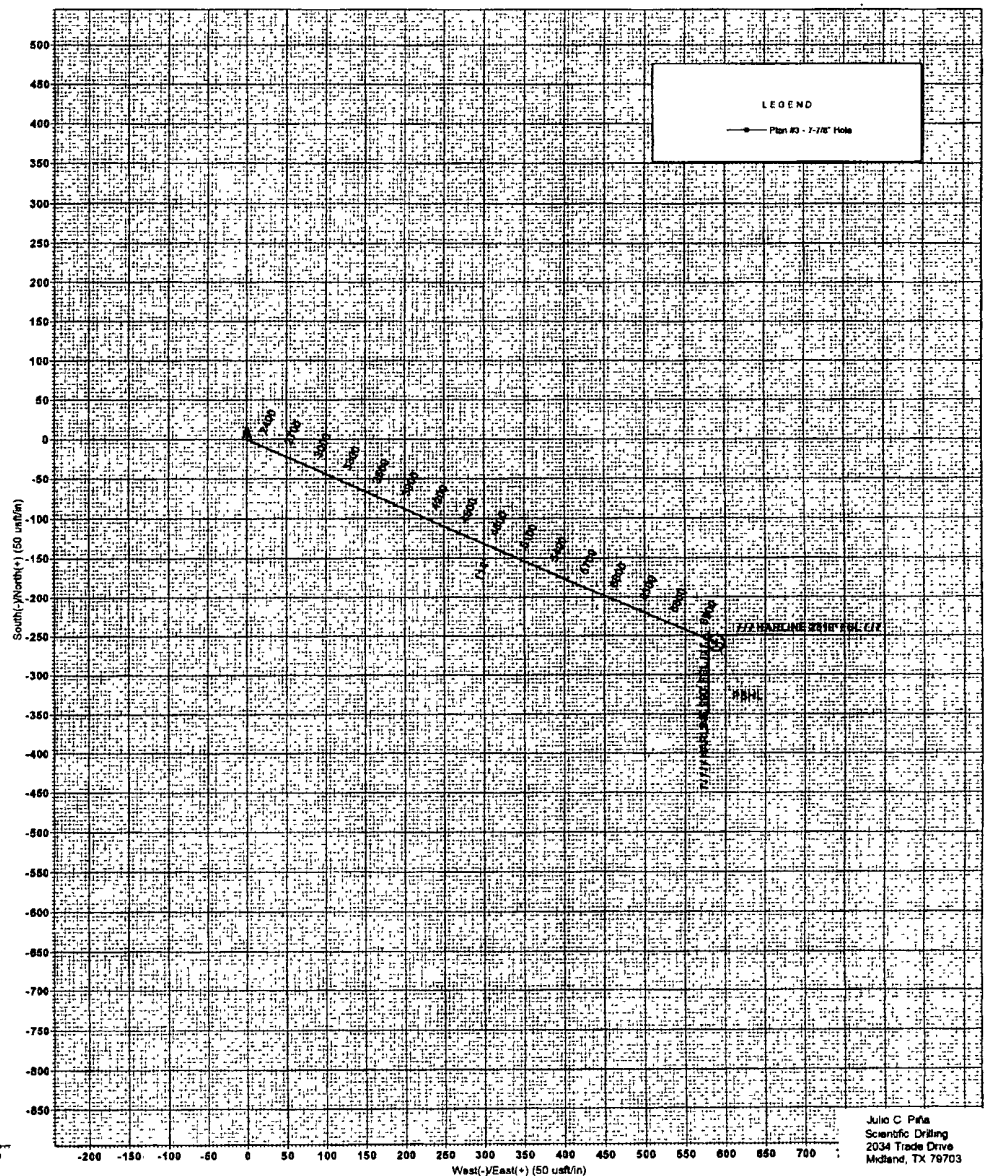
Dip Angle from Horizontal: 80.89°

Magnetic Field Strength: 48000

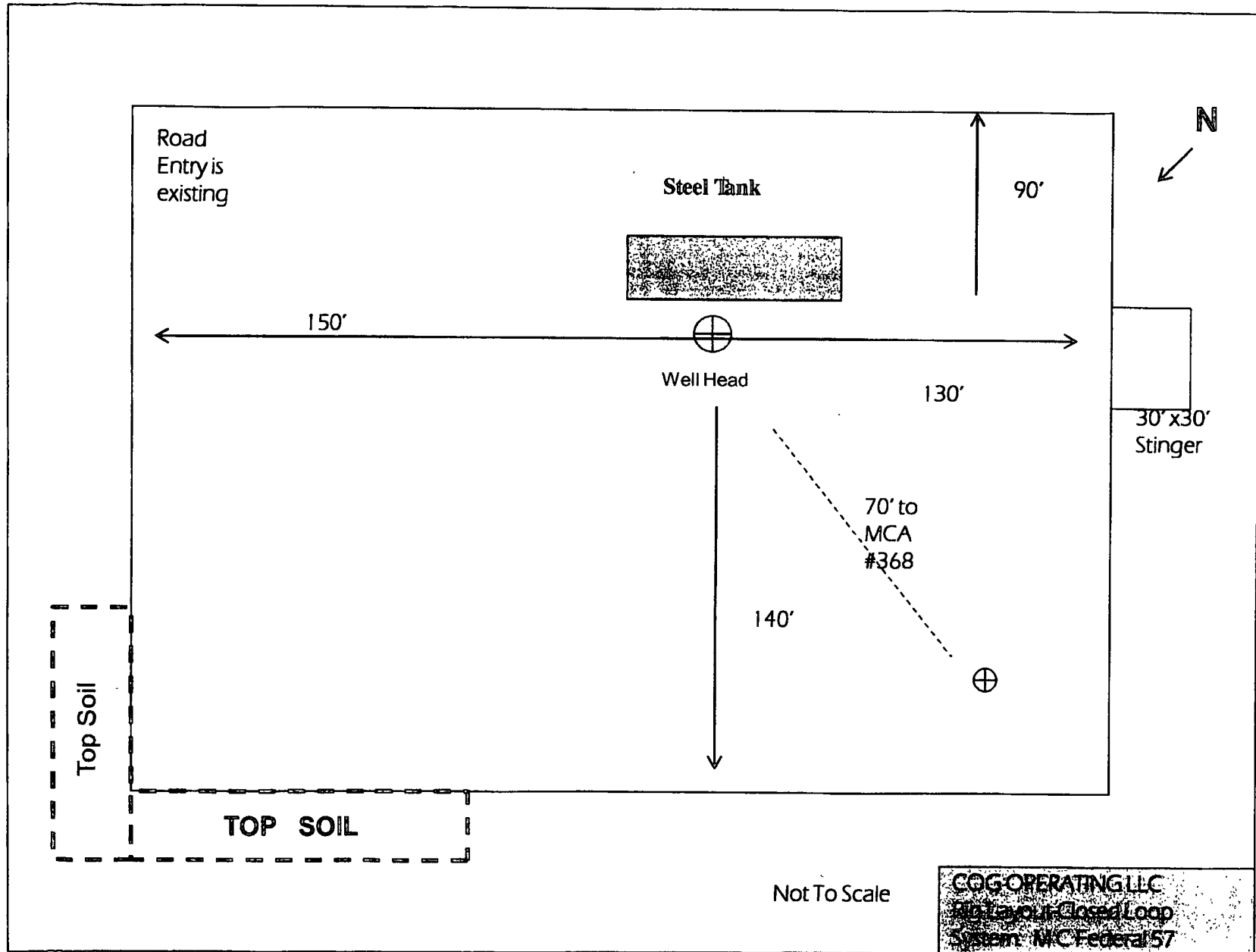
To convert a Magnetic Direction to a Grid Direction Add 7.36°
To convert a Magnetic Direction to a True Direction Add 7.37° East
To convert a True Direction to a Grid Direction Subtract 0.31°

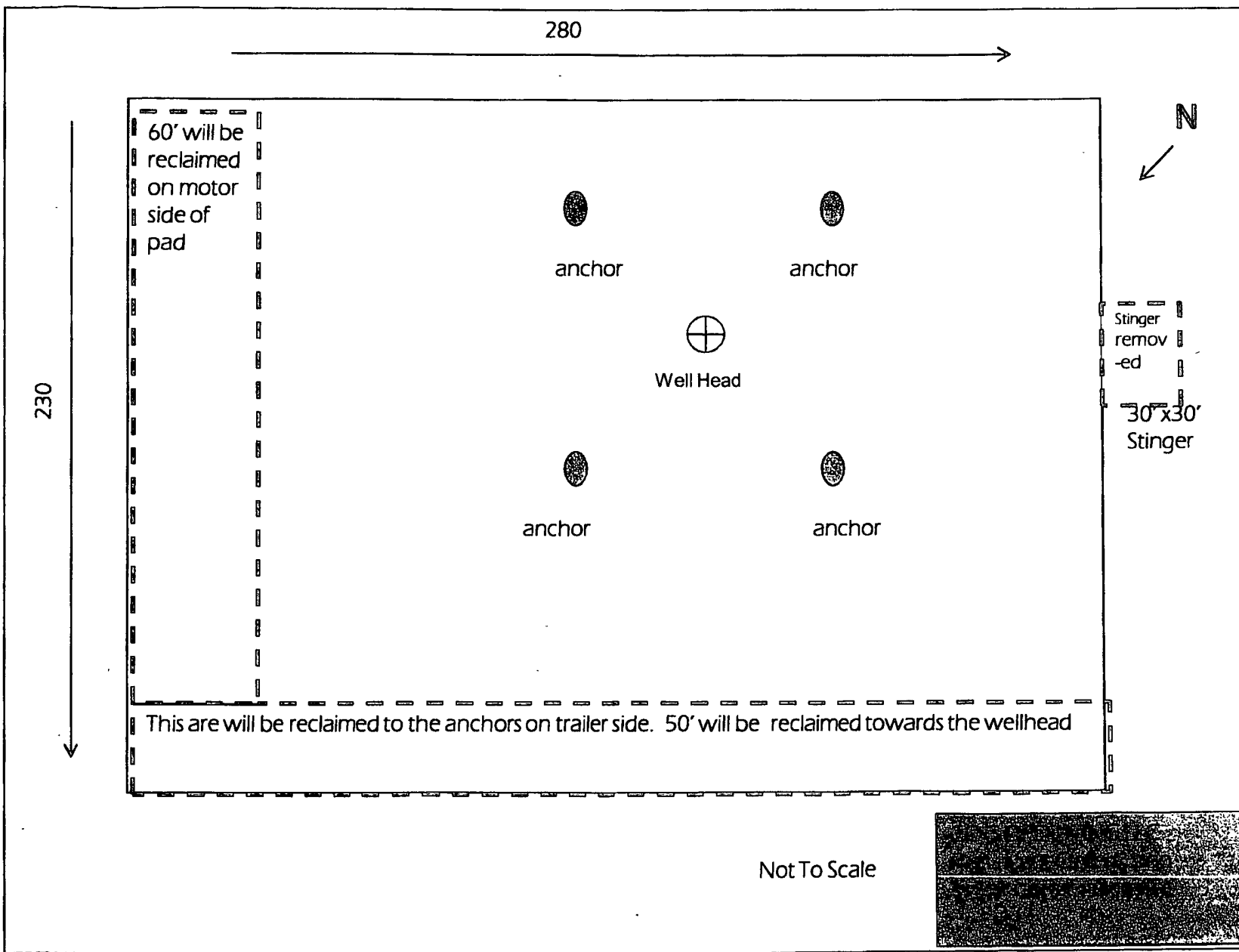
PROJECT DETAILS: Lea County NM (NAD27 NME)

Geographic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Elevation: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level



Julio C Pina
Scientific Drilling
2034 Trade Drive
Midland, TX 79703





16 17S 32E 15

MC FEDERAL
#57

1 MILE

Estimated Distance SHL to BHL
553.2 ft

SHL

BHL

21 1 MILE 22

BHL Estimated Distance to nearest
Wellbore 355 ft SE

SHL Estimated Distance to nearest
wellbore 59 ft N

28

27

33



Project SENM/KP LONGHORN
Eddy/Lea Co., NM

SENM Shelf Area

MC Federal #57

SHL 2576' FSL 1474' FEL, UNIT 1

BHL 2310' FSL 990' FEL, UNIT 1

SEC. 21, T17S, R32E

Author R.V.	Well Scale	Date 11/15/00
Field R.V.	Scale 1" = 100'	Sheet PAGE 1