

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

ATS-11-400
FORM APPROVED
OMB NO. 1004-0137
Expires July 31, 2010

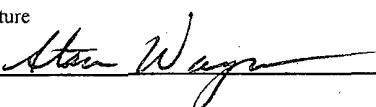
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work ☒ DRILL ☐ REENTER		5. Lease Serial No. NM 15303
1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator EOG Resources Inc.		7. Unit or CA Agreement Name and No.
3a. Address P.O. Box 2267 Midland, Texas 79702	3b. Phone No. (include area code) 432-686-3689	8. Lease Name and Well No. Venado 10 Federal 1H
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 330' FNL & 900' FEL, U/L A At proposed prod. zone 330' FSL & 330' FEL, U/L P		9. API Well No. 30-015-39015
14. Distance in miles and direction from nearest town or post office* +/- 5 miles Southeast from Malaga, NM		10. Field and Pool, or Exploratory Brady Bone Spring
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) 330'	16. No. of Acres in lease 2560	11. Sec., T., R., M., or Blk. and Survey or Area Sec 10, T25S, R29E
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1410'	19. Proposed Depth Pilot Hole 8200' VD 11731 MD - 7250 TVD	12. County or Parish Eddy
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3034' GL	22. Approximate date work will start* 5/1/11	13. State NM
23. Estimated duration 30 days		

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM |

25. Signature 	Name (Printed/Typed) Stan Wagner	Date 2/9/11
Title Regulatory Analyst		
Approved by (Signautre) /s/ Don Peterson	Name (Printed/Typed) Don Peterson	Date APR 22 2011
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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.

(Continued on page 2)

*(Instructions on page 2)

CARLSBAD CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

ALL APPLICANTS TO
GENERAL AGREEMENTS
AND SPECIAL STIPULATIONS
ATTACHED



Permit Information:

Well Name: Venado 10 Federal No. 1H

Location:

SL: 330' FNL & 900' FEL, Section 10, T-25-S, R-29-E, Eddy Co., N.M.

BHL: 330' FSL & 330' FEL, Section 10, T-25-S, R-29-E, Eddy Co., N.M.

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
14.75"	0 - 700'	11.75"	42#	H40	STC	1.125	1.25	1.60
11.00"	0-3,100'	8.625"	32#	J55	LTC	1.125	1.25	1.60
7.875"	0' - 11,731'	5.5"	17#	N80	LTC	1.125	1.25	1.60

Cement Program: *See COR*

Depth	No. Sacks	Wt. ppg	Yld Ft ³ /ft	Slurry Description
700'	325	14.8	1.32	Class C + 0.005 pps Static Free + 2% CaCl ₂ + 0.25 pps CelloFlake + 0.005 gps FP-6L (TOC @ surface) (AHS = 15.75" + 25% excess)
3,100'	450	12.7	2.01	Class C + 2% SMS + 0.8% R-3 + 0.25 pps CelloFlake + 0.005 pps Static Free (TOC @ surface) (AHS = 12.15" + 25% excess)
	200	14.8	1.32	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free (TOC @ 2,500') (AHS = 12.15" + 0% excess)
BH Plug 8200'-8000'	75	18.0	0.90	Class H + 0.005 lbs/sx Static Free + 5% Salt + 1.2% CD31 + 0.005 gps FP-6L (AHS = 8.00" + 0% excess)
KO Plug 600'	250	18.0	0.90	Class H + 0.005 lbs/sx Static Free + 5% Salt + 1.2% CD31 + 0.005 gps FP-6L (AHS = 8.50" + 0% excess)
11,731'	210	10.8	3.67	60:40:0 Class 'C' + 15.00 lb/sk BA-90 + 4.00% MPA-5 + 3.00% SMS + 5.00% A-10 + 1.00% BA-10A + 0.80% ASA-301 + 2.90% R-21 + 8.00 lb/sk LCM-1 + 0.005 lb/sk Static Free (TOC @ 2,600') (AHS = 8.85" + 25% excess)
	210	11.8	2.38	50:50:10 Class 'H' + 0.80% FL-52 + 0.45% ASA-301 + 0.40% SMS + 2.00% Salt + 3.00 lb/sx LCM-1 + 0.20% R-21 + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free (TOC @ 5,200') (AHS = 8.85" + 25% excess)
	845	14.2	1.28	50:50:2 Class 'H' + 0.65% FL-52 + 0.20% CD-32 + 0.15% SMS + 2.00% Salt + 0.10% R-3 + 0.005 lb/sk Static Free (TOC @ 6,700') (AHS = 8.10" + 10% excess)

AHS = Average hole size (estimated)

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 700'	Fresh - Gel	8.6-8.8	28-34	N/c
700' – 3,100'	Brine	10.0-10.2	28-34	N/c
3,100' – 8,200' Pilot hole	Cut Brine	8.4-9.0	28-34	N/c
KOP – TD Lateral	Cut Brine	9.0-9.5	28-34	N/c

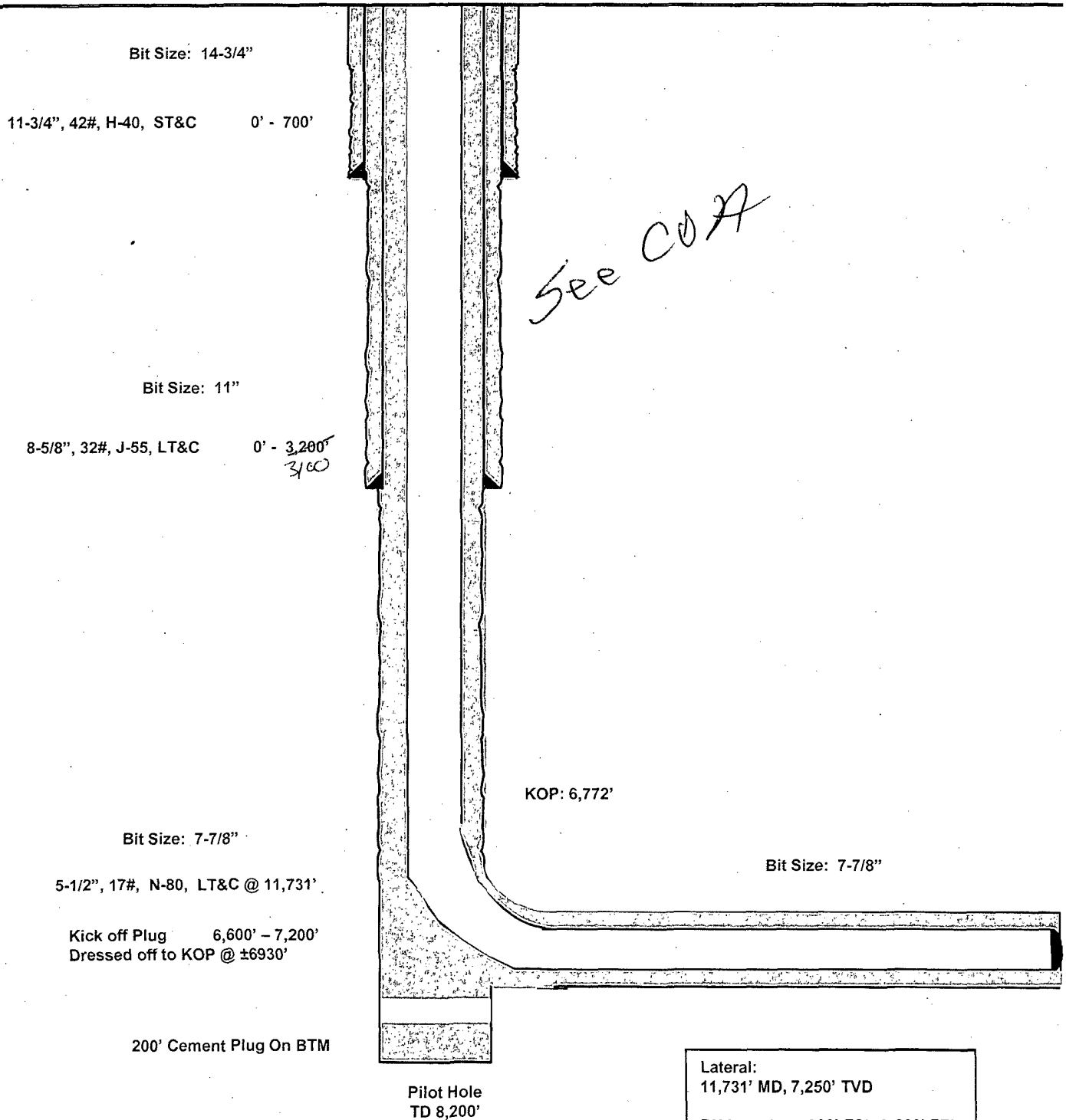
Venado 10 Federal #1H
Eddy County, New Mexico

330' FNL
900' FEL
Section 10
T-25-S, R-29-E

Proposed Wellbore

API: 30-015-*****

KB: 3,053.6'
GL: 3,034.6'



Lateral:
11,731' MD, 7,250' TVD
BH Location: 330' FSL & 330' FEL
Section 10
T-25-S, R-29-E

EOG RESOURCES, INC.
VENADO 10 FEDERAL NO. 1H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	620'
Top of Salt	650'
Salado	1,150'
Base of Salt	2,933'
Lamar	3,133'
Bell Canyon	3,162'
Cherry Canyon	4,033'
Brushy Canyon	5,313'
Bone Spring Lime	6,905'
1 st Bone Spring Sand	7,800'
Pilot hole TD	8,200'

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0- 620'	Fresh Water
Bell Canyon	3,162'	Oil
Cherry Canyon	4,033'	Oil
Bone Spring Lime	6,905'	Oil
1 st Bone Spring Sand	7,800'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 11.75" casing at 700' and circulating cement back to surface.

4. CASING PROGRAM - NEW

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
14.75"	0 - 700'	11.75"	42#	H40	STC	1.125	1.25	1.60
11.00"	0-3,100'	8.625"	32#	J55	LTC	1.125	1.25	1.60
7.875"	0'- 11,731'	5.5"	17#	N80	LTC	1.125	1.25	1.60

EOG RESOURCES, INC.
VENADO 10 FEDERAL NO. 1H

Cementing Program: *See COA*

Depth	No. Sacks	Wt. ppg	Yld Ft ³ /ft	Slurry Description
700'	325	14.8	1.32	Class C + 0.005 pps Static Free + 2% CaCl ₂ + 0.25 pps CelloFlake + 0.005 gps FP-6L (TOC @ surface) (AHS = 15.75" + 25% excess)
3,100'	450	12.7	2.01	Class C + 2% SMS + 0.8% R-3 + 0.25 pps CelloFlake + 0.005 pps Static Free (TOC @ surface) (AHS = 12.15" + 25% excess)
	200	14.8	1.32	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free (TOC @ 2,500') (AHS = 12.15" + 0% excess)
BH Plug 8200'-8000'	75	18.0	0.90	Class H + 0.005 lbs/sx Static Free + 5% Salt + 1.2% CD31 + 0.005 gps FP-6L (AHS = 8.00" + 0% excess)
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	210	11.8	2.38	50:50:10 Class 'H' + 0.80% FL-52 + 0.45% ASA-301 + 0.40% SMS + 2.00% Salt + 3.00 lb/sx LCM-1 + 0.20% R-21 + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free (TOC @ 5,200') (AHS = 8.85" + 25% excess)
	845	14.2	1.28	50:50:2 Class 'H' + 0.65% FL-52 + 0.20% CD-32 + 0.15% SMS + 2.00% Salt + 0.10% R-3 + 0.005 lb/sk Static Free (TOC @ 6,700') (AHS = 8.10" + 10% excess)

Cement volumes based on bit size + 25% excess.

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

(SEE EXHIBIT #1)

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram-type (5000 psi WP) preventer and an annular preventer (5000-psi WP). Units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOP's and accessory equipment will be tested in accordance with Onshore Oil & Gas order No. 2. Prior to drilling out of the surface casing, the BOP's will be tested to 2000/250 psig. Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 2500/ 250 psig.

EOG RESOURCES, INC.
VENADO 10 FEDERAL NO. 1H

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

A hydraulically operated choke will not be installed prior to the setting and cementing of the intermediate casing string, but will be installed prior to drilling out of the intermediate casing shoe.

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

The well will be drilled to TD with a combination of fresh water and brine water, with polymer sweeps. The applicable depths and properties of this system are as follows:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 700'	Fresh - Gel	8.6-8.8	28-34	N/c
700' – 3,100'	Brine	10.0-10.2	28-34	N/c
3,100' – 8,200' Pilot hole	Cut Brine	8.4-9.0	28-34	N/c
KOP – TD Lateral	Cut Brine	9.0-9.5	28-34	N/c

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

6. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

- (A) A kelly cock will be kept in the drill string at all times.
- (B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.
- (C) A mud logging unit will be continuously monitoring drill penetration rate and hydrocarbon shows from intermediate casing point to TD.
- (D) H₂S monitoring and detection equipment will be utilized from surface casing point to TD.

**EOG RESOURCES, INC.
VENADO 10 FEDERAL NO. 1H**

8. LOGGING, TESTING AND CORING PROGRAM: *See c01A*

Open-hole logging is anticipated in the 7-7/8" hole section. The anticipated logging suites scheduled for this hole section are listed below:

NGT-CNL-LDT w/ Pe	From TD to previous casing shoe. At casing pull GR – Neutron to surface.
HR Laterolog Array	From TD to previous casing shoe.
FMI	Possible in the production hole

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

The estimated bottom hole temperature (BHT) at TD is 145 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 3600 psig. No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major loss circulation zones have been reported in offsetting wells.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

EOG RESOURCES, INC.
VENADO 10 FEDERAL NO. 1H

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A hydraulically operated choke will not be installed prior to the setting and cementing of the intermediate casing string, but will be installed prior to drilling out of the intermediate casing shoe.

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

The well will be drilled to TD with a combination of brine, cut brine, and polymer sweeps. The applicable depths and properties of these fresh water systems are as follows:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 700'	Fresh - Gel	8.6-8.8	28-34	N/c
700' – 3,100'	Brine	10.0-10.2	28-34	N/c
3,100' – 8,200' Pilot hole	Cut Brine	8.4-9.0	28-34	N/c
KOP – TD Lateral	Cut Brine	9.0-9.5	28-34	N/c

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

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- (D) H₂S monitoring and detection equipment will be utilized from surface casing point to TD.



EOG Resources, Inc.

Eddy County

Venado "10" Federal

#1H

OH

Plan: Design #1

Pathfinder X & Y Planning Report

31 January, 2011





Pathfinder
Pathfinder X & Y Planning Report



Company: EOG Resources, Inc.
Project: Eddy County
Site: Venado "10" Federal
Well: #1H
Wellbore: OH
Design: Design #1

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 3053.60usft (19' KB Correction)
MD Reference: WELL @ 3053.60usft (19' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project: Eddy County

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

System Datum: Mean Sea Level

Site: Venado "10" Federal

Site Position: Northing: 418,824.200 usft Latitude: 32° 9' 3.355 N
From: Map Easting: 613,634.100 usft Longitude: 103° 57' 58.190 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.20 °

Well: #1H

Well Position: +N/-S 0.00 usft Northing: 418,824.200 usft Latitude: 32° 9' 3.355 N
+E/-W 0.00 usft Easting: 613,634.100 usft Longitude: 103° 57' 58.190 W
Position Uncertainty: 0.00 usft Wellhead Elevation: usft Ground Level: 3,034.60 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	01/31/11	7.79	60.08	48,604

Design: Design #1

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	172.85

Survey Tool Program: Date 01/31/11

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	11,730.98	Design #1 (OH)	MWD	MWD - Standard



Pathfinder
Pathfinder X & Y Planning Report

PATHFINDER
A Schlumberger Company

Company: EOG Resources, Inc.
Project: Eddy County
Site: Venado "10" Federal
Well: #1H
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Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	3,053.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
100.00	0.00	0.00	100.00	2,953.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
200.00	0.00	0.00	200.00	2,853.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
300.00	0.00	0.00	300.00	2,753.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
400.00	0.00	0.00	400.00	2,653.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
500.00	0.00	0.00	500.00	2,553.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
600.00	0.00	0.00	600.00	2,453.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
700.00	0.00	0.00	700.00	2,353.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
800.00	0.00	0.00	800.00	2,253.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
900.00	0.00	0.00	900.00	2,153.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
1,000.00	0.00	0.00	1,000.00	2,053.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
1,100.00	0.00	0.00	1,100.00	1,953.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
1,200.00	0.00	0.00	1,200.00	1,853.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
1,300.00	0.00	0.00	1,300.00	1,753.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
1,400.00	0.00	0.00	1,400.00	1,653.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
1,500.00	0.00	0.00	1,500.00	1,553.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
1,600.00	0.00	0.00	1,600.00	1,453.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
1,700.00	0.00	0.00	1,700.00	1,353.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
1,800.00	0.00	0.00	1,800.00	1,253.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
1,900.00	0.00	0.00	1,900.00	1,153.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
2,000.00	0.00	0.00	2,000.00	1,053.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
2,100.00	0.00	0.00	2,100.00	953.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
2,200.00	0.00	0.00	2,200.00	853.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
2,300.00	0.00	0.00	2,300.00	753.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
2,400.00	0.00	0.00	2,400.00	653.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
2,500.00	0.00	0.00	2,500.00	553.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
2,600.00	0.00	0.00	2,600.00	453.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10



Pathfinder
Pathfinder X & Y Planning Report

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A Schlumberger Company

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2,700.00	0.00	0.00	2,700.00	353.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
2,800.00	0.00	0.00	2,800.00	253.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
2,900.00	0.00	0.00	2,900.00	153.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
3,000.00	0.00	0.00	3,000.00	53.60	0.00	0.00	0.00	0.00	418,824.20	613,634.10
3,100.00	0.00	0.00	3,100.00	-46.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
3,200.00	0.00	0.00	3,200.00	-146.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
3,300.00	0.00	0.00	3,300.00	-246.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
3,400.00	0.00	0.00	3,400.00	-346.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
3,500.00	0.00	0.00	3,500.00	-446.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
3,600.00	0.00	0.00	3,600.00	-546.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
3,700.00	0.00	0.00	3,700.00	-646.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
3,800.00	0.00	0.00	3,800.00	-746.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
3,900.00	0.00	0.00	3,900.00	-846.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
4,000.00	0.00	0.00	4,000.00	-946.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
4,100.00	0.00	0.00	4,100.00	-1,046.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
4,200.00	0.00	0.00	4,200.00	-1,146.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
4,300.00	0.00	0.00	4,300.00	-1,246.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
4,400.00	0.00	0.00	4,400.00	-1,346.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
4,500.00	0.00	0.00	4,500.00	-1,446.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
4,600.00	0.00	0.00	4,600.00	-1,546.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
4,700.00	0.00	0.00	4,700.00	-1,646.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
4,800.00	0.00	0.00	4,800.00	-1,746.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
4,900.00	0.00	0.00	4,900.00	-1,846.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
5,000.00	0.00	0.00	5,000.00	-1,946.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
5,100.00	0.00	0.00	5,100.00	-2,046.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
5,200.00	0.00	0.00	5,200.00	-2,146.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
5,300.00	0.00	0.00	5,300.00	-2,246.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10



Pathfinder
Pathfinder X & Y Planning Report



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Project: Eddy County
Site: Venado "10" Federal
Well: #1H
Wellbore: OH
Design: Design #1

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 3053.60usft (19' KB Correction)
MD Reference: WELL @ 3053.60usft (19' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
5,400.00	0.00	0.00	5,400.00	-2,346.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
5,500.00	0.00	0.00	5,500.00	-2,446.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
5,600.00	0.00	0.00	5,600.00	-2,546.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
5,700.00	0.00	0.00	5,700.00	-2,646.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
5,800.00	0.00	0.00	5,800.00	-2,746.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
5,900.00	0.00	0.00	5,900.00	-2,846.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
6,000.00	0.00	0.00	6,000.00	-2,946.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
6,100.00	0.00	0.00	6,100.00	-3,046.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
6,200.00	0.00	0.00	6,200.00	-3,146.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
6,300.00	0.00	0.00	6,300.00	-3,246.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
6,400.00	0.00	0.00	6,400.00	-3,346.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
6,500.00	0.00	0.00	6,500.00	-3,446.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
6,600.00	0.00	0.00	6,600.00	-3,546.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
6,700.00	0.00	0.00	6,700.00	-3,646.40	0.00	0.00	0.00	0.00	418,824.20	613,634.10
6,772.50	0.00	0.00	6,772.50	-3,718.90	0.00	0.00	0.00	0.00	418,824.20	613,634.10
KOP-6772.50°MD,0.00°INC,0.00°AZI,6772.50°TVD										
6,775.00	0.30	172.85	6,775.00	-3,721.40	-0.01	0.00	0.01	12.00	418,824.19	613,634.10
6,800.00	3.30	172.85	6,799.98	-3,746.38	-0.79	0.10	0.79	12.00	418,823.41	613,634.20
6,825.00	6.30	172.85	6,824.89	-3,771.29	-2.86	0.36	2.88	12.00	418,821.34	613,634.46
6,850.00	9.30	172.85	6,849.66	-3,796.06	-6.23	0.78	6.28	12.00	418,817.97	613,634.88
6,875.00	12.30	172.85	6,874.21	-3,820.61	-10.87	1.36	10.96	12.00	418,813.33	613,635.46
6,900.00	15.30	172.85	6,898.49	-3,844.89	-16.79	2.11	16.92	12.00	418,807.41	613,636.21
6,925.00	18.30	172.85	6,922.42	-3,868.82	-23.96	3.01	24.15	12.00	418,800.24	613,637.11
6,950.00	21.30	172.85	6,945.94	-3,892.34	-32.36	4.06	32.61	12.00	418,791.84	613,638.16
6,975.00	24.30	172.85	6,968.98	-3,915.38	-41.97	5.26	42.30	12.00	418,782.23	613,639.36
7,000.00	27.30	172.85	6,991.49	-3,937.89	-52.76	6.62	53.18	12.00	418,771.44	613,640.72
7,025.00	30.30	172.85	7,013.40	-3,959.80	-64.71	8.12	65.22	12.00	418,759.49	613,642.22



Pathfinder
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Wellbore: OH
Design: Design #1

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North Reference: Grid
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Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V.Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
7,050.00	33.30	172.85	7,034.64	-3,981.04	-77.78	9.76	78.39	12.00	418,746.42	613,643.86
7,075.00	36.30	172.85	7,055.17	-4,001.57	-91.94	11.53	92.66	12.00	418,732.26	613,645.63
7,100.00	39.30	172.85	7,074.92	-4,021.32	-107.14	13.44	107.98	12.00	418,717.06	613,647.54
7,125.00	42.30	172.85	7,093.84	-4,040.24	-123.34	15.47	124.31	12.00	418,700.86	613,649.57
7,150.00	45.30	172.85	7,111.89	-4,058.29	-140.51	17.63	141.61	12.00	418,683.69	613,651.73
7,175.00	48.30	172.85	7,129.00	-4,075.40	-158.59	19.89	159.83	12.00	418,665.61	613,653.99
7,200.00	51.30	172.85	7,145.14	-4,091.54	-177.53	22.27	178.92	12.00	418,646.67	613,656.37
7,225.00	54.30	172.85	7,160.25	-4,106.65	-197.29	24.75	198.83	12.00	418,626.91	613,658.85
7,250.00	57.30	172.85	7,174.30	-4,120.70	-217.80	27.32	219.51	12.00	418,606.40	613,661.42
7,275.00	60.30	172.85	7,187.25	-4,133.65	-239.01	29.98	240.89	12.00	418,585.19	613,664.08
7,300.00	63.30	172.85	7,199.07	-4,145.47	-260.87	32.72	262.92	12.00	418,563.33	613,666.82
7,325.00	66.30	172.85	7,209.71	-4,156.11	-283.31	35.54	285.53	12.00	418,540.89	613,669.64
7,350.00	69.29	172.85	7,219.16	-4,165.56	-306.28	38.42	308.68	12.00	418,517.92	613,672.52
7,375.00	72.29	172.85	7,227.38	-4,173.78	-329.70	41.36	332.28	12.00	418,494.50	613,675.46
7,400.00	75.29	172.85	7,234.36	-4,180.76	-353.52	44.35	356.29	12.00	418,470.68	613,678.45
7,425.00	78.29	172.85	7,240.07	-4,186.47	-377.66	47.38	380.62	12.00	418,446.54	613,681.48
7,450.00	81.29	172.85	7,244.50	-4,190.90	-402.07	50.44	405.22	12.00	418,422.13	613,684.54
7,475.00	84.29	172.85	7,247.63	-4,194.03	-426.68	53.52	430.02	12.00	418,397.52	613,687.62
7,500.00	87.29	172.85	7,249.47	-4,195.87	-451.42	56.63	454.95	12.00	418,372.78	613,690.73
7,522.56	90.00	172.85	7,250.00	-4,196.40	-473.79	59.43	477.50	12.00	418,350.41	613,693.53
EOC-7522.56°MD,90.00°INC,172.85°AZI,7250.00°TVD										
7,600.00	90.00	172.85	7,250.00	-4,196.40	-550.63	69.07	554.94	0.00	418,273.57	613,703.17
7,700.00	90.00	172.85	7,250.00	-4,196.40	-649.85	81.52	654.94	0.00	418,174.35	613,715.62
7,800.00	90.00	172.85	7,250.00	-4,196.40	-749.07	93.97	754.94	0.00	418,075.13	613,728.07
7,900.00	90.00	172.85	7,250.00	-4,196.40	-848.30	106.41	854.94	0.00	417,975.90	613,740.51
8,000.00	90.00	172.85	7,250.00	-4,196.40	-947.52	118.86	954.94	0.00	417,876.68	613,752.96
8,100.00	90.00	172.85	7,250.00	-4,196.40	-1,046.74	131.31	1,054.94	0.00	417,777.46	613,765.41



Pathfinder

Pathfinder X & Y Planning Report



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Project: Eddy County
Site: Venado "10" Federal
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Wellbore: OH
Design: Design #1

Local Co-ordinate Reference: Well #1H
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (%/100usft)	Northing (usft)	Easting (usft)
8,200.00	90.00	172.85	7,250.00	-4,196.40	-1,145.96	143.75	1,154.94	0.00	417,678.24	613,777.85
8,300.00	90.00	172.85	7,250.00	-4,196.40	-1,245.19	156.20	1,254.94	0.00	417,579.01	613,790.30
8,400.00	90.00	172.85	7,250.00	-4,196.40	-1,344.41	168.65	1,354.94	0.00	417,479.79	613,802.75
8,500.00	90.00	172.85	7,250.00	-4,196.40	-1,443.63	181.09	1,454.94	0.00	417,380.57	613,815.19
8,600.00	90.00	172.85	7,250.00	-4,196.40	-1,542.85	193.54	1,554.94	0.00	417,281.35	613,827.64
8,700.00	90.00	172.85	7,250.00	-4,196.40	-1,642.08	205.99	1,654.94	0.00	417,182.12	613,840.09
8,800.00	90.00	172.85	7,250.00	-4,196.40	-1,741.30	218.43	1,754.94	0.00	417,082.90	613,852.53
8,900.00	90.00	172.85	7,250.00	-4,196.40	-1,840.52	230.88	1,854.94	0.00	416,983.68	613,864.98
9,000.00	90.00	172.85	7,250.00	-4,196.40	-1,939.74	243.33	1,954.94	0.00	416,884.46	613,877.43
9,100.00	90.00	172.85	7,250.00	-4,196.40	-2,038.96	255.77	2,054.94	0.00	416,785.24	613,889.87
9,200.00	90.00	172.85	7,250.00	-4,196.40	-2,138.19	268.22	2,154.94	0.00	416,686.01	613,902.32
9,300.00	90.00	172.85	7,250.00	-4,196.40	-2,237.41	280.67	2,254.94	0.00	416,586.79	613,914.77
9,400.00	90.00	172.85	7,250.00	-4,196.40	-2,336.63	293.11	2,354.94	0.00	416,487.57	613,927.21
9,500.00	90.00	172.85	7,250.00	-4,196.40	-2,435.85	305.56	2,454.94	0.00	416,388.35	613,939.66
9,600.00	90.00	172.85	7,250.00	-4,196.40	-2,535.08	318.01	2,554.94	0.00	416,289.12	613,952.11
9,700.00	90.00	172.85	7,250.00	-4,196.40	-2,634.30	330.45	2,654.94	0.00	416,189.90	613,964.55
9,800.00	90.00	172.85	7,250.00	-4,196.40	-2,733.52	342.90	2,754.94	0.00	416,090.68	613,977.00
9,900.00	90.00	172.85	7,250.00	-4,196.40	-2,832.74	355.35	2,854.94	0.00	415,991.46	613,989.45
10,000.00	90.00	172.85	7,250.00	-4,196.40	-2,931.97	367.79	2,954.94	0.00	415,892.23	614,001.89
10,100.00	90.00	172.85	7,250.00	-4,196.40	-3,031.19	380.24	3,054.94	0.00	415,793.01	614,014.34
10,200.00	90.00	172.85	7,250.00	-4,196.40	-3,130.41	392.69	3,154.94	0.00	415,693.79	614,026.79
10,300.00	90.00	172.85	7,250.00	-4,196.40	-3,229.63	405.13	3,254.94	0.00	415,594.57	614,039.23
10,400.00	90.00	172.85	7,250.00	-4,196.40	-3,328.86	417.58	3,354.94	0.00	415,495.34	614,051.68
10,500.00	90.00	172.85	7,250.00	-4,196.40	-3,428.08	430.03	3,454.94	0.00	415,396.12	614,064.13
10,600.00	90.00	172.85	7,250.00	-4,196.40	-3,527.30	442.47	3,554.94	0.00	415,296.90	614,076.57
10,700.00	90.00	172.85	7,250.00	-4,196.40	-3,626.52	454.92	3,654.94	0.00	415,197.68	614,089.02
10,800.00	90.00	172.85	7,250.00	-4,196.40	-3,725.75	467.37	3,754.94	0.00	415,098.45	614,101.47



Pathfinder
Pathfinder X & Y Planning Report

PATHFINDER
A Schlumberger Company

Company: EOG Resources, Inc.
Project: Eddy County
Site: Venado "10" Federal
Well: #1H
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Design: Design #1

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Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
10,900.00	90.00	172.85	7,250.00	-4,196.40	-3,824.97	479.81	3,854.94	0.00	414,999.23	614,113.91
11,000.00	90.00	172.85	7,250.00	-4,196.40	-3,924.19	492.26	3,954.94	0.00	414,900.01	614,126.36
11,100.00	90.00	172.85	7,250.00	-4,196.40	-4,023.41	504.71	4,054.94	0.00	414,800.79	614,138.81
11,200.00	90.00	172.85	7,250.00	-4,196.40	-4,122.63	517.16	4,154.94	0.00	414,701.57	614,151.26
11,300.00	90.00	172.85	7,250.00	-4,196.40	-4,221.86	529.60	4,254.94	0.00	414,602.34	614,163.70
11,400.00	90.00	172.85	7,250.00	-4,196.40	-4,321.08	542.05	4,354.94	0.00	414,503.12	614,176.15
11,500.00	90.00	172.85	7,250.00	-4,196.40	-4,420.30	554.50	4,454.94	0.00	414,403.90	614,188.60
11,600.00	90.00	172.85	7,250.00	-4,196.40	-4,519.52	566.94	4,554.94	0.00	414,304.68	614,201.04
11,700.00	90.00	172.85	7,250.00	-4,196.40	-4,618.75	579.39	4,654.94	0.00	414,205.45	614,213.49
11,730.98	90.00	172.85	7,250.00	-4,196.40	-4,649.48	583.24	4,685.92	0.00	414,174.72	614,217.34

TD at 11730.98

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,772.50	6,772.50	0.00	0.00	KOP-6772.50'MD,0.00°INC,0.00°AZI,6772.50'TVD
7,522.56	7,250.00	-473.79	59.43	EOC-7522.56'MD,90.00°INC,172.85°AZI,7250.00'TVD
11,730.98	7,250.00	-4,649.48	583.24	TD at 11730.98

Checked By: _____ Approved By: _____ Date: _____



Project: Eddy County
Site: Venado "10" Federal
Well: #1H
Wellbore: OH
Plan: Design #1 (#1H/OH)



Azimuths to Grid North
True North: -0.20°
Magnetic North: 7.60°

Magnetic Field
Strength: 48603.7nT
Dip Angle: 60.08°
Date: 01/31/2011
Model: IGRF200510

PATHFINDER
A Schlumberger Company

WELL DETAILS: #1H						
Ground Elevation: 3034.60						
RKB Elevation: WELL @ 3053.60usft (19' KB Correction)						
Rig Name: 19' KB Correction						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	418824.200	613634.100	32° 9' 3.355 N	103° 57' 58.190 W	

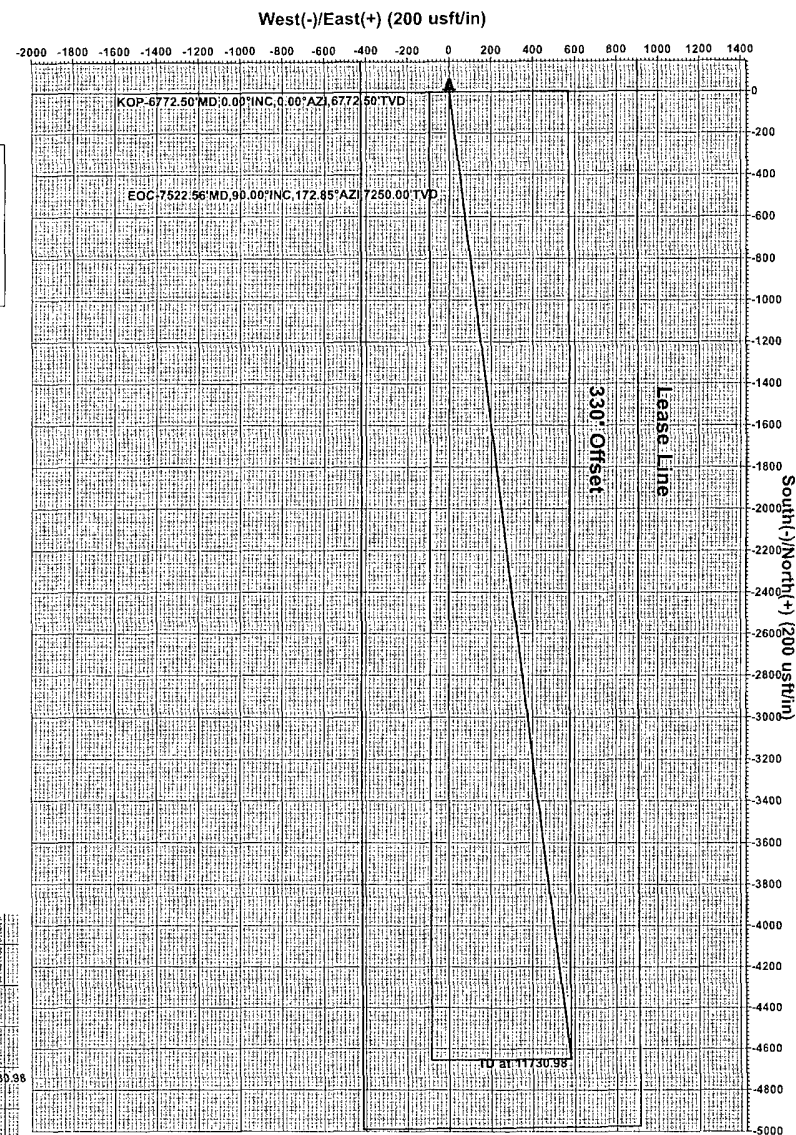
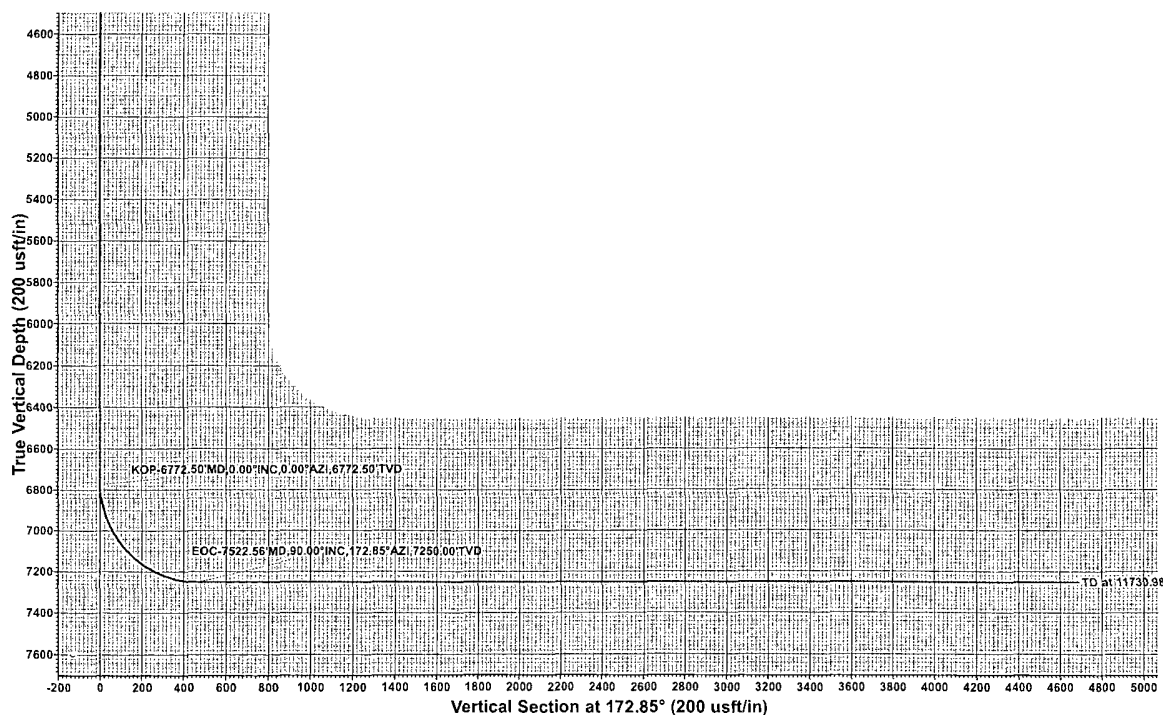
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6772.50	0.00	0.00	6772.50	0.00	0.00	0.00	0.00	0.00	0.00
7522.56	90.00	172.85	7250.00	-473.79	59.43	12.00	172.85	477.50	
11730.98	90.00	172.85	7250.00	-4649.48	583.24	0.00	0.00	4685.92	PBHL(VF#1)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(VF#1)	7250.00	-4649.50	583.10	414174.700	614217.200	Point

PROJECT DETAILS: Eddy County
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

LEGEND

• Design #1



Plan: Design #1 (#1H/OH)

Created By: Nate Bingham Date: 9:01, January 31 2011

Checked: _____ Date: _____

EOG RESOURCES, INC.
VENADO 10 FEDERAL 1H

ATTACHMENT TO EXHIBIT #1

1. Wear ring to be properly installed in head.
2. Blow out preventer and all fittings must be in good condition, 5000 psi W.P. minimum. Exhibit #1.
3. All fittings to be flanged
4. Safety valve must be available on rig floor at all times with proper connections, valve to be full bore 5000 psi W.P. minimum.
5. All choke and fill lines to be securely anchored especially ends of choke lines.
6. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
7. Kelly cock on kelly.
8. Extension wrenches and hand wheels to be properly installed.
9. Blow out preventer control to be located as close to driller's position as feasible.
10. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation, and meet all API specifications.

EXHIBIT 1

EOG Resources
Venado 10 Federal No. 1H

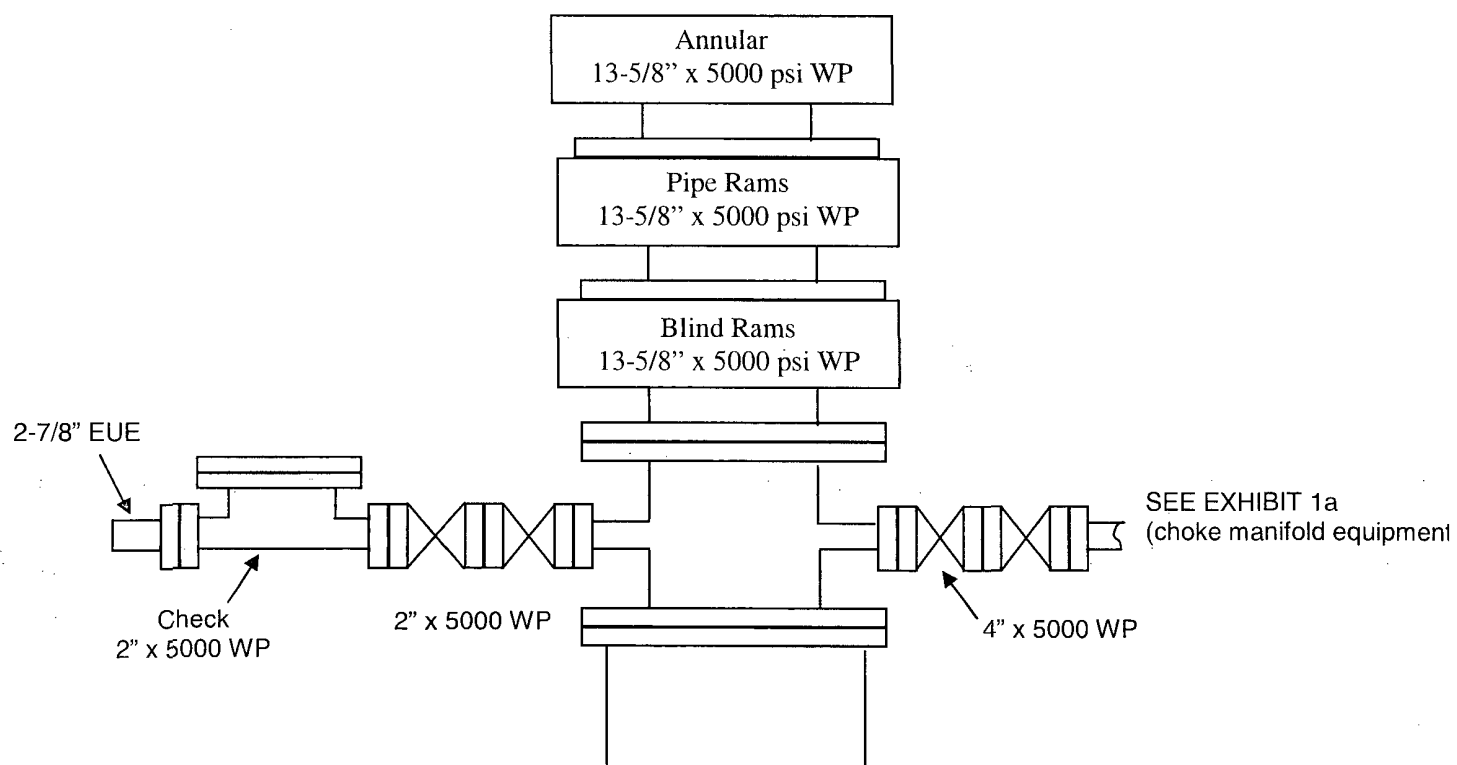
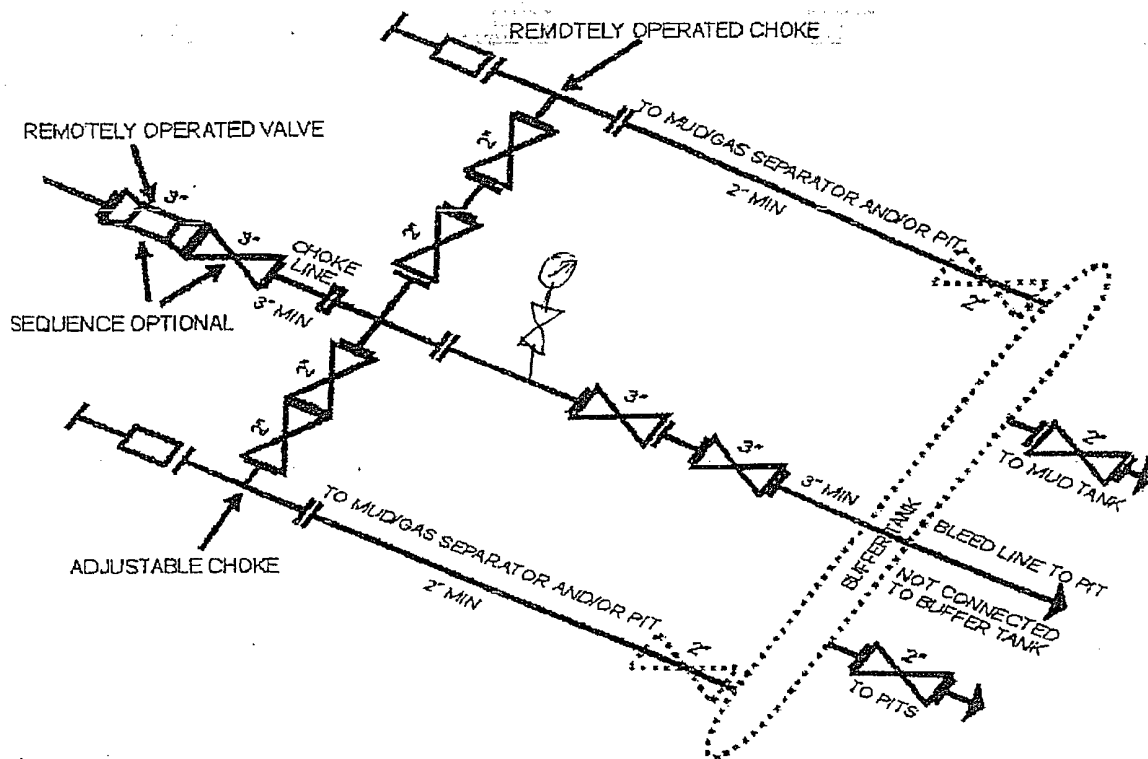


EXHIBIT 1a
EOG Resources, Inc.

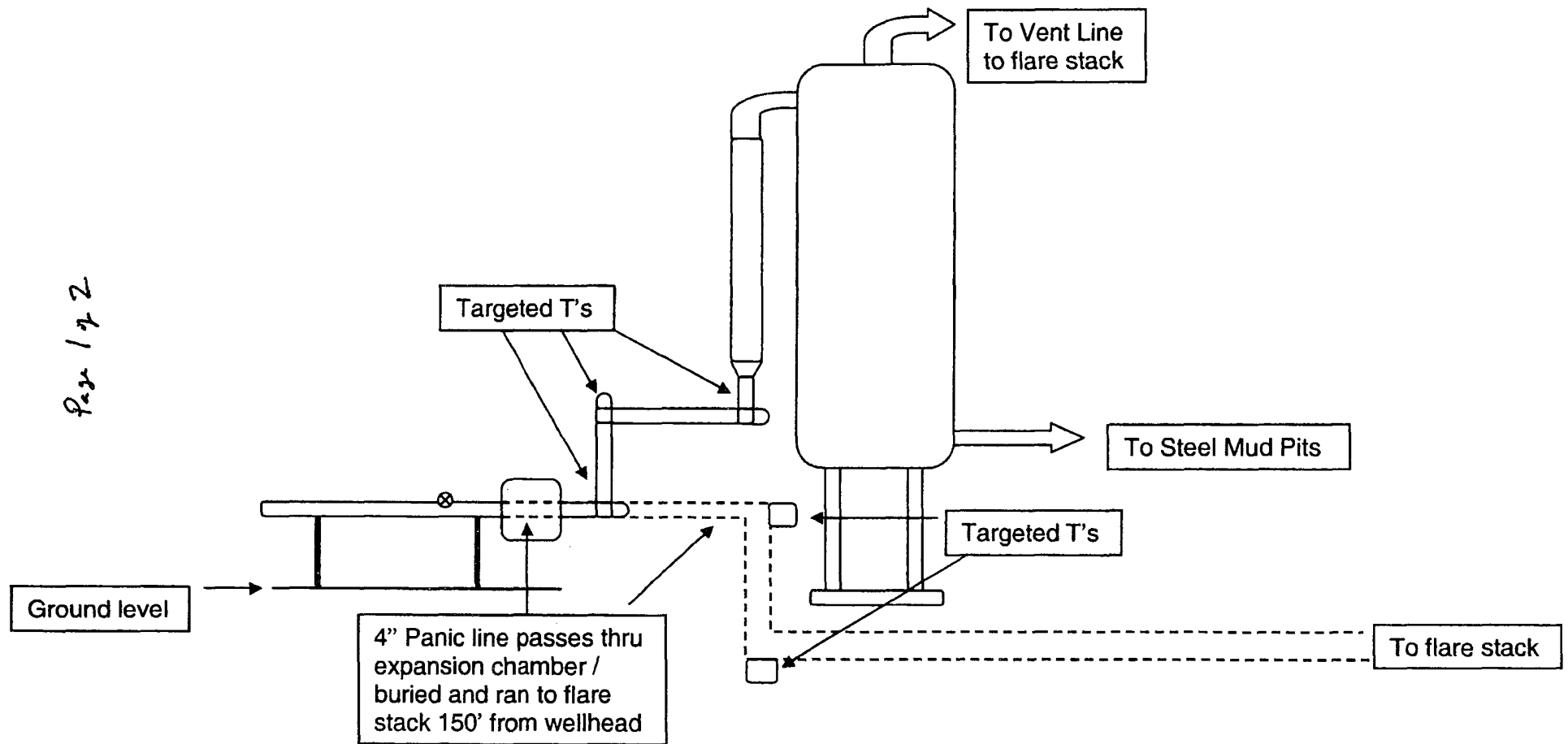


5M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

Although not required for any of the choke manifold systems, buffer tanks are sometimes installed downstream of the choke assemblies for the purpose of manifolding the bleed lines together. When buffer tanks are employed, valves shall be installed upstream to isolate a failure or malfunction without interrupting flow control. Though not shown on 2M, 3M, 10M, OR 15M drawings, it would also be applicable to those situations.

[54 FR 39528, Sept. 27, 1989]

Profile View of Piping from Choke Manifold
to the Mud Gas Separator



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Aerial View of the Piping from the Choke
Manifold to the Mud Gas Separator

