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ATS-12-875

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No: SL:NM029415B BL:NM029415A

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

7. If Unit or CA Agreement, Name and No: N/A

1a Type of work: ☑ DRILL ☐ REENTER

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

8. Lease Name and Well No: Puckett 13 Federal Com #6H <38922>

2. Name of Operator: COG Operating LLC <229137>

9. API Well No: 30-015- 40736

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: Fren; Glorieta Yeso-East <97213>

4. Location of Well (Report location clearly and in accordance with any State requirements *)

At surface: SHL: 36' FNL & 1627' FEL, UL B

At proposed prod. zone: BHL: 330' FSL & 1650' FEL, UL O

UNORTHODOX LOCATION

11. Sec., T R. M. or Blk. and Survey or Area: Sec 13 T17S R31E

14. Distance in miles and direction from nearest town or post office*: 9 miles East of 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 drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
36'	SHL: 1920 BHL: 640	160
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**
466'	TVD: 6600' MD: 11309'	NMB000740; NMB000215
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3963' GL	08/31/2012	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
	Kelly J. Holly	06/19/2012

Title: Permitting Tech

Approved by (Signature)	Name (Printed/Typed)	Date
/s/ Don Peterson	/s/ Don Peterson	SEP 19 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

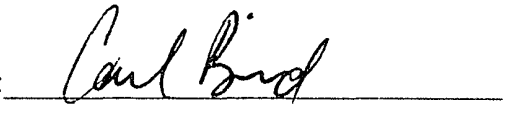
*(Instructions on page 2)

Roswell Controlled Water Basin

SEE ATTACHED FOR
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 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 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 2nd day of April, 2012.

Signed: 

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@concho.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- 46736	97213	FREN; GLORIETA-YESO, EAST

Property Code	Property Name	Well Number
38922	PUCKETT 13 FEDERAL COM	6H

OGRID No.	Operator Name	Elevation
229137	COG OPERATING, LLC	3963'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	13	17-S	31-E		36	NORTH	1627	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	13	17-S	31-E		330	SOUTH	1650	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

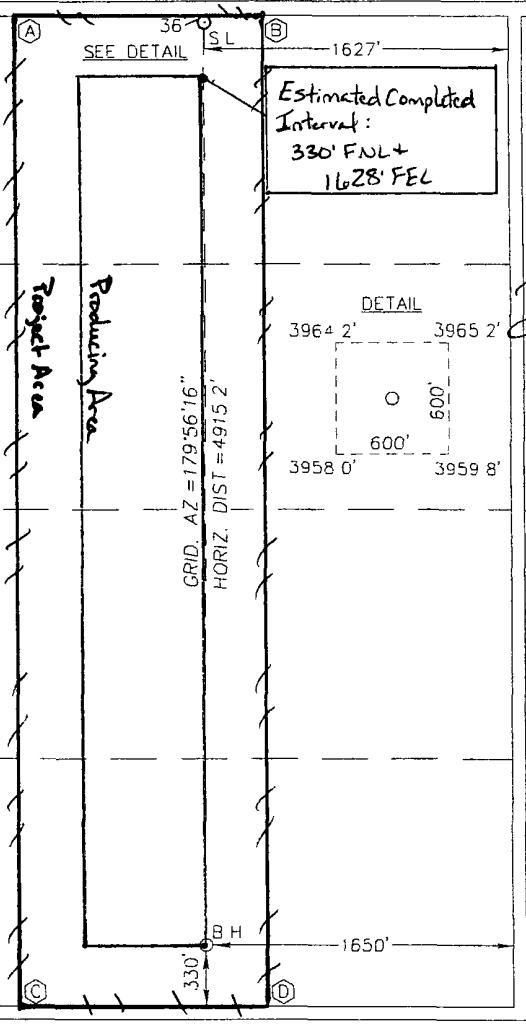
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=670312.4 N
X=657876.9 E
LAT = 32.841718° N
LONG = 103.819296° W

BOTTOM HOLE LOCATION
Y=665398.5 N
X=657882.2 E

CORNER COORDINATES TABLE
(A) - Y=670340.7 N, X=656865.1 E
(B) - Y=670350.6 N, X=658184.2 E
(C) - Y=665061.6 N, X=656892.2 E
(D) - Y=665070.9 N, X=658213.0 E



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 7/13/2012 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.

FEBRUARY 24, 2012
Date of Survey

Signature & Seal of Professional Surveyor:

NEW MEXICO 3239 REGISTERED PROFESSIONAL SURVEYOR RONALD J. EIDSON

03/13/2012

Certificate Number: Gary G. Eidson 12641
Ronald J. Eidson 3239

AF JWSC W.O. 11.11.2409

6. Casing Program - **Proposed**

Hole size	Interval	OD of Casing	Weight	Cond.	Collar	Grade
17-1/2"	0' - +/-750'	13-3/8"	48#	New	STC	H-40 or Hybrid J-55
Collapse sf – 2.32, Burst sf – 5.22, Tension sf – 8.94						
12-1/4"	0' - +/-2000'	9-5/8"	36#	New	STC	J/K-55
Collapse sf – 2.13, Burst sf – 3.72, Tension sf – 6.29						
8-3/4" x 7 7/8"	0' – 11309'	7" x 5-1/2"	26#/17#	New	LTC	L-80
7" Csg - Collapse sf – 1.87, Burst sf – 1.65, Tension sf – 3.26 5 ½" Csg - Collapse sf – 2.01, Burst sf – 1.67, Tension sf – 3.10						

Production string will be a tapered string with 7" 26# L-80 LTC ran from surface to kick off point and then crossed over to 5 ½" 17# L-80 LTC.

7. Cement Program * See COA

13 3/8" Surface Csg: Set at +/- 750'MD, Lead Slurry: 450 sx Class "C" w/ 4% Gel, 2% CaCl, .25 lb/sx CelloFlake, yield 1.75 ft^3/sx, wt. 13.5 ppg. Tail Slurry: 200sx Class "C" w/ 2% CaCl2 & 0.25 lb/sx CelloFlake, yield 1.32 ft^3/sx, wt.14.8 ppg. 102% excess, calculated to surface.

9 5/8" Intrmd. Csg: Set at +/- 2000'MD.

Option #1: **Single Stage (TD to Surface):** Lead Slurry: 500 sx 50:50:10:C:Poz:Gel w/ 5% salt, 5 pps LCM-1, 0.25 pps CF,yield 2.45 cu.ft./sk.,11.8 ppg. Tail Slurry: 200 sx Class "C" w/ 2% CaCl2, yield 1.32 cu.ft./sk., wt. 14.8 ppg. 208% excess, calculated to surface.

Option #2: **Multi Stage: Stage 1 (TD to DV Tool @ 800'):** 500 sx Class "C" w/ 2% CaCl2, yield 1.32 cu.ft./sk., wt. 14.8 ppg. 17% excess. **Stage 2 (DV Tool to surface):** 250 sx 50:50:10:C:Poz:Gel w/ 5% salt, 5 pps LCM-1, 0.25 pps CF, yield 2.45 cu.ft./sk., wt. 14.8 ppg calculated to surface, 225% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 800' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

See COA

7" x 5 1/2" Production Csg: Set at +/- 11309'MD.

Option#1: **Single Stage (KOP to surface):** Lead Slurry: 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 2.01 cu.ft./sk., wt. 12.5 ppg. Tail Slurry: 400 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, 0.6% SMS, 1% FL-25, 1% BA-58, 0.125 pps CF, 0.3% FL-52A; yield 1.37 cu.ft./sk., wt. 14.0 ppg. DV Tool and ECP to be set at kick off point with 7" cemented to surface and 5 ½" run with +/- 18 isolation packers and sliding sleeves in uncemented lateral. 97% excess in open hole, from kick off point, calculated to surface. **This is a minimum volume and will be adjusted up after caliper is run**.

Option #2: **Multi Stage (DV Tool & ECP (external csg. packer)@ KOP and DV Tool at 3000'): Stage 1:** (KOP To DV Tool at 3000'): 700 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, 0.6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, 0.3% FL-52A; yield 1.37 cu.ft./sk., wt.14.00 ppg. 104% excess. **This is a minimum volume and will be adjusted up after caliper is run. Stage 2 (DV Tool to surface)** Lead Slurry: 300 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, 0.6% SMS, 1% FL-25, 1% BA-58, 0.125 pps CF, 0.3% FL-52A; yield 1.37 cu.ft./sk., wt. 14.0 ppg. Tail Slurry: 300 sx Class C w/ 0.3% R-3 + 1.5% CD-32, yield 1.02 cu.ft./sk., wt. 16.8 ppg. 155% excess calculated back to surface (no need for excess in casing overlap). **This is a minimum volume and will be adjusted up after caliper is run**.

See COA

You will note that in option #2 the Multi stage tool (DV Tool) will be set at approximately 3000', depending on hole conditions. Cement volumes will be adjusted proportionately for depth changes of multi stage tool; assumption for use of tool is water flow.

8. Pressure Control Equipment: See COA

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" BOP will be used during the drilling of the well. A 13 5/8" permanent casing head will be installed on the 13 3/8" casing. The BOP will be nippled up on the 13 5/8" permanent casing head and tested to 2000 psi. After setting 9-5/8", permanent "B section" well head will be installed and the BOP will then be nippled up on the permanent B section well head 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.

9. Proposed Mud Circulating System

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 750'	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
750'- 2000'	10	30	NC	Brine mud, lime for PH and paper for seepage and sweeps.
2000'- 11309'	9.1	29	NC	Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal.

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

10. Production Hole Drilling Summary: RUN

Drill 8 ¾" hole and kick off at +/- 6123', building curve over +/- 750' to horizontal at 6600' TVD. Drill 7 7/8" lateral section in a southerly direction for +/-4914' lateral to TD at +/-11309' MD, 6600' TVD. Run 7" x 5-1/2" production casing. 7" to be ran from surface to kickoff point and changed over to 5 ½" with DV Tool and ECP at kickoff point. 5 ½" casing will be ran from kickoff point to td and isolation packers set throughout lateral. 7" to be cemented from kickoff point to surface.

RUN

11. 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.

12. Logging, Testing and Coring Program:

    A. No electric logs to be run. * See COA

    B. The mud logging program will consist of lagged 10' samples from intermediate casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.

    C. Drill Stem test is not anticipated.

    D. No conventional coring is anticipated.

    E. Further testing procedures will be determined after the 7" x 5 ½" production casing has been cemented at TD based on drill shows and log evaluation.

13. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

    No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature at TD of pilot hole is 105 degrees and estimated maximum bottom hole pressure is 2970 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, however an H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

    Drilling operations will commence approximately on ***June 30, 2012*** with drilling and completion operations lasting approximately ***90*** days.

received
6/25/12

COG Operating LLC

Eddy County, NM
Puckett 13 Federal Com 6H
Puckett 13 Federal Com 6H

Wellbore #1

Surface: 36' FNL, 1627' FEL, Sec 13, T17S, R31E, Unit B
BHL: 330' FSL, 1650' FEL, Sec 13, T17S, R31E, Unit O
PP: 330' FNL, 1628' FEL, Sec 13 T17S R31E, Unit B

Plan: Plan #1

Standard Planning Report

12 April, 2012

Crescent Directional Drilling

Planning Report

Database:	R5000 Houston DB	**Local Co-ordinate Reference:**	Site Puckett 13 Federal Com 6H
Company:	COG Operating LLC	**TVD Reference:**	WELL @ 3981 00ft (Original Well Elev)
Project:	Eddy County, NM	**MD Reference:**	WELL @ 3981 00ft (Original Well Elev)
Site:	Puckett 13 Federal Com 6H	**North Reference:**	Grid
Well:	Puckett 13 Federal Com 6H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project	Eddy County, NM		
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	Puckett 13 Federal Com 6H				
Site Position:		**Northing:**	670,312 40 ft	**Latitude:**	32° 50' 30 17 N
From:	Map	**Easting:**	657,876 90 ft	**Longitude:**	103° 49' 9 48 W
Position Uncertainty:	0 00 ft	**Slot Radius:**	13 200 in	**Grid Convergence:**	0 28 °

Well	Puckett 13 Federal Com 6H					
Well Position	**+N/-S**	0 00 ft	**Northing:**	670,312 40 ft	**Latitude:**	32° 50' 30 17 N
	+E/-W	0 00 ft	**Easting:**	657,876 90 ft	**Longitude:**	103° 49' 9 48 W
Position Uncertainty		0 00 ft	**Wellhead Elevation:**		**Ground Level:**	3,963 00 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	4/3/2012	7 65	60 70	48,877

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	179 94	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
6,122 54	0 00	0 00	6,122 54	0 00	0 00	0 00	0 00	0 00	0 00	
6,872 54	90 00	179 94	6,600 00	-477 46	0 51	12 00	12 00	0 00	179 94	
11,308 97	90 00	179 94	6,600 00	-4,913 90	5 30	0.00	0 00	0 00	0.00	PBHL (Puckett 13 Fe

Database:	R5000 Houston DB	**Local Co-ordinate Reference:**	Site Puckett 13 Federal Com 6H
Company:	COG Operating LLC	**TVD Reference:**	WELL @ 3981.00ft (Original Well Elev)
Project:	Eddy County, NM	**MD Reference:**	WELL @ 3981 00ft (Original Well Elev)
Site:	Puckett 13 Federal Com 6H	**North Reference:**	Grid
Well:	Puckett 13 Federal Com 6H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,122 54	0.00	0 00	6,122 54	0 00	0 00	0 00	0 00	0 00	0 00
KOP - Start Build @ 12.00°/100'									
6,200 00	9 30	179 94	6,199 66	-6 27	0 01	6 27	12 00	12 00	0 00
6,300 00	21 30	179 94	6,295 94	-32 60	0 04	32 60	12 00	12 00	0 00
6,400.00	33 30	179 94	6,384 65	-78 38	0 08	78 38	12 00	12 00	0 00
6,500 00	45 30	179 94	6,461 89	-141.59	0 15	141 59	12 00	12 00	0.00
6,600 00	57 30	179 94	6,524 31	-219 49	0 24	219 49	12 00	12 00	0 00
6,684 23	67 40	179 94	6,563 35	-294 00	0 32	294 00	12 00	12 00	0 00
PP @ 6684.23 MD, 6563.35 TVD, 67.40 INC, 179.94 AZ, 294.00 VS									
6,700 00	69 30	179 94	6,569 16	-308 66	0 33	308 66	12 00	12 00	0 00
6,800 00	81 30	179 94	6,594 50	-405 21	0 44	405 21	12 00	12 00	0 00
6,872 54	90 00	179 94	6,600 00	-477 46	0 51	477 46	12 00	12 00	0 00
Landing Point - Hold @ 90.00° INC, 179.94° AZ									
6,900 00	90 00	179 94	6,600 00	-504 93	0 54	504 93	0 00	0 00	0 00
7,000 00	90 00	179 94	6,600 00	-604 93	0 65	604 93	0 00	0 00	0 00
7,100 00	90 00	179 94	6,600 00	-704 93	0.76	704 93	0 00	0 00	0 00
7,200 00	90 00	179 94	6,600 00	-804 93	0 87	804 93	0 00	0 00	0 00
7,300 00	90 00	179 94	6,600 00	-904 93	0 98	904 93	0 00	0 00	0 00
7,400 00	90 00	179 94	6,600 00	-1,004 93	1 08	1,004 93	0 00	0 00	0 00
7,500 00	90 00	179 94	6,600 00	-1,104 93	1 19	1,104 93	0 00	0 00	0 00
7,600 00	90 00	179 94	6,600 00	-1,204 93	1 30	1,204 93	0 00	0 00	0 00
7,700 00	90 00	179 94	6,600 00	-1,304 93	1 41	1,304 93	0 00	0 00	0 00
7,800 00	90 00	179 94	6,600 00	-1,404 93	1 52	1,404 93	0 00	0 00	0 00
7,900 00	90 00	179 94	6,600 00	-1,504 93	1 62	1,504 93	0 00	0 00	0 00
8,000 00	90 00	179 94	6,600 00	-1,604 93	1 73	1,604 93	0 00	0 00	0 00
8,100 00	90 00	179 94	6,600 00	-1,704 93	1 84	1,704 93	0 00	0 00	0 00
8,200 00	90 00	179 94	6,600 00	-1,804 93	1 95	1,804 93	0 00	0 00	0 00
8,300 00	90 00	179 94	6,600 00	-1,904 93	2 05	1,904 93	0 00	0 00	0 00
8,400 00	90 00	179 94	6,600 00	-2,004 93	2 16	2,004 93	0 00	0 00	0 00
8,500 00	90 00	179 94	6,600 00	-2,104 93	2 27	2,104 93	0 00	0 00	0 00
8,600 00	90 00	179 94	6,600 00	-2,204 93	2 38	2,204 93	0 00	0 00	0 00
8,700 00	90 00	179 94	6,600 00	-2,304 93	2 49	2,304 93	0 00	0 00	0 00
8,800 00	90 00	179 94	6,600 00	-2,404 93	2 59	2,404 93	0 00	0 00	0 00
8,900 00	90 00	179 94	6,600 00	-2,504 93	2 70	2,504 93	0 00	0 00	0 00
9,000 00	90 00	179 94	6,600 00	-2,604 93	2 81	2,604 93	0 00	0 00	0 00
9,100 00	90 00	179 94	6,600 00	-2,704 93	2 92	2,704 93	0 00	0 00	0 00
9,200 00	90 00	179 94	6,600 00	-2,804 93	3 03	2,804 93	0 00	0 00	0 00
9,300 00	90 00	179 94	6,600 00	-2,904 93	3 13	2,904 93	0 00	0 00	0 00
9,400 00	90 00	179 94	6,600 00	-3,004 93	3 24	3,004 93	0 00	0 00	0 00
9,500 00	90 00	179 94	6,600 00	-3,104 93	3 35	3,104 93	0 00	0 00	0 00
9,600 00	90 00	179 94	6,600 00	-3,204 93	3 46	3,204 93	0 00	0 00	0 00
9,700 00	90 00	179 94	6,600 00	-3,304 93	3 56	3,304 93	0 00	0 00	0 00
9,800 00	90 00	179 94	6,600 00	-3,404 93	3 67	3,404 93	0 00	0 00	0 00
9,900 00	90 00	179 94	6,600 00	-3,504 93	3 78	3,504 93	0 00	0 00	0 00
10,000 00	90 00	179 94	6,600 00	-3,604 93	3 89	3,604 93	0 00	0 00	0 00
10,100 00	90 00	179 94	6,600 00	-3,704 93	4 00	3,704 93	0 00	0 00	0 00
10,200 00	90 00	179 94	6,600 00	-3,804 93	4 10	3,804 93	0 00	0 00	0 00
10,300 00	90 00	179 94	6,600 00	-3,904 93	4 21	3,904 93	0.00	0 00	0 00
10,400 00	90 00	179 94	6,600 00	-4,004 93	4 32	4,004.93	0 00	0 00	0 00
10,500 00	90 00	179 94	6,600 00	-4,104 93	4 43	4,104 93	0 00	0 00	0 00
10,600 00	90 00	179 94	6,600 00	-4,204 93	4 54	4,204 93	0 00	0 00	0 00
10,700 00	90 00	179.94	6,600 00	-4,304 93	4 64	4,304 93	0 00	0 00	0 00
10,800 00	90 00	179 94	6,600 00	-4,404 93	4 75	4,404 93	0 00	0 00	0 00

Crescent Directional Drilling

Planning Report

Database:	R5000 Houston DB	**Local Co-ordinate Reference:**	Site Puckett 13 Federal Com 6H
Company:	COG Operating LLC	**TVD Reference:**	WELL @ 3981 00ft (Original Well Elev)
Project:	Eddy County, NM	**MD Reference:**	WELL @ 3981.00ft (Original Well Elev)
Site:	Puckett 13 Federal Com 6H	**North Reference:**	Grid
Well:	Puckett 13 Federal Com 6H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,900 00	90 00	179 94	6,600 00	-4,504 93	4 86	4,504 93	0 00	0 00	0 00
11,000 00	90 00	179 94	6,600 00	-4,604 93	4 97	4,604 93	0 00	0 00	0 00
11,100 00	90 00	179 94	6,600 00	-4,704 93	5 07	4,704 93	0 00	0 00	0 00
11,200 00	90 00	179 94	6,600 00	-4,804 93	5 18	4,804 93	0 00	0 00	0 00
11,300 00	90 00	179 94	6,600 00	-4,904 93	5 29	4,904 93	0 00	0 00	0 00
11,308.97	90 00	179 94	6,600 00	-4,913 90	5 30	4,913 90	0 00	0 00	0 00

TD @ 11308.97' MD, 6600.00' TVD - PBHL (Puckett 13 Federal Com 6H Plan 1)

Design 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 (Puckett 13 Feder - plan hits target center - Point	0 00	0 00	6,600 00	-4,913 90	5 30	665,398 50	657,882 20	32° 49' 41 55 N	103° 49' 9 70 W

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
6,122 54	6,122 54	0.00	0 00	KOP - Start Build @ 12 00°/100'
6,684 23	6,563 35	-294 00	0 32	PP @ 6684 23 MD, 6563 35 TVD, 67 40 INC, 179 94 AZ, 294 00 VS
6,872 54	6,600 00	-477 46	0 51	Landing Point - Hold @ 90 00° INC, 179 94° AZ
11,308 97	6,600 00	-4,913 90	5 30	TD @ 11308 97' MD, 6600 00' TVD

PRESCO DIRECTIONAL DRILLING

COG Operating LLC
Puckett 13 Federal Com 6H
Eddy County, NM
Plan #1

CONCHO

Surface Location		Ground Elev: 3963.00 WELL @ 3981.00ft (Original Well Elev)			
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.00	0.00	670312.40	657876.90	32° 50' 30.17 N	103° 49' 9.48 W

TARGET DETAILS

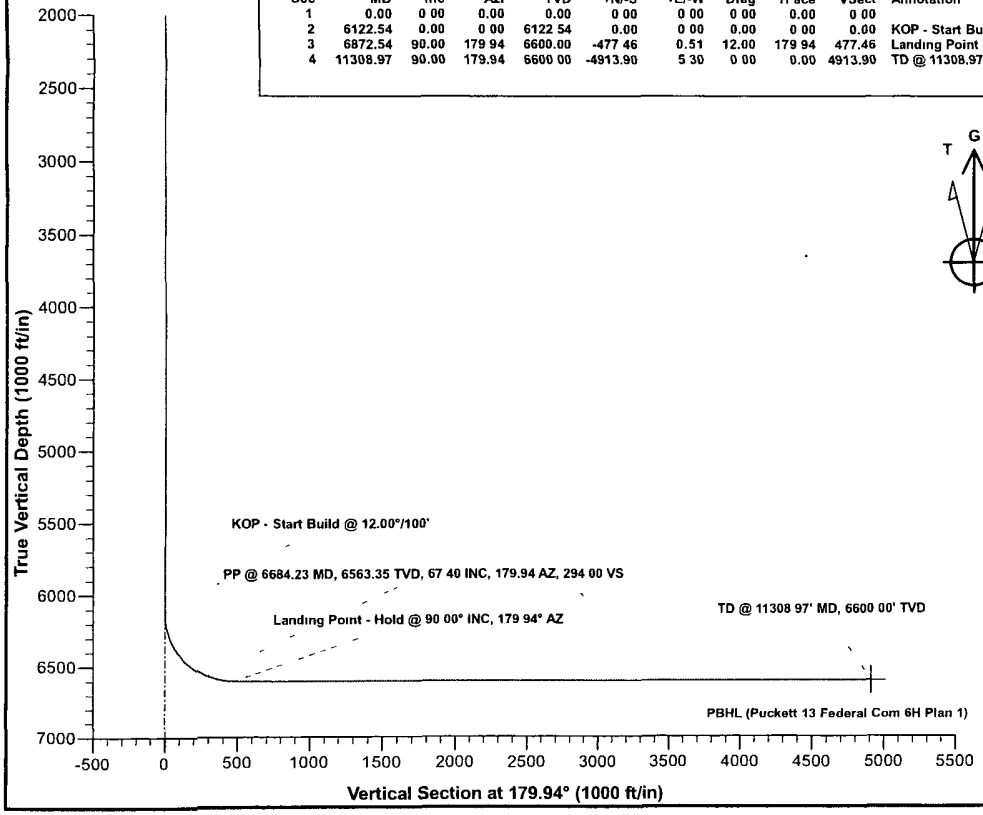
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (Puckett 13 Federal Com 6H Plan 1)	6600.00	-4913.90	5 30	665398 50	657882.20	32° 49' 41 55 N	103° 49' 9 70 W

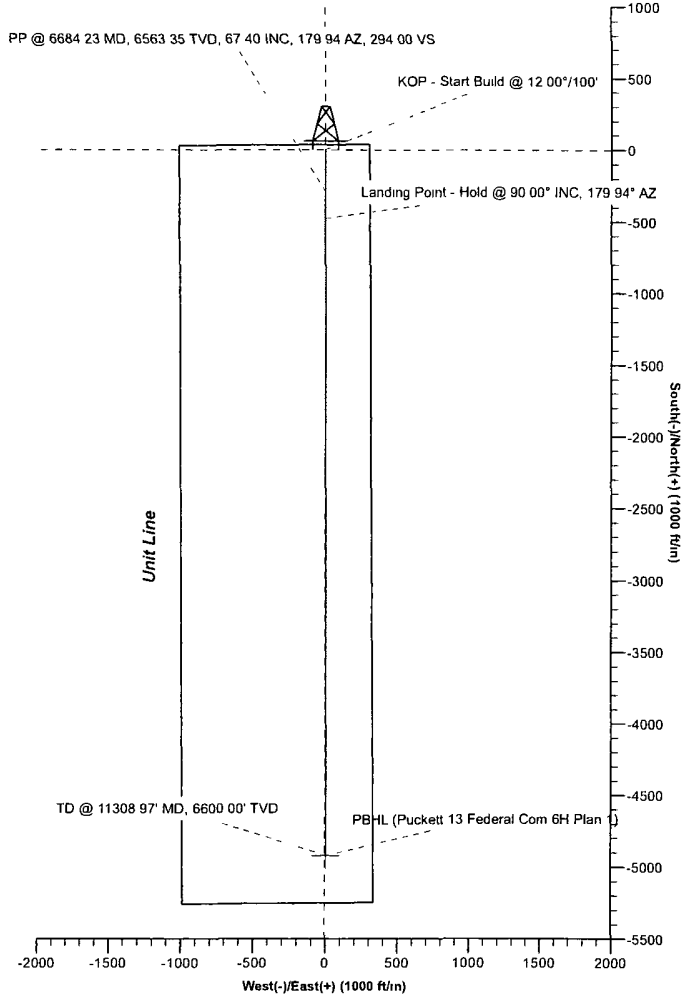
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	TFace	VSect	Annotation
1	0.00	0 00	0.00	0.00	0 00	0 00	0 00	0.00	0 00	
2	6122.54	0.00	0 00	6122 54	0.00	0 00	0.00	0 00	0.00	KOP - Start Build @ 12 00°/100'
3	6872.54	90.00	179 94	6600.00	-477 46	0.51	12.00	179 94	477.46	Landing Point - Hold @ 90.00° INC, 179.94° AZ
4	11308.97	90.00	179.94	6600 00	-4913.90	5 30	0 00	0.00	4913.90	TD @ 11308.97' MD, 6600 00' TVD

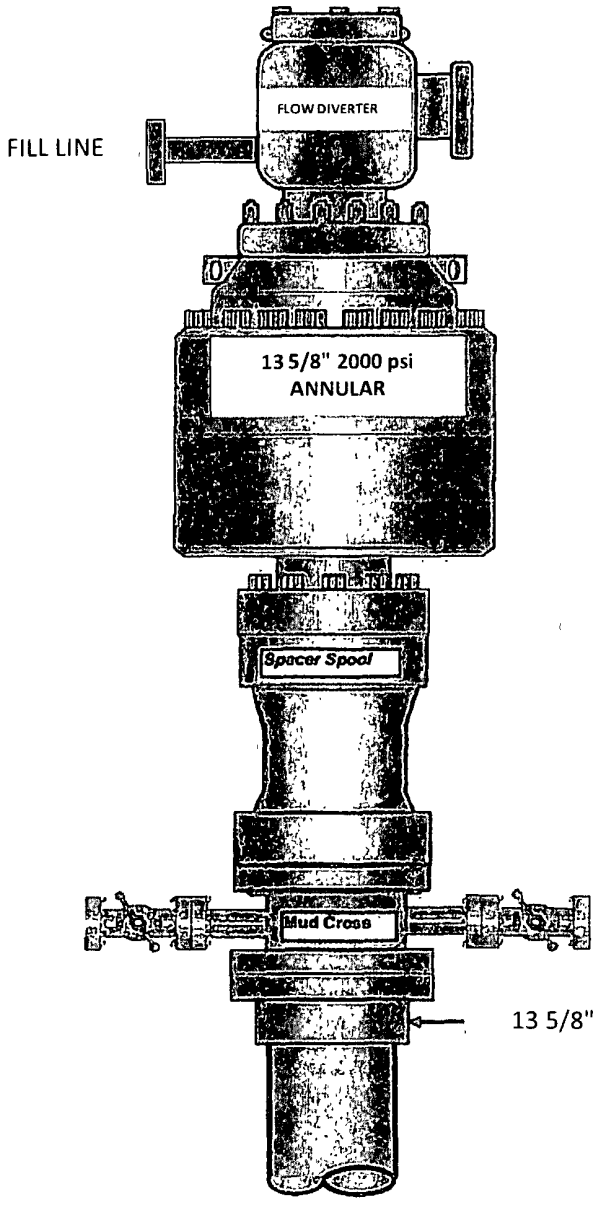
Azimuths to Grid North
True North -0 28°
Magnetic North 7 37°

Magnetic Field
Strength 48876 7snT
Dip Angle: 60 70°
Date 4/3/2012
Model IGRF2010





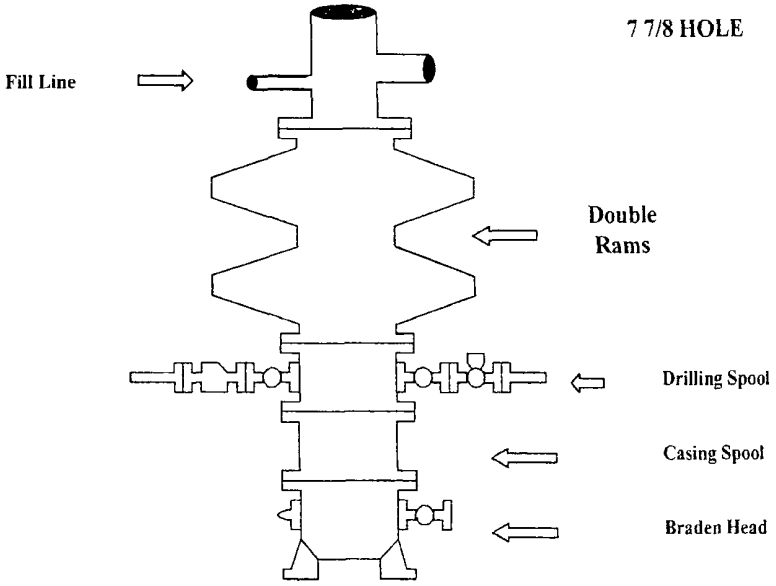
13 5/8" 2K ANNULAR



COG Operating LLC

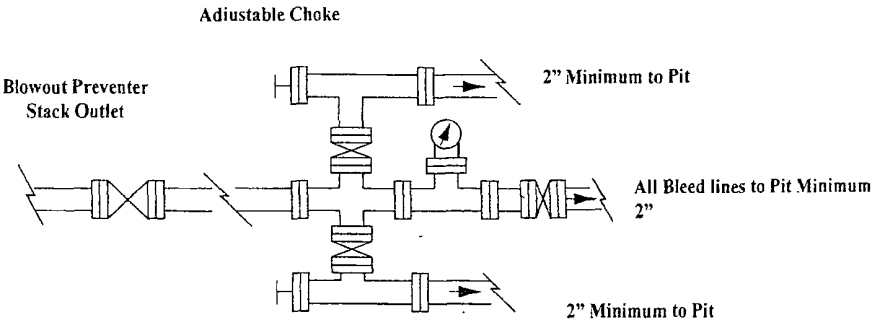
Exhibit #9

BOPE and Choke Schematic



Minimum 4" Nominal choke and kill lines

Choke Manifold Requirement (2000 psi WP)
No Annular Required



Adjustable Choke
(or Positive)

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.

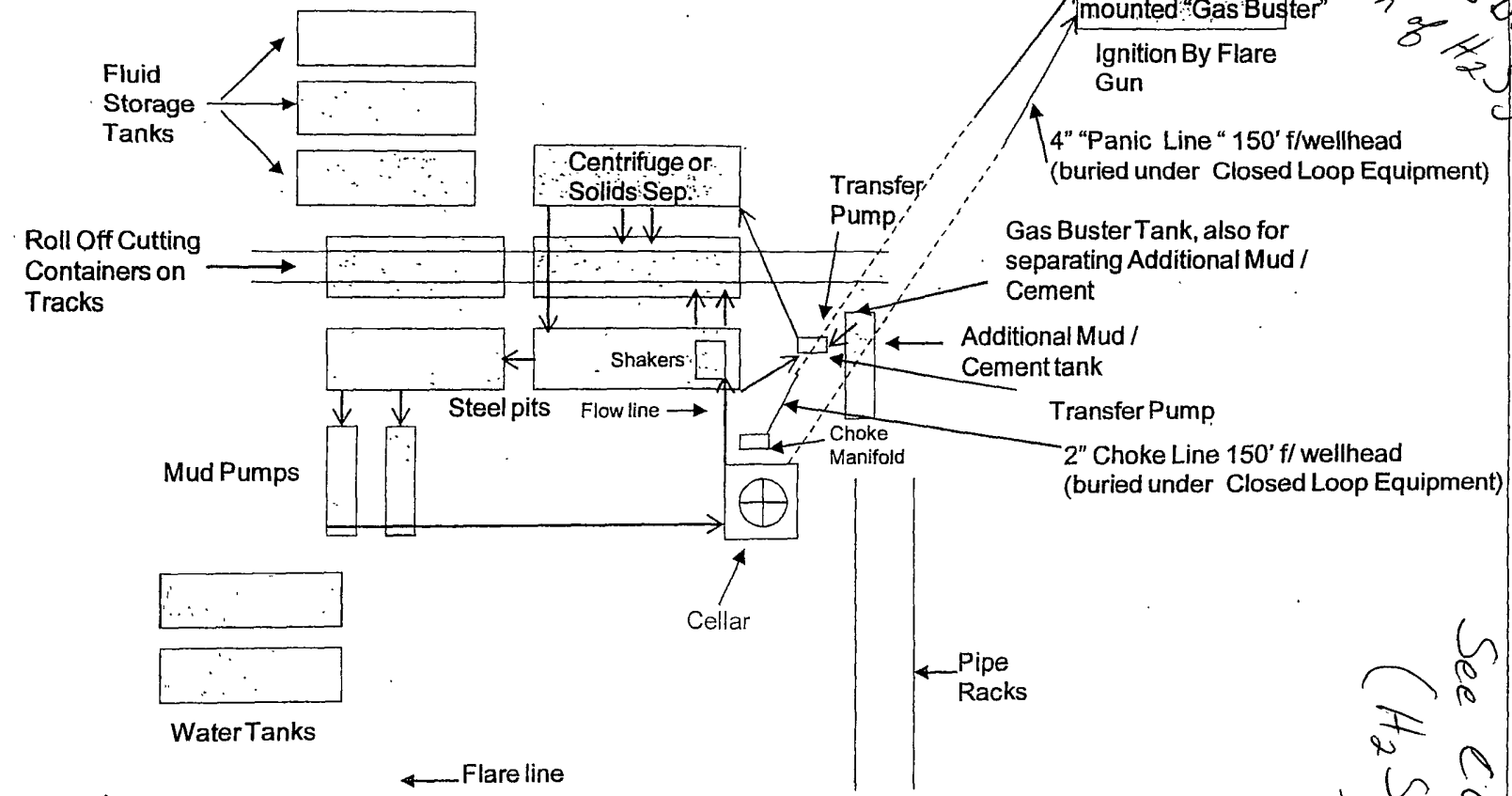
9. Extension wrenches and hands wheels to be properly installed.

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



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

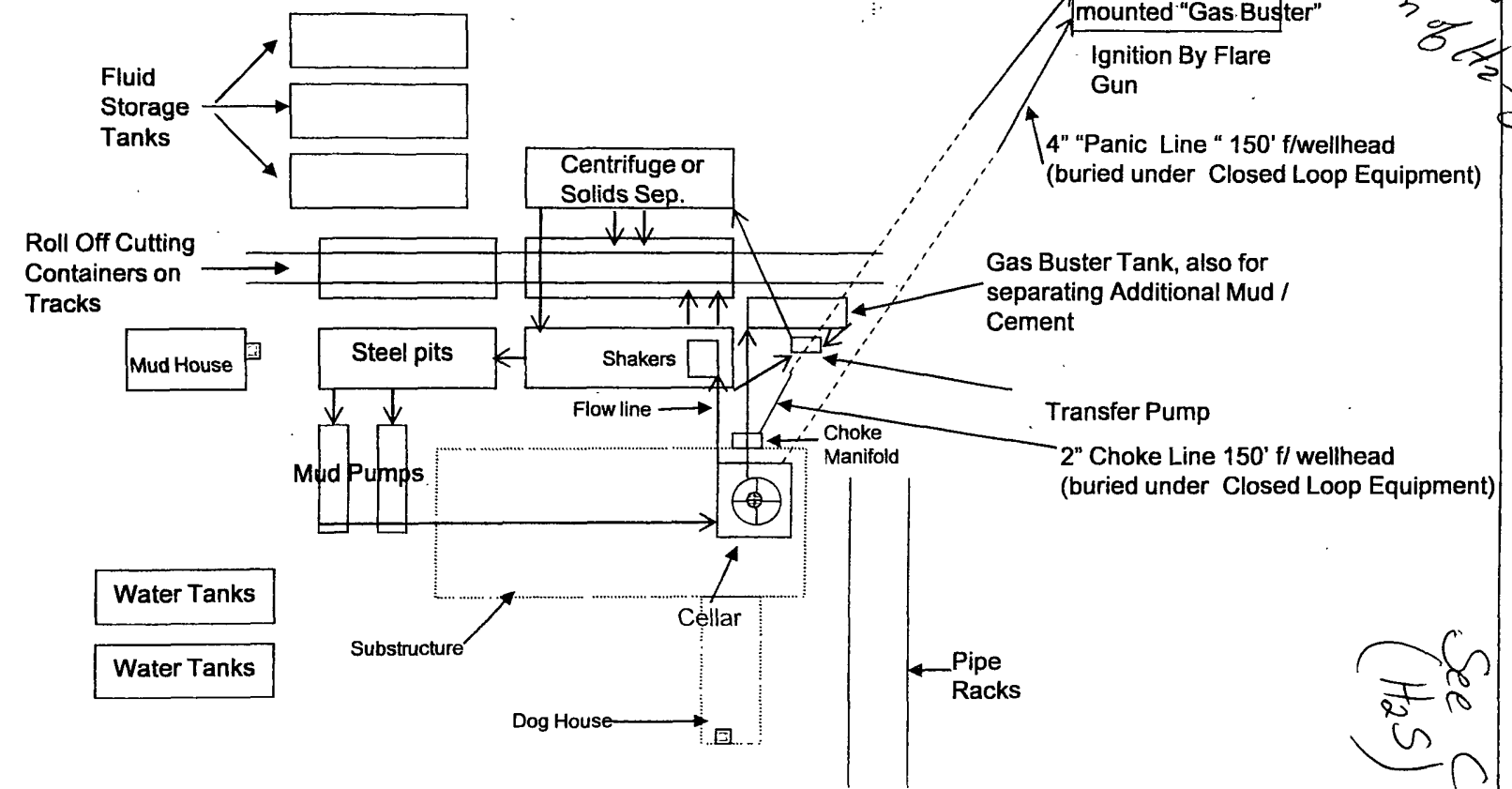
COG Operating LLC

EXHIBIT 8

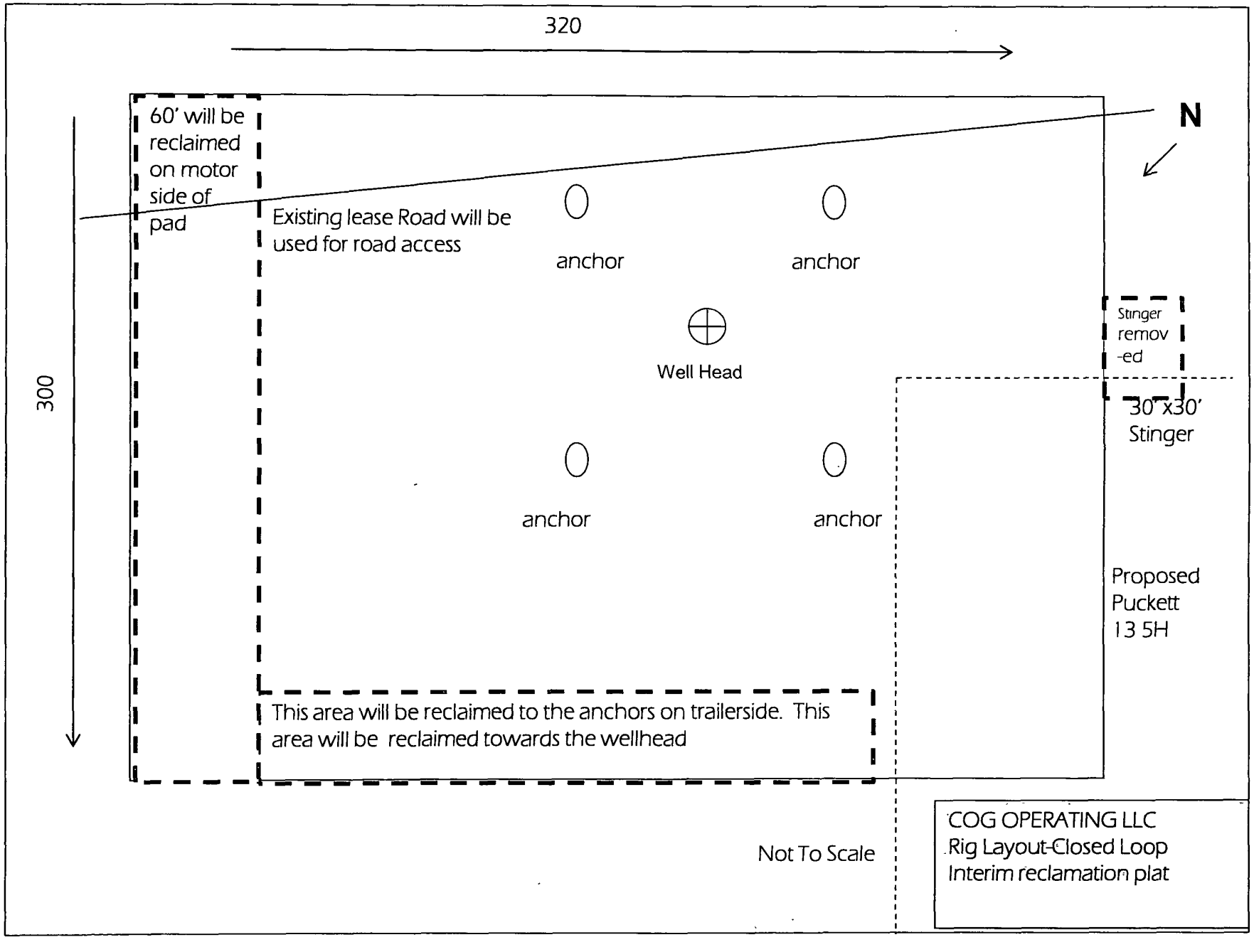
Drilling Location - H2S Safety Equipment Diagram

Won't allow ignition of H2S gas

Open bottom gas buster



See COA (H2S)


320
300
N
60' will be reclaimed on motor side of pad
Existing lease Road will be used for road access
anchor
anchor
Well Head
anchor
anchor
Stinger remov -ed
30' x30' Stinger
Proposed Puckett 13 5H
This area will be reclaimed to the anchors on trailerside. This area will be reclaimed towards the wellhead
Not To Scale
COG OPERATING LLC
Rig Layout-Closed Loop
Interim reclamation plat

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating
LEASE NO.:	LC029415A
WELL NAME & NO.:	6H Puckett 13 Federal Com
SURFACE HOLE FOOTAGE:	36' FNL & 1627' FEL
BOTTOM HOLE FOOTAGE	330' FSL & 1650' FEL
LOCATION:	Section 13, T.17 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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