AT507-390
EA-07-1199

Form 3160-3
(February 2005)

OCD-ARTESIA

SEP 20 2007

OCD-ARTESIA

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

1a Type of work ☑ DRILL ☐ REENTER	5 Lease Serial No (SL) ~~LC054856~~ NMNM, (BHL) ~~LC104675~~ NMNM
1b Type of Well ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	6 If Indian, Allotee 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 West Texas Ave., Suite 1300 Midland, TX 79701	3b Phone No (include area code) 432-685-9158
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface 1800' FSL & 330' FEL, Unit I At proposed prod zone 1800' FSL & 2310' FEL, Unit J	8 Lease Name and Well No Donner "30" Federal #2
	9 API Well No 30-015-35819
	10 Field and Pool, or Exploratory Dog Canyon; Wolfcamp
	11 Sec, T R M or Blk and Survey or Area Section 30, T16S, R28E
14 Distance in miles and direction from nearest town or post office* Approx. 15 miles Northwest from Loco Hills, NM	12 County or Parish Eddy / 13 State NM

Roswell Controlled Water Basin

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 330'	16 No of acres in lease 1120 See Surface Agreement	17 Spacing Unit dedicated to this well 80
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1470'	19 Proposed Depth 6535' TVD, 11,195' MD	20 BLM/BIA Bond No on file NMB 000215
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3567' GL	22 Approximate date work will start* 09/27/2007	23 Estimated duration 45 Days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, must be attached to this form

1 Well plat certified by a registered surveyor
2 A Drilling Plan
3 A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office)
4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
5 Operator certification
6 Such other site specific information and/or plans as may be required by the BLM

25 Signature	Name (Printed Typed) Dwaine Moore	Date 07/27/2007
Title Agent for COG Operating, LLC.		
Approved by (Signature) /s/ James Stovall	Name (Printed Typed) /s/ James Stovall	Date SEP 18 2007
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)

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
	17970	Dog Canyon; Wolfcamp

Property Code	Property Name	Well Number
36630	DONNER "30" FEDERAL	2

OGRID No.	Operator Name	Elevation
229137	C.O.G. OPERATING L.L.C.	3567'

Surface Location

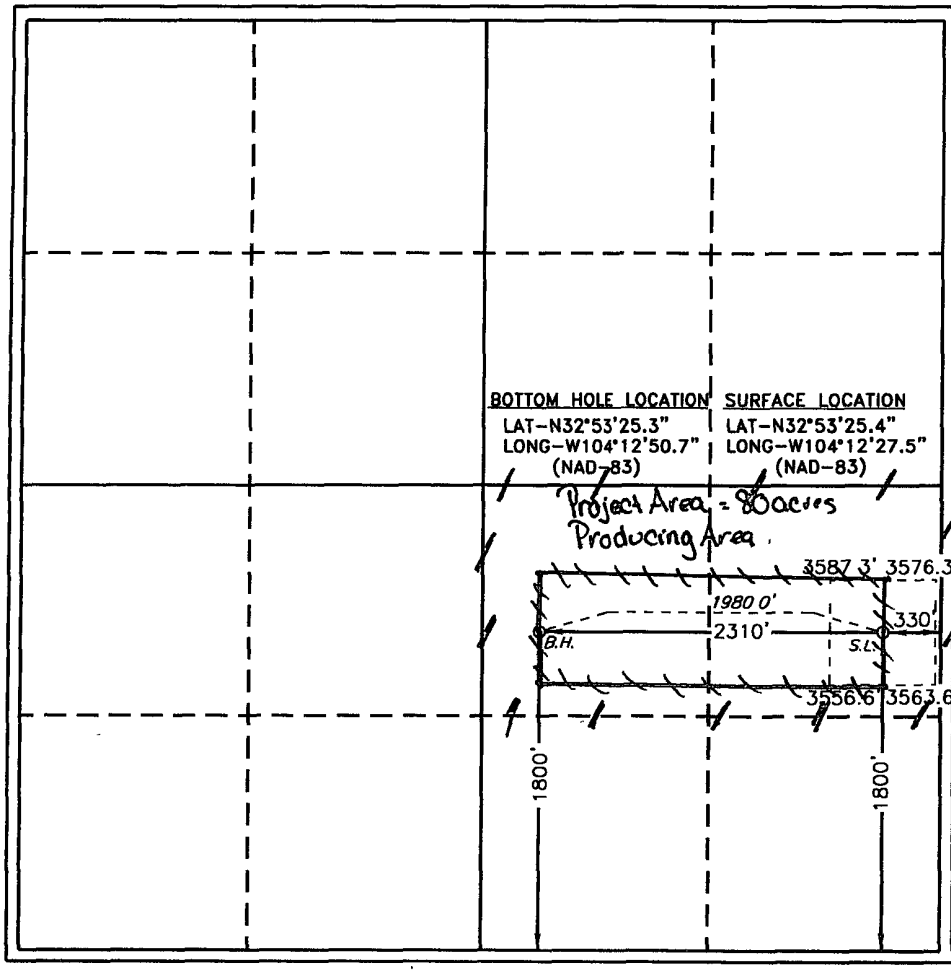
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	30	16 S	28 E		1800	SOUTH	330	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	30	16 S	28 E		1800	SOUTH	2310	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
80			

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



OPERATOR CERTIFICATION

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

Signature 7/25/07 Date

Dwayne Moore Agent For COG
Printed Name

SURVEYOR CERTIFICATION

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

APRIL 2007
Date Surveyed

Signature & Seal of Professional Surveyor

W.O. 938

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

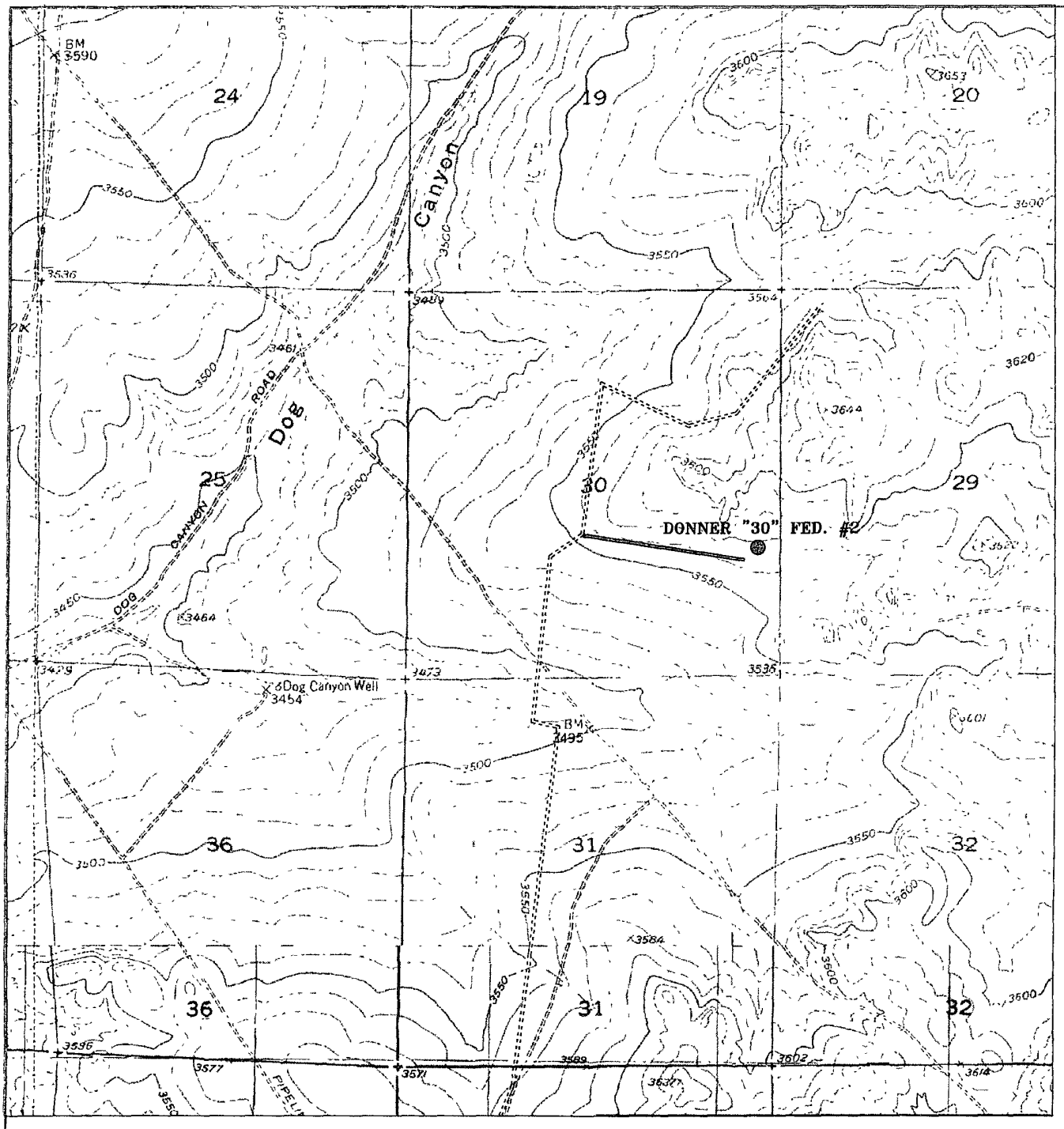
C.O.G. Operating, LLC (229137)
550 W. Texas Avenue, Ste. 1300
Midland, TX 79701

The undersigned accepts all applicable terms, conditions, stipulations and restrictions covering operations conducted on the leased land or portion thereof, as described below:

Lease No – Surface Location:	NMLC #054856
Lease No – Bottom Hole Location:	NMLC #104675
Well Name:	Donner "30" Federal #2
Legal Description of Land:	SL: 1800' FSL & 330' FEL, Unit I BHL: 1800' FSL & 2310' FEL, Unit J Section 30, T16S, R28E Eddy County, NM
Formation(s) (if applicable):	Crows Flat Wolfcamp (#97102)
Bond Coverage:	$25,000 statewide bond of C.O.G. Operating, LLC
BLM Bond File No:	NMB 000215

7-29-07
Date

John Coffman
C.O.G. Operating, LLC



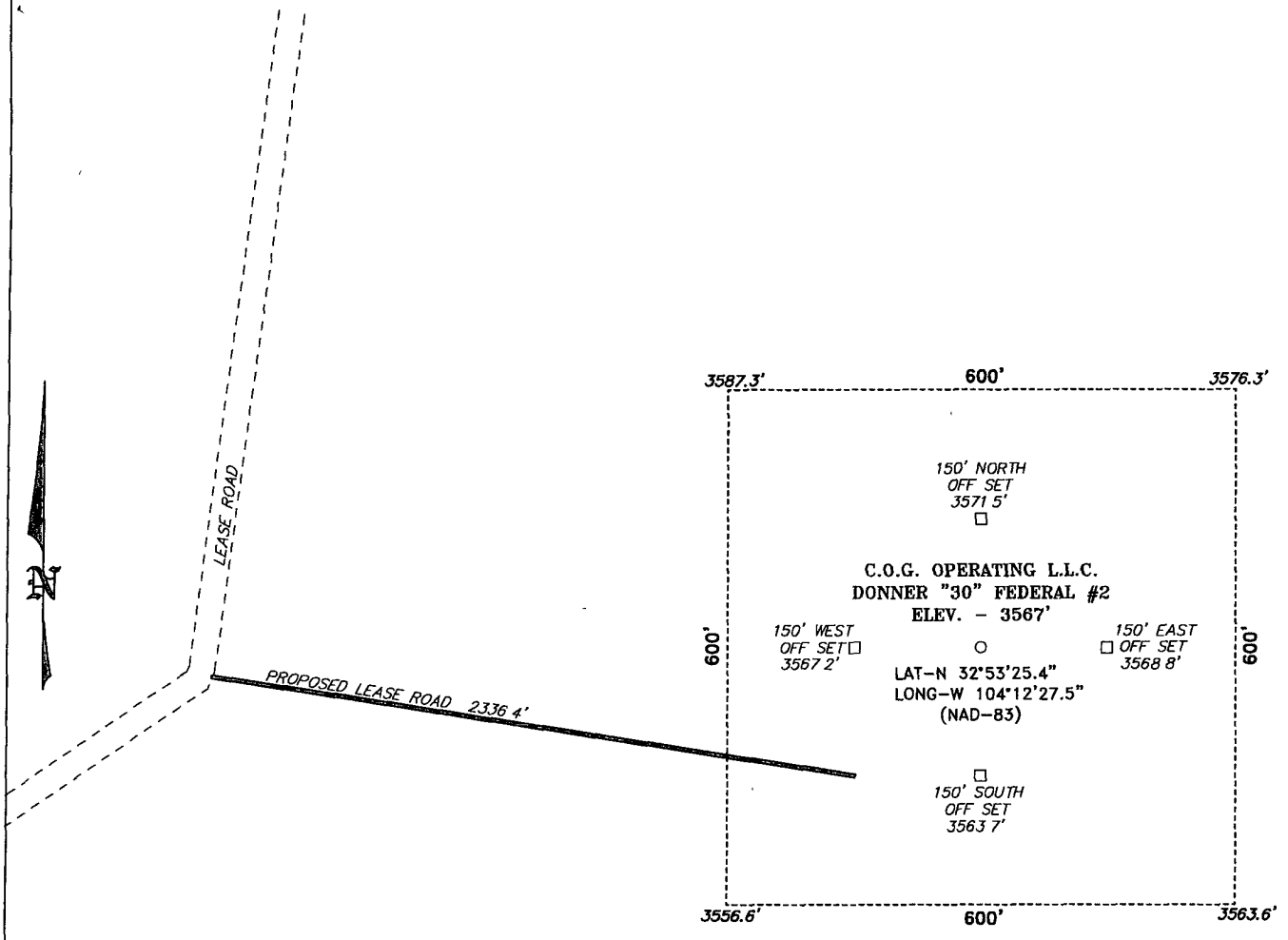
DONNER "30" FEDERAL #2
Located at 1800' FSL and 330 FEL
Section 30, Township 16 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.

Basin Surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W O Number:	JMS 17938T
Survey Date.	04-11-2007
Scale	1" = 2000'
Date.	04-13-2007

C.O.G. OPERATING L.L.C.

SECTION 30, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



200 0 200 400 FEET

SCALE: 1" = 200'

DIRECTIONS TO LOCATION:

FROM THE JUNCTION OF US HWY 82 AND CO RD 202 (SOUTHERN UNION), GO NORTH ON CO. RD. 202 FOR 3 8 MILES TO LEASE ROAD, ON LEASE ROAD GO NORTH 2 5 MILES TO PROPOSED LEASE ROAD.

C.O.G. OPERATING L.L.C.

REF: DONNER "30" FEDERAL #2 / Well Pad Topo

THE DONNER "30" FEDERAL #2 LOCATED 1800' FROM THE SOUTH LINE AND 330' FROM THE EAST LINE OF SECTION 30, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 17938	Drawn By: J. M. SMALL		
Date. 04-13-2007	Disk JMS 17938W	Survey Date: 04-11-2007	Sheet 1 of 1 Sheets

ATTACHMENT TO FORM 3160-3
COG Operating
Donner "30" Federal #2
SL: 1800' FSL & 330' FEL, Unit I
BHL: 1800' FSL & 2310' FEL, Unit J
Sec 30, T16S, R28E
Eddy County, NM
Revised 8/13/07

1. Proration Unit Spacing: 80 Acres

2. Ground Elevation: 3567'

3 Proposed Depths: TVD = 6570'; MD = 8550'

4. Estimated tops of geological markers:

Quaternary	Surface
Yates	580'
Queens	1110'
San Andres	1830'
Glorietta	3350'
Tubb	4550'
Abo	5300'
Wolfcamp	6530'

5. Possible mineral bearing formations:

Water Sand	Fresh Water	150'
San Andres	Oil / Gas	1830'
Glorietta	Oil / Gas	3350'
Tubb	Oil / Gas	4550'
Abo	Oil / Gas	5300'
Wolfcamp	Oil / Gas	6530'

6. Casing Program:

Hole size	Interval	OD of Casing	Weight	Cond.	Collar	Grade
17-1/2"	0' - +/-500'	13-3/8"	48#	New	STC	H40
Collapse sf - 2.98, Burst sf – 2.33, Tension sf – 13.42						
12 1/4"	0' - 1800'	9-5/8"	40#	New	STC	J-55
Collapse sf - 2. 86, Burst sf – 1 42, Tension sf – 7.22						
8-3/4"	0' – 6000'	5-1/2"	17#	New	LTC	L-80
Collapse sf - 2. 08, Burst sf – 2.35, Tension sf – 2 92						
7-7/8"	6000' – 8550'	5-1/2"	17#	New	BTC	L-80
Collapse sf – 1.85, Burst sf – 2.28, Tension sf – 29.19						

7. Cement Program:

13 3/8" Surf Csg Set at +/- 500', Circ to Surf with +/- 500 sx Class "C" w/ 2% CaCl2, 1.35 yd.

9 5/8" Intrmd Csg Set at +/- 1800' Circ to Surf with +/- 600 sx 35/65 Poz "C", 2.05 yd. & 200 sx Class "C" w/ 2% CaCl2, 1.35 yd.

see COA

5 ½" Prod Csg Set at +/- 8550' MD. Cement casing with +/- 200 sx 50/50/2 "C", 1.37 yd & +/- 400 sx Class "H", 1.18 yd. Est. TOC @ 5000'.

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 w/ rig pump.

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# with clear fluid and annular to 1500 psi 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.

9. Proposed Mud Circulating System

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 500'	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
see COA 500 '- 1800'	9.1	30	NC	Cut brine mud, lime for PH and paper for seepage and sweeps.
1800' – 6570'	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.
6570' - 8550'	9.5	36	10	Drill 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 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.

ATTACHMENT TO FORM 3160-3
COG Operating
Donner "30" Federal #2
Page 3 of 3

11 Logging, Testing and Coring Program:

A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. to 9 5/8" casing shoe.

B. Drill Stem test is not anticipated.

C. No conventional coring is anticipated.

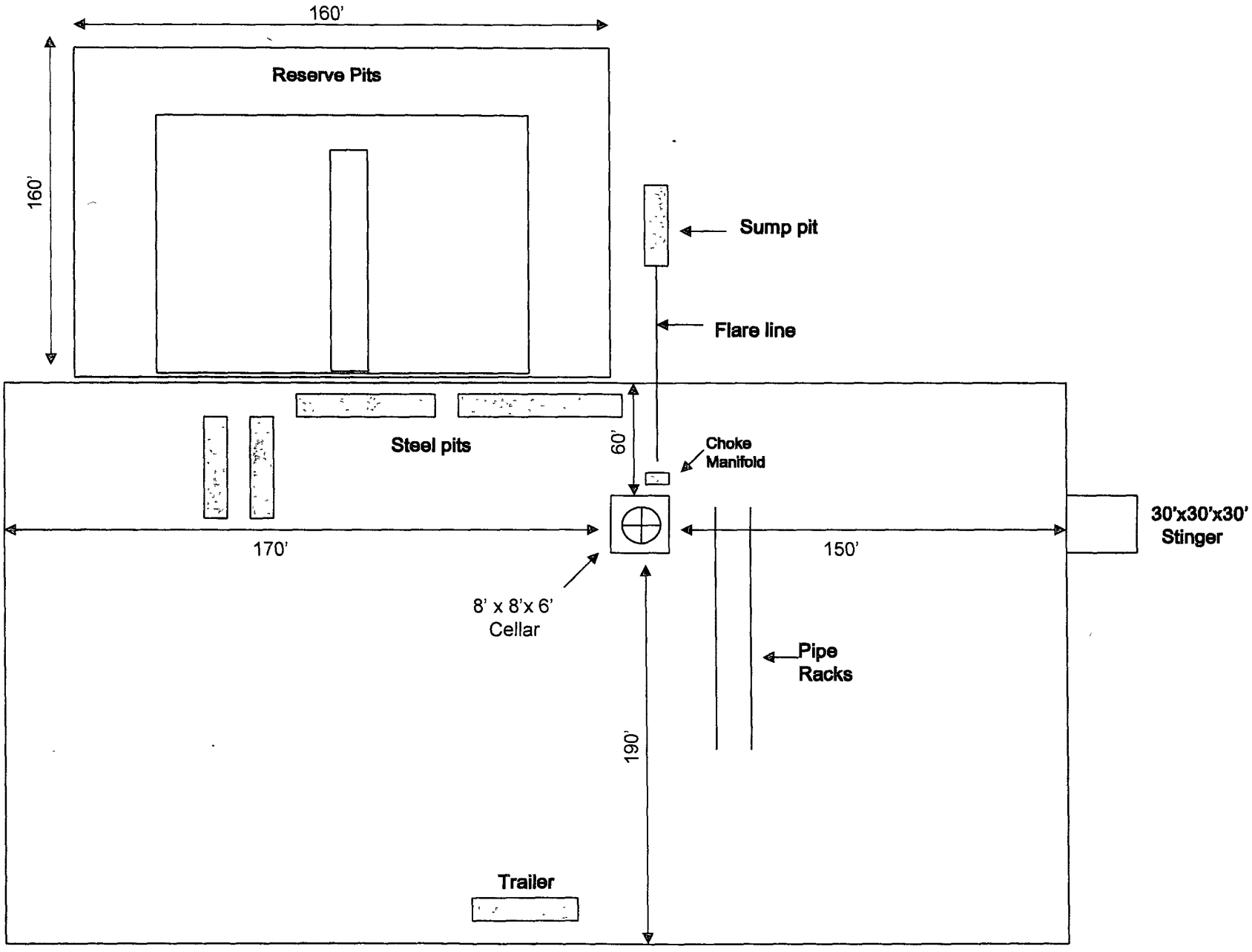
D. Further testing procedures will be determined after the 5 ½" production casing has been cemented at TD based on drill shows and log evaluation.

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

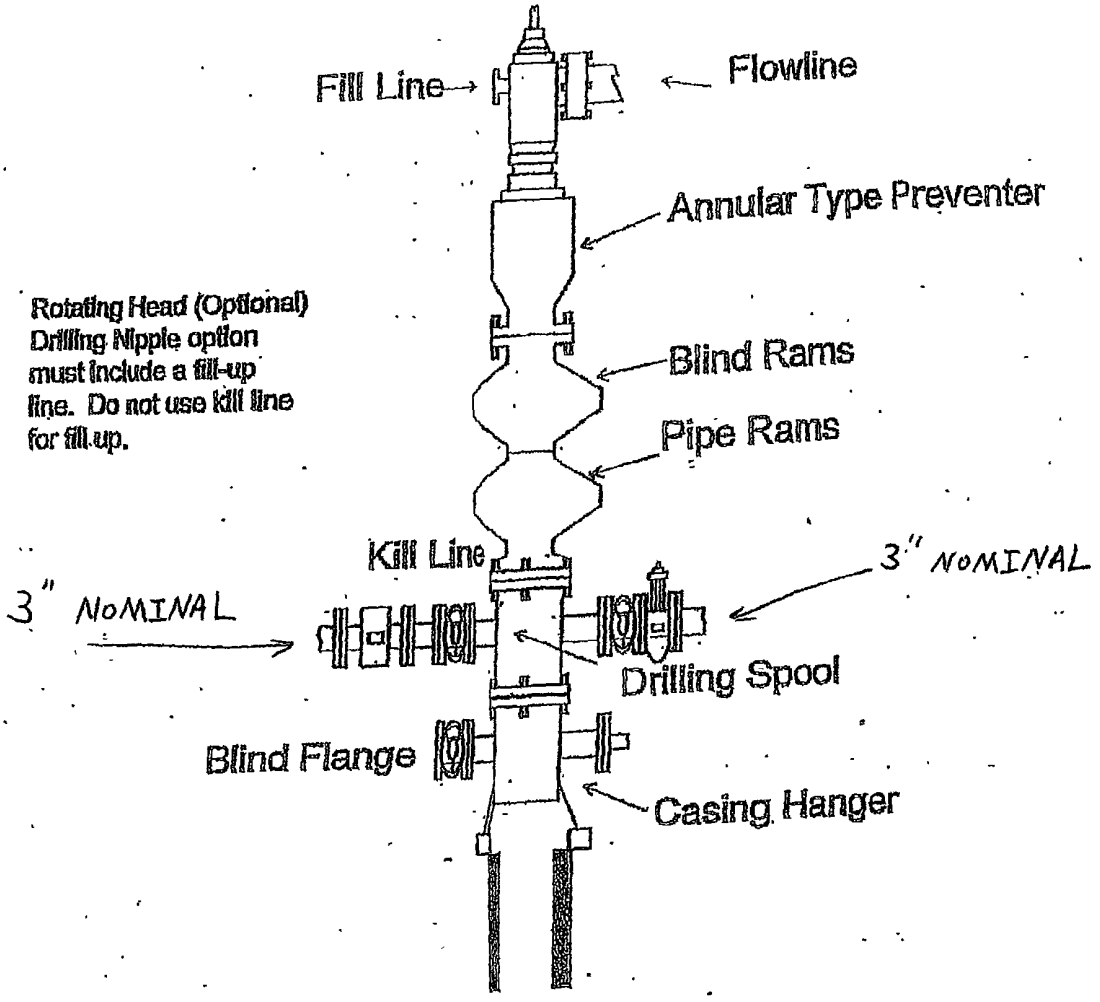
No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and estimated maximum bottom hole pressure is 2845 psig. Low levels of Hydrogen sulfide have been monitored in producing wells in the area, so H2S may be present while drilling of the well. An H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

13 Anticipated Starting Date

Drilling operations will commence approximately on September 27, 2007 with drilling and completion operations lasting approximately 45 days.


160'
Reserve Pits
160'
Sump pit
Flare line
Steel pits
60'
Choke
Manifold
30'x30'x30'
Stinger
170'
150'
8' x 8'x 6'
Cellar
Pipe
Racks
190'
Trailer

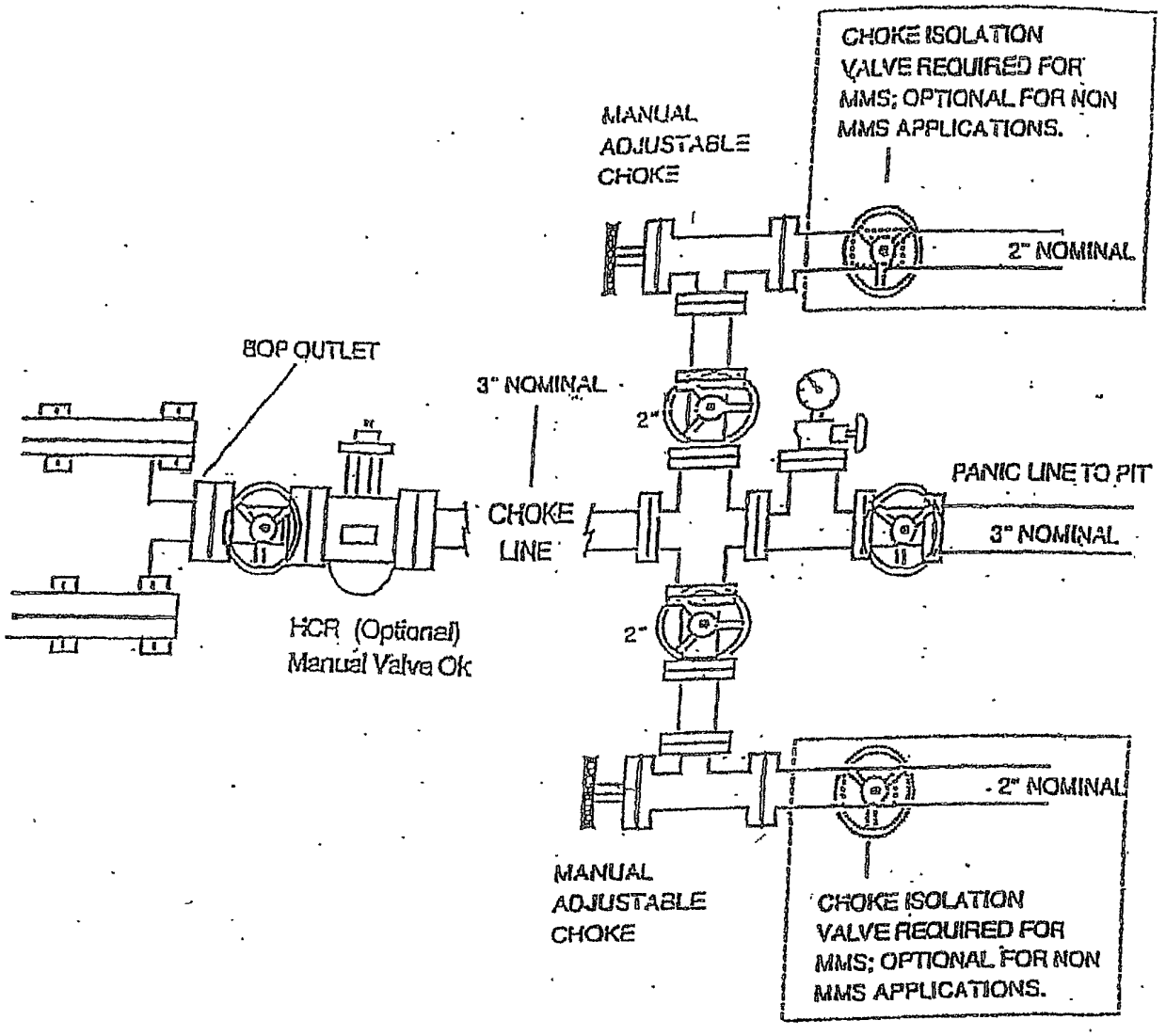
BOPE SCHEMATIC



900 SERIES

CHOKE MANIFOLD

3M SERVICE



Planned Wellpath Report

Plan #1

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Concho O&G**	Slot	**#2_SHL**
Area	**Andrews County, TX**	Well	**#2**
Field	**Section 30 T16S R28E (Donner)**	Wellbore	**#2 PWB**
Facility	**Donner 30 Federal #2**		

REPORT SETUP INFORMATION			
Projection System	**NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet**	Software System	**WellArchitect™ 1.2**
North Reference	**Grid**	User	**Gomeoscr**
Scale	**0.999911**	Report Generated	**08/08/07 at 15:00:22**
Wellbore last revised	**08/08/07**	Database/Source file	**WA_Midland/#2_PWB.xml**

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North [feet]	**East [feet]**	**Easting [US feet]**	**Northing [US feet]**	**Latitude [°]**	**Longitude [°]**
Slot Location	**0.00**	**0.00**	579927.41	687679.71	32 53 25.393N	104 12 27.414W
Facility Reference Pt			**579927.41**	**687679.71**	32 53 25.393N	104 12 27.414W
Field Reference Pt			579933.19	690975.05	**32 53 58.000N**	**104 12 27.300W**

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on #2_SHL (RT) to Facility Vertical Datum	**0.00 feet**
Horizontal Reference Pt	**Facility Center**	Rig on #2_SHL (RT) to Ground Level	**3564.00 feet**
Vertical Reference Pt	**Rig on #2_SHL (RT)**	Facility Vertical Datum to Mud Line (Facility)	**0.00 feet**
MD Reference Pt	**Rig on #2_SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Ground Level**	Section Azimuth	**269.56°**

Planned Wellpath Report

Plan #1

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Concho O&G**	Slot	**#2_SHL**
Area	**Andrews County, TX**	Well	**#2**
Field	**Section 30 T16S R28E (Donner)**	Wellbore	**#2 PWB**
Facility	**Donner 30 Federal #2**		

WELLPATH DATA (33 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]	Design Comments	Path Comment
0.00	0.000	269.562	0.00	0.00	0.00	0.00	0.00	Tie On	
1330.00†	0.000	269.562	1330.00	0.00	0.00	0.00	0.00		B/Salt
1830.00†	0.000	269.562	1830.00	0.00	0.00	0.00	0.00		San Andres
3350.00†	0.000	269.562	3350.00	0.00	0.00	0.00	0.00		Glorieta
4550.00†	0.000	269.562	4550.00	0.00	0.00	0.00	0.00		Tubb
5300.00†	0.000	0.000	5300.00	0.00	0.00	0.00	0.00		Abo/Shale
5960.00	0.000	269.562	5960.00	0.00	0.00	0.00	0.00	KOP	
6060.00†	10.050	269.562	6059.49	8.75	-0.07	-8.75	10.05		
6160.00†	20.100	269.562	6155.92	34.72	-0.27	-34.72	10.05		
6260.00†	30.150	269.562	6246.35	77.13	-0.59	-77.13	10.05		
6360.00†	40.200	269.562	6327.98	134.66	-1.03	-134.66	10.05		
6460.00†	50.250	269.562	6398.32	205.56	-1.57	-205.55	10.05		
6560.00†	60.300	269.562	6455.21	287.64	-2.20	-287.63	10.05		
6660.00†	70.350	269.562	6496.91	378.40	-2.89	-378.38	10.05		
6760.00†	80.400	269.562	6522.12	475.03	-3.63	-475.02	10.05		
6844.46†	88.889	269.562	6530.00	559.05	-4.27	-559.03	10.05		Wolfcamp
6855.57	90.004	269.562	6530.11	570.15	-4.36	-570.13	10.05	EOC	Wolfcamp
6860.00†	90.004	269.562	6530.11	574.58	-4.39	-574.57	0.00		
6960.00†	90.004	269.562	6530.10	674.58	-5.16	-674.57	0.00		
7060.00†	90.004	269.562	6530.09	774.58	-5.92	-774.56	0.00		
7160.00†	90.004	269.562	6530.08	874.58	-6.69	-874.56	0.00		
7260.00†	90.004	269.562	6530.08	974.58	-7.45	-974.56	0.00		
7360.00†	90.004	269.562	6530.07	1074.58	-8.22	-1074.55	0.00		
7460.00†	90.004	269.562	6530.06	1174.58	-8.98	-1174.55	0.00		
7560.00†	90.004	269.562	6530.05	1274.58	-9.75	-1274.55	0.00		

Planned Wellpath Report

Plan #1

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Concho O&G**	Slot	**#2_SHL**
Area	**Andrews County, TX**	Well	**#2**
Field	**Section 30 T16S R28E (Donner)**	Wellbore	**#2 PWB**
Facility	**Donner 30 Federal #2**		

WELLPATH DATA (33 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]	Design Comments	Path Comment
7660.00†	90.004	269.562	6530.05	1374.58	-10.51	-1374.54	0 00		
7760.00†	90.004	269.562	6530.04	1474.58	-11.27	-1474.54	0.00		
7860.00†	90.004	269.562	6530.03	1574.58	-12.04	-1574.54	0.00		
7960.00†	90.004	269.562	6530.02	1674.58	-12.80	-1674.54	0.00		
8060.00†	90.004	269.562	6530.02	1774.58	-13.57	-1774.53	0.00		
8160.00†	90.004	269.562	6530.01	1874.58	-14.33	-1874.53	0.00		
8260.00†	90.004	269.562	6530.00	1974.58	-15.10	-1974.53	0.00		
8265.73	90.004	269.562	6530.00	1980.32	-15.14	-1980.26	0.00	#2 BHL	

HOLE & CASING SECTIONS Ref Wellbore: #2 PWB Ref Wellpath: Plan #1

String/Diameter	Start MD [feet]	End MD [feet]	Interval [feet]	Start TVD [feet]	End TVD [feet]	Start N/S [feet]	Start E/W [feet]	End N/S [feet]	End E/W [feet]
7.875in Open Hole	5960.00	8265.73	2305.73	5960.00	6530.00	0.00	0.00	-15.14	-1980.26

TARGETS

Name	MD [feet]	TVD [feet]	North [feet]	East [feet]	Grid East [us survey feet]	Grid North [us survey feet]	Latitude [°]	Longitude [°]	Shape
1) #2 BHL	8265.73	6530.00	-15.14	-1980.26	577947.33	687664.57	32 53 25.266N	104 12 50.637W	point

SURVEY PROGRAM Ref Wellbore: #2 PWB Ref Wellpath: Plan #1

Start MD [feet]	End MD [feet]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	8265.73	NaviTrak (Standard)		#2 PWB

Concho O&G

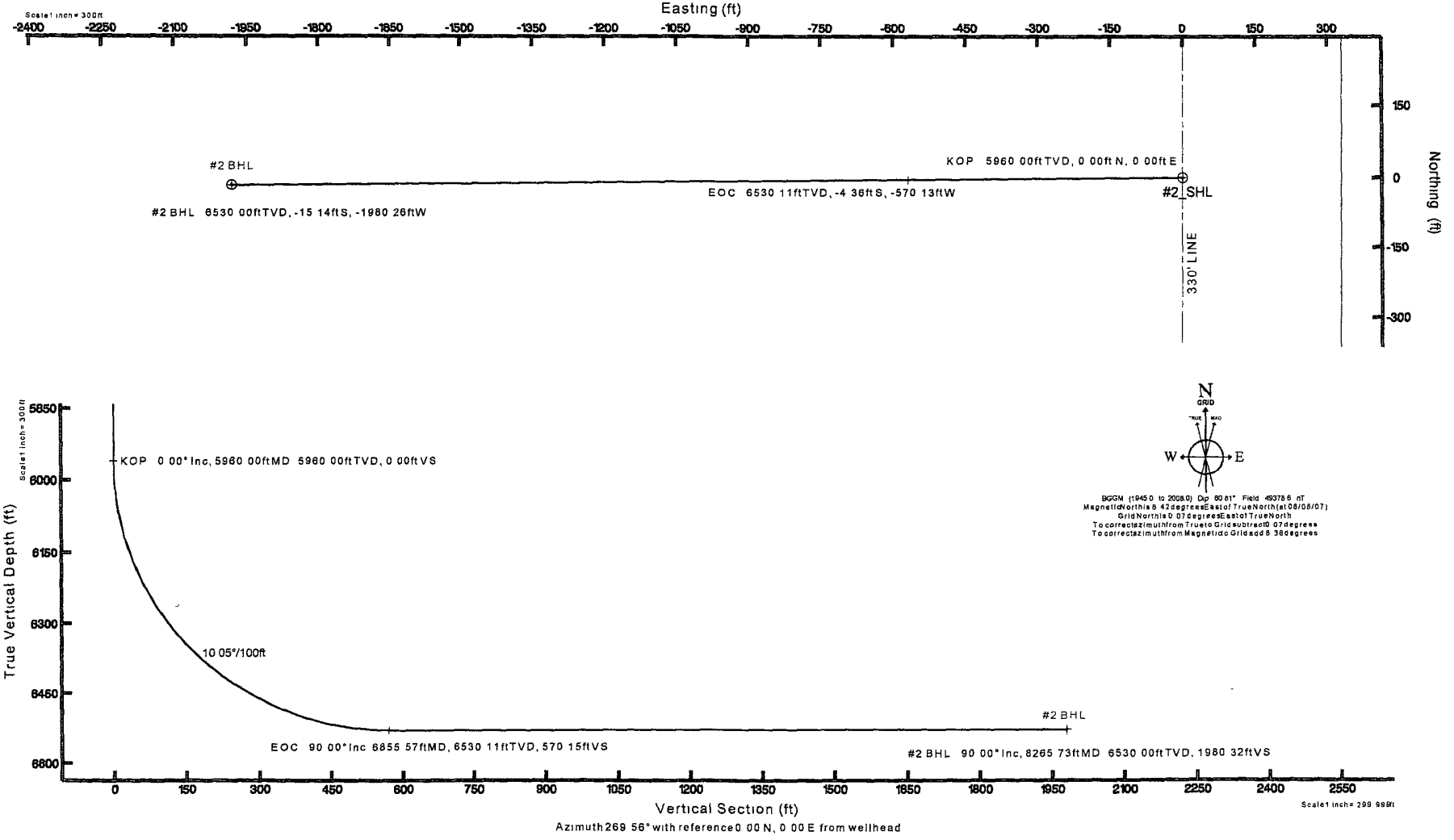
Location AndrewsCounty,TX
Field Section30T16SR28E(Donner)
Facility Donner30Federal#2

Slot #2_SHL
Well #2
Wellbore #2 PWB

BAKER HUGHES INTEQ

Well Profile Data								
DesignComment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0 00	0 000	269 562	0 00	0 00	0 00	0 00	0 00
KOP	5960 00	0 000	269 562	5960 00	0 00	0 00	0 00	0 00
EOC	6855 57	90 004	269 562	6530 11	-4 36	-570 13	10 05	570 15
#2 BHL	8265 73	90 004	269 562	6530 00	-15 14	-1980 26	0 00	1980 32

Plotreferencewellpathis Plan#	
Truevertical depths are referenced to Rig on #2_SHL(RT)	Grid System NAD83/TM New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on #2_SHL(RT)	North Reference Grid north
Rig on #2_SHL(RT) to Ground Level 3564 feet	Scale True distance
Ground Level to Mud line (Facility Donner30 Federal#2) 3564 feet	Depths are in feet
Coordinates are in feet reference to Facility Center	Created by gomezcron 1/8 2007



PROPOSED WELLPATH REPORT (CSV version)
Prepared by Baker Hughes INTEQ
Software System: WellArchitect™1.2

REFERENCE WELLPATH IDENTIFICATION

Operator	Concho O&G
Area	Andrews County, TX
Field	Section 30 T16S R28E (Donner)
Facility	Donner 30 Federal #2
Slot	#2_SHL
Well	#2
Wellbore	#2 PWB
Wellpath	Plan #1
Sidetrack	(none)

REPORT SETUP INFORMATION

Projection :	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
North Refe	Grid
Scale	0.999911
Wellbore L	8/8/2007
Software S	WellArchitect™
User	Gomeoscr
Report Ge	08/08/07 at 15:01.13
DataBase/	WA_Midland/ev01 xml

WELLPATI	Local North	Local East	Grid East	Grid North	Latitude	Longitude
	[ft]	[ft]	[ft]	[ft]	[°]	[°]
Slot Locatic	0	0	579927.4	687679.7	32 53 25.3	104 12 27.414W
Facility Ref			579927.4	687679 7	32 53 25.3	104 12 27 414W
Field Refer			579933 2	690975	32 53 58 0	104 12 27 300W

WELLPATH DATUM

Calculation	Minimum curvature
Horizontal I	Facility Center
Vertical Re	Rig on #2_SHL (RT)
MD Refere	Rig on #2_SHL (RT)
Field Vertic	Ground Level

Rig on #2_ 0.00 feet
Rig on #2_ 3564.00 feet
Facility Ver 0.00 feet
Section Or 0.00 feet
Section Ori 0 00 feet
Section Az 269.56°

WELLPATH DATA Wellbore #2 PWB Wellpath: Plan #1 † = interpolated/extrapolated station

	MD feet	Inclination deg	Azimuth deg	TVD feet	Vert Sect feet	North feet	East feet	DLS deg/100ft	Design Co	Path Comr	Tgt#
	0	0	269 562	0	0	0	0	0	Tie On		
†	100	0	0	100	0	0	0	0			
†	200	0	0	200	0	0	0	0			
†	300	0	0	300	0	0	0	0			
†	400	0	0	400	0	0	0	0			
†	500	0	0	500	0	0	0	0			
†	600	0	0	600	0	0	0	0			
†	700	0	0	700	0	0	0	0			
†	800	0	0	800	0	0	0	0			
†	900	0	0	900	0	0	0	0			
†	1000	0	0	1000	0	0	0	0			
†	1100	0	0	1100	0	0	0	0			
†	1200	0	0	1200	0	0	0	0			
†	1300	0	0	1300	0	0	0	0			
†	1330	0	269.562	1330	0	0	0	0			B/Salt
†	1400	0	0	1400	0	0	0	0			
†	1500	0	0	1500	0	0	0	0			
†	1600	0	0	1600	0	0	0	0			
†	1700	0	0	1700	0	0	0	0			
†	1800	0	0	1800	0	0	0	0			
†	1830	0	269 562	1830	0	0	0	0			San Andres
†	1900	0	0	1900	0	0	0	0			
†	2000	0	0	2000	0	0	0	0			
†	2100	0	0	2100	0	0	0	0			
†	2200	0	0	2200	0	0	0	0			
†	2300	0	0	2300	0	0	0	0			

†	2400	0	0	2400	0	0	0	0	
†	2500	0	0	2500	0	0	0	0	
†	2600	0	0	2600	0	0	0	0	
†	2700	0	0	2700	0	0	0	0	
†	2800	0	0	2800	0	0	0	0	
†	2900	0	0	2900	0	0	0	0	
†	3000	0	0	3000	0	0	0	0	
†	3100	0	0	3100	0	0	0	0	
†	3200	0	0	3200	0	0	0	0	
†	3300	0	0	3300	0	0	0	0	
†	3350	0	269 562	3350	0	0	0	0	Glorieta
†	3400	0	0	3400	0	0	0	0	
†	3500	0	0	3500	0	0	0	0	
†	3600	0	0	3600	0	0	0	0	
†	3700	0	0	3700	0	0	0	0	
†	3800	0	0	3800	0	0	0	0	
†	3900	0	0	3900	0	0	0	0	
†	4000	0	0	4000	0	0	0	0	
†	4100	0	0	4100	0	0	0	0	
†	4200	0	0	4200	0	0	0	0	
†	4300	0	0	4300	0	0	0	0	
†	4400	0	0	4400	0	0	0	0	
†	4500	0	0	4500	0	0	0	0	
†	4550	0	269.562	4550	0	0	0	0	Tubb
†	4600	0	0	4600	0	0	0	0	
†	4700	0	0	4700	0	0	0	0	
†	4800	0	0	4800	0	0	0	0	
†	4900	0	0	4900	0	0	0	0	
†	5000	0	0	5000	0	0	0	0	
†	5100	0	0	5100	0	0	0	0	
†	5200	0	0	5200	0	0	0	0	
†	5300	0	0	5300	0	0	0	0	Abo/Shale
†	5400	0	0	5400	0	0	0	0	
†	5500	0	0	5500	0	0	0	0	
†	5600	0	0	5600	0	0	0	0	
†	5700	0	0	5700	0	0	0	0	
†	5800	0	0	5800	0	0	0	0	

†	5900	0	0	5900	0	0	0	0			
	5960	0	269 562	5960	0	0	0	0	KOP		
†	6000	4.02	269 562	5999 97	1 4	-0 01	-1 4	10 05			
†	6100	14 07	269.562	6098 6	17.1	-0 13	-17.1	10.05			
†	6200	24.12	269.562	6192.97	49.78	-0 38	-49 77	10.05			
†	6300	34.17	269.562	6280.2	98.41	-0.75	-98 41	10 05			
†	6400	44.22	269.562	6357.6	161.53	-1.24	-161 53	10 05			
†	6500	54.27	269 562	6422.8	237.18	-1.81	-237 18	10.05			
†	6600	64.32	269.562	6473.8	323.05	-2.47	-323.04	10 05			
†	6700	74.37	269 562	6509 03	416.51	-3.18	-416 49	10 05			
†	6800	84.42	269.562	6527.41	514.67	-3.94	-514 66	10 05			
†	6844.46	88.889	269.562	6530	559.05	-4.27	-559 03	10 05		Wolfcamp	
	6855.57	90.004	269 562	6530.11	570.15	-4 36	-570 13	10 05	EOC	Wolfcamp	
†	6900	90.004	269.562	6530 1	614 58	-4 7	-614 57	0			
†	7000	90.004	269 562	6530 1	714.58	-5.46	-714.56	0			
†	7100	90 004	269 562	6530.09	814 58	-6.23	-814 56	0			
†	7200	90.004	269.562	6530.08	914.58	-6.99	-914.56	0			
†	7300	90.004	269.562	6530.07	1014.58	-7.76	-1014.56	0			
†	7400	90.004	269.562	6530.07	1114 58	-8 52	-1114.55	0			
†	7500	90.004	269.562	6530.06	1214.58	-9.29	-1214 55	0			
†	7600	90.004	269 562	6530.05	1314 58	-10.05	-1314.55	0			
†	7700	90.004	269.562	6530.04	1414.58	-10.82	-1414.54	0			
†	7800	90.004	269.562	6530.04	1514 58	-11.58	-1514.54	0			
†	7900	90.004	269.562	6530 03	1614 58	-12 35	-1614 54	0			
†	8000	90.004	269.562	6530.02	1714.58	-13.11	-1714 53	0			
†	8100	90.004	269.562	6530.01	1814 58	-13 87	-1814 53	0			
†	8200	90 004	269 562	6530	1914 58	-14.64	-1914 53	0			
	8265.73	90.004	269 562	6530	1980.32	-15 14	-1980 26	0	#2 BHL		1

HOLE AND CASING SECTIONS Ref Wellbore· #2 PWB Ref Wellpath· Plan #1

String/Dian	Start MD feet	End MD feet	Interval feet	Start TVD feet	End TVD feet	Start N/S	End N/S	Start E/W	End E/W
7.875in Op	5960	8265 73	2305.73	5960	6530	0	0	-15.14	-1980.26

TARGETS

Name	MD feet	TVD feet	North feet	East feet	Grid East us survey f	Grid North us survey f	Latitude DegMinSe	Longitude DegMinSec	Shape	Comment	Design Comments

(1) #2 BHL	8265.73	6530	-15.14	-1980.26	577947 3	687664.6	32 53 25.2(	104 12 50.(	point

SURVEY PROGRAM Ref Wellbore: #2 PWB Ref Wellpath Plan #1

Start MD feet	End MD feet	Pos Unc M	Log Name/ Wellbore
0	8265 73	NaviTrak (Standard)	#2 PWB

COG OPERATING, LLC

HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN
FOR DRILLING / COMPLETING / WORKOVER / FACILITY
WITH THE EXPECTATION OF H2S IN EXCESS OF 100 PPM

DONNER "30" FEDERAL #2
NEW DRILL WELL
SL: 1800' FSL & 330' FEL, UNIT I
BHL: 1800' FSL & 2310' FEL, UNIT J
SECTION 30, T16S, R28E
EDDY COUNTY, NEW MEXICO

This well / facility is not expected to have H2S, but the following is submitted as requested.

TABLE OF CONTENTS

GENERAL H2S EMERGENCY ACTIONS

In the event of any evidence of H2S emergency, the following plan will be initiated:

1. All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".

2. If for any reason a person must enter the hazardous area, they must wear a SCBA (self-contained breathing apparatus).

3. Always use the "buddy system".

4. Isolate the well / problem if possible.

5. Account for all personnel.

6. Display the proper colors warning all unsuspecting personnel of the danger at hand.

7. Contact the company representative as soon as possible if not at the location (use the enclosed call list as instructed).

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

1. All personnel will don the self-contained breathing apparatus.

2. Remove all personnel to the "safe area: (always use the "buddy system").

3. Contact company representative if not on location.

4. Set in motion the steps to protect and / or remove the general public to any upwind "safe are". Maintain strict security and safety procedures while dealing with the source.
5. No entry to any unauthorized personnel.

6. Notify the appropriate agencies:
   City Police - City streets
   State Police - State Roads
   County Sheriff - County Roads

7. Call the NMOCD.

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way, he will immediately notify public safety personnel.

EMERGENCY CALL LIST

	Office	Cell	Home
John Coffman	432-683-7443	432-631-9762	432-699-5552
Erick Nelson	432-683-7443	432-238-7591	
Matt Corser	432-683-7443	432-413-0071	

EMERGENCY RESPONSE NUMBERS
Eddy County, New Mexico

State Police	**505-748-9718**
Eddy County Sheriff	**505-746-2701**
Emergency Medical Services (Ambulance)	**911 or 505-746-2701**
Eddy County Emergency Management (Harry Burgess)	**505-887-9511**
State Emergency Response Center (SERC)	**505-476-9620**
Carlsbad Police Department	**505-885-2111**
Carlsbad Fire Department	**505-885-3125**
New Mexico Oil Conservation Division	**505-748-1283**
Callaway Safety Equipment, Inc.	**505-392-2973**

PROTECTION OF THE GENERAL (ROE) RADIUS OF EXPOSURE

In the event greater than 100 ppg H2S is present, the ROE calculations will be done to determine if the following is warranted:

* 100 ppm at any public area (any place not associated with this site)

* 500 ppm at any public road (any road which the general public may travel).

* 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H2S could be present in concentrations greater than 100 ppm in the gas mixture.

Calculation for the 100 ppm ROE:

X = [(1.589)(concentration)(Q)] (0.6258)

Calculation for the 500 ppm ROE:

X = [(0.4546)(concentration)(Q)] (.06258)

(H2S concentrations in decimal form)

10,000 ppm + = .01
1,000 ppm + = .001
100 ppm + = .0001
10 ppm + = .00001

EXAMPLE: If a well / facility has been determined to have 150 ppm H2S in the gas mixture and the well / facility is producing at a gas rate of 200 MCFD then:

ROE for 100 ppm X=[(1.589)(.00010)(200,000)] (0.6258)
X=8.8'

ROE for 500 ppm X=[(.4546)(.00050)(200,000)] (0.6258)
X=10.9'

These calculations will be forwarded to the appropriate NMOCD district office when applicable.

PUBLIC EVACUATION PLAN

When the supervisor has determined that the general public will be involved, the following plan will be implemented.

1. Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.

2. A trained person in H2S safety shall monitor with detection equipment the H2S concentration, wind and area of exposure. This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. All monitoring equipment shall be UL approved for use in Class I Groups A, B, C & D, Division I hazardous locations. All monitors will have a minimum capability of measuring H2S, oxygen, and flammable values.

3. Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.

4. The company representative shall stay in communication with all agencies throughout the duration of the situation and inform such agencies when the situation has been contained and the effected area is safe to enter.

PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION

The decision to ignite a well should be a last resort and one, if not both, of the following pertain:

1. Human life and / or property are endangered.

2. There is no hope of bringing the situation under control with the prevailing conditions at the site.

Instructions for Igniting the Well:

1. Two people are required. They must be equipped with positive pressure, self-contained breathing apparatus and "D"-ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.

2. One of the people will be a qualified safety person who will test the atmosphere for H2S, oxygen and LFL. The other person will be the company representative.

3. Ignite upwind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25mm flare gun with a range of approximately +/- 500 feet shall be used to ignite the gas.

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

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

REQUIRED EMERGENCY EQUIPMENT

1. Breathing Apparatus

* Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.

* Work / Escape Packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.

* Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.

2. Signage and Flagging

* One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.

* A Colored Condition flag will be on display reflecting the condition at the site at that time.

3. Briefing Area

* Two perpendicular areas will be designated by signs and readily accessible.

4. Windsocks

* Two windsocks will be placed in strategic locations, visible from all angles.

5. H2S Detectors and Alarms

* The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible alarm @ 15 ppm. Calibrate a minimum of every 30 days or as needed. The three sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer):

* Rig Floor
* Bell Nipple
* End of flow line or where well bore fluid is being discharged

6. Auxiliary Rescue Equipment

* Stretcher
* Two OSHA full body harnesses
* 100' of 5/8" OSHA approved rope
* One 20 lb. Class ABC fire extinguisher
* Communication via cell phones on location and vehicles on location

USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA)

1. SCBA should be worn when any of the following are performed:

    * Working near the top or on top of a tank
    * Disconnecting any line where H2S can reasonably be expected.
    * Sampling air in the area to determine if toxic concentrations of H2S exist.
    * Working in areas where over 10 ppm of H2S has been detected.
    * At any time there is a doubt of the level of H2S in the area.

2. All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.

3. Facial hair and standard eyeglasses are not allowed with SCBA.

4. Contact lenses are never allowed with SCBA.

5. When breaking out any line where H2S can reasonably be expected.

6. After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.

7. All SCBA shall be inspected monthly.

RESCUE & FIRST AID FOR VICTIMS OF H2S POISONING

* Do not panic.

* Remain calm and think.

* Get on the breathing apparatus.

* Remove the victim to the safe breathing area as quickly as possible, upwind and uphill from source or crosswind to achieve upwind.

* Notify emergency response personnel.

* Provide artificial respiration and / or CPR as necessary.

* Remove all contaminated clothing to avoid further exposure.

* A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

Toxic Effects of H2S Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic that Carbon Monoxide. Occupational exposure limits for Hydrogen sulfide and other gasses are compared below in Table 1. toxicity table for H2S and physical effects are shown in Table II.

Table 1
Permissible Exposure Limits of Various Gasses

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	C	
Hydrogen Sulfide	H2S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO2	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	CO	.97	25 ppm	200 ppm	
Carbon Dioxide	CO2	1.52	5000 ppm	30,000 ppm	
Methane	CH4	.55	4.7% LEL	14% UEL	

Definitions

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

B. STEL – Short Term Exposure Limit is the 15 minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H2S is 19 PPM.

C. IDLH – Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H2S is 100 PPM.

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

TABLE II

Toxicity Table of H2S

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

PHYSICAL PROPERTIES OF H2S

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

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

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

COLOR – TRANSPARENT

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

ODOR – ROTTEN EGGS

Hydrogen Sulfide has a distinctive offensive smell, similar to "rotten eggs". For this reason it earned its common name "sour gas". However, H2S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192

Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H2S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

EXPLOSIVE LIMITS – 4.3% TO 46%

Mixed with the right proportion of air or oxygen, H2S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

FLAMMABILITY

Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO2), another hazardous gas that irritates the eyes and lungs.

SOLUBILITY – 4 TO 1 RATIO WITH WATER

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of H2S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H2S may release the gas into the air.

BOILING POINT – (-76 degrees Fahrenheit)

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

SURFACE USE AND OPERATIONS PLAN
FOR DRILLING, COMPLETION, AND PRODUCING

C.O.G. Operating, LLC
Donner "30" Federal # 2
SL: 1800' FSL & 330' FEL, Unit I
BHL: 1800' FSL & 2310' FEL, Unit J
Sec 30, T16S, R28E
Eddy County, New Mexico

LOCATED

Approximately 15 miles Northwest from Loco Hills, New Mexico

OIL & GAS LEASE

SL: NMLC #054856 1120
BHL: NM LC #104675 160

RECORD TITLE LESSEE

SL: Devon Energy Production Co LP, 20 N Broadway, Suite #1500, Oklahoma City, OK 73102
BHL: COG Operating, LLC, 550 West Texas Ave., Suite 1300, Midland, TX 79701

BOND COVERAGE

$25,000 statewide bond of C.O.G. Operating, L.L.C. NMB 000215

SURFACE OWNER

Bureau of Land Management

MINERAL OWNER

Bureau of Land Management

GRAZING TENANT

Bogle LTD CO LLC, PO Box 460, Dexter, NM 88230; 505-734-5442

POOL

Crow Flats Wolfcamp (#97102)

PROPOSED TOTAL DEPTH

This well will be drilled to a Total Vertical Depth of approximately 6535' and a Measured Depth of approximately 8550'.

EXHIBITS

A.	Well Location & Acreage Dedication Map
B.	Area Road Map
C.	Vicinity Oil & Gas Map
D.	Topographic & Location Verification Map
E.	Proposed Lease Road and Pad Layout Map
F.	Drilling Rig Layout
G.	BOPE Schematic
H.	Choke Manifold Schematic

EXISTING ROADS

A. Exhibit A is a portion of a section map showing the location of the proposed well as staked.

B. Exhibit B is a map showing existing roads in the vicinity of the proposed well site.

C. Directions to well location:
From the junction of U.S. Hwy 82 and County Road 202 (Southern Union), go North on County Road 202 for 3.8 miles to lease road. On lease road go North 2.8 miles, thence East by Northeast 0.5 miles to proposed lease road.

ACCESS ROADS

A. Length and Width: 2336.4' long and 30' wide. The access road will be built and is shown on Exhibit E.

B. Surface Material: Existing

C. Maximum Grad: Less than five percent

D. Turnouts: None necessary

E. Drainage Design: Existing

F. Culverts: None necessary

G. Gates and Cattle Guards: None needed

LOCATION OF EXISITING WELLS

Existing wells in the immediate area are shown in Exhibit C.

LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

Necessary production facilities for this well will be located on the well pad.

LOCATION AND TYPE OF WATER SUPPLY

It is not contemplated that a water well will be drilled. Water necessary for drilling will be purchased and hauled to the site over existing roads shown on Exhibit B.

METHODS OF HANDLING WASTE DISPOSAL

A. Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.

B. Water produced during tests will be disposed of in the drilling pits.

C. Oil produced during tests will be stored in test tanks.

D. Trash will be contained in a trash trailer and removed from well site.

E. All trash and debris will be removed from the well site within 30 days after finishing drilling and/or completion operations.

ANCILLARY FACILITIES

None required.

WELL SITE LAYOUT

Exhibits E and F show the relative location and dimensions of the well pad, mud pits, reserve pit, and trash pit, and the location of major rig components.

PLANS FOR RESTORATION OF THE SURFACE

A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. The well site will be cleaned of all trash and junk to leave the site in an as aesthetically pleasing condition as possible.

B. After abandonment, all equipment, trash, and junk will be removed and the site will be clean.

OTHER INFORMATION

A. Topography:
The topography consists of sandy soil with native grasses. No wildlife was observed, but the usual inhabitants of this region are Jackrabbits, Reptiles, Coyotes, etc.

B. Soil: Topsoil at the well site is sandy soil.

C. Flora and Fauna: The location is in an area sparsely covered with mesquite and range grasses.

D. Ponds and Streams: There are no rivers, lakes, ponds, or streams in the area.

E. Residences and Other Structures: There are no residences within a mile of the proposed well site.

F. Archaeological, Historical, and Cultural sites: An Archaeological Survey has been ordered and a copy to be sent to the BLM Office.

G. Land Use: Grazing

ONLEASE RIGHT OF WAY REQUEST

Requesting Right of Way for all onlease appurtenances, including proposed lease roads.

A. Roads: Building of a proposed lease road 2336.4' in length. (See Exhibit E).

OPERATOR'S REPRESENTATIVE

John Coffman
C.O.G. Operating, LLC
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Midland, TX 79701
(432) 683-7443

CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be preformed by the C.O.G. Operating, LLC Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

7-29-07
Date

John Coffman
C.O.G. Operating, LLC

Conditions of Approval
Cave and Karst

EA#: NM-520-07-799
Lease #: NM-54856, NM-104675
COG Operating LLC
Donner "30" Federal # 1, # 2, and # 3

Cave/Karst Surface Mitigation
The following stipulations will be applied to minimize impacts during construction, drilling and production.

Berming:
Any tank batteries will be constructed and bermed large enough to contain any spills that may occur.

Bermed areas will be lined with rip-stop padding to prevent tears or punctures in liners and lined with a permanent 20 mil plastic liner.

Cave/Karst Subsurface Mitigation
The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. Use depth to the deepest expected fresh water as listed in the geologist report.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone as identified in the geologic report.

Casing:
All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported.

Regardless of the type of drilling machinery used, if a void (bit drops) of four feet or more and circulation losses greater then 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations will immediately stop and the BLM will be

notified by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

Delayed Blasting:
Any blasting will be a phased and time delayed.

Abandonment Cementing:
Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

Record Keeping:
The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence of absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.

CONDITIONS OF APPROVAL - DRILLING

Operator's Name:	**COG Operating LLC**
Well Name & No.	**2-Donner "30" Federal**
Location SHL:	**1800' FSL, 0330' FEL, Sec. 30, T-16-S, R-28-E, Eddy County, NM**
Location BHL:	**1800' FSL, 2310' FEL, Sec. 30, T-16-S, R-28-E, Eddy County, NM**
Lease:	**NM-54856 (SHL) / NM-104675 (BHL)**

I. DRILLING OPERATIONS REQUIREMENTS:

A. The Bureau of Land Management (BLM) is to be notified a minimum of 2 hours in advance for a representative to witness:

1. Spudding well
2. Setting and/or Cementing of all casing strings
3. BOPE tests

- Eddy County call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822

B. Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If H2S is detected, please report the measurements to the BLM.

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

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

II. CASING:

A. The **13-3/8** inch surface casing shall be set **in the Tansill Formation at approximately 500 feet** and cemented to the surface.

1. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
2. Wait on cement (WOC) time for a primary cement job will be a minimum of 18 hours or 24 hours in the potash area or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
3. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
4. **If cement falls back, remedial action will be done prior to drilling out that string.**

Fresh water mud to be used down to setting depth for the 9-5/8" casing.
Possible lost circulation in the Grayburg and San Andres formations.
High cave/karst area.
High pressure gas bursts within the Wolfcamp formation.

B. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is cement shall come to surface. If cement does not come to surface see A.1 thru 4.

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

C. The minimum required fill of cement behind the **5-1/2** inch production casing is **cement to extend a minimum of 200 feet inside the intermediate casing. Proposed cement volume is inadequate to get to required height. Prior to moving the rig, please provide verification of cement top.**

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

III. PRESSURE CONTROL:

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

B. The appropriate BLM office shall be notified a minimum of 2 hours in advance for a representative to witness the tests.

1. The tests shall be done by an independent service company.
2. The results of the test shall be reported to the appropriate BLM office.
3. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.
5. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** **if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days**. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.
6. A variance to test the surface casing and BOP/BOPE to the reduced pressure of **1000** psi with rig pumps is approved.

IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation and shall be used until production casing is run and cemented.

1. Recording pit level indicator to indicate volume gains and losses.
2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
3. Flow-sensor on the flow line to warn of abnormal mud returns from the well

Engineer on call phone (after hours): Carlsbad - 505-706-2779

WWI 081707