District 1 Form C-102 State of New Mexico 1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District II
CONSERVATION DIVISION Revised October 12, 2005 Submit to Appropriate District Office State Lease- 4 Copies 1000 Rio Brazos Rd., Aztec, NM 874100V 2 3 2009 1220 South St. Francis Dr. Fee Lease-3 Copies District IV Santa Fe, NM 87505 1220 S. St. Francis Dr., Santa Fe, INOBBSOCD ☐ AMENDED REPORT WELL LOCATION AND ACREAGE DEDICATION PLAT Number Pool Code Wolfermp. North Tulk 30-025-60610 Property Name Well Number Property Code INCREDIBLE HULK "26" STATE COM 44 OGRID No. Operator Name 😫 Elevation 4286.3 EOG RESOURCES, INC. 7377 SP Surface Location East/West line Lot Idn Feet from the UL or lot no. Section Township Range North/South line Feet from the County N 26 14 SOUTH 32 EAST, N.M.P.M. 800 **SOUTH** 2310 WEST **LEA** Bottom Hole Location If Different 1 From Surface Township Lot Idn Feet from the North/South line | Feet from the East/West line 3 County UL or lot no. Section 27 14 SOUTH 32 EAST, N.M.P.M. 800 **SOUTH** 2310 EAST **LEA Dedicated Acres** Joint or Infill Consolidation Code Order No. 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 27 26 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. 10/30/09 Date Donny G. Printed Name SURFACE LOCATION NEW MEXICO EAST NAD 1927 Y=753733.3 X=697418.9 LAT.: N 33.0704055' ONG.: W 103.6888941' SURVEYOR CERTIFICATION BOTTOM HOLE LOCATION NEW MEXICO EAST NAD 1927 Y=753712.8 X=692798.9 LAT.: N 33.0704260' LONG.: W 103.7039749' I hereby ce d thát the the best 15079 Date BAY SECT OF = 269°45 Signatui 4620.0

PRODUCING

Certificate Nymber

er 15079 WO# 091012WL-c (ka)

2310

Permit Information:

Well Name: Incredible Hulk 26 State Com No. 4#

Location:

SL: 800' FSL & 2310' FWL, Section 26, T-14-S, R-32-E, Lea Co., N.M. BHL: 800' FSL & 2310' FEL, Section 27, T-14-S, R-32-E, Lea Co., N.M.

Casing Program:

Casing	Setting	Hole	Casing	Casing	Casing	Desired TOC
	Depth	Size	Size	Weight	Grade	
Surface	500'	17-1/2"	13-3/8"	48#	H-40	Surface
Intermediate	4,100'	12-1/4"	9-5/8"	40#	J-55	Surface
Production	8,100'	8-3/4"	7"	26#	P110	3600'
Liner	13,318'	6-1/8"	4-1/2"	11.6#	HCP-110	Uncemented**

^{**}Liner will use Peak isolation packers and ports

Cement Program:

	No.	Wt.	Yld	
Depth	Sacks	lb/gal	Ft ³ /ft	Slurry Description
500'	500	14.8	1.35	Class C + 0.005 pps Static Free + 2% CaCl ₂ + 0.25 pps
				CelloFlake + 0.005 gps FP-6L
4,100'	950	12.7	2.01	Lead: Class 'C' + 2.00% SMS + 1.50% R-3 + 0.25 lb/sk Cello
				Flake + 0.005 lb/sk Static Free
	200	14.8	1.33	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk
				Static Free
8,100'	500	11.8	2.31	Lead: 50:50:10 Poz:C:Gel+ 0.005 pps Static Free + 0.25 pps
		ľ	ĺ	CelloFlake + 0.90% FL-52A + 0.30% ASA-301 + 0.15%
				SMS
	300	14.2	1.30	Tail: 50:50:2 Poz: H: Gel + 0.005 pps Static Free + 5% NaCl =
				+ 0.2% CD-32 + 0.65% FL-52A

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 500'	Fresh - Gel	8.6-8.8	28-34	N/c
500' - 4,100'	Brine	10.0-10.2	28-34	N/c
4,100' - 8,100'	Fresh Water	8.4-8.6	28-34	N/c
8,100'-9,250'	Cut Brine - XCD	8.7-9.0	29-32	N/c
Pilot hole				
8,425'-13,318'	Cut Brine - XCD	8.7-9.0	32-42	8-10
Lateral				

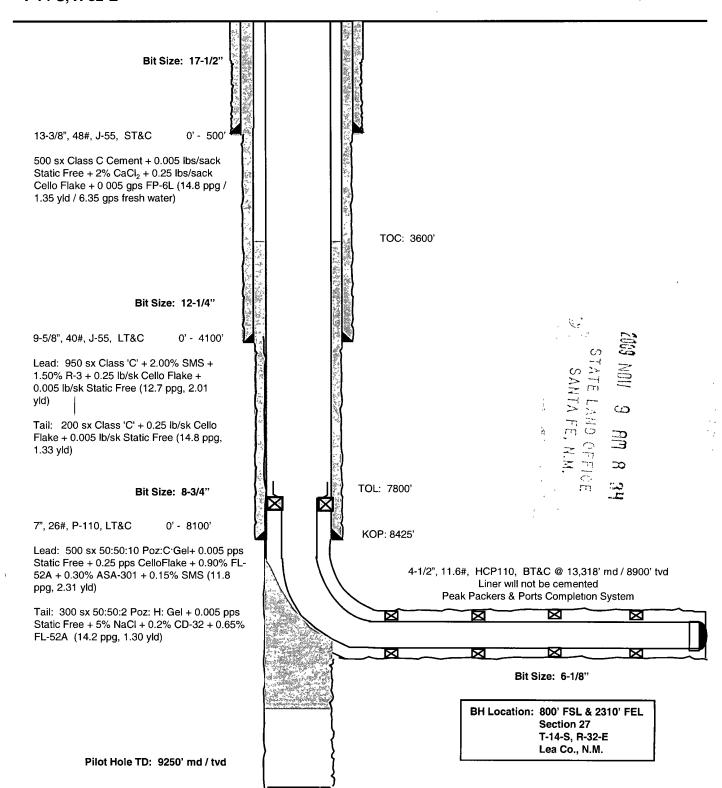
Incredible Hulk 26 State Com #4# Lea County, New Mexico

Surface Location: 800' FSL 2310' FWL Section 26 T-14-S, R-32-E

Proposed Wellbore

API: 30-025-*****

KB: 4,305.3' GL: 4,286.3'





October 14, 2009

EOG Resources, Inc. PO Box 2267 Midland, TX 79702 (432) 686-3600

Crownquest Operating, LLC P. O. Box 53310 Midland, TX 79710

Attention: Mr. Craig Clark

Re: EOG Incredible Hulk State Com. No. 4H

T-14-S, R-32-E

S/2SW/4 Section 26 & S/2SE/4 Section 27

Lea County, New Mexico

RECEIVED

HOBBSOUD

Gentlemen:

EOG Resources, Inc. plans to drill the Incredible Hulk State Com. No. 4 well as a horizontal well to test the Wolfcamp formation from a surface location 2310' FWL and 800' FSL of Section 26-14-32 to a horizontal terminus in the SW/4SE/4 of Section 27-14S-32E.

Crowquest operates the State 26 No.5 Well, a Pennsylvanian oil producer located in Unit P of Section 26-14-32. The surface location for the Incredible Hulk State Com. # 2 well will be located in Unit P.

EOG respectfully requests Crownquest's consent for approval of EOG's application to drill, complete and operate the subject well from the surface to 100' below the base of the Wolfcamp formation within the boundaries of the proration unit (Unit P) for the State 26 No. 5 Well. If you agree to our request, please execute and return one copy of this letter to the letterhead address.



EOG Resources, Inc.

Lea County Incredible Hulk 26 Com Incredible Hulk 26 State Com #4# OH RECEIVED

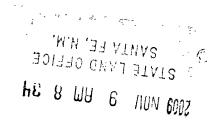
HOBRAOCD NO. 5 3 5008

Plan: Plan #1

Pathfinder X & Y Planning Report

26 October, 2009







Pathfinder X & Y Planning Report



Company: EOG Resources, Inc.
Project: Lea County
Incredible Hulk 26 Com
Well: Incredible Hulk 26 State Com #4

Wellbore: Design: Plan #1 Local Co-ordinate Reference:

TVD Reference: MD Reference: *

North Reference: Survey Calculation Method:

Database:

Well Incredible Hulk 26 State Com #4

WELL @ 4306.30ft (Est. RKB) WELL @ 4306.30ft (Est. RKB)

Grid

Minimum Curvature Midland Database

Project Lea County

Map System:

US State Plane 1927 (Exact solution)

Geo Datum: Map Zone:

NAD 1927 (NADCON CONUS)

New Mexico East 3001

System Datum:

Mean Sea Level

Site Incredible Hulk 26 Com

Site Position:

From:

Map

+N/-S

+E/-W

Northing: Easting:

757,402.400 ft 697.396.500 ft Latitude: Longitude:

33° 4' 49 764 N 103° 41' 20.018 W

Position Uncertainty:

0 00 ft

Slot Radius:

Grid Convergence:

0 35°

Incredible Hulk 26 State Com #4 Well

Well Position

0.00 ft 0.00 ft

Northing: Easting:

753,733.300 ft 697,418.900 ft Latitude: Longitude:

33° 4' 13.459 N 103° 41' 20.019 W

Position Uncertainty

0 00 ft

Wellhead Elevation:

Ground Level:

4,286 30 ft

Wellbore

Magnetics Model Name Sample Date **Declination** Dip Angle Field Strength (°) IGRF200510 10/26/2009 49,299

Désign

Audit Notes:

Version: Phase: **PLAN**

Tie On Depth:

0 00

Vertical Section: Depth From (TVD) Direction 0.00

Survey Tool Program Date 10/26/2009 Survey (Wellbore) Tool Name Description MWD - Standard 13,318.04 Plan #1 (OH) MWD 0.00



Pathfinder X & Y Planning Report



Company: EOG Resources, Inc.
Project: Lea County
Incredible Hulk 26 Com
Incredible Hulk 26 State Com #4
Wellbore: OH
Design: Plan #1

TVD Reference:

MD Reference:
North Reference:

Survey Calculation Method: Database:

Local Co-ordinate Reference: Well Incredible Hulk 26 State Com #4

WELL @ 4306.30ft (Est RKB) WELL @ 4306.30ft (Est RKB)

Grid

Minimum Curvature

Midland Database

Planned Survey										THE REAL PROPERTY OF THE PARTY
MD	Inc	Azi	TVO	TVDSS	N/O E	/W			Northing	
(ft)		(°)	(ft)	(ft)		ft)		DLeg (100ft)	Northing (ft)	Easting (ft)
0.00	0.00	0.00	0.00	-4,306 30	0 00	0 00	0 00	0 00	753,733.30	697,418.90
100 00	0 00	0.00	100.00	-4,206 30	0.00	0.00	0.00	0.00	753,733.30	697,418 90
200 00	0.00	0 00	200 00	-4,106 30	0.00	0.00	0.00	0.00	753,733.30	697,418 90
300.00	0.00	0.00	300.00	-4,006.30	0.00	0 00	0 00	0.00	753,733.30	697,418.90
400.00	0.00	0.00	400 00	-3,906.30	0.00	0 00	0.00	0.00	753,733.30	697,418.90
500.00	0 00	0.00	500 00	-3,806.30	0 00	0.00	0.00	0.00	753,733.30	697,418 90
600.00	0 00	0.00	600 00	-3,706.30	0.00	0.00	0.00	0.00	753,733 30	697,418 90
700.00	0 00	0.00	700 00	-3,606.30	0.00	0 00	0.00	0 00	753,733 30	697,418.90
800 00	0.00	0.00	800.00	-3,506 30	0.00	0.00	0.00	0 00	753,733 30	697,418.90
900.00	0.00	0.00	900.00	-3,406.30	0.00	0 00	0 00	0 00	753,733 30	697,418.90
1,000 00	0.00	0.00	1,000 00	-3,306 30	0 00	0.00	0.00	0.00	753,733 30	697,418 90
1,100.00	0.00	0 00	1,100 00	-3,206.30	0.00	0.00	0.00	0 00	753,733.30	697,418 90
1,200 00	0 00	0.00	1,200.00	-3,106 30	0.00	0.00	0.00	0 00	753,733.30	697,418 90
1,300.00	0 00	0.00	1,300.00	-3,006 30	0.00	0.00	0.00	0 00	753,733.30	697,418.90
1,400 00	0.00	0.00	1,400.00	-2,906 30	0 00	0 00	0.00	0.00	753,733.30	697,418.90
1,500 00	0 00	0.00	1,500 00	-2,806.30	0 00	0.00	0 00	0 00	753,733 30	697,418.90
1,600.00	0.00	0 00	1,600 00	-2,706.30	0 00	0 00	0.00	0.00	753,733 30	697,418 90
1,700 00	0.00	0.00	1,700.00	-2,606 30	0.00	0 00	0.00	0.00	753,733 30	697,418 90
1,800 00	0 00	0 00	1,800.00	-2,506 30	0.00	0.00	0.00	0 00	753,733 30	697,418 90
1,900.00	0 00	0.00	1,900.00	-2,406 30	0 00	0.00	0.00	0.00	753,733.30	697,418.90
2,000 00	0.00	0.00	2,000 00	-2,306 30	0.00	0.00	0.00	0.00	753,733.30	697,418 90
2,100 00	0.00	0 00	2,100.00	-2,206.30	0 00	0 00	0 00	0 00	753,733.30	697,418.90
2,200.00	0.00	0 00	2,200.00	-2,106 30	0.00	0.00	0.00	0.00	753,733.30	697,418.90
2,300.00	0.00	0 00	2,300.00	-2,006.30	0.00	0.00	0.00	0.00	753,733 30	697,418.90
2,400.00	0 00	0 00	2,400.00	-1,906 30	0.00	0 00	0 00	0 00	753,733.30	697,418 90
2,500 00	0 00	0.00	2,500 00	-1,806 30	0 00	0.00	0 00	0.00	753,733 30	697,418 90
2,600.00	0.00	0 00	2,600 00	-1,706.30	0.00	0.00	0.00	0.00	753,733.30	697,418 90



Pathfinder X & Y Planning Report



Company: EOG Resources, Inc
Project: Lea County
Incredible Hulk 26 Com
Well: Incredible Hulk 26 State Com #4
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: (Local Co-orometer)

MD Reference:
North Reference:
Survey Calculation Method:

Database:

Well Incredible Hulk 26 State Com #4

WELL @ 4306.30ft (Est. RKB) WELL @ 4306.30ft (Est RKB)

Grid

Minimum Curvature Midland Database

Planned Survey								0		
MD (ft)		Azi (°)	TVD (ft)	TVDSS (ft)	N/S I (ft)		.Sec [(ft) (°)	DLeg +	Northing (ft)	Easting (ft)
2,700 00	0 00	0 00	2,700 00	-1,606.30	0.00	0 00	0.00	0 00	753,733 30	697,418.90
2,800 00	0.00	0.00	2,800 00	-1,506 30	0.00	0 00	0 00	0.00	753,733 30	697,418.90
2,900 00	0.00	0.00	2,900 00	-1,406 30	0.00	0 00	0 00	0.00	753,733 30	697,418 90
3,000.00	0 00	0 00	3,000.00	-1,306 30	0.00	0 00	0.00	0 00	753,733 30	697,418.90
3,100 00	0.00	0.00	3,100.00	-1,206 30	0.00	0 00	0.00	0 00	753,733 30	697,418.90
3,200 00	0.00	0.00	3,200 00	-1,106.30	0.00	0.00	0 00	0.00	753,733 30	697,418 90
3,300 00	0.00	0.00	3,300 00	-1,006.30	0.00	0 00	0 00	0 00	753,733 30	697,418.90
3,400 00	0 00	0.00	3,400.00	-906 30	0.00	0.00	0.00	0 00	753,733.30	697,418.90
3,500.00	0.00	0.00	3,500 00	-806.30	0.00	0.00	0 00	0.00	753,733 30	697,418 90
3,600 00	0.00	0.00	3,600.00	-706 30	0.00	0.00	0.00	0 00	753,733 30	697,418.90
3,700.00	0.00	0 00	3,700.00	-606.30	0 00	0.00	0 00	0.00	753,733 30	697,418 90
3,800 00	0 00	0.00	3,800.00	-506.30	0 00	0 00	0 00	0.00	753,733 30	697,418 90
3,900.00	0.00	0 00	3,900.00	-406 30	0 00	0.00	0 00	0.00	753,733 30	697,418 90
4,000.00	0.00	0.00	4,000.00	-306.30	0 00	0.00	0 00	0.00	753,733 30	697,418 90
4,100.00	0.00	0.00	4,100.00	-206 30	0 00	0.00	0 00	0.00	753,733.30	697,418 90
4,200.00	0.00	0.00	4,200.00	-106 30	0 00	0.00	0 00	0.00	753,733 30	697,418.90
4,300 00	0 00	0.00	4,300.00	-6 30	0.00	0 00	0.00	0.00	753,733.30	697,418.90
4,400 00	0 00	0.00	4,400.00	93.70	0.00	0 00	0.00	0.00	753,733.30	697,418.90
4,500.00	0 00	0.00	4,500 00	193.70	0.00	0 00	0 00	0.00	753,733.30	697,418.90
4,600.00	0.00	0.00	4,600 00	293.70	0 00	0.00	0.00	0 00	753,733.30	697,418.90
4,700.00	000 .M.N	0,00	4,700 00	393 70	0 00	0.00	0.00	0 00	753,733.30	697,418.90
4,800 00	0301770	27 0,00 WA	S 4,800 00	493.70	0.00	0 00	0.00	0.00	753,733 30	697,418.90
4,900.00	0.00	TE 90.00 11	AT 3'000 00	593.70	. 0.00	0 00	0 00	0 00	753,733.30	697,418.90
5,000 00	hobo 8 L	JH 9500 111	5,000 00	693.70	0.00	0 00	0 00	0 00	753,733.30	697,418.90
5,100.00	0.00	IA 6200 111	IN GARO OO	793 70	0.00	0 00	0 00	0 00	753,733.30	697,418.90
5,200.00	0.00	0 00	5,200.00	893.70	0.00	0 00	0.00	0.00	753,733 30	697,418 90
5,300 00	0 00	0 00	5,300 00	993.70	0.00	0 00	0.00	0.00	753,733 30	697,418.90



Pathfinder X & Y Planning Report



Company: EOG Resources, Inc
Project: Lea County
Site: Incredible Hulk 26 Com
Well: Incredible Hulk 26 State Com #4
Wellbore: OH
Design: Plan #1

TVD Reference: MD Reference North Reference

Survey Calculation Method: Database:

Local Co-ordinate Reference: Well Incredible Hulk 26 State Com #4

WELL @ 4306.30ft (Est. RKB) WELL @ 4306.30ft (Est. RKB)

Grid

Minimum Curvature Midland Database

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Planned Survey	eri Comment State of State of	X.44.00. 34 X.5.2.07 A.F.					7 1 10 14 1901 FRE 1808 ES			120
				<u>- 19</u>						
MD in (ft) (°		Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W V (ft)		DLeg /100ft)	Northing (ft)	Easting (ft)
5.400.00	0 00	0 00	5,400.00	1,093 70	0.00	0.00	0.00	0 00	753,733.30	697,418.90
5 500 00	0.00	0.00	5 500 00	4 400 70	0.00	0.00	0.00	0.00	750 700 00	007.440.00
5,500 00	0 00	0.00	5,500.00	1,193.70	0.00	0.00	0 00	0.00	753,733.30	697,418 90
5,600 00	0.00	0.00	5,600.00	1,293.70	0.00	0 00	0 00	0.00	753,733.30	697,418 90
5,700.00	0.00	0 00	5,700 00	1,393 70	0.00	0.00	0.00	0.00	753,733.30	697,418.90
5,800 00	0.00	0.00	5,800.00	1,493.70	0.00	0.00	0 00	0.00	753,733.30	697,418.90
5,900 00	0.00	0 00	5,900.00	1,593.70	0.00	0 00	0 00	0.00	753,733.30	697,418 90
6,000 00	0 00	0.00	6,000.00	1,693.70	0.00	0 00	0 00	0.00	753,733.30	697,418.90
6,100 00	0 00	0.00	6,100.00	1,793.70	0.00	0 00	0 00	0.00	753,733.30	697,418.90
6,200.00	0 00	0 00	6,200 00	1,893.70	0 00	0 00	0 00	0.00	753,733.30	697,418 90
6,300.00	0.00	0.00	6,300.00	1,993.70	0.00	0 00	0 00	0.00	753,733.30	697,418 90
6,400.00	0 00	0 00	6,400 00	2,093.70	0.00	0.00	0 00	0.00	753,733 30	697,418.90
6,500.00	0.00	0.00	6,500.00	2,193 70	0.00	0 00	0.00	0.00	753,733 30	697,418.90
6,600.00	0 00	0 00	6,600.00	2,293 70	0.00	0.00	0.00	0.00	753,733 30	697,418.90
6,700.00	0 00	0 00	6,700 00	2,393 70	0.00	0 00	0 00	0.00	753,733 30	697,418.90
6,800.00	0 00	0 00	6,800 00	2,493 70	0.00	0.00	0.00	0.00	753,733 30	697,418.90
6,900.00	0 00	0 00	6,900 00	2,593 70	0 00	0 00	0.00	0.00	753,733 30	697,418.90
7,000 00	0.00	0 00	7,000.00	2,693.70	0.00	0.00	0.00	0.00	753,733 30	697,418.90
7,100.00	0.00	0.00	7,100 00	2,793.70	0 00	0.00	0.00	0.00	753,733.30	697,418.90
7,200.00	0 00	0 00	7,200.00	2,893.70	0.00	0 00	0 00	0.00	753,733 30	697,418.90
7,300.00	0 00	0 00	7,300.00	2,993.70	0 00	0.00	0.00	0.00	753,733 30	697,418.90
7,400 00	0 00	0 00	7,400.00	3,093.70	0 00	0.00	0.00	0.00	753,733 30	697,418.90
7,500 00	0.00	0.00	7,500 00	3,193 70	0.00	0.00	0 00	0.00	753,733 30	697,418.90
7,600.00	0.00	0 00	7,600 00	3,293 70	0.00	0.00	0 00	0 00	753,733.30	697,418 90
7,700.00	0 00	0 00	7,700 00	3,393 70	0.00	0.00	0 00	0 00	753,733 30	697,418.90
7,800.00	0.00	0 00	7,800 00	3,493.70	0.00	0.00	0.00	0.00	753,733.30	697,418 90
7,900.00	0 00	0.00	7,900.00	3,593.70	0 00	0.00	0.00	0.00	753,733 30	697,418 90
8,000.00	0.00	0.00	8,000.00	3,693.70	0 00	0 00	0 00	0.00	753,733 30	697,418 90



Pathfinder X & Y Planning Report



Company: EOG Resources, Inc.
Project: Lea County
Site: Incredible Hulk 26 Cor
Well: Incredible Hulk 26 Sta
Wellbore: OH Incredible Hulk 26 Com

Incredible Hulk 26 State Com #4

Design:

Plan #1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Database: Midland Database

Survey Calculation Method:

Well Incredible Hulk 26 State Com #4

WELL @ 4306.30ft (Est. RKB) WELL @ 4306.30ft (Est RKB)

Grid

Minimum Curvature

Planned Survey										
MD	Inc	Azi	TVD	TVDSS	N/S	E/W	V. Sec	DLeg	Northing	Easting
(ft)	(°)	(°)	(ft)	ጜኇ፟ዸጜኯኯፙኯኯዀጜፙኯኯዹቔፙኯፙፙቜዀፙፙቝኯዀዀዀዀዀዀቔቜዂ	(ft)	(ft)	(ft) (DLeg °/100ft)		(ft)
8,100.00	0.00	0 00	8,100 00	3,793.70	0 00	0.00	0.00	0 00	753,733 30	697,418.90
8,200 00	0 00	0.00	8,200.00	3,893.70	0.00	0 00	0 00	0 00	753,733.30	697,418 90
8,300 00	0 00	0.00	8,300.00	3,993.70	0.00	0 00	0 00	0.00	753,733.30	697,418 90
8,400 00	0.00	0.00	8,400 00	4,093.70	0.00	0.00	0.00	0 00	753,733 30	697,418.90
8,422 54	0 00	0 00	8,422.54	4,116.24	0.00	0.00	0 00	0 00	753,733.30	697,418.90
8,425.00	0 30	272 50	8,425 00	4,118 70	0.00	-0 01	0 01	12.00	753,733.30	697,418 89
8,450.00	3.30	272 50	8,449.98	4,143 68	0.03	-0 79	0 79	12 00	753,733.33	697,418.11
8,475.00	6.30	272 50	8,474.89	4,168.59	0.13	-2 88	2.88	12 00	753,733.43	697,416.02
8,500.00	9.30	272 50	8,499.66	4,193 36	0 27	-6 26	6.26	12.00	753,733.57	697,412 64
8,525.00	12 30	272 50	8,524 22	4,217 92	0 48	-10.94	10.94	12.00	753,733.78	697,407 96
8,550.00	15.30	272.50	8,548.49	4,242.19	0.74	-16.90	16.89	12 00	753,734.04	697,402.00
8,575.00	18 30	272 50	8,572 42	4,266.12	1.05	-24 11	24.11	12.00	753,734.35	697,394 79
8,600.00	21.30	272.50	8,595.94	4,289.64	1.42	-32.57	32.56	12 00	753,734.72	697,386.33
8,625.00	24.30	272 50	8,618.99	4,312 69	1 84	-42.25	42 24	12.00	753,735 14	697,376.65
8,650 00	27.30	272 50	8,641.49	4,335.19	2.32	-53.11	53.10	12 00	753,735 62	697,365.79
8,675.00	30 30	272 50	8,663 40	4,357 10	2 84	-65 14	65 13	12.00	753,736.14	697,353.76
8,700.00	33.30	272 50	8,684.65	4,378.35	3 42	-78.30	78.28	12.00	753,736 72	697,340.60
8,725.00	36 30	272 50	8,705.17	4,398.87	4 04	-92.55	92.53	12 00	753,737.34	697,326.35
8,750.00	39.30	272.50	8,724 93	4,418 63	4.71	-107 86	107.83	12.00	753,738 01	697,311.04
8,775 00	42.30	272.50	8,743 85	4,437.55	5.42	-124 17	124.15	12 00	753,738 72	697,294.73
8,800 00	45.30	272.50	8,761 89	4,455.59	6.18	-141 46	141.43	12.00	753,739 48	697,277.44
8,825.00	48.30	272.50	8,779.01	4,472.71	6.97	-159 66	159 63	12.00	753,740 27	697,259.24
8,850.00	51 30	272.50	8,795.14	4,488.84	7.80	-178.73	178.70	12 00	753,741 10	697,240.17
8,875 00	54.30	272.50	8,810.26	4,503.96	8.67	-198 62	198 58	12 00	753,741 97	697,220.28
8,900 00	57.30	272.50	8,824.31	4,518 01	9 57	-219 28	219.23	12 00	753,742 87	697,199.62
8,925 00	60.30	272 50	8,837.26	4,530 96	10 51	-240 64	240.59	12.00	753,743 81	697,178.26
8,950 00	63.30	272.50	8,849.08	4,542 78	11.47	-262.64	262.59	12 00	753,744 77	697,156.26



Pathfinder X & Y Planning Report



Company: EOG Resources, Inc.
Project: Lea County
Site: Incredible Hulk 26 Com
Well: Incredible Hulk 26 State Com #4
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Incredible Hulk 26 State Com #4
TVD Reference: WELL @ 4306.30ft (Est. RKB)
MD Reference: WELL @ 4306.30ft (Est. RKB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Database: Midland Database

Planned Survey

Planned Survey MD (ft)	lnc (°)	Azi (°)	TVD (ft)	TVDSS (ff)	N/S (ft)	E/W (ft)		DLeg /100ft)	Northing (ft)	Easting (ft)
8,975.00	66 30	272.50	8,859 72	4,553.42	12.45	-285.24	285.18	12.00	753,745.75	697,133.66
9,000.00	69.30	272 50	8,869.17	4,562.87	13 46	-308 36	308.30	12 00	753,746 76	697,110 54
9,025.00	72.30	272.50	8,877.39	4,571.09	14.49	-331 95	331 88	12 00	753,747.79	697,086 95
9,050 00	75.30	272.50	8,884.37	4,578 07	15 54	-355 93	355 85	12 00	753,748 84	697,062 97
9,075.00	78 30	272.50	8,890 08	4,583.78	16.60	-380.24	380 16	12 00	753,749.90	697,038 66
9,100 00	81 30	272 50	8,894 51	4,588 21	17 67	-404.82	404.74	12 00	753,750.97	697,014.08
9,125.00	84.30	272.50	8,897 64	4,591 34	18 76	-429.59	429.51	12.00	753,752.06	696,989.31
9,150 00	87.30	272 50	8,899.47	4,593 17	19 84	-454.50	454.41	12 00	753,753.14	696,964.40
9,172 54	90.00	272.50	8,900.00	4,593.70	20 83	-477.01	476 91	12 00	753,754.13	696,941.89
9,200 00	90 00	271.95	8,900.00	4,593.70	21 89	-504 45	504.35	2.00	753,755.19	696,914.45
9,247.54	90.00	271.00	8,900 00	4,593.70	23.12	-551.97	551.87	2 00	753,756.42	696,866.93
9,300.00	90.00	271.00	8,900 00	4,593 70	24.03	-604.43	604.31	0.00	753,757 33	696,814.47
9,400.00	90.00	271 00	8,900.00	4,593.70	25.78	-704 41	704 29	0.00	753,759 08	696,714.49
9,500 00	90.00	271 00	8,900.00	4,593.70	27 52	-804 39	804 26	0.00	753,760.82	696,614 51
9,600.00	90.00	271.00	8,900.00	4,593.70	29.27	-904 38	904 24	0.00	753,762 57	696,514.52
9,700 00	90.00	271.00	8,900 00	4,593.70	31 01	-1,004 36	1,004 22	0.00	753,764.31	696,414.54
9,800.00	90.00	271.00	8,900 00	4,593 70	32.76	-1,104 35	1,104 19	0 00	753,766 06	696,314.55
9,900.00	90.00	271.00	8,900 00	4,593 70	34 50	-1,204.33	1,204.17	0 00	753,767.80	696,214.57
10,000.00	90.00	271 00	8,900.00	4,593 70	36.25	-1,304.32	1,304.14	0 00	753,769.55	696,114 58
10,100.00	90.00	271.00	8,900.00	4,593.70	37 99	-1,404.30	1,404.12	0.00	753,771.29	696,014 60
10,200.00	90.00	271.00	8,900.00	4,593.70	39 74	-1,504.29	1,504.10	0.00	753,773.04	695,914 61
10,300.00	90 00	271.00	8,900.00	4,593 70	41 49	-1,604.27	1,604 07	0 00	753,774.79	695,814.63
10,400 00	90.00	271 00	8,900 00	4,593 70	43 23	-1,704 26	1,704 05	0.00	753,776 53	695,714.64
10,500.00	90.00	271 00	8,900.00	4,593 70	44.98	-1,804 24	1,804 02	0.00	753,778 28	695,614.66
10,600.00	90 00	271 00	8,900 00	4,593.70	46.72	-1,904.23	1,904 00	0.00	753,780 02	695,514.67
10,700.00	90.00	271 00	8,900.00	4,593.70	48.47	-2,004.21	2,003 98	0.00	753,781.77	695,414 69
10,800.00	90.00	271 00	8,900 00	4,593 70	50.21	-2,104 20	2,103 95	0 00	753,783 51	695,314 70



Pathfinder X & Y Planning Report



Company: EOG Resources, Inc
Project: Lea County
Site: Incredible Hulk 26 Com
Well: Incredible Hulk 26 State Com #4
Wellbore: OH
Design: Plan #1

TVD Reference: MD Reference: North Reference:

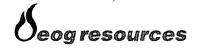
Survey Calculation Method: Database:

Local Co-ordinate Reference: Well Incredible Hulk 26 State Com #4 WELL @ 4306.30ft (Est RKB) WELL @ 4306.30ft (Est RKB)

Grid

Minimum Curvature Midland Database

								233223920000000000000000000000000000000	and the second s	
Planned Survey			200 managarahan dari kanagaran dari (and of the company	**************************************	A COLUMN TO A COLU
<u> </u>							ing a second			
- 12-1	c)	Azi (°)	TVD (ft)	TVDSS (ff)	N/S (ft)	E/W (ft)		DLeg************************************	Northing (ft)	Easting (ft)
10.900 00	90 00	271.00	8,900 00	4,593.70	51.96	-2,204.18	2,203.93	0 00	753.785 26	695,214 72
11,000.00	90 00	271.00	8,900.00	4,593.70	53.70	-2,304.17	2,303.91	0.00	753,787.00	695,114.73
11,100 00	90.00	271.00	8,900.00	4,593.70	55.45	-2,404.15	2,403.88	0.00	753,788 75	695,014.75
11,200 00	90 00	271 00	8,900.00	4,593.70	57 19	-2,504 14	2,503 86	0 00	753,790.49	694,914 76
11,300.00	90.00	271 00	8,900.00	4,593.70	58.94	-2,604.12	2,603.83	0.00	753,792.24	694,814 78
11,400.00	90.00	271.00	8,900.00	4,593 70	60 68	-2,704 11	2,703 81	0 00	753,793 98	694,714.79
11,500 00	90.00	271.00	8,900.00	4,593 70	62 43	-2,804.09	2,803 79	0.00	753,795 73	694,614.81
11,547 54	90.00	271 00	8,900.00	4,593 70	63 26	-2,851.62	2,851.31	0.00	753,796.56	694,567.28
11,600.00	90 00	269.95	8,900.00	4,593 70	63 69	-2,904 08	2,903 77	2 00	753,796.99	694,514.82
11,700.00	90.00	267.95	8,900 00	4,593 70	61 86	-3,004 06	3,003.75	2.00	753,795 16	694,414.84
11,744 03	90.00	267.07	8,900.00	4,593.70	59.95	-3,048.04	3,047.75	2.00	753,793.25	694,370.86
11,800 00	90.00	267.07	8,900.00	4,593.70	57.09	-3,103.94	3,103 66	0 00	753,790 39	694,314.96
11,900.00	90 00	267 07	8,900.00	4,593.70	51.98	-3,203 81	3,203 55	0 00	753,785 28	694,215.09
12,000.00	90 00	267.07	8,900 00	4,593 70	46.87	-3,303 68	3,303 44	0 00	753,780 17	694,115 22
12,100.00	90.00	267.07	8,900.00	4,593 70	41.76	-3,403 55	3,403 33	0.00	753,775 06	694,015 35
12,200.00	90 00	267.07	8,900.00	4,593 70	36 64	-3,503 42	3,503 22	0.00	753,769 94	693,915 48
12,300.00	90 00	267 07	8,900.00	4,593.70	31.53	-3,603.29	3,603 11	0.00	753,764 83	693,815.61
12,400.00	90 00	267 07	8,900.00	4,593.70	26.42	-3,703.16	3,703 01	0.00	753,759 72	693,715 74
12,500.00	90.00	267 07	8,900.00	4,593.70	21 31	-3,803.03	3,802.90	0.00	753,754 61	693,615.87
12,600 00	90.00	267.07	8,900.00	4,593 70	16.20	-3,902.90	3,902.79	0 00	753,749.50	693,516.00
12,700 00	90.00	267.07	8,900.00	4,593 70	11.09	-4,002.77	4,002.68	0 00	753,744.39	693,416.13
12,800.00	90 00	267.07	8,900 00	4,593 70	5.98	-4,102.64	4,102.57	0 00	753,739.28	693,316.26
12,900 00	90.00	267 07	8,900.00	4,593 70	0 87	-4,202 51	4,202 46	0 00	753,734.17	693,216.39
13,000.00	90.00	267 07	8,900.00	4,593.70	-4 24	-4,302 38	4,302 35	0 00	753,729.06	693,116 52
13,100.00	90.00	267 07	8,900.00	4,593.70	-9.36	-4,402 24	4,402 24	0.00	753,723.94	693,016.66
13,200.00	90.00	267.07	8,900 00	4,593 70	-14.47	-4,502 11	4,502 13	0.00	753,718 83	692,916.79
13,300.00	90 00	267 07	8,900 00	4,593 70	-19 58	-4,601 98	4,602.02	0.00	753,713.72	692,816 92



Pathfinder X & Y Planning Report



Company: EOG Resources, Inc.
Project: Lea County
Incredible Hulk 26 Com
Well: Incredible Hulk 26 State Com #4
Wellbore: OH Local Co-ordinate Reference: Well Incredible Hulk 26 State Com #4 TVD Reference: MD Reference: WELL @ 4306.30ft (Est. RKB) WELL @ 4306.30ft (Est. RKB) North Reference: Grid Survey Calculation Method: Minimum Curvature Design: Plan #1 Database: Midland Database Planned Survey V. Sec. DLeg Northing Easting
(ft) (°/100ft) (ft) (ft) V. Sec (ft) (ft) 13,318.04 90.00 267 07 8,900.00 4,593.70 -20.50 -4,620.00 4,620 05 0 00 753,712 80 692,798.90 Hulk 26 #4 (BHL)

Targets Target Name - hit/miss target Dip/Ar - Shape (2)	igle Di	p.Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W	Northing (ft)	Easting (ft)	Latitude	Longitude
Hulk 26 #4 (BHL) - plan hits target - Point	0.00	0.00	8,900 00	-20.50	-4,620.00	753,712.800	692,798 900	33° 4′ 13.534 N	103° 42' 14.310 W
State 27 #2 (BHL) - plan misses by 1131 25ft at - Circle (radius 213.52)	0 00 11667 62ft MD	0.00 (8900.00 TVD,	10,010 00 62.84 N, -2971.76	-155.40 DE)	-2,967.70	753,577.900	694,451.200	33° 4' 12.101 N	103° 41′ 54 903 W
State 26 #5 (BHL) - plan misses by 1118.00ft at - Circle (radius 146.64)	0 00 9125.00ft MD (0 00 (8897 64 TVD, 1	10,000 00 18.76 N, -429 59 E	-137.50 E)	-328 10	753,595 800	697,090.800	33° 4' 12 119 N	103° 41' 23 884 W

Checked By:	Approved By:	Date:	



Project: Lea County

Site: Incredible Hulk 26 Com Well: Incredible Hulk 26 State Com #4

Wellbore: OH

Plan: Plan #1 (Incredible Hulk 26 State Com #4/OH)





Azimuths to Grid North True North: -0.35° Magnetic North: 7.54°

Magnetic Field Strength: 49299.1snT Dip Angle: 61.00° Date: 10/26/2009 Model: IGRF200510

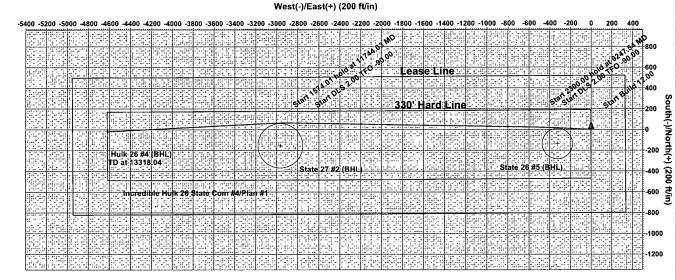
PROJECT DETAILS: Lea County Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866

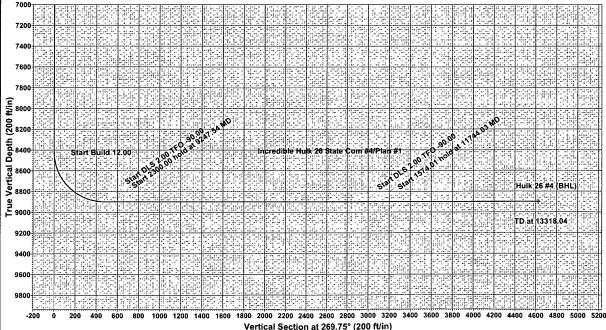
Zone: New Mexico East 3001 System Datum: Mean Sea Level Local North: Grid

LEGEND

* State 26 #5, OH, Plan #1 V0 * State 27 #2, OH, Plan #1 V0

- Plan #1





WELL DETAILS Incredible Hulk 26 State Com #4

Ground Elevation.. 4286.30 RKB Elevation WELL @ 4306.30ft (Est. RKB) Rig Name Est RKB

Latittude Longitude 33° 4' 13 459 N 103° 41' 20 019 W Northing 753733.300 697418.900 0.00 0 00

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Easting Hulk 26 #4 (BHL) State 26 #5 (BHL) State 27 #2 (BHL) 753712 800 753595.800 692798.900 697090 800 8900.00 10000.00 -20 50 -137.50 -4620 00 -328 10 Circle (Radius 146 64) -2967 70 694451.200

SECTION DETAILS MD Inc 0.00 0.00 31.54 0.00 30.00 SECTION DETAILS
+N/-S +E/-W DIeg TFace VSec
0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00
0.03 477.01 12.00 272.50 476.91
23 12 -551.97 2.00 -90.00 551.81
58.95 -3048.04 2.00 -90.00 3047.75 Azı TVD 0.00 0 00 0 00 8422 54 VSec Target 8422 54 9172 54 90 00 9247.54 90.00 272 50 8900.00 271 00 8900 00 5 11547 54 90 00 271 00 8900 00 6 11744 03 90 00 267 07 8900.00 13318.04 90.00 267 07 8900 00 -20 50 -4620 00 0.00 4620.05 Hulk 26 #4 (BHL)

Plan Plan #1 (Incredible Hulk 26 State Com #4/OH)

Created By John Walker Date 11 14, October 26 2009

Checked _____ Date

EOG Resources, Inc.

Legal's:

Incredible Hulk "26" State Com #4H

Lea Co. New Mexico

800' FSL & 2310' FWL Surface Location

Section 26 T-14-S, R-32-E

Lat: N 33.0704055

Long: W 103.6888941

800' FSL & 2310' FEL Bottom Hole Location

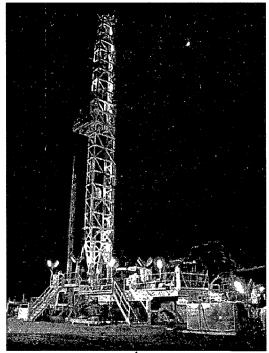
Section 27

T-14-S, R-32-E

Lat: N 33.0704260

Long: W 103.7039749

H₂S "Contingency Plan"





Safety Solutions, LLC 3222 Commercial Dr.

(432) 686-8555 Midland, TX 79701

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- c. Discussion of Plan

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- b. Emergency Reaction Steps
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- b. Instructions

IV. Training Requirements

V. Emergency Equipment

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- b. Procedural Check List

VII. Briefing Procedures

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H₂S 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 H₂S 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 H₂S 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 H₂S 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 H₂S 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 H₂S.
- 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 H₂S.
- 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 responsibility 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 H₂S 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 H₂S 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

- 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:

- 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. H₂S 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 H₂S, 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 H₂S 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 H₂S 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, H₂S 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 (O₂, LEL H₂S). 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 H₂S monitors are available for all employees on location.
- Automatic Flare Igniters are recommended for installation on the rig.

CHECK LISTS

Status Check List

Note: Date each item as they are implemented.

1.	Sign at location entrance.
2.	Two (2) wind socks (in required locations).
3.	Wind Streamers (if required).
4.	SCBA's on location for all rig personnel and mud loggers.
5.	Air packs, inspected and ready for use.
6.	Spare bottles for each air pack (if required).
7.	Cascade system for refilling air bottles.
8.	Cascade system and hose line hook up.
9.	Choke manifold hooked-up and tested. (before drilling out surface casing.)
10.	Remote Hydraulic BOP control (hooked-up and tested before drilling out surface casing).
11.	BOP tested (before drilling out surface casing).
12.	Mud engineer on location with equipment to test mud for H ₂ S.
13.	Safe Briefing Areas set-up
14.	Well Condition sign and flags on location and ready.
15.	Hydrogen Sulfide detection system hooked -up & tested.
16.	Hydrogen Sulfide alarm system hooked-up & tested.
17.	Stretcher on location at Safe Briefing Area.
18.	2 – 100' Life Lines on location.
19.	1 – 20# Fire Extinguisher in safety trailer.
20.	Confined Space Monitor on location and tested.
21.	All rig crews and supervisor trained (as required).

22. Access restricted for unauthorized personnel.	
23. Drills on H ₂ S and well control procedures.	
24. All outside service contractors advised of potential H ₂ S on the well.	
25. NO SMOKNG sign posted.	
26. H₂S Detector Pump w/tubes on location.	
27. 25mm Flare Gun on location w/flares.	
28. Automatic Flare Igniter installed on 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:

- 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

key service company reasonne

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:		
Danny Kiser	Cell	(281) 833-2749
Drilling Engineer		
Steve Munsell	Office	(432) 686-3609
	Cell	(432) 894-1256
Operations Manager		
Joel Pettit	Office	(432) 686-3705
	Cell	(432)894-1226
Drilling Superintendent		
Barney Thompson	Office	(432) 686-3678
	Cell	(432) 254-9056
Field Drilling Superintendent		
Ron Welch	Cell	(432) 386-0592
McVay Drilling		1 - 100
McVay Drilling / Hobbs		(575) 397-3311
McVay Drilling Rig #4	Rig	(575) 370-5598
Tool Pusher:		
Terry Johnson	Cell	(575) 370-5620
Safety Consultants	···	
Safety Solutions, LLC		(432) 686-8555
Cliff Strasner	Cell	(432) 894-9789
Craig Strasner	Cell	(432) 894-0341

MAPS AND PLATS (Maps & Plats Attached)

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.

GENERAL INFORMATION

STATE LARD OFFICE SANTA FE, N.M.

Toxic Effects of H₂S 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	С	
Hydrogen Sulfide	H ₂ S	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	со	.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 H₂S 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 H₂S 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 H₂S
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.
.03	300	Dizziness, cessation of breathing begins in a rew innates.
.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 H₂S

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, H₂S, 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, H₂S 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 (SO₂), 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 H₂S.
- B. When breaking out any line where H_2S can reasonably be expected.
- C. When sampling air in areas where H₂S may be present.
- D. When working in areas where the concentration of H₂S exceeds the Threshold Limit Value for H₂S (10 ppm).
- E. At any time where there is a doubt as to the H₂S level in the area to be entered.

EMERGENCY RESCUE PROCEDURES

DO NOT PANIC!!!

Remain Calm ~ Think

- 1. Before attempting any rescue you must first get out of the hazardous area yourself. Go to a safe briefing area.
- 2. Sound alarm and activate the 911 system.
- 3. Put on breathing apparatus. At least two persons should do this, when available use the buddy system.
- 4. Rescue the victim and return them to a safe briefing area.
- 5. Perform an initial assessment and begin proper First Aid/CPR procedures.
- 6. Keep victim lying down with a blanket or coat, etc.., under the shoulders to keep airway open. Conserve body heat and do not leave unattended.
- 7. If the eyes are affected by H₂S, wash them thoroughly with potable water. For slight irritation, cold compresses are helpful.
- 8. In case a person has only minor exposure and does not lose consciousness totally, it's best if he doesn't return to work until the following day.
- 9. Any personnel overcome by H₂S should always be examined by medical personnel. They should always be transported to a hospital or doctor.