

Form 3160-3 (August 2007)
HOBBS OGD
MAR 14 2012

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-HOBBS

ATS-12-96
FORM APPROVED
OMB NO. 1004-0137
Expires July 31, 2010

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work ☒ DRILL ☐ REENTER
1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

2. Name of Operator

BOG Resources Inc.

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 requirements)*

At surface 280' FNL & 2370' FEL, U/L B, Sec 31 T24S R34E Unit B

At proposed prod zone

2310' FNL & 2190' FEL, U/L G, Sec 6 T25S R34E Unit G

14. Distance in miles and direction from nearest town or post office*

Approximately +/- 24 miles Southwest from Jal, NM

15. Distance from proposed*

location to nearest
property or lease line, ft.
(Also to nearest drg. unit line, if any)

280'

16. No. of Acres in lease

319.46
640

17. Spacing Unit dedicated to this well

E/2 31, NE/4 6

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.

216' to Diamond 6-1

19. Proposed Depth

Pilot 12200'
16566 MD - 9509 TVD

20. BLM/BIA Bond No. on file

NM 2308

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

3496' GL

22. Approximate date work will start*

1/1/2012

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

Title

Regulatory Analyst

Approved by (Signature) Don Peterson

Name (Printed/Typed)

Date

Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICE

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

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

K2 07/21/12

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

MAR 22 2012

EOG RESOURCES, INC.
DILLON 31 FED COM NO. 2H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	1,175'
Top of Salt	1,425'
Base of Salt	5,000'
Lamar	5,280'
Bell Canyon	5,310'
Cherry Canyon	6,290'
Brushy Canyon	7,810'
Bone Spring Lime	9,250'
Bone Spring 1 Sand	10,200'
Bone Spring 2 Carb	10,520'
Bone Spring 2 Sand	10,870'
Bone Spring 3 Carb	11,290'
Bone Spring 3 Sand	11,870'
Pilot hole TD	12,200'
Wolfcamp	12,250'
(Will TD prior to penetrating the Wolfcamp)	

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

Upper Permian Sands	0- 400'	Fresh Water
Lamar	5,280'	Oil
Bell Canyon	5,310'	Oil
Cherry Canyon	6,290'	Oil
Brushy Canyon	7,810'	Oil
Bone Spring Lime	9,250'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 11.75" casing at 1,200' and circulating cement back to surface.

4. CASING PROGRAM - NEW

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
14.75"	0 - 1200' 125	11.75"	42#	H40	STC	1.125	1.25	1.60
11"	0-4000'	8.625"	32#	J55	LTC	1.125	1.25	1.60
11"	4000'-5150'	8.625"	32#	HCK55	LTC	1.125	1.25	1.60
7.875"	0'-16,566'	5.500"	20#	HCP110	NSCC	1.125	1.25	1.60

See
10A

**EOG RESOURCES, INC.
DILLON 31 FED COM NO. 2H**

Cementing Program:

Depth	No. Sacks	Wt. lb/gal	Yld Ft ³ /ft	Slurry Description
1,200'	350	13.5	1.73	Lead: Class 'C' + 4.00% Bentonite + 0.5% CaCl ₂
	200	14.8	1.35	Tail: Class 'C' + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
5,150'	700	12.7	2.22	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	1.32	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
BH Plug 11,900'- 12,200'	150	18.0	0.90	Class H + 0.005 lbs/sx Static Free + 5% Salt + 1.2% CD31 + 0.005 gps FP-6L
KO Plug 600'	300	18.0	0.90	Class H + 0.005 lbs/sx Static Free + 5% Salt + 1.2% CD31 + 0.005 gps FP-6L
16,566'	150	10.8	3.68	Lead 1: 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 + 2.10% R-21 + 8.00 lb/sk LCM-1 + 0.01 gps FP-13L
	300	11.8	2.38	Lead 2: 50:50:10 Class H + 0.80% FL-52A + 0.30% ASA-301 + 0.30% SMS + 2.00% Salt (2.47 lb/sk) + 0.35% R-21 + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
	1400	14.2	1.28	Tail: 50:50:2 Class H + 0.65% FL-52A + 0.20% CD-32 + 0.15% SMS + 2.00% Salt (0.961 lb/sk) + 0.20% 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.

See
10A

~~3000-psi BOPE is adequate for this application. Due to the 3000-psi BOPE requirement no FIT tests are planned.~~

EOG RESOURCES, INC.
DILLON 31 FED COM NO. 2H

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 1400 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. Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 - 1,200' / 255	Fresh Water Gel	8.6-8.8	28-34	N/c
1,200' - 5,150'	Saturated Brine	10.0-10.2	28-34	N/c
5,150' - 12,200' Pilot hole	Cut Brine	8.5-9.5	28-34	N/c
KOP - 16,566' Lateral	Cut Brine	8.5-9.5	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) H₂S monitoring and detection equipment will be utilized from 1,100' to TD.

EOG RESOURCES, INC.
DILLON 31 FED COM NO. 2H

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

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

NGT-CNL-LDT w/ Pe	From TD to previous casing shoe. At casing pull GR – Neutron to surface.
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HR Laterolog Array	From TD to previous casing shoe.
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FMI	Possible in the production hole
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9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

The estimated bottom hole temperature (BHT) at TD is 187 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 5300 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 30-60 days will be required for completion and testing before a decision is made to install permanent facilities.

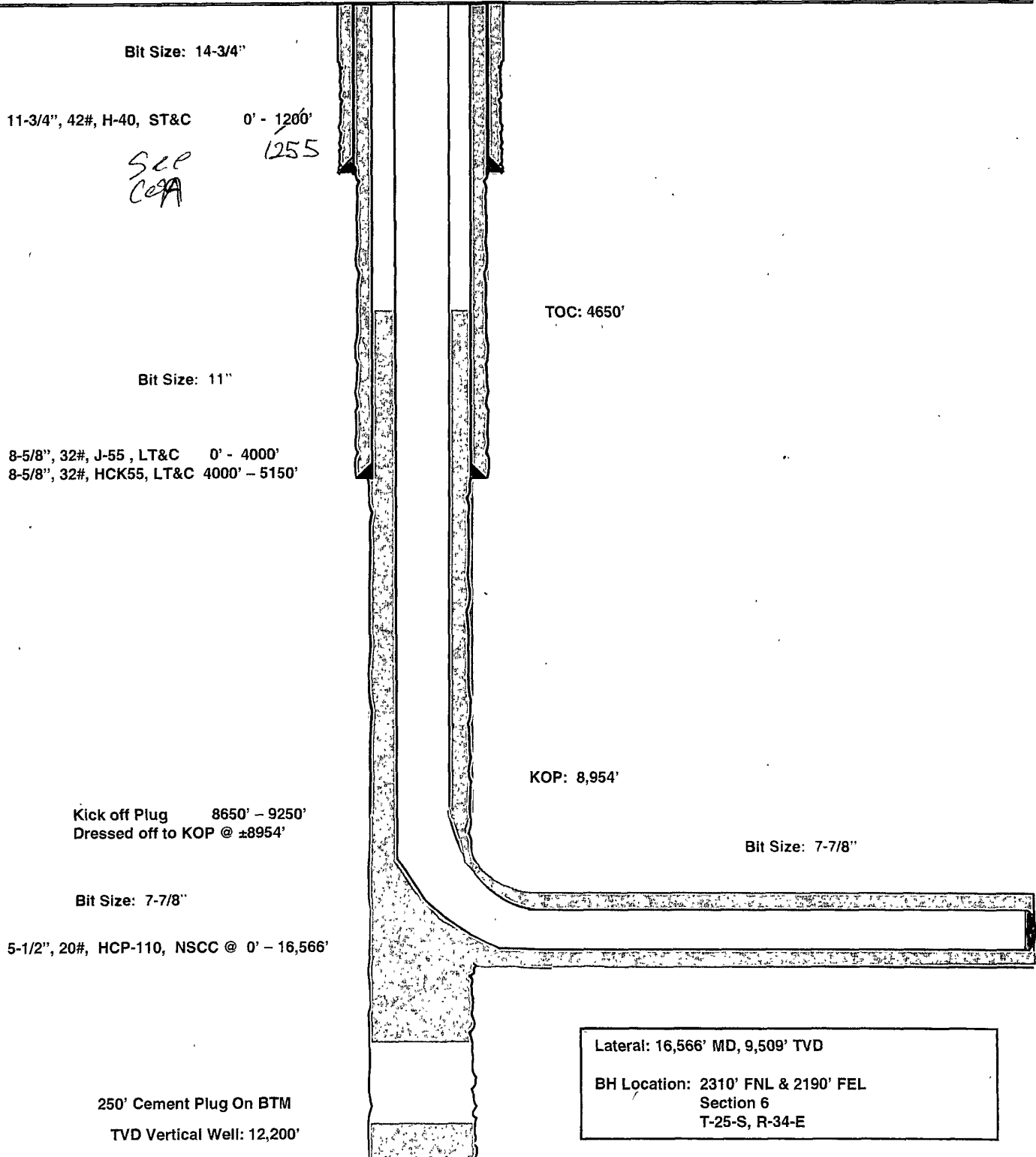
Dillon 31 Fed Com #2H
Pitchfork Ranch
Lea County, New Mexico

280' FNL
2370' FEL
Section 31
T-24-S, R-34-E

Proposed Wellbore

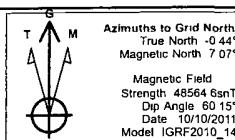
KB: 3,526.5'
GL: 3,496.5'

API: 30-025-



Project: Lea County, NM (Nad27)
Site: Dillon 31 Fed Com
Well: Dillon 31 Fed Com 2H
Wellbore: Wellbore #1
Plan: Plan #1 101011
Rig: Cactus Rig No. 123

PROJECT DETAILS	
Lea 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



PHOENIX
TECHNOLOGY SERVICES

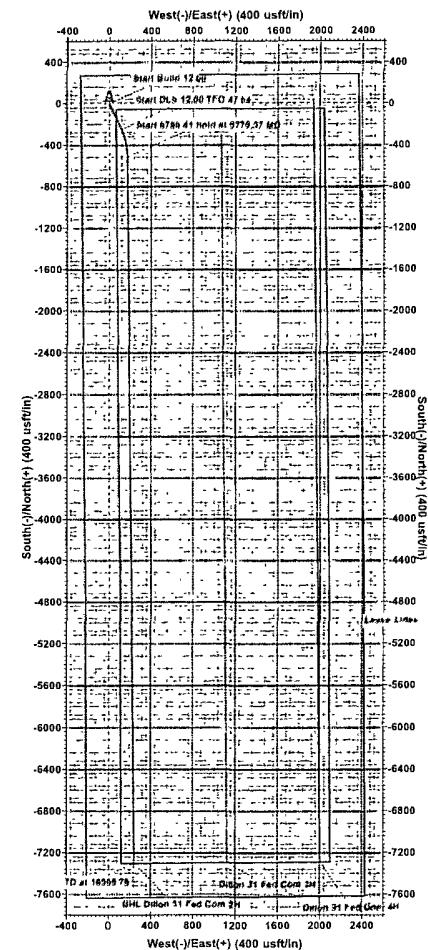
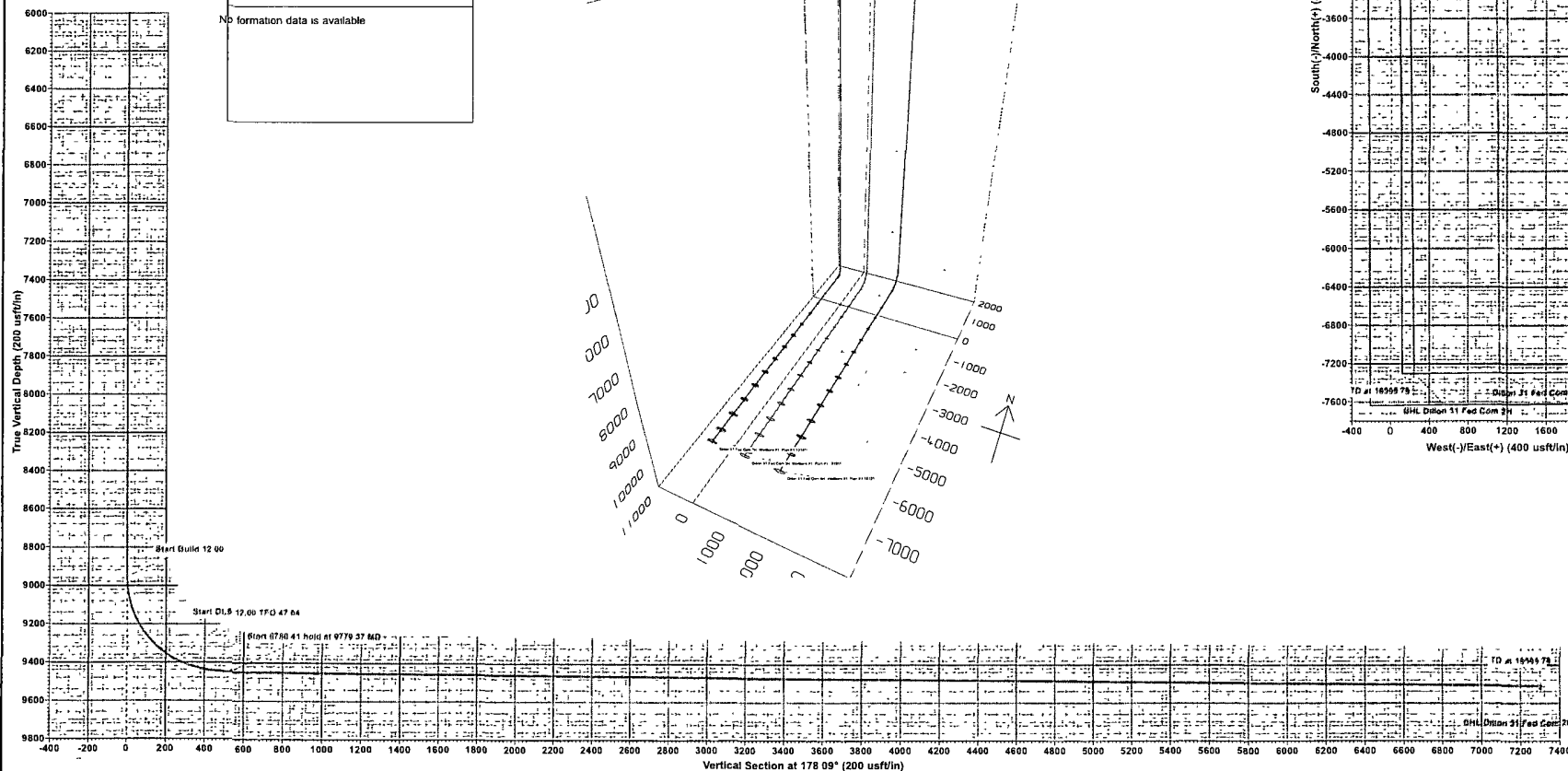
Ground Level	3496 50		
Northing	Easting	Latitude	Longitude
430328 70	755450 70	32° 10' 49 425 N	103° 30' 27 636 W

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
BHL Dillon 31 Fed Com 2H	9509.22	-7301.60	243.50	423027.10	755694.20	Point

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
0	0	0	0	0	0	0	0	0
8954 28	0	0	8954 28	0	0	0	0	0
9495 65	95	155	0	-249 85	116 51	12	0	0
9779 37	89	50	179 41	-515 80	173 93	12	47 64	521 32
16565 78	89	50	179 41	-515 80	173 93	12	0	0

TVD	MD	Annotation
8954 28	8954 28	Start Build 12 00
9387 01	9495 95	Start DLS 12 00 TFO 47 64
9450 00	9779 37	Start 6786 41 hold at 9779 37 MD
9509 21	16565 00	TD at 16565 78

No formation data is available



EOG Resources

Lea County, NM (Nad27)

Dillon 31 Fed Com

Dillon 31 Fed Com 2H

Wellbore #1

Plan: Plan #1 101011

EOG Resources

10 October, 2011



PHOENIX
TECHNOLOGY SERVICES

Phoenix Technology Services
EOG Resources



Company:	EOG Resources	Local Co-ordinate Reference:	Well Dillon 31 Fed Com 2H
Project:	Lea County, NM (Nad27)	TVD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Site:	Dillon 31 Fed Com	MD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Well:	Dillon 31 Fed Com 2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 101011	Database:	GCR DB v5000

Project	Lea 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	Dillon 31 Fed Com		
Site Position:		Northing:	430,328.70 usft
From:	Map	Easting:	755,450.70 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 49.425 N
		Longitude:	103° 30' 27.636 W
		Grid Convergence:	0.44 °

Well	Dillon 31 Fed Com 2H		
Well Position	+N/-S	0.00 usft	Northing: 430,328.70 usft
	+E/-W	0.00 usft	Easting: 755,450.70 usft
Position Uncertainty	0.00 usft		Latitude: 32° 10' 49.425 N
			Longitude: 103° 30' 27.636 W
		Wellhead Elevation:	usft
		Ground Level:	3,496.50 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010_14	10/10/2011	(°)
			7.51
			Dip Angle
			(°)
			60.15
			Field Strength
			(nT)
			48,565

Design	Plan #1 101011		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction: 178.09
			(°)

Survey Tool Program	Date 10/10/2011		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
0.00	16,565.50	Plan #1 101011 (Wellbore #1)	MWD
			Description: MWD - Standard

Phoenix Technology Services
EOG Resources



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Project:	Lea County, NM (Nad27)	TVD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Site:	Dillon 31 Fed Com	MD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Well:	Dillon 31 Fed Com 2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 101011	Database:	GCR DB v5000

Planned Survey											
MD (usft)	Inc (S)	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	-3,526.50	0.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
100.00	0.00	0.00	-3,426.50	100.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
200.00	0.00	0.00	-3,326.50	200.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
300.00	0.00	0.00	-3,226.50	300.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
400.00	0.00	0.00	-3,126.50	400.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
500.00	0.00	0.00	-3,026.50	500.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
600.00	0.00	0.00	-2,926.50	600.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
700.00	0.00	0.00	-2,826.50	700.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
800.00	0.00	0.00	-2,726.50	800.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
900.00	0.00	0.00	-2,626.50	900.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
1,000.00	0.00	0.00	-2,526.50	1,000.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
1,100.00	0.00	0.00	-2,426.50	1,100.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
1,200.00	0.00	0.00	-2,326.50	1,200.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
1,300.00	0.00	0.00	-2,226.50	1,300.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
1,400.00	0.00	0.00	-2,126.50	1,400.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
1,500.00	0.00	0.00	-2,026.50	1,500.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
1,600.00	0.00	0.00	-1,926.50	1,600.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
1,700.00	0.00	0.00	-1,826.50	1,700.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
1,800.00	0.00	0.00	-1,726.50	1,800.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
1,900.00	0.00	0.00	-1,626.50	1,900.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
2,000.00	0.00	0.00	-1,526.50	2,000.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
2,100.00	0.00	0.00	-1,426.50	2,100.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
2,200.00	0.00	0.00	-1,326.50	2,200.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
2,300.00	0.00	0.00	-1,226.50	2,300.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
2,400.00	0.00	0.00	-1,126.50	2,400.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
2,500.00	0.00	0.00	-1,026.50	2,500.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
2,600.00	0.00	0.00	-926.50	2,600.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	

Phoenix Technology Services
EOG Resources



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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 101011	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)	
2,700.00	0.00	0.00	-826.50	2,700.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
2,800.00	0.00	0.00	-726.50	2,800.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
2,900.00	0.00	0.00	-626.50	2,900.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
3,000.00	0.00	0.00	-526.50	3,000.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
3,100.00	0.00	0.00	-426.50	3,100.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
3,200.00	0.00	0.00	-326.50	3,200.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
3,300.00	0.00	0.00	-226.50	3,300.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
3,400.00	0.00	0.00	-126.50	3,400.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
3,500.00	0.00	0.00	-26.50	3,500.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
3,600.00	0.00	0.00	73.50	3,600.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
3,700.00	0.00	0.00	173.50	3,700.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
3,800.00	0.00	0.00	273.50	3,800.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
3,900.00	0.00	0.00	373.50	3,900.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
4,000.00	0.00	0.00	473.50	4,000.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
4,100.00	0.00	0.00	573.50	4,100.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
4,200.00	0.00	0.00	673.50	4,200.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
4,300.00	0.00	0.00	773.50	4,300.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
4,400.00	0.00	0.00	873.50	4,400.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
4,500.00	0.00	0.00	973.50	4,500.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
4,600.00	0.00	0.00	1,073.50	4,600.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
4,700.00	0.00	0.00	1,173.50	4,700.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
4,800.00	0.00	0.00	1,273.50	4,800.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
4,900.00	0.00	0.00	1,373.50	4,900.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
5,000.00	0.00	0.00	1,473.50	5,000.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
5,100.00	0.00	0.00	1,573.50	5,100.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
5,200.00	0.00	0.00	1,673.50	5,200.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
5,300.00	0.00	0.00	1,773.50	5,300.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	

Phoenix Technology Services
EOG Resources



Company:	EOG Resources	Local Co-ordinate Reference:	Well Dillon 31 Fed Com 2H
Project:	Lea County, NM (Nad27)	TVD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Site:	Dillon 31 Fed Com	MD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Well:	Dillon 31 Fed Com 2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 101011	Database:	GCR DB v5000

Planned Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)		
5,400.00	0.00	0 00	1,873.50	5,400.00	0 00	0 00	0.00	0.00	430,328.70	755,450.70		
5,500.00	0.00	0.00	1,973.50	5,500.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70		
5,600.00	0 00	0.00	2,073.50	5,600.00	0.00	0.00	0.00	0 00	430,328.70	755,450.70		
5,700.00	0.00	0.00	2,173.50	5,700.00	0.00	0.00	0.00	0 00	430,328.70	755,450.70		
5,800.00	0.00	0.00	2,273.50	5,800.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70		
5,900.00	0 00	0 00	2,373.50	5,900.00	0.00	0 00	0.00	0 00	430,328.70	755,450.70		
6,000.00	0.00	0.00	2,473.50	6,000.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70		
6,100.00	0 00	0.00	2,573.50	6,100.00	0 00	0.00	0.00	0.00	430,328.70	755,450.70		
6,200.00	0 00	0 00	2,673.50	6,200.00	0.00	0 00	0.00	0.00	430,328.70	755,450.70		
6,300.00	0.00	0.00	2,773.50	6,300.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70		
6,400.00	0 00	0.00	2,873.50	6,400.00	0 00	0.00	0.00	0.00	430,328.70	755,450.70		
6,500.00	0.00	0 00	2,973.50	6,500.00	0 00	0.00	0.00	0.00	430,328.70	755,450.70		
6,600.00	0.00	0.00	3,073.50	6,600.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70		
6,700.00	0.00	0.00	3,173.50	6,700.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70		
6,800.00	0.00	0.00	3,273.50	6,800.00	0.00	0 00	0.00	0.00	430,328.70	755,450.70		
6,900.00	0.00	0 00	3,373.50	6,900.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70		
7,000.00	0.00	0.00	3,473.50	7,000.00	0.00	0 00	0.00	0.00	430,328.70	755,450.70		
7,100.00	0.00	0.00	3,573.50	7,100.00	0 00	0.00	0.00	0.00	430,328.70	755,450.70		
7,200.00	0.00	0 00	3,673.50	7,200.00	0.00	0 00	0.00	0.00	430,328.70	755,450.70		
7,300.00	0.00	0.00	3,773.50	7,300.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70		
7,400.00	0.00	0 00	3,873.50	7,400.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70		
7,500.00	0.00	0.00	3,973.50	7,500.00	0 00	0 00	0.00	0.00	430,328.70	755,450.70		
7,600.00	0.00	0.00	4,073.50	7,600.00	0.00	0.00	0.00	0 00	430,328.70	755,450.70		
7,700.00	0 00	0.00	4,173.50	7,700.00	0 00	0.00	0.00	0 00	430,328.70	755,450.70		
7,800.00	0.00	0.00	4,273.50	7,800.00	0.00	0 00	0.00	0.00	430,328.70	755,450.70		
7,900.00	0.00	0.00	4,373.50	7,900.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70		
8,000.00	0.00	0 00	4,473.50	8,000.00	0 00	0.00	0.00	0 00	430,328.70	755,450.70		

Phoenix Technology Services
EOG Resources



Company:	EOG Resources	Local Co-ordinate Reference:	Well Dillon 31 Fed Com 2H
Project:	Lea County, NM (Nad27)	TVD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Site:	Dillon 31 Fed Com	MD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Well:	Dillon 31 Fed Com 2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 101011	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)	
8,100.00	0.00	0.00	4,573.50	8,100.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
8,200.00	0.00	0.00	4,673.50	8,200.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
8,300.00	0.00	0.00	4,773.50	8,300.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
8,400.00	0.00	0.00	4,873.50	8,400.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
8,500.00	0.00	0.00	4,973.50	8,500.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
8,600.00	0.00	0.00	5,073.50	8,600.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
8,700.00	0.00	0.00	5,173.50	8,700.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
8,800.00	0.00	0.00	5,273.50	8,800.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
8,900.00	0.00	0.00	5,373.50	8,900.00	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
8,954.28	0.00	0.00	5,427.78	8,954.28	0.00	0.00	0.00	0.00	430,328.70	755,450.70	
Start Build 12.00											
9,000.00	5.49	155.00	5,473.43	8,999.93	-1.98	0.92	2.01	12.00	430,326.72	755,451.62	
9,100.00	17.49	155.00	5,571.25	9,097.75	-20.00	9.32	20.30	12.00	430,308.70	755,460.02	
9,200.00	29.49	155.00	5,662.80	9,189.30	-56.05	26.14	56.89	12.00	430,272.65	755,476.84	
9,300.00	41.49	155.00	5,744.07	9,270.57	-108.57	50.63	110.19	12.00	430,220.13	755,501.33	
9,400.00	53.49	155.00	5,811.53	9,338.03	-175.25	81.72	177.88	12.00	430,153.45	755,532.42	
9,495.95	65.00	155.00	5,860.51	9,387.01	-249.85	116.51	253.59	12.00	430,078.85	755,567.21	
Start DLS 12.00 TFO 47.64											
9,500.00	65.33	155.40	5,862.21	9,388.71	-253.19	118.05	256.98	12.00	430,075.51	755,568.75	
9,600.00	73.70	164.58	5,897.24	9,423.74	-341.09	149.84	345.89	12.00	429,987.61	755,600.54	
9,700.00	82.44	172.99	5,917.92	9,444.42	-436.90	168.72	442.28	12.00	429,891.80	755,619.42	
9,779.37	89.50	179.41	5,923.50	9,450.00	-515.80	173.93	521.32	12.00	429,812.90	755,624.63	
Start 6786.41 hold at 9779.37 MD											
9,800.00	89.50	179.41	5,923.68	9,450.18	-536.43	174.15	541.94	0.00	429,792.27	755,624.85	
9,900.00	89.50	179.41	5,924.55	9,451.05	-636.43	175.17	641.91	0.00	429,692.27	755,625.87	
10,000.00	89.50	179.41	5,925.42	9,451.92	-736.42	176.20	741.88	0.00	429,592.28	755,626.90	
10,100.00	89.50	179.41	5,926.29	9,452.79	-836.41	177.22	841.85	0.00	429,492.29	755,627.92	

Phoenix Technology Services
EOG Resources



Company:	EOG Resources	Local Co-ordinate Reference:	Well Dillon 31 Fed Com 2H
Project:	Lea County, NM (Nad27)	TVD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Site:	Dillon 31 Fed Com	MD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Well:	Dillon 31 Fed Com 2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 101011	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)
10,200.00	89.50	179.41	5,927.17	9,453.67	-936.40	178.25	941.82	0.00	429,392.30	755,628.95
10,300.00	89.50	179.41	5,928.04	9,454.54	-1,036.39	179.27	1,041.79	0.00	429,292.31	755,629.97
10,400.00	89.50	179.41	5,928.91	9,455.41	-1,136.38	180.30	1,141.76	0.00	429,192.32	755,631.00
10,500.00	89.50	179.41	5,929.79	9,456.29	-1,236.37	181.32	1,241.73	0.00	429,092.33	755,632.02
10,600.00	89.50	179.41	5,930.66	9,457.16	-1,336.36	182.35	1,341.70	0.00	428,992.34	755,633.05
10,700.00	89.50	179.41	5,931.53	9,458.03	-1,436.35	183.37	1,441.67	0.00	428,892.35	755,634.07
10,800.00	89.50	179.41	5,932.40	9,458.90	-1,536.34	184.40	1,541.64	0.00	428,792.36	755,635.10
10,900.00	89.50	179.41	5,933.28	9,459.78	-1,636.33	185.42	1,641.61	0.00	428,692.37	755,636.12
11,000.00	89.50	179.41	5,934.15	9,460.65	-1,736.33	186.45	1,741.57	0.00	428,592.37	755,637.15
11,100.00	89.50	179.41	5,935.02	9,461.52	-1,836.32	187.47	1,841.54	0.00	428,492.38	755,638.17
11,200.00	89.50	179.41	5,935.89	9,462.39	-1,936.31	188.50	1,941.51	0.00	428,392.39	755,639.20
11,300.00	89.50	179.41	5,936.77	9,463.27	-2,036.30	189.52	2,041.48	0.00	428,292.40	755,640.22
11,400.00	89.50	179.41	5,937.64	9,464.14	-2,136.29	190.55	2,141.45	0.00	428,192.41	755,641.25
11,500.00	89.50	179.41	5,938.51	9,465.01	-2,236.28	191.57	2,241.42	0.00	428,092.42	755,642.27
11,600.00	89.50	179.41	5,939.38	9,465.88	-2,336.27	192.60	2,341.39	0.00	427,992.43	755,643.30
11,700.00	89.50	179.41	5,940.26	9,466.76	-2,436.26	193.62	2,441.36	0.00	427,892.44	755,644.32
11,800.00	89.50	179.41	5,941.13	9,467.63	-2,536.25	194.65	2,541.33	0.00	427,792.45	755,645.35
11,900.00	89.50	179.41	5,942.00	9,468.50	-2,636.24	195.67	2,641.30	0.00	427,692.46	755,646.37
12,000.00	89.50	179.41	5,942.88	9,469.38	-2,736.23	196.70	2,741.27	0.00	427,592.47	755,647.40
12,100.00	89.50	179.41	5,943.75	9,470.25	-2,836.23	197.72	2,841.24	0.00	427,492.47	755,648.42
12,200.00	89.50	179.41	5,944.62	9,471.12	-2,936.22	198.75	2,941.21	0.00	427,392.48	755,649.45
12,300.00	89.50	179.41	5,945.49	9,471.99	-3,036.21	199.77	3,041.18	0.00	427,292.49	755,650.47
12,400.00	89.50	179.41	5,946.37	9,472.87	-3,136.20	200.80	3,141.15	0.00	427,192.50	755,651.50
12,500.00	89.50	179.41	5,947.24	9,473.74	-3,236.19	201.82	3,241.12	0.00	427,092.51	755,652.52
12,600.00	89.50	179.41	5,948.11	9,474.61	-3,336.18	202.85	3,341.09	0.00	426,992.52	755,653.55
12,700.00	89.50	179.41	5,948.98	9,475.48	-3,436.17	203.87	3,441.06	0.00	426,892.53	755,654.57
12,800.00	89.50	179.41	5,949.86	9,476.36	-3,536.16	204.90	3,541.03	0.00	426,792.54	755,655.60

Phoenix Technology Services
EOG Resources



Company:	EOG Resources	Local Co-ordinate Reference:	Well Dillon 31 Fed Com 2H
Project:	Lea County, NM (Nad27)	TVD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Site:	Dillon 31 Fed Com	MD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Well:	Dillon 31 Fed Com 2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 101011	Database:	GCR DB v5000

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (%/100usft)	Northing (usft)	Easting (usft)
12,900.00	89.50	179.41	5,950.73	9,477.23	-3,636.15	205.92	3,641.00	0.00	426,692.55	755,656.62
13,000.00	89.50	179.41	5,951.60	9,478.10	-3,736.14	206.95	3,740.97	0.00	426,592.56	755,657.65
13,100.00	89.50	179.41	5,952.47	9,478.97	-3,836.14	207.97	3,840.94	0.00	426,492.56	755,658.67
13,200.00	89.50	179.41	5,953.35	9,479.85	-3,936.13	209.00	3,940.91	0.00	426,392.57	755,659.70
13,300.00	89.50	179.41	5,954.22	9,480.72	-4,036.12	210.02	4,040.87	0.00	426,292.58	755,660.72
13,400.00	89.50	179.41	5,955.09	9,481.59	-4,136.11	211.05	4,140.84	0.00	426,192.59	755,661.75
13,500.00	89.50	179.41	5,955.97	9,482.47	-4,236.10	212.07	4,240.81	0.00	426,092.60	755,662.77
13,600.00	89.50	179.41	5,956.84	9,483.34	-4,336.09	213.10	4,340.78	0.00	425,992.61	755,663.80
13,700.00	89.50	179.41	5,957.71	9,484.21	-4,436.08	214.12	4,440.75	0.00	425,892.62	755,664.82
13,800.00	89.50	179.41	5,958.58	9,485.08	-4,536.07	215.15	4,540.72	0.00	425,792.63	755,665.85
13,900.00	89.50	179.41	5,959.46	9,485.96	-4,636.06	216.17	4,640.69	0.00	425,692.64	755,666.87
14,000.00	89.50	179.41	5,960.33	9,486.83	-4,736.05	217.20	4,740.66	0.00	425,592.65	755,667.90
14,100.00	89.50	179.41	5,961.20	9,487.70	-4,836.04	218.22	4,840.63	0.00	425,492.66	755,668.92
14,200.00	89.50	179.41	5,962.07	9,488.57	-4,936.04	219.25	4,940.60	0.00	425,392.66	755,669.95
14,300.00	89.50	179.41	5,962.95	9,489.45	-5,036.03	220.27	5,040.57	0.00	425,292.67	755,670.97
14,400.00	89.50	179.41	5,963.82	9,490.32	-5,136.02	221.30	5,140.54	0.00	425,192.68	755,672.00
14,500.00	89.50	179.41	5,964.69	9,491.19	-5,236.01	222.32	5,240.51	0.00	425,092.69	755,673.02
14,600.00	89.50	179.41	5,965.56	9,492.06	-5,336.00	223.35	5,340.48	0.00	424,992.70	755,674.05
14,700.00	89.50	179.41	5,966.44	9,492.94	-5,435.99	224.37	5,440.45	0.00	424,892.71	755,675.07
14,800.00	89.50	179.41	5,967.31	9,493.81	-5,535.98	225.40	5,540.42	0.00	424,792.72	755,676.10
14,900.00	89.50	179.41	5,968.18	9,494.68	-5,635.97	226.42	5,640.39	0.00	424,692.73	755,677.12
15,000.00	89.50	179.41	5,969.05	9,495.55	-5,735.96	227.45	5,740.36	0.00	424,592.74	755,678.15
15,100.00	89.50	179.41	5,969.93	9,496.43	-5,835.95	228.47	5,840.33	0.00	424,492.75	755,679.17
15,200.00	89.50	179.41	5,970.80	9,497.30	-5,935.94	229.50	5,940.30	0.00	424,392.76	755,680.20
15,300.00	89.50	179.41	5,971.67	9,498.17	-6,035.94	230.52	6,040.27	0.00	424,292.76	755,681.22
15,400.00	89.50	179.41	5,972.55	9,499.05	-6,135.93	231.55	6,140.24	0.00	424,192.77	755,682.25
15,500.00	89.50	179.41	5,973.42	9,499.92	-6,235.92	232.58	6,240.20	0.00	424,092.78	755,683.28

Phoenix Technology Services
EOG Resources

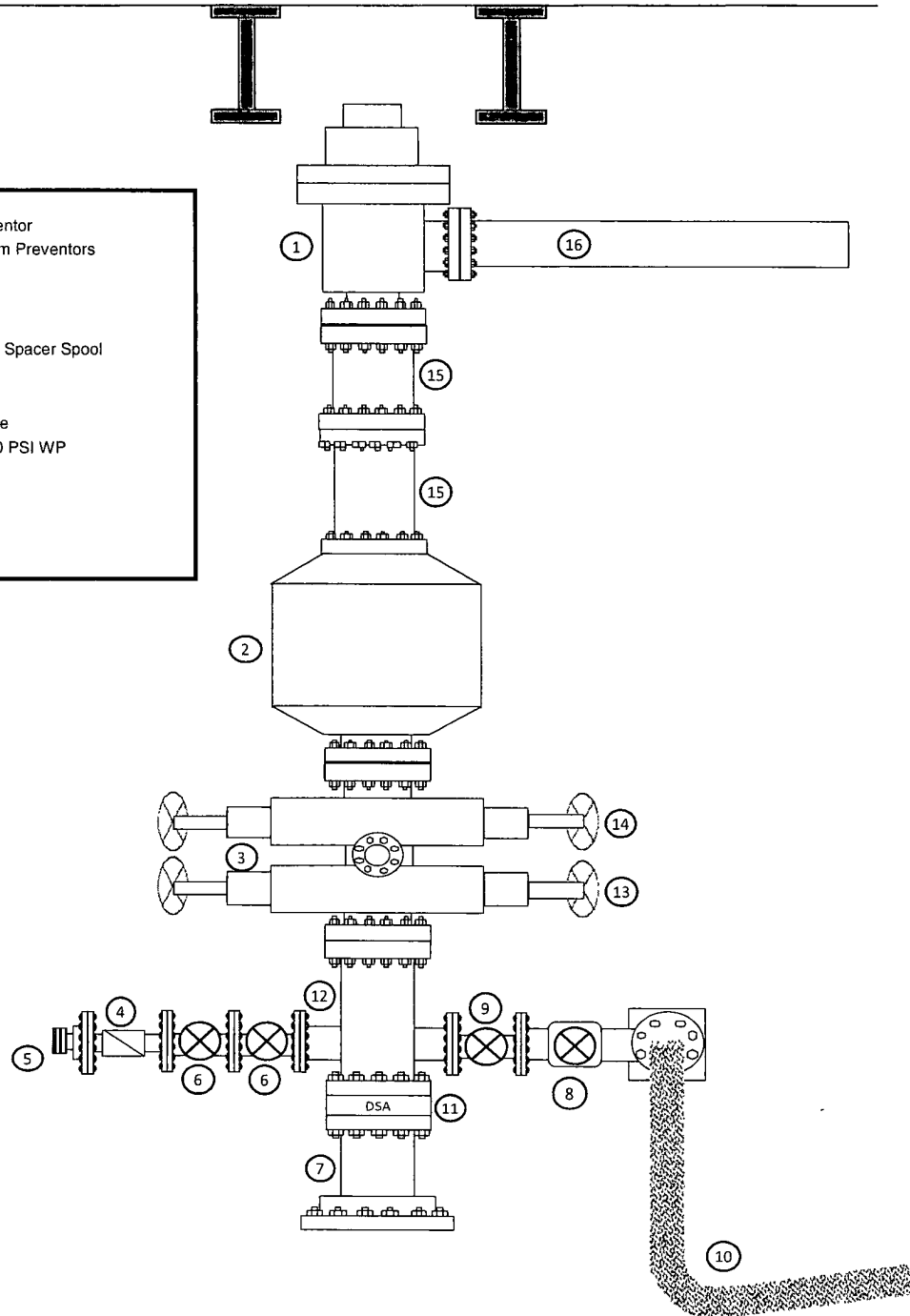


Company:	EOG Resources	Local Co-ordinate Reference:	Well Dillon 31 Fed Com 2H
Project:	Lea County, NM (Nad27)	TVD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Site:	Dillon 31 Fed Com	MD Reference:	WELL @ 3526.50usft (Original Well Elev + 30' KB)
Well:	Dillon 31 Fed Com 2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1 101011	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)	
15,600.00	89.50	179.41	5,974.29	9,500.79	-6,335.91	233.60	6,340.17	0.00	423,992.79	755,684.30	
15,700.00	89.50	179.41	5,975.16	9,501.66	-6,435.90	234.63	6,440.14	0.00	423,892.80	755,685.33	
15,800.00	89.50	179.41	5,976.04	9,502.54	-6,535.89	235.65	6,540.11	0.00	423,792.81	755,686.35	
15,900.00	89.50	179.41	5,976.91	9,503.41	-6,635.88	236.68	6,640.08	0.00	423,692.82	755,687.38	
16,000.00	89.50	179.41	5,977.78	9,504.28	-6,735.87	237.70	6,740.05	0.00	423,592.83	755,688.40	
16,100.00	89.50	179.41	5,978.65	9,505.15	-6,835.86	238.73	6,840.02	0.00	423,492.84	755,689.43	
16,200.00	89.50	179.41	5,979.53	9,506.03	-6,935.85	239.75	6,939.99	0.00	423,392.85	755,690.45	
16,300.00	89.50	179.41	5,980.40	9,506.90	-7,035.85	240.78	7,039.96	0.00	423,292.85	755,691.48	
16,400.00	89.50	179.41	5,981.27	9,507.77	-7,135.84	241.80	7,139.93	0.00	423,192.86	755,692.50	
16,500.00	89.50	179.41	5,982.14	9,508.64	-7,235.83	242.83	7,239.90	0.00	423,092.87	755,693.53	
16,565.78	89.50	179.41	5,982.72	9,509.22	-7,301.60	243.50	7,305.66	0.00	423,027.10	755,694.20	
TD at 16565.78											

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
8,954.28	8,954.28	0.00	0.00	Start Build 12.00
9,495.95	9,387.01	-249.85	116.51	Start DLS 12.00 TFO 47.64
9,779.37	9,450.00	-515.80	173.93	Start 6786.41 hold at 9779.37 MD
16,565.78	9,509.22	-7,301.60	243.50	TD at 16565.78

Checked By: _____	Approved By: _____	Date: _____
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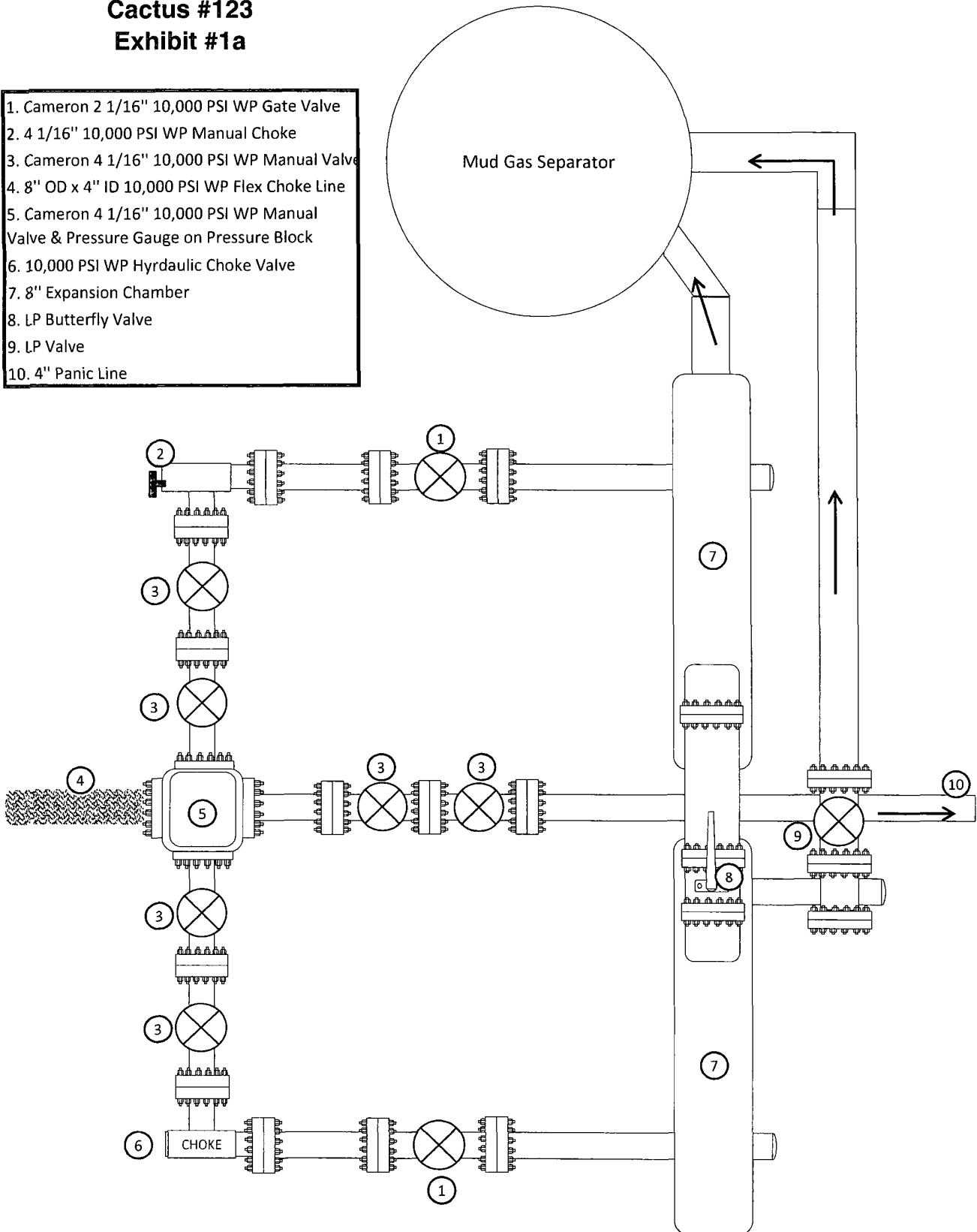
EOG RESOURCES, INC.
DILLON 31 FED COM #2H

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
Cactus #123
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 Hyrdraulic Choke Valve
7. 8" Expansion Chamber
8. LP Butterfly Valve
9. LP Valve
10. 4" Panic Line



Manufacturer: Midwest Hose & Specialty

Serial Number: SN#90067

Length: 35'

Size: OD = 8" ID = 4"

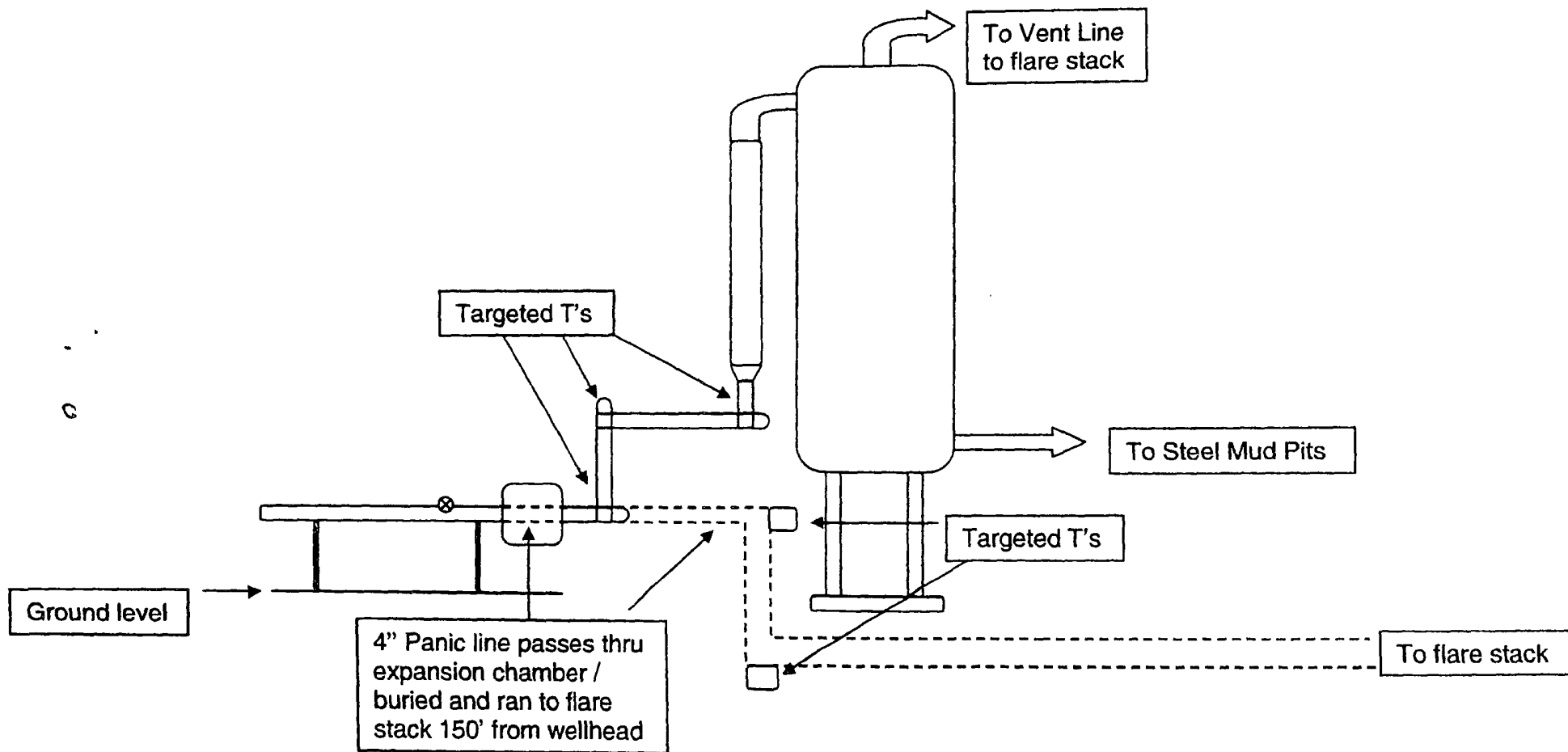
Ends: Flanges Size: 4-1/16"

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

M I D W E S T
HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT			
Customer: CACTUS		P.O. Number: RIG #123 Asset # M10761	
HOSE SPECIFICATIONS			
Type: CHOKER LINE		Length: 35'	
I.D. 4" INCHES		O.D. 8" INCHES	
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI		BURST PRESSURE PSI
COUPLINGS			
Type of End Fitting 4 1/16 10K FLANGE			
Type of Coupling: SWEDGED		MANUFACTURED BY MIDWEST HOSE & SPECIALTY	
PROCEDURE			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
TIME HELD AT TEST PRESSURE 1 MIN.		ACTUAL BURST PRESSURE: 0 PSI	
COMMENTS: SN#90087 M10761 Hose is covered with stainless steel armour cover and wrapped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes			
Date: 6/6/2011	Tested By: BOBBY FINK		Approved: MENDI JACKSON

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



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

