Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

ATS-12-592

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of Work: [X] DRILL [ ] REENTER	5 Lease Serial No: NM-0438001
1b Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [ ] Single Zone [ ] Multiple Zone	6 If Indian, Allotee 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
4 Location of Well (Report location clearly and in accordance with any State equirements)* At surface: ~~330'~~ 50' FNL & ~~910'~~ 1494' FEL, U/L A (Jennings) At proposed prod zone: 330' FSL & 1370' FEL, U/L O	8 Lease Name and Well No.: Ross Draw 8 Fed 5H (38727)
	9. API Well No: 30-015- 40563 (97800)
	10. Field and Pool, or Exploratory: ~~Wildcat~~; Bone Spring; West
	11 Sec., T., R., M., or Blk and Survey or Area: Sec 8, T26S, R31E
14. Distance in miles and direction from nearest town or post office*: +/- 49 miles NW from Jal NM	12 County or Parish: Eddy; 13 State: NM
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: 2201.36
	17 Spacing Unit dedicated to this well: 320 ~~320~~ acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft: 280' to RD 8 Fed 2H	19. Proposed Depth: Max TVD - 8760' 8721 V - 13541 M
	20 BLM/BIA Bond No. on file: NM 2308
21 Elevations (Show whether DF, KDB, RT, GL, etc.): 3286' GL	22. Approximate date work will start*: 10/1/2012
	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
2. A Drilling Plan
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)
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM

25 Signature	Name (Printed/Typed)	Date
Stan Wagner	Stan Wagner	4/4/2012

Title: Regulatory Analyst

Approved by (Signature)	Name (Printed/Typed)	Date
/s/ James A. Amos		JUL 30 2012

Title	Office
FIELD MANAGER	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

NSL APPROVAL REQUIRED
TES 8/6/2012

RECEIVED
AUG 01 2012
NMOCD ARTESIA

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

OPERATOR CERTIFICATION

I certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal Laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true, and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 9th day of March, 2012.

Name: Roger Motley
Position: Sr. Lease Operations ROW Representative
Address: P.O. Box 2267, Midland, TX 79705
Telephone: (432) 686-3642
Email: roger_motley@eogresources.com

Signed 

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease- 4 Copies
Fee Lease- 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015- 40563	~~96403~~ 97860	~~Wildcat~~ Jennings; Bone Spring, West

Property Code	Property Name	Well Number
~~38727~~	ROSS DRAW "8" FED.	5H

OGRID No.	Operator Name	Elevation
7377	EOG RESOURCES, INC.	3286.6'

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
~~A~~ B	8	26 SOUTH	31 EAST, N.M.P.M.		~~330~~ 50'	NORTH	~~910~~ 1494	EAST	EDDY

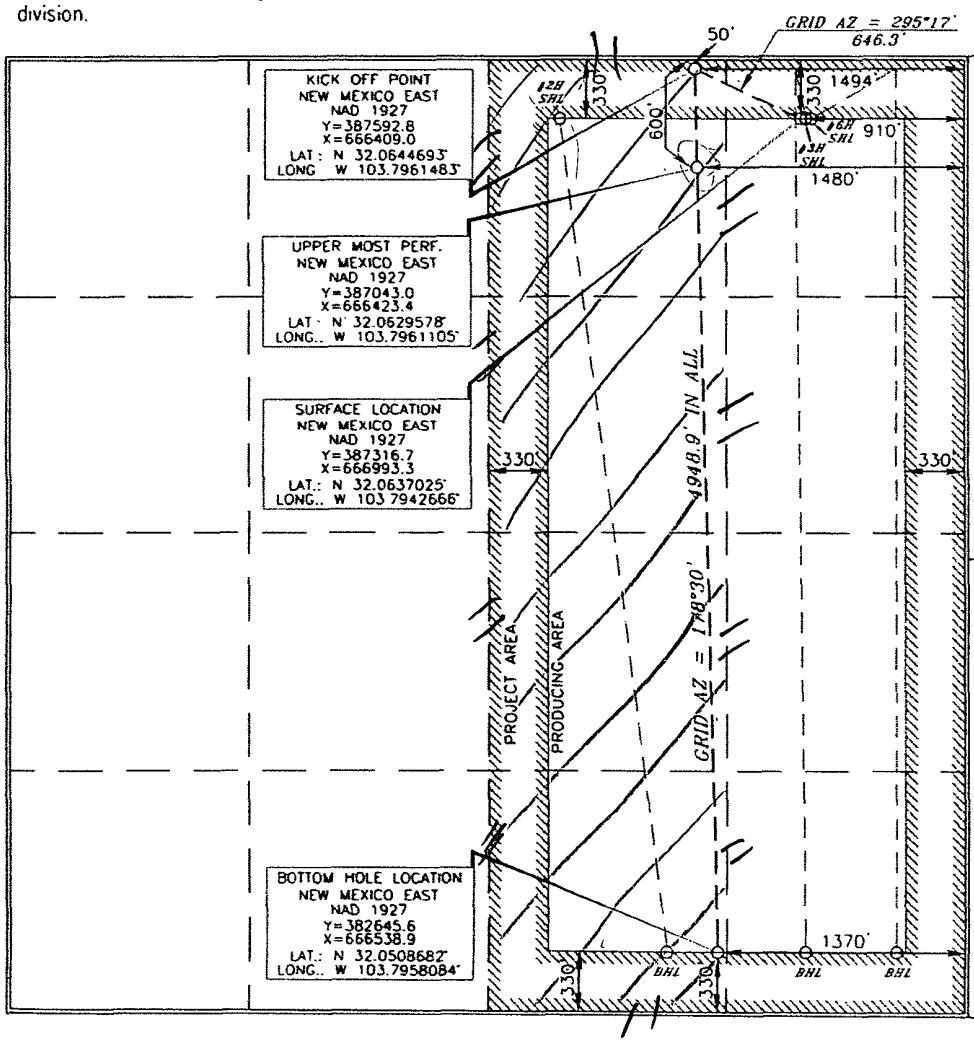
Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	8	26 SOUTH	31 EAST, N.M.P.M.		330'	SOUTH	1370'	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No
160 ~~320~~			13541 7/30

160

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.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Stan Wagner 4/4/12
Signature Date

Stan Wagner
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

15079
JANUARY 17, 2012
Date of Survey

Signature and Seal of Professional Surveyor:

NEW MEXICO — GARY L. JONES — 15079 — PROFESSIONAL LAND SURVEYOR

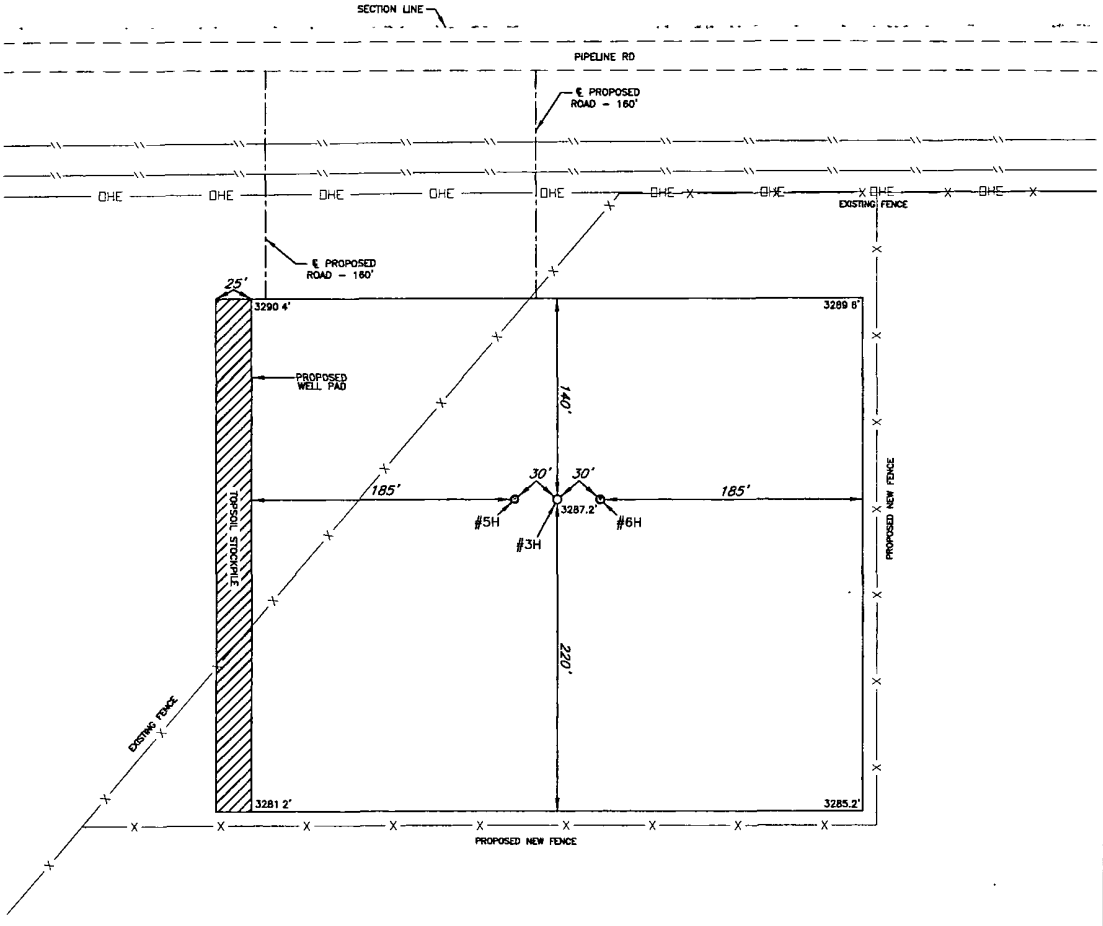
Terry J. Asel 3/30/2012
Certificate Number 15079

WO# 120117WL-a (Rev. A) (KA)

eog resources, inc.

SECTION 8, TOWNSHIP 26 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



#3H LATITUDE N 32.0637026 **#3H LONGITUDE** W 103.7941703

LEGEND

- EXISTING ROAD
- SECTION LINE
- EXISTING PIPELINE
- OHE — OVERHEAD ELECTRIC

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY

ORIGINAL DOCUMENT SIZE 8.5" X 14"

TOPOGRAPHIC
SURVEYING • MAPPING • GIS • GPS
2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 • FAX (432) 682-1743
1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548
2225 PERRYTON PARKWAY • PAMPA, TEXAS 79065
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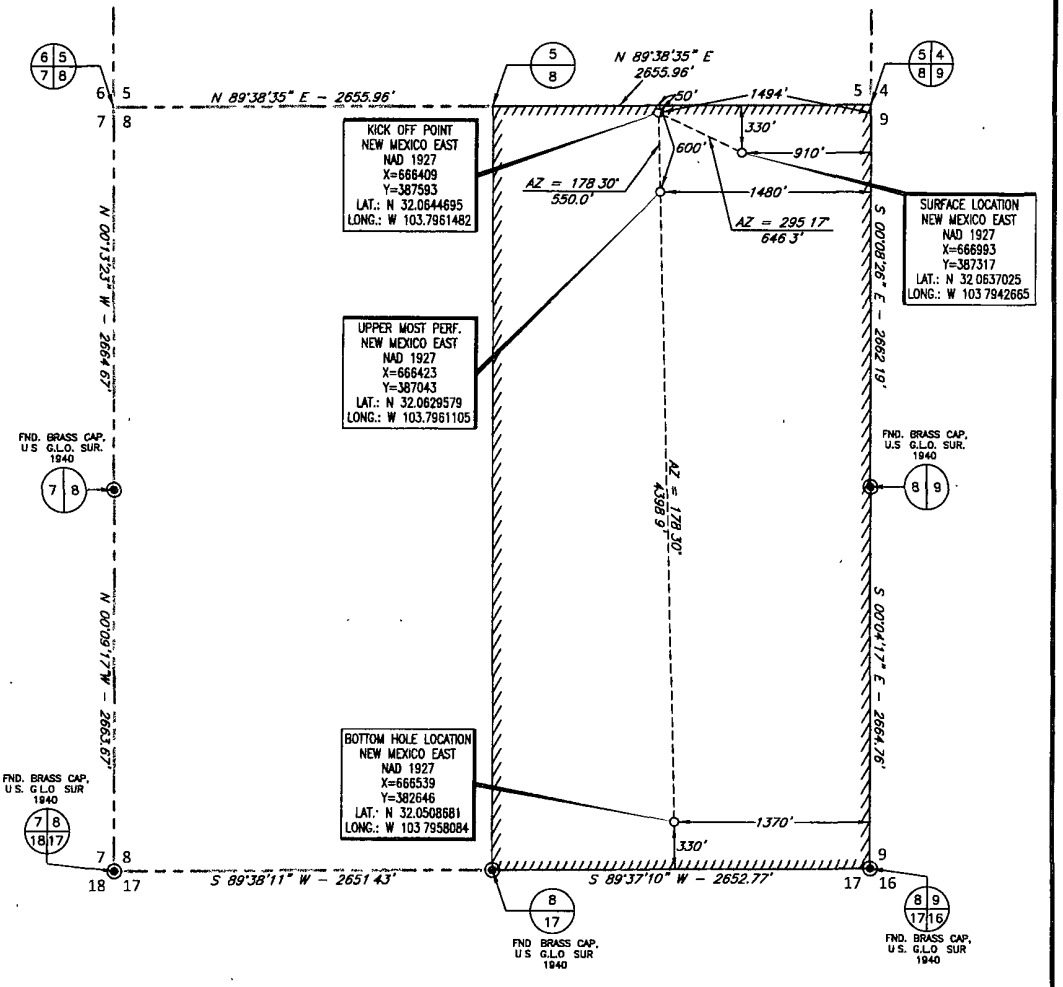
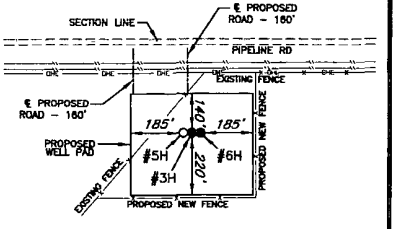
eog resources, inc.

SECTION 8, TOWNSHIP 26 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, NEW MEXICO





DETAIL VIEW
SCALE: 1" = 500'

SCALE: 1" = 1000'
0' 500' 1000'

LEASE NAME & WELL NO.: ROSS DRAW 8 FED #5H

SECTION 8 **TWP** 26-S **RGE** 31-E **SURVEY** N.M.P.M.
COUNTY EDDY **STATE** NM
DESCRIPTION 330' FNL & 910' FEL

DISTANCE & DIRECTION FROM INT. OF US-285 & CR. 720, GO SOUTH ON US-285 ±12.6 MILES, THENCE NORTHEAST ON WHITEHORN RD. ±4.1 MILES, THENCE EAST ON PIPELINE RD. ±12.0 MILES TO A POINT ±370 FEET NORTH OF THE LOCATION.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET

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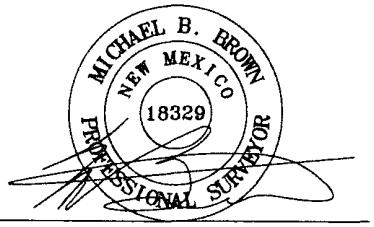

Michael Blake Brown, P.S. No. 18329
MAY 15, 2012

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EOG RESOURCES, INC.
ROSS DRAW 8 FED NO. 5H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	1,300'
Top of Salt	1,550'
Base of Salt	3,845'
Lamar	4,055'
Bell Canyon	4,080'
Cherry Canyon	4,980'
Brushy Canyon	6,276'
Bone Spring Lime	8,040'
TD	8,760'

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

Upper Permian Sands	0- 400'	Fresh Water
Brushy Canyon	6,276'	Oil
Bone Spring Lime	8,040'	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 1325' 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 – 1325'	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
8.75"	0'-13,541'	5.500"	17#	P110 or HCP110	LTC	1.125	1.25	1.60

Cementing Program:

Depth	No. Sacks	Wt. lb/gal	Yld Ft^3/ft	Slurry Description
1325'	500	13.5	1.73	Lead: 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	Tail: Class C + 0.005 pps Static Free + 2% $CaCl_2$ + 0.25 pps CelloFlake + 0.005 gps FP-6L
4,000'	600	12.7	2.22	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	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
13,541'	300	10.8	3.67	Lead: 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 @ 3500')
	225	11.8	2.38	Middle: 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
	1300	14.2	1.28	Tail: 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

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 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.
- 3000 psi BOPE is adequate for this application. Due to the 3000 psi BOPE requirement no FIT tests are planned.
- Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 3000/ 250 psig and the annular preventer to 2500/ 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 3000/ 250 psig and the annular preventer to 2500/ 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.

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

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

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1325'	Fresh Water Gel	8.6-8.8	28-34	N/c
1325' – 4,000'	Saturated Brine	10.0-10.2	28-34	N/c
4,000' – 8,319'	Fresh Water	8.4-8.6	28-34	N/c
8,319'– 13,541' Lateral	Cut Brine Water	9.0-9.5	28-34	N/c

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) H_2S monitoring and detection equipment will be utilized from surface casing point to TD.

8. LOGGING, TESTING AND CORING PROGRAM: See COA

Open-hole logs are not planned for this well.

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

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

The estimated bottom-hole temperature (BHT) at TD is 155 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 3800 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.

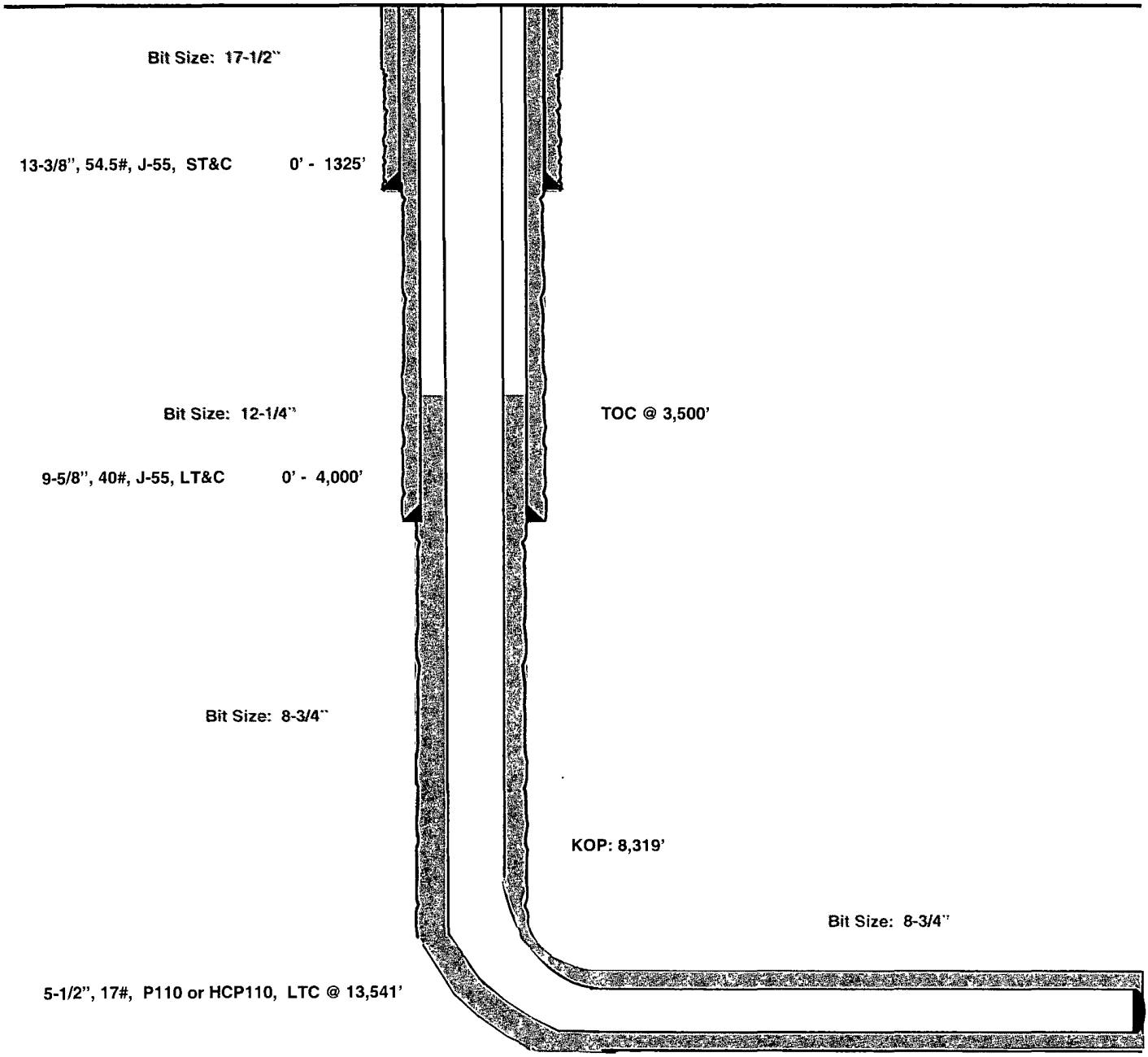
Ross Draw 8 Fed #5H
Eddy County, New Mexico

330' FNL
910' FEL
Section 8
T-26-S, R-31-E

Proposed Wellbore

API: 30-015-******

KB: 3,316.6'
GL: 3,286.6'



Lateral:
13,541' MD, 8,721' TVD

BH Location: 330' FSL & 1370' FEL
Section 8
T-26-S, R-31-E

EOG Resources

Project: Eddy County, NM (Nad27)
Site: Ross Draw 8 Fed
Well: Ross Draw 8 Fed 5H
Wellbore: Wellbore #1
Plan: Plan #1 032612
Rig: Cactus Rig No. 123

PROJECT DETAILS Eddy County, NM (Nad27)	
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
Location North	Grid

Azimuths to Grid North
True North -0 29°
Magnetic North 7 30°

Magnetic Field
Strength 48417 8snT
Dip Angle 59 98°
Date 03/26/2012
Model IGRF2010_14

PHOENIX TECHNOLOGY SERVICES

WELL DETAILS: Ross Draw 8 Fed 5H

Northing	Easting	Ground Level 3286 60 Latitude	Longitude
387316 70	666993 30	32° 3' 49 3289 N	103° 47' 39 3594 W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
KOP Ross Draw 8 Fed 5H	8282 55	276 10	-584 30	387592 80	666409 00	Point
BHL Ross Draw 8 Fed 5H	8721 01	-4671 10	-454 40	382645 60	666538 90	Point

SECTION DETAILS

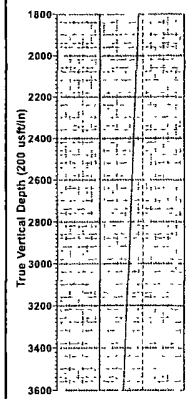
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0 00	0 00	0 00	0.00	0 00	0 00	0 00	0 00	0 00	
1200 00	0 00	0 00	1200 00	0 00	0 00	0 00	0 00	0 00	
1468 16	6 70	295 29	1467 55	6 69	-14 17	2 50	295 29	-5 29	
6701 96	6 70	295 29	6665 57	267 73	-566 59	0 00	0 00	-211 62	
7037 16	0 00	0 00	7000 00	276 10	-584 30	2 00	180 00	-218 23	
8319 71	0 00	0 00	8282 55	276 10	-584 30	0 00	0 00	-218 23	
9073 88	90 50	178 50	8760 00	-205 37	-571 66	12 00	178 50	259 75	
13541 32	90 50	178 50	8721 01	-4671 10	-454 40	0.00	0 00	4693 15	BHL Ross Draw 8 Fed 5H

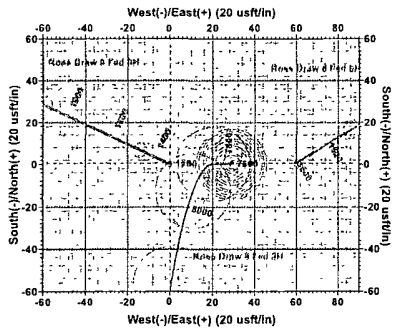
ANNOTATIONS

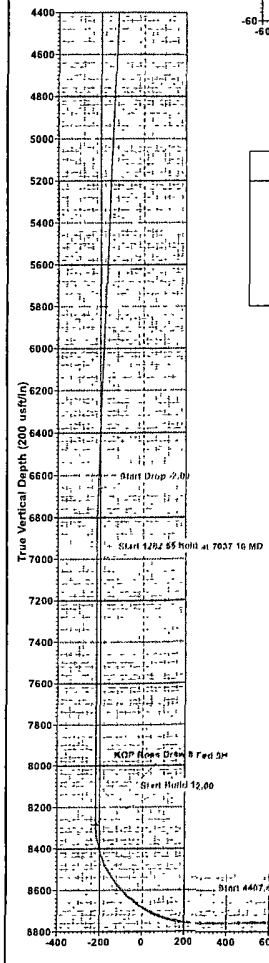
TVD	MD	Annotation
1200 00	1200 00	Start Build 2 50
1467 55	1468 16	Start 5233 81 hold at 1468 16 MD
6665 57	6701 96	Start Drop -2 00
7000 00	7037 16	Start 1282 55 hold at 7037 16 MD
8282 55	8319 71	Start Build 12 00
8760 00	9073 88	Start 4467 44 hold at 9073 88 MD
8721 01	13541 32	TD at 13541 32

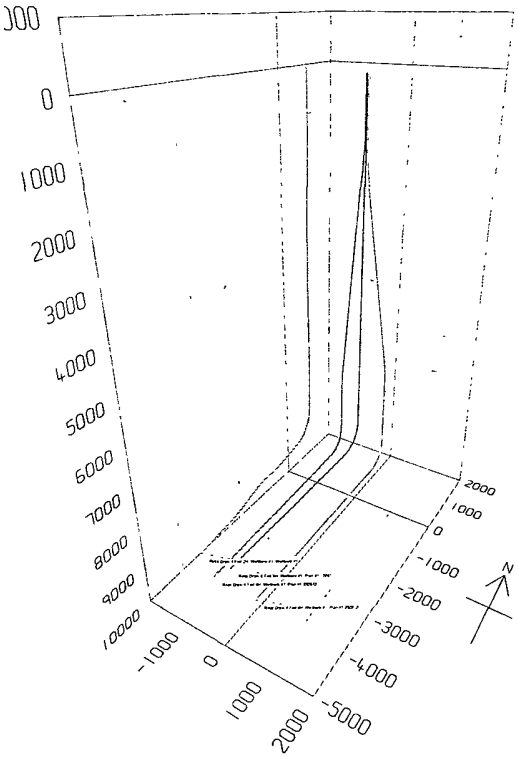
FORMATION TOP DETAILS

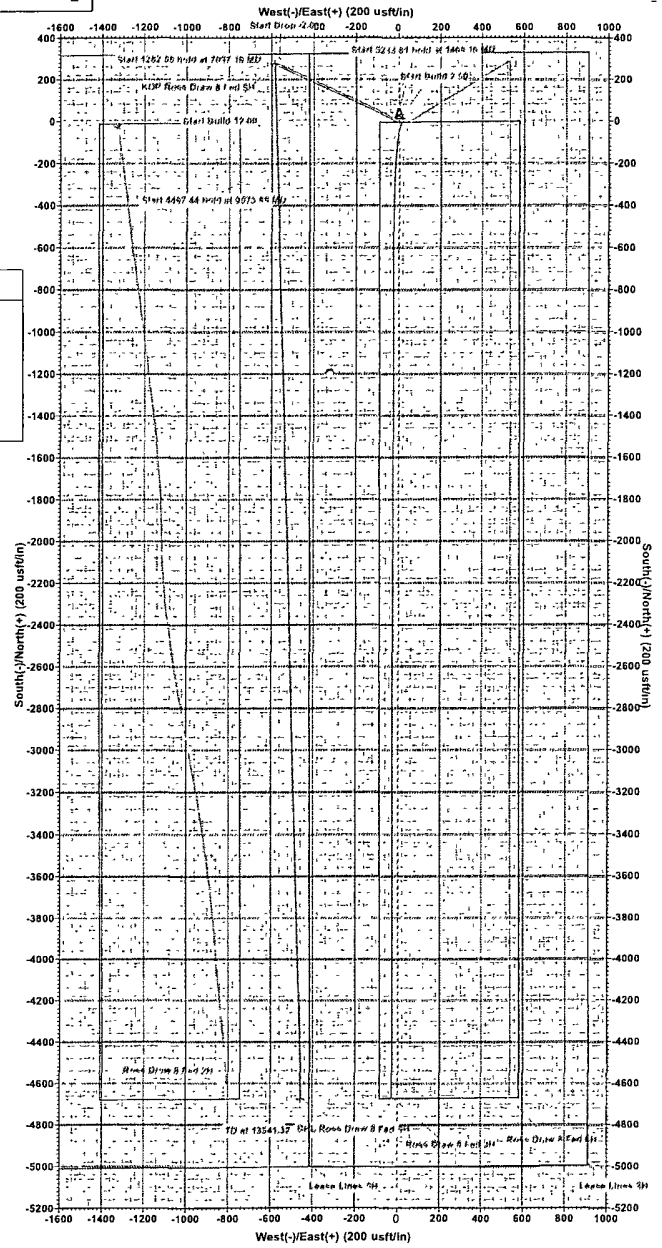
No formation data is available

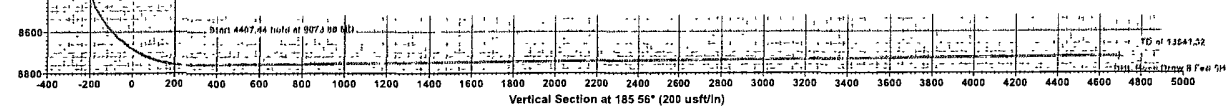












EOG Resources

Eddy County, NM (Nad27)
Ross Draw 8 Fed
Ross Draw 8 Fed 5H
Wellbore #1

Plan: Plan #1 032612

EOG Resources

26 March, 2012

PHOENIX
TECHNOLOGY SERVICES

Phoenix Technology Services

EOG Resources

PHOENIX TECHNOLOGY SERVICES

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well Ross Draw 8 Fed 5H
Project:	Eddy County, NM (Nad27)	**TVD Reference:**	WELL @ 3316.60usft (Original Well Elev)
Site:	Ross Draw 8 Fed	**MD Reference:**	WELL @ 3316 60usft (Original Well Elev)
Well:	Ross Draw 8 Fed 5H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 032612	**Database:**	GCR DB v5000

Project Eddy County, NM (Nad27)

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 Ross Draw 8 Fed

Site Position:		**Northing:**	387,290.50 usft	**Latitude:**	32° 3' 49.2593 N
From:	Map	**Easting:**	663,109.60 usft	**Longitude:**	103° 48' 24.4920 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0 28 °

Well Ross Draw 8 Fed 5H

Well Position	**+N/-S**	0.00 usft	**Northing:**	387,316.70 usft	**Latitude:**	32° 3' 49.3289 N
	+E/-W	0.00 usft	**Easting:**	666,993.30 usft	**Longitude:**	103° 47' 39.3594 W
Position Uncertainty		0 00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,286.60 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	03/26/12	7.58	59.98	48,418

Design Plan #1 032612

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	185.56

Survey Tool Program Date 03/26/12

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	13,541.32	Plan #1 032612 (Wellbore #1)	MWD	MWD - Standard

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well Ross Draw 8 Fed 5H
Project:	Eddy County, NM (Nad27)	**TVD Reference:**	WELL @ 3316.60usft (Original Well Elev)
Site:	Ross Draw 8 Fed	**MD Reference:**	WELL @ 3316.60usft (Original Well Elev)
Well:	Ross Draw 8 Fed 5H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 032612	**Database:**	GCR DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	-3,316.60	0.00	0.00	0.00	0.00	0.00	387,316.70	666,993.30
100.00	0.00	0.00	-3,216.60	100.00	0.00	0.00	0.00	0.00	387,316.70	666,993.30
200.00	0.00	0 00	-3,116 60	200.00	0.00	0 00	0.00	0 00	387,316.70	666,993.30
300 00	0.00	0.00	-3,016.60	300.00	0.00	0 00	0.00	0.00	387,316.70	666,993.30
400.00	0.00	0.00	-2,916.60	400.00	0.00	0.00	0.00	0.00	387,316 70	666,993.30
500.00	0.00	0 00	-2,816.60	500.00	0.00	0 00	0.00	0.00	387,316.70	666,993.30
600.00	0.00	0.00	-2,716.60	600.00	0.00	0.00	0 00	0.00	387,316.70	666,993.30
700.00	0.00	0.00	-2,616.60	700.00	0.00	0.00	0.00	0 00	387,316.70	666,993.30
800 00	0.00	0.00	-2,516 60	800.00	0.00	0 00	0.00	0.00	387,316 70	666,993.30
900 00	0.00	0 00	-2,416.60	900 00	0 00	0 00	0.00	0.00	387,316 70	666,993 30
1,000.00	0 00	0.00	-2,316 60	1,000.00	0.00	0 00	0.00	0.00	387,316 70	666,993 30
1,100.00	0 00	0.00	-2,216.60	1,100.00	0 00	0.00	0.00	0.00	387,316.70	666,993.30
1,200.00	0.00	0.00	-2,116 60	1,200.00	0.00	0.00	0 00	0 00	387,316.70	666,993.30
Start Build 2.50										
1,300.00	2.50	295.29	-2,016.63	1,299.97	0 93	-1.97	-0 74	2.50	387,317.63	666,991.33
1,400.00	5.00	295.29	-1,916.85	1,399.75	3.73	-7.89	-2.95	2.50	387,320.43	666,985.41
1,468.16	6.70	295.29	-1,849.05	1,467.55	6.69	-14.17	-5.29	2.50	387,323.39	666,979.13
Start 5233.81 hold at 1468.16 MD										
1,500.00	6.70	295.29	-1,817.43	1,499 17	8.28	-17.53	-6 55	0.00	387,324 98	666,975.77
1,600.00	6.70	295.29	-1,718.11	1,598.49	13.27	-28.08	-10.49	0.00	387,329.97	666,965.22
1,700.00	6.70	295.29	-1,618.80	1,697.80	18.26	-38 64	-14.43	0.00	387,334 96	666,954 66
1,800.00	6.70	295.29	-1,519.48	1,797 12	23.25	-49.19	-18 37	0.00	387,339.95	666,944.11
1,900.00	6.70	295.29	-1,420.16	1,896.44	28 23	-59.75	-22.32	0.00	387,344.93	666,933.55
2,000.00	6.70	295 29	-1,320 85	1,995 75	33 22	-70.30	-26.26	0 00	387,349.92	666,923.00
2,100.00	6.70	295 29	-1,221.53	2,095 07	38.21	-80.86	-30 20	0 00	387,354.91	666,912 44
2,200 00	6.70	295.29	-1,122.22	2,194.38	43.20	-91 41	-34.14	0.00	387,359.90	666,901.89
2,300.00	6.70	295 29	-1,022.90	2,293.70	48.18	-101.97	-38.08	0.00	387,364.88	666,891 33

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well Ross Draw 8 Fed 5H
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Site:	Ross Draw 8 Fed	**MD Reference:**	WELL @ 3316.60usft (Original Well Elev)
Well:	Ross Draw 8 Fed 5H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 032612	**Database:**	GCR DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,400.00	6.70	295.29	-923.58	2,393.02	53.17	-112.52	-42.03	0.00	387,369.87	666,880.78
2,500.00	6.70	295.29	-824.27	2,492.33	58 16	-123.08	-45.97	0 00	387,374.86	666,870.22
2,600.00	6.70	295.29	-724 95	2,591.65	63.15	-133.63	-49.91	0.00	387,379.85	666,859.67
2,700.00	6.70	295.29	-625.63	2,690.97	68.13	-144.19	-53.85	0.00	387,384 83	666,849.11
2,800.00	6.70	295.29	-526.32	2,790 28	73.12	-154.74	-57.79	0.00	387,389.82	666,838.56
2,900.00	6.70	295 29	-427.00	2,889.60	78 11	-165 30	-61 74	0 00	387,394 81	666,828.00
3,000.00	6.70	295.29	-327.69	2,988.91	83.10	-175.85	-65.68	0.00	387,399 80	666,817.45
3,100.00	6.70	295.29	-228.37	3,088.23	88.08	-186.41	-69.62	0.00	387,404.78	666,806.89
3,200.00	6.70	295.29	-129.05	3,187.55	93.07	-196.96	-73.56	0.00	387,409.77	666,796.34
3,300 00	6 70	295.29	-29.74	3,286.86	98.06	-207.52	-77.51	0.00	387,414 76	666,785 78
3,400 00	6.70	295.29	69.58	3,386.18	103.05	-218.07	-81 45	0.00	387,419.75	666,775.23
3,500.00	6.70	295.29	168.90	3,485 50	108 03	-228.63	-85.39	0.00	387,424 73	666,764.67
3,600.00	6.70	295 29	268.21	3,584 81	113 02	-239.18	-89 33	0 00	387,429.72	666,754.12
3,700.00	6.70	295.29	367.53	3,684.13	118.01	-249.74	-93 27	0 00	387,434.71	666,743.56
3,800.00	6.70	295 29	466.84	3,783.44	123 00	-260.29	-97.22	0.00	387,439.70	666,733.01
3,900.00	6 70	295.29	566.16	3,882.76	127.98	-270.85	-101.16	0.00	387,444.68	666,722.45
4,000.00	6.70	295 29	665.48	3,982.08	132.97	-281.40	-105.10	0.00	387,449.67	666,711.90
4,100.00	6.70	295 29	764 79	4,081.39	137 96	-291 96	-109 04	0.00	387,454.66	666,701.34
4,200.00	6.70	295.29	864 11	4,180.71	142 95	-302 51	-112.98	0.00	387,459.65	666,690.79
4,300.00	6.70	295.29	963.43	4,280.03	147.93	-313.07	-116.93	0.00	387,464.63	666,680 23
4,400 00	6.70	295.29	1,062.74	4,379.34	152.92	-323.62	-120.87	0.00	387,469 62	666,669.68
4,500.00	6.70	295.29	1,162.06	4,478.66	157.91	-334 18	-124.81	0.00	387,474.61	666,659.12
4,600.00	6.70	295 29	1,261.37	4,577.97	162.90	-344.73	-128.75	0 00	387,479.60	666,648.57
4,700 00	6.70	295.29	1,360 69	4,677.29	167.88	-355 29	-132.70	0.00	387,484.58	666,638.01
4,800.00	6.70	295.29	1,460.01	4,776.61	172.87	-365 84	-136 64	0.00	387,489.57	666,627.46
4,900.00	6.70	295.29	1,559 32	4,875.92	177.86	-376.39	-140.58	0.00	387,494.56	666,616.91
5,000.00	6 70	295.29	1,658.64	4,975.24	182.85	-386.95	-144.52	0.00	387,499.55	666,606.35

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Well:	Ross Draw 8 Fed 5H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 032612	**Database:**	GCR DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
5,100.00	6.70	295.29	1,757.96	5,074.56	187.83	-397 50	-148.46	0.00	387,504 53	666,595.80
5,200.00	6.70	295.29	1,857.27	5,173.87	192.82	-408.06	-152.41	0.00	387,509.52	666,585.24
5,300.00	6 70	295.29	1,956.59	5,273.19	197 81	-418.61	-156 35	0.00	387,514.51	666,574.69
5,400.00	6.70	295.29	2,055.90	5,372 50	202 80	-429.17	-160.29	0 00	387,519.50	666,564 13
5,500.00	6.70	295 29	2,155.22	5,471 82	207.78	-439.72	-164.23	0.00	387,524.48	666,553 58
5,600.00	6.70	295.29	2,254.54	5,571 14	212.77	-450.28	-168.17	0.00	387,529.47	666,543.02
5,700.00	6.70	295.29	2,353.85	5,670 45	217.76	-460.83	-172.12	0.00	387,534 46	666,532.47
5,800.00	6.70	295.29	2,453.17	5,769.77	222.75	-471.39	-176.06	0.00	387,539.45	666,521.91
5,900.00	6 70	295 29	2,552.49	5,869.09	227.73	-481.94	-180.00	0 00	387,544.43	666,511.36
6,000.00	6 70	295 29	2,651.80	5,968.40	232.72	-492.50	-183.94	0 00	387,549.42	666,500 80
6,100 00	6.70	295.29	2,751 12	6,067.72	237.71	-503.05	-187.88	0.00	387,554.41	666,490.25
6,200.00	6.70	295.29	2,850.43	6,167.03	242.70	-513.61	-191.83	0.00	387,559 40	666,479.69
6,300.00	6.70	295.29	2,949 75	6,266 35	247 68	-524.16	-195 77	0.00	387,564 38	666,469.14
6,400.00	6.70	295 29	3,049.07	6,365.67	252.67	-534.72	-199.71	0.00	387,569.37	666,458.58
6,500.00	6.70	295.29	3,148.38	6,464.98	257.66	-545.27	-203.65	0.00	387,574.36	666,448.03
6,600.00	6.70	295 29	3,247 70	6,564.30	262.65	-555 83	-207.60	0.00	387,579.35	666,437.47
6,700.00	6.70	295.29	3,347.02	6,663.62	267.63	-566.38	-211.54	0.00	387,584.33	666,426.92
6,701 96	6.70	295.29	3,348.97	6,665.57	267.73	-566.59	-211.62	0.00	387,584.43	666,426.71
Start Drop -2.00										
6,800.00	4.74	295 29	3,446.51	6,763.11	271 91	-575.43	-214.92	2.00	387,588.61	666,417.87
6,900.00	2.74	295 29	3,546.29	6,862.89	274 70	-581.33	-217.12	2.00	387,591.40	666,411.97
7,000.00	0.74	295 29	3,646 24	6,962 84	276.00	-584 08	-218.15	2.00	387,592.70	666,409.22
7,037 16	0.00	0.00	3,683 40	7,000 00	276.10	-584.30	-218.23	2.00	387,592 80	666,409.00
Start 1282.55 hold at 7037.16 MD										
7,100 00	0.00	0.00	3,746.24	7,062.84	276.10	-584 30	-218.23	0.00	387,592.80	666,409.00
7,200.00	0.00	0.00	3,846.24	7,162.84	276.10	-584.30	-218.23	0.00	387,592.80	666,409.00
7,300 00	0.00	0.00	3,946 24	7,262.84	276 10	-584 30	-218.23	0.00	387,592 80	666,409 00

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Well:	Ross Draw 8 Fed 5H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 032612	**Database:**	GCR DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
7,400.00	0.00	0.00	4,046.24	7,362.84	276.10	-584.30	-218.23	0 00	387,592.80	666,409.00
7,500.00	0.00	0 00	4,146.24	7,462.84	276 10	-584.30	-218.23	0.00	387,592.80	666,409.00
7,600.00	0.00	0.00	4,246.24	7,562.84	276.10	-584.30	-218.23	0 00	387,592.80	666,409.00
7,700.00	0.00	0.00	4,346.24	7,662.84	276 10	-584.30	-218.23	0 00	387,592.80	666,409.00
7,800.00	0.00	0.00	4,446.24	7,762.84	276.10	-584.30	-218.23	0.00	387,592.80	666,409.00
7,900.00	0.00	0.00	4,546.24	7,862 84	276.10	-584.30	-218.23	0.00	387,592.80	666,409.00
8,000.00	0.00	0.00	4,646.24	7,962.84	276.10	-584.30	-218 23	0.00	387,592.80	666,409.00
8,100.00	0.00	0.00	4,746.24	8,062.84	276.10	-584.30	-218.23	0.00	387,592.80	666,409.00
8,200.00	0 00	0.00	4,846.24	8,162.84	276.10	-584.30	-218 23	0.00	387,592.80	666,409.00
8,300.00	0.00	0.00	4,946 24	8,262.84	276.10	-584.30	-218 23	0.00	387,592.80	666,409.00
8,319.71	0.00	0.00	4,965.95	8,282.55	276.10	-584 30	-218 23	0.00	387,592.80	666,409.00
Start Build 12.00										
8,400 00	9.63	178.50	5,045.86	8,362.46	269.37	-584 12	-211.55	12.00	387,586 07	666,409.18
8,500.00	21.63	178.50	5,141.98	8,458 58	242.48	-583 42	-184 85	12 00	387,559 18	666,409.88
8,600.00	33.63	178.50	5,230.42	8,547 02	196 19	-582.20	-138.90	12.00	387,512.89	666,411.10
8,700.00	45.63	178 50	5,307.29	8,623.89	132.54	-580.53	-75.71	12.00	387,449.24	666,412 77
8,800.00	57 63	178.50	5,369.24	8,685.84	54.31	-578.48	1.96	12.00	387,371.01	666,414.82
8,900 00	69.63	178.50	5,413 57	8,730.17	-35.10	-576.13	90.72	12.00	387,281.60	666,417.17
9,000 00	81.63	178.50	5,438.33	8,754.93	-131.76	-573.59	186.68	12.00	387,184.94	666,419.71
9,073.88	90.50	178 50	5,443.40	8,760.00	-205 37	-571.66	259.75	12.00	387,111.33	666,421.64
Start 4467.44 hold at 9073.88 MD										
9,100 00	90 50	178.50	5,443 17	8,759.77	-231.48	-570.97	285 67	0.00	387,085.22	666,422.33
9,200.00	90.50	178 50	5,442.29	8,758.89	-331 44	-568.35	384.91	0.00	386,985.26	666,424.95
9,300.00	90.50	178.50	5,441.42	8,758.02	-431 40	-565.72	484 15	0.00	386,885 30	666,427.58
9,400.00	90.50	178.50	5,440.55	8,757 15	-531.36	-563 10	583 39	0.00	386,785 34	666,430.20
9,500.00	90.50	178.50	5,439 68	8,756.28	-631.33	-560 47	682.63	0.00	386,685 37	666,432.83
9,600.00	90.50	178.50	5,438.80	8,755.40	-731 29	-557.85	781.86	0.00	386,585.41	666,435.45

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Well:	Ross Draw 8 Fed 5H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 032612	**Database:**	GCR DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
9,700.00	90.50	178.50	5,437.93	8,754.53	-831.25	-555.22	881.10	0.00	386,485.45	666,438.08
9,800.00	90.50	178 50	5,437.06	8,753 66	-931 21	-552.60	980.34	0.00	386,385 49	666,440.70
9,900 00	90.50	178.50	5,436 19	8,752.79	-1,031.17	-549 97	1,079 58	0.00	386,285.53	666,443.33
10,000 00	90.50	178.50	5,435.31	8,751 91	-1,131.13	-547.35	1,178.82	0.00	386,185.57	666,445.95
10,100.00	90.50	178.50	5,434.44	8,751.04	-1,231.10	-544.73	1,278.05	0.00	386,085.60	666,448.57
10,200.00	90.50	178 50	5,433.57	8,750 17	-1,331.06	-542.10	1,377.29	0.00	385,985 64	666,451 20
10,300.00	90.50	178 50	5,432.70	8,749.30	-1,431.02	-539.48	1,476 53	0.00	385,885 68	666,453 82
10,400.00	90 50	178.50	5,431.82	8,748.42	-1,530.98	-536.85	1,575.77	0 00	385,785.72	666,456.45
10,500.00	90.50	178.50	5,430.95	8,747.55	-1,630.94	-534.23	1,675.01	0.00	385,685.76	666,459.07
10,600.00	90.50	178.50	5,430 08	8,746.68	-1,730.90	-531.60	1,774.24	0 00	385,585.80	666,461 70
10,700.00	90.50	178.50	5,429.20	8,745.80	-1,830.87	-528.98	1,873.48	0.00	385,485.83	666,464.32
10,800 00	90.50	178.50	5,428.33	8,744 93	-1,930.83	-526.35	1,972.72	0.00	385,385 87	666,466.95
10,900.00	90.50	178.50	5,427.46	8,744.06	-2,030.79	-523.73	2,071 96	0.00	385,285.91	666,469.57
11,000.00	90.50	178 50	5,426 59	8,743.19	-2,130.75	-521.10	2,171.20	0.00	385,185.95	666,472.20
11,100.00	90.50	178.50	5,425.71	8,742.31	-2,230.71	-518.48	2,270.43	0.00	385,085.99	666,474.82
11,200.00	90.50	178.50	5,424.84	8,741.44	-2,330 68	-515.85	2,369.67	0.00	384,986.02	666,477.45
11,300.00	90.50	178.50	5,423.97	8,740.57	-2,430.64	-513 23	2,468.91	0.00	384,886.06	666,480.07
11,400.00	90.50	178.50	5,423.10	8,739 70	-2,530.60	-510.60	2,568.15	0.00	384,786.10	666,482.70
11,500.00	90.50	178.50	5,422.22	8,738.82	-2,630 56	-507.98	2,667.38	0.00	384,686.14	666,485.32
11,600.00	90.50	178.50	5,421.35	8,737.95	-2,730.52	-505.35	2,766.62	0.00	384,586.18	666,487.95
11,700.00	90.50	178.50	5,420.48	8,737.08	-2,830.48	-502.73	2,865.86	0.00	384,486.22	666,490.57
11,800.00	90.50	178.50	5,419 61	8,736 21	-2,930.45	-500.10	2,965 10	0.00	384,386.25	666,493.20
11,900.00	90.50	178.50	5,418.73	8,735.33	-3,030.41	-497.48	3,064.34	0.00	384,286.29	666,495.82
12,000.00	90 50	178 50	5,417.86	8,734 46	-3,130 37	-494.86	3,163.57	0 00	384,186.33	666,498 44
12,100 00	90.50	178.50	5,416.99	8,733.59	-3,230.33	-492.23	3,262.81	0.00	384,086.37	666,501.07
12,200.00	90.50	178.50	5,416.12	8,732.72	-3,330.29	-489.61	3,362.05	0.00	383,986.41	666,503.69
12,300 00	90.50	178.50	5,415.24	8,731.84	-3,430.25	-486.98	3,461.29	0.00	383,886.45	666,506.32

Phoenix Technology Services

EOG Resources

PHOENIX TECHNOLOGY SERVICES

Company:	EOG Resources	**Local Co-ordinate Reference:**	Well Ross Draw 8 Fed 5H
Project:	Eddy County, NM (Nad27)	**TVD Reference:**	WELL @ 3316.60usft (Original Well Elev)
Site:	Ross Draw 8 Fed	**MD Reference:**	WELL @ 3316.60usft (Original Well Elev)
Well:	Ross Draw 8 Fed 5H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 032612	**Database:**	GCR DB v5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
12,400.00	90.50	178.50	5,414.37	8,730.97	-3,530 22	-484.36	3,560.53	0.00	383,786.48	666,508.94
12,500.00	90 50	178.50	5,413.50	8,730.10	-3,630.18	-481.73	3,659.76	0.00	383,686.52	666,511 57
12,600.00	90 50	178.50	5,412.62	8,729.22	-3,730 14	-479.11	3,759.00	0 00	383,586 56	666,514 19
12,700.00	90.50	178.50	5,411.75	8,728.35	-3,830.10	-476.48	3,858.24	0.00	383,486.60	666,516.82
12,800.00	90.50	178.50	5,410.88	8,727.48	-3,930.06	-473.86	3,957 48	0 00	383,386.64	666,519.44
12,900.00	90.50	178.50	5,410 01	8,726.61	-4,030.02	-471 23	4,056.72	0.00	383,286.68	666,522.07
13,000.00	90.50	178.50	5,409 13	8,725.73	-4,129.99	-468.61	4,155 95	0.00	383,186.71	666,524 69
13,100.00	90.50	178 50	5,408.26	8,724.86	-4,229.95	-465.98	4,255.19	0.00	383,086.75	666,527.32
13,200.00	90.50	178.50	5,407.39	8,723.99	-4,329.91	-463.36	4,354.43	0.00	382,986.79	666,529.94
13,300 00	90.50	178.50	5,406.52	8,723.12	-4,429.87	-460.73	4,453.67	0.00	382,886.83	666,532.57
13,400.00	90.50	178.50	5,405.64	8,722.24	-4,529.83	-458.11	4,552.91	0.00	382,786.87	666,535.19
13,500 00	90.50	178.50	5,404.77	8,721.37	-4,629 80	-455 48	4,652.14	0.00	382,686.90	666,537 82
13,541.32	90.50	178.50	5,404.41	8,721.01	-4,671.10	-454.40	4,693.15	0.00	382,645.60	666,538.90
TD at 13541.32										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,200.00	1,200.00	0.00	0.00	Start Build 2.50
1,468.16	1,467.55	6.69	-14.17	Start 5233.81 hold at 1468 16 MD
6,701.96	6,665.57	267.73	-566.59	Start Drop -2.00
7,037.16	7,000.00	276.10	-584.30	Start 1282 55 hold at 7037.16 MD
8,319.71	8,282.55	276.10	-584.30	Start Build 12 00
9,073.88	8,760.00	-205.37	-571 66	Start 4467.44 hold at 9073.88 MD
13,541.32	8,721 01	-4,671.10	-454.40	TD at 13541.32

Checked By: _____ Approved By: _____ Date: _____

EOG RESOURCES, INC.
ROSS DRAW 8 FED 5H

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.

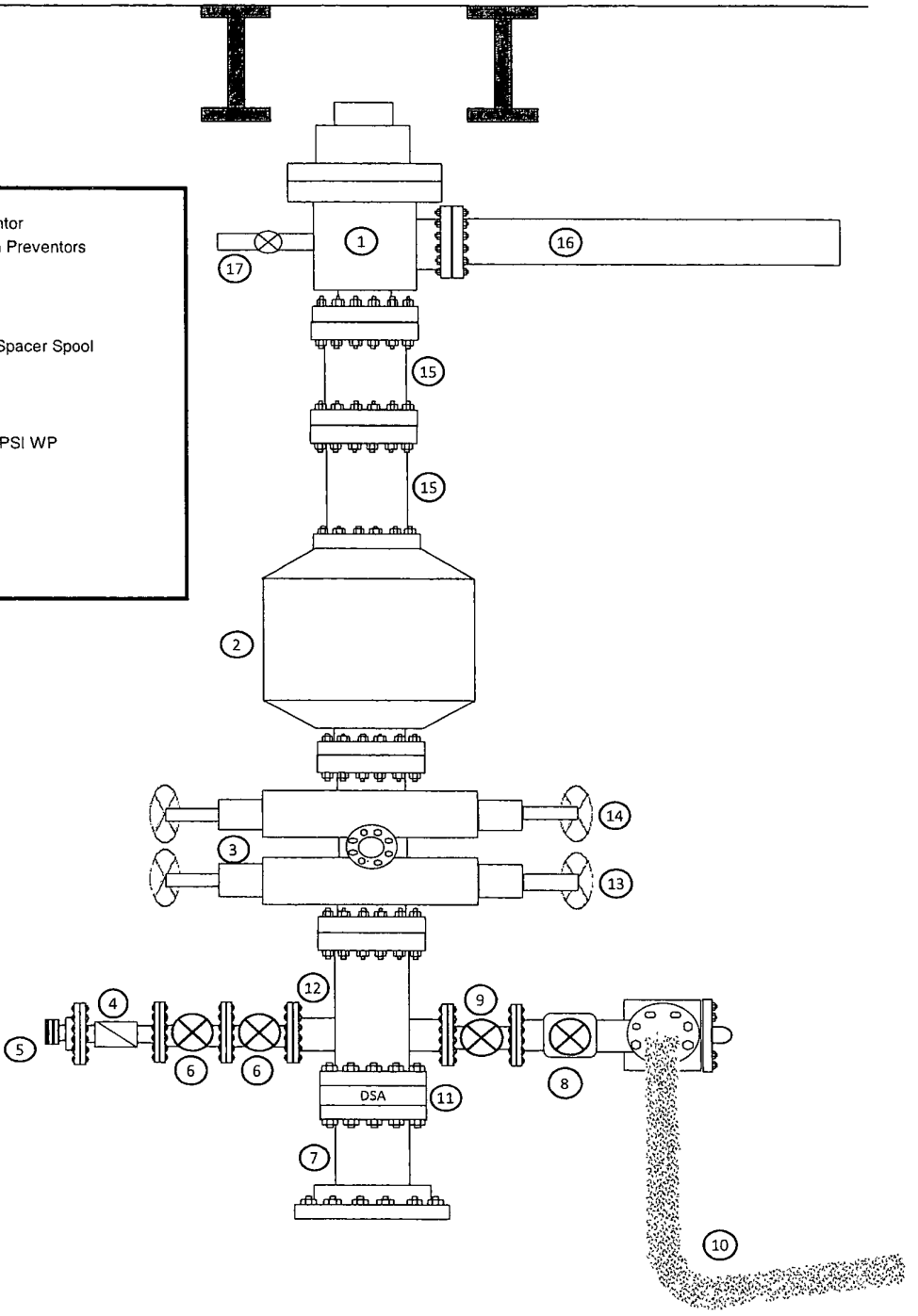
9. Blow out preventer control to be located as close to driller's position as feasible.

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.

EOG Resources
10M BOPE
Exhibit #1

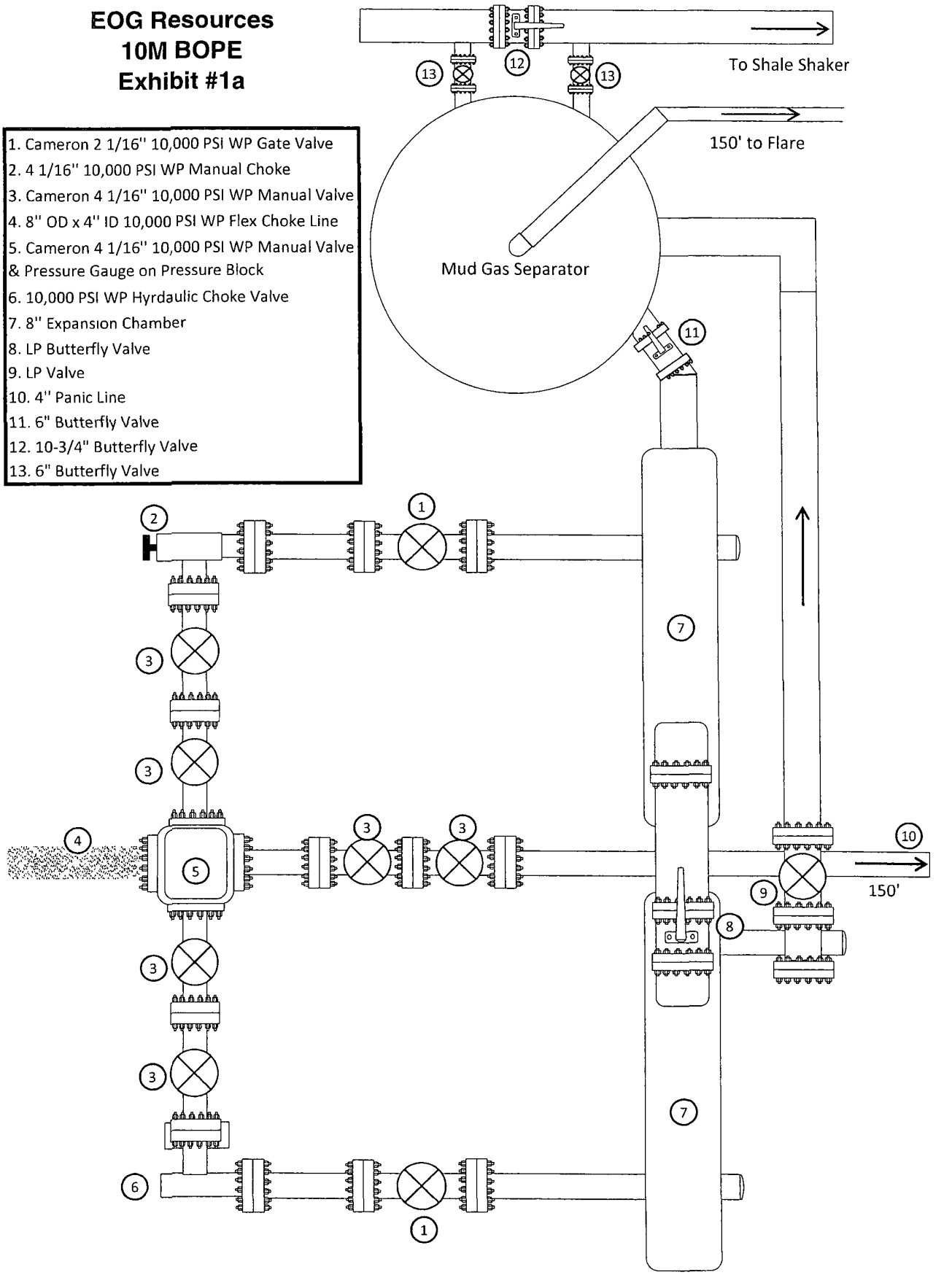
Rig Floor

1. 13 5/8" Rotating Head
2. Hydril 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. 8" OD x 4" ID 10,000 PSI WP 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" 5,000 PSI WP Spacer Spools
16. Flow Line
17. 2" Fill Line



EOG Resources
10M BOPE
Exhibit #1a

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 Hyrdaulic 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



EOG 10M Choke Manifold Diagram (rev. 5/1/12)

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 manfacturer: No

MIDWEST

HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT		
Customer: CACTUS		**P.O. Number:** RIG #123
		Asset # M10761
HOSE SPECIFICATIONS		
Type: CHOKE 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		
Hose assembly pressure tested with water at ambient temperature.		
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 wraped 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

OPERATING AND MAINTENANCE PLAN – CLOSED LOOP SYSTEM

19.15.17.12 OPERATIONAL REQUIREMENTS:

A. General specifications. An operator shall maintain and operate a pit, closed-loop system, below-grade tank or sump in accordance with the following requirements.

(1) The operator shall operate and maintain a pit, closed-loop system, below-grade tank or sump to contain liquids and solids and maintain the integrity of the liner, liner system or secondary containment system, prevent contamination of fresh water and protect public health and the environment.

Operator shall operate and maintain a closed loop system.

(2) The operator shall recycle, reuse or reclaim all drilling fluids in a manner that prevents the contamination of fresh water and protects public health and the environment.

Operator shall recycle, reuse or reclaim all drilling fluids used. Excess or unused fluid shall be disposed of at division approved facilities.

(3) The operator shall not discharge into or store any hazardous waste in a pit, closed-loop system, below-grade tank or sump.

Operator shall not knowingly discharge hazardous waste into the closed loop system.

(4) If the integrity of the pit liner is compromised, or if any penetration of the liner occurs above the liquid's surface, then the operator shall notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the liner.

No Pit liner. Closed loop system.

(5) If a lined pit develops a leak, or if any penetration of the liner occurs below the liquid's surface, then the operator shall remove all liquid above the damage or leak line from the pit within 48 hours and repair the damage or replace the liner.

No Pit liner. Closed loop system. If a leak develops in any of the closed loop tanks, all liquid shall be removed from the effected tank within 48 hours and any damage shall be repaired prior to putting the tank back in service.

(6) The operator shall install a level measuring device in a lined pit containing fluids to monitor the level of the fluid surface, so that the operator may recognize unanticipated change in volume of fluids.

No pit. Closed loop system. Excess fluid shall be removed appropriately from the catch tanks.

(7) The injection or withdrawal of liquids from a lined pit shall be accomplished through a header, diverter or other hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.

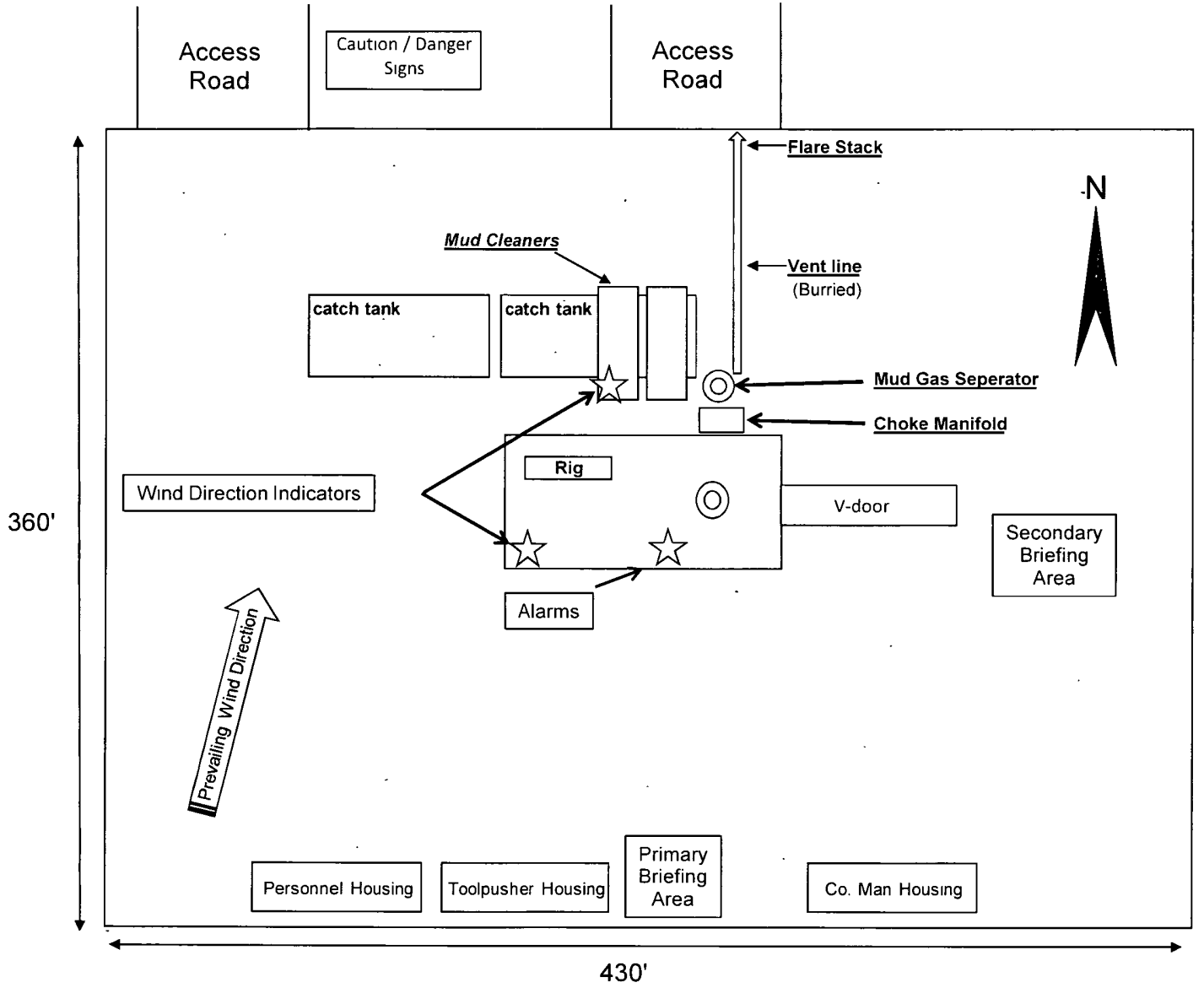
No pit. Closed loop system. Excess fluid shall be removed appropriately from the catch tanks using a re-circulating pump or vacuum trucks.

(8) The operator shall operate and install a pit, below-grade tank or sump to prevent the collection of surface water run-on.

Operator shall berm or collect surface water run- on and dispose of at a division approved facility.

(9) The operator shall install, or maintain on site, an oil absorbent boom or other device to contain and remove oil from a pit's surface.

Operator shall install a skimmer system on catch tanks, circulating tanks and over-flow tanks as needed to collect oil.



I

EOG Resources
Ross Draw 8 Fed #5H

Well Site Diagram

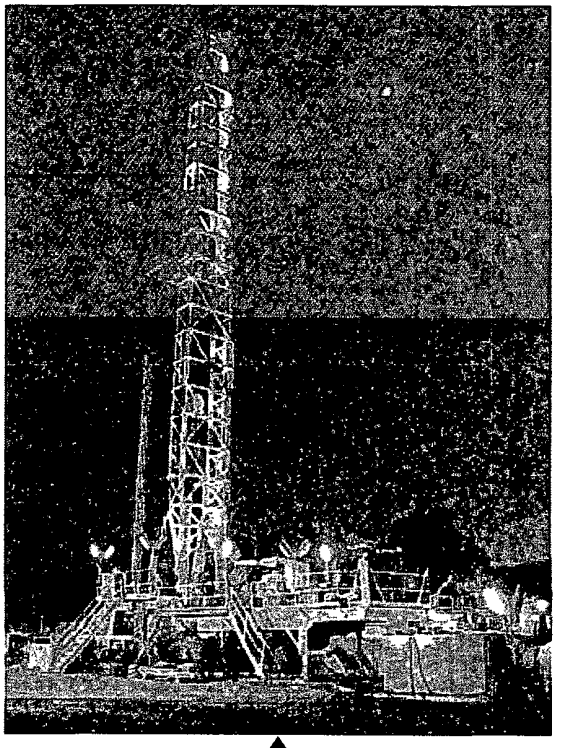
EOG Resources, Inc.

Legal's:
Ross Draw 8 Fed No. 5H
Eddy Co. New Mexico

330' FNL & 910' FEL Surface Location
Section 8
T-26-S, R-31-E
Lat: N 32.0637025
Long: W 103.7942666

330' FSL & 1370' FEL Bottom Hole Location
Section 8
T-26-S, R-31-E
Lat: N 32.0508682
Long: W 103.7958084

H_2S
"Contingency Plan"



SAFETY
SOLUTIONS, LLC.

Safety Solutions, LLC **(432) 686-8555**
3222 Commercial Dr. **Midland, TX 79701**

Table of Contents

H_2S CONTINGENCY PLAN SECTION

Scope:

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release, or following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas (H_2S).

Objective:

Prevent any and all accidents, and prevent the uncontrolled release of H_2S into the atmosphere.

Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

Discussion of Plan:

Suspected Problem Zones:

Implementation: This plan, with all details, is to be fully implemented 1000' before drilling into the first sour zone.

Emergency Response Procedure: This section outlines the conditions and denotes steps to be taken in the event of an emergency.

Emergency Equipment and Procedure: This section outlines the safety and emergency equipment that will be required for the drilling of this well.

Training Provisions: This section outlines the training provisions that must be adhered to 1000' before drilling into the first sour zone.

Emergency call list: Included are the telephone numbers of all persons that would need to be contacted, should an H_2S emergency occur.

Briefing: This section deals with the briefing of all persons involved with the drilling of this well.

Public Safety: Public Safety Personnel will be made aware of the drilling of this well.

Check Lists: Status check lists and procedural check lists have been included to ensure adherence to the plan.

General Information: A general information section has been included to supply support information.

EMERGENCY PROCEDURES SECTION

I. In the event of any evidence of H_2S level above 10ppm, take the following steps immediately:

   a. Secure breathing apparatus.

   b. Order non-essential personnel out of the danger zone.

   c. Take steps to determine if the H_2S level can be corrected or suppressed, and if so, proceed with normal operations.

II. If uncontrollable conditions occur, proceed with the following:

   a. Take steps to protect and/or remove any public downwind of the rig, including partial evacuation or isolation. Notify necessary public safety personnel and the New Mexico Oil Conservation Division of the situation.

   b. Remove all personnel to the Safe Briefing Area.

   c. Notify public safety personnel for help with maintaining roadblocks and implementing evacuation.

   d. Determine and proceed with the best possible plan to regain control of the well. Maintain tight security and safety measures.

III. Responsibility:

   a. The Company Approved Supervisor shall be responsible for the total implementation of the plan.

   b. The Company Approved Supervisor shall be in complete command during any emergency.

   c. The Company Approved Supervisor shall designate a back up Supervisor in the event that he/she is not available.

EMERGENCY PROCEDURE IMPLEMENTATION

I. Drilling or Tripping

a. *All Personnel*

i. When alarm sounds, don escape unit and report to upwind Safe Briefing Area.

ii. Check status of other personnel (buddy system).

iii. Secure breathing apparatus.

iv. Wait for orders from supervisor.

b. *Drilling Foreman*

i. Report to the upwind Safe Briefing Area.

ii. Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).

iii. Determine the concentration of H_2S.

iv. Assess the situation and take appropriate control measures.

c. *Tool Pusher*

i. Report to the upwind Safe Briefing Area.

ii. Don Breathing Apparatus and return to the point of release with the Drilling Foreman or the Driller (buddy system).

iii. Determine the concentration of H_2S.

iv. Assess the situation and take appropriate control measures.

d. *Driller*

i. Check the status of other personnel (in a rescue attempt, always use the buddy system).

ii. Assign the least essential person to notify the Drilling Foreman and Tool Pusher, in the event of their absence.

iii. Assume the responsiblility of the Drilling Foreman and the Tool Pusher until they arrive, in the event of their absence.

e. *Derrick Man and Floor Hands*

i. Remain in the upwind Safe Briefing Area until otherwise instructed by a supervisor.

f. *Mud Engineer*

i. Report to the upwind Safe Briefing Area.

ii. When instructed, begin check of mud for pH level and H_2S level.

g. *Safety Personnel*

i. Don Breathing Apparatus.

ii. Check status of personnel.

iii. Wait for instructions from Drilling Foreman or Tool Pusher.

II. Taking a Kick

a. All Personnel report to the upwind Safe Briefing Area.

b. Follow standard BOP procedures.

III. Open Hole Logging

a. All unnecessary personnel should leave the rig floor.

b. Drilling Foreman and Safety Personnel should monitor the conditions and make necessary safety equipment recommendations.

IV. Running Casing or Plugging

a. Follow "Drilling or Tripping" procedures.

b. Assure that all personnel have access to protective equipment.

SIMULATED BLOWOUT CONTROL DRILLS

All drills will be initiated by activating alarm devices (air horn). One long blast, on the air horn, for ACTUAL and SIMULATED Blowout Control Drills. This operation will be performed by the Drilling Foreman or Tool Pusher at least one time per week for each of the following conditions, with each crew:

Drill #1 Bottom Drilling

Drill #2 Tripping Drill Pipe

In each of these drills, the initial reaction time to shutting in the well shall be timed as well as the total time for the crew to complete its entire pit drill assignment. The times must be recorded on the IADC Driller's Log as "Blowout Control Drill".

Drill No.:
Reaction Time to Shut-In: minutes, seconds.
Total Time to Complete Assignment: minutes, seconds.

I. Drill Overviews

a. Drill No. 1 – Bottom Drilling

i. Sound the alarm immediately.

ii. Stop the rotary and hoist Kelly joint above the rotary table.

iii. Stop the circulatory pump.

iv. Close the drill pipe rams.

v. Record casing and drill pipe shut-in pressures and pit volume increases.

b. Drill No. 2 – Tripping Drill Pipe

i. Sound the alarm immediately.

ii. Position the upper tool joint just above the rotary table and set the slips.

iii. Install a full opening valve or inside blowout preventer tool in order to close the drill pipe.

iv. Close the drill pipe rams.

v. Record the shut-in annular pressure.

II. Crew Assignments

a. Drill No. 1 – Bottom Drilling

i. Driller

1. Stop the rotary and hoist Kelly joint above the rotary table.
2. Stop the circulatory pump.
3. Check Flow.
4. If flowing, sound the alarm immediately
5. Record the shit-in drill pipe pressure
6. Determine the mud weight increase needed or other courses of action.

ii. Derrickman

1. Open choke line valve at BOP.
2. Signal Floor Man #1 at accumulator that choke line is open.
3. Close choke and upstream valve after pipe tam have been closed.
4. Read the shut-in annular pressure and report readings to Driller.

iii. Floor Man #1

1. Close the pipe rams after receiving the signal from the Derrickman.
2. Report to Driller for further instructions.

iv. Floor Man #2

1. Notify the Tool Pusher and Operator representative of the H_2S alarms.
2. Check for open fires and, if safe to do so, extinguish them.
3. Stop all welding operations.
4. Turn-off all non-explosions proof lights and instruments.
5. Report to Driller for further instructions.

v. Tool Pusher

1. Report to the rig floor.
2. Have a meeting with all crews.

3. Compile and summarize all information.

4. Calculate the proper kill weight.

5. Ensure that proper well procedures are put into action.

vi. *Operator Representative*

1. Notify the Drilling Superintendent.

2. Determine if an emergency exists and if so, activate the contingency plan.

b. Drill No. 2 – Tripping Pipe

i. Driller

1. Sound the alarm immediately when mud volume increase has been detected.

2. Position the upper tool joint just above the rotary table and set slips.

3. Install a full opening valve or inside blowout preventer tool to close the drill pipe.

4. Check flow.

5. Record all data reported by the crew.

6. Determine the course of action.

ii. Derrickman

1. Come down out of derrick.

2. Notify Tool Pusher and Operator Representative.

3. Check for open fires and, if safe to do so , extinguish them.

4. Stop all welding operations.

5. Report to Driller for further instructions.

iii. Floor Man #1

1. Pick up full opening valve or inside blowout preventer tool and stab into tool joint above rotary table (with Floor Man #2).

2. Tighten valve with back-up tongs.

3. Close pipe rams after signal from Floor Man #2.

4. Read accumulator pressure and check for possible high pressure fluid leaks in valves or piping.

5. Report to Driller for further instructions.

iv. Floor Man #2

1. Pick-up full opening valve or inside blowout preventer tool and stab into tool joint above rotary table (with Floor Man #1).

2. Position back-up tongs on drill pipe.

3. Open choke line valve at BOP.

4. Signal Floor Man #1 at accumulator that choke line is open.

5. Close choke and upstream valve after pipe rams have been closed.

6. Check for leaks on BOP stack and choke manifold.

7. Read annular pressure.

8. Report readings to the Driller.

v. Tool Pusher

1. Report to the rig floor.

2. Have a meeting with all of the crews.

3. Compile and summarize all information.

4. See that proper well kill procedures are put into action.

vi. Operator Representative

1. Notify Drilling Superintendent

2. Determine if an emergency exists, and if so, activate the contingency plan.

IGNITION PROCEDURES

Responsibility:

The decision to ignite the well is the responsibility of the DRILLING FOREMAN in concurrence with the STATE POLICE. In the event the Drilling Foreman is incapacitated, it becomes the responsibility of the RIG TOOL PUSHER. This decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.

2. There is no hope of controlling the blowout under the prevailing conditions.

If time permits, notify the main office, but do not delay if human life is in danger. Initiate the first phase of the evacuation plan.

Instructions for Igniting the Well:

1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and must use a full body harness and attach a retrievable safety line to the D-Ring in the back. One man must monitor the atmosphere for explosive gases with the LEL monitor, while the Drilling Foreman is responsible for igniting the well.

2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.

3. Ignite from upwind and do not approach any closer than is warranted.

4. Select the ignition site best suited for protection and which offers an easy escape route.

5. Before igniting, check for the presence of combustible gases.

6. After igniting, continue emergency actions and procedures as before.

7. All unassigned personnel will limit their actions to those directed by the Drilling Foreman.

Note: After the well is ignited, burning Hydrogen Sulfide will convert to Sulfur Dioxide, which is also highly toxic. Do not assume the area is safe after the well is ignited.

TRAINING PROGRAM

When working in an area where Hydrogen Sulfide (H_2S) might be encountered, definite training requirements must be carried out. The Company Supervisor will ensure that all personnel, at the well site, have had adequate training in the following:

1. Hazards and characteristics of Hydrogen Sulfide.
2. Physicals effects of Hydrogen Sulfide on the human body.
3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
4. H_2S detection, Emergency alarm and sensor location.
5. Emergency rescue.
6. Resuscitators.
7. First aid and artificial resuscitation.
8. The effects of Hydrogen Sulfide on metals.
9. Location safety.

Service company personnel and visiting personnel must be notified if the zone contains H_2S, and each service company must provide adequate training and equipment for their employees before they arrive at the well site.

EMERGENCY EQUIPMENT REQUIREMENTS

Lease Entrance Sign:

Should be located at the lease entrance with the following information:

CAUTION – POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

Respiratory Equipment:

- Fresh air breathing equipment should be placed at the safe briefing areas and should include the following:
- Two SCBA's at each briefing area.
- Enough air line units to operate safely, anytime the H_2S concentration reaches the IDLH level (100 ppm).
- Cascade system with enough breathing air hose and manifolds to reach the rig floor, the derrickman and the other operation areas.

Windsocks or Wind Streamers:

- A minimum of two 10" windsocks located at strategic locations so that they may be seen from any point on location.
- Wind streamers (if preferred) should be placed at various locations on the well site to ensure wind consciousness at all times. (Corners of location).

Hydrogen Sulfide Detector and Alarms:

- 1 - Four channel H_2S monitor with alarms.
- Four (4) sensors located as follows: #1 – Rig Floor, #2 – Bell Nipple, #3 – Shale Shaker, #4 – Mud Pits.
- Gastec or Draeger pump with tubes.
- Sensor test gas.

Well Condition Sign and Flags:

The Well Condition Sign w/flags should be placed a minimum of 150' before you enter the location. It should have three (3) color coded flags (green, yellow and red) that will be used to denote the following location conditions:

GREEN – Normal Operating Conditions
YELLOW – Potential Danger
RED – Danger, H_2S Gas Present

Auxiliary Rescue Equipment:

- Stretcher
- 2 – 100' Rescue lines.
- First Aid Kit properly stocked.

Mud Inspection Equipment:

Garret Gas Train or Hach Tester for inspection of Hydrogen Sulfide in the drilling mud system.

Fire Extinguishers:

Adequate fire extinguishers shall be located at strategic locations.

Blowout Preventer:

- The well shall have hydraulic BOP equipment for the anticipated BHP.
- The BOP should be tested upon installation.
- BOP, Choke Line and Kill Line will be tested as specified by Operator.

Confined Space Monitor:

There should be a portable multi-gas monitor with at least 3 sensors (O_2, LEL H_2S). This instrument should be used to test the atmosphere of any confined space before entering. It should also be used for atmospheric testing for LEL gas before beginning any type of Hot Work. Proper calibration documentation will need to be provided.

Communication Equipment:

- Proper communication equipment such as cell phones or 2-way radios should be available at the rig.
- Radio communication shall be available for communication between the company man's trailer, rig floor and the tool pusher's trailer.

- Communication equipment shall be available on the vehicles.

Special Control Equipment:

- Hydraulic BOP equipment with remote control on the ground.
- Rotating head at the surface casing point.

Evacuation Plan:

- Evacuation routes should be established prior to spudding the well.
- Should be discussed with all rig personnel.

Designated Areas:

Parking and Visitor area:

- All vehicles are to be parked at a pre-determined safe distance from the wellhead.
- Designated smoking area.

Safe Briefing Areas:

- Two Safe Briefing Areas shall be designated on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds or they are at a 180 degree angle if wind directions tend to shift in the area.
- Personal protective equipment should be stored at both briefing areas or if a moveable cascade trailer is used, it should be kept upwind of existing winds. When wind is from the prevailing direction, both briefing areas should be accessible.

Note:

- Additional equipment will be available at the Safety Solutions, LLC office.
- Additional personal H_2S monitors are available for all employees on location.
- Automatic Flare Igniters are recommended for installation on the rig.

Procedural Check List

Perform the following on each tour:

1. Check fire extinguishers to see that they have the proper charge.
2. Check breathing equipment to insure that they have not been tampered with.
3. Check pressure on the supply air bottles to make sure they are capable of recharging.
4. Make sure all of the Hydrogen Sulfide detection systems are operative.

Perform the following each week:

1. Check each piece of breathing equipment to make sure that they are fully charged and operational. This requires that the air cylinder be opened and the mask assembly be put on and tested to make sure that the regulators and masks are properly working. Negative and Positive pressure should be conducted on all masks.
2. BOP skills.
3. Check supply pressure on BOP accumulator stand-by source.
4. Check all breathing air mask assemblies to see that straps are loosened and turned back, ready for use.
5. Check pressure on cascade air cylinders to make sure they are fully charged and ready to use for refill purposes if necessary.
6. Check all cascade system regulators to make sure they work properly.
7. Perform breathing drills with on-site personnel.
8. Check the following supplies for availability:
    - Stretcher
    - Safety Belts and Ropes
    - Spare air Bottles
    - Spare Oxygen Bottles (if resuscitator required)
    - Gas Detector Pump and Tubes
    - Emergency telephone lists
9. Test the Confined Space Monitor to verify the batteries are good

BRIEFING PROCEDURES

The following scheduled briefings will be held to ensure the effective drilling and operation of this project:

Pre-Spud Meeting

Date: Prior to spudding the well.
Attendance: Drilling Supervisor
Drilling Engineer
Drilling Foreman
Rig Tool Pushers
Rig Drillers
Mud Engineer
All Safety Personnel
Key Service Company Personnel

Purpose: Review and discuss the well program, step-by-step, to insure complete understanding of assignments and responsibilities.

EVACUATION PLAN

General Plan

The direct lines of action prepared by SAFETY SOLUTIONS, LLC to protect the public from hazardous gas situations are as follows:

1. When the company approved supervisor (Drilling Foreman, Tool Pusher or Driller) determine that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the area map.

2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists and evacuation needs to be implemented.

3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.

4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

5. After the discharge of gas has been controlled, "Company" safety personnel will determine when the area is safe for re-entry.

See Emergency Action Plan

Emergency Assistance Telephone List

PUBLIC SAFETY:	**911 or**
Eddy County Sheriff's Department	(575) 887-7551
Kent Waller	
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:		
Pearl Turner Tommy Turner	Cell	(432) 894-3416
Drilling Engineer		
Steve Munsell	Office	(432) 686-3609
	Cell	(432) 894-1256
Operations Manager		
Travis Lain	Office	(432) 686-3740
	Cell	(432) 254-3521
Drilling Superintendent		
Barney Thompson	Office	(432) 686-3678
	Cell	(432) 254-9056
Field Drilling Superintendent		
Ron Welch	Cell	(432) 386-0592
McVay Drilling		
Cactus Drilling	Office	(580) 799-2752
Cactus Drilling Rig #123	Rig	(432) 894-3417
Tool Pusher:		
Jackie Herndon	Cell	(580) 799-2752
Safety Consultants		
Safety Solutions, LLC	Office	(432) 686-8555
Cliff Strasner	Cell	(432) 894-9789
Craig Strasner	Cell	(432) 894-0341

Affected Notification List

(within a 65' radius of exposure @100ppm)

The geologic zones that will be encountered during drilling are known to contain hazardous quantities of H_2S. The accompanying map illustrates the affected areas of the community. The residents within this radius will be notified via a hand delivered written notice describing the activities, potential hazards, conditions of evacuation, evacuation drill siren alarms and other precautionary measures.

Evacuee Description:
Residents: **THERE ARE NO RESIDENTS WITHIN 3000' ROE.**

Notification Process:

A continuous siren audible to all residence will be activated, signaling evacuation of previously notified and informed residents.

Evacuation Plan:
All evacuees will migrate lateral to the wind direction.

The Oil Company will identify all home bound or highly susceptible individuals and make special evacuation preparations, interfacing with the local and emergency medical service as necessary.

Toxic Effects of H_2S Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity – 1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide. Occupational exposure limits for Hydrogen Sulfide and other gases are compared below in Table 1. Toxicity table for H_2S and physical effects are shown in Table 2.

Table 1
Permissible Exposure Limits of Various Gases

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	C	
Hydrogen Sulfide	H_2S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO_2	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	CO	.97	25 ppm	200 ppm	
Carbon Dioxide	CO_2	1.52	5000 ppm	30,000 ppm	
Methane	CH_4	.55	4.7% LEL	14% UEL	

Definitions

A. TLV – Threshold Limit Value is the concentration employees may be exposed based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists) and regulated by OSHA.

B. STEL – Short Term Exposure Limit is the 15 minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H_2S is 19 PPM.

C. IDLH – Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H_2S is 100 PPM.

D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed based on an TWA.

TABLE 2

Toxicity Table of H_2S

Percent %	PPM	Physical Effects
.0001	1	Can smell less than 1 ppm.
.001	10	TLV for 8 hours of exposure.
.0015	15	STEL for 15 minutes of exposure.
.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
.02	200	Kills sense of smell quickly, may burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins **in a few minutes.**
.07	700	Unconscious quickly, death will result if not rescued promptly.
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.

PHYSICAL PROPERTIES OF H_2S

The properties of all gases are usually described in the context of seven major categories:

COLOR
ODOR
VAPOR DENSITY
EXPLOSIVE LIMITS
FLAMMABILITY
SOLUBILITY (IN WATER)
BOILING POINT

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a fairly complete picture of the properties of the gas.

COLOR – TRANSPARENT

Hydrogen Sulfide is colorless so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence. In fact that makes this gas extremely dangerous to be around.

ODOR – ROTTEN EGGS

Hydrogen Sulfide has a distinctive offensive smell, similar to "rotten eggs". For this reason it earned its common name "sour gas". However, H_2S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192

Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H_2S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

EXPLOSIVE LIMITS – 4.3% TO 46%

Mixed with the right proportion of air or oxygen, H_2S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

FLAMMABILITY

Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO_2), another hazardous gas that irritates the eyes and lungs.

SOLUBILITY – 4 TO 1 RATIO WITH WATER

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of H_2S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H_2S may release the gas into the air.

BOILING POINT – (-76 degrees Fahrenheit)

Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.

RESPIRATOR USE

The Occupational Safety and Health Administration (OSHA) regulate the use of respiratory protection to protect the health of employees. OSHA's requirements are written in the Code of Federal Regulations, Title 29, Part 1910, Section 134, Respiratory Protection. This regulation requires that all employees who might be required to wear respirators, shall complete a OSHA mandated medical evaluation questionnaire. The employee then should be fit tested prior to wearing any respirator while being exposed to hazardous gases.

Written procedures shall be prepared covering safe use of respirators in dangerous atmospheric situations, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

Respirators shall be inspected prior to and after each use to make sure that the respirator has been properly cleaned, disinfected and that the respirator works properly. The unit should be fully charged prior to being used.

Anyone who may use respirators shall be properly trained in how to properly seal the face piece. They shall wear respirators in normal air and then in a test atmosphere. (Note: Such items as facial hair (beard or sideburns) and eyeglass temple pieces will not allow a proper seal.) Anyone that may be expected to wear respirators should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses. Contact lenses should not be allowed.

Respirators shall be worn during the following conditions:

A. Any employee who works near the top or on the top of any tank unless tests reveal less than 20 ppm of H_2S.

B. When breaking out any line where H_2S can reasonably be expected.

C. When sampling air in areas where H_2S may be present.

D. When working in areas where the concentration of H_2S exceeds the Threshold Limit Value for H_2S (10 ppm).

E. At any time where there is a doubt as to the H_2S level in the area to be entered.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	EOG Resources
LEASE NO.:	NM0438001
WELL NAME & NO.:	5H Ross Draw 8 Fed
SURFACE HOLE FOOTAGE:	330' FNL & 910' FEL
BOTTOM HOLE FOOTAGE	330' FSL & 1370' FEL
LOCATION:	Section 8, T.26 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.