Permit Information:

30-025-41680

Well Name: Ophelia 27 No. 5H

Location:
SL: 2420' FNL & 1550' FEL, Section 27, T-26-S, R-33-E, Lea Co., N.M.
BHL: 2410' FSL & 1620' FEL, Section 22, T-26-S, R-33-E, Lea Co., N.M.

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
17.5"	0 – 875'	13.375"	54.5#	J55	STC	1.125	1.25	1.60
12.25"	0-4000'	9.625"	40#	J55	LTC	1.125	1.25	1.60
12.25"	4000' – 5100'	9.625"	40#	HCK-55	LTC	1.125	1.25	1.60
8.75"	0'-14,148'	5.5"	17#	HCP-110	LTC	1.125	1.25	1.60

Cement Program:

Depth	No. Sacks	Wt. ppg	Yld Ft^3/ft	Slurry Description
875'	300	13.5	1.73	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% $CaCl_2$ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	200	14.8	1.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
5,100'	800	12.7	2.22	Class 'C' + 1.50% R-3 + 0.25 lb/sk Cello-Flake + 2.0% Sodium Metasilicate + 10% Salt + 0.005 lb/sk Static Free
	200	14.8	1.32	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
14,148'	375	10.8	3.67	60:40:0 Class C + 15.0 pps BA-90 + 4% MPA-5 + 3.0% SMS + 5.0% A-10 + 1.0% BA-10A + 0.80% ASA-301 + 2.55% R-21 + 8.0 pps LCM-1
	400	11.8	2.38	50:50:10 Class H + 0.80% FL-52 + 0.30% ASA-301 + 0.40% SMS + 2.0% Salt + 0.30% R-21 + 3.0 pps LCM-1 + 0.25 pps Celloflake
	1300	14.2	1.28	50:50:2 Class H + 0.65% FL-52 + 0.45% CD-32 + 0.10% SMS + 2.0% Salt

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 875'	Fresh - Gel	8.6-8.8	28-34	N/c
875' – 5,100'	Brine	10.0-10.2	28-34	N/c
5,100' – 9,042'	Cut Brine	8.4-9.0	28-34	N/c
9,042' – 14,148' Lateral	Cut Brine	9.0-9.5	40-42	8-10

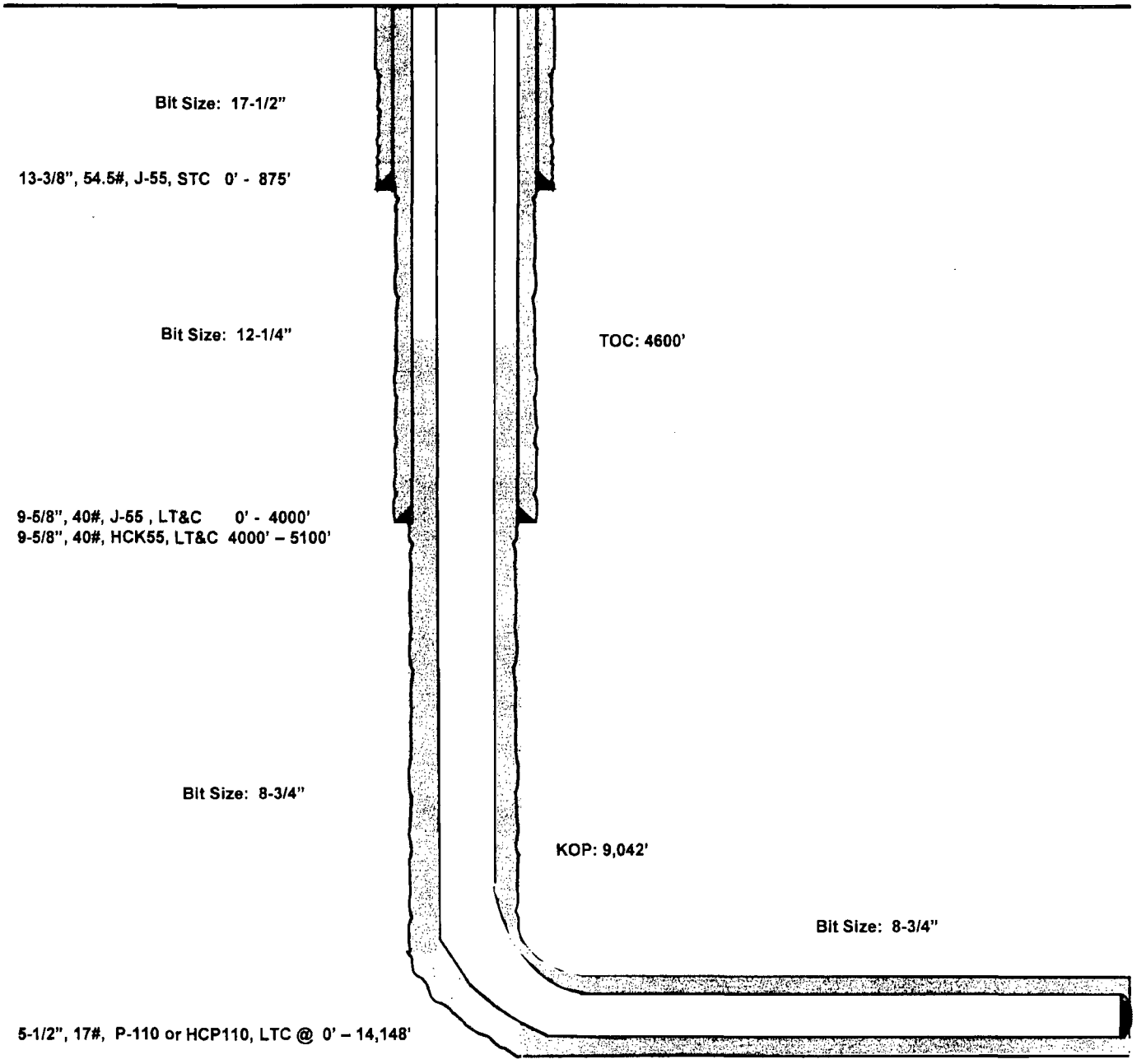
Ophelia 27 #5H
Lea County, New Mexico

2420' FNL
1550' FEL
Section 27
T-26-S, R-33-E

Proposed Wellbore

API: 30-025-

KB: 3,311'
GL: 3,284'



Lateral: 14,148' MD, 9,501' TVD

BH Location: 2410' FSL & 1620' FEL
Section 22
T-26-S, R-33-E

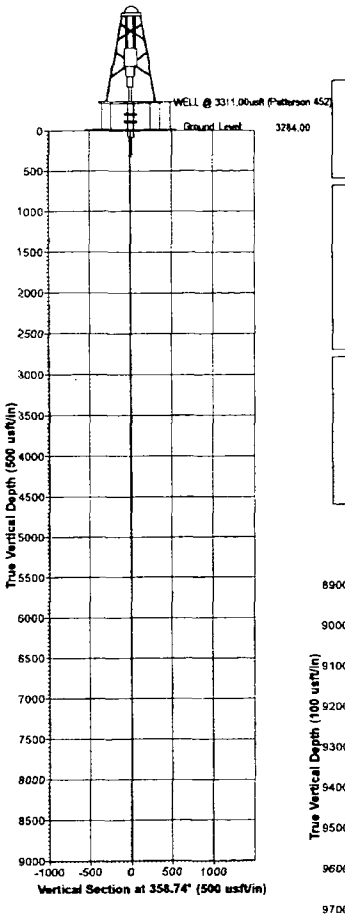
eog resources

Project: Lea County, NM (NAD27 NME)
Site: Ophelia 27
Well: #5H
Wellbore: Wellbore #1 Job #1410307
Design: Plan #1 02-24-14
Rig: Patterson 452

PHOENIX TECHNOLOGY SERVICES

Azimuths to Grid North
True North: -0.41°
Magnetic North: 6.82°

Magnetic Field
Strength: 48224.2nT
Dip Angle: 59.93°
Date: 02/20/2014
Model: IGRF2010_14



WELL DETAILS

Ground Level 3284.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	370021.00	740880.00	32° 0' 53.71478 N	103° 33' 22.22056 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	9042.54	0.00	0.00	9042.54	0.00	0.00	0.00	0.00	0.00		KOP, Start Build 12.00°/100'
3	9794.62	90.25	352.75	9520.00	475.71	-60.52	12.00	352.75	478.93		LP at 90.25° Inc, Start Turn 3.00°/100'
4	10022.28	90.25	359.58	9519.01	702.72	-75.74	3.00	88.99	704.22		EOT, 359.58° Azi
5	14148.71	90.25	359.58	9501.02	4829.00	-106.00	0.00	0.00	4830.16	BHL Ophelia 27 #5H	TD at 14148.71

DESIGN TARGET DETAILS

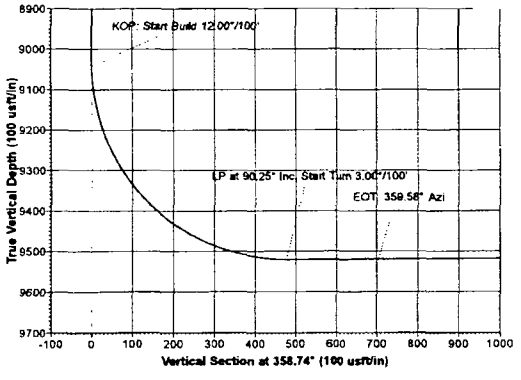
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BHL Ophelia 27 #5H	9501.02	4829.00	-106.00	374850.00	740774.00	32° 1' 41.50810 N	103° 33' 23.04837 W	Point

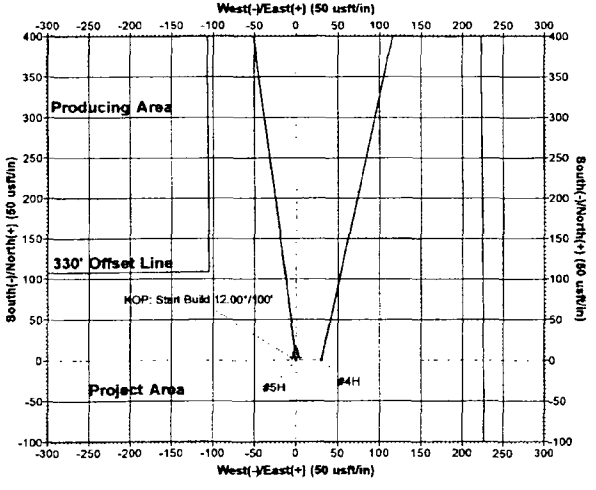
Map System:	US State Plane 1927 (Exact solution)
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1866
Zone Name:	New Mexico East 3001
Local Origin:	Well #5H, Grid North
Latitude:	32° 0' 53.71478 N
Longitude:	103° 33' 22.22056 W
Grid East:	740880.00
Grid North:	370021.00
Scale Factor:	1.000
Geomagnetic Model:	IGRF2010_14
Sample Date:	20-Feb-14
Magnetic Declination:	7.23°
Dip Angle from Horizontal:	59.93°
Magnetic Field Strength:	48224

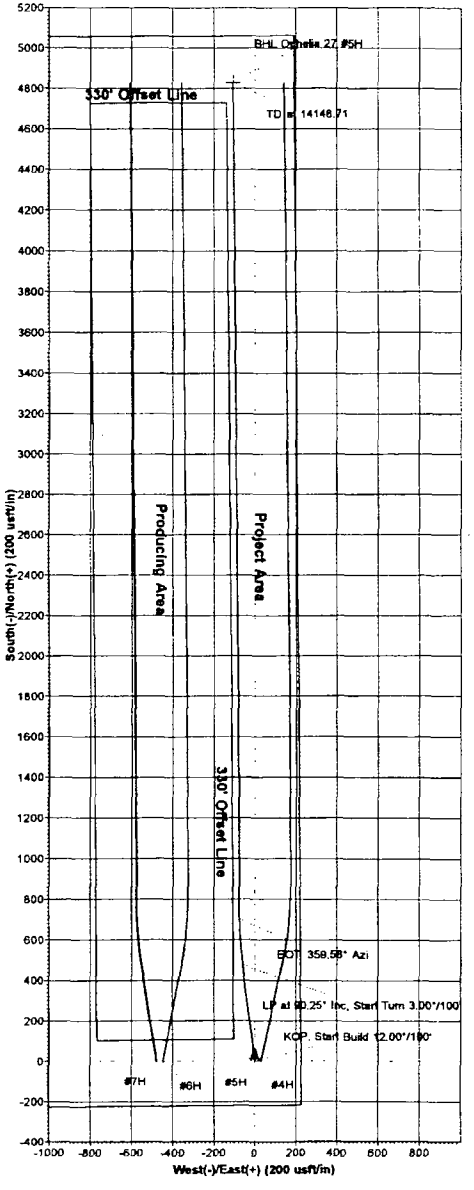
To convert a Magnetic Direction to a Grid Direction, Add 6.82°
To convert a Magnetic Direction to a True Direction, Add 7.23° East
To convert a True Direction to a Grid Direction, Subtract 0.41°

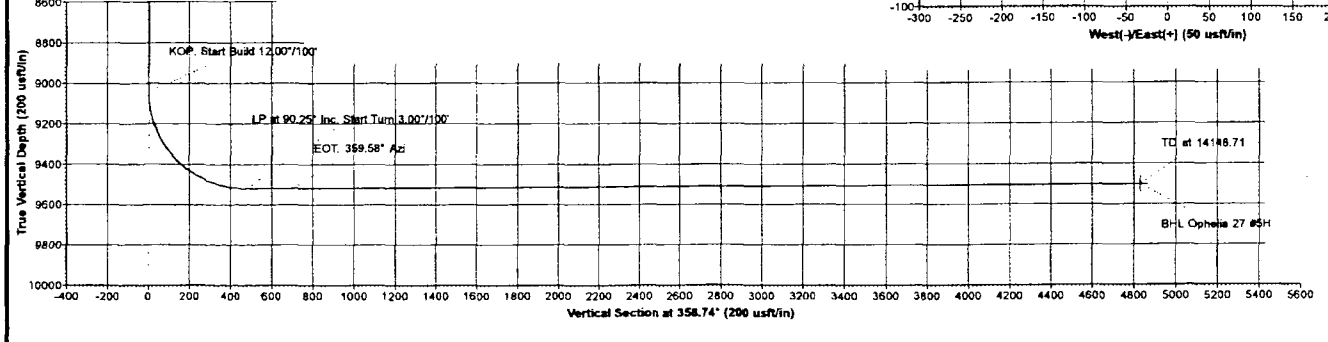
LEGEND

- #5H, Wellbore #1 Job #1410308, Plan #1 02-24-14 V0
- #4H, Wellbore #1 Job #1410306, Plan #1 02-24-14 V0
- #7H, Wellbore #1 Job #1410309, Plan #1 02-24-14 V0
- Plan #1 02-24-14









Created By: Justin Andoe Date: 8:25, February 24 2014

eog resources

EOG Resources

Lea County, NM (NAD27 NME)
Ophelia 27
#5H
Wellbore #1 Job #1410307

Plan: Plan #1 02-24-14

Planning Report

24 February, 2014

PHOENIX
TECHNOLOGY SERVICES

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well #5H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3311.00usft (Patterson 452)
Site:	Ophelia 27	**MD Reference:**	WELL @ 3311.00usft (Patterson 452)
Well:	#5H	**North Reference:**	Grid
Wellbore:	Wellbore #1 Job #1410307	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 02-24-14	**Database:**	Compass 5000 GCR DB

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	Ophelia 27				
Site Position:		**Northing:**	370,025.00 usft	**Latitude:**	32° 0' 53.71140 N
From:	Map	**Easting:**	741,483.00 usft	**Longitude:**	103° 33' 15.21704 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.41 °

Well	#5H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	370,021.00 usft	**Latitude:**	32° 0' 53.71478 N
	+E/-W	0.00 usft	**Easting:**	740,880.00 usft	**Longitude:**	103° 33' 22.22056 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,284.00 usft

Wellbore Wellbore #1 Job #1410307

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010_14	02/20/14	7.23	59.93	48,224

Design Plan #1 02-24-14

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.00	0.00	0.00	358.74

Survey Tool Program **Date** 02/24/14

From (usft)	**To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.00	14,148.71	Plan #1 02-24-14 (Wellbore #1 Job #1410	MWD	MWD - Standard

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well #5H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3311.00usft (Patterson 452)
Site:	Ophelia 27	**MD Reference:**	WELL @ 3311.00usft (Patterson 452)
Well:	#5H	**North Reference:**	Grid
Wellbore:	Wellbore #1 Job #1410307	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 02-24-14	**Database:**	Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
0.00	0.00	0.00	-3,311.00	0.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
100.00	0.00	0.00	-3,211.00	100.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
200.00	0.00	0.00	-3,111.00	200.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
300.00	0.00	0.00	-3,011.00	300.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
400.00	0.00	0.00	-2,911.00	400.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
500.00	0.00	0.00	-2,811.00	500.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
600.00	0.00	0.00	-2,711.00	600.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
700.00	0.00	0.00	-2,611.00	700.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
800.00	0.00	0.00	-2,511.00	800.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
900.00	0.00	0.00	-2,411.00	900.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
1,000.00	0.00	0.00	-2,311.00	1,000.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
1,100.00	0.00	0.00	-2,211.00	1,100.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
1,200.00	0.00	0.00	-2,111.00	1,200.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
1,300.00	0.00	0.00	-2,011.00	1,300.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
1,400.00	0.00	0.00	-1,911.00	1,400.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
1,500.00	0.00	0.00	-1,811.00	1,500.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
1,600.00	0.00	0.00	-1,711.00	1,600.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
1,700.00	0.00	0.00	-1,611.00	1,700.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
1,800.00	0.00	0.00	-1,511.00	1,800.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
1,900.00	0.00	0.00	-1,411.00	1,900.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
2,000.00	0.00	0.00	-1,311.00	2,000.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
2,100.00	0.00	0.00	-1,211.00	2,100.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
2,200.00	0.00	0.00	-1,111.00	2,200.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
2,300.00	0.00	0.00	-1,011.00	2,300.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
2,400.00	0.00	0.00	-911.00	2,400.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
2,500.00	0.00	0.00	-811.00	2,500.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
2,600.00	0.00	0.00	-711.00	2,600.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well #5H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3311.00usft (Patterson 452)
Site:	Ophelia 27	**MD Reference:**	WELL @ 3311.00usft (Patterson 452)
Well:	#5H	**North Reference:**	Grid
Wellbore:	Wellbore #1 Job #1410307	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 02-24-14	**Database:**	Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
2,700.00	0.00	0.00	-611.00	2,700.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
2,800.00	0.00	0.00	-511.00	2,800.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
2,900.00	0.00	0.00	-411.00	2,900.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
3,000.00	0.00	0.00	-311.00	3,000.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
3,100.00	0.00	0.00	-211.00	3,100.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
3,200.00	0.00	0.00	-111.00	3,200.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
3,300.00	0.00	0.00	-11.00	3,300.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
3,400.00	0.00	0.00	89.00	3,400.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
3,500.00	0.00	0.00	189.00	3,500.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
3,600.00	0.00	0.00	289.00	3,600.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
3,700.00	0.00	0.00	389.00	3,700.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
3,800.00	0.00	0.00	489.00	3,800.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
3,900.00	0.00	0.00	589.00	3,900.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
4,000.00	0.00	0.00	689.00	4,000.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
4,100.00	0.00	0.00	789.00	4,100.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
4,200.00	0.00	0.00	889.00	4,200.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
4,300.00	0.00	0.00	989.00	4,300.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
4,400.00	0.00	0.00	1,089.00	4,400.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
4,500.00	0.00	0.00	1,189.00	4,500.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
4,600.00	0.00	0.00	1,289.00	4,600.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
4,700.00	0.00	0.00	1,389.00	4,700.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
4,800.00	0.00	0.00	1,489.00	4,800.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
4,900.00	0.00	0.00	1,589.00	4,900.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
5,000.00	0.00	0.00	1,689.00	5,000.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
5,100.00	0.00	0.00	1,789.00	5,100.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
5,200.00	0.00	0.00	1,889.00	5,200.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
5,300.00	0.00	0.00	1,989.00	5,300.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well #5H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3311.00usft (Patterson 452)
Site:	Ophelia 27	**MD Reference:**	WELL @ 3311.00usft (Patterson 452)
Well:	#5H	**North Reference:**	Grid
Wellbore:	Wellbore #1 Job #1410307	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 02-24-14	**Database:**	Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
5,400.00	0.00	0.00	2,089.00	5,400.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
5,500.00	0.00	0.00	2,189.00	5,500.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
5,600.00	0.00	0.00	2,289.00	5,600.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
5,700.00	0.00	0.00	2,389.00	5,700.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
5,800.00	0.00	0.00	2,489.00	5,800.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
5,900.00	0.00	0.00	2,589.00	5,900.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
6,000.00	0.00	0.00	2,689.00	6,000.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
6,100.00	0.00	0.00	2,789.00	6,100.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
6,200.00	0.00	0.00	2,889.00	6,200.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
6,300.00	0.00	0.00	2,989.00	6,300.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
6,400.00	0.00	0.00	3,089.00	6,400.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
6,500.00	0.00	0.00	3,189.00	6,500.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
6,600.00	0.00	0.00	3,289.00	6,600.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
6,700.00	0.00	0.00	3,389.00	6,700.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
6,800.00	0.00	0.00	3,489.00	6,800.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
6,900.00	0.00	0.00	3,589.00	6,900.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
7,000.00	0.00	0.00	3,689.00	7,000.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
7,100.00	0.00	0.00	3,789.00	7,100.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
7,200.00	0.00	0.00	3,889.00	7,200.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
7,300.00	0.00	0.00	3,989.00	7,300.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
7,400.00	0.00	0.00	4,089.00	7,400.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
7,500.00	0.00	0.00	4,189.00	7,500.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
7,600.00	0.00	0.00	4,289.00	7,600.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
7,700.00	0.00	0.00	4,389.00	7,700.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
7,800.00	0.00	0.00	4,489.00	7,800.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
7,900.00	0.00	0.00	4,589.00	7,900.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
8,000.00	0.00	0.00	4,689.00	8,000.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well #5H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3311.00usft (Patterson 452)
Site:	Ophelia 27	**MD Reference:**	WELL @ 3311.00usft (Patterson 452)
Well:	#5H	**North Reference:**	Grid
Wellbore:	Wellbore #1 Job #1410307	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 02-24-14	**Database:**	Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
8,100.00	0.00	0.00	4,789.00	8,100.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
8,200.00	0.00	0.00	4,889.00	8,200.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
8,300.00	0.00	0.00	4,989.00	8,300.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
8,400.00	0.00	0.00	5,089.00	8,400.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
8,500.00	0.00	0.00	5,189.00	8,500.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
8,600.00	0.00	0.00	5,289.00	8,600.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
8,700.00	0.00	0.00	5,389.00	8,700.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
8,800.00	0.00	0.00	5,489.00	8,800.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
8,900.00	0.00	0.00	5,589.00	8,900.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
9,000.00	0.00	0.00	5,689.00	9,000.00	0.00	0.00	370,021.00	740,880.00	0.00	0.00
9,042.54	0.00	0.00	5,731.54	9,042.54	0.00	0.00	370,021.00	740,880.00	0.00	0.00
KOP: Start Build 12.00°/100'										
9,050.00	0.90	352.75	5,739.00	9,050.00	0.06	-0.01	370,021.06	740,879.99	0.06	12.00
9,075.00	3.90	352.75	5,763.98	9,074.98	1.09	-0.14	370,022.09	740,879.86	1.10	12.00
9,100.00	6.90	352.75	5,788.86	9,099.86	3.43	-0.44	370,024.43	740,879.56	3.43	12.00
9,125.00	9.90	352.75	5,813.59	9,124.59	7.05	-0.90	370,028.05	740,879.10	7.06	12.00
9,150.00	12.90	352.75	5,838.10	9,149.10	11.95	-1.52	370,032.95	740,878.48	11.98	12.00
9,175.00	15.90	352.75	5,862.31	9,173.31	18.11	-2.30	370,039.11	740,877.70	18.16	12.00
9,200.00	18.90	352.75	5,886.16	9,197.16	25.52	-3.25	370,046.52	740,876.75	25.59	12.00
9,225.00	21.90	352.75	5,909.59	9,220.59	34.17	-4.35	370,055.17	740,875.65	34.25	12.00
9,250.00	24.90	352.75	5,932.53	9,243.53	44.01	-5.60	370,065.01	740,874.40	44.12	12.00
9,275.00	27.90	352.75	5,954.92	9,265.92	55.04	-7.00	370,076.04	740,873.00	55.18	12.00
9,300.00	30.90	352.75	5,976.70	9,287.70	67.21	-8.55	370,088.21	740,871.45	67.38	12.00
9,325.00	33.90	352.75	5,997.81	9,308.81	80.49	-10.24	370,101.49	740,869.76	80.70	12.00
9,350.00	36.90	352.75	6,018.19	9,329.19	94.86	-12.07	370,115.86	740,867.93	95.10	12.00
9,375.00	39.90	352.75	6,037.78	9,348.78	110.26	-14.03	370,131.26	740,865.97	110.54	12.00
9,400.00	42.90	352.75	6,056.53	9,367.53	126.65	-16.11	370,147.65	740,863.89	126.98	12.00

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well #5H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3311.00usft (Patterson 452)
Site:	Ophelia 27	**MD Reference:**	WELL @ 3311.00usft (Patterson 452)
Well:	#5H	**North Reference:**	Grid
Wellbore:	Wellbore #1 Job #1410307	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 02-24-14	**Database:**	Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
9,425.00	45.90	352.75	6,074.39	9,385.39	144.00	-18.32	370,165.00	740,861.68	144.37	12.00
9,450.00	48.90	352.75	6,091.31	9,402.31	162.25	-20.64	370,183.25	740,859.36	162.67	12.00
9,475.00	51.90	352.75	6,107.25	9,418.25	181.36	-23.07	370,202.36	740,856.93	181.82	12.00
9,500.00	54.90	352.75	6,122.15	9,433.15	201.27	-25.60	370,222.27	740,854.40	201.78	12.00
9,525.00	57.90	352.75	6,135.99	9,446.99	221.92	-28.23	370,242.92	740,851.77	222.48	12.00
9,550.00	60.90	352.75	6,148.72	9,459.72	243.26	-30.95	370,264.26	740,849.05	243.88	12.00
9,575.00	63.90	352.75	6,160.30	9,471.30	265.24	-33.74	370,286.24	740,846.26	265.91	12.00
9,600.00	66.90	352.75	6,170.71	9,481.71	287.78	-36.61	370,308.78	740,843.39	288.52	12.00
9,625.00	69.90	352.75	6,179.91	9,490.91	310.84	-39.54	370,331.84	740,840.46	311.63	12.00
9,650.00	72.90	352.75	6,187.89	9,498.89	334.34	-42.53	370,355.34	740,837.47	335.19	12.00
9,675.00	75.90	352.75	6,194.61	9,505.61	358.22	-45.57	370,379.22	740,834.43	359.14	12.00
9,700.00	78.90	352.75	6,200.07	9,511.07	382.42	-48.65	370,403.42	740,831.35	383.40	12.00
9,725.00	81.90	352.75	6,204.24	9,515.24	406.87	-51.76	370,427.87	740,828.24	407.91	12.00
9,750.00	84.90	352.75	6,207.11	9,518.11	431.50	-54.89	370,452.50	740,825.11	432.60	12.00
9,775.00	87.90	352.75	6,208.68	9,519.68	456.25	-58.04	370,477.25	740,821.96	457.42	12.00
9,794.62	90.25	352.75	6,209.00	9,520.00	475.71	-60.52	370,496.71	740,819.48	476.93	12.00
LP at 90.25° Inc, Start Turn 3.00°/100'										
9,800.00	90.25	352.91	6,208.98	9,519.98	481.05	-61.19	370,502.05	740,818.81	482.28	3.00
9,900.00	90.25	355.91	6,208.54	9,519.54	580.56	-70.93	370,601.56	740,809.07	581.98	3.00
10,000.00	90.25	358.91	6,208.10	9,519.10	680.45	-75.44	370,701.45	740,804.56	681.94	3.00
10,022.28	90.25	359.58	6,208.01	9,519.01	702.72	-75.74	370,723.72	740,804.26	704.22	3.00
EOT: 359.58° Azi										
10,100.00	90.25	359.58	6,207.67	9,518.67	780.44	-76.31	370,801.44	740,803.69	781.93	0.00
10,200.00	90.25	359.58	6,207.23	9,518.23	880.44	-77.04	370,901.44	740,802.96	881.92	0.00
10,300.00	90.25	359.58	6,206.80	9,517.80	980.43	-77.77	371,001.43	740,802.23	981.90	0.00
10,400.00	90.25	359.58	6,206.36	9,517.36	1,080.43	-78.51	371,101.43	740,801.49	1,081.89	0.00
10,500.00	90.25	359.58	6,205.92	9,516.92	1,180.43	-79.24	371,201.43	740,800.76	1,181.88	0.00

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well #5H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3311.00usft (Patterson 452)
Site:	Ophelia 27	**MD Reference:**	WELL @ 3311.00usft (Patterson 452)
Well:	#5H	**North Reference:**	Grid
Wellbore:	Wellbore #1 Job #1410307	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 02-24-14	**Database:**	Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
10,600.00	90.25	359.58	6,205.49	9,516.49	1,280.42	-79.97	371,301.42	740,800.03	1,281.87	0.00
10,700.00	90.25	359.58	6,205.05	9,516.05	1,380.42	-80.71	371,401.42	740,799.29	1,381.86	0.00
10,800.00	90.25	359.58	6,204.62	9,515.62	1,480.42	-81.44	371,501.42	740,798.56	1,481.85	0.00
10,900.00	90.25	359.58	6,204.18	9,515.18	1,580.41	-82.17	371,601.41	740,797.83	1,581.84	0.00
11,000.00	90.25	359.58	6,203.74	9,514.74	1,680.41	-82.91	371,701.41	740,797.09	1,681.82	0.00
11,100.00	90.25	359.58	6,203.31	9,514.31	1,780.41	-83.64	371,801.41	740,796.36	1,781.81	0.00
11,200.00	90.25	359.58	6,202.87	9,513.87	1,880.40	-84.37	371,901.40	740,795.63	1,881.80	0.00
11,300.00	90.25	359.58	6,202.44	9,513.44	1,980.40	-85.11	372,001.40	740,794.89	1,981.79	0.00
11,400.00	90.25	359.58	6,202.00	9,513.00	2,080.39	-85.84	372,101.39	740,794.16	2,081.78	0.00
11,500.00	90.25	359.58	6,201.57	9,512.57	2,180.39	-86.57	372,201.39	740,793.43	2,181.77	0.00
11,600.00	90.25	359.58	6,201.13	9,512.13	2,280.39	-87.31	372,301.39	740,792.69	2,281.75	0.00
11,700.00	90.25	359.58	6,200.69	9,511.69	2,380.38	-88.04	372,401.38	740,791.96	2,381.74	0.00
11,800.00	90.25	359.58	6,200.26	9,511.26	2,480.38	-88.77	372,501.38	740,791.23	2,481.73	0.00
11,900.00	90.25	359.58	6,199.82	9,510.82	2,580.38	-89.51	372,601.38	740,790.49	2,581.72	0.00
12,000.00	90.25	359.58	6,199.39	9,510.39	2,680.37	-90.24	372,701.37	740,789.76	2,681.71	0.00
12,100.00	90.25	359.58	6,198.95	9,509.95	2,780.37	-90.97	372,801.37	740,789.03	2,781.70	0.00
12,200.00	90.25	359.58	6,198.51	9,509.51	2,880.37	-91.71	372,901.37	740,788.29	2,881.68	0.00
12,300.00	90.25	359.58	6,198.08	9,509.08	2,980.36	-92.44	373,001.36	740,787.56	2,981.67	0.00
12,400.00	90.25	359.58	6,197.64	9,508.64	3,080.36	-93.17	373,101.36	740,786.83	3,081.66	0.00
12,500.00	90.25	359.58	6,197.21	9,508.21	3,180.35	-93.91	373,201.35	740,786.09	3,181.65	0.00
12,600.00	90.25	359.58	6,196.77	9,507.77	3,280.35	-94.64	373,301.35	740,785.36	3,281.64	0.00
12,700.00	90.25	359.58	6,196.33	9,507.33	3,380.35	-95.37	373,401.35	740,784.63	3,381.63	0.00
12,800.00	90.25	359.58	6,195.90	9,506.90	3,480.34	-96.11	373,501.34	740,783.89	3,481.61	0.00
12,900.00	90.25	359.58	6,195.46	9,506.46	3,580.34	-96.84	373,601.34	740,783.16	3,581.60	0.00
13,000.00	90.25	359.58	6,195.03	9,506.03	3,680.34	-97.58	373,701.34	740,782.42	3,681.59	0.00
13,100.00	90.25	359.58	6,194.59	9,505.59	3,780.33	-98.31	373,801.33	740,781.69	3,781.58	0.00
13,200.00	90.25	359.58	6,194.16	9,505.16	3,880.33	-99.04	373,901.33	740,780.96	3,881.57	0.00

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well #5H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3311.00usft (Patterson 452)
Site:	Ophelia 27	**MD Reference:**	WELL @ 3311.00usft (Patterson 452)
Well:	#5H	**North Reference:**	Grid
Wellbore:	Wellbore #1 Job #1410307	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 02-24-14	**Database:**	Compass 5000 GCR DB

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	Northing (usft)	Easting (usft)	V. Sec (usft)	DLeg (°/100usft)
13,300.00	90.25	359.58	6,193.72	9,504.72	3,980.33	-99.78	374,001.33	740,780.22	3,981.56	0.00
13,400.00	90.25	359.58	6,193.28	9,504.28	4,080.32	-100.51	374,101.32	740,779.49	4,081.54	0.00
13,500.00	90.25	359.58	6,192.85	9,503.85	4,180.32	-101.24	374,201.32	740,778.76	4,181.53	0.00
13,600.00	90.25	359.58	6,192.41	9,503.41	4,280.31	-101.98	374,301.31	740,778.02	4,281.52	0.00
13,700.00	90.25	359.58	6,191.98	9,502.98	4,380.31	-102.71	374,401.31	740,777.29	4,381.51	0.00
13,800.00	90.25	359.58	6,191.54	9,502.54	4,480.31	-103.44	374,501.31	740,776.56	4,481.50	0.00
13,900.00	90.25	359.58	6,191.10	9,502.10	4,580.30	-104.18	374,601.30	740,775.82	4,581.49	0.00
14,000.00	90.25	359.58	6,190.67	9,501.67	4,680.30	-104.91	374,701.30	740,775.09	4,681.47	0.00
14,100.00	90.25	359.58	6,190.23	9,501.23	4,780.30	-105.64	374,801.30	740,774.36	4,781.46	0.00
14,148.71	90.25	359.58	6,190.02	9,501.02	4,829.00	-106.00	374,850.00	740,774.00	4,830.16	0.00

TD at 14148.71

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
9,042.54	9,042.54	0.00	0.00	KOP: Start Build 12.00°/100'
9,794.62	9,520.00	475.71	-60.52	LP at 90.25° Inc, Start Turn 3.00°/100'
10,022.28	9,519.01	702.72	-75.74	EOT: 359.58° Azi
14,148.71	9,501.02	4,829.00	-106.00	TD at 14148.71

EOG RESOURCES, INC.
OPHELIA 27 #5H

Hydrogen Sulfide Plan Summary

A. All personnel shall receive proper H2S training in accordance with Onshore Order III.C.3.a.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment:

- Well control equipment
  a. Flare line 150' from wellhead to be ignited by flare gun.
  b. Choke manifold with a remotely operated choke.
  c. Mud/gas separator

- Protective equipment for essential personnel.

  Breathing apparatus:
  a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  b. Work/Escape packs —4 packs shall be stored on the rig floor th sufficient air hose not to restrict work activity.
  c. Emergency Escape Packs —4 packs shall be stored in the doghouse for emergency evacuation.

  Auxiliary Rescue Equipment:
  a. Stretcher
  b. Two OSHA full body harness
  c. 100 ft 5/8 inch OSHA approved rope
  d. 1-20# class ABC fire extinguisher

- H2S detection and monitoring equipment:
  The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.
  (Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.
  a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
  c. Two wind socks will be placed in strategic locations, visible from all angles.

EOG RESOURCES, INC.
OPHELIA 27 #5H

- Mud program:
  The mud program has been designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.

- Metallurgy:
  All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

- Communication:
  Communication will be via cell phones and land lines where available.

EOG RESOURCES, INC.
OPHELIA 27 #5H

Emergency Assistance Telephone List

PUBLIC SAFETY:	**911 or**
Lea County Sheriff's Department	(575) 396-3611
Rod Coffman	
Fire Department:	
Carlsbad	(575) 885-3125
Artesia	(575) 746-5050
Hospitals:	
Carlsbad	(575) 887-4121
Artesia	(575) 748-3333
Hobbs	(575) 392-1979
Dept. of Public Safety/Carlsbad	(575) 748-9718
Highway Department	(575) 885-3281
New Mexico Oil Conservation	(575) 476-3440
U.S. Dept. of Labor	(575) 887-1174

EOG Resources, Inc.	
EOG / Midland	Office (432) 686-3600

Company Drilling Consultants:	
Lonnie Byrd	Cell (432) 894-2389
Rickie Poindexter	

Drilling Engineer	
Robert Brosig	Office (432) 686-3737
	Cell (432) 770-0705

Drilling Manager	
Steve Munsell	Office (432) 686-3609
	Cell (432) 894-1256

Drilling Superintendent	
Ron Welch	Office (432) 686-3695
	Cell (432) 386-0592

Cactus Drilling	
Patterson Drilling	Office (432) 682-9401
Patterson 452 Drilling Rig	Rig (432) 894-2389

Tool Pusher:	
Robert Merchant	Cell (903) 477-3751
Patrick Ford	Cell (903) 539-7889

Safety	
Reggie Phillips (HSE Manager)	Office (432) 686-3747
	Cell (432) 250-7507