

OCD Hobbs

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBBS OCD
FEB 08 2016
RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM114985
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 (7377)		7. If Unit or CA Agreement, Name and No.
3a. Address P.O. Box 2267 Midland, TX 79702		8. Lease Name and Well No. Driver 14 State Com 502H (315972)
3b. Phone No. (include area code) 432-686-3689		9. API Well No. 30-025- 43071
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 160' FNL & 1070' FWL, NWNW (D), Sec 14, 23S, 33E At proposed prod. zone 230' FSL & 330' FWL, SWSW (M), Sec 14		10. Field and Pool, or Exploratory Bell Lake; Bone Spring, North (5150)
11. Sec., T. R. M. or Blk. and Survey or Area Section 14, T23S, R33E		12. County or Parish Lea
13. State NM		
14. Distance in miles and direction from nearest town or post office* Approximately +/- 25 miles Northwest from Jal, New Mexico	15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 160', 330' PP	16. No. of acres in lease 1039.09
17. Spacing Unit dedicated to this well 160 ac.	18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1st well	19. Proposed Depth 16000' MD, 11200' TVD
20. BLM/BIA Bond No. on file NM 2308	21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3653' GL	22. Approximate date work will start* 03/01/2016
23. Estimated duration 25 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 09/21/2015
Title Regulatory Specialist		
Approved by (Signature) 	Name (Printed/Typed) Steve Caffey	Date FEB - 2 2016
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

Ka
2/10/16

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

FEB 11 2016

EOG RESOURCES, INC.
DRIVER 14 STATE COM NO. 502H



1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	1,300'
Top of Salt	1,800'
Base of Salt / Top Anhydrite	5,020'
Base Anhydrite	5,020'
Lamar	5,230'
Bell Canyon	5,260'
Cherry Canyon	6,200'
Brushy Canyon	7,700'
Bone Spring Lime	9,130'
1 st Bone Spring Sand	10,275'
2 nd Bone Spring Lime	10,650'
2 nd Bone Spring Sand	10,780'
TD	11,200'

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

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	6,200'	Oil
Brushy Canyon	7,700'	Oil
1 st Bone Spring Sand	10,275'	Oil
2 nd Bone Spring Lime	10,650'	Oil
2 nd Bone Spring Sand	10,780'	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 13.375" casing at 1,325' 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
17.5"	0 - 1,325'	13.375"	54.5#	J55	STC	1.125	1.25	1.60
12.25"	0-4,000'	9.625"	40#	J55	LTC	1.125	1.25	1.60
12.25"	4,000' - 5,100'	9.625"	40#	HCK55	LTC	1.125	1.25	1.60
8.75"	0'-16,000'	5.5"	17#	HCP-110	BTC	1.125	1.25	1.60

EOG RESOURCES, INC.
DRIVER 14 STATE COM NO. 502H

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft ³ /ft	Mix Water Gal/sk	Slurry Description
13-3/8" 1,325'	600	13.5	1.73	9.13	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl ₂ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	300	14.8	1.34	6.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
9-5/8" 5,100'	1000	12.7	2.22	12.38	Lead: Class 'C' + 1.50% R-3 + 0.25 lb/sk Cello-Flake + 2.0% Sodium Metasilicate + 10% Salt + 0.005 lb/sk Static Free (TOC @ surface)
	200	14.8	1.32	6.33	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
5-1/2" 16,000'	775	9.0	2.79	10.12	Lead: LiteCRETE + 0.10% D-065 + 0.20% D-046 + 0.40% D-167 + 0.20% D-198 + 0.04% D-208 + 2.0% D-174 (TOC @ 4,600')
	2000	14.4	1.28	5.69	Tail: Class H + 47.01 pps D-909 + 37.01 pps + 5.0% D-020 + 0.30% D-013 + 0.20% D-046 + 0.10% D-065 + 0.50% D-167 + 2.0% D-174

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (5000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

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 5000/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

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 be installed prior to drilling out of the intermediate casing shoe.

EOG RESOURCES, INC.
DRIVER 14 STATE COM NO. 502H

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal.

The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,325'	Fresh - Gel	8.6-8.8'	28-34	N/c
1,325' – 5,100'	Oil Base	8.7-9.4	58-68	N/c - 6
5,100' – 10,659'	Oil Base	8.7-9.4	58-68	N/c - 6
10,659' – 16,000' Lateral	Oil Base	10.0-10.5	58-68	N/c - 6

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

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.

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

8. LOGGING, TESTING AND CORING PROGRAM:

Open-hole logs are not planned for this well.

GR-CCL Will be run in cased hole during completions phase of operations.

*See
COA*

**EOG RESOURCES, INC.
DRIVER 14 STATE COM NO. 502H**

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

*See
COA*

The estimated bottom-hole temperature (BHT) at TD is 170 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 4849 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:

*See
COA*

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.

- (A) EOG Resources requests the option to contract a Surface Rig to drill, set surface casing, and cement on the subject well. If the timing between rigs is such that EOG Resources would not be able to preset the surface, the Primary Rig will MIRU and drill the well in its entirety per the APD.

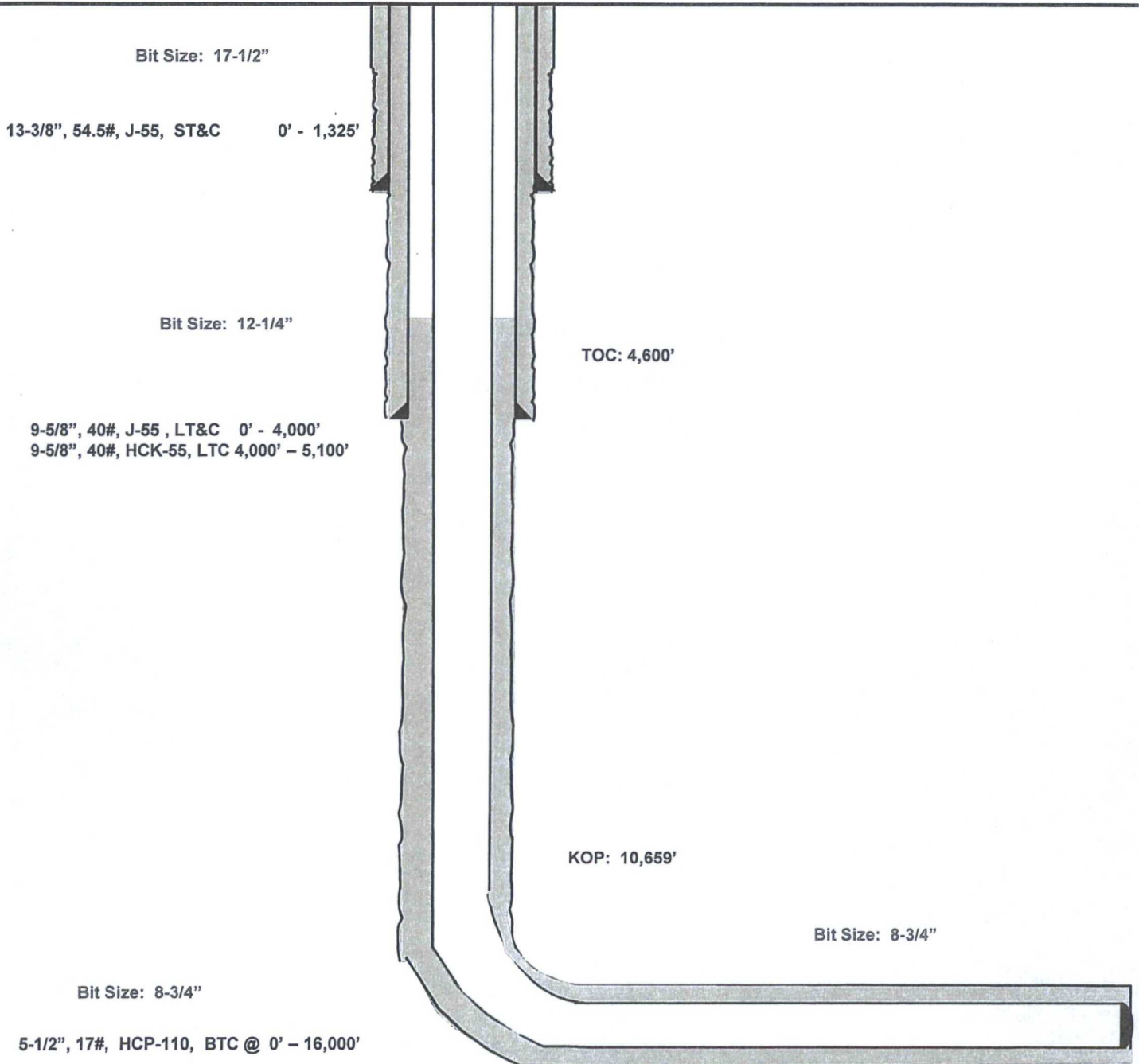
Driver 14 State Com #502H

Lea County, New Mexico
Proposed Wellbore

160' FNL
1070' FWL
Section 14
T-23-S, R-33-E

API: 30-025-

KB: 3,683'
GL: 3,653'



Lateral: 16,000' MD, 11,200' TVD
Upper Most Perf:
330' FNL & 330' FWL Sec. 14
Lower Most Perf:
330' FSL & 330' FWL Sec. 14
BH Location: 230' FSL & 330' FWL
Section 14
T-23-S, R-33-E



Lea County, NM (NAD 27 NME)

Driver 14 State #502H

Precision 612

Plan #1

PROJECT DETAILS: Lea County, NM (NAD 27 NME)

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

WELL DETAILS: #502H

Ground Level: 3653.0
KB = 28 @ 3578.0usft (Precision 612)
Northing: 477891.00 Easting: 742708.00 Latitude: 32° 18' 41.017 N Longitude: 103° 32' 51.846 W

Azimuths to Grid North
True North: -0.42°
Magnetic North: 6.66°
Magnetic Field
Strength: 48114.2nT
Dip Angle: 60.16°
Date: 4/6/2016
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.86°
To convert a Magnetic Direction to a True Direction, Add 7.08° East
To convert a True Direction to a Grid Direction, Subtract 0.42°

SECTION DETAILS

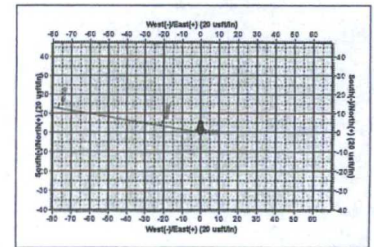
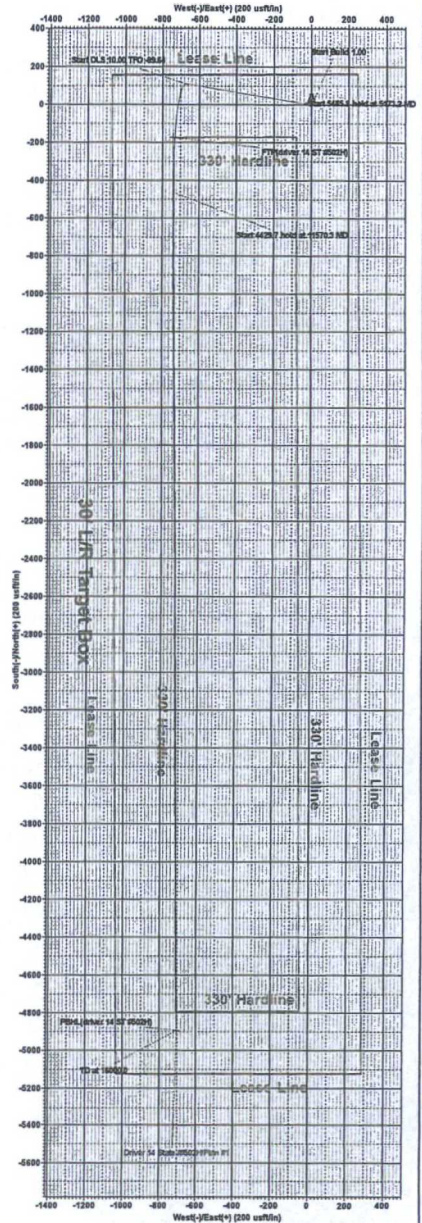
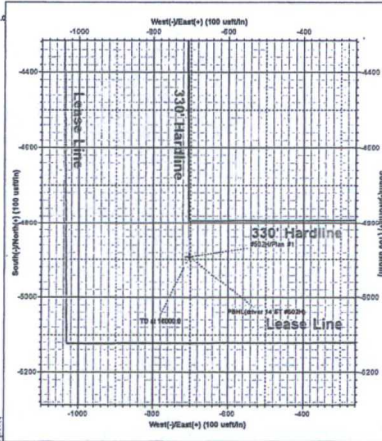
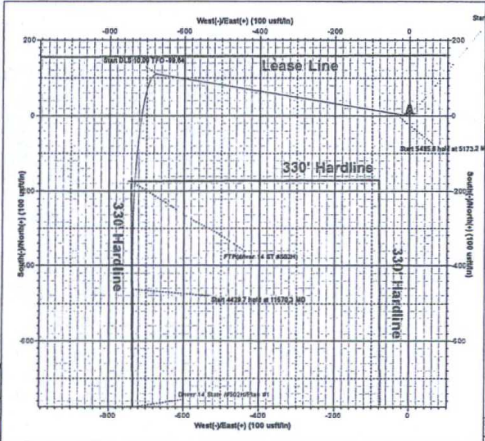
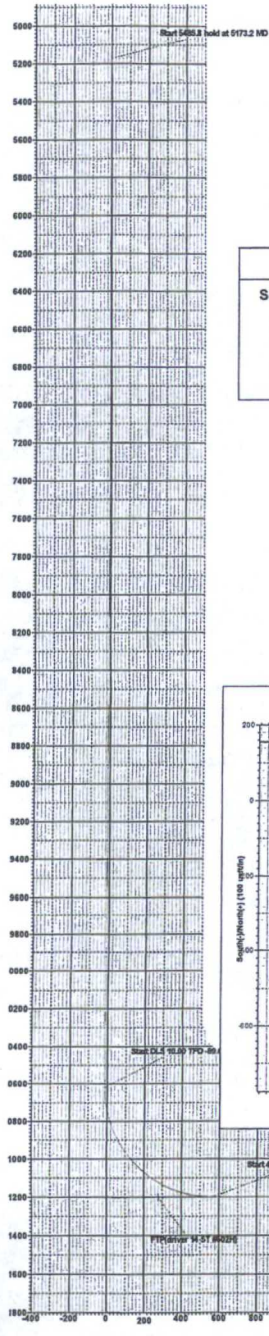
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	4500.0	0.0	0.0	0.00	0.00	0.0	
2	4500.0	0.00	0.00	4500.0	0.0	0.0	0.00	0.00	0.0	
3	5173.2	6.73	279.27	5171.6	6.4	-39.0	1.00	279.27	-0.8	
4	10659.0	6.73	279.27	10619.6	109.9	-673.6	0.00	0.00	-13.0	
5	11570.3	90.00	179.56	11200.0	-463.4	-736.8	10.00	-99.64	563.5	
6	16000.0	90.00	179.56	11200.0	-4893.0	-703.0	0.00	0.00	4943.2	PBHL(driver 14 ST #502H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
FTP(driver 14 ST #502H)	11200.0	-174.0	-739.0	477717.00	741969.00
PBHL(driver 14 ST #502H)	11200.0	-4893.0	-703.0	472999.00	742005.00



Lea County, NM (NAD 27 NME)
Driver 14 State #502H
Precision 612
Plan #1
4/6/2016, 10:00 AM



EOG Resources - Midland

Lea County, NM (NAD 27 NME)

Driver 14 State

#502H

OH

Plan: Plan #1

Standard Planning Report

18 September, 2015



EOG Resources, Inc.
Planning Report

Database: EDM 5000.1 Single User Db
Company: EOG Resources - Midland
Project: Lea County, NM (NAD 27 NME)
Site: Driver 14 State
Well: #502H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #502H
TVD Reference: KB = 25 @ 3678.0usft (Precision 612)
MD Reference: KB = 25 @ 3678.0usft (Precision 612)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD 27 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	Driver 14 State			
Site Position:		Northing:	477,891.00 usft	Latitude: 32° 18' 41.017 N
From:	Map	Easting:	742,708.00 usft	Longitude: 103° 32' 51.846 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.42 °

Well	#502H			
Well Position	+N/-S	0.0 usft	Northing:	477,891.00 usft
	+E/-W	0.0 usft	Easting:	742,708.00 usft
Position Uncertainty	0.0 usft		Wellhead Elevation:	0.0 usft
			Ground Level:	3,653.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/6/2016	7.08	60.16	48,114

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	188.18

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,173.2	6.73	279.27	5,171.6	6.4	-39.0	1.00	1.00	0.00	279.27	
10,659.0	6.73	279.27	10,619.6	109.9	-673.6	0.00	0.00	0.00	0.00	
11,570.3	90.00	179.56	11,200.0	-463.4	-736.8	10.00	9.14	-10.94	-99.64	
16,000.0	90.00	179.56	11,200.0	-4,893.0	-703.0	0.00	0.00	0.00	0.00	PBHL(driver 14 ST #5



EOG Resources, Inc.

Planning Report

Database: EDM 5000.1 Single User Db
Company: EOG Resources - Midland
Project: Lea County, NM (NAD 27 NME)
Site: Driver 14 State
Well: #502H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #502H
TVD Reference: KB = 25 @ 3678.0usft (Precision 612)
MD Reference: KB = 25 @ 3678.0usft (Precision 612)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	1.00	279.27	4,600.0	0.1	-0.9	0.0	1.00	1.00	0.00
4,700.0	2.00	279.27	4,700.0	0.6	-3.4	-0.1	1.00	1.00	0.00
4,800.0	3.00	279.27	4,799.9	1.3	-7.7	-0.1	1.00	1.00	0.00
4,900.0	4.00	279.27	4,899.7	2.2	-13.8	-0.3	1.00	1.00	0.00
5,000.0	5.00	279.27	4,999.4	3.5	-21.5	-0.4	1.00	1.00	0.00
5,100.0	6.00	279.27	5,098.9	5.1	-31.0	-0.6	1.00	1.00	0.00
5,173.2	6.73	279.27	5,171.6	6.4	-39.0	-0.8	1.00	1.00	0.00
5,200.0	6.73	279.27	5,198.3	6.9	-42.1	-0.8	0.00	0.00	0.00



EOG Resources, Inc.

Planning Report

Database: EDM 5000.1 Single User Db
Company: EOG Resources - Midland
Project: Lea County, NM (NAD 27 NME)
Site: Driver 14 State
Well: #502H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #502H
TVD Reference: KB = 25 @ 3678.0usft (Precision 612)
MD Reference: KB = 25 @ 3678.0usft (Precision 612)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	6.73	279.27	5,297.6	8.8	-53.7	-1.0	0.00	0.00	0.00
5,400.0	6.73	279.27	5,396.9	10.6	-65.2	-1.3	0.00	0.00	0.00
5,500.0	6.73	279.27	5,496.2	12.5	-76.8	-1.5	0.00	0.00	0.00
5,600.0	6.73	279.27	5,595.5	14.3	-88.4	-1.7	0.00	0.00	0.00
5,700.0	6.73	279.27	5,694.8	16.4	-99.9	-1.9	0.00	0.00	0.00
5,800.0	6.73	279.27	5,794.1	18.2	-111.5	-2.2	0.00	0.00	0.00
5,900.0	6.73	279.27	5,893.4	20.1	-123.1	-2.4	0.00	0.00	0.00
6,000.0	6.73	279.27	5,992.8	22.0	-134.6	-2.6	0.00	0.00	0.00
6,100.0	6.73	279.27	6,092.1	23.9	-146.2	-2.8	0.00	0.00	0.00
6,200.0	6.73	279.27	6,191.4	25.7	-157.8	-3.0	0.00	0.00	0.00
6,300.0	6.73	279.27	6,290.7	27.6	-169.3	-3.3	0.00	0.00	0.00
6,400.0	6.73	279.27	6,390.0	29.5	-180.9	-3.5	0.00	0.00	0.00
6,500.0	6.73	279.27	6,489.3	31.4	-192.5	-3.7	0.00	0.00	0.00
6,600.0	6.73	279.27	6,588.6	33.3	-204.1	-3.9	0.00	0.00	0.00
6,700.0	6.73	279.27	6,687.9	35.2	-215.6	-4.2	0.00	0.00	0.00
6,800.0	6.73	279.27	6,787.2	37.1	-227.2	-4.4	0.00	0.00	0.00
6,900.0	6.73	279.27	6,886.5	39.0	-238.8	-4.6	0.00	0.00	0.00
7,000.0	6.73	279.27	6,985.9	40.8	-250.3	-4.8	0.00	0.00	0.00
7,100.0	6.73	279.27	7,085.2	42.7	-261.9	-5.1	0.00	0.00	0.00
7,200.0	6.73	279.27	7,184.5	44.6	-273.5	-5.3	0.00	0.00	0.00
7,300.0	6.73	279.27	7,283.8	46.5	-285.0	-5.5	0.00	0.00	0.00
7,400.0	6.73	279.27	7,383.1	48.4	-296.6	-5.7	0.00	0.00	0.00
7,500.0	6.73	279.27	7,482.4	50.3	-308.2	-5.9	0.00	0.00	0.00
7,600.0	6.73	279.27	7,581.7	52.2	-319.7	-6.2	0.00	0.00	0.00
7,700.0	6.73	279.27	7,681.0	54.1	-331.3	-6.4	0.00	0.00	0.00
7,800.0	6.73	279.27	7,780.3	55.9	-342.9	-6.6	0.00	0.00	0.00
7,900.0	6.73	279.27	7,879.7	57.8	-354.5	-6.8	0.00	0.00	0.00
8,000.0	6.73	279.27	7,979.0	59.7	-366.0	-7.1	0.00	0.00	0.00
8,100.0	6.73	279.27	8,078.3	61.6	-377.6	-7.3	0.00	0.00	0.00
8,200.0	6.73	279.27	8,177.6	63.5	-389.2	-7.5	0.00	0.00	0.00
8,300.0	6.73	279.27	8,276.9	65.4	-400.7	-7.7	0.00	0.00	0.00
8,400.0	6.73	279.27	8,376.2	67.3	-412.3	-8.0	0.00	0.00	0.00
8,500.0	6.73	279.27	8,475.5	69.2	-423.9	-8.2	0.00	0.00	0.00
8,600.0	6.73	279.27	8,574.8	71.0	-435.4	-8.4	0.00	0.00	0.00
8,700.0	6.73	279.27	8,674.1	72.9	-447.0	-8.6	0.00	0.00	0.00
8,800.0	6.73	279.27	8,773.4	74.8	-458.6	-8.8	0.00	0.00	0.00
8,900.0	6.73	279.27	8,872.8	76.7	-470.1	-9.1	0.00	0.00	0.00
9,000.0	6.73	279.27	8,972.1	78.6	-481.7	-9.3	0.00	0.00	0.00
9,100.0	6.73	279.27	9,071.4	80.5	-493.3	-9.5	0.00	0.00	0.00
9,200.0	6.73	279.27	9,170.7	82.4	-504.8	-9.7	0.00	0.00	0.00
9,300.0	6.73	279.27	9,270.0	84.3	-516.4	-10.0	0.00	0.00	0.00
9,400.0	6.73	279.27	9,369.3	86.1	-528.0	-10.2	0.00	0.00	0.00
9,500.0	6.73	279.27	9,468.6	88.0	-539.6	-10.4	0.00	0.00	0.00
9,600.0	6.73	279.27	9,567.9	89.9	-551.1	-10.6	0.00	0.00	0.00
9,700.0	6.73	279.27	9,667.2	91.8	-562.7	-10.9	0.00	0.00	0.00
9,800.0	6.73	279.27	9,766.6	93.7	-574.3	-11.1	0.00	0.00	0.00
9,900.0	6.73	279.27	9,865.9	95.6	-585.8	-11.3	0.00	0.00	0.00
10,000.0	6.73	279.27	9,965.2	97.5	-597.4	-11.5	0.00	0.00	0.00
10,100.0	6.73	279.27	10,064.5	99.4	-609.0	-11.7	0.00	0.00	0.00
10,200.0	6.73	279.27	10,163.8	101.3	-620.5	-12.0	0.00	0.00	0.00
10,300.0	6.73	279.27	10,263.1	103.1	-632.1	-12.2	0.00	0.00	0.00
10,400.0	6.73	279.27	10,362.4	105.0	-643.7	-12.4	0.00	0.00	0.00
10,500.0	6.73	279.27	10,461.7	106.9	-655.2	-12.6	0.00	0.00	0.00
10,600.0	6.73	279.27	10,561.0	108.8	-666.8	-12.9	0.00	0.00	0.00



EOG Resources, Inc.

Planning Report

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 Company: EOG Resources - Midland
 Project: Lea County, NM (NAD 27 NME)
 Site: Driver 14 State
 Well: #502H
 Wellbore: OH
 Design: Plan #1

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 TVD Reference: KB = 25 @ 3678.0usft (Precision 612)
 MD Reference: KB = 25 @ 3678.0usft (Precision 612)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,659.0	6.73	279.27	10,619.6	109.9	-673.6	-13.0	0.00	0.00	0.00
10,700.0	7.27	245.40	10,660.3	109.2	-678.4	-11.6	10.00	1.31	-82.60
10,750.0	10.36	219.11	10,709.8	104.4	-684.1	-6.1	10.00	6.18	-52.59
10,800.0	14.54	206.21	10,758.6	95.3	-689.7	3.8	10.00	8.37	-25.79
10,850.0	19.12	199.18	10,806.4	81.9	-695.2	17.8	10.00	9.15	-14.07
10,900.0	23.86	194.82	10,853.0	64.4	-700.4	35.9	10.00	9.48	-8.72
10,950.0	28.68	191.84	10,897.8	42.9	-705.5	57.9	10.00	9.65	-5.95
11,000.0	33.55	189.67	10,940.6	17.5	-710.3	83.7	10.00	9.75	-4.35
11,050.0	38.46	187.99	10,981.0	-11.6	-714.8	113.1	10.00	9.80	-3.36
11,100.0	43.38	186.64	11,018.8	-44.0	-718.9	145.8	10.00	9.84	-2.70
11,150.0	48.31	185.51	11,053.6	-79.7	-722.7	181.7	10.00	9.87	-2.25
11,200.0	53.26	184.55	11,085.2	-118.3	-726.1	220.3	10.00	9.89	-1.93
11,250.0	58.21	183.70	11,113.4	-159.5	-729.0	261.5	10.00	9.90	-1.69
11,300.0	63.16	182.94	11,137.8	-203.0	-731.5	304.9	10.00	9.91	-1.52
FTP(driver 14 ST #502H)									
11,350.0	68.12	182.24	11,158.4	-248.5	-733.6	350.3	10.00	9.92	-1.39
11,400.0	73.09	181.59	11,175.0	-295.6	-735.2	397.1	10.00	9.92	-1.30
11,450.0	78.05	180.97	11,187.5	-344.0	-736.2	445.2	10.00	9.93	-1.23
11,500.0	83.01	180.38	11,195.7	-393.3	-736.8	494.1	10.00	9.93	-1.19
11,550.0	87.98	179.80	11,199.6	-443.1	-736.9	543.4	10.00	9.93	-1.16
11,570.3	90.00	179.56	11,200.0	-463.4	-736.8	563.5	10.00	9.93	-1.16
11,600.0	90.00	179.56	11,200.0	-493.1	-736.6	592.8	0.00	0.00	0.00
11,700.0	90.00	179.56	11,200.0	-593.1	-735.8	691.7	0.00	0.00	0.00
11,800.0	90.00	179.56	11,200.0	-693.1	-735.0	790.6	0.00	0.00	0.00
11,900.0	90.00	179.56	11,200.0	-793.1	-734.3	889.5	0.00	0.00	0.00
12,000.0	90.00	179.56	11,200.0	-893.1	-733.5	988.3	0.00	0.00	0.00
12,100.0	90.00	179.56	11,200.0	-993.1	-732.8	1,087.2	0.00	0.00	0.00
12,200.0	90.00	179.56	11,200.0	-1,093.1	-732.0	1,186.1	0.00	0.00	0.00
12,300.0	90.00	179.56	11,200.0	-1,193.1	-731.2	1,284.9	0.00	0.00	0.00
12,400.0	90.00	179.56	11,200.0	-1,293.1	-730.5	1,383.8	0.00	0.00	0.00
12,500.0	90.00	179.56	11,200.0	-1,393.1	-729.7	1,482.7	0.00	0.00	0.00
12,600.0	90.00	179.56	11,200.0	-1,493.1	-728.9	1,581.6	0.00	0.00	0.00
12,700.0	90.00	179.56	11,200.0	-1,593.1	-728.2	1,680.4	0.00	0.00	0.00
12,800.0	90.00	179.56	11,200.0	-1,693.1	-727.4	1,779.3	0.00	0.00	0.00
12,900.0	90.00	179.56	11,200.0	-1,793.1	-726.6	1,878.2	0.00	0.00	0.00
13,000.0	90.00	179.56	11,200.0	-1,893.1	-725.9	1,977.1	0.00	0.00	0.00
13,100.0	90.00	179.56	11,200.0	-1,993.1	-725.1	2,075.9	0.00	0.00	0.00
13,200.0	90.00	179.56	11,200.0	-2,093.1	-724.4	2,174.8	0.00	0.00	0.00
13,300.0	90.00	179.56	11,200.0	-2,193.1	-723.6	2,273.7	0.00	0.00	0.00
13,400.0	90.00	179.56	11,200.0	-2,293.1	-722.8	2,372.5	0.00	0.00	0.00
13,500.0	90.00	179.56	11,200.0	-2,393.0	-722.1	2,471.4	0.00	0.00	0.00
13,600.0	90.00	179.56	11,200.0	-2,493.0	-721.3	2,570.3	0.00	0.00	0.00
13,700.0	90.00	179.56	11,200.0	-2,593.0	-720.5	2,669.2	0.00	0.00	0.00
13,800.0	90.00	179.56	11,200.0	-2,693.0	-719.8	2,768.0	0.00	0.00	0.00
13,900.0	90.00	179.56	11,200.0	-2,793.0	-719.0	2,866.9	0.00	0.00	0.00
14,000.0	90.00	179.56	11,200.0	-2,893.0	-718.3	2,965.8	0.00	0.00	0.00
14,100.0	90.00	179.56	11,200.0	-2,993.0	-717.5	3,064.6	0.00	0.00	0.00
14,200.0	90.00	179.56	11,200.0	-3,093.0	-716.7	3,163.5	0.00	0.00	0.00
14,300.0	90.00	179.56	11,200.0	-3,193.0	-716.0	3,262.4	0.00	0.00	0.00
14,400.0	90.00	179.56	11,200.0	-3,293.0	-715.2	3,361.3	0.00	0.00	0.00
14,500.0	90.00	179.56	11,200.0	-3,393.0	-714.4	3,460.1	0.00	0.00	0.00
14,600.0	90.00	179.56	11,200.0	-3,493.0	-713.7	3,559.0	0.00	0.00	0.00
14,700.0	90.00	179.56	11,200.0	-3,593.0	-712.9	3,657.9	0.00	0.00	0.00



EOG Resources, Inc.
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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,800.0	90.00	179.56	11,200.0	-3,693.0	-712.2	3,756.8	0.00	0.00	0.00
14,900.0	90.00	179.56	11,200.0	-3,793.0	-711.4	3,855.6	0.00	0.00	0.00
15,000.0	90.00	179.56	11,200.0	-3,893.0	-710.6	3,954.5	0.00	0.00	0.00
15,100.0	90.00	179.56	11,200.0	-3,993.0	-709.9	4,053.4	0.00	0.00	0.00
15,200.0	90.00	179.56	11,200.0	-4,093.0	-709.1	4,152.2	0.00	0.00	0.00
15,300.0	90.00	179.56	11,200.0	-4,193.0	-708.3	4,251.1	0.00	0.00	0.00
15,400.0	90.00	179.56	11,200.0	-4,293.0	-707.6	4,350.0	0.00	0.00	0.00
15,500.0	90.00	179.56	11,200.0	-4,393.0	-706.8	4,448.9	0.00	0.00	0.00
15,600.0	90.00	179.56	11,200.0	-4,493.0	-706.1	4,547.7	0.00	0.00	0.00
15,700.0	90.00	179.56	11,200.0	-4,593.0	-705.3	4,646.6	0.00	0.00	0.00
15,800.0	90.00	179.56	11,200.0	-4,693.0	-704.5	4,745.5	0.00	0.00	0.00
15,900.0	90.00	179.56	11,200.0	-4,793.0	-703.8	4,844.3	0.00	0.00	0.00
16,000.0	90.00	179.56	11,200.0	-4,893.0	-703.0	4,943.2	0.00	0.00	0.00
PBHL(driver 14 ST #502H)									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL(driver 14 ST #502	0.00	0.00	11,200.0	-4,893.0	-703.0	472,998.00	742,005.00	32° 17' 52.650 N	103° 33' 0.453 W
- plan hits target center									
- Point									
FTP(driver 14 ST #502H	0.00	0.00	11,200.0	-174.0	-739.0	477,717.00	741,969.00	32° 18' 39.349 N	103° 33' 0.471 W
- plan misses target center by 69.0usft at 11300.0usft MD (11137.8 TVD, -203.0 N, -731.5 E)									
- Point									

Exhibit 1

EOG Resources

10M BOPE

Rig Floor

1. 13 5/8" Rotating Head
2. NOV 13 5/8" 5,000 PSI WP GK Annular Preventor
3. 13 5/8" Cameron Type "U" 10,000 PSI WP Ram Preventors
4. 2 1/16" - 10,000 PSI WP Check Valve
5. 10,000 PSI WP - 1502 Union to kill line
6. 2 1/16" - 10,000 PSI WP Manual Valves
7. 13 5/8" 3,000 PSI WP x 13 5/8" 5,000 PSI WP Spacer Spool
8. 4 1/16" 10,000 PSI WP HCR Valve
9. 4 1/16" 10,000 PSI WP Manual Valve
10. 6" OD x 3" ID 10,000 PSI WP Steel Armoured Flex Choke Line
11. DSA - 13 5/8" 10,000 PSI WP x 13 5/8" 5,000 PSI WP
12. Mud Cross - 13 5/8" 10,000 PSI WP
13. Blind Rams
14. Pipe Rams
15. 13 5/8" Cameron Type "U" 10,000 PSI WP Pipe Rams
16. Flow Line
17. 2" Fill Line

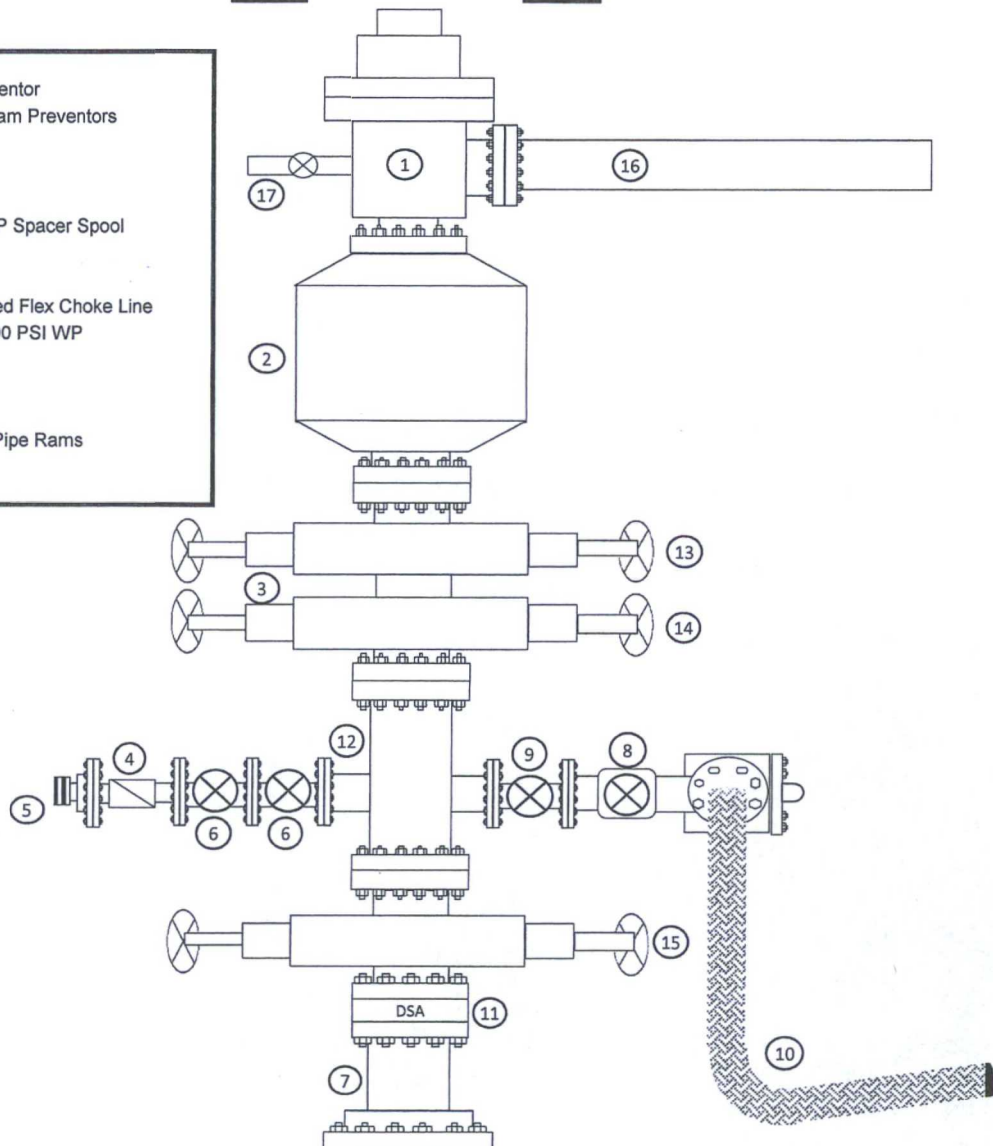
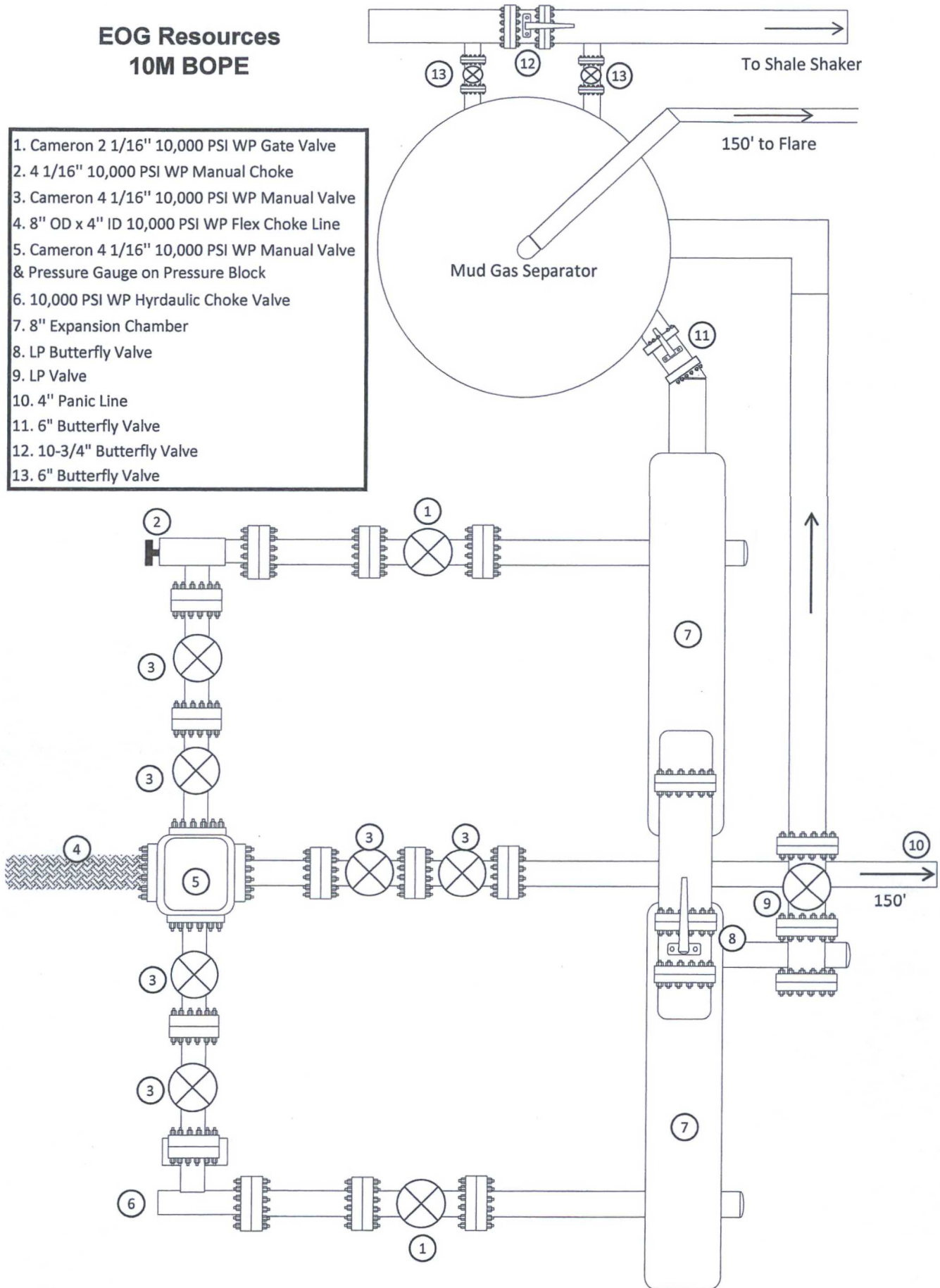


Exhibit 1a

EOG Resources 10M BOPE

1. Cameron 2 1/16" 10,000 PSI WP Gate Valve
2. 4 1/16" 10,000 PSI WP Manual Choke
3. Cameron 4 1/16" 10,000 PSI WP Manual Valve
4. 8" OD x 4" ID 10,000 PSI WP Flex Choke Line
5. Cameron 4 1/16" 10,000 PSI WP Manual Valve & Pressure Gauge on Pressure Block
6. 10,000 PSI WP Hyrdraulic Choke Valve
7. 8" Expansion Chamber
8. LP Butterfly Valve
9. LP Valve
10. 4" Panic Line
11. 6" Butterfly Valve
12. 10-3/4" Butterfly Valve
13. 6" Butterfly Valve



Manufacturer: Midwest Hose & Specialty

Serial Number: SN#90067

Length: 35'

Size: OD = 8" ID = 4"

Ends: Flanges Size: 4-1/16"

WP Rating: 10,000 psi Anchors required by manufacturer: No

MIDWEST
HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT		
Customer: CACTUS		P.O. Number: RIG #123 Asset # M10761
HOSE SPECIFICATIONS		
Type: CHOKER LINE		Length: 35'
I.D. 4" INCHES		O.D. 8" INCHES
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI	BURST PRESSURE PSI
COUPLINGS		
Type of End Fitting 4 1/16 10K FLANGE		
Type of Coupling: SWEDGED		MANUFACTURED BY MIDWEST HOSE & SPECIALTY
PROCEDURE		
<i>Hose assembly pressure tested with water at ambient temperature.</i>		
TIME HELD AT TEST PRESSURE 1 MIN.		ACTUAL BURST PRESSURE: 0 PSI
COMMENTS: SN#90067 M10761 Hose is covered with stainless steel armour cover and wrapped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes		
Date: 6/6/2011	Tested By: BOBBY FINK	Approved: MENDI JACKSON



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

Customer: CACTUS

SALES ORDER# 90067

Hose Specifications

Hose Type

C & K

I.D.

4"

Length

35'

O.D.

8"

Verification

Type of Fitting

4 1/16 10K

Die Size

6.62"

Coupling Method

Swage

Final O.D.

6.68"

Working Pressure

10000 PSI

Burst Pressure

Standard Safety Multiplier Applies

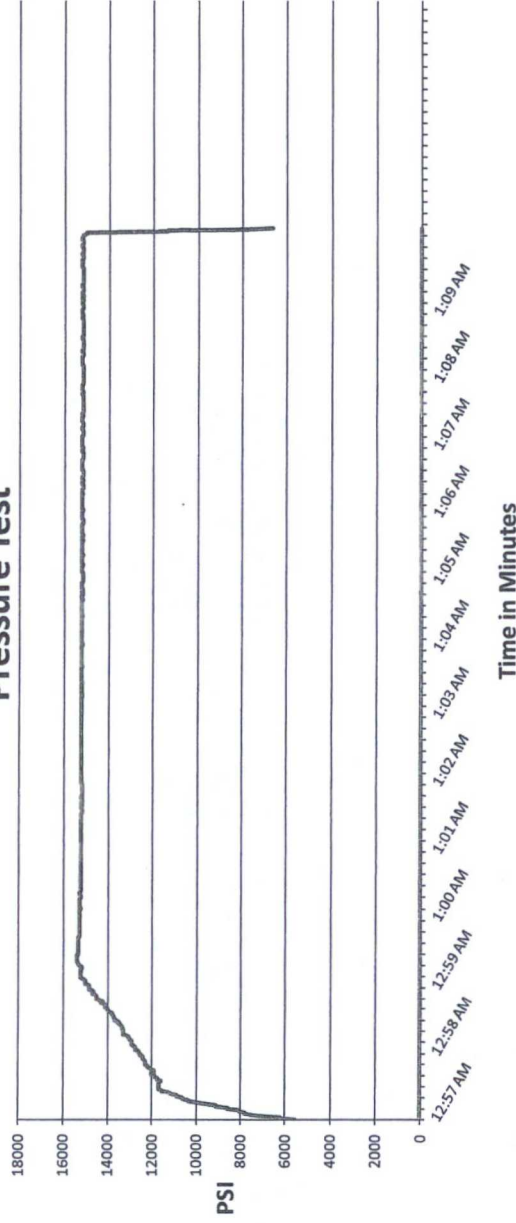
Hose Serial #

90067

Hose Assembly Serial #

90067

Pressure Test



Test Pressure
15000 PSI

Time Held at Test Pressure
11 1/4 Minutes

Actual Burst Pressure

Peak Pressure
15439 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Bobby Fink

Approved By: Mendi Jackson

Mendi Jackson

Exhibit 4

EOG Resources

Driver 14 State Com #502H

Well Site Diagram

