

District I
1625 N French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S St. Francis Dr., Sante Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

FORM C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
HOBBS OCD
MAY 18 2012
RECEIVED ☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025- 40580	² Pool Code 97900	³ Pool Name WC Red Hills; Bone Spring Upper Shale
⁴ Property Code 38965	⁵ Property Name BLACK BEAR 36 STATE	⁶ Well Number #4H
⁷ OGRID No. 7377	⁸ Operator Name EOG RESOURCES, INC.	⁹ Elevation 3323.9'

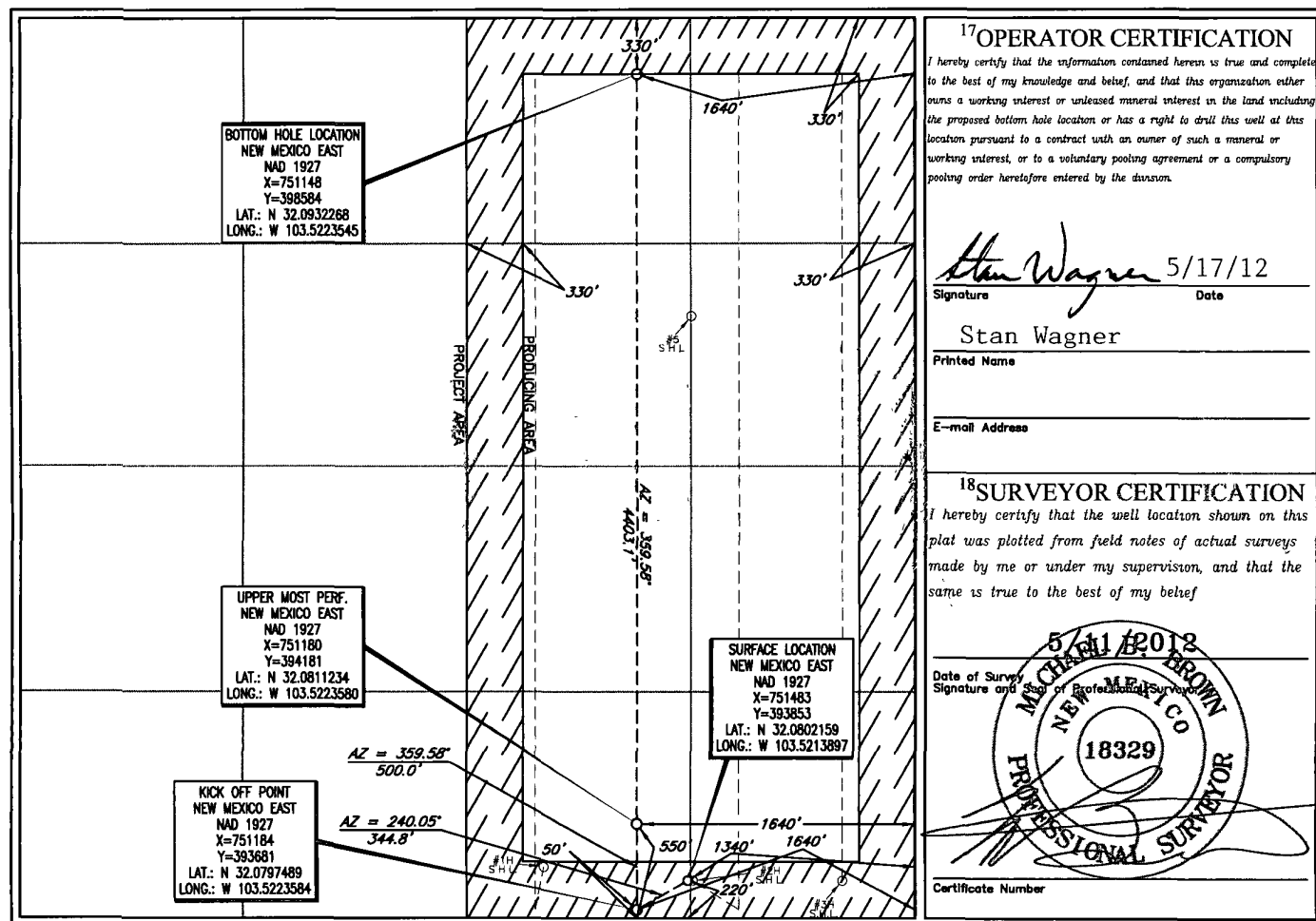
¹⁰Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	36	25-S	33-E	-	220'	SOUTH	1340'	EAST	LEA

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	36	25-S	33-E	-	330'	NORTH	1640'	EAST	LEA

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ 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.



MAY 21 2012

Permit Information:

MAY 18 2012

Well Name: Black Bear 36 State No. 4H

RECEIVED**Location:**

SL: 220' FSL & 1340' FEL, Section 36, T-25-S, R-33-E, Lea Co., N.M.

BHL: 330' FNL & 1640' FEL, Section 36, T-25-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 – 985'	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' -14,315'	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
985'	370	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'	790	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
14,315'	230	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
	450	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
	1400	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 – 985'	Fresh - Gel	8.6-8.8	28-34	N/c
985' – 5,100'	Brine	10.0-10.2	28-34	N/c
5,100' – 9,140'	Cut Brine	8.4-9.0	28-34	N/c
KOP – 14,315' Lateral	Cut Brine	9.0-9.5	40-42	8-10

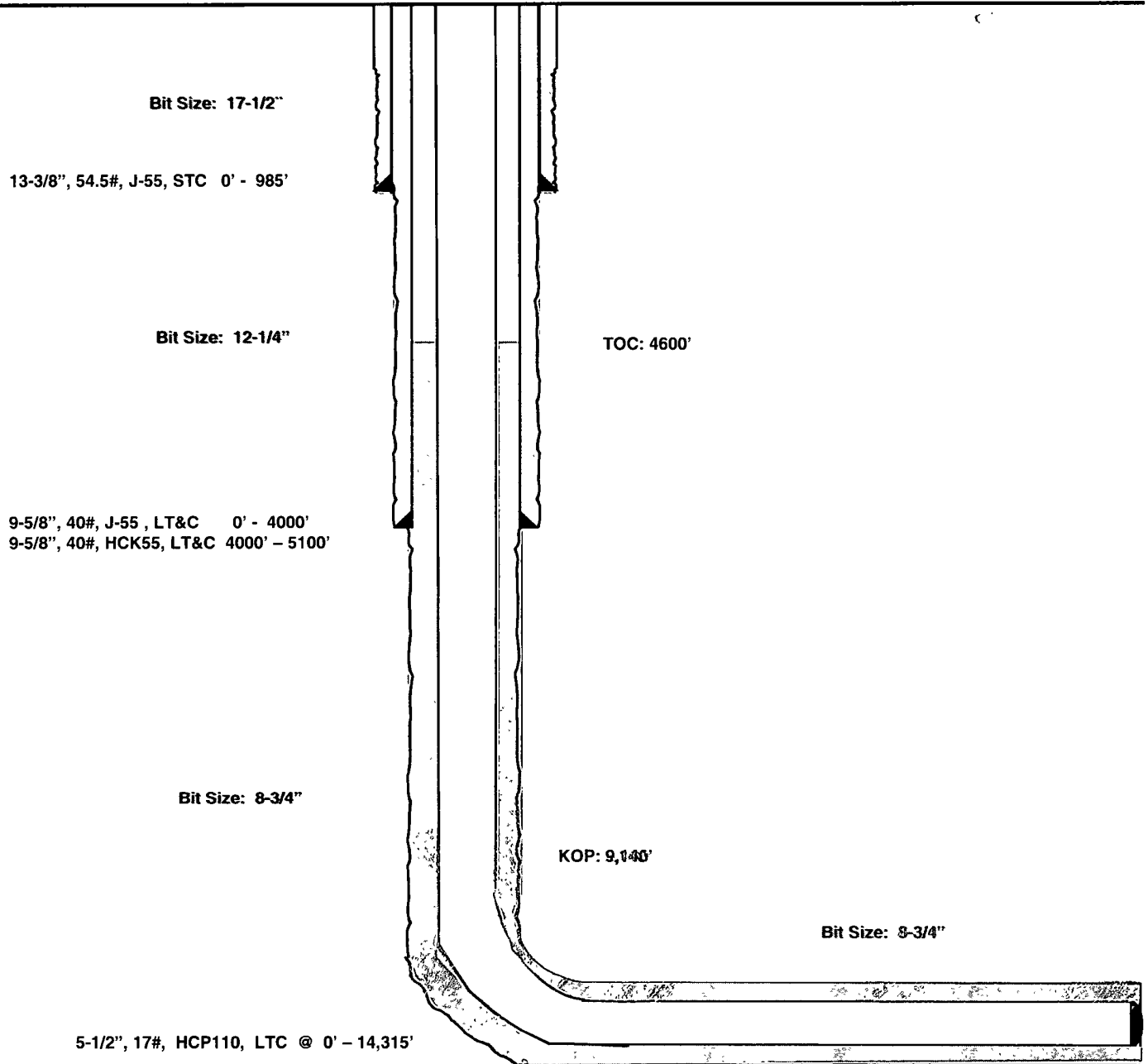
Black Bear 36 State #4H
Red Hills
Lea County, New Mexico

220' FSL
1340' FEL
Section 36
T-25-S, R-33-E

Proposed Wellbore

API: 30-025-

KB: 3,353.9'
GL: 3,323.9'



Lateral: 14,315' MD, 9,600' TVD

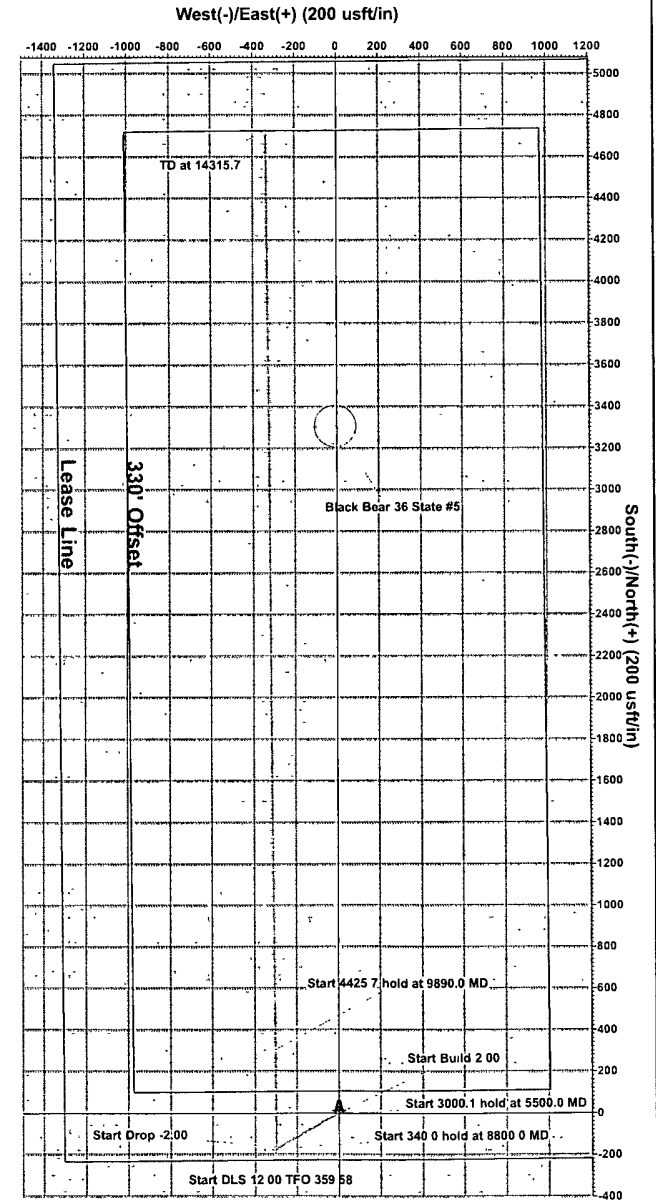
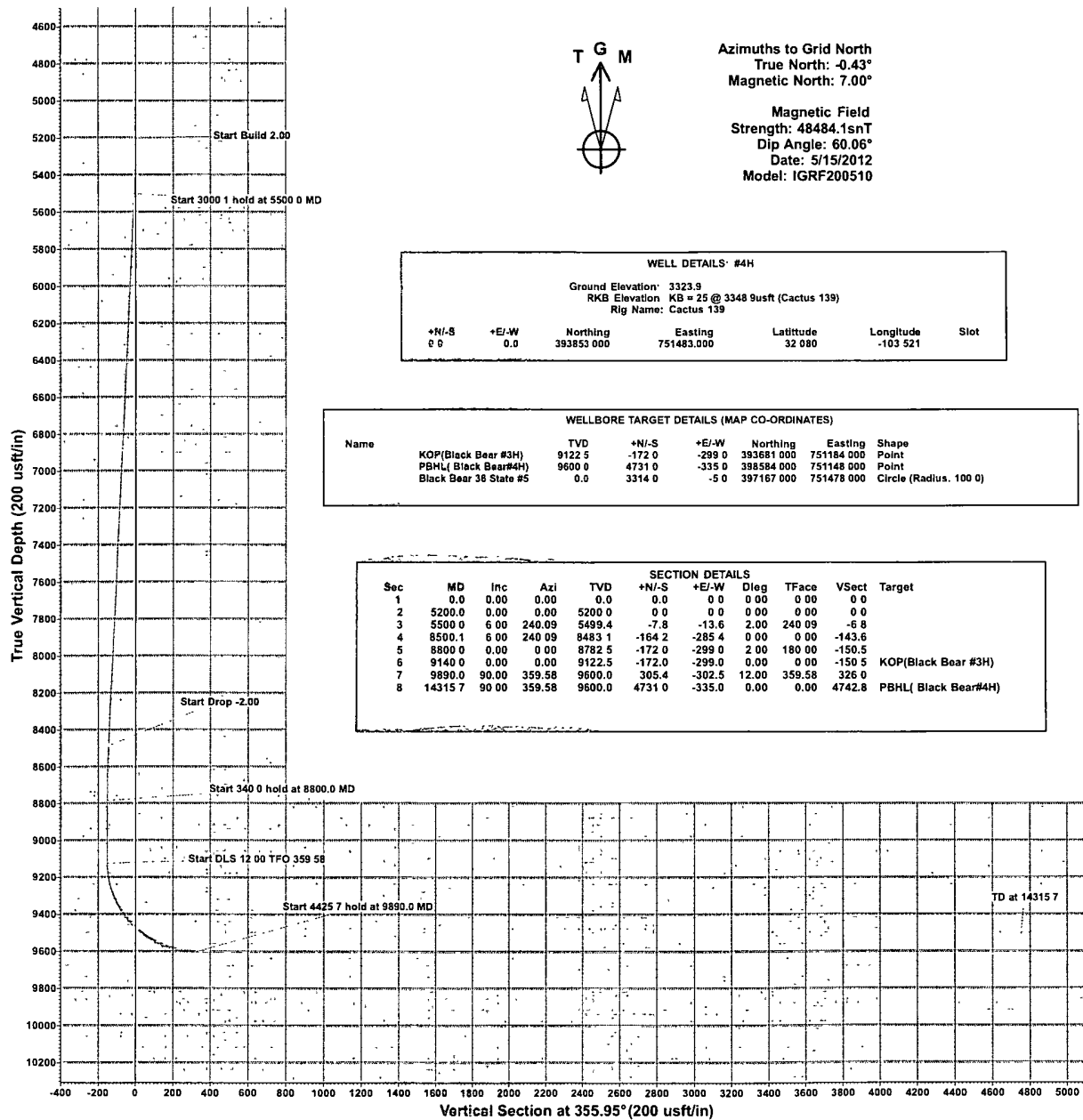
BH Location: 330' FNL & 1640' FEL
Section 36
T-25-S, R-33-E



Project: Lea County
Site: Black Bear "36" State
Well: #4H
Wellbore: OH
Plan: Plan #1 (#4H/OH)

PROJECT DETAILS: Lea County
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1886
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

PATHFINDER
A Schlumberger Company



Plan Plan #1 (#4H/OH)

Created By: Sam Brille Date: 13.28, May 15 2012

Checked: _____ Date: _____





EOG Resources, Inc.

Lea County

Black Bear "36" State

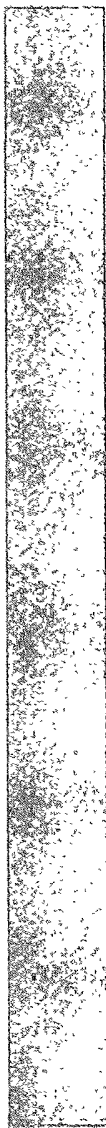
#4H

OH

Plan: Plan #1

PathfinderX & Y Report

15 May, 2012

A vertical rectangular bar with a dense, grainy texture, spanning the height of the page on the right side.
PATHFINDER[®]

A Schlumberger Company

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #4H
Project:	Lea County	TVD Reference:	KB = 25 @ 3348.9usft (Cactus 139)
Site:	Black Bear "36" State	MD Reference:	KB = 25 @ 3348.9usft (Cactus 139)
Well:	#4H	North Reference:	Grd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000 1 Single User Db

Project	Lea County		
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		Black Bear "36" State									
Site Position:		Northing:		393,927 000 usft		Latitude:		32.080			
From:		Map		Easting:		750,632 000 usft		Longitude:		-103.524	
Position Uncertainty:		0.0 usft		Slot Radius:		13-3/16 "		Grid Convergence:		0.43 °	

Well	#4H					
Well Position	+N/-S	0.0 usft	Northing:	393,853.000 usft	Latitude:	32.080
	+E/-W	0.0 usft	Easting:	751,483.000 usft	Longitude:	-103.521
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,323.9 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	5/15/2012	7.43	60.06	48,484

Design		Plan #1		
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	355.95

Survey Tool Program		Date 5/15/2012		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	14,315.7	Plan #1 (OH)	MWD	MWD - Standard

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #4H
Project:	Lea County	TVD Reference:	KB = 25 @ 3348.9usft (Cactus 139)
Site:	Black Bear "36" State	MD Reference:	KB = 25 @ 3348.9usft (Cactus 139)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	-3,348.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
100.0	0.00	0.00	100.0	-3,248.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
200.0	0.00	0.00	200.0	-3,148.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
300.0	0.00	0.00	300.0	-3,048.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
400.0	0.00	0.00	400.0	-2,948.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
500.0	0.00	0.00	500.0	-2,848.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
600.0	0.00	0.00	600.0	-2,748.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
700.0	0.00	0.00	700.0	-2,648.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
800.0	0.00	0.00	800.0	-2,548.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
900.0	0.00	0.00	900.0	-2,448.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
1,000.0	0.00	0.00	1,000.0	-2,348.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
1,100.0	0.00	0.00	1,100.0	-2,248.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
1,200.0	0.00	0.00	1,200.0	-2,148.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
1,300.0	0.00	0.00	1,300.0	-2,048.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
1,400.0	0.00	0.00	1,400.0	-1,948.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
1,500.0	0.00	0.00	1,500.0	-1,848.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
1,600.0	0.00	0.00	1,600.0	-1,748.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
1,700.0	0.00	0.00	1,700.0	-1,648.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
1,800.0	0.00	0.00	1,800.0	-1,548.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
1,900.0	0.00	0.00	1,900.0	-1,448.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
2,000.0	0.00	0.00	2,000.0	-1,348.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
2,100.0	0.00	0.00	2,100.0	-1,248.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
2,200.0	0.00	0.00	2,200.0	-1,148.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
2,300.0	0.00	0.00	2,300.0	-1,048.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
2,400.0	0.00	0.00	2,400.0	-948.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
2,500.0	0.00	0.00	2,500.0	-848.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	
2,600.0	0.00	0.00	2,600.0	-748.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00	

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #4H
Project:	Lea County	TVD Reference:	KB = 25 @ 3348 9usft (Cactus 139)
Site:	Black Bear "36" State	MD Reference:	KB = 25 @ 3348 9usft (Cactus 139)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
2,700.0	0.00	0.00	2,700.0	-648.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
2,800.0	0.00	0.00	2,800.0	-548.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
2,900.0	0.00	0.00	2,900.0	-448.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
3,000.0	0.00	0.00	3,000.0	-348.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
3,100.0	0.00	0.00	3,100.0	-248.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
3,200.0	0.00	0.00	3,200.0	-148.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
3,300.0	0.00	0.00	3,300.0	-48.9	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
3,400.0	0.00	0.00	3,400.0	51.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
3,500.0	0.00	0.00	3,500.0	151.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
3,600.0	0.00	0.00	3,600.0	251.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
3,700.0	0.00	0.00	3,700.0	351.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
3,800.0	0.00	0.00	3,800.0	451.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
3,900.0	0.00	0.00	3,900.0	551.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
4,000.0	0.00	0.00	4,000.0	651.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
4,100.0	0.00	0.00	4,100.0	751.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
4,200.0	0.00	0.00	4,200.0	851.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
4,300.0	0.00	0.00	4,300.0	951.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
4,400.0	0.00	0.00	4,400.0	1,051.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
4,500.0	0.00	0.00	4,500.0	1,151.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
4,600.0	0.00	0.00	4,600.0	1,251.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
4,700.0	0.00	0.00	4,700.0	1,351.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
4,800.0	0.00	0.00	4,800.0	1,451.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
4,900.0	0.00	0.00	4,900.0	1,551.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
5,000.0	0.00	0.00	5,000.0	1,651.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
5,100.0	0.00	0.00	5,100.0	1,751.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
5,200.0	0.00	0.00	5,200.0	1,851.1	0.0	0.0	0.0	0.00	393,853.00	751,483.00		
5,300.0	2.00	240.09	5,300.0	1,951.1	-0.9	-1.5	-0.8	2.00	393,852.13	751,481.49		

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Planned Survey											
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5,400.0	4.00	240.09	5,399.8	2,050.9	-3.5	-6.0	-3.0	2.00	393,849.52	751,476.95	
5,500.0	6.00	240.09	5,499.4	2,150.5	-7.8	-13.6	-6.8	2.00	393,845.18	751,469.40	
5,600.0	6.00	240.09	5,598.9	2,250.0	-13.0	-22.7	-11.4	0.00	393,839.96	751,460.34	
5,700.0	6.00	240.09	5,698.4	2,349.5	-18.2	-31.7	-16.0	0.00	393,834.75	751,451.28	
5,800.0	6.00	240.09	5,797.8	2,448.9	-23.5	-40.8	-20.5	0.00	393,829.54	751,442.22	
5,900.0	6.00	240.09	5,897.3	2,548.4	-28.7	-49.8	-25.1	0.00	393,824.33	751,433.16	
6,000.0	6.00	240.09	5,996.7	2,647.8	-33.9	-58.9	-29.6	0.00	393,819.12	751,424.10	
6,100.0	6.00	240.09	6,096.2	2,747.3	-39.1	-68.0	-34.2	0.00	393,813.91	751,415.04	
6,200.0	6.00	240.09	6,195.6	2,846.7	-44.3	-77.0	-38.8	0.00	393,808.69	751,405.98	
6,300.0	6.00	240.09	6,295.1	2,946.2	-49.5	-86.1	-43.3	0.00	393,803.48	751,396.92	
6,400.0	6.00	240.09	6,394.5	3,045.6	-54.7	-95.1	-47.9	0.00	393,798.27	751,387.86	
6,500.0	6.00	240.09	6,494.0	3,145.1	-59.9	-104.2	-52.4	0.00	393,793.06	751,378.80	
6,600.0	6.00	240.09	6,593.4	3,244.5	-65.2	-113.3	-57.0	0.00	393,787.85	751,369.74	
6,700.0	6.00	240.09	6,692.9	3,344.0	-70.4	-122.3	-61.5	0.00	393,782.64	751,360.68	
6,800.0	6.00	240.09	6,792.3	3,443.4	-75.6	-131.4	-66.1	0.00	393,777.42	751,351.62	
6,900.0	6.00	240.09	6,891.8	3,542.9	-80.8	-140.4	-70.7	0.00	393,772.21	751,342.56	
7,000.0	6.00	240.09	6,991.2	3,642.3	-86.0	-149.5	-75.2	0.00	393,767.00	751,333.50	
7,100.0	6.00	240.09	7,090.7	3,741.8	-91.2	-158.6	-79.8	0.00	393,761.79	751,324.44	
7,200.0	6.00	240.09	7,190.1	3,841.2	-96.4	-167.6	-84.3	0.00	393,756.58	751,315.38	
7,300.0	6.00	240.09	7,289.6	3,940.7	-101.6	-176.7	-88.9	0.00	393,751.37	751,306.32	
7,400.0	6.00	240.09	7,389.0	4,040.1	-106.8	-185.7	-93.5	0.00	393,746.15	751,297.26	
7,500.0	6.00	240.09	7,488.5	4,139.6	-112.1	-194.8	-98.0	0.00	393,740.94	751,288.20	
7,600.0	6.00	240.09	7,588.0	4,239.1	-117.3	-203.9	-102.6	0.00	393,735.73	751,279.14	
7,700.0	6.00	240.09	7,687.4	4,338.5	-122.5	-212.9	-107.1	0.00	393,730.52	751,270.08	
7,800.0	6.00	240.09	7,786.9	4,438.0	-127.7	-222.0	-111.7	0.00	393,725.31	751,261.02	
7,900.0	6.00	240.09	7,886.3	4,537.4	-132.9	-231.0	-116.3	0.00	393,720.10	751,251.96	
8,000.0	6.00	240.09	7,985.8	4,636.9	-138.1	-240.1	-120.8	0.00	393,714.88	751,242.90	

Company:	EOG Resources, Inc	Local Co-ordinate Reference:	Well #4H
Project:	Lea County	TVD Reference:	KB = 25 @ 3348.9usft (Cactus 139)
Site:	Black Bear "36" State	MD Reference:	KB = 25 @ 3348.9usft (Cactus 139)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,100.0	6.00	240.09	8,085.2	4,736.3	-143.3	-249.2	-125.4	0.00	393,709.67	751,233.84	
8,200.0	6.00	240.09	8,184.7	4,835.8	-148.5	-258.2	-129.9	0.00	393,704.46	751,224.78	
8,300.0	6.00	240.09	8,284.1	4,935.2	-153.8	-267.3	-134.5	0.00	393,699.25	751,215.73	
8,400.0	6.00	240.09	8,383.6	5,034.7	-159.0	-276.3	-139.0	0.00	393,694.04	751,206.67	
8,500.1	6.00	240.09	8,483.1	5,134.2	-164.2	-285.4	-143.6	0.00	393,688.82	751,197.60	
8,600.0	4.00	240.09	8,582.6	5,233.7	-168.5	-292.9	-147.4	2.00	393,684.48	751,190.05	
8,700.0	2.00	240.09	8,682.5	5,333.6	-171.1	-297.5	-149.7	2.00	393,681.87	751,185.51	
8,800.0	0.00	0.00	8,782.5	5,433.6	-172.0	-299.0	-150.5	2.00	393,681.00	751,184.00	
8,900.0	0.00	0.00	8,882.5	5,533.6	-172.0	-299.0	-150.5	0.00	393,681.00	751,184.00	
9,000.0	0.00	0.00	8,982.5	5,633.6	-172.0	-299.0	-150.5	0.00	393,681.00	751,184.00	
9,100.0	0.00	0.00	9,082.5	5,733.6	-172.0	-299.0	-150.5	0.00	393,681.00	751,184.00	
9,140.0	0.00	0.00	9,122.5	5,773.6	-172.0	-299.0	-150.5	0.00	393,681.00	751,184.00	
9,150.0	1.20	359.58	9,132.5	5,783.6	-171.9	-299.0	-150.3	12.00	393,681.10	751,184.00	
9,175.0	4.20	359.58	9,157.4	5,808.5	-170.7	-299.0	-149.2	12.00	393,682.28	751,183.99	
9,200.0	7.20	359.58	9,182.3	5,833.4	-168.2	-299.0	-146.7	12.00	393,684.76	751,183.97	
9,225.0	10.20	359.58	9,207.0	5,858.1	-164.5	-299.1	-142.9	12.00	393,688.54	751,183.94	
9,250.0	13.20	359.58	9,231.5	5,882.6	-159.4	-299.1	-137.9	12.00	393,693.61	751,183.91	
9,275.0	16.20	359.58	9,255.7	5,906.8	-153.0	-299.1	-131.5	12.00	393,699.95	751,183.86	
9,300.0	19.20	359.58	9,279.5	5,930.6	-145.5	-299.2	-124.0	12.00	393,707.55	751,183.81	
9,325.0	22.20	359.58	9,302.9	5,954.0	-136.6	-299.3	-115.1	12.00	393,716.38	751,183.74	
9,350.0	25.20	359.58	9,325.8	5,976.9	-126.6	-299.3	-105.1	12.00	393,726.43	751,183.67	
9,375.0	28.20	359.58	9,348.1	5,999.2	-115.3	-299.4	-93.9	12.00	393,737.66	751,183.58	
9,400.0	31.20	359.58	9,369.8	6,020.9	-103.0	-299.5	-81.5	12.00	393,750.04	751,183.49	
9,425.0	34.20	359.58	9,390.9	6,042.0	-89.5	-299.6	-68.1	12.00	393,763.55	751,183.39	
9,450.0	37.20	359.58	9,411.2	6,062.3	-74.9	-299.7	-53.5	12.00	393,778.13	751,183.29	
9,475.0	40.20	359.58	9,430.7	6,081.8	-59.2	-299.8	-37.9	12.00	393,793.76	751,183.17	
9,500.0	43.20	359.58	9,449.3	6,100.4	-42.6	-300.0	-21.3	12.00	393,810.39	751,183.05	

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #4H
Project:	Lea County	TVD Reference:	KB = 25 @ 3348.9usft (Cactus 139)
Site:	Black Bear "36" State	MD Reference:	KB = 25 @ 3348 9usft (Cactus 139)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
9,525.0	46.20	359.58	9,467.1	6,118.2	-25.0	-300.1	-3.8	12.00	393,827.97	751,182.92	
9,550.0	49.20	359.58	9,483.9	6,135.0	-6.5	-300.2	14.7	12.00	393,846.45	751,182.79	
9,575.0	52.20	359.58	9,499.8	6,150.9	12.8	-300.4	34.0	12.00	393,865.80	751,182.64	
9,600.0	55.20	359.58	9,514.6	6,165.7	32.9	-300.5	54.1	12.00	393,885.94	751,182.50	
9,625.0	58.20	359.58	9,528.3	6,179.4	53.8	-300.7	74.9	12.00	393,906.83	751,182.34	
9,650.0	61.20	359.58	9,540.9	6,192.0	75.4	-300.8	96.5	12.00	393,928.41	751,182.18	
9,675.0	64.20	359.58	9,552.4	6,203.5	97.6	-301.0	118.6	12.00	393,950.63	751,182.02	
9,700.0	67.20	359.58	9,562.6	6,213.7	120.4	-301.1	141.4	12.00	393,973.41	751,181.85	
9,725.0	70.20	359.58	9,571.7	6,222.8	143.7	-301.3	164.6	12.00	393,996.70	751,181.68	
9,750.0	73.20	359.58	9,579.6	6,230.7	167.4	-301.5	188.3	12.00	394,020.43	751,181.51	
9,775.0	76.20	359.58	9,586.2	6,237.3	191.5	-301.7	212.4	12.00	394,044.54	751,181.33	
9,800.0	79.20	359.58	9,591.5	6,242.6	216.0	-301.8	236.7	12.00	394,068.96	751,181.15	
9,825.0	82.20	359.58	9,595.5	6,246.6	240.6	-302.0	261.4	12.00	394,093.63	751,180.97	
9,850.0	85.20	359.58	9,598.3	6,249.4	265.5	-302.2	286.2	12.00	394,118.47	751,180.79	
9,875.0	88.20	359.58	9,599.7	6,250.8	290.4	-302.4	311.1	12.00	394,143.43	751,180.60	
9,890.0	90.00	359.58	9,600.0	6,251.1	305.4	-302.5	326.0	12.00	394,158.45	751,180.49	
9,900.0	90.00	359.58	9,600.0	6,251.1	315.4	-302.6	336.0	0.00	394,168.42	751,180.42	
10,000.0	90.00	359.58	9,600.0	6,251.1	415.4	-303.3	435.8	0.00	394,268.42	751,179.69	
10,100.0	90.00	359.58	9,600.0	6,251.1	515.4	-304.0	535.6	0.00	394,368.42	751,178.95	
10,200.0	90.00	359.58	9,600.0	6,251.1	615.4	-304.8	635.4	0.00	394,468.42	751,178.22	
10,300.0	90.00	359.58	9,600.0	6,251.1	715.4	-305.5	735.2	0.00	394,568.41	751,177.48	
10,400.0	90.00	359.58	9,600.0	6,251.1	815.4	-306.3	835.0	0.00	394,668.41	751,176.75	
10,500.0	90.00	359.58	9,600.0	6,251.1	915.4	-307.0	934.8	0.00	394,768.41	751,176.02	
10,600.0	90.00	359.58	9,600.0	6,251.1	1,015.4	-307.7	1,034.6	0.00	394,868.41	751,175.28	
10,700.0	90.00	359.58	9,600.0	6,251.1	1,115.4	-308.5	1,134.4	0.00	394,968.40	751,174.55	
10,800.0	90.00	359.58	9,600.0	6,251.1	1,215.4	-309.2	1,234.2	0.00	395,068.40	751,173.81	
10,900.0	90.00	359.58	9,600.0	6,251.1	1,315.4	-309.9	1,334.0	0.00	395,168.40	751,173.08	

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #4H
Project:	Lea County	TVD Reference:	KB = 25 @ 3348 9usft (Cactus 139)
Site:	Black Bear "36" State	MD Reference:	KB = 25 @ 3348 9usft (Cactus 139)
Well:	#4H	North Reference:	Grd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc. (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (%/100usft)	Northing (usft)	Easting (usft)	
11,000.0	90.00	359.58	9,600.0	6,251.1	1,415.4	-310.7	1,433.8	0.00	395,268.40	751,172.34	
11,100.0	90.00	359.58	9,600.0	6,251.1	1,515.4	-311.4	1,533.6	0.00	395,368.39	751,171.61	
11,200.0	90.00	359.58	9,600.0	6,251.1	1,615.4	-312.1	1,633.4	0.00	395,468.39	751,170.88	
11,300.0	90.00	359.58	9,600.0	6,251.1	1,715.4	-312.9	1,733.2	0.00	395,568.39	751,170.14	
11,400.0	90.00	359.58	9,600.0	6,251.1	1,815.4	-313.6	1,833.0	0.00	395,668.38	751,169.41	
11,500.0	90.00	359.58	9,600.0	6,251.1	1,915.4	-314.3	1,932.8	0.00	395,768.38	751,168.67	
11,600.0	90.00	359.58	9,600.0	6,251.1	2,015.4	-315.1	2,032.6	0.00	395,868.38	751,167.94	
11,700.0	90.00	359.58	9,600.0	6,251.1	2,115.4	-315.8	2,132.4	0.00	395,968.38	751,167.21	
11,800.0	90.00	359.58	9,600.0	6,251.1	2,215.4	-316.5	2,232.2	0.00	396,068.37	751,166.47	
11,900.0	90.00	359.58	9,600.0	6,251.1	2,315.4	-317.3	2,332.0	0.00	396,168.37	751,165.74	
12,000.0	90.00	359.58	9,600.0	6,251.1	2,415.4	-318.0	2,431.8	0.00	396,268.37	751,165.00	
12,100.0	90.00	359.58	9,600.0	6,251.1	2,515.4	-318.7	2,531.6	0.00	396,368.37	751,164.27	
12,200.0	90.00	359.58	9,600.0	6,251.1	2,615.4	-319.5	2,631.4	0.00	396,468.36	751,163.53	
12,300.0	90.00	359.58	9,600.0	6,251.1	2,715.4	-320.2	2,731.2	0.00	396,568.36	751,162.80	
12,400.0	90.00	359.58	9,600.0	6,251.1	2,815.4	-320.9	2,831.0	0.00	396,668.36	751,162.07	
12,500.0	90.00	359.58	9,600.0	6,251.1	2,915.4	-321.7	2,930.8	0.00	396,768.35	751,161.33	
12,600.0	90.00	359.58	9,600.0	6,251.1	3,015.4	-322.4	3,030.6	0.00	396,868.35	751,160.60	
12,700.0	90.00	359.58	9,600.0	6,251.1	3,115.3	-323.1	3,130.4	0.00	396,968.35	751,159.86	
12,800.0	90.00	359.58	9,600.0	6,251.1	3,215.3	-323.9	3,230.2	0.00	397,068.35	751,159.13	
12,900.0	90.00	359.58	9,600.0	6,251.1	3,315.3	-324.6	3,330.0	0.00	397,168.34	751,158.39	
13,000.0	90.00	359.58	9,600.0	6,251.1	3,415.3	-325.3	3,429.8	0.00	397,268.34	751,157.66	
13,100.0	90.00	359.58	9,600.0	6,251.1	3,515.3	-326.1	3,529.6	0.00	397,368.34	751,156.93	
13,200.0	90.00	359.58	9,600.0	6,251.1	3,615.3	-326.8	3,629.4	0.00	397,468.34	751,156.19	
13,300.0	90.00	359.58	9,600.0	6,251.1	3,715.3	-327.5	3,729.2	0.00	397,568.33	751,155.46	
13,400.0	90.00	359.58	9,600.0	6,251.1	3,815.3	-328.3	3,829.0	0.00	397,668.33	751,154.72	
13,500.0	90.00	359.58	9,600.0	6,251.1	3,915.3	-329.0	3,928.8	0.00	397,768.33	751,153.99	
13,600.0	90.00	359.58	9,600.0	6,251.1	4,015.3	-329.7	4,028.6	0.00	397,868.32	751,153.25	

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #4H
Project:	Lea County	TVD Reference:	KB = 25 @ 3348.9usft (Cactus 139)
Site:	Black Bear "36" State	MD Reference:	KB = 25 @ 3348.9usft (Cactus 139)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc. (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
13,700.0	90.00	359.58	9,600.0	6,251.1	4,115.3	-330.5	4,128.4	0.00	397,968.32	751,152.52	
13,800.0	90.00	359.58	9,600.0	6,251.1	4,215.3	-331.2	4,228.2	0.00	398,068.32	751,151.79	
13,900.0	90.00	359.58	9,600.0	6,251.1	4,315.3	-331.9	4,328.0	0.00	398,168.32	751,151.05	
14,000.0	90.00	359.58	9,600.0	6,251.1	4,415.3	-332.7	4,427.8	0.00	398,268.31	751,150.32	
14,100.0	90.00	359.58	9,600.0	6,251.1	4,515.3	-333.4	4,527.6	0.00	398,368.31	751,149.58	
14,200.0	90.00	359.58	9,600.0	6,251.1	4,615.3	-334.2	4,627.4	0.00	398,468.31	751,148.85	
14,300.0	90.00	359.58	9,600.0	6,251.1	4,715.3	-334.9	4,727.2	0.00	398,568.31	751,148.12	
14,315.7	90.00	359.58	9,600.0	6,251.1	4,731.0	-335.0	4,742.8	0.00	398,584.00	751,148.00	

Checked By: _____ Approved By: _____ Date: _____