TH 09-494

Form 3160-3
(February 2005)

OCD Artesia

0770

AUG 12 2009

ATS-09-494 KM

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.	**LC051102a(SL); LC-060906(BL)**
6. If Indian, Allotee or Tribe Name	
7 If Unit or CA Agreement, Name and No	
8 Lease Name and Well No.	**SAND TANK 1 FED COM 4H**
9 API Well No.	**30-015-** 37214
10. Field and Pool, or Exploratory	**Sand Tank; Bone Spring**
11 Sec., T R. M. or Blk. and Survey or Area	**Section 1, T18S-R29E, N.M.P.M.**
12 County or Parish	**Eddy**
13 State	**NM**

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

2. Name of Operator: **EOG Resources, Inc.**

3a. Address: **P.O. Box 2267 Midland, TX 79702**

3b. Phone No. *(include area code)*: **432-686-3642**

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface: **2250' FNL & 330' FEL (U/L H)**
At proposed prod zone: **2200' FNL & 330' FWL (U/L E)**

14. Distance in miles and direction from nearest town or post office*: **Approx 4 miles SW from Loco Hills, NM**

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	**330'**	16 No. of acres in lease: **160**	17. Spacing Unit dedicated to this well: **S/2 N/2**
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**600'**	19 Proposed Depth: Pilot Hole 8300 **7425' TVD; 12023' TMD**	20. BLM/BIA Bond No. on file: **NM2308**
21. Elevations (Show whether DF, KDB, RT, GL, etc.): **GL 3538.8'**		22. Approximate date work will start*: **09/15/2009**	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: Donny G. Glanton	Name *(Printed/Typed)*: **Donny G. Glanton**	Date: **07/07/2009**

Title: **Sr. Lease Operations ROW Representative**

Approved by *(Signature)*: /s/ Don Peterson	Name *(Printed/Typed)*: /s/ Don Peterson	Date: AUG - 8 2009
Title: FIELD MANAGER	Office: CARLSBAD FIELD OFFICE	

FOR

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.

*(Instructions on page 2)

Roswell Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015- 37214	96836	Sand Tank; Bone Spring

Property Code	Property Name	Well Number
19656	SAND TANK 1 FED. COM	4H

OGRID No.	Operator Name	Elevation
7377	EOG RESOURCES, INC.	3538.8'

Surface Location

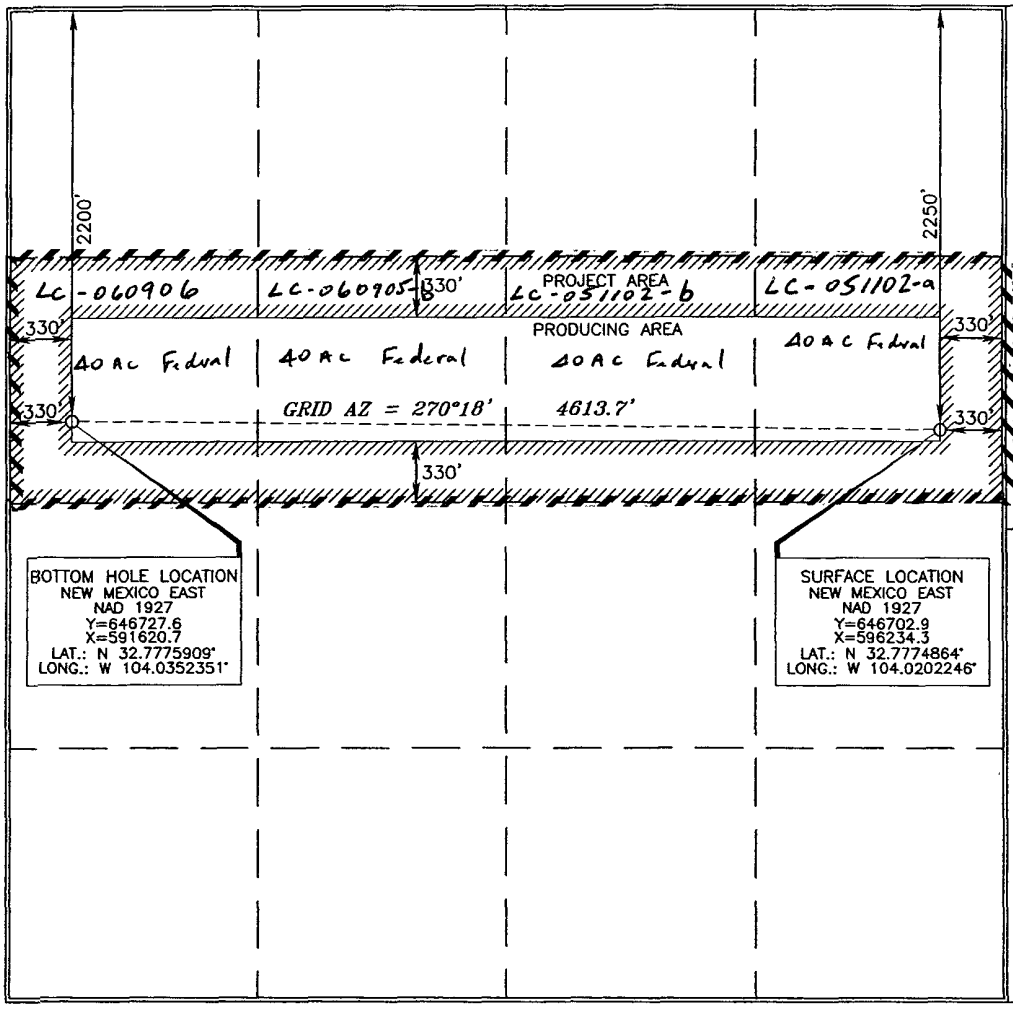
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	1	18 SOUTH	29 EAST, N.M.P.M.		2250'	NORTH	330'	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	1	18 SOUTH	29 EAST, N.M.P.M.		2200'	NORTH	330'	WEST	EDDY

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 division.



OPERATOR CERTIFICATION

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

Donny G. Glanton 7/7/09
Signature Date

Donny G. Glanton
Printed Name

SURVEYOR CERTIFICATION

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

JUNE 9, 2009
Date of Survey

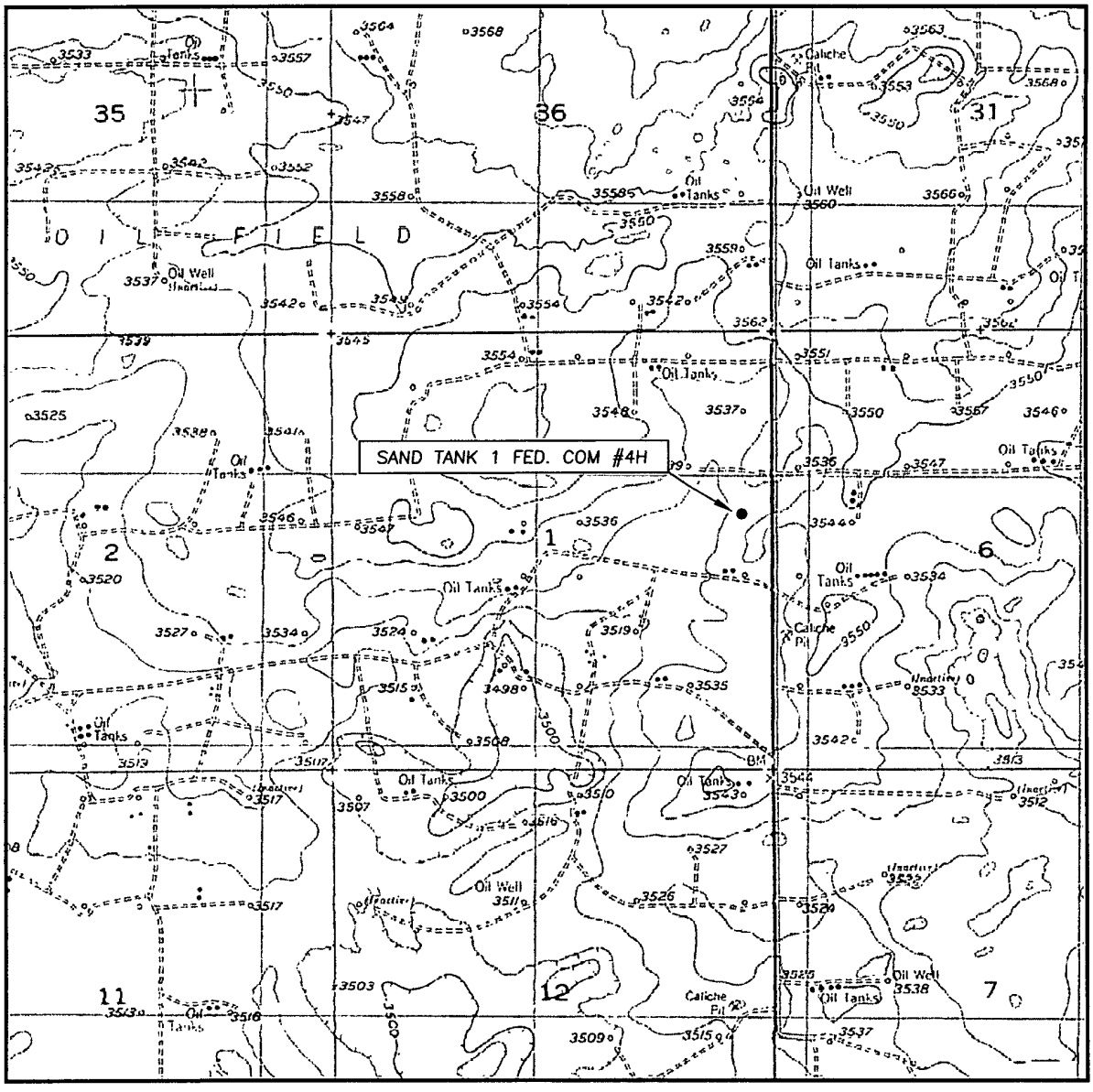
Signature and Seal of Professional Surveyor:

NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate Number 15079 6/17/2009

WO# 090609WL-c (KA)

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'

SEC. 1 TWP. 18-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 2250' FNL & 330' FEL

ELEVATION 3538.8'

OPERATOR EOG RESOURCES INC.

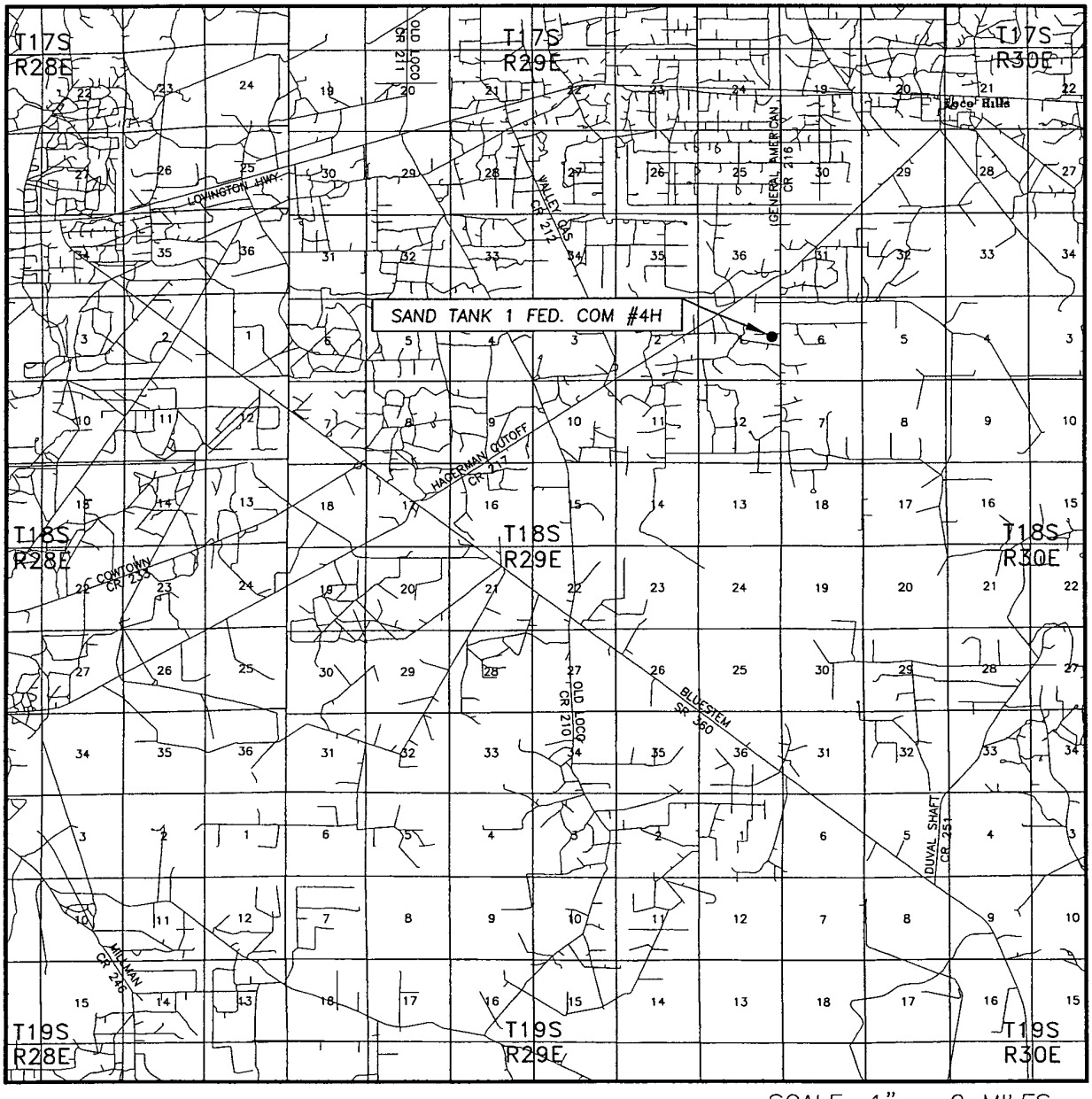
LEASE SAND TANK 1 FED. COM #4H

U.S.G.S. TOPOGRAPHIC MAP
RED LAKE SE, N.M.

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 1 TWP. 18-S RGE. 29-E
SURVEY N.M.P.M.
COUNTY EDDY
DESCRIPTION 2250' FNL & 330' FEL
ELEVATION 3538.8'
OPERATOR EOG RESOURCES INC.
LEASE SAND TANK 1 FED. COM #4H

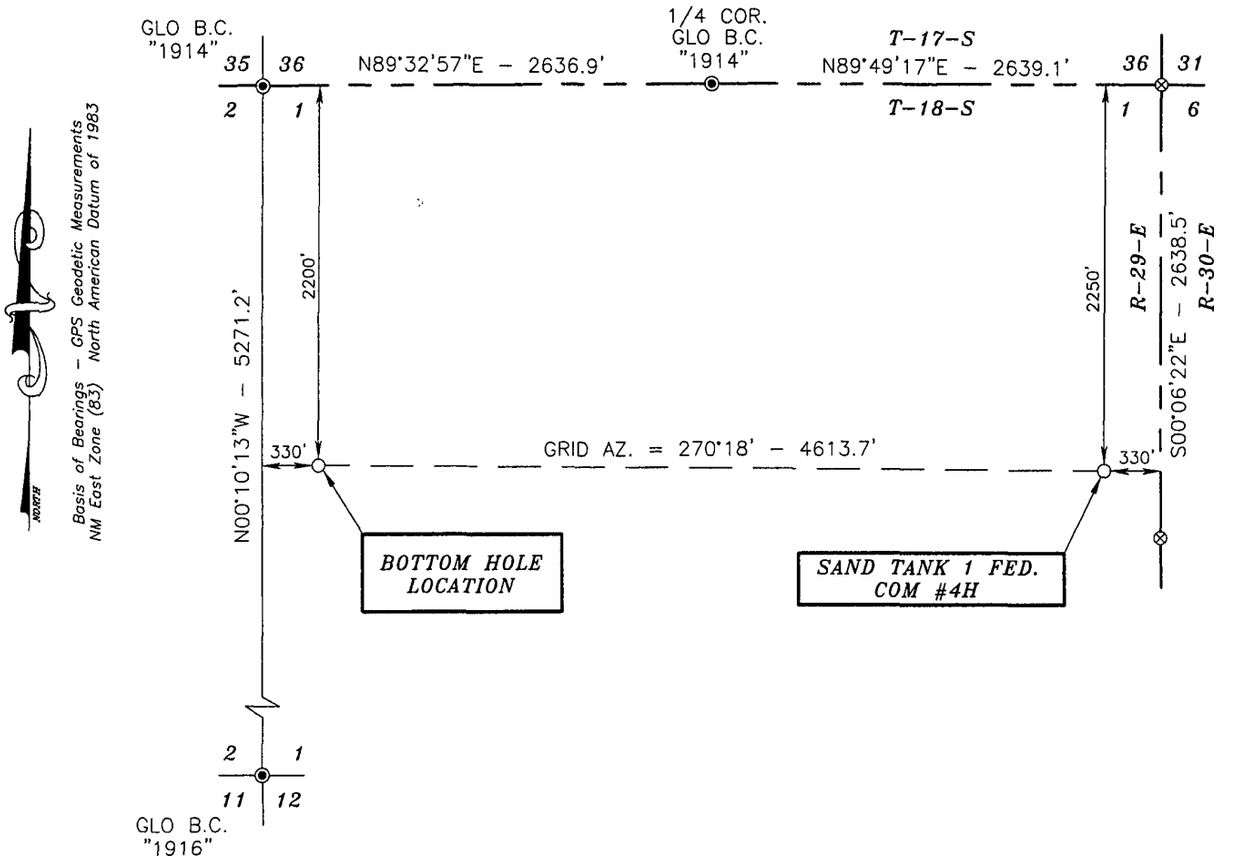
Asel Surveying

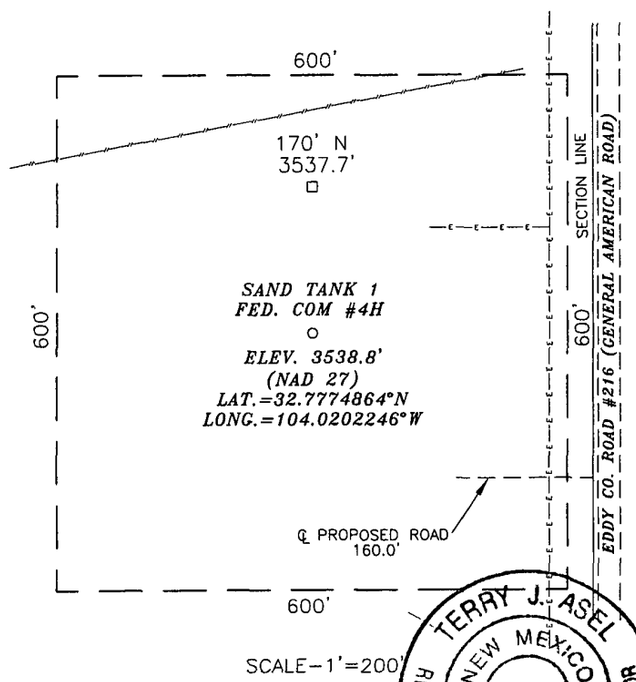
P.O. BOX 393 – 310 W. TAYLOR
HOBBS, NEW MEXICO – 575-393-9146

DIRECTIONS BEGINNING AT THE INTERSECTION OF U.S. HWY. #82 AND EDDY CO. ROAD #217 IN LOCO HILLS, GO SOUTHWEST ON COUNTY ROAD #217 (HAGERMAN CUTOFF ROAD) FOR 3.0 MILES, GO SOUTH ON COUNTY ROAD #216 (GENERAL AMERICAN ROAD) FOR 0.7 MILES, TURN RIGHT ON PROPOSED ROAD AND GO WEST FOR 160.0 FEET TO LOCATION.

SECTION 1, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY NEW MEXICO

Exhibit 2a





DRIVING DIRECTIONS:
BEGINNING AT THE INTERSECTION OF U.S. HWY. #82 AND EDDY COUNTY ROAD #217 IN LOCO HILLS, GO SOUTHWEST ON COUNTY ROAD #217 (HAGERMAN CUTOFF ROAD) FOR 3.0 MILES, GO SOUTH ON COUNTY ROAD #216 (GENERAL AMERICAN ROAD) FOR 0.7 MILES, TURN RIGHT ON PROPOSED ROAD AND GO WEST FOR 160.0 FEET TO LOCATION.

LEGEND

◉ - DENOTES FOUND MONUMENT AS NOTED
⊗ - DENOTES CALCULATED CORNER

1000' 0 1000' 2000' FEET
SCALE: 1"=1000'

TERRY J. ASEL NEW MEXICO 15079 REGISTERED PROFESSIONAL LAND SURVEYOR

SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS.

Terry J. Asel 6/17/2009
Terry J. Asel N.M. R.P.S. No. 15079

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

EOG RESOURCES, INC.

SAND TANK 1 FED. COM #4H LOCATED AT 2250' FNL & 330' FEL IN SECTION 1, TOWNSHIP 18 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 06/09/09	Sheet 1 of 1 Sheets	
W.O. Number: 090609WL-c	Drawn By: KA	Rev:
Date: 06/12/09	090609WL-c	Scale:1"=1000'

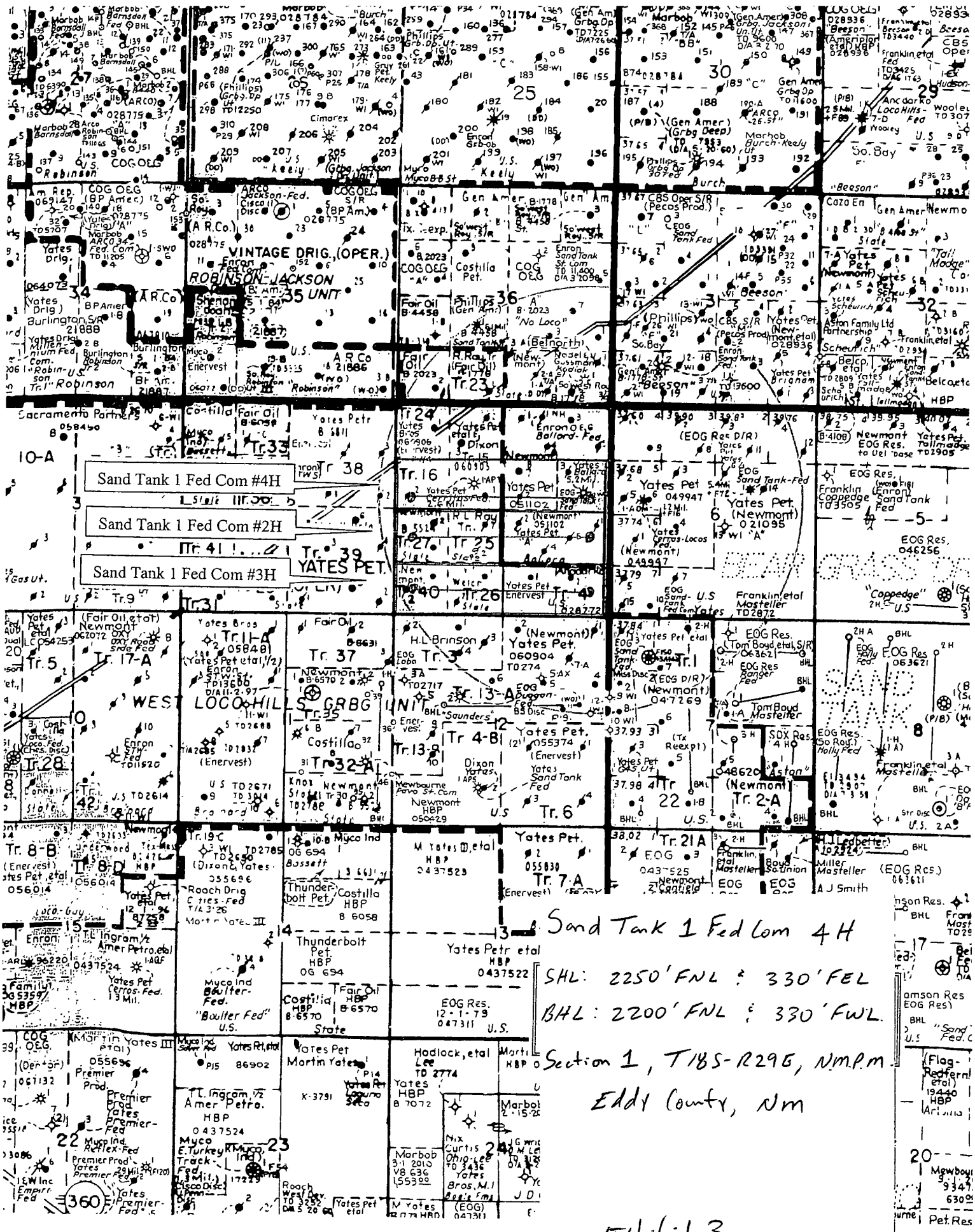

Sand Tank 1 Fed Com #4H
Sand Tank 1 Fed Com #2H
Sand Tank 1 Fed Com #3H
VINTAGE DRIG. (OPER.)
ROBINSON-JACKSON UNIT
YATES PET.
WEST LOCO HILLS GRBG UNIT
Sand Tank 1 Fed Com 4H
SHL: 2250' FNL & 330' FEL
BHL: 2200' FNL & 330' FWL
Section 1, T18S-R29E, NMPM
Eddy County, NM

Exhibit 3

Permit Information:

Well Name: Sand Tank 1 Fed Com #4H

Location:
SL 2250' FNL & 330' FEL, Section 1, T-18-S, R-29-E, Eddy Co., N.M.
BHL 2200' FNL & 330' FWL, Section 1, T-18-S, R-29-E, Eddy Co., N.M.

Casing Program:

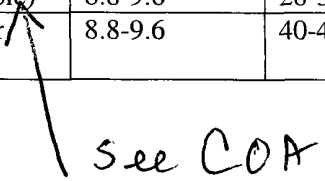
Casing	Setting Depth	Hole Size	Casing Size	Casing Weight	Casing Grade	Desired TOC
Surface	350'	14-3/4"	11-3/4"	42#	H-40	Surface
Intermediate	2,900'	11"	8-5/8"	32#	J-55	Surface
Production	12,023'	7-7/8"	5 ½"	17#	N-80	2,300'

Cement Program:

Depth	No. Sacks	Slurries:
350'	500	Premium Plus C + 0.005 pps Static Free + 2% CaCl2 + 0.25 pps CelloFlake + 0.005 gps FP-6L
2,900'	650	Lead: Class C Cement + 0.005 lbs/sack Static Free + 0.25 lbs/sack Cello Flake + 0.005 gps FP-6L+ 2% bwoc Sodium Metasilicate + 1.25% bwoc R-3
	200	Tail: Class C Cement + 0.005 lbs/sack Static Free + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.005 gps FP-6L
12,023'	750	Lead: (50:50) Poz (Fly Ash):Class C Cement + 0.005 lbs/sack Static Free + 0.25 lbs/sack CelloFlake + 0.005 gps FP-6L + 10% bwoc Bentonite + 0.5% bwoc FL-52A + 0.3% bwoc ASA-301 + 0.15% bwoc Sodium Metasilicate
	1000	Tail: (50:50) Poz (Fly Ash):Class H Cement + 0.005 lbs/sack Static Free + 5% bwow SodiumChloride + 0.2% bwoc CD-32 + 0.005 gps FP-6L + 2% bwoc Bentonite + 0.65% bwoc FL-52A

Mud Program:

Depth (MD)	Type	Weight (ppg)	Viscosity	Water Loss
0 – 350'	Fresh - Gel	8.6-8.8	28-34	N/c
350' – 2,900'	Brine	10.0-10.2	28-34	N/c
2,900' – 7,000'	Fresh Water	8.4 – 8.6	28-34	N/c
7,000' – 8,300'	Cut Brine (Pilot Hole)	8.8-9.6	28-34	N/c
KOP – 12,023'	Cut Brine/ Polymer (Lateral)	8.8-9.6	40-45	10-25



EOG RESOURCES, INC.
SAND TANK 1 FED COM 4H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	260'
Grayburg	2,650'
2nd Bone Spring F Sand	7,560'
2nd Bone Spring F Sand Target	7,610'

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

Upper Permian Sands	0- 250'	Fresh Water
Grayburg/ San Andres	2,650'	Oil
2nd Bone Spring F Sand	7,560'	Oil
2nd Bone Spring F Sand Target	7,610'	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 350' and circulating cement back to surface.

4. CASING PROGRAM - NEW

Hole	Interval	OD Csg	Weight	Grade	Conn.	Collapse Design Factor	Burst Design Factor	Tension Design Factor
14.750"	0-350'	11.75"	42#	H-40	ST&C	2.08	1.32	1.81
11.00"	0-2,900'	8.625"	32#	J-55	LT&C	1.68	1.25	1.64
7.875"	0-12,023'	5.5"	17#	N-80	LT&C	1.62	1.25	1.60

Cementing Program:

11.75" Surface Casing: Cement to surface, 500 sx Premium Plus C + 0.005 pps Static Free + 2% CaCl2 + 0.25 pps CelloFlake + 0.005 gps FP-6L, 14.8 ppg, 1.35 yield

8.625" Intermediate Casing: Cement to surface, Lead: 650 sx Class C Cement + 0.005 lbs/sack Static Free + 0.25 lbs/sack Cello Flake + 0.005 gps FP-6L+ 2% bwoc Sodium Metasilicate + 1.25% bwoc R-3, 12.7 ppg, 2.01 yield
Tail: 200 sx Class C Cement + 0.005 lbs/sack Static Free + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.005 gps FP-6L, 14.8 ppg, 1.34 yield

5.50" Production Casing:	Cement to 2,300', Lead: 750 sx (50:50) Poz (Fly Ash): Class C Cement + 0.005 lbs/sack Static Free + 0.25 lbs/sack Cello Flake + 0.005 gps FP-6l + 10% bwoc Bentonite + 0.5% bwoc FL-52A + 0.3% bwoc ASA-301 + 0.15% bwoc Sodium Metasilicate, 11.8 ppg, 2.30 yield Tail: 900 sx 50:50 Poz (Fly Ash):Class H Cement + 0.005 lbs/sack Static Free + 5% bwoc Sodium Chloride + 0.2% bwoc CD-32 + 0.005 gps FP-6L + 2% bwoc Bentonite + 0.65% bwoc FL-52A, 14.2 ppg, 1.30 yield

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

(SEE EXHIBIT #1)

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

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.

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

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

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

Depth	Type	Wt (PPG)	Viscosity (sec)	Waterloss (cc)
0-350'	Fresh – Gel	8.6-8.8	28-34	N/c
350'-2,900'	Brine	10.0-10.2	28-34	N/c
2,900'–7,000'	Fresh water	8.4-8.6	28-34	N/c
7,000'–7,400'	Cut Brine	8.8-9.6	28-34	N/c
7,400'–8,300'	Cut Brine	8.8-9.6	28-34	N/c
KOP -12,023'	Polymer (Lateral)	8.8-9.6	35-45	10-25

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

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

(A) A kelly cock will be kept in the drill string at all times.

(B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

8. LOGGING, TESTING AND CORING PROGRAM:

Open-hole logging is anticipated in the 7-7/8" production hole. 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.
HR Laterolog Array	From TD to previous casing shoe.
FMI	Possible in the production hole

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

The estimated bottom hole temperature (BHT) at TD is 165 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 3500 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.

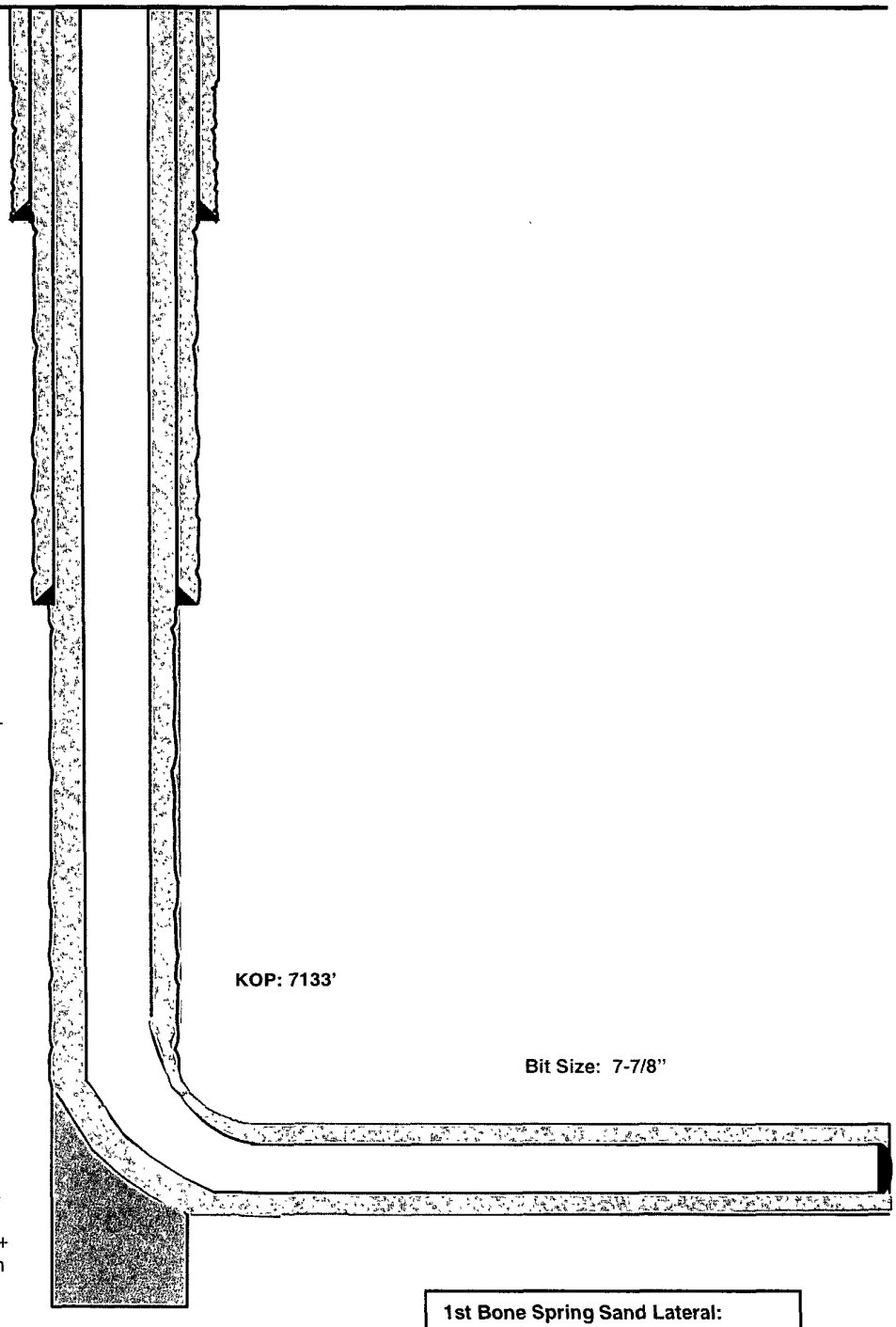
Sand Tank 1 Fed Com #4H
Sand Tank
Eddy County, New Mexico

2250' FNL
330' FEL
Section 1
T-18-S, R-29-E

Proposed Wellbore

API: 30-015-****

KB: 3,538.8'
GL: 3,557.8'



Bit Size: 14-3/4"

11-3/4", 42#, H-40, LT&C 0' - 350'
w/ 500 sx Premium Plus C + 0.005 pps Static Free + 2% CaCl2 + 0.25 pps CelloFlake + 0.005 gps FP-6L

Bit Size: 11"

8-5/8", 32#, J-55, LT&C 0' - 2900'
w/ 650 sx Class C Cement + 0.005 lbs/sack Static Free + 0.25 lbs/sack Cello Flake + 0.005 gps FP-6L+ 2% bwoc Sodium Metasilicate + 1.25% bwoc R-3 and
200 sx Class C Cement + 0.005 lbs/sack Static Free + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.005 gps FP-6L

KOP: 7133'

Bit Size: 7-7/8"

Bit Size: 7-7/8"

5-1/2", 17#, N-80, LT&C @ 12,023'
w/ 750 sx (50:50) Poz (Fly Ash):Class C Cement + 0.005 lbs/sack Static Free + 0.25 lbs/sack CelloFlake + 0.005 gps FP-6L + 10% bwoc Bentonite + 0.5% bwoc FL-52A + 0.3% bwoc ASA-301 + 0.15% bwoc Sodium Metasilicate and
1000 sx (50:50) Poz (Fly Ash):Class H Cement + 0.005 lbs/sack Static Free + 5% bwow SodiumChloride + 0.2% bwoc CD-32 + 0.005 gps FP-6L + 2% bwoc Bentonite + 0.65% bwoc FL-52A

Pilot Hole
TD 8300'

1st Bone Spring Sand Lateral:
12,023' MD, 7425' TVD

BH Location: 2200' FNL & 330' FWL
Section 1
T-18-S, R-29-E

eog resources

EOG Resources, Inc.

Eddy County
Sand Tank 1 Fed Com
#4H
OH

Plan: Plan #1

Pathfinder X & Y Planning Report

29 June, 2009

PATHFINDER

Company:	EOG Resources, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County	**TVD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Site:	Sand Tank 1 Fed Com	**MD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Project Eddy County

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 Sand Tank 1 Fed Com

Site Position:		**Northing:**	645,298.300 ft	**Latitude:**	32° 46' 25.050 N
From:	Map	**Easting:**	596,324.000 ft	**Longitude:**	104° 1' 11 807 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	"	**Grid Convergence:**	0.17 °

Well #4H

Well Position	**+N/-S**	0 00 ft	**Northing:**	646,702.900 ft	**Latitude:**	32° 46' 38.951 N
	+E/-W	0.00 ft	**Easting:**	596,234.300 ft	**Longitude:**	104° 1' 12.809 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	3,538.80 ft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	06/29/2009	8.06	60.68	49,123

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	0.00	0.00	0.00	270.31

Survey Tool Program **Date** 06/29/2009

From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.00	11,974.63	Plan #1 (OH)	MWD	MWD - Standard

Company:	EOG Resources, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County	**TVD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Site:	Sand Tank 1 Fed Com	**MD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
0.00	0.00	0.00	0.00	-3,557.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
100.00	0.00	0.00	100.00	-3,457.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
200.00	0.00	0.00	200.00	-3,357.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
300.00	0.00	0.00	300.00	-3,257.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
400.00	0.00	0.00	400.00	-3,157.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
500.00	0.00	0.00	500.00	-3,057.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
600.00	0.00	0.00	600.00	-2,957.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
700.00	0.00	0.00	700.00	-2,857.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
800.00	0.00	0.00	800.00	-2,757.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
900.00	0.00	0.00	900.00	-2,657.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
1,000.00	0.00	0.00	1,000.00	-2,557.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
1,100.00	0.00	0.00	1,100.00	-2,457.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
1,200.00	0.00	0.00	1,200.00	-2,357.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
1,300.00	0.00	0.00	1,300.00	-2,257.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
1,400.00	0.00	0.00	1,400.00	-2,157.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
1,500.00	0.00	0.00	1,500.00	-2,057.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
1,600.00	0.00	0.00	1,600.00	-1,957.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
1,700.00	0.00	0.00	1,700.00	-1,857.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
1,800.00	0.00	0.00	1,800.00	-1,757.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
1,900.00	0.00	0.00	1,900.00	-1,657.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
2,000.00	0.00	0.00	2,000.00	-1,557.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
2,100.00	0.00	0.00	2,100.00	-1,457.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
2,200.00	0.00	0.00	2,200.00	-1,357.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
2,300.00	0.00	0.00	2,300.00	-1,257.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
2,400.00	0.00	0.00	2,400.00	-1,157.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
2,500.00	0.00	0.00	2,500.00	-1,057.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
2,600.00	0.00	0.00	2,600.00	-957.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30

Company:	EOG Resources, Inc.	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County	TVD Reference:	WELL @ 3557.80ft (19' KB Correction)
Site:	Sand Tank 1 Fed Com	MD Reference:	WELL @ 3557.80ft (19' KB Correction)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
2,700.00	0.00	0.00	2,700.00	-857.80	0.00	0 00	0 00	0.00	646,702.90	596,234.30
2,800.00	0 00	0.00	2,800.00	-757.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
2,900.00	0.00	0.00	2,900.00	-657.80	0 00	0.00	0.00	0.00	646,702.90	596,234.30
3,000.00	0.00	0.00	3,000.00	-557 80	0.00	0 00	0.00	0.00	646,702.90	596,234.30
3,100 00	0.00	0.00	3,100.00	-457.80	0.00	0 00	0.00	0.00	646,702.90	596,234.30
3,200.00	0.00	0 00	3,200.00	-357.80	0 00	0.00	0.00	0 00	646,702.90	596,234.30
3,300.00	0 00	0 00	3,300.00	-257.80	0.00	0.00	0.00	0.00	646,702.90	596,234 30
3,400.00	0.00	0.00	3,400.00	-157.80	0.00	0.00	0.00	0.00	646,702 90	596,234.30
3,500.00	0 00	0.00	3,500.00	-57.80	0.00	0.00	0.00	0.00	646,702.90	596,234.30
3,600.00	0.00	0.00	3,600.00	42.20	0.00	0 00	0.00	0.00	646,702.90	596,234.30
3,700.00	0.00	0.00	3,700.00	142.20	0.00	0 00	0.00	0.00	646,702.90	596,234.30
3,800.00	0.00	0.00	3,800.00	242.20	0 00	0.00	0.00	0.00	646,702.90	596,234.30
3,900.00	0.00	0.00	3,900.00	342.20	0.00	0.00	0.00	0 00	646,702.90	596,234.30
4,000 00	0.00	0 00	4,000.00	442.20	0.00	0 00	0.00	0 00	646,702.90	596,234.30
4,100.00	0 00	0.00	4,100.00	542.20	0.00	0.00	0.00	0.00	646,702.90	596,234.30
4,200.00	0.00	0.00	4,200.00	642.20	0.00	0.00	0.00	0 00	646,702.90	596,234 30
4,300.00	0 00	0.00	4,300 00	742.20	0.00	0 00	0.00	0.00	646,702 90	596,234.30
4,400 00	0.00	0.00	4,400.00	842 20	0.00	0.00	0.00	0 00	646,702.90	596,234.30
4,500.00	0 00	0.00	4,500.00	942.20	0.00	0.00	0 00	0.00	646,702.90	596,234 30
4,600.00	0.00	0 00	4,600.00	1,042.20	0.00	0.00	0.00	0 00	646,702.90	596,234.30
4,700.00	0 00	0.00	4,700 00	1,142.20	0.00	0 00	0.00	0.00	646,702.90	596,234.30
4,800.00	0.00	0 00	4,800.00	1,242.20	0.00	0.00	0.00	0.00	646,702.90	596,234 30
4,900.00	0.00	0.00	4,900.00	1,342 20	0.00	0.00	0.00	0.00	646,702.90	596,234.30
5,000.00	0.00	0 00	5,000.00	1,442.20	0.00	0.00	0.00	0.00	646,702.90	596,234.30
5,100.00	0.00	0.00	5,100.00	1,542.20	0.00	0.00	0.00	0.00	646,702.90	596,234.30
5,200.00	0.00	0 00	5,200.00	1,642 20	0.00	0.00	0.00	0.00	646,702.90	596,234 30
5,300.00	0 00	0 00	5,300 00	1,742 20	0.00	0 00	0.00	0 00	646,702.90	596,234.30

Company:	EOG Resources, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County	**TVD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Site:	Sand Tank 1 Fed Com	**MD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
5,400.00	0.00	0.00	5,400.00	1,842.20	0.00	0.00	0.00	0.00	646,702.90	596,234.30
5,500.00	0.00	0.00	5,500.00	1,942.20	0.00	0.00	0.00	0.00	646,702.90	596,234.30
5,600 00	0.00	0.00	5,600.00	2,042.20	0.00	0.00	0.00	0.00	646,702 90	596,234 30
5,700.00	0.00	0.00	5,700.00	2,142.20	0.00	0.00	0 00	0 00	646,702.90	596,234.30
5,800 00	0.00	0.00	5,800.00	2,242.20	0 00	0.00	0.00	0.00	646,702.90	596,234.30
5,900.00	0.00	0 00	5,900.00	2,342.20	0.00	0.00	0.00	0.00	646,702.90	596,234.30
6,000.00	0.00	0.00	6,000.00	2,442.20	0.00	0.00	0.00	0 00	646,702.90	596,234.30
6,100.00	0.00	0.00	6,100.00	2,542 20	0.00	0.00	0.00	0.00	646,702.90	596,234 30
6,200.00	0.00	0.00	6,200.00	2,642.20	0.00	0.00	0.00	0.00	646,702.90	596,234.30
6,300.00	0.00	0 00	6,300.00	2,742.20	0.00	0 00	0 00	0.00	646,702.90	596,234.30
6,400.00	0.00	0 00	6,400.00	2,842.20	0 00	0 00	0.00	0.00	646,702.90	596,234.30
6,500.00	0 00	0.00	6,500.00	2,942 20	0.00	0.00	0.00	0.00	646,702.90	596,234.30
6,600.00	0.00	0 00	6,600 00	3,042.20	0.00	0.00	0.00	0.00	646,702.90	596,234.30
6,700 00	0.00	0 00	6,700.00	3,142.20	0.00	0.00	0.00	0 00	646,702.90	596,234.30
6,800.00	0.00	0 00	6,800.00	3,242.20	0.00	0 00	0.00	0.00	646,702.90	596,234.30
6,900.00	0.00	0.00	6,900.00	3,342.20	0.00	0.00	0.00	0.00	646,702 90	596,234.30
7,000.00	0.00	0.00	7,000.00	3,442.20	0 00	0.00	0.00	0.00	646,702.90	596,234.30
7,100.00	0 00	0.00	7,100.00	3,542 20	0.00	0.00	0.00	0 00	646,702.90	596,234 30
7,133.00	0.00	0.00	7,133.00	3,575.20	0.00	0.00	0 00	0.00	646,702.90	596,234.30
KOP-7133.00'MD,0.00°INC,270.30°AZI,7133.00'TVD										
7,150.00	2 04	270 31	7,150.00	3,592.20	0.00	-0.30	0.30	12.00	646,702.90	596,234.00
7,175.00	5.04	270.31	7,174.95	3,617.15	0.01	-1.85	1 85	12.00	646,702.91	596,232 45
7,200.00	8.04	270.31	7,199.78	3,641.98	0.03	-4.69	4.69	12 00	646,702.93	596,229.61
7,225.00	11.04	270.31	7,224.43	3,666.63	0.05	-8.84	8.84	12.00	646,702.95	596,225.46
7,250.00	14.04	270.31	7,248 83	3,691.03	0.08	-14.26	14.26	12.00	646,702.98	596,220.04
7,275.00	17.04	270.31	7,272.92	3,715.12	0 11	-20 96	20.96	12.00	646,703.01	596,213.34
7,300.00	20.04	270.31	7,296.62	3,738.82	0 16	-28.91	28.91	12.00	646,703.06	596,205.39

Company:	EOG Resources; Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County	**TVD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Site:	Sand Tank 1 Fed Com	**MD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
7,325.00	23.04	270 31	7,319.87	3,762.07	0.21	-38.08	38.09	12.00	646,703 11	596,196.22
7,350.00	26 04	270 31	7,342.61	3,784.81	0.26	-48.47	48.47	12.00	646,703.16	596,185.83
7,375.00	29.04	270.31	7,364 77	3,806.97	0.32	-60.02	60 02	12.00	646,703.22	596,174.28
7,400 00	32 04	270 31	7,386.30	3,828.50	0.39	-72 73	72.73	12.00	646,703 29	596,161.57
7,425.00	35.04	270.31	7,407.14	3,849.34	0.47	-86 54	86.54	12.00	646,703.37	596,147.76
7,450.00	38 04	270 31	7,427 22	3,869 42	0.55	-101 42	101.42	12 00	646,703.45	596,132.88
7,475 00	41 04	270 31	7,446 50	3,888.70	0.63	-117.33	117.33	12.00	646,703.53	596,116.97
7,500.00	44.04	270.31	7,464.92	3,907.12	0.73	-134.23	134 23	12.00	646,703.63	596,100.07
7,525.00	47.04	270 31	7,482 43	3,924.63	0.82	-152 07	152 07	12.00	646,703.72	596,082.23
7,550.00	50.04	270.31	7,498 98	3,941.18	0.92	-170.80	170.81	12.00	646,703.82	596,063.50
7,575.00	53.04	270.31	7,514.52	3,956.72	1.03	-190.38	190 38	12 00	646,703.93	596,043.92
7,600.00	56 04	270.31	7,529.03	3,971 23	1.14	-210.74	210.74	12.00	646,704.04	596,023 56
7,625.00	59 04	270.31	7,542.44	3,984.64	1.25	-231.83	231.83	12.00	646,704 15	596,002.47
7,650.00	62.04	270.31	7,554.74	3,996.94	1.37	-253.59	253 60	12.00	646,704.27	595,980.71
7,661.48	63.42	270 31	7,560.00	4,002 20	1 43	-263.80	263.80	12.00	646,704.33	595,970.50
Top of F Sand - 7661.48'MD,63.42°INC,270.31°AZI,7560.00'TVD										
7,675.00	65.04	270 31	7,565.88	4,008.08	1.49	-275.97	275.97	12.00	646,704.39	595,958.33
7,700.00	68.04	270.31	7,575.83	4,018.03	1.62	-298.90	298.91	12.00	646,704 52	595,935.40
7,725.00	71 04	270.31	7,584 57	4,026 77	1 74	-322 32	322.33	12.00	646,704.64	595,911.98
7,750.00	74.04	270 31	7,592.07	4,034.27	1.87	-346.17	346.17	12.00	646,704.77	595,888.13
7,775.00	77.04	270.31	7,598.31	4,040.51	2.00	-370.37	370.38	12.00	646,704 90	595,863.93
7,800.00	80.04	270.31	7,603.28	4,045.48	2.14	-394.87	394.87	12.00	646,705.04	595,839.43
7,825.00	83.04	270 31	7,606.96	4,049.16	2.27	-419.59	419.60	12.00	646,705.17	595,814.71
7,850.00	86.04	270.31	7,609 34	4,051.54	2 40	-444.48	444 48	12.00	646,705.30	595,789.82
7,875.00	89.04	270.31	7,610.41	4,052.61	2.54	-469.45	469.46	12 00	646,705.44	595,764.85
7,900.00	92.04	270.31	7,610.18	4,052.38	2.68	-494 45	494 45	12.00	646,705.58	595,739.85

Company:	EOG Resources, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County	**TVD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Site:	Sand Tank 1 Fed Com	**MD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
7,904.44	92.57	270.31	7,610.00	4,052.20	2.70	-498.88	498.89	12 00	646,705.60	595,735.42
EOC-7904.44'MD,92.57°INC,270.31°AZI,7610.00'TVD,12.00°DLS, 498.89'VS, 2.70'N, -498.88'E										
8,000.00	92.57	270.31	7,605.72	4,047 92	3.22	-594 34	594.35	0 00	646,706.12	595,639.96
8,100.00	92.57	270.31	7,601 23	4,043.43	3.76	-694.24	694.25	0.00	646,706.66	595,540.06
8,200.00	92.57	270 31	7,596.75	4,038.95	4.30	-794.14	794.15	0.00	646,707 20	595,440.16
8,300.00	92 57	270.31	7,592.26	4,034.46	4.84	-894.04	894.05	0.00	646,707.74	595,340.26
8,400.00	92.57	270.31	7,587.78	4,029.98	5.38	-993 94	993.95	0.00	646,708.28	595,240.36
8,500.00	92.57	270.31	7,583.30	4,025.50	5.92	-1,093.83	1,093.85	0.00	646,708.82	595,140.47
8,600.00	92.57	270 31	7,578.81	4,021.01	6.46	-1,193 73	1,193.75	0 00	646,709.36	595,040.57
8,700.00	92.57	270 31	7,574.33	4,016.53	7.00	-1,293.63	1,293.65	0.00	646,709.90	594,940 67
8,800 00	92.57	270 31	7,569.84	4,012.04	7 54	-1,393.53	1,393.55	0.00	646,710.44	594,840.77
8,900.00	92.57	270.31	7,565.36	4,007.56	8.08	-1,493.43	1,493.45	0.00	646,710.98	594,740.87
9,000.00	92.57	270 31	7,560.88	4,003.08	8 62	-1,593 32	1,593 35	0.00	646,711.52	594,640.98
9,100.00	92.57	270.31	7,556.39	3,998.59	9.16	-1,693.22	1,693.25	0.00	646,712.06	594,541.08
9,200.00	92.57	270.31	7,551.91	3,994.11	9.70	-1,793 12	1,793.15	0.00	646,712.60	594,441.18
9,300.00	92 57	270 31	7,547 42	3,989.62	10.24	-1,893.02	1,893.05	0.00	646,713.14	594,341.28
9,400.00	92.57	270.31	7,542.94	3,985.14	10.78	-1,992.92	1,992.94	0 00	646,713.68	594,241.38
9,500.00	92.57	270.31	7,538.46	3,980.66	11.32	-2,092.81	2,092.84	0 00	646,714.22	594,141.49
9,600.00	92.57	270.31	7,533.97	3,976.17	11.86	-2,192.71	2,192.74	0.00	646,714.76	594,041.59
9,700.00	92.57	270 31	7,529.49	3,971.69	12 40	-2,292.61	2,292 64	0.00	646,715.30	593,941.69
9,800.00	92.57	270.31	7,525.00	3,967.20	12 94	-2,392.51	2,392.54	0.00	646,715.84	593,841.79
9,900.00	92.57	270 31	7,520 52	3,962.72	13.49	-2,492.41	2,492.44	0.00	646,716.39	593,741.89
10,000.00	92.57	270 31	7,516 04	3,958.24	14 03	-2,592.30	2,592.34	0.00	646,716 93	593,642.00
10,100.00	92.57	270.31	7,511.55	3,953.75	14.57	-2,692.20	2,692 24	0 00	646,717.47	593,542.10
10,200.00	92.57	270.31	7,507.07	3,949.27	15.11	-2,792 10	2,792.14	0.00	646,718.01	593,442.20
10,300.00	92 57	270 31	7,502 58	3,944 78	15.65	-2,892.00	2,892.04	0.00	646,718.55	593,342 30
10,400.00	92.57	270 31	7,498 10	3,940 30	16 19	-2,991.89	2,991.94	0.00	646,719 09	593,242.41

Company:	EOG Resources, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County	**TVD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Site:	Sand Tank 1 Fed Com	**MD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
10,500 00	92 57	270.31	7,493.62	3,935.82	16.73	-3,091.79	3,091.84	0.00	646,719.63	593,142.51
10,600.00	92.57	270.31	7,489.13	3,931.33	17.27	-3,191.69	3,191.74	0.00	646,720.17	593,042 61
10,700.00	92.57	270.31	7,484 65	3,926.85	17.81	-3,291.59	3,291.64	0.00	646,720.71	592,942.71
10,800.00	92.57	270.31	7,480.16	3,922.36	18.35	-3,391.49	3,391.54	0.00	646,721.25	592,842.81
10,900.00	92.57	270.31	7,475.68	3,917.88	18.89	-3,491.38	3,491.44	0.00	646,721.79	592,742.92
11,000 00	92.57	270.31	7,471.20	3,913.40	19.43	-3,591.28	3,591.34	0.00	646,722.33	592,643.02
11,100.00	92.57	270.31	7,466.71	3,908.91	19 97	-3,691 18	3,691.23	0.00	646,722.87	592,543.12
11,200.00	92.57	270.31	7,462.23	3,904.43	20.51	-3,791 08	3,791.13	0.00	646,723.41	592,443.22
11,300.00	92 57	270.31	7,457 74	3,899 94	21.05	-3,890.98	3,891.03	0.00	646,723.95	592,343.32
11,400.00	92.57	270.31	7,453.26	3,895.46	21.59	-3,990.87	3,990.93	0 00	646,724.49	592,243.43
11,500.00	92.57	270.31	7,448.78	3,890 98	22.13	-4,090 77	4,090.83	0.00	646,725.03	592,143.53
11,600.00	92.57	270.31	7,444.29	3,886.49	22 67	-4,190 67	4,190.73	0.00	646,725.57	592,043.63
11,700.00	92.57	270.31	7,439 81	3,882 01	23.21	-4,290 57	4,290 63	0.00	646,726.11	591,943 73
11,800.00	92 57	270.31	7,435.32	3,877.52	23.75	-4,390.47	4,390.53	0.00	646,726.65	591,843.83
11,900.00	92.57	270.31	7,430.84	3,873.04	24.30	-4,490.36	4,490.43	0 00	646,727.20	591,743.94
11,974.84	92.57	270.31	7,427.48	3,869.68	24.70	-4,565.13	4,565.19	0 00	646,727.60	591,669.17
BHL-11974.85'MD,92.57°INC,270.31°AZI, 7427.48'TVD, 4565.20'VS, 24.70'N, -4565.14'E										
12,000.00	92.57	270 31	7,426.36	3,868.56	24.84	-4,590.26	4,590 33	0.00	646,727.74	591,644.04
12,023.36	92.57	270.31	7,425.31	3,867 51	24.96	-4,613.60	4,613 67	0.00	646,727.86	591,620 70
PBHL(#4HST1)										

Company:	EOG Resources, Inc.	**Local Co-ordinate Reference:**	Well #4H
Project:	Eddy County	**TVD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Site:	Sand Tank 1 Fed Com	**MD Reference:**	WELL @ 3557.80ft (19' KB Correction)
Well:	#4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	Midland Database

Targets

Target Name - hit/miss target Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL(#4HST1) - plan hits target - Point	0.00	0 00	7,425.00	24.70	-4,613.60	646,727.600	591,620.700	32° 46' 39.328 N	104° 2' 6.846 W

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
7,133 00	7,133.00	0.00	0.00	KOP-7133.00'MD,0.00°INC,270 30°AZI,7133.00'TVD
7,661.48	7,560.00	1.43	-263.80	Top of F Sand - 7661.48'MD,63.42°INC,270.31°AZI,7560 00'TVD
7,904.44	7,610.00	2 70	-498 88	EOC-7904.44'MD,92 57°INC,270.31°AZI,7610.00'TVD,12.00°DLS, 498.89'VS,
11,974.84	7,427.48	24.70	-4,565.13	BHL-11974.85'MD,92.57°INC,270 31°AZI, 7427.48'TVD, 4565.20'VS, 24.70'N,

Checked By: _____ Approved By: _____ Date: _____

eog resources

Project: Eddy County
Site: Sand Tank 1 Fed Com
Well: #4H
Wellbore: OH
Plan: Plan #1 (#4H/OH)

T G M

Azimuths to Grid North
True North: -0.17°
Magnetic North: 7.89°

Magnetic Field
Strength: 49122.8snT
Dip Angle: 60.68°
Date: 06/29/2009
Model: IGRF200510

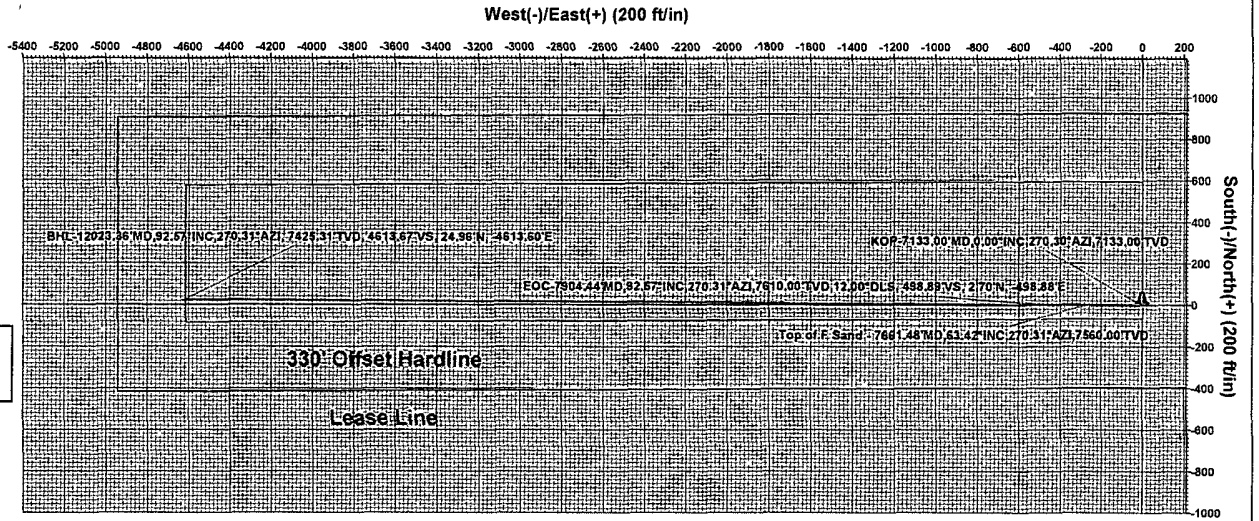
PATHFINDER

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	7133.00	0.00	0.00	7133.00	0.00	0.00	0.00	0.00	0.00	
3	7904.44	92.57	270.31	7610.00	2.70	-498.88	12.00	270.31	498.89	
4	12023.36	92.57	270.31	7425.31	24.96	-4613.60	0.00	0.00	4613.67	PBHL(#4HST1)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

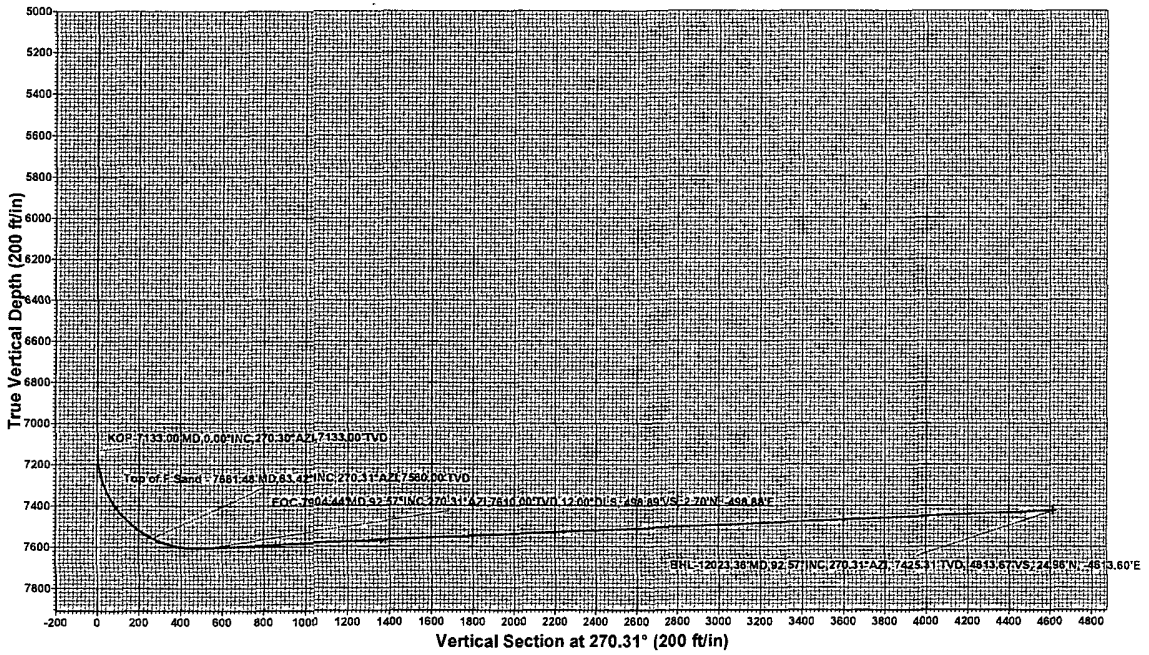
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(#4HST1)	7425.00	24.70	-4613.60	646727.600	591620.700	Point



WELL DETAILS #4H

Ground Elevation: 3538.80
RKB Elevation: WELL @ 3557.80ft (19' KB Correction)
Rig Name: 19' KB Correction

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	646702.900	596234.300	32° 46' 38.951 N	104° 1' 12.809 W	

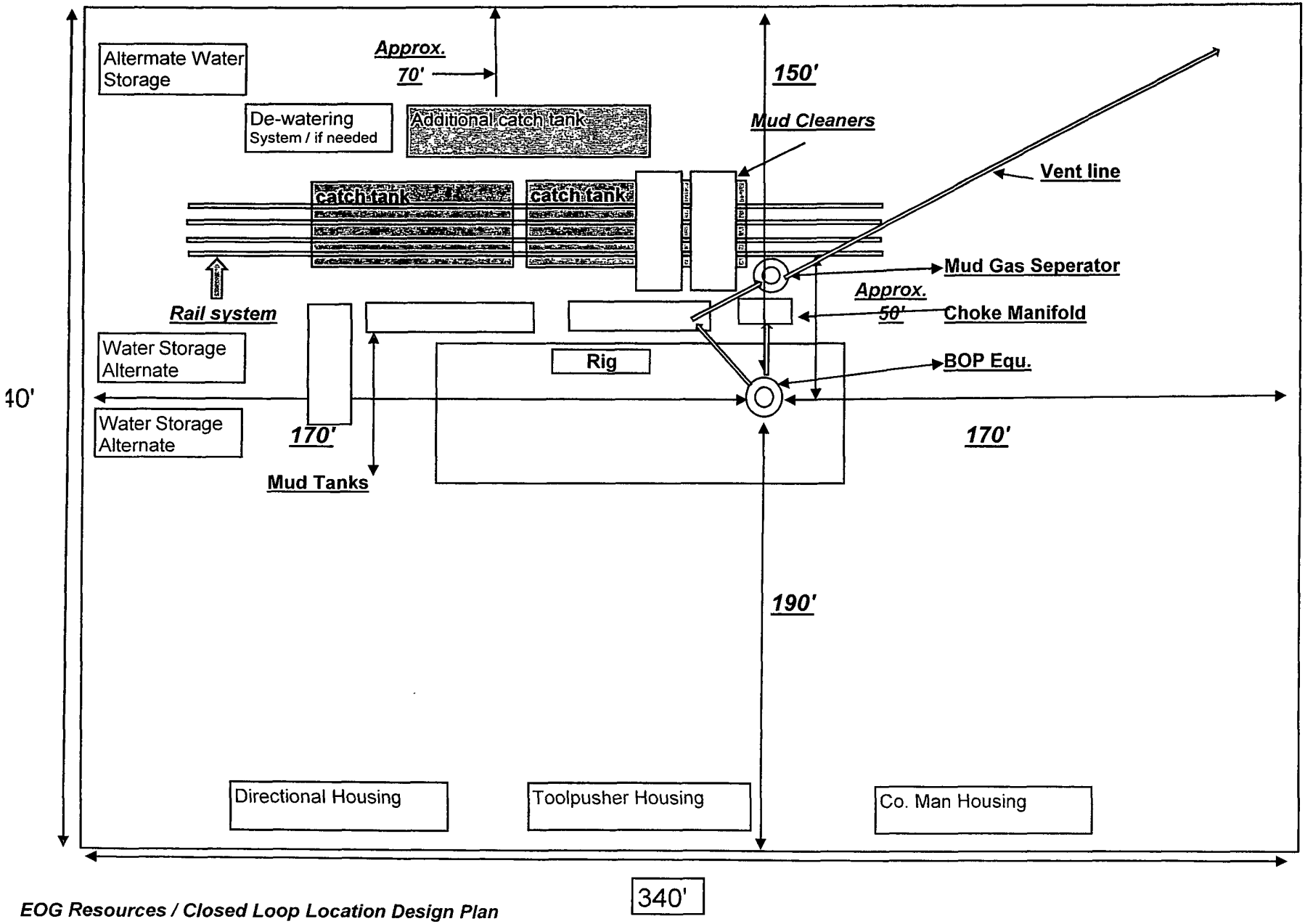


PROJECT DETAILS: Eddy County
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

Plan: Plan #1 (#4H/OH)

Created By: Nate Bingham Date: 14:18, July 07 2009

Checked _____ Date _____



EOG Resources / Closed Loop Location Design Plan

Not to scale

)/2008

ATTACHMENT TO EXHIBIT #1

1. Wear ring to be properly installed in head.

2. Blow out preventer and all fittings must be in good condition, 5000 psi W.P. minimum. Exhibit #1.

3. All fittings to be flanged

4. Safety valve must be available on rig floor at all times with proper connections, valve to be full bore 5000 psi W.P. minimum.

5. All choke and fill lines to be securely anchored especially ends of choke lines.

6. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.

7. Kelly cock on kelly.

8. Extension wrenches and hand wheels to be properly installed.

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

10. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation, and meet all API specifications.

EXHIBIT 1

EOG Resources, Inc.

Said Tank 1 Fed Com 4H

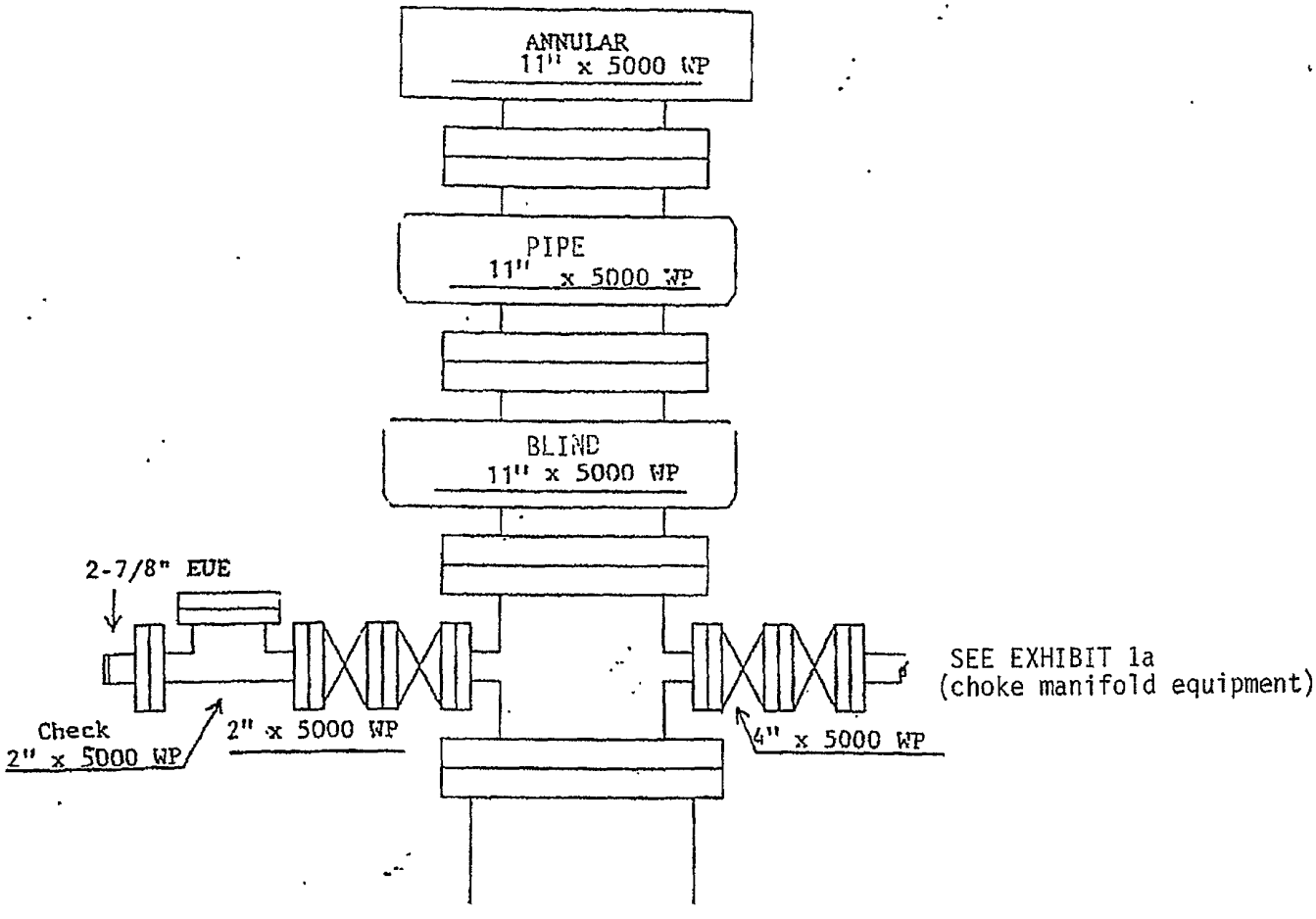


Exhibit 1b
Page 1 of 2

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

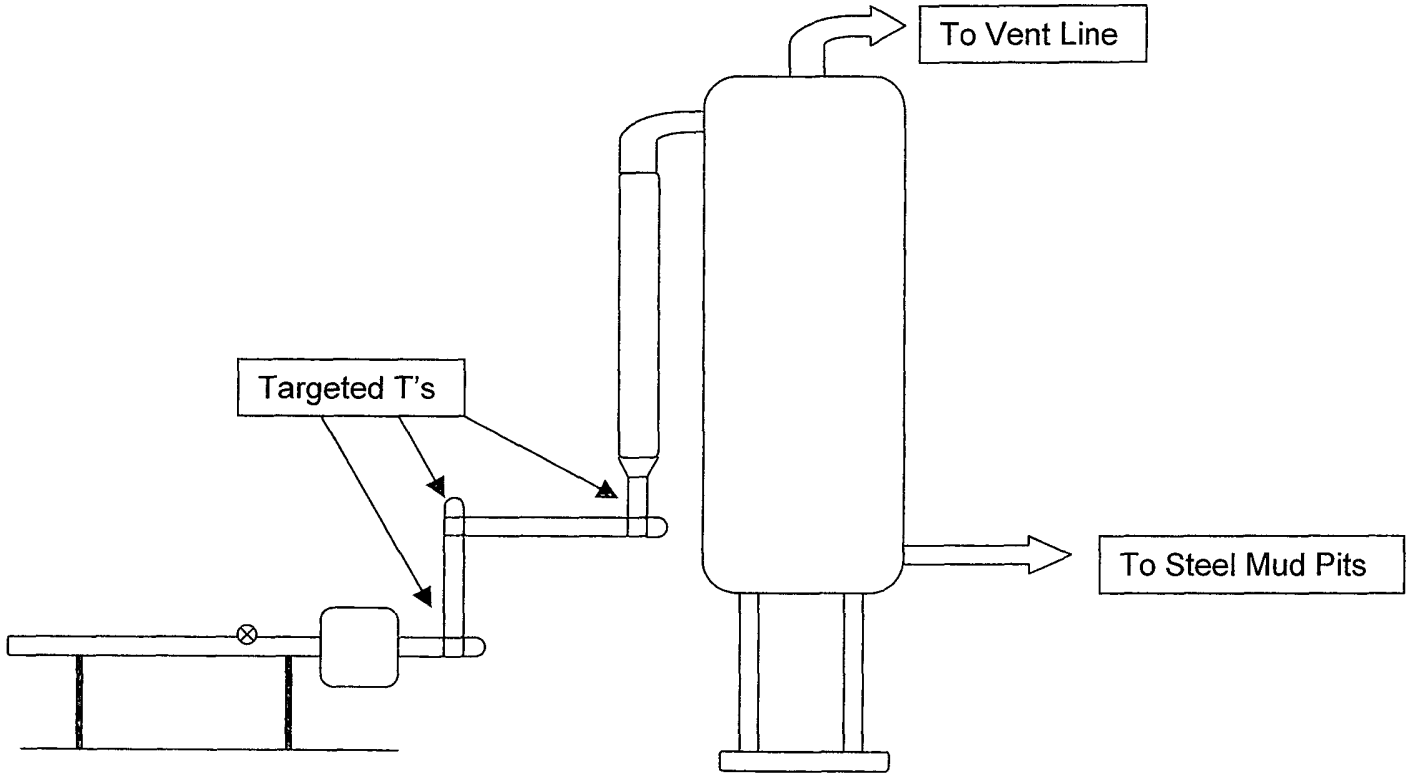
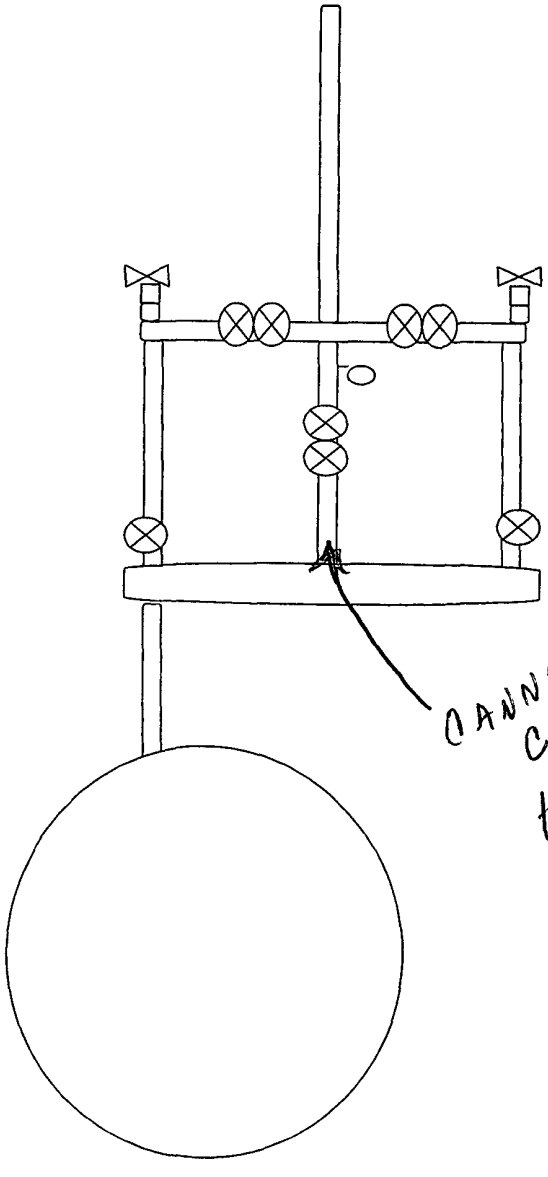
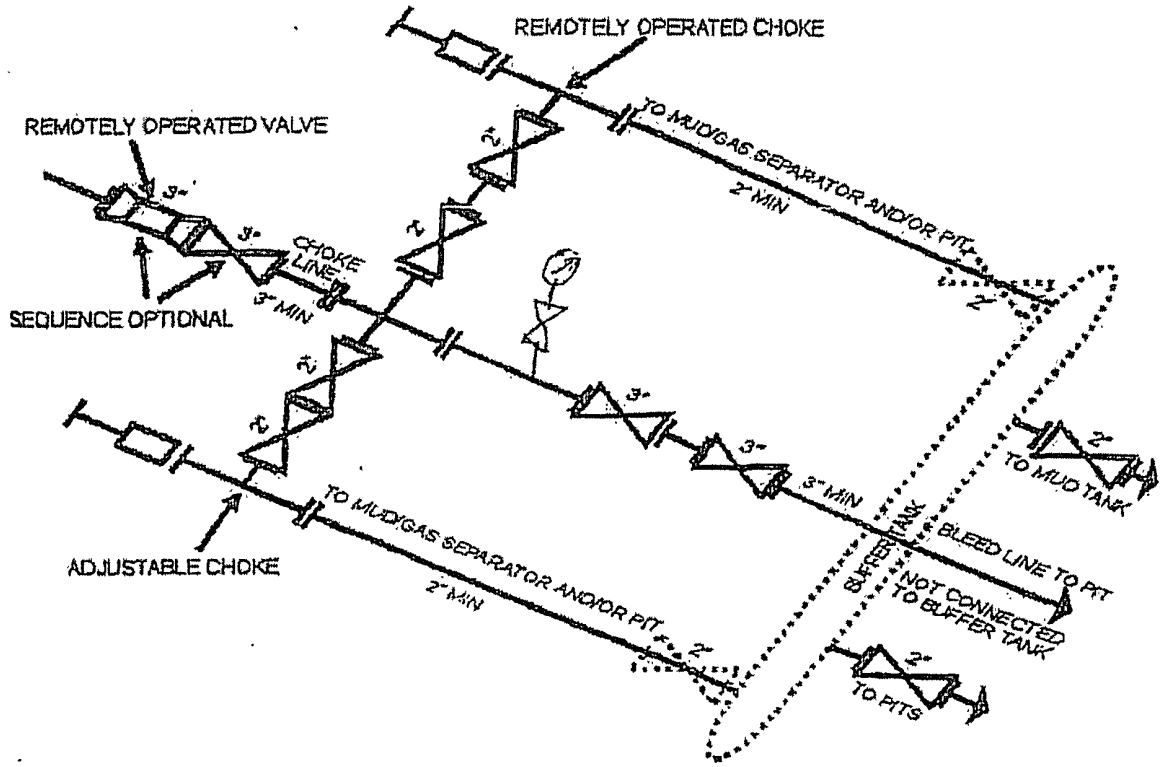


Exhibit 16

Page 2 of 2



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



5M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

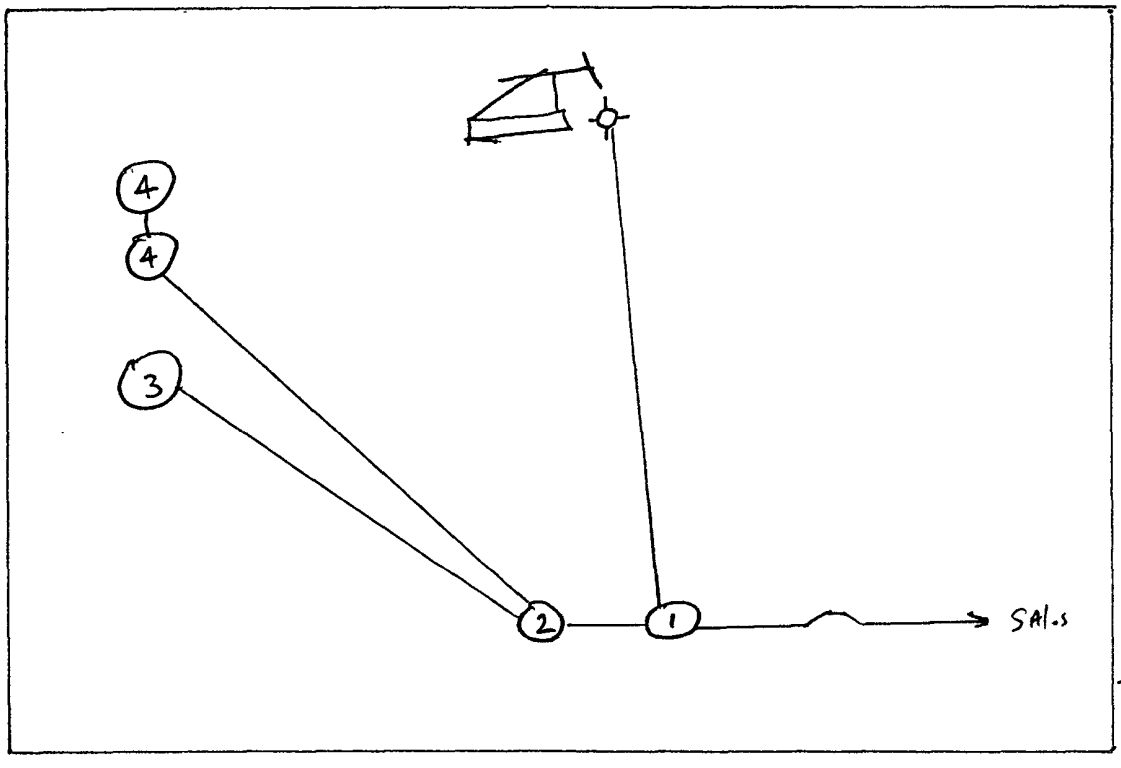
Although not required for any of the choke manifold systems, buffer tanks are sometimes installed downstream of the choke assemblies for the purpose of manifolding the bleed lines together. When buffer tanks are employed, valves shall be installed upstream to isolate a failure or malfunction without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

[54 FR 39528, Sept. 27, 1989]

WELL NAME: Sand Tank 1 Fed Com 4H

CLOSED LOOP EQUIPMENT

Closed LOOP EQUIPMENT



1. Separator
2. Heater
3. Water Tank
4. Oil Tank

"NOT TO SCALE"

Closure Plan for Closed Loop Drilling System

1. METHODS OF HANDLING WASTE MATERIALS

a. Drill cuttings shall be disposed of in steel cuttings bins (catch tanks) on the drilling pad (behind the steel mud tanks). The bin and cuttings shall be hauled to a division approved facility by an approved transporter. At the facility, the cuttings shall be removed from the bin and the bin shall be returned to the drilling site for reuse, moved to the next drilling site or returned to the provider.

b. Remaining drilling fluids shall be hauled off by approved transports to a division approved disposal facility. Water produced during completion shall be put in storage tanks and disposed of at a division approved facility. Oil and condensate produced shall be put in a storage tank and sold or put in a sales pipeline.

2. RECLAMATION

a. Within 120 days after the drilling and completion of the well, the location area shall be reduced as determined by operator to the minimum area necessary to safely and effectively operate the well. The reclaimed location area shall be restored to the condition that existed prior to oil and gas operations.

19.15.17.12 OPERATIONAL REQUIREMENTS:

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

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

Operator shall operate and maintain a closed loop system.

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

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

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

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

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

No Pit liner. Closed loop system.

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

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

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

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

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

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

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

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

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

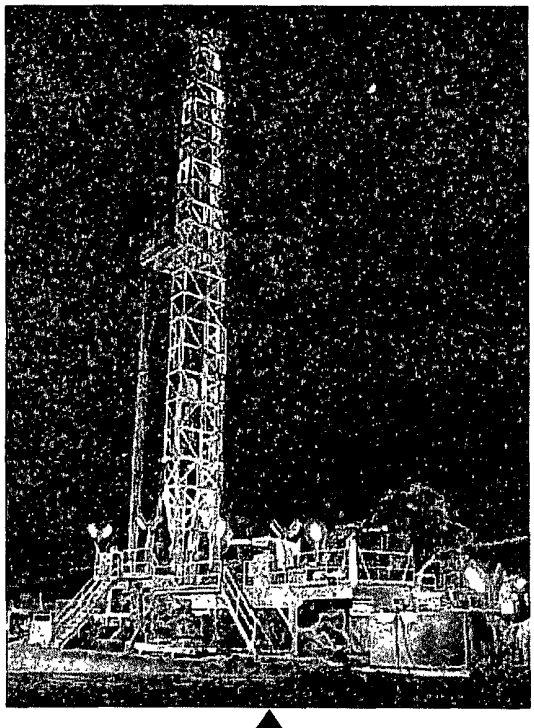
Operator shall install a skimmer system on catch tanks, circulating tanks and over-flow tanks as needed to collect oil.

EOG Resources, Inc.

Legals:
Sand Tank 1 Fed. COM 4H
Eddy Co. New Mexico

2250' FSL & 330' FEL Surface Location	**2200' FSL & 330' FEL Bottom of Hole Location**
Section 1	**Section 1**
T-18-S, R-29-E	**T-18-S, R-29-E**
Lat: N 32.7774864	**Lat: N 32.7775909**
Long: W 104.0202246	**Long: W 104.0352351**

H_2S
"Contingency Plan"



SAFETY
SOLUTIONS, LLC.

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

Table of Contents

H_2S CONTINGENCY PLAN SECTION

Scope:

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

Objective:

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

Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

Discussion of Plan:

Suspected Problem Zones:

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

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

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

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

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

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

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

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

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

EMERGENCY PROCEDURES SECTION

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

   a. Secure breathing apparatus.

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

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

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

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

   b. Remove all personnel to the Safe Briefing Area.

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

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

III. Responsibility:

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

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

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

EMERGENCY PROCEDURE IMPLEMENTATION

I. Drilling or Tripping

a. *All Personnel*

- **i.** When alarm sounds, don escape unit and report to upwind Safe Briefing Area.
- **ii.** Check status of other personnel (buddy system).
- **iii.** Secure breathing apparatus.
- **iv.** Wait for orders from supervisor.

b. *Drilling Foreman*

- **i.** Report to the upwind Safe Briefing Area.
- **ii.** Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).
- **iii.** Determine the concentration of H_2S.
- **iv.** Assess the situation and take appropriate control measures.

c. *Tool Pusher*

- **i.** Report to the upwind Safe Briefing Area.
- **ii.** Don Breathing Apparatus and return to the point of release with the Drilling Foreman or the Driller (buddy system).
- **iii.** Determine the concentration of H_2S.
- **iv.** Assess the situation and take appropriate control measures.

d. *Driller*

- **i.** Check the status of other personnel (in a rescue attempt, always use the buddy system).
- **ii.** Assign the least essential person to notify the Drilling Foreman and Tool Pusher, in the event of their absence.
- **iii.** Assume the responsiblility of the Drilling Foreman and the Tool Pusher until they arrive, in the event of their absence.

e. *Derrick Man and Floor Hands*

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

f. *Mud Engineer*

i. Report to the upwind Safe Briefing Area.

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

g. *Safety Personnel*

i. Don Breathing Apparatus.

ii. Check status of personnel.

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

II. Taking a Kick

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

b. Follow standard BOP procedures.

III. Open Hole Logging

a. All unnecessary personnel should leave the rig floor.

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

IV. Running Casing or Plugging

a. Follow "Drilling or Tripping" procedures.

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

SIMULATED BLOWOUT CONTROL DRILLS

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

Drill #1 Bottom Drilling

Drill #2 Tripping Drill Pipe

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

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

I. Drill Overviews

a. Drill No. 1 – Bottom Drilling

i. Sound the alarm immediately.

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

iii. Stop the circulatory pump.

iv. Close the drill pipe rams.

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

b. Drill No. 2 – Tripping Drill Pipe

i. Sound the alarm immediately.

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

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

iv. Close the drill pipe rams.

v. Record the shut-in annular pressure.

II. Crew Assignments

a. Drill No. 1 – Bottom Drilling

i. Driller

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

ii. Derrickman

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

iii. Floor Man #1

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

iv. Floor Man #2

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

v. Tool Pusher

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

3. Compile and summarize all information.

4. Calculate the proper kill weight.

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

vi. Operator Representative

1. Notify the Drilling Superintendent.

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

b. Drill No. 2 – Tripping Pipe

i. Driller

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

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

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

4. Check flow.

5. Record all data reported by the crew.

6. Determine the course of action.

ii. Derrickman

1. Come down out of derrick.

2. Notify Tool Pusher and Operator Representative.

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

4. Stop all welding operations.

5. Report to Driller for further instructions.

iii. Floor Man #1

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

2. Tighten valve with back-up tongs.

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

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

5. Report to Driller for further instructions.

iv. Floor Man #2

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

2. Position back-up tongs on drill pipe.

3. Open choke line valve at BOP.

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

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

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

7. Read annular pressure.

8. Report readings to the Driller.

v. Tool Pusher

1. Report to the rig floor.

2. Have a meeting with all of the crews.

3. Compile and summarize all information.

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

vi. Operator Representative

1. Notify Drilling Superintendent

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

IGNITION PROCEDURES

Responsibility:

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

1. Human life and property are endangered.

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

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

Instructions for Igniting the Well:

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

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

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

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

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

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

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

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

TRAINING PROGRAM

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

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

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

EMERGENCY EQUIPMENT REQUIREMENTS

Lease Entrance Sign:

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

CAUTION – POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

Respiratory Equipment:

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

Windsocks or Wind Streamers:

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

Hydrogen Sulfide Detector and Alarms:

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

Well Condition Sign and Flags:

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

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

Auxiliary Rescue Equipment:

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

Mud Inspection Equipment:

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

Fire Extinguishers:

Adequate fire extinguishers shall be located at strategic locations.

Blowout Preventer:

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

Confined Space Monitor:

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

Communication Equipment:

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

- Communication equipment shall be available on the vehicles.

Special Control Equipment:

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

Evacuation Plan:

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

Designated Areas:

Parking and Visitor area:

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

Safe Briefing Areas:

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

Note:

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

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_2S. _____
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_2S and well control procedures. _____

24. All outside service contractors advised of potential H_2S on the well. _____

25. NO SMOKNG sign posted. _____

26. H_2S 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:

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

BRIEFING PROCEDURES

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

Pre-Spud Meeting

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

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

EVACUATION PLAN

General Plan

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

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

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

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

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

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

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

See Emergency Action Plan

Emergency Assistance Telephone List

PUBLIC SAFETY:	**911 or**
Eddy County Sheriff's Department	(575) 887-7551
Kent Waller	
Fire Department:	
Carlsbad	(575) 885-3125
Artesia	(575) 746-5050
Hospitals:	
Carlsbad	(575) 887-4121
Artesia	(575) 748-3333
Hobbs	(575) 392-1979
Dept. of Public Safety/Carlsbad	(575) 748-9718
Highway Department	(575) 885-3281
New Mexico Oil Conservation	(575) 476-3440
U.S. Dept. of Labor	(575) 887-1174

EOG Resources, Inc.

EOG / Midland

Company Drilling Consultants:		
Lynn Clayton	Cell	(281) 833-2749
Drilling Engineer		
Steve Munsell	Office:	(432) 686-3609
	Cell:	(432) 894-1256
Drilling Manager		
Manuel Leyva	Cell	(432) 706-4821
Johnny Lopez	Cell	(432) 513-2181
Drilling Superintendent		
Barney Thompson	Office	(432) 686-3678
	Cell	(432) 254-9056
McVay Drilling		
McVay Drilling / Hobbs	Office	(575) 397-3311
McVay Drilling Rig #4	Rig	(575) 370-5598
Tool Pusher:		
Terry Johnson	Cell	(575) 370-5620
Safety Consultants		
Safety Solutions, LLC	Office	(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

Toxic Effects of H_2S Poisoning

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

Table 1
Permissible Exposure Limits of Various Gases

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

Definitions

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

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

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

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

TABLE 2

Toxicity Table of H_2S

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

PHYSICAL PROPERTIES OF H_2S

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

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

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

COLOR – TRANSPARENT

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

ODOR – ROTTEN EGGS

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

VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192

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

EXPLOSIVE LIMITS – 4.3% TO 46%

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

FLAMMABILITY

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

SOLUBILITY – 4 TO 1 RATIO WITH WATER

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

BOILING POINT – (-76 degrees Fahrenheit)

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

RESPIRATOR USE

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

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

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

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

Respirators shall be worn during the following conditions:

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

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

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

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

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

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 H_2S, 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 H_2S should always be examined by medical personnel. They should always be transported to a hospital or doctor.

SURFACE USE PLAN OF OPERATION

SHL: 2250' FNL & 330' FEL, Unit H, Section 1, T18S-R29E, N.M.P.M., Eddy, NM
BHL: 2200' FNL & 330' FWL, Unit E, Section 1, T18S-R29E, N.M.P.M., Eddy, NM

1. EXISTING ROADS:

a. The well site and elevation plat for the proposed well are reflected on the well site layout; Form C-102. The well was staked by Terry Asel, RPL 15079.
b. All roads into the location are depicted on Exhibit 2 & 2a.
c. Directions to Locations: Beginning in Loco Hills, NM, From Jct. of Hwy 82 & Co. Road 217, Go Southwest on CR 217 for 3 miles, turn left on CR 216 and go south for 0.7 miles, turn right on proposed road and go west for 160 feet to location.

2. NEW OR RECONSTRUCTED ACCESS ROAD:

a. Exhibit 2a shows the layout. Applicant will construct new lease road with compact caliche a distance of 160 feet as depicted.
b. The maximum width of the road will be 15'. It will be crowned and made of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent soil erosion.
c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.
d. No cattleguards, gates or fence cuts will be required. No turnouts are planned.

3. LOCATION OF EXISTING WELLS:

Exhibit #3 shows all existing wells within a one-mile radius of this well.

4. LOCATION OF EXISTING AND/OR PROPOSED PRODUCTION FACILITIES:

a. In the event the well is found to be productive, the necessary production equipment will be installed at the well site. See Production Facilities Layout diagram.
b. As a proposed oil well, operator will contact Central Valley Electric Coop to provide electrical service to the well.
c. All flow lines will adhere to API standards.
d. Refer to b above.
e. If the well is productive, rehabilitation plans are as follows:
   i. Within 120 days subsequent to the first date of sales, the location shall be reduced as determined by operator to the minimum area necessary to safely and effectively operate the well.

ii. The original topsoil from the well site will be returned to the location. The location will be contoured as close as possible to match the original topography.

5. LOCATION AND TYPE OF WATER SUPPLY:

This location will be drilled using a combination of water mud systems (outlined in the drilling program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using existing and proposed roads shown in Exhibit 2 & 2a. On occasion, water will be obtained from existing water wells. In these cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If poly pipeline is used to transport fresh water to the location, proper authorization will be secured by the contractor.

6. CONSTRUCTION MATERIALS

All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. All roads will be constructed of rolled and compacted caliche. Will use BLM recommended use of extra caliche from other locations close by roads, if available.

7. METHODS OF HANDLING WASTE MATERIALS

a. Drill cuttings shall be disposed of in a steel cuttings bin (catch tanks) on the drilling pad (behind the steel mud tanks). The bin and cuttings shall be hauled to an approved cuttings dumpsite.
   At the site, the cuttings shall be removed from the bin & the bin shall be returned to the drilling site for reuse.
b. All trash, junk, and other waste material shall be contained in trash cages or trash bins to prevent scattering. When a job is completed, all contents shall be removed and disposed of in an approved landfill.
c. The supplier, including broken sacks, shall pick up salts remaining after completion of well.
d. If necessary, a porto-john shall be provided for the rig crews. This equipment shall be properly maintained during the drilling and completion operations and shall be removed when all operations are complete.
e. Remaining drilling fluids shall be hauled off by transports to a state approved disposal site. Water produced during completion shall be put in storage tanks and disposed of in a state approved disposal. Oil and condensate produced shall be put in a storage tank and sold.
f. Disposal of fluids to be transported by the following companies:
   i. RGB TRUCKING
   ii. LOBO TRUCKING
   iii. I & W TRUCKING

iv. CRANE HOT OIL & TRANSPORT
v. JWS
vi. QUALITY TRUCKING

8. ANCILLARY FACILITIES:

a. No airstrip, campsite, or other facilities will be built.

9. WELL SITE LAYOUT:

a. Exhibit 4 shows the proposed location of reserve and sump pits, living facilities and well site layout with dimensions of the pad layout.
b. Mud pits in the active circulating system shall be steel pits and the catch tanks shall be steel tanks set in shallow sumps behind the steel circulating tanks and sumps.
c. The area where the catch tanks are placed shall be reclaimed and the surface vegetation restored to as or near the same condition that existed prior to operations.

10. PLANS FOR SURFACE RECLAMATION:

a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche shall be removed from the pad and transported to the original caliche pit or used for other drilling locations and roads. The road shall be reclaimed and the surface vegetation restored to as or near the same condition that existed prior to operations. The catch tank area shall be broken out and leveled after drying to a condition where these are feasible. The original topsoil shall again be returned to the pad and contoured, as close as possible, to the original topography.
b. After the well is plugged and abandoned, the location and road shall be reclaimed and the surface vegetation restored to as or near the same condition that existed prior to operations.
c. If the well is deemed commercially productive, the catch tank area shall be restored as described in 10(a) within 120 days subsequent to the first date of sales. Caliche from areas of the pad site not required for operations shall be reclaimed. The original topsoil shall be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad shall be contoured, as close as possible, to match the original topography.

11. SURFACE OWNERSHIP

The surface is owned by Steve Haines whose contact information is as follows:

11030 Lovington Hwy
Artesia, NM 88210

Cell No. 575-703-2006

Applicant is currently negotiating a Surface Use Agreement in compliance with the New Mexico Surface Owners Protection Act.

12. OTHER INFORMATION:

a. The area surrounding the well is grassland. The topsoil is sandy in nature. The vegetation is moderately sparse with native prairie grass, mesquite, cactus and shinnery oak. No wildlife was observed but it is likely that deer, rabbits, coyotes, birds and rodents transverse the area.
b. There are not dwellings within 2 miles of location.
c. There is no permanent or live water within 2 miles of the location.
d. Applicant is participating in the Arch MOA and contribution has been submitted for payment into the fund.

13. BOND COVERAGE:

a. Bond Coverage is Nationwide; Bond No. NM 2308

COMPANY REPRESENTATIVES:

Representatives responsible for ensuring compliance of the surface use plan are listed below:

Permitting & Land

Mr. Donny G. Glanton
Senior Lease Operations ROW Representative
EOG Resources, Inc.
P.O. Box 2267
Midland, TX 79702
(432) 686-3642 Office
(432) 770-0602 Cell

Drilling

Mr. Steve Munsell
Drilling Engineer
EOG Resources, Inc.
P.O. Box 2267
Midland, TX 79702
(432) 686-3609 Office
(432) 894-1256 Cell

Operations

Mr. Howard Kemp
Production Manager
EOG Resources, Inc
P.O. Box 2267
Midland, TX 79702
(432) 686-3704 Office
(432) 634-1001 Cell

OPERATOR CERTIFICATION

I certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal Laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true, and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 7th day of July 2009.

Name: Donny G. Glanton
Position: Sr. Lease Operations ROW Representative
Address: P.O. Box 2267 Midland, TX 79705
Telephone: 432-686-3642
Email: donny_glanton@eogresources.com

Signed: Donny G. Glanton

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	EOG Resources, Inc.
LEASE NO.:	NMLC060906
WELL NAME & NO.:	Sand Tank 1 Fed Com # 4H
SURFACE HOLE FOOTAGE:	2250' FNL & 330' FEL
BOTTOM HOLE FOOTAGE	2200' FNL & 330' FWL
LOCATION:	Section 1, T. 18 S., R 29 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. Operator to supply NMOCD order or description of pool which details the vertical and horizontal extent of pool to verify that requested communitization is within an approved and established pool.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

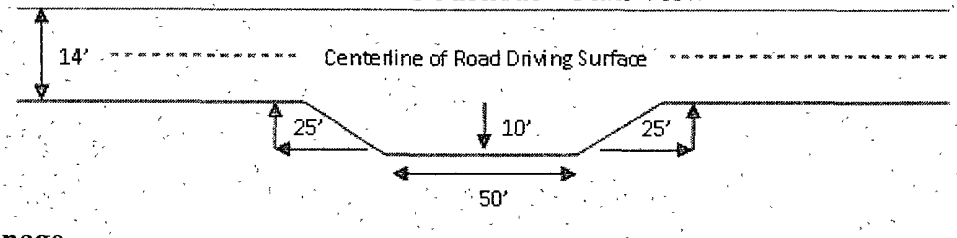
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

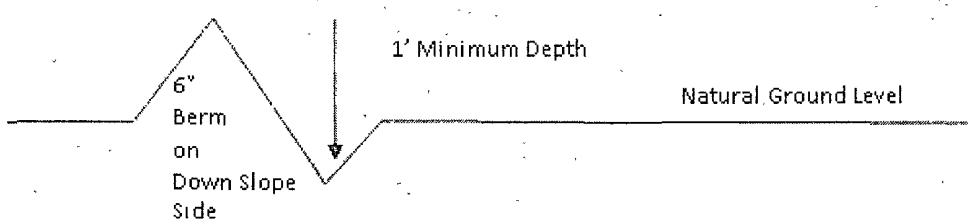
Standard Turnout – Plan View



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section Of Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: 400'/4% + 100' = 200' lead-off ditch interval

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

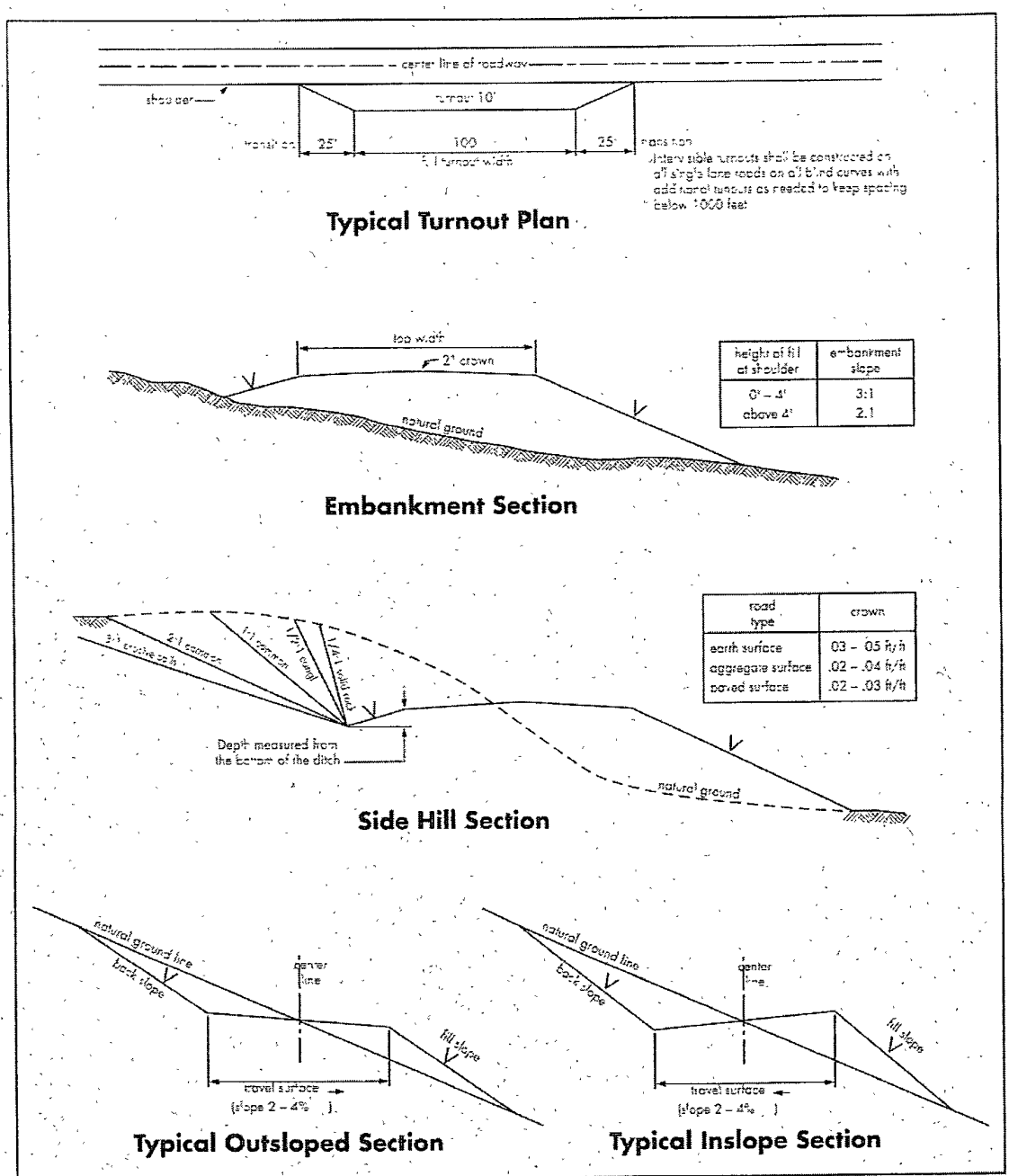
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Hydrogen Sulfide has been reported as a hazard, but no measurements have been recorded. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, please report measurements and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible brine/water flows in the Salado Group and Artesia Group.
Possible lost circulation in the Grayburg and San Andres formations.

1. The **11-3/4** inch surface casing shall be set **at approximately 350 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If the salt is encountered at a shallower depth, the casing is to be set 25' above the salt.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Casing to be set in the upper portion of the San Andres.**

Formation below the 8-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole.

Pilot hole to be plugged from 8300' to kickoff point of 7133'. Plug may be done as single plug or may be set as two plugs. If two plugs are set, the bottom hole plug is to be 185' in length and must be tagged. Tag depth to be reported on subsequent sundry that includes casing/cementing details.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

    ☒ Cement should tie-back at least 600 feet into previous casing string. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8-5/8"** intermediate casing shoe shall be **5000 (5M)** psi.

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. The tests shall be done by an independent service company.

    b. The results of the test shall be reported to the appropriate BLM office.

    c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

    d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

WWI 080509

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

IX. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

The operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

Seed Mixture

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.