OCD-ARTESIA

11-1087

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JUN 07 2012
NMOCD ARTESIA

Form 3160-3
(April 2004)

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.
NMLC-028731B

6. If Indian, Allotee or Tribe Name
N/A

1a. Type of work ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No
NMNM-111789X; Dodd Federal Unit

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

8. Lease Name and Well No
DODD FEDERAL UNIT #623 C-30885?

2. Name of Operator
COG Operating LLC

9. API Well No.
30-015- 40386

3a. Address
550 W. Texas Ave., Suite 100
Midland, TX 79701

3b. Phone No (include area code)
432-685-4384

10. Field and Pool, or Exploratory
Dodd; Glorieta-Upper Yeso C-9917?

4. Location of Well (Report location clearly and in accordance with any State requirements *)
At surface 2300' FSL & 1800' FWL, Unit K
At proposed prod. zone same

11. Sec., T R M or Blk. and Survey or Area
Sec 14 T17S R29E

14. Distance in miles and direction from nearest town or post office*
2 miles from Loco Hills, NM

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
1800'	1480	40
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
267'	TVD: 4550' MD: 4585'	NMB000740; NMB000215
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3614' GL	11/30/2011	15 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall 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 shall 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 authorized officer

25. Signature	Name (Printed/Typed)	Date
Kacie Connally	Kacie Connally	10/12/2011
Title: Permitting Tech		

Approved by (Signature)	Name (Printed/Typed)	Date
		- 5 2012
Title: FIELD MANAGER	Office: CARLSBAD FIELD OFFICE	

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

APPROVAL FOR TWO YEARS

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

*(Instructions on page 2)

Roswell Controlled Water Basin

RECEIVED
JUN 07 2012
NMOCD ARTESIA

CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access road 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 make 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 COG Operating, LLC, 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 5th day of October, 2011.

Signed: Carl Bird

Printed Name: Carl Bird

Position: Drilling Engineer

Address: 550 W. Texas, Suite 1300, Midland, Texas 79701

Telephone: (432) 683-7443

Field Representative (if not above signatory): Same

E-mail: cbird@conchoresources.com

DISTRICT I
1625 N French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax. (575) 393-0720
DISTRICT II
811 S First St., Artesia, NM 88210
Phone. (575) 748-1283 Fax (575) 748-9720
DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S St Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax. (505) 476-3462

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

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015- 40386	97917	DODD; GLORIETA-UPPER YESO

Property Code	Property Name	Well Number
308195	DODD FEDERAL UNIT	623

OGRID No	Operator Name	Elevation
229137	COG OPERATING, LLC	3613'

Surface Location

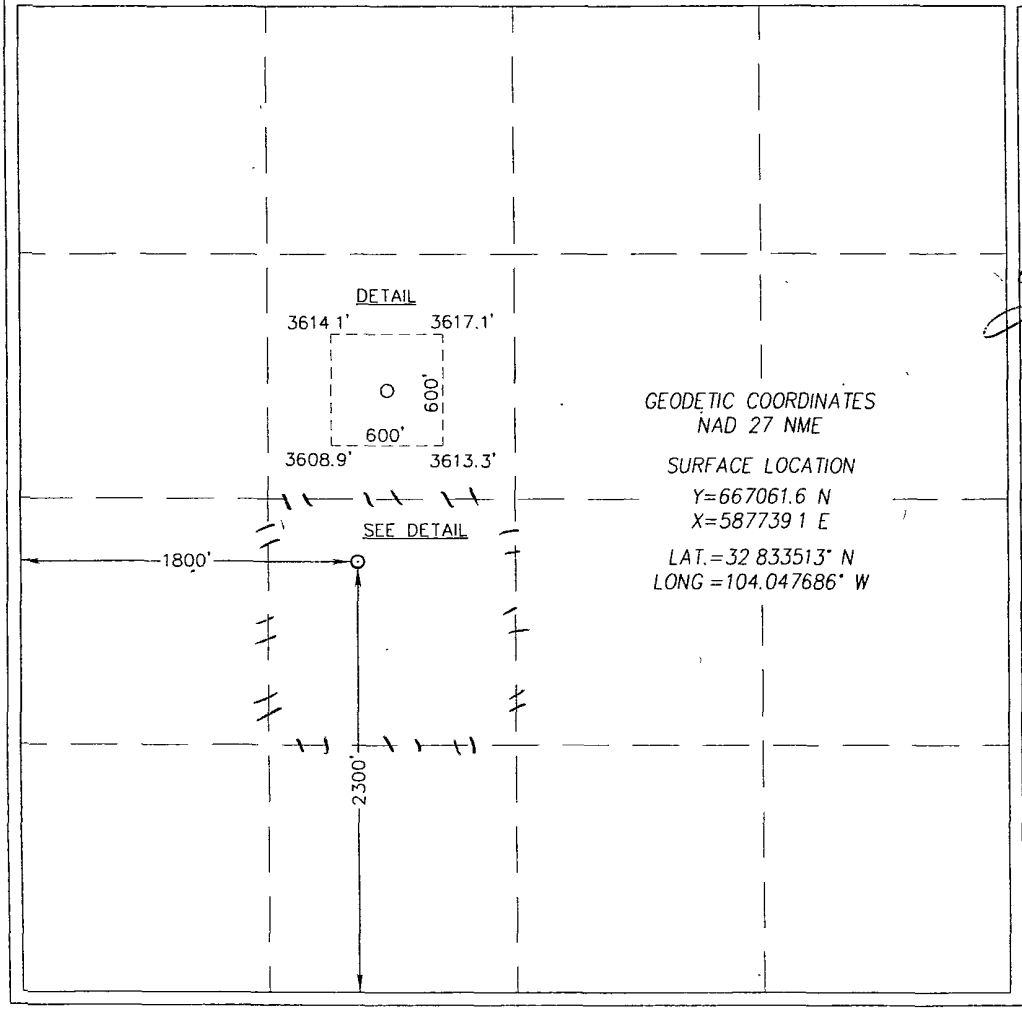
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	14	17-S	29-E		2300	SOUTH	1800	WEST	EDDY

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 5/11/2012 Date

Robyn M. Odom
Printed Name

Rodom@concho.com
E-mail Address

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

MAY 4, 2012
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON NEW MEXICO 3239 REGISTERED PROFESSIONAL SURVEYOR

Ronald J. Eidson 5/9/2012

Certificate Number Gary L. Jones 12641
Ronald J. Eidson 3239

AF WSC W O 12 11 0865

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Rustler	220'
Salt	360'
Base of Salt	780'
Yates	950'
Seven Rivers	1235'
Queen	1845'
Grayburg	2220'
San Andres	2540'
Glorieta	4000'
Paddock	4075'
Blinebry	4620'
Tubb	5520'

3. Estimated Depths of Anticipated Fresh Water, Oil and Gas

Water Sand	150'	Fresh Water
Grayburg	2220'	Oil/Gas
San Andres	2540'	Oil/Gas
Glorieta	4000'	Oil/Gas
Paddock	4075'	Oil/Gas
Blinebry	4620'	Oil/Gas
Tubb	5520'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to ~~300~~ 400' and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 8 5/8" casing to ~~850~~ 900' and circulating cement, in a single or multi-stage job and/or with an ECP, back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them. This will be achieved by cementing, with a single or multi-stage job, the 5 1/2" production casing back 200' into the intermediate casing, (but calculated to surface) to be run at TD. If wellbore conditions arise that require immediate action and/or a change to this program, COG Operating LLC personnel will always react to protect the wellbore and/or environment.

See COA

See COA

4. Casing Program

See COA

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	brst/clps/ten
17 ½"	0-300' 280	13 3/8"	48#	H-40orJ-55	ST&C/New	ST&C	9.22/3.943/15.8
11"	0-850' 925	8 5/8"	24or32#	J-55	ST&C/New	ST&C	3.03/2.029/7.82
7 7/8"	0-TD	5 1/2"	15.5or17#	J-55orL-80	LT&C/New	LT&C	1.88/1.731/2.42

5. Cement Program See COA

13 3/8" Surface Casing: Class C w/ 2% Cacl2 + 0.25 pps CF, 400 sx, yield 1.32, back to surface. 154% excess

8 5/8" Intermediate Casing:

11" Hole:

Single Stage: 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 300 sx lead, yield-2.45 + Class C w/2% CaCl2, 200 sx tail, yield-1.32, back to surface. 363% excess

Multi-Stage: Stage 1: Class C w/2% CaCl2, 200 sx, yield - 1.32; 108% excess Stage 2: 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 300 sx, yield - 2.45, back to surface, 726% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 350' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

5 1/2" Production Casing:

Single Stage: LEAD 500 sx 35:65:6 C:Poz:Gel w/ 5% Salt + 5 pps LCM + 0.2% SMS + 0.3% FL-52A + 0.125 pps CF, yield-2.05; + TAIL 400 sx 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, yield-1.37, to 200' minimum tie back to intermediate casing. 76.8% open hole excess, cement calculated back to surface.

Multi-Stage: Stage 1: (Assumed TD of 4550') 500 sx 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF,

yield - 1.37, 34% excess; Stage 2: LEAD 450 sx 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, yield - 1.37, + TAIL 250 sx Class C w/ 0.3% R-3 + 1.5% CD-32, yield – 1.02 148% open hole excess, cement calculated back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 2500'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool, assumption for tool is water flow.

6. Minimum Specifications for Pressure Control

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer, and in some cases possibly a 2000 psi Hydril type annular preventer as provided for in Onshore Order #2. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on the bottom. A 13-5/8" or 11" BOP will be used, depending on the rig selected, during the drilling of the well. The BOP will be nippled up on the 13 3/8" surface casing with BOP equipment and tested to 2000 psi. When 11" BOP is used the special drilling flange will be utilized on the 13-3/8" head to allow testing the BOP with a retrievable test plug. After setting 8-5/8" the BOP will then be nippled up on the 8 5/8" intermediate casing and tested by a third party to 2000 psi and used continuously until total depth is reached. 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. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve, choke lines and a choke manifold (Exhibit #11) with a 2000 psi WP rating.

The majority of the rigs currently in use have a 13-5/8" BOP, so no special provision is needed for most wells in the area for conventionally testing the BOP with a test plug. However, due to the vagaries of rig scheduling, it might be that one of the few rigs with 11" BOP's might be called upon to drill any specific well in the area. Note that intermediate hole size is always 11". Therefore, COG Operating LLC respectfully requests a variance to the requirement of 13-5/8" BOP on 13-3/8" casing. When that circumstance is encountered the special flange will be utilized to allow testing the entire BOP with a test plug, without subjecting the casing to test pressure. The special flange also allows the return to full-open capability if desired. See COA

7. 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	WEIGHT	VISCOSITY	WATERLOSS
0-300' 250	Fresh Water	8.5	28	N.C.
300-850' 425	Brine	10	30	N.C.
850'-TD'	Cut Brine	8.7-9.2	30	N.C.

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

8. Auxiliary Well Control and Monitoring Equipment

A. Kelly cock will be kept in the drill string at all times.

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

9. Logging, Testing and Coring Program See COA

A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be run from TD to Surface.

B. Drill Stem test is not anticipated.

C. No conventional coring is anticipated.

D. Further testing procedures will be determined after the 5 ½" production casing has been cemented at TD, based on drill shows and log evaluation.

10. Abnormal Conditions, Pressure, Temperatures and Potential Hazards

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and the estimated maximum bottom hole pressure is 2300 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, although a Hydrogen Sulfide Drilling Operation Plan is attached to this program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations

Road and location work will not begin until approval has been received from the BLM. As this is a Master Drilling plan, please refer to the Form 3160-3 for the anticipated start date. Once commenced, drilling operations should be finished in approximately 10 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

CONCHO

COG Operating LLC

Eddy County, NM (NAN27 NME)
Dodd Federal Unit #623
Dodd Federal Unit #623

OH

Plan: Plan #1 7-7/8" Hole
SHL = 2300' FSL & 1700' FWL
BHL = 2621' FSL & 1341' FWL
Top of Paddock = 275' North of Surface & 309' West of Surface @ 4100' TVD

Standard Planning Report

10 October, 2011

Scientific Drilling
Directional Drilling Operations

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Dodd Federal Unit #623
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3614.00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3614 00usft
Site:	Dodd Federal Unit #623	**North Reference:**	Grid
Well:	Dodd Federal Unit #623	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7-7/8" Hole		

Project Eddy County, NM (NAN27 NME)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Dodd Federal Unit #623

Site Position:		**Northing:**	667,061 50 usft	**Latitude:**	32° 50' 0 647 N
From:	Map	**Easting:**	587,639 20 usft	**Longitude:**	104° 2' 52 839 W
Position Uncertainty:	0 00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0 15 °

Well Dodd Federal Unit #623

Well Position	**+N/-S**	0 00 usft	**Northing:**	667,061 50 usft	**Latitude:**	32° 50' 0 647 N
	+E/-W	0 00 usft	**Easting:**	587,639 20 usft	**Longitude:**	104° 2' 52 839 W
Position Uncertainty		0 00 usft	**Wellhead Elevation:**		**Ground Level:**	3,614 00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/10/10	7 81	60 66	48,897

Design Plan #1 7-7/8" Hole

Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0 00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 00	0.00	0 00	311 69

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,150 00	0.00	0 00	1,150 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,580 21	8 60	311 69	1,578 59	21 45	-24 08	2 00	2 00	-11 23	311 69	
4,585 44	8 60	311 69	4,550 00	320 50	-359 80	0 00	0 00	0 00	0 00	PBHL-Dodd #623

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Dodd Federal Unit #623
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3614 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3614 00usft
Site:	Dodd Federal Unit #623	**North Reference:**	Grid
Well:	Dodd Federal Unit #623	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7-7/8" Hole		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
West HL-Dodd #623 - North HL-Dodd #623									
1,050 00	0 00	0 00	1,050 00	0 00	0 00	0 00	0 00	0 00	0 00
8-5/8" Casing									
1,150 00	0 00	0 00	1,150 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start DLS 2.00°/100'									
1,200 00	1 00	311 69	1,200 00	0 29	-0 33	0 44	2 00	2 00	0 00
1,300 00	3 00	311 69	1,299 93	2 61	-2 93	3 93	2 00	2 00	0 00
1,400 00	5 00	311 69	1,399 68	7 25	-8 14	10 90	2 00	2 00	0 00
1,500 00	7 00	311 69	1,499 13	14 20	-15 95	21 35	2 00	2 00	0 00
1,580 21	8 60	311 69	1,578 59	21 45	-24 08	32 24	2 00	2 00	0 00
EOC hold 8.60°									
1,600 00	8 60	311 69	1,598 16	23 42	-26 29	35 20	0 00	0 00	0 00
1,700 00	8 60	311 69	1,697 04	33 37	-37.46	50 16	0 00	0 00	0 00
1,800 00	8 60	311 69	1,795 91	43 32	-48 63	65 12	0 00	0 00	0 00
1,900 00	8 60	311 69	1,894 79	53 27	-59 80	80 09	0 00	0 00	0 00
2,000 00	8 60	311 69	1,993 66	63 22	-70 97	95 05	0 00	0 00	0 00
2,100 00	8 60	311 69	2,092 53	73 17	-82 14	110 01	0 00	0 00	0 00
2,200 00	8 60	311 69	2,191 41	83 12	-93 31	124 97	0 00	0 00	0 00
2,300 00	8 60	311 69	2,290 28	93 07	-104 49	139 93	0 00	0 00	0 00
2,400 00	8 60	311 69	2,389 16	103 02	-115 66	154 89	0 00	0 00	0 00
2,500 00	8 60	311 69	2,488 03	112 98	-126 83	169 85	0 00	0 00	0 00
2,600 00	8 60	311 69	2,586 91	122 93	-138 00	184 81	0 00	0 00	0 00
2,700 00	8 60	311 69	2,685 78	132 88	-149 17	199 77	0 00	0 00	0 00
2,800 00	8 60	311 69	2,784 66	142 83	-160 34	214 73	0 00	0 00	0 00
2,900 00	8 60	311 69	2,883 53	152 78	-171 51	229 69	0 00	0 00	0 00
3,000 00	8 60	311 69	2,982 41	162 73	-182 69	244 65	0 00	0 00	0 00
3,100 00	8 60	311.69	3,081 28	172 68	-193 86	259 61	0 00	0 00	0 00
3,200 00	8 60	311 69	3,180 15	182 63	-205 03	274 57	0 00	0 00	0 00
3,300 00	8 60	311 69	3,279 03	192 58	-216 20	289 54	0 00	0 00	0 00
3,400 00	8 60	311 69	3,377 90	202 54	-227 37	304 50	0 00	0 00	0 00
3,500 00	8 60	311 69	3,476 78	212 49	-238 54	319.46	0 00	0 00	0 00
3,600 00	8 60	311 69	3,575 65	222 44	-249 71	334 42	0 00	0 00	0 00
3,700 00	8 60	311 69	3,674 53	232 39	-260 88	349 38	0 00	0 00	0 00
3,800 00	8 60	311 69	3,773 40	242 34	-272 06	364 34	0 00	0 00	0 00
3,900 00	8 60	311 69	3,872 28	252 29	-283 23	379 30	0 00	0 00	0 00
4,000 00	8 60	311 69	3,971 15	262 24	-294 40	394 26	0 00	0 00	0 00
4,100 00	8 60	311 69	4,070 03	272 19	-305 57	409 22	0 00	0 00	0 00
4,130 32	8 60	311 69	4,100 00	275 21	-308 96	413 76	0 00	0 00	0 00
Top of Paddock									
4,200 00	8 60	311 69	4,168 90	282 14	-316 74	424 18	0 00	0 00	0 00
4,300 00	8 60	311 69	4,267 77	292 10	-327 91	439 14	0 00	0 00	0 00
4,400 00	8 60	311 69	4,366 65	302 05	-339 08	454 10	0 00	0 00	0 00
4,500 00	8 60	311 69	4,465 52	312 00	-350 26	469 06	0 00	0 00	0 00
4,585 44	8 60	311 69	4,550 00	320 50	-359 80	481 85	0 00	0 00	0 00
PBHL-Dodd #623									

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Dodd Federal Unit #623
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3614 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3614 00usft
Site:	Dodd Federal Unit #623	**North Reference:**	Grid
Well:	Dodd Federal Unit #623	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7-7/8" Hole		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
West HL-Dodd #623	0 00	0 00	0 00	330 50	-369 80	667,392 00	587,269 40	32° 50' 3 927 N	104° 2' 57 162 W
- plan misses target center by 495 97usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W0 00 H150 00 D0 00)									
North HL-Dodd #623	0 00	0 00	0 00	330 50	-369 80	667,392 00	587,269 40	32° 50' 3 927 N	104° 2' 57 162 W
- plan misses target center by 495 97usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W150 00 H0 00 D0 00)									
PBHL-Dodd #623	0 00	0 01	4,550 00	320 50	-359 80	667,382 00	587,279 40	32° 50' 3 828 N	104° 2' 57 045 W
- plan hits target center - Circle (radius 10 00)									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,050 00	1,050 00	8-5/8" Casing	8-5/8	12-1/4

Formations

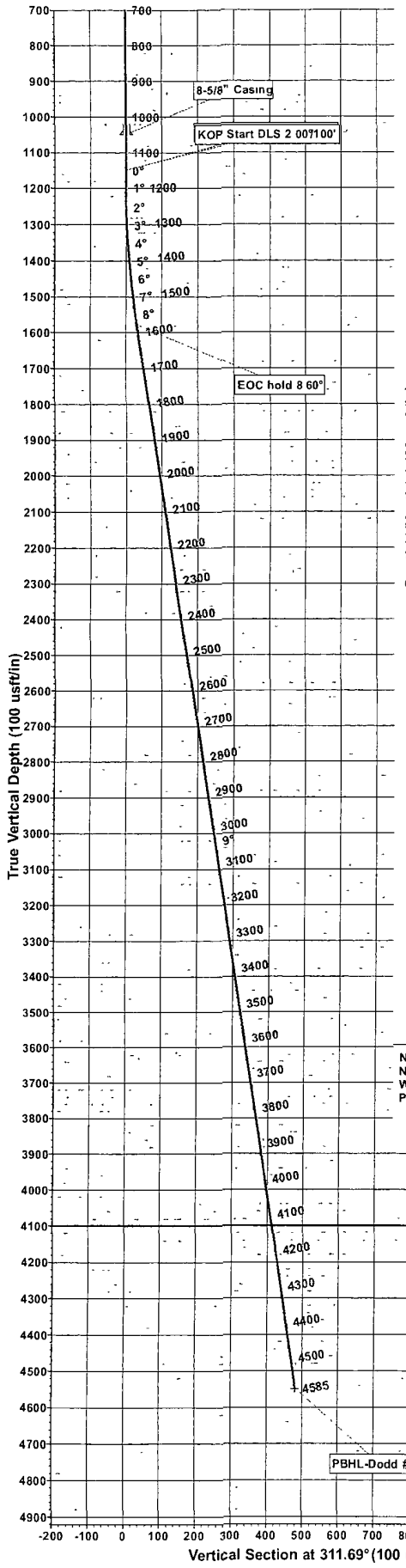
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,130 32	4,100 00	Top of Paddock		0 00	

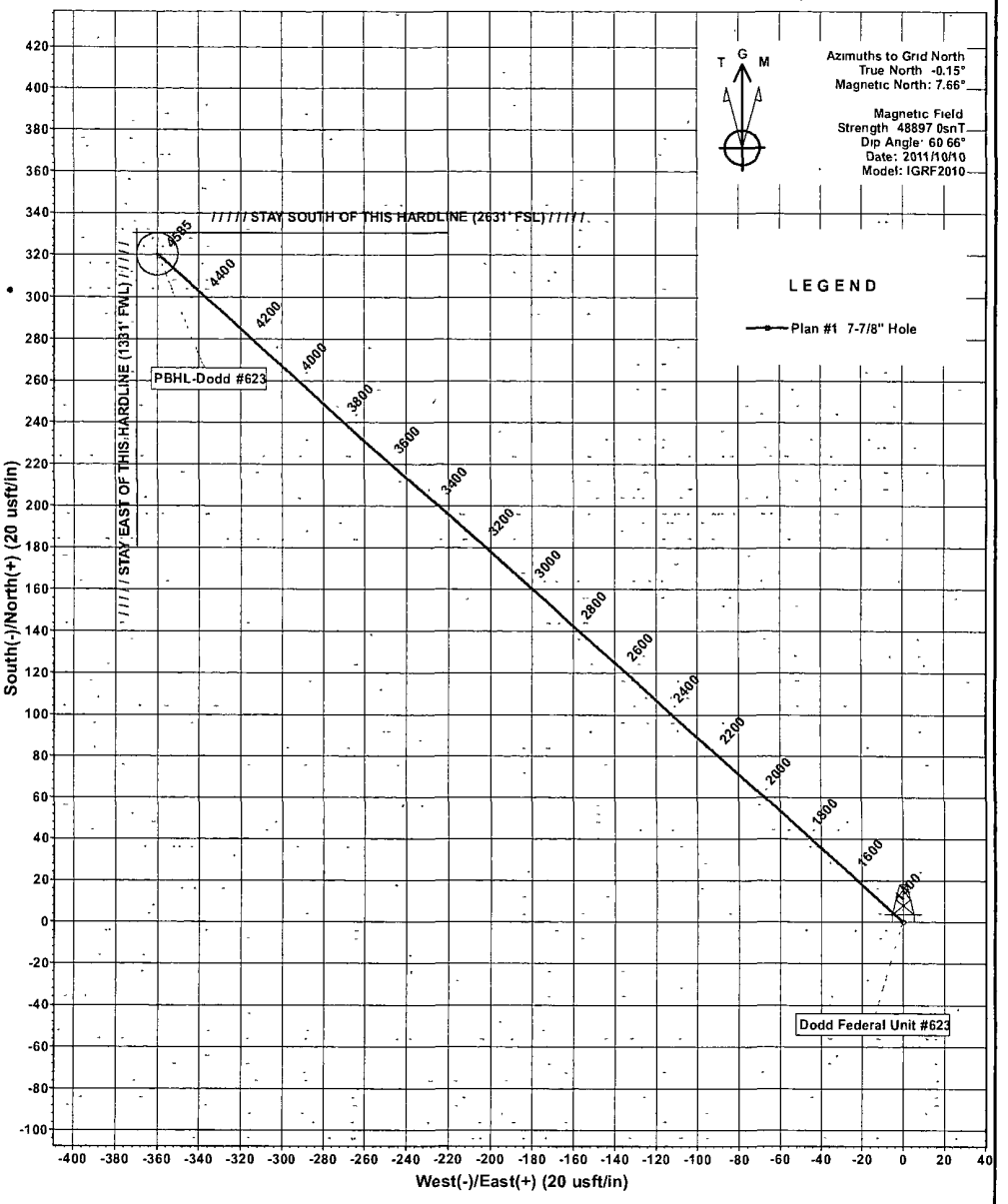
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,150 00	1,150 00	0 00	0 00	KOP Start DLS 2 00°/100'
1,580 21	1,578 59	21 45	-24.08	EOC hold 8 60°

Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Dodd Federal Unit #623
Wellbore: OH
Design: Plan #1 7-7/8" Hole

Scientific Drilling
Directional Drilling Operations





WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
North HL-Dodd #623	0 00	330.50	-369.80	667392 00	587269.40	32° 50' 3 927 N	104° 2' 57.162 W	Rectangle (Sides L0.00 W150 00)
West HL-Dodd #623	0 00	330.50	-369 80	667392 00	587269 40	32° 50' 3 927 N	104° 2' 57.162 W	Rectangle (Sides L 150 00 W0 00)
PBHL-Dodd #623	4550 00	320.50	-359.80	667382 00	587279 40	32° 50' 3 828 N	104° 2' 57.045 W	Circle (Radius 10. 00)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2	1150.00	0.00	0 00	1150.00	0 00	0 00	0.00	0.00	0 00	
3	1580 21	8.60	311 69	1578 59	21.45	-24 08	2 00	311 69	32 24	
4	4585 44	8 60	311.69	4550 00	320.50	-359 80	0 00	0 00	481.85	PBHL-Dodd #623

WELL DETAILS Dodd Federal Unit #623

Ground Level 3614.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0 00	0.00	667061 50	587639.20	32° 50' 0 647 N	104° 2' 52 839 W	

PROJECT DETAILS Eddy County, NM (NAN27 NME)

Plan Plan #1 7-7/8" Hole (Dodd Federal Unit #623/OH)

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

Created By: Julio Pina Date: 10-Oct-11
Checked. _____ Date _____
Reviewed: _____ Date _____
Approved. _____ Date. _____

COG OPERATING LLC
550 West Texas, Suite 1300
Midland, TX 79701

DIRECTIONAL PLAN VARIANCE REQUEST

Dodd Federal Unit #623
EDDY, NM

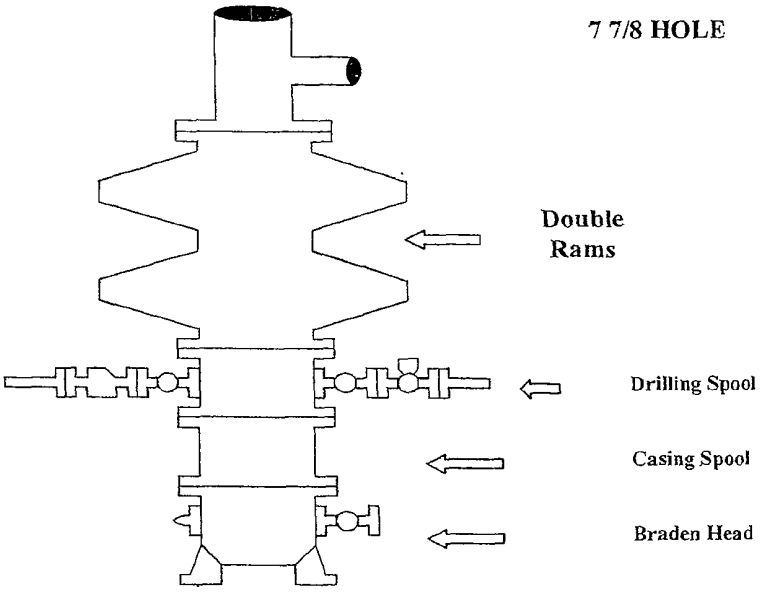
SHL	2300 FSL, 1700 FWL	Sec 14, T17S, R29E, Unit K
BHL	2631 FSL, 1331 FWL	Sec 14, T17S, R29E, Unit K

COG Operating LLC, as Operator, desires that the APD reflect the footages as stated on the surveyor's plat. However, Operator also desires to avoid inadvertently drilling the well to a non-standard location. Therefore, due to the proximity of the plat bottom hole location to the pro-ration unit hard line(s), the attached directional plan is designed to avoid the hard lines by as much as fifty feet; said fifty feet being in either (or both) the north-south and/or east-west directions as applicable.

COG Operating LLC

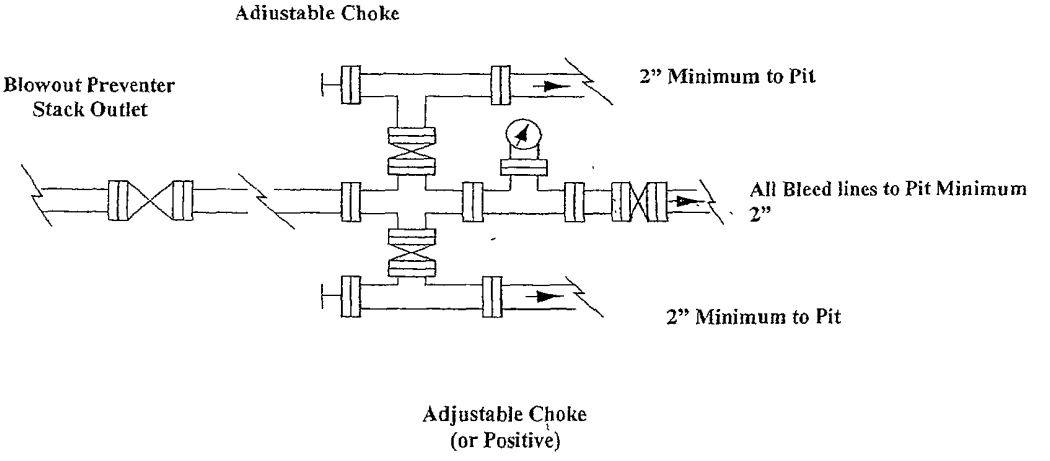
Exhibit #9

BOPE and Choke Schematic



Minimum 4" Nominal choke and kill lines

Choke Manifold Requirement (2000 psi WP)
No Annular Required

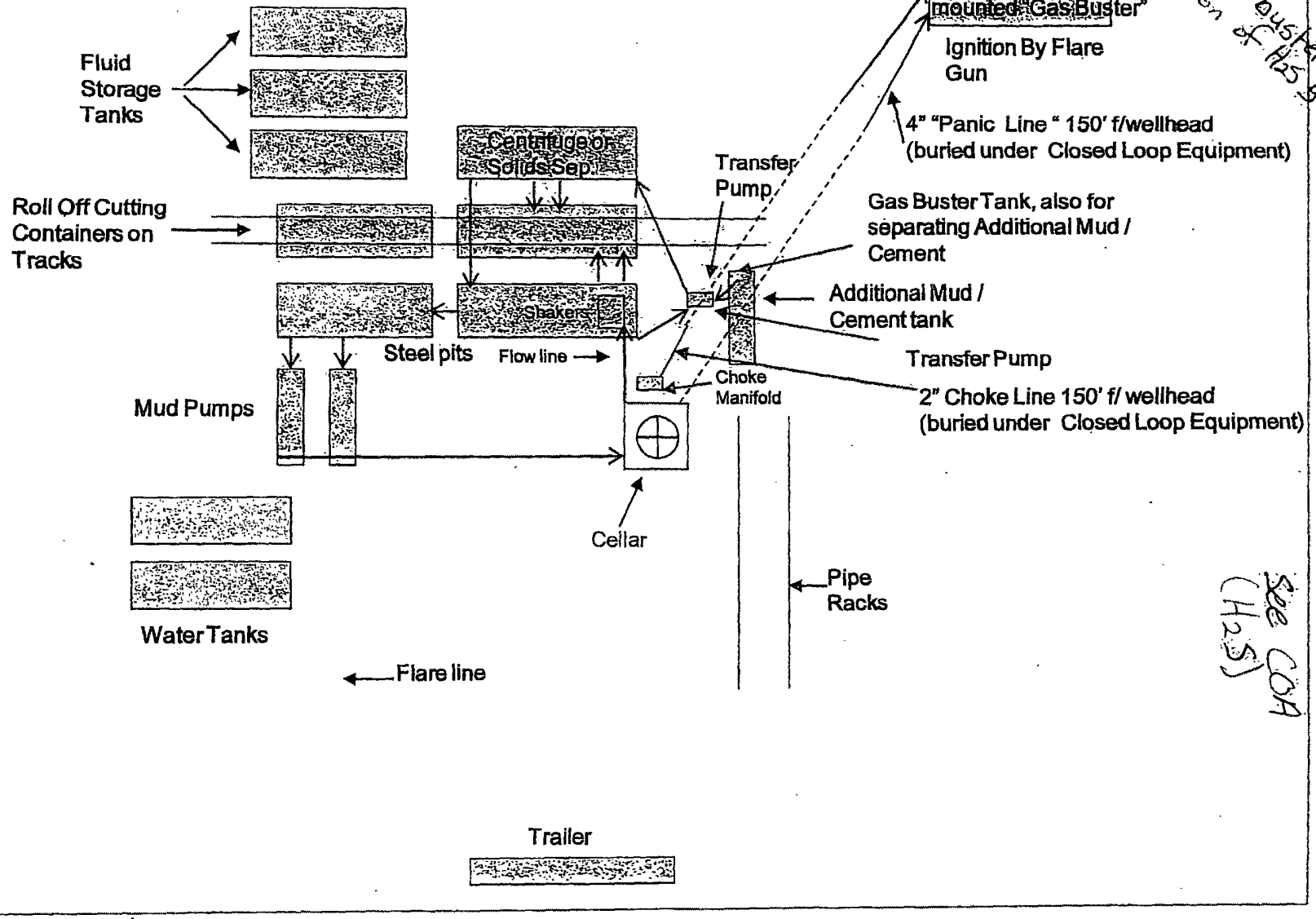


NOTES REGARDING THE BLOWOUT PREVENTERS
Master Drilling Plan
Eddy County, New Mexico

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
2. Wear ring to be properly installed in head.
3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
4. All fittings to be flanged.
5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
6. All choke and fill lines to be securely anchored especially ends of choke lines.
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
8. Kelly cock on Kelly.
9. Extension wrenches and hands wheels to be properly installed.
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.

COG Operating LLC

Closed Loop Equipment Diagram



All drilling fluid circulated over shaker(s) with cuttings discharged into roll off container.

Fluid and fines below shaker(s) are circulated with transfer pump through centrifuge(s) or solids separator with cuttings and fines discharged into roll off container.

Fluid is continuously re-circulated through equipment with polymer added to aid separation of cutting fines.

Roll off containers are lined and de-watered with fluids re-circulated into system.

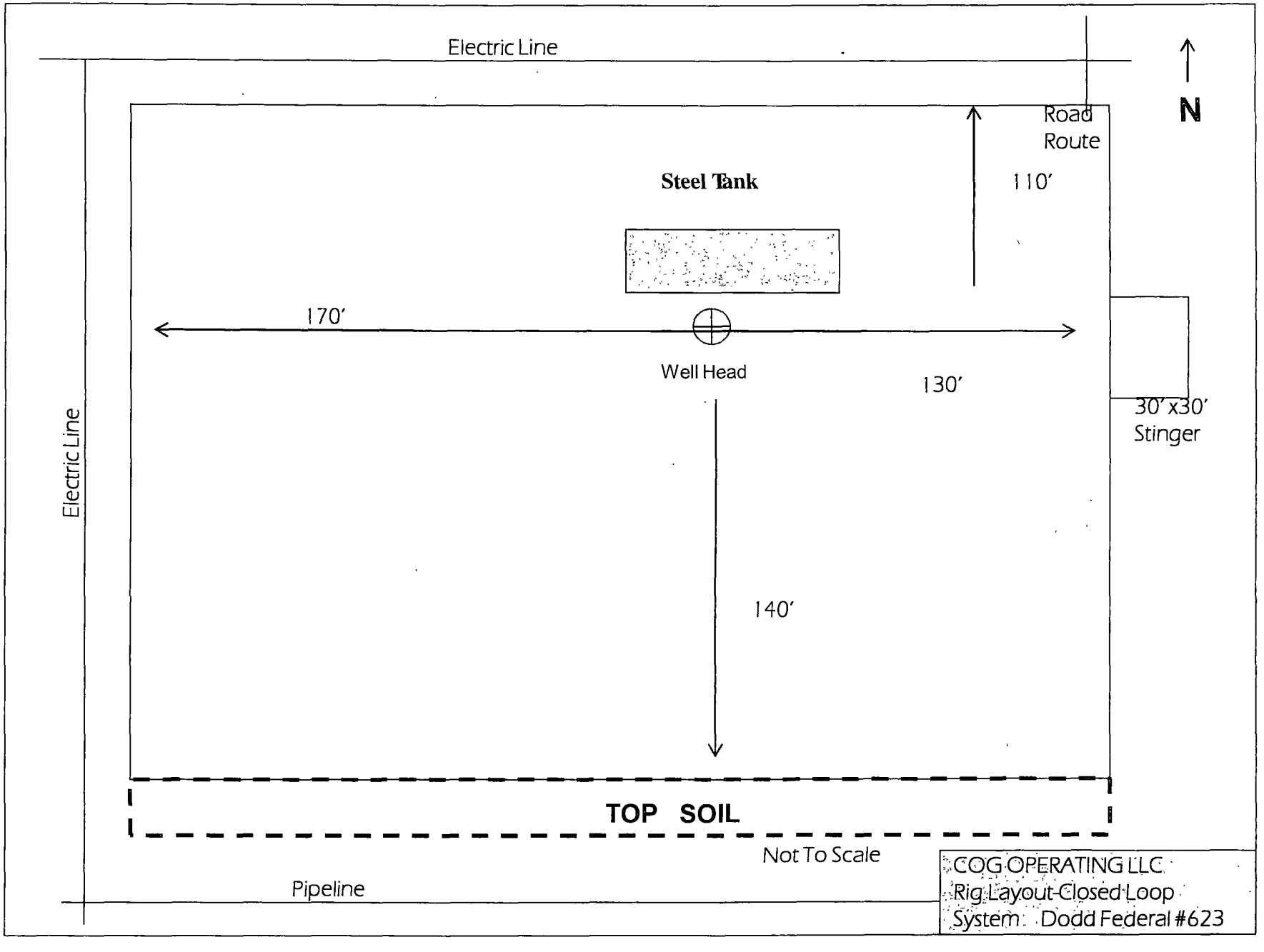
Additional tank is used to capture unused drilling fluid or cement returns from casing jobs.

This equipment will be maintained 24 hrs./day by solids control personnel and or rig crews that stay on location.

Cuttings will be hauled to either:

CRI (permit number R9166)
or
GMI (permit number 711-019-001)

dependent upon which rig is available to drill this well.


Electric Line
N
Road
Route
Steel Tank
110'
170'
Well Head
130'
30' x30'
Stinger
Electric Line
140'
TOP SOIL
Not To Scale
Pipeline
COG OPERATING LLC
Rig Layout-Closed Loop
System Dodd Federal #623

COG Operating LLC

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards an characteristics of hydrogen sulfide (H2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H2S detectors alarms warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile tubular are to be used, personnel well be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. **The concentrations of H2S of wells in this area from surface to TD are low enough that a contingency plan is not required.**

II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

1. **Well Control Equipment:**

   A. Flare line.

   B. Choke manifold.

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

   D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

2. **Protective equipment for essential personnel:**

   A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

3. **H2S detection and monitoring equipment:**

   A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

4. **Visual warning systems:**

   A. Wind direction indicators as shown on well site diagram (Exhibit #8).

   B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

5. **Mud program:**

   A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices, and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

6. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

   B. All elastomers used for packing and seals shall be H2S trim.

7. **Communication:**

   A. Radio communications in company vehicles including cellular telephone and 2-way radio.

   B. Land line (telephone) communication at Office.

8. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.

   B. There will be no drill stem testing.

EXHIBIT #7

WARNING

YOU ARE ENTERING AN H2S

AUTHORIZED PERSONNEL ONLY

1. BEARDS OR CONTACT LENSES NOT ALLOWED
2. HARD HATS REQUIRED
3. SMOKING IN DESIGNATED AREAS ONLY
4. BE WIND CONSCIOUS AT ALL TIMES
5. CHECK WITH COG OPERATING FOREMAN AT

COG OPERATING LLC

1-432-683-7443

1-575-746-2010

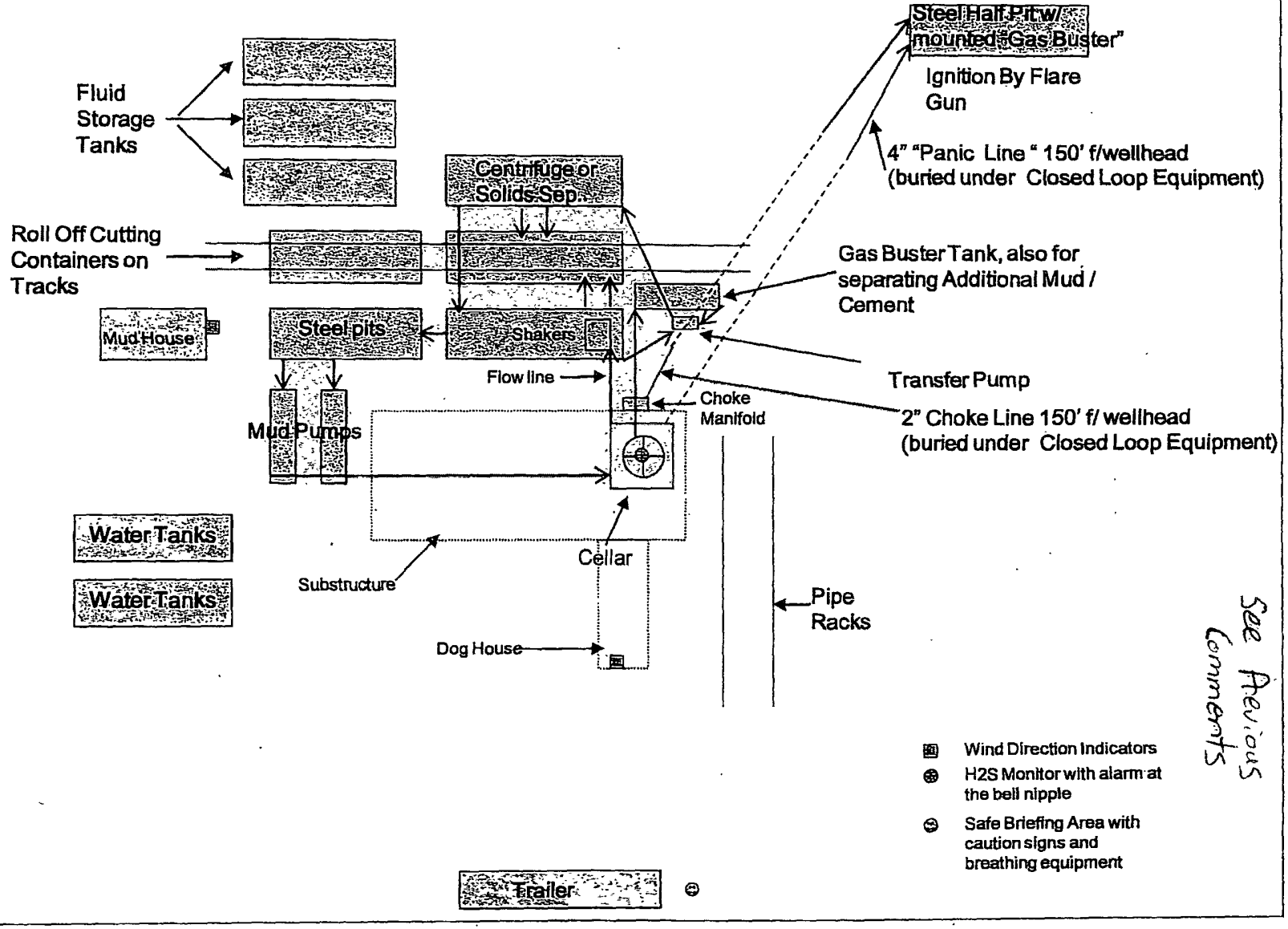
EDDY COUNTY EMERGENCY NUMBERS
ARTESIA FIRE DEPT. 575-746-5050
ARTESIA POLICE DEPT. 575-746-5000
EDDY CO. SHERIFF DEPT. 575-746-9888

LEA COUNTY EMERGENCY NUMBERS
HOBBS FIRE DEPT. 575-397-9308
HOBBS POLICE DEPT. 575-397-9285
LEA CO. SHERIFF DEPT. 575-396-1196

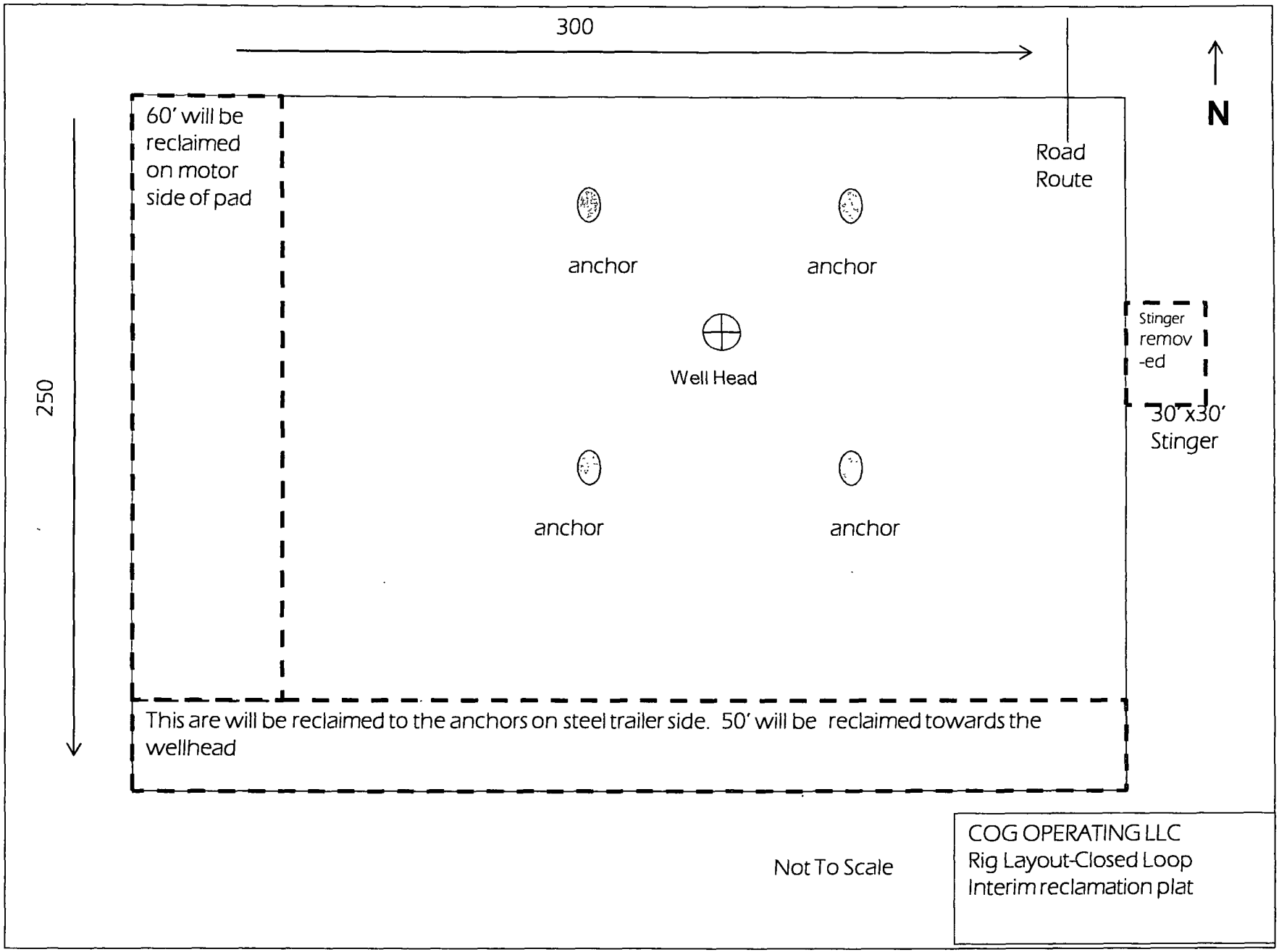
COG Operating LLC

EXHIBIT 8

Drilling Location - H2S Safety Equipment Diagram



See Previous Comments


300
N
60' will be reclaimed on motor side of pad
Road Route
anchor
anchor
Well Head
Stinger remov -ed
30' x30' Stinger
250
anchor
anchor
This are will be reclaimed to the anchors on steel trailer side. 50' will be reclaimed towards the wellhead
Not To Scale
COG OPERATING LLC
Rig Layout-Closed Loop
Interim reclamation plat

Surface Use & Operating Plan

Dodd Federal Unit #623

- Surface Tenant: Bogle Farms, Lewis Derrick, P O Box 441, Artesia, NM 88211.
- New Road: approx. 102'
- Flow Line: approx. 990'
- Facilities: Dodd North Federal tank battery

Well Site Information

V Door: East

Topsoil: South

Interim Reclamation: South/West

Notes

-N/A

Onsite: 8/23/2011

John Fast (BLM), Caden Jameson (COG), Gary Box (J.W.S)

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating
LEASE NO.:	LC028731B
WELL NAME & NO.:	Dodd Fed Unit 623
SURFACE HOLE FOOTAGE:	2300' FSL & 1700' FWL
BOTTOM HOLE FOOTAGE	2631' FSL & 1331' FWL
LOCATION:	Section 14, T.17 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.