

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

OCD Artesia

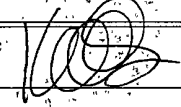
FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

1a Type of work ☒ DRILL ☐ REENTER		5 Lease Serial No. SHL: NM-2507; BHL: NM-0559945
1b Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone		6 If Indian, Allottee or Tribe Name N/A
2 Name of Operator COG Operating LLC		7 If Unit or CA Agreement, Name and No. N/A
3a Address 550 W. Texas Ave., Suite 100 Midland, TX 79701	3b Phone No. (include area code) 432-685-4385	8 Lease Name and Well No. Trigg 5 Federal Com #3H <38991>
4 Location of Well (Report location clearly and in accordance with any State requirements.) At surface 3020' FNL & 154' FWL, Lot 12 At proposed prod. zone 2970' FNL & 330' FEL, Lot 9		9 API Well No. 30-015- 40745 <97722>
14 Distance in miles and direction from nearest town or post office* 11.5 miles Northwest of Maljamar, NM		10 Field and Pool, or Exploratory Wildcat, Wolfcamp WC; G-05 S153117E; ABO-WC
15 Distance from proposed location to nearest property or lease line, ft (Also to nearest drg. unit line, if any) 154'	16 No of acres in lease SHL: 854.35; BHL: 759.63	11 Sec, T, R, M. or Blk. and Survey or Area Sec 5, T16S, R31E
17 Spacing Unit dedicated to this well 160	18 Distance from proposed location to nearest well, drilling completed, applied for, on this lease, ft 655'	12 County or Parish EDDY
19 Proposed Depth TVD: 8240' MD: 12758' Pilot Hole: 8600'	20 BLM/BIA Bond No on file NMB000215; NMB000740	13 State NM
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 4035' GL	22 Approximate date work will start* 08/31/2012	23 Estimated duration 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 | 4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2 A Drilling Plan | 5 Operator certification |
| 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) | 6 Such other site specific information and/or plans as may be required by the authorized officer |

25 Signature 	Name (Printed/Typed) Kelly J. Holly	Date 06/12/2012
Title Permitting Tech		
Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date
Title FIELD MANAGER		
Office CARLSBAD FIELD OFFICE		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached

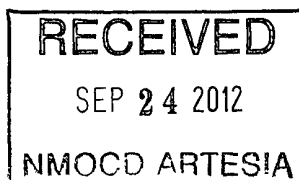
APPROVAL FOR TWO YEARS

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

*(Instructions on page 2)

Approval Subject to General Requirements
& Special Stipulations Attached

Roswell Controlled Water Basin



SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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-11
Revised August 1, 20
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-40745	Pool Code 97722	Well Name WU; G-05 SK3117E; Wildeat; Wolfeamp
Property Code 38991	Property Name TRIGG 5 FEDERAL COM	Well Number 3H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 4035'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
12	5	16-S	31-E		3020	NORTH	154	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
9	5	16-S	31-E		2970	NORTH	330	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

Estimated Completed Interval:
3020 FNL + 330 FWL

DETAIL
4037.6' x 4046.0' x 4029.7' x 4034.7'

CORNER COORDINATES TABLE

(A)	- Y=712414.2 N, X=632869.1 E
(B)	- Y=712439.7 N, X=638149.6 E
(C)	- Y=711095.0 N, X=632876.4 E
(D)	- Y=711125.7 N, X=638157.2 E

SCALE 1" = 2000'

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.

Kacie Connally 4-23-12
Signature Date

Kacie Connally
Printed Name

Kconnally@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.

APRIL 9, 2012
Date of Survey

Ronald J. Eidson
Signature of Professional Surveyor

RONALD J. EIDSON
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
3239

Certification Number: 12641
Ronald J. Eidson 3239

AF JWSC W.O. 12.11 0719

ATTACHMENT TO FORM 3160-3
 COG Operating, LLC
 Trigg 5 Federal Com #3H
 SHL: 3020' FNL & 154' FWL, Lot 12
 BHL: 2970' FNL & 330' FEL, Lot 9
 Sec 5, T16S, R31E
 Eddy County, NM

1. Proration Unit Spacing: 160 Acres
2. Ground Elevation: 4035'
3. Proposed Depths: Pilot hole TD = 8600', Horizontal TVD = 8,240', MD = 12,758'
4. Estimated tops of geological markers:

Rustler	520'
Salado	675'
Base of Salt/Tansil	1530'
Yates	1790'
Seven Rivers	2034'
Queen	2569'
Grayburg	3100'
San Andres	3300'
Glorietta	4940'
Paddock	5060'
Blinberry	5450'
Tubb	6070'
Drinkard	6275'
Abo	6350'
Abo Shale	6840'
Lower Abo Pay	8130'
Base Lo. Abo	8250'
TD Pilot Hole	8600'

5. Possible mineral bearing formations:

Water Sand	150'	Fresh Water
Yates	1790'	Oil / Gas
Queen	2569'	Oil / Gas
San Andres	3300'	Oil / Gas
Tubb	6070'	Oil / Gas
Abo	6350'	Oil / Gas
Lower Abo Pay	8130'	Oil / Gas

6. Casing Program - Proposed

Hole size	Interval	OD of Casing	Weight	Cond.	Collar	Grade
17-1/2"	0' - +/-545'	13-3/8"	48#	New	STC	H-40 or J/K-55 Hybrid
Collapse sf - 4.36, Burst sf - 9.79, Tension sf - 16.77						
12 1/4"	0' - +/-3300'	9-5/8"	40#	New	STC	J/K-55
Collapse sf - 1.36, Burst sf - 2.09, Tension sf - 3.25						
8-3/4"	0' - +/-7275'	7"	26#	New	LTC	P-110
Collapse sf - 1.67, Burst sf - 2.68, Tension sf - 3.40						

Note: The 7" casing setting depth may vary from 7275' (+/- 100') based on geologic information from the Trigg 5 Federal #1 located in Sec 5 T16S R31E.

ATTACHMENT TO FORM 3160-3

**COG Operating, LLC
Trigg 5 Federal Com #3H
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<u>Hole size</u>	<u>Interval</u>	<u>OD of Casing</u>	<u>Weight</u>	<u>Cond.</u>	<u>Collar</u>	<u>Grade</u>
6-1/8"	7275' - 12,758'	4-1/2"	11.6#	New	LTC	P-110
Collapse sf - 1.74, Burst sf - 2.46, Tension sf - 2.74						

Respectfully request permission for 100' liner overlap to set pump as deep as possible. Liner top may also vary +/- 100' depending on 7" casing shoe depth.

7. Cement Program

13 3/8" Surface Casing set at +/- 545', Lead: +/- 200 sx Class "C" w/ 2% CaCl₂, 4% gel, wt. 13.5 ppg, yield 1.74 cf/sk. Tail: 450 sx Class "C" w/ 2% CaCl₂ yield 1.35 cf/sk, wt. 14.8 ppg, 130% excess calculated to surface.

9 5/8" Intrmd. Csg. Set at +/- 3300'. Lead: 800sx 35:65:6 C:Poz:gel w/ 5pps LCM-1 0.2% sodium metasilicate, 0.3% FL52A (Fluid loss additive), 5% NaCl, yield 2.05 cf/sk wt. 12.5 ppg. Tail: 200 sx Class "C" w/ 2% CaCl₂, yield 1.34 cf/sk., wt. 14.8 ppg. 76% excess, calculated to surface.

7" Production Casing set at +/- 7275' MD, Lead: 750 sx Class "C" w/ 4% gel wt. 13.5 ppg, yield 1.72 cf/sk. Tail: 200sx Class "C" w/ 0.35% R-3 (retarder), yield 1.33 cf./sk., wt. 14.8 ppg, 100% excess calculated to surface.

6-1/8" Pilot hole 7275' to 8600' plugged back to 7500' with 350 sx Class "C" with 0.3% R-3 (retarder), 1.5% CD-32, yield 0.99 cf./sk., wt. 16.8 ppg. 30% excess

4 1/2" Production Liner set from +/- 7175' to +/- 12758' MD, 8240' TVD, Liner run with +/- 12 isolation Packers and Sliding sleeves in un-cemented Lateral.

8. Pressure Control Equipment:

After setting 13 3/8" casing and installing 3000 psi casing head, NU 13 5/8" 3000 psi annular BOP. Test annular BOP, casing and manifold with clear fluid to 1000 psi. After setting 9 5/8" casing and installing 3000 psi casing spool, NU 3000 psi double ram BOP and 3000 psi annular BOP. Test double ram BOP and manifold to 3000 psig with clear fluid and annular to 1500 psig using an independent tester. This equipment will be used continuously until TD is reached. Blind rams will be operationally checked on each trip out of hole. Pipe rams will be operationally checked each 24 hour period. These checks will be noted on daily tour sheets. Other accessories to the BOP equipment include a Kelly cock and floor safety valves, choke lines and choke manifold with 3000 psi WP rating. This equipment will be tested to recommended working pressures also.

9. Proposed Mud Circulating System

<u>Interval</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>FL</u>	<u>Type Mud System</u>
0' - 545' 755'	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
545' - 3300'	9.1	30	NC	Cut brine mud, lime for PH and paper for seepage and sweeps.

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Trigg 5 Federal Com #3H
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3300' - 7275'	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.
7275' - 12,758'	9.5	36	10	Drill pilot hole, curve and horizontal section with XCD polymer / cut brine / starch.

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:

Set 7" production casing at +/- 7275'. Drill 6-1/8" pilot hole thru Lower Abo/Wolfcamp to +/- 8600', run open hole logs. Spot +/- 350 sx. Class "C". Kick off plug from +/- 7500' to +/- 8600'. Drill 6-1/8" hole and kick off at +/- 7688', building curve over +/- 741' to horizontal at 8429' MD, 8165' TVD. Drill horizontal section in a Easterly direction for +/- 4162' lateral to TD at +/- 12,758' MD, 8240' TVD. Run 4-1/2" production liner in Open hole lateral and set isolation packers and liner top packer @ +/- 7175' MD.

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: See COA

- A. The electric logging program will consist of FMI, GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. in vertical pilot hole to 9 5/8" casing shoe.
- B. The mud logging program will consist of lagged 10' samples from surface 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. Whole Cores will be taken in the pilot hole.
- E. Further testing procedures will be determined after the 4 1/2" production casing has been run.

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

No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature at TD is 120 degrees and estimated maximum bottom hole pressure is 3785 psi pilot hole, 3626 psi at TVD of lateral. Low levels of Hydrogen sulfide have been monitored in producing wells in the area, so H2S may be present while drilling of the well. An H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

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COG Operating, LLC
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4. Anticipated Starting Date

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



COG Operating LLC

Eddy County, NM (NAN27 NME)

Trigg 5 Federal Com #3H

OH

Plan: Plan #1 8-3/4" Hole

SHL: 3020' FNL, 154' FWL, Sec 5, T16S, R31E, Lot #12

PP: 3020' FNL, 330' FWL, Sec 5, T16S, R31E, Lot #12

BHL: 2970' FNL, 330' FEL, Sec 5, T16S, R31E, Lot #9

Standard Planning Report

31 May, 2012





Scientific Drilling International, Inc.

Planning Report



Database:	EDM:5000 1:Single User Db	Local Co-ordinate Reference:	Site:Trigg 5 Federal Com #3H
Company:	COG Operating LLC	TVD Reference:	GL @ 4035.00usft
Project:	Eddy County, NM (NAN27, NME)	MD Reference:	GL @ 4035.00usft
Site:	Trigg 5 Federal Com #3H	North Reference:	Grid
Well:	Trigg 5 Federal Com #3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1: 8-3/4" 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:		Trigg 5 Federal Com #3H			
Site Position:		Northing:	712,033.40 usft	Latitude:	32° 57' 24.119 N
From:	Map	Easting:	633,025.20 usft	Longitude:	103° 53' 58.743 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.24

Well	Trigg 5 Federal Com #3H					
Well Position	+N-S	0.00 usft	Northing:	712,033.40 usft	Latitude:	32° 57' 24.119 N
	+E-W	0.00 usft	Easting:	633,025.20 usft	Longitude:	103° 53' 58.743 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,035.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	05/31/12	7.68	60.78	48,920

Design		Plan #1: 8-3/4" Hole		
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/S	+E/W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	89.23

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	
7,687.50	0.00	0.00	7,687.50	0.00	0.00	0.00	0.00	0.00	0.00	
8,429.39	89.01	89.23	8,165.00	6.34	469.25	12.00	12.00	0.00	89.23	
12,757.68	89.01	89.23	8,240.00	64.80	4,796.50	0.00	0.00	0.00	0.00	PBHL-Trigg 5 #3H



Scientific Drilling International, Inc.

Planning Report



Database:	EDM 5000-1: Single User Db	Local Co-ordinate Reference:	Site: Trigg 5 Federal Com #3H
Company:	COG Operating LLC	TVD Reference:	GL @ 4035.00usft
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	GL @ 4035.00usft
Site:	Trigg 5 Federal Com #3H	North Reference:	Grid
Well:	Trigg 5 Federal Com #3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 8-3/4" 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
7,687.50	0.00	0.00	7,687.50	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 12.00/100									
7,700.00	1.50	89.23	7,700.00	0.00	0.16	0.16	12.00	12.00	0.00
7,800.00	13.50	89.23	7,798.96	0.18	13.19	13.19	12.00	12.00	0.00
7,900.00	25.49	89.23	7,893.06	0.63	46.50	46.50	12.00	12.00	0.00
8,000.00	37.49	89.23	7,978.17	1.33	98.64	98.65	12.00	12.00	0.00
8,100.00	49.49	89.23	8,050.59	2.26	167.33	167.34	12.00	12.00	0.00
8,111.24	50.84	89.23	8,057.79	2.38	175.96	175.98	12.00	12.00	0.00
PP=330° FWL Trigg 5 #3H									
8,200.00	61.49	89.23	8,107.14	3.37	249.57	249.59	12.00	12.00	0.00
8,300.00	73.48	89.23	8,145.37	4.62	341.77	341.80	12.00	12.00	0.00
8,400.00	85.48	89.23	8,163.59	5.94	439.90	439.94	12.00	12.00	0.00
8,429.39	89.01	89.23	8,165.00	6.34	469.25	469.30	12.00	12.00	0.00
Land EOC hold 89.01									
8,500.00	89.01	89.23	8,166.22	7.29	539.85	539.89	0.00	0.00	0.00
8,600.00	89.01	89.23	8,167.95	8.64	639.82	639.88	0.00	0.00	0.00
8,700.00	89.01	89.23	8,169.69	9.99	739.80	739.86	0.00	0.00	0.00
8,800.00	89.01	89.23	8,171.42	11.35	839.77	839.85	0.00	0.00	0.00
8,900.00	89.01	89.23	8,173.15	12.70	939.75	939.83	0.00	0.00	0.00
9,000.00	89.01	89.23	8,174.89	14.05	1,039.72	1,039.82	0.00	0.00	0.00
9,100.00	89.01	89.23	8,176.62	15.40	1,139.70	1,139.80	0.00	0.00	0.00
9,200.00	89.01	89.23	8,178.35	16.75	1,239.68	1,239.79	0.00	0.00	0.00
9,300.00	89.01	89.23	8,180.08	18.10	1,339.65	1,339.77	0.00	0.00	0.00
9,400.00	89.01	89.23	8,181.82	19.45	1,439.63	1,439.76	0.00	0.00	0.00
9,500.00	89.01	89.23	8,183.55	20.80	1,539.60	1,539.74	0.00	0.00	0.00
9,600.00	89.01	89.23	8,185.28	22.15	1,639.58	1,639.73	0.00	0.00	0.00
9,700.00	89.01	89.23	8,187.02	23.50	1,739.56	1,739.71	0.00	0.00	0.00
9,800.00	89.01	89.23	8,188.75	24.85	1,839.53	1,839.70	0.00	0.00	0.00
9,900.00	89.01	89.23	8,190.48	26.20	1,939.51	1,939.68	0.00	0.00	0.00
10,000.00	89.01	89.23	8,192.21	27.55	2,039.48	2,039.67	0.00	0.00	0.00
10,100.00	89.01	89.23	8,193.95	28.90	2,139.46	2,139.65	0.00	0.00	0.00
10,200.00	89.01	89.23	8,195.68	30.25	2,239.43	2,239.64	0.00	0.00	0.00
10,300.00	89.01	89.23	8,197.41	31.61	2,339.41	2,339.62	0.00	0.00	0.00
10,400.00	89.01	89.23	8,199.15	32.96	2,439.39	2,439.61	0.00	0.00	0.00
10,500.00	89.01	89.23	8,200.88	34.31	2,539.36	2,539.59	0.00	0.00	0.00
10,600.00	89.01	89.23	8,202.61	35.66	2,639.34	2,639.58	0.00	0.00	0.00
10,700.00	89.01	89.23	8,204.34	37.01	2,739.31	2,739.56	0.00	0.00	0.00
10,800.00	89.01	89.23	8,206.08	38.36	2,839.29	2,839.55	0.00	0.00	0.00
10,900.00	89.01	89.23	8,207.81	39.71	2,939.27	2,939.53	0.00	0.00	0.00
11,000.00	89.01	89.23	8,209.54	41.06	3,039.24	3,039.52	0.00	0.00	0.00
11,100.00	89.01	89.23	8,211.28	42.41	3,139.22	3,139.50	0.00	0.00	0.00
11,200.00	89.01	89.23	8,213.01	43.76	3,239.19	3,239.49	0.00	0.00	0.00
11,300.00	89.01	89.23	8,214.74	45.11	3,339.17	3,339.47	0.00	0.00	0.00
11,400.00	89.01	89.23	8,216.47	46.46	3,439.15	3,439.46	0.00	0.00	0.00
11,500.00	89.01	89.23	8,218.21	47.81	3,539.12	3,539.44	0.00	0.00	0.00
11,600.00	89.01	89.23	8,219.94	49.16	3,639.10	3,639.43	0.00	0.00	0.00
11,700.00	89.01	89.23	8,221.67	50.51	3,739.07	3,739.41	0.00	0.00	0.00
11,800.00	89.01	89.23	8,223.41	51.86	3,839.05	3,839.40	0.00	0.00	0.00
11,900.00	89.01	89.23	8,225.14	53.22	3,939.02	3,939.38	0.00	0.00	0.00
12,000.00	89.01	89.23	8,226.87	54.57	4,039.00	4,039.37	0.00	0.00	0.00
12,100.00	89.01	89.23	8,228.60	55.92	4,138.98	4,139.35	0.00	0.00	0.00
12,200.00	89.01	89.23	8,230.34	57.27	4,238.95	4,239.34	0.00	0.00	0.00



Scientific Drilling International, Inc.

Planning Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Site Trigg 5 Federal Com #3H
Company:	COG Operating LLC	TVD Reference:	GL @ 4035 00usft
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	GL @ 4035 00usft
Site:	Trigg 5 Federal Com #3H	North Reference:	Grid
Well:	Trigg 5 Federal Com #3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 8-3/4" 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)
12,300 00	89 01	89 23	8,232 07	58 62	4,338 93	4,339 32	0 00	0 00	0 00
12,400 00	89 01	89 23	8,233 80	59 97	4,438 90	4,439 31	0 00	0 00	0 00
12,500 00	89 01	89 23	8,235 54	61 32	4,538 88	4,539 29	0 00	0 00	0 00
12,600 00	89 01	89 23	8,237 27	62 67	4,638 86	4,639 28	0 00	0 00	0 00
12,700 00	89 01	89 23	8,239 00	64 02	4,738 83	4,739 26	0 00	0 00	0 00
12,757 68	89 01	89 23	8,240 00	64.80	4,796 50	4,796 94	0 00	0 00	0 00
PBHL-Trigg 5 #3H									

Design Targets

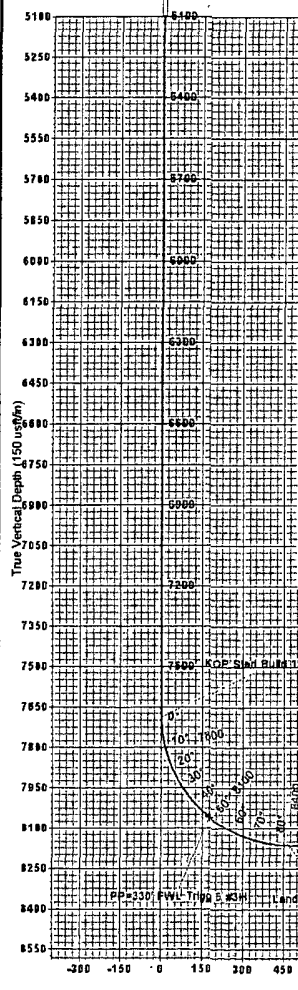
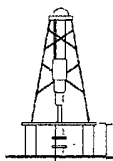
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
hit/miss target									
Shape									
PP= 330' FWL Trigg 5 #3	0 00	0 00	8,057 81	2 38	175 98	712,035 77	633,201.19	32° 57' 24 135 N	103° 53' 56 678 W
- plan hits target center									
- Point									
PBHL-Trigg 5 #3H	0.00	0 00	8,240.00	64.80	4,796 50	712,098.20	637,821 70	32° 57' 24 561 N	103° 53' 2 447 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates	+N/-S (usft)	+E/-W (usft)	Comment
7,687.50	7,687 50		0 00	0 00	KOP Start Build 12 00/100'
8,429.39	8,165 00		6 34	469 25	Land EOC hold 89 01°



Trigg 5 Federal Com #3H
Eddy County, NM (NAN27 NME)
Northing (Y) 712033.40
Easting (X) 633025.20
Plan #1 8-3/4" Hole



WELL DETAILS: Trigg 5 Federal Com #3H										
N/A/S 0.00	N/A/W 0.00	Northing 712033.40	Ground Level Easting 633025.20	4035.00	Latitude 32° 27' 34" 119 N	Longitude 104° 59' 58" 162 W	Sic1			
SECTION DETAILS										
Sic1	W/D	In	W/D	T/D	N/A/S	N/A/W	W/D	T/Face	T/Face	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	7881.20	0.00	0.00	7887.80	0.00	0.00	0.00	0.00	0.00	
3	8409.50	89.71	89.22	8162.80	6.34	40.25	12.00	89.22	89.22	
4	12777.66	89.31	89.23	8240.00	64.60	4796.00	0.00	0.00	4796.00	PBHL-Trigg 5 #3H
DESIGN TARGET DETAILS										
Name PP=330 FWH Trigg 5 #3H	T/D 8067.81	N/A/S 1.36	N/A/W 117.06	Northing 71,035.76	Easting 63,401.15	Latitude 32° 57' 24.132 N	Longitude 104° 59' 58.176 W	Shape Point		
PBHL-Trigg 5 #3H - plan hits target render	8240.00	64.60	4796.00	71,008.00	63795.17	32° 57' 24.161 N	104° 59' 58.417 W	Point		



Aligning to Grid North
True North: 0.00°
Magnetic North: 7.64°
Magnetic Field
Strength: 4850.00
Dip Angle: 6.70°
Date: 2024-10-10
Model: IDP-2010

To convert Magnetic North to Grid, Add 7.64°
To convert True North to Grid, Subtract 0.00°

PROJECT DETAILS: Eddy County, NM (NAN27 NME)
Geologic System: US State Plane 1927 (EAST) Solution
Datum: NAD 1983 (NAD83) (NAD83)
Elevation: 4035.00
Zone: North America East 5001
System Datum: Mean Sea Level

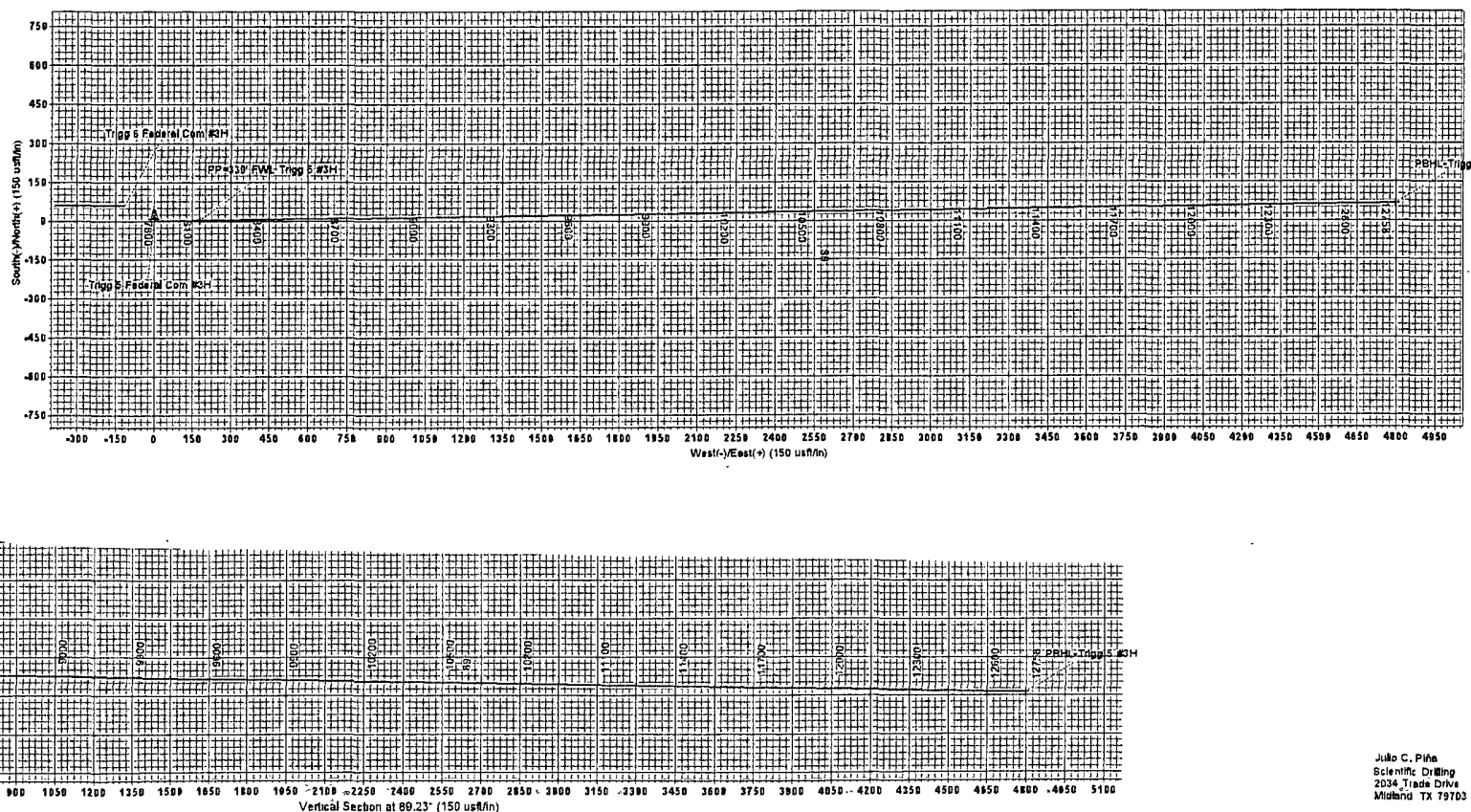
SITE DETAILS: Trigg 5 Federal Com #3H
Site Center Northing: 712033.40
Easting: 633025.20
Functional Uncertainty: 0.10
Curve Center: 0.14
Local North: Grid

LEGEND

Trigg 5 Federal Com #3H, Plan #1 8-3/4" Hole VO
Plan #1 8-3/4" Hole

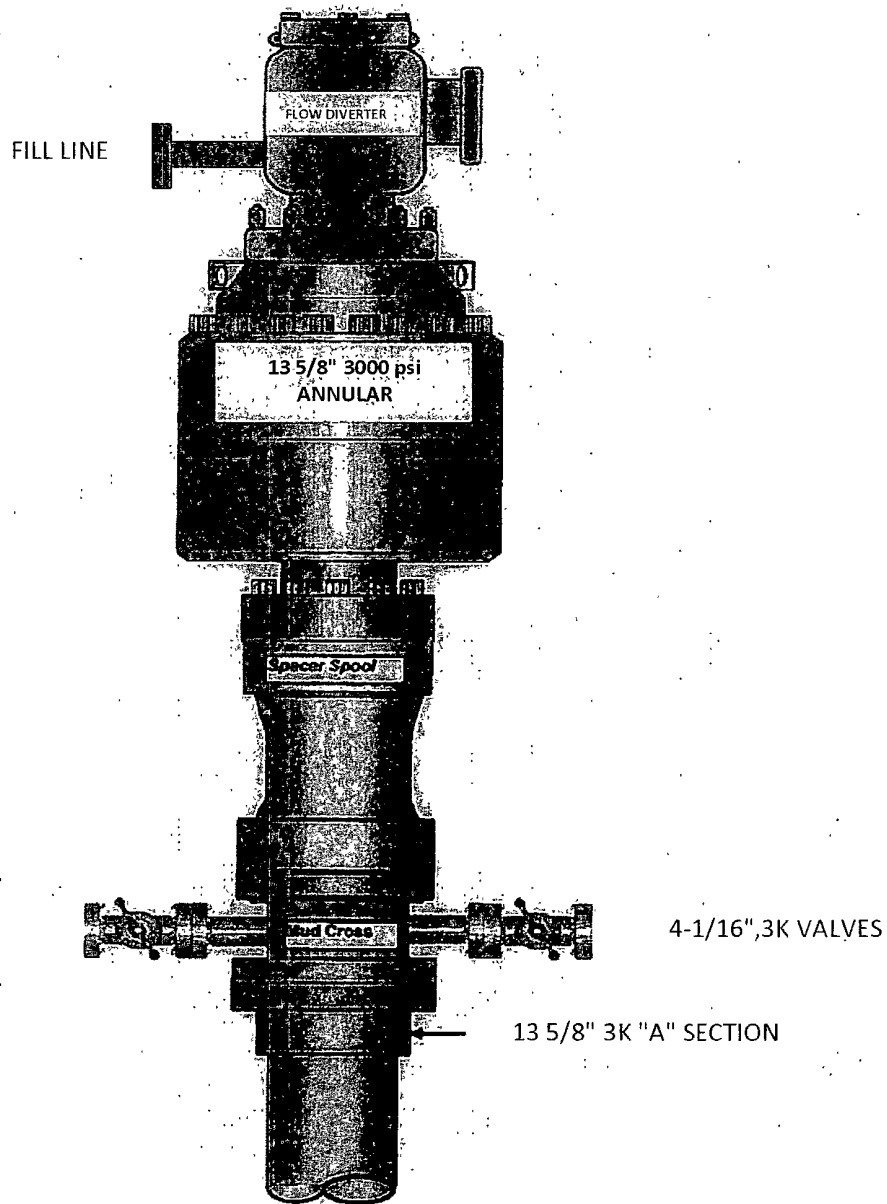
Map System: US State Plane 1927 (EAST) Solution
Datum: NAD 1983 (NAD83) (NAD83)
Elevation: 4035.00
Zone: North America East 5001
Local Origin: Site Trigg 5 Federal Com #3H, Grid North
Latitude: 32° 27' 34" 119 N
Longitude: 104° 59' 58" 162 W
Grid East: 633025.20
Grid North: 712033.40
Scale Factor: 1.000

Geographic Model: IGRF2015
Sample Date: 2024-10-10
Magnetic Declination: 7.64°
Dip Angle from Horizontal: 6.70°
Magnetic Field Strength: 4850.00
To convert Magnetic North to Grid, Add 7.64°
To convert True North to Grid, Subtract 0.00°



Julio C. Peña
Scientific Drilling
2034 Trade Drive
Midland TX 79703

**13 5/8" 3K ANNULAR
BOP**



13 5/8" 3M BOP
FOR 8 3/4" + 6 1/8" open hole

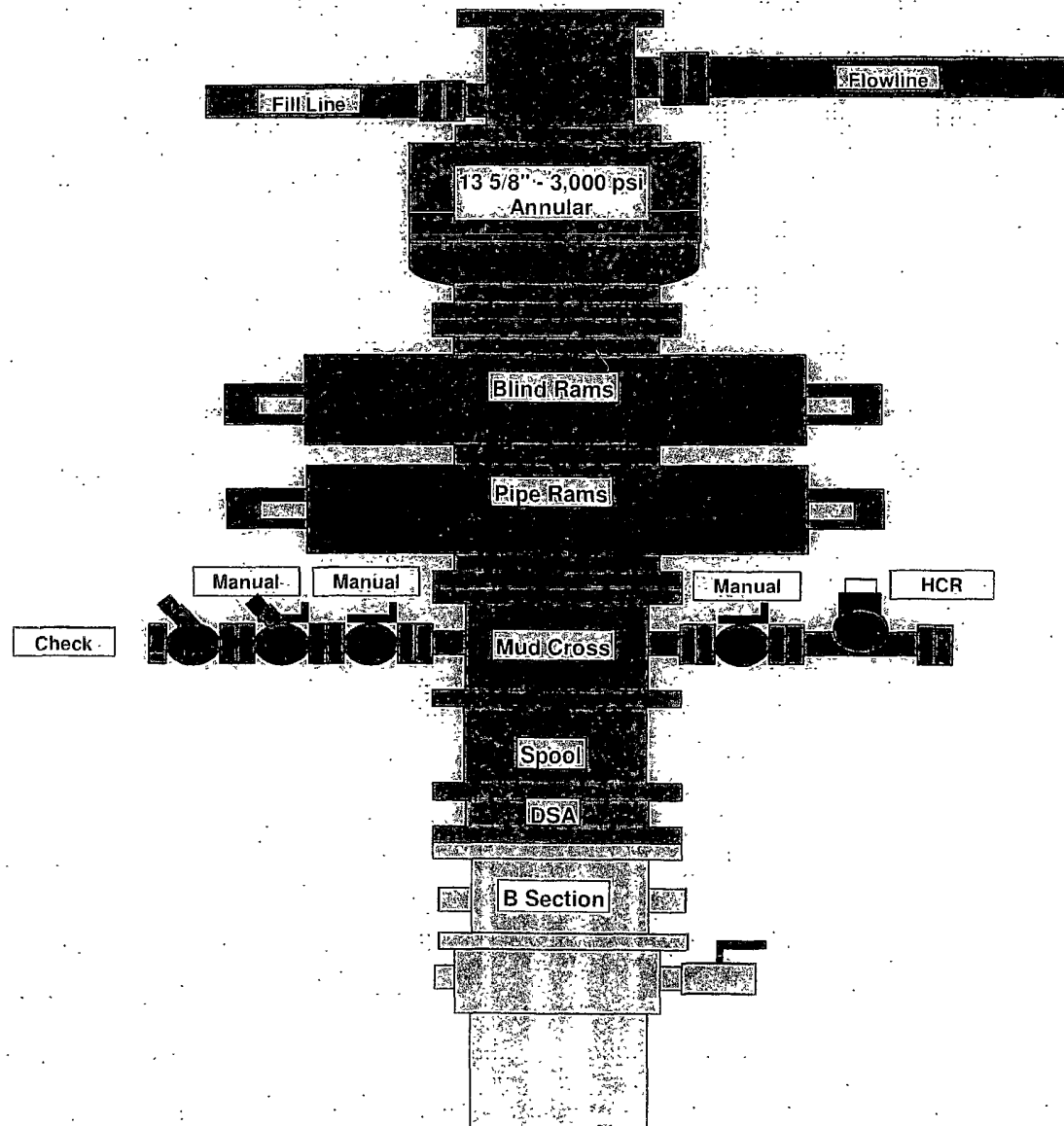
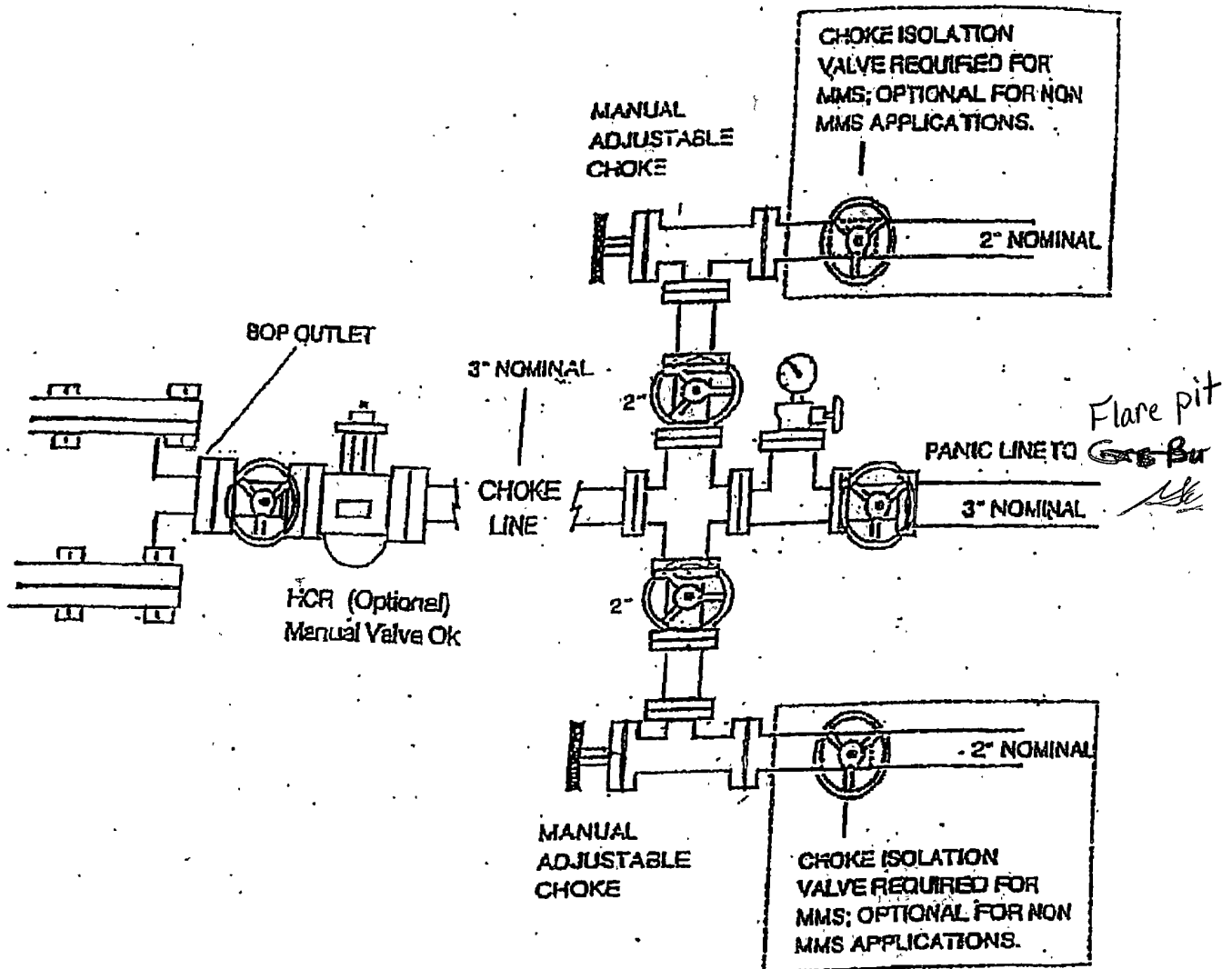


EXHIBIT "H"

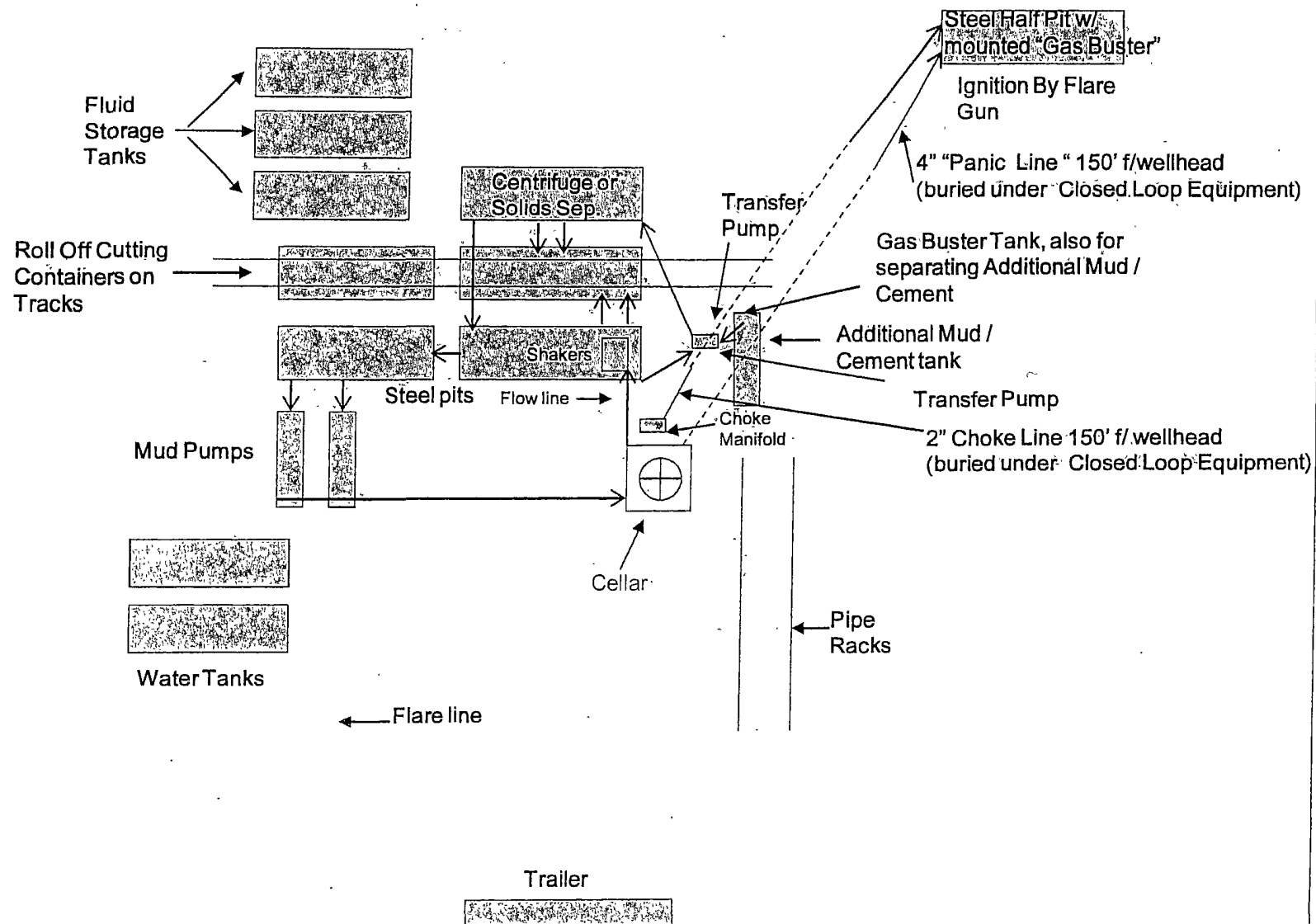
CHOKE MANIFOLD

3M SERVICE



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 and 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 will 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

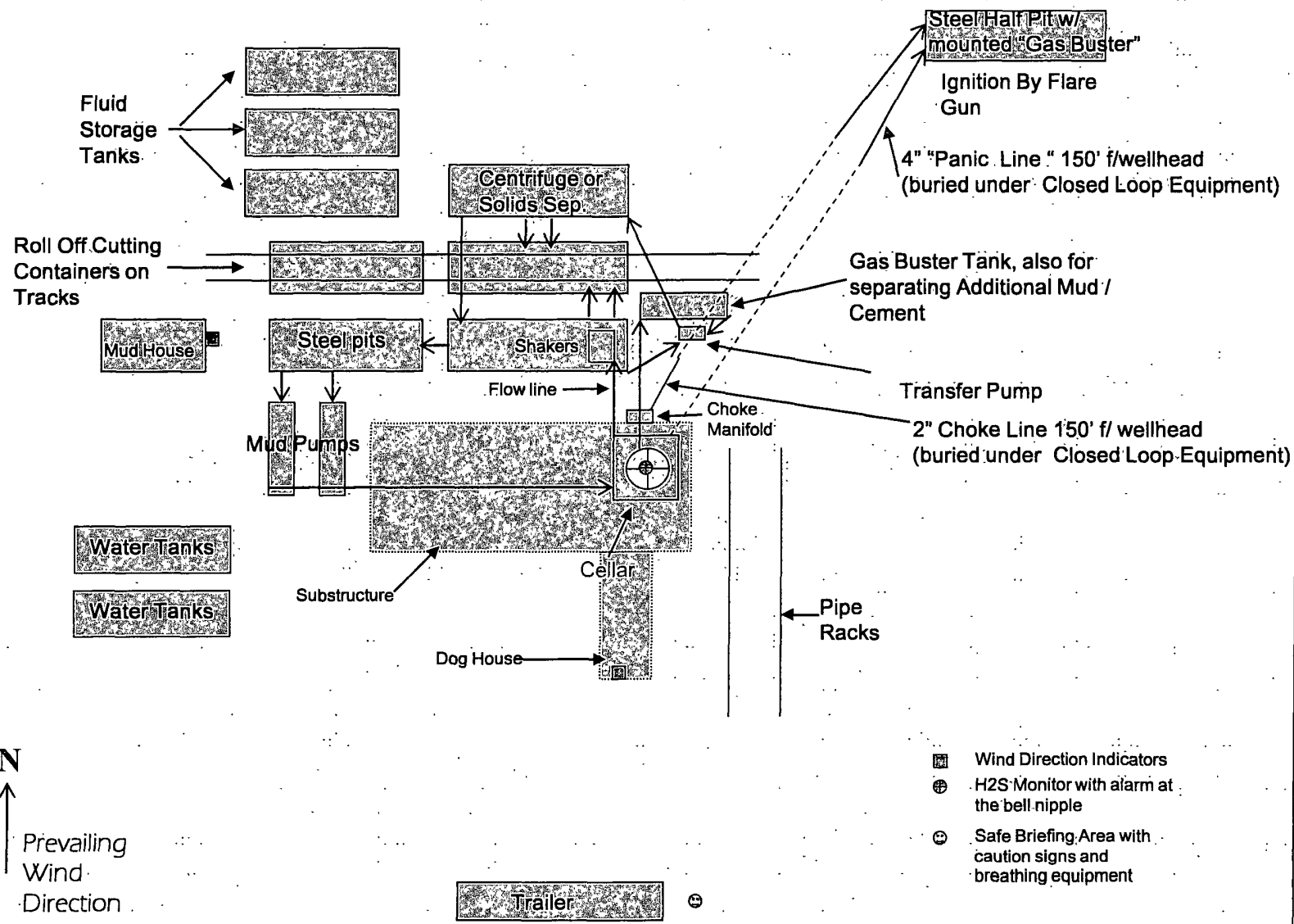
LEA COUNTY EMERGENCY NUMBERS

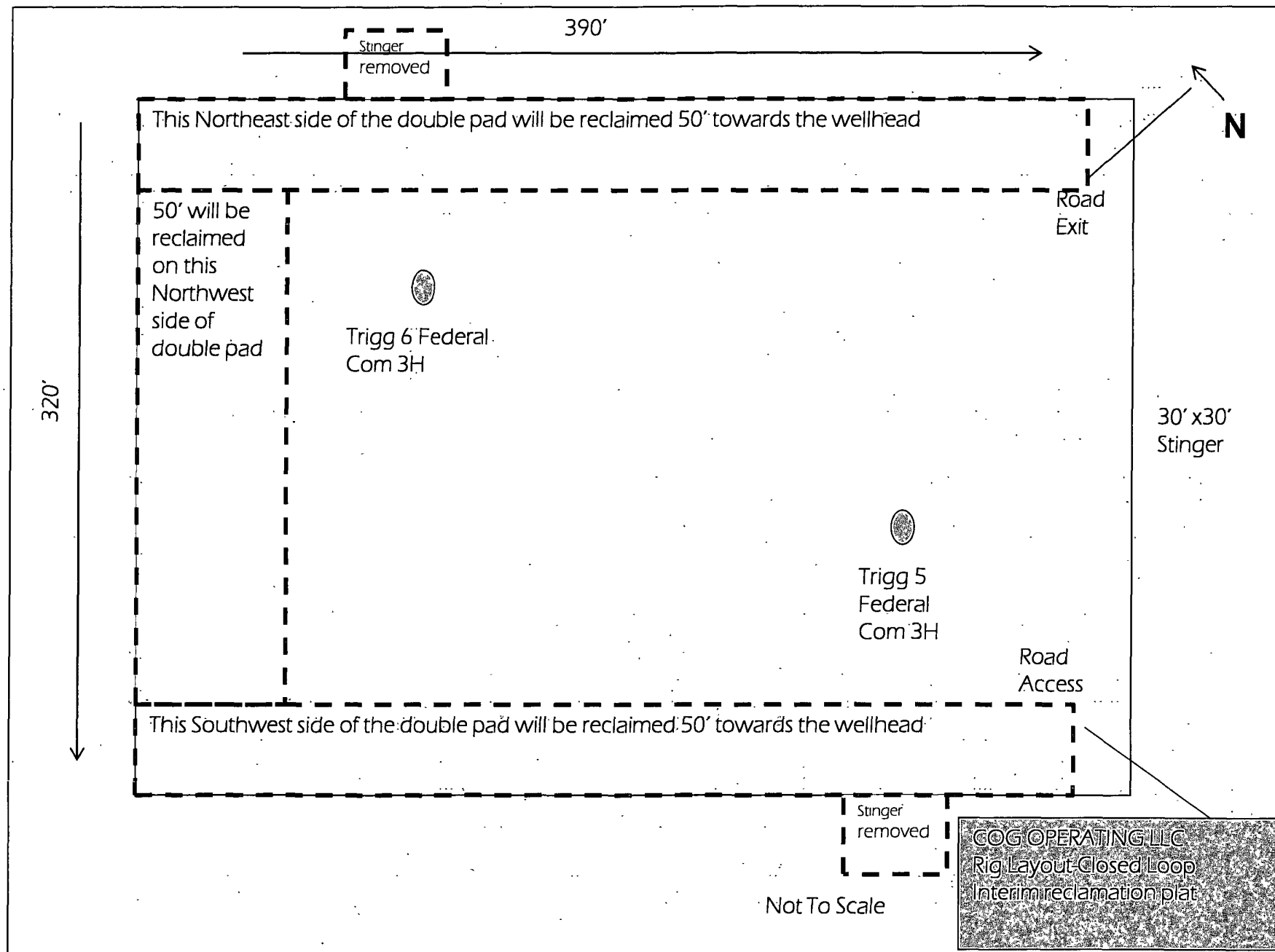
HOBBS FIRE DEPT. 575-397-9308
HOBBS POLICE DEPT. 575-397-9285
LEA CO. SHERIFF DEPT. 575-396-1196

COG Operating LLC

EXHIBIT 8

Drilling Location - H2S Safety Equipment Diagram





PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cog Operating
LEASE NO.:	NM0559945
WELL NAME & NO.:	3H Trigg 5 Federal Com
SURFACE HOLE FOOTAGE:	3020' FNL & 154' FWL
BOTTOM HOLE FOOTAGE:	2970' FNL & 330' FEL
LOCATION:	Section 5, T.16 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.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Interim Reclamation
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
 - Communitization Agreement
- ☒ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Logging Requirements
 - Waste Material and Fluids
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
- ☐ **Interim Reclamation**
- ☒ **Final Abandonment & Reclamation**