ATS-08-29
EA-08-126

Form 3160-3
(April 2004)

DEC 11 2007
OCD-ARTESIA

OCD-ARTESIA

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a. Type of work: ☑ DRILL ☐ REENTER	5 Lease Serial No: ~~LC-029338B~~ NM0467931
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 W. Texas, Suite 1300 Midland TX 79701**	8. Lease Name and Well No: **Electra Federal #23**
3b. Phone No *(include area code)*: **(432) 685-4372**	9 API Well No: 30-015-35979
4. Location of Well *(Report location clearly and in accordance with any State requirements *)* At surface: **2510' FNL & 250' FWL** At proposed prod. zone: **2310' FNL & 330' FWL**	10 Field and Pool, or Exploratory: **Loco Hills; Glorieta-Yeso** 11 Sec., T R M. or Blk. and Survey or Area: **Sec 10, T17S, R30E**
14 Distance in miles and direction from nearest town or post office*: **2.5 miles North East of Loco Hills, New Mexico**	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): **250'**	16 No of acres in lease: **640**	17 Spacing Unit dedicated to this well: **40**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft: **770'**	19 Proposed Depth: **5950'**	20 BLM/BIA Bond No on file: **NMB000215**
21 Elevations (Show whether DF, KDB, RT, GL, etc.): **3697'**	22. Approximate date work will start*: **01/01/2007**	23 Estimated duration: **10 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)*: **Gary E. Miller**	Date: **08/19/2007**
Title: **Agent**		
Approved by *(Signature)*: /s/ Don Peterson	Name *(Printed/Typed)*: /s/ Don Peterson	Date: DEC 07 2007
Title: FOR FIELD MANAGER	Office: CARLSBAD FIELD OFFICE	

Application approval do... to those rights in the subject lease which would entitle the applicant to conduct operations there... Conditions of approval, ...

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

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1... owingly and willfully to make to any department or agency of the United States any false, fictitiou... jurisdiction.

*(Instructions on page ...

Roswell Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
	96718	LOCO HILLS; GLORIETA-YESO

Property Code	Property Name	Well Number
302483	ELECTRA FEDERAL	23

OGRID No.	Operator Name	Elevation
229137	COG OPERATING, LLC	3697'

Surface Location

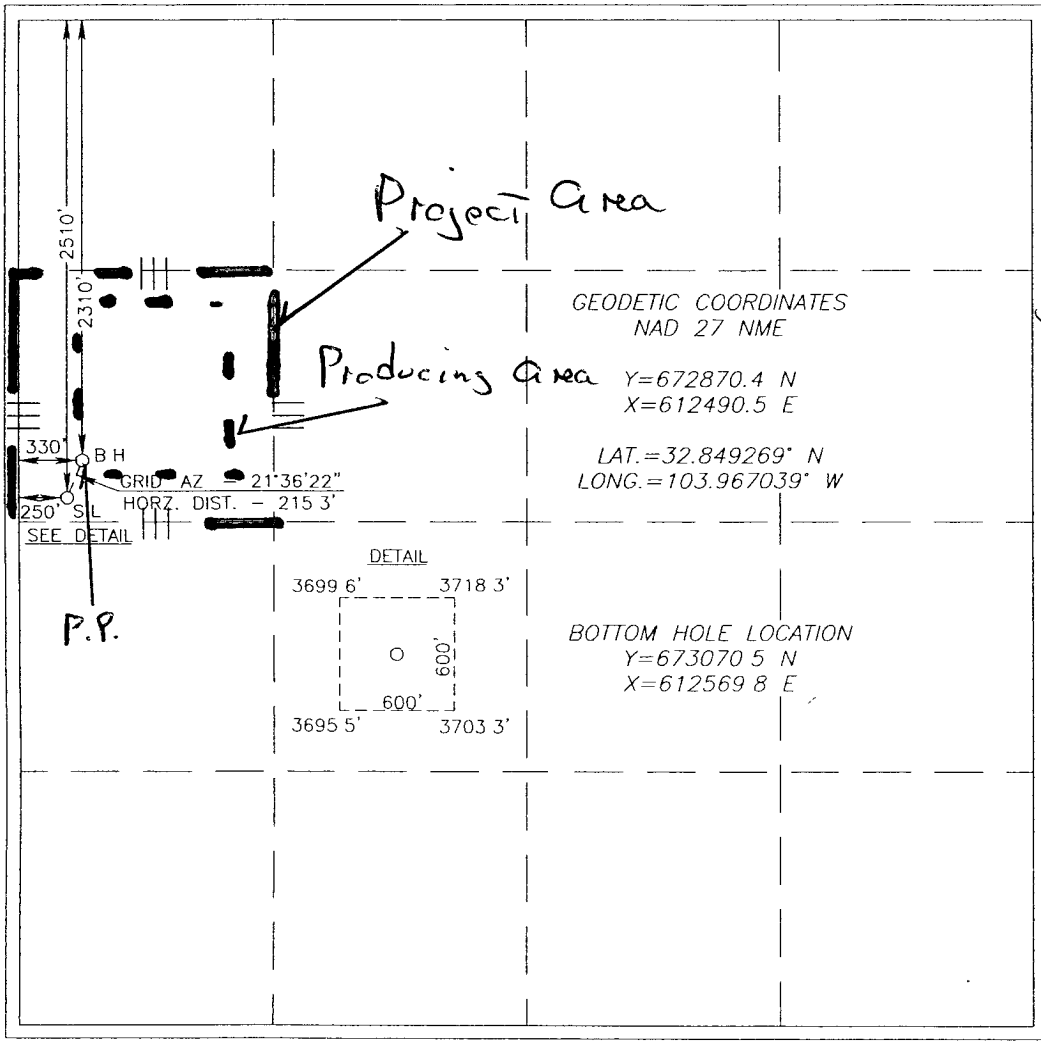
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	10	17-S	30-E		2510	NORTH	250	WEST	EDDY

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
E	10	17-S	30-E		2310	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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



OPERATOR CERTIFICATION

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

Phyllis A. Edwards 10/9/07
Signature Date

Phyllis A. Edwards
Printed Name

Regulatory Analyst

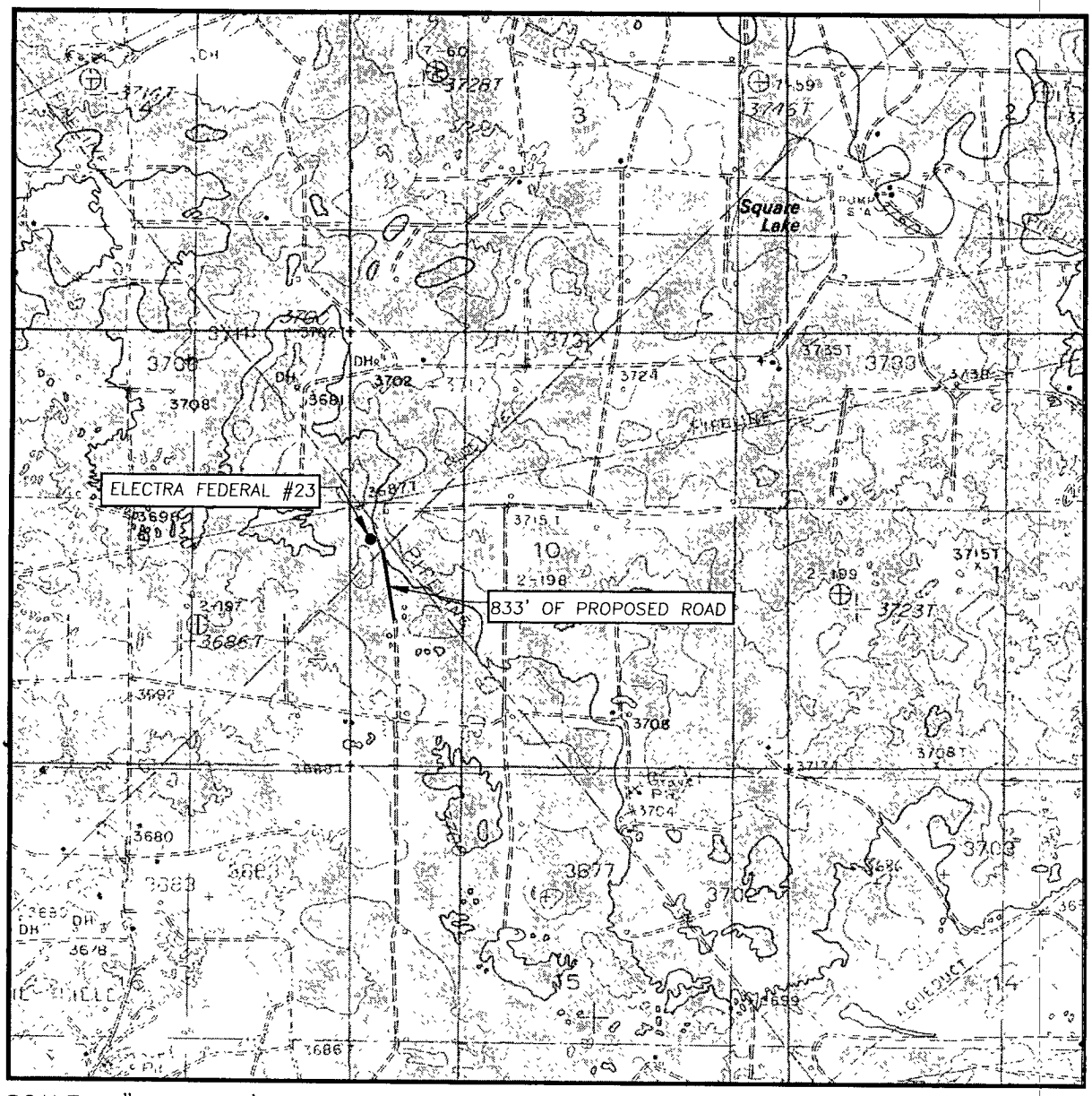
SURVEYOR CERTIFICATION

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.

SEPTEMBER 19, 2007
Date Surveyed REV. 9/24/07
Signature & Seal of Professional Surveyor
GARY L. EIDSON
NEW MEXICO
12641
REGISTERED PROFESSIONAL SURVEYOR
Basin Surveys 10/1/07
07.11.0991

Certificate No. GARY EIDSON 12641
RONALD EIDSON 3239

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
LOCO HILLS, N.M. – 10'

SEC. 10 TWP. 17-S RGE. 30-E

SURVEY N.M P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 2510' FNL & 250' FWL

ELEVATION 3697'

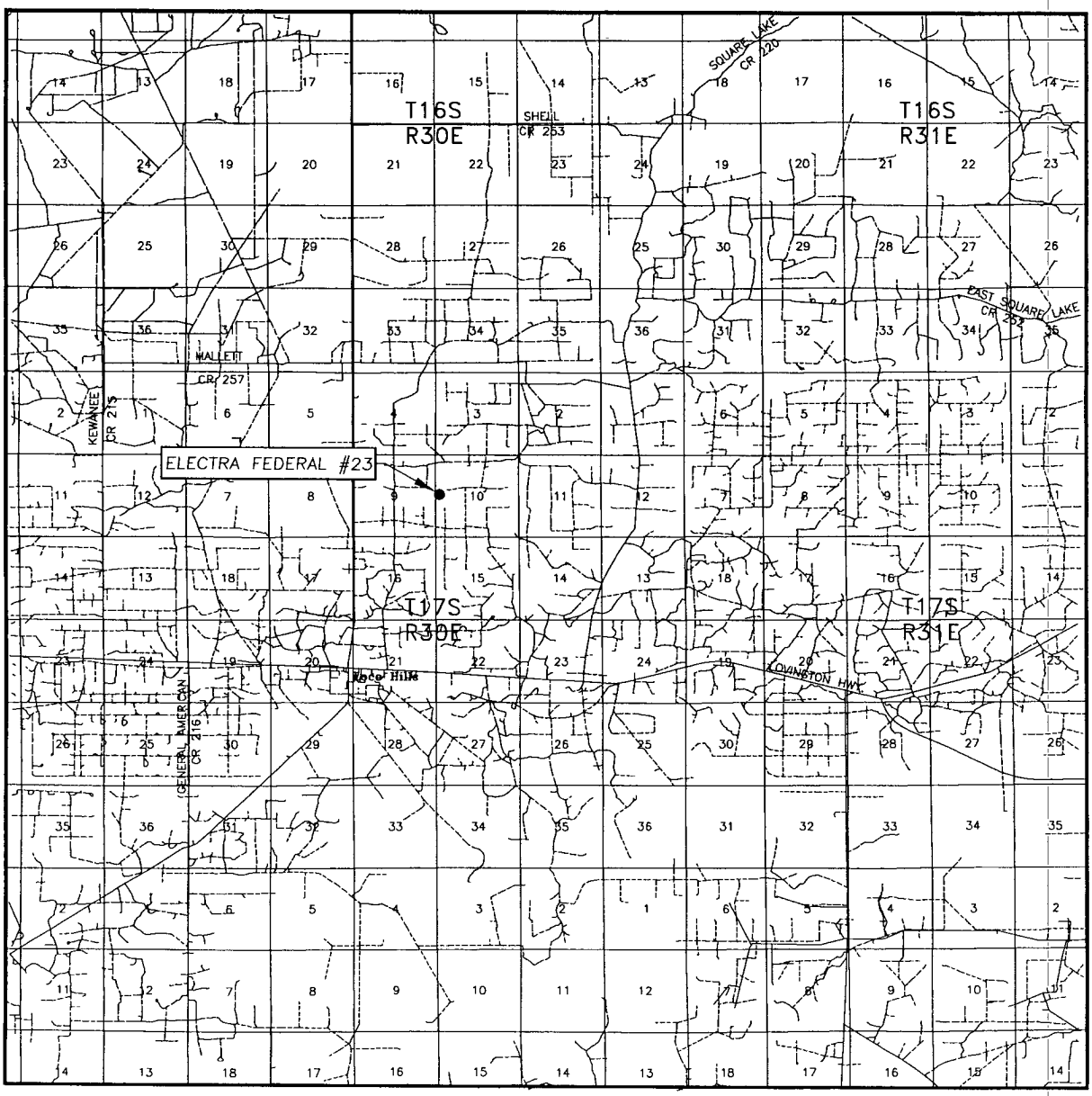
OPERATOR COG OPERATING, LLC

LEASE ELECTRA FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
LOCO HILLS, N.M.

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 10 TWP. 17-S RGE. 30-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 2510' FNL & 250' FWL

ELEVATION 3697'

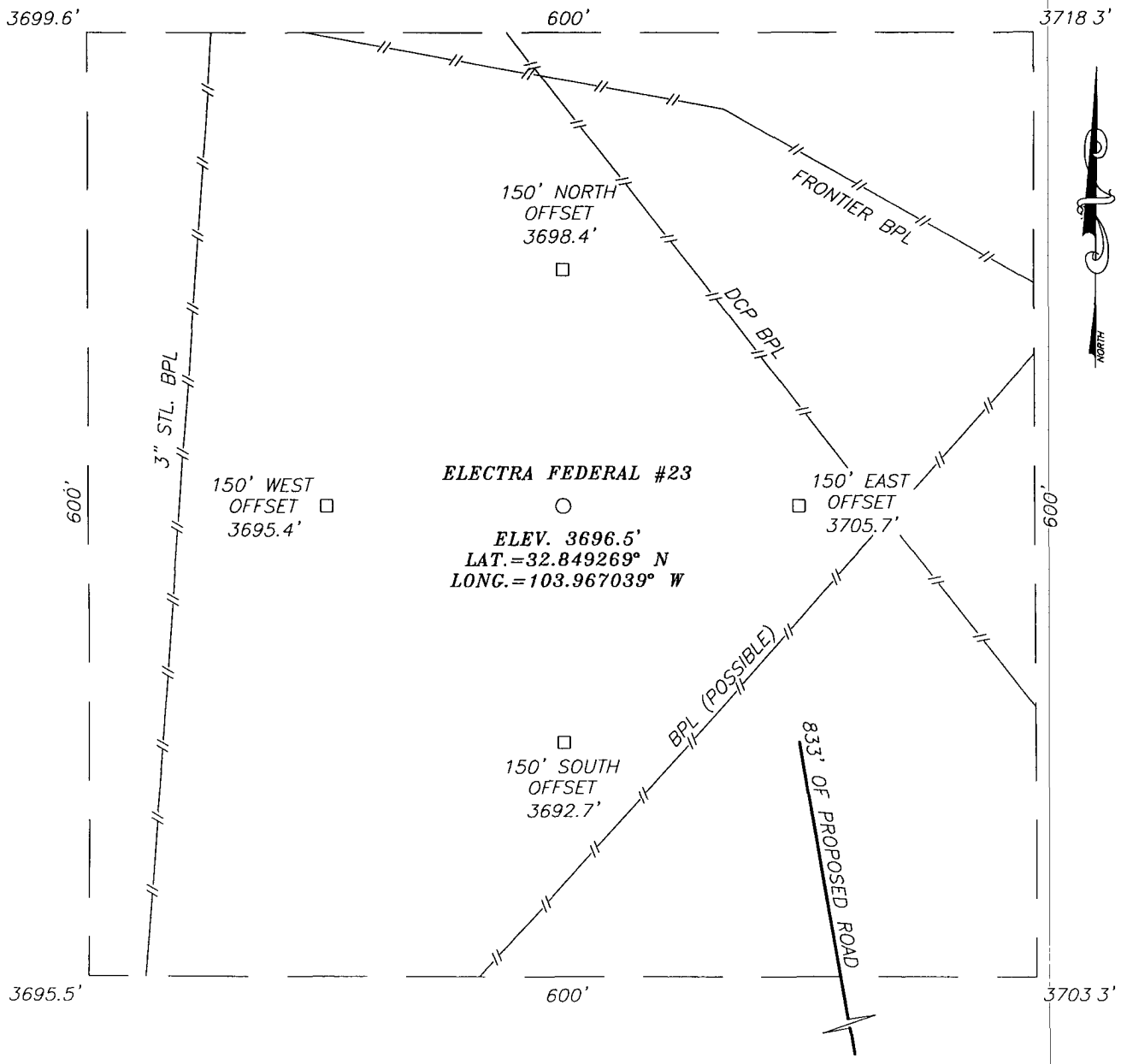
OPERATOR COG OPERATING, LLC

LEASE ELECTRA FEDERAL

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N DAL PASO
HOBBS, N.M 88240
(505) 393-3117

SECTION 10, TOWNSHIP 17 SOUTH, RANGE 30 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST. HWY. #82 AND CO. RD #217 (HAGERMAN CUTOFF), GO NORTH ON CO. RD #217 FOR APPROX. 1.8 MILES TURN RIGHT AND GO EAST APPROX. 0.6 MILES. TURN LEFT AND GO NORTH APPROX. 0.3 MILES TO A PROPOSED ROAD SURVEY FOLLOW ROAD SURVEY NORTHWEST APPROX. 1000 FEET TO THIS LOCATION

100 0 100 200 Feet

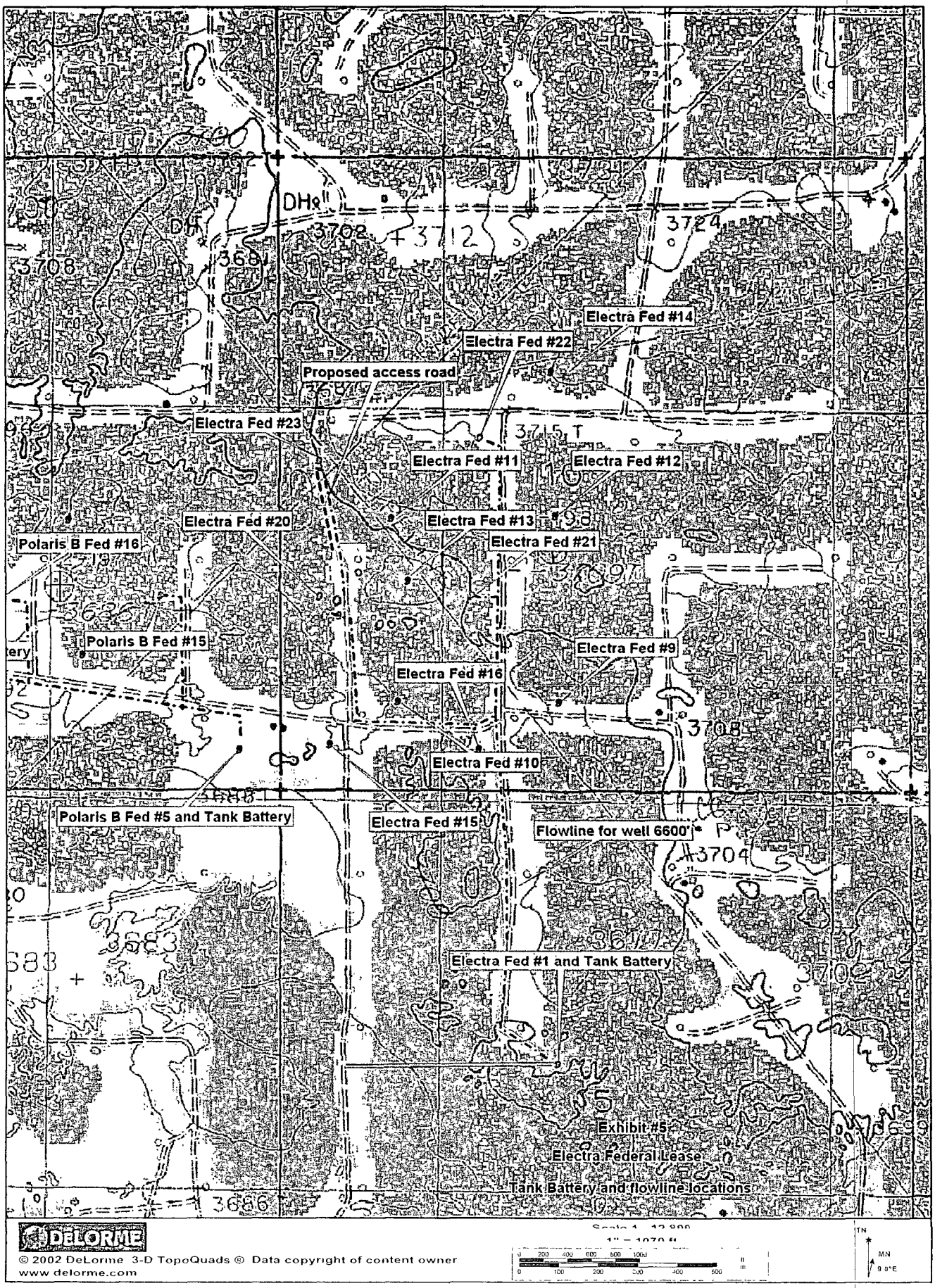
Scale: 1"=100'

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

COG OPERATING, LLC

ELECTRA FEDERAL #23 WELL
LOCATED 2510 FEET FROM THE NORTH LINE
AND 250 FEET FROM THE WEST LINE OF SECTION 10,
TOWNSHIP 17 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

Survey Date: 9/6/07	Sheet 1 of 1 Sheets		
W.O. Number: 07 11 0991	Dr By: LA	Rev 1-N/A	
Date: 9/18/07	Disk. CD#6	07110991	Scale: 1"=100'


Electra Fed #14
Electra Fed #22
Proposed access road
Electra Fed #23
Electra Fed #11
Electra Fed #12
Electra Fed #20
Electra Fed #13
Electra Fed #21
Polaris B Fed #16
Polaris B Fed #15
Electra Fed #9
Electra Fed #16
Electra Fed #10
Polaris B Fed #5 and Tank Battery
Electra Fed #15
Flowline for well 6600'
Electra Fed #1 and Tank Battery
Exhibit #5
Electra Federal Lease
Tank Battery and flowline locations
© 2002 DeLorme 3-D TopoQuads ® Data copyright of content owner
www.delorme.com

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Top of Salt	500'
Base of Salt	1150'
Yates	1250'
Seven Rivers	1530'
Queen	2150'
Grayburg	2350'
San Andres	2850'
Glorietta	4300'
Paddock	4380'
Blinebry	4850'

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

Water Sand	150'	Fresh Water
Grayburg	2350'	Oil/Gas
San Andres	2850'	Oil/Gas
Paddock	4380'	Oil/Gas
Blinebry	4850'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 425' and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 8 5/8" casing to 1300' and circulating cement back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them by cementing 5 1/2" production casing back 200' into the intermediate casing, to be run at TD.

4. Casing Program

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	burst/collapse/tension
17 ½"	0-425'	13 3/8"	48#	H-40	ST&C/New	ST&C	9.22/3.943/15.8
12 ¼"	0-1300'	8 5/8"	24#	J-55	ST&C/New	ST&C	3.03/2.029/7.82
7 7/8"	0-T.D.	5 1/2"	17#	J-55	LT&C/New	LT&C	1.88/1.731/2.42

5. Cement Program

13 3/8" Surface Casing:	Class C, 475 sx, yield 1.32, back to surface
8 5/8 Intermediate Casing:	Class C, 400 sx lead, yield-245 200 sx tail, yield-1.32, back to surface
5 1/2" Production Casing:	Class C, 800 sx Lead, yield 1.97, Class C, 400 sx Tail, yield 1.37, to 200' minimum tie back to intermediate casing

6. Minimum Specifications for Pressure Control

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer. 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. The BOP will be nippled up on the 13 3/8" surface casing and tested to 1500 psi by a third party. The BOP will then be nippled up on the 8 5/8" intermediate casing and tested by a third party to 2000 psi and used continuously until total depth is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of the intermediate casing. 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) will a 2000 psi WP rating.

7. Types and Characteristics of the Proposed Mud System

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

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-425'	Fresh Water	8.5	28	N.C.
425-1300'	Brine	10	30	N.C.
1300'-TD	Cut Brine	9.1	29	N.C.

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

8. Auxiliary Well Control and Monitoring Equipment

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

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

9. Logging, Testing and Coring Program

A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be run from TD to 8 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.

10. Abnormal Conditions, Pressure, Temperatures and Potential Hazards

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 110 degrees and the estimated maximum bottom hold pressure is 2300 psig. Low levels of hydrogen sulfide have been monitored in producing wells in the area, so H_2S may be present while drilling the well. A Hydrogen Sulfide Drilling Operation Plan is attached to this program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations

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

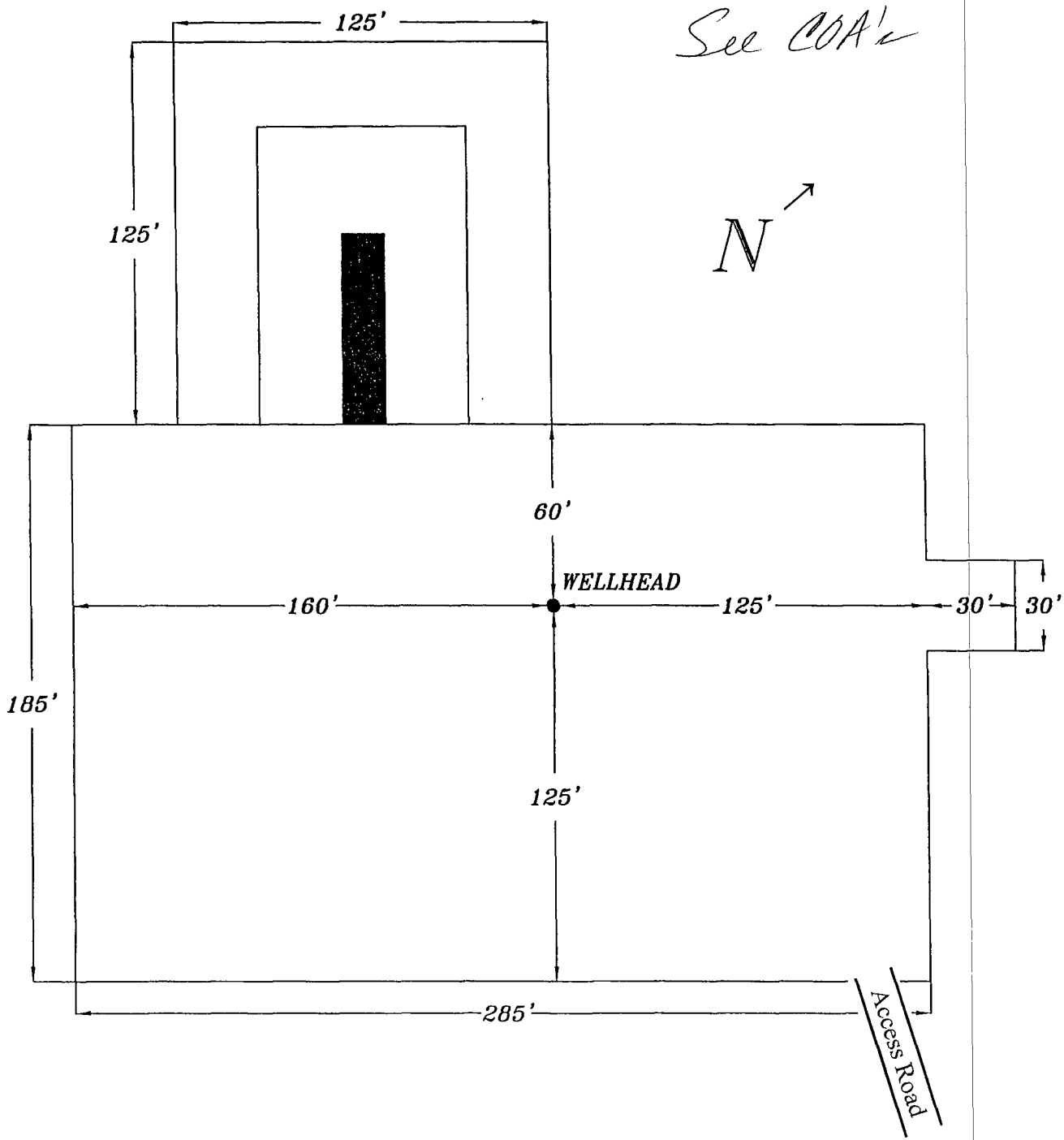
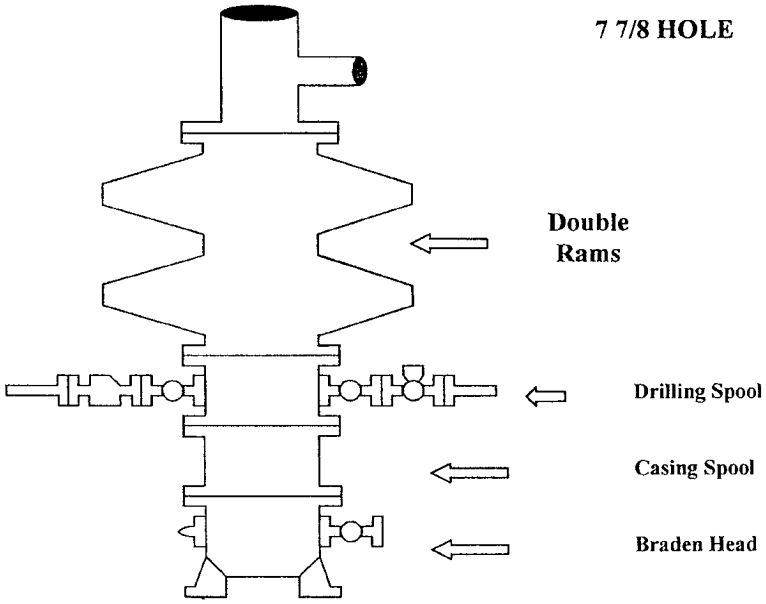


EXHIBIT #6

DATE: 9/14/07	COG OPERATING, LLC RIG LAYOUT
DWN. BY: JJ	*HIGHLANDER ENVIRONMENTAL CORP.* *MIDLAND, TEXAS*
FILE: C:\COG\ PIT LAYOUT	

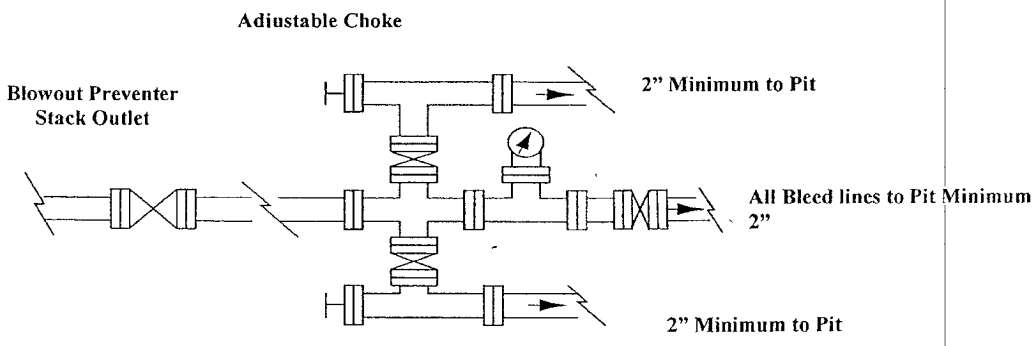
NOT TO SCALE

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.

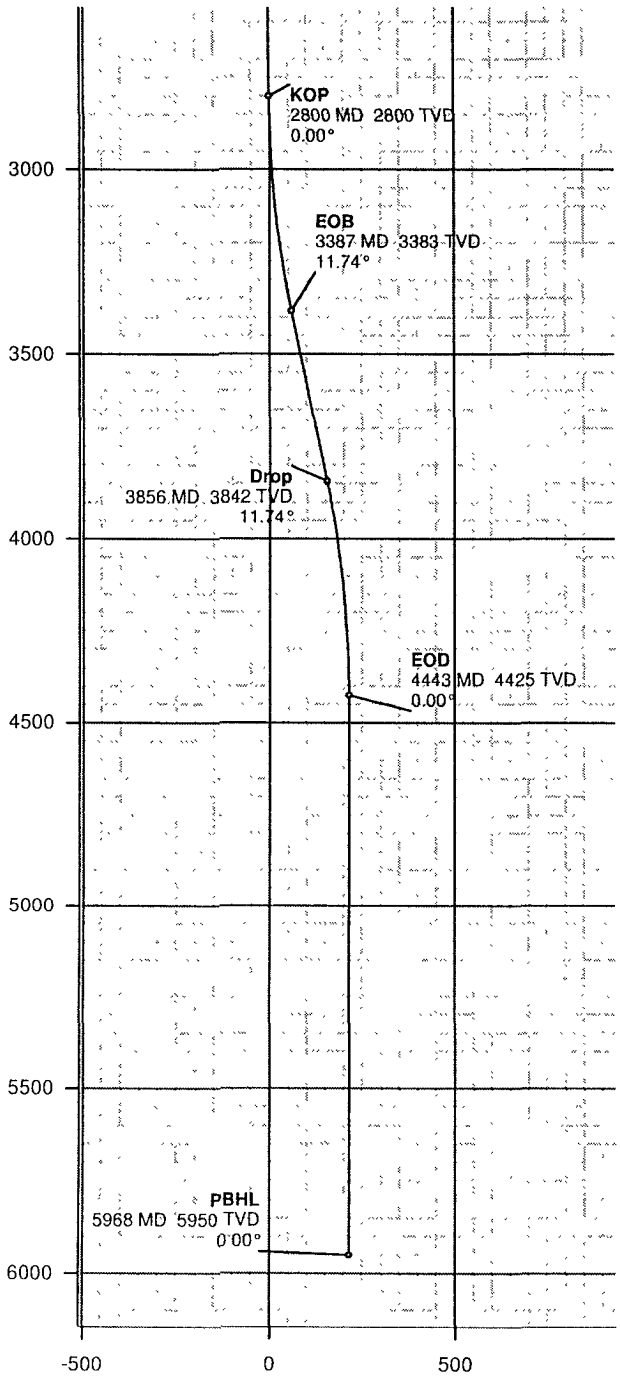
COG Operating, LLC.

WELL	FIELD	STRUCTURE
Electra Federal #23	Eddy County, NM	Electra Federal #23

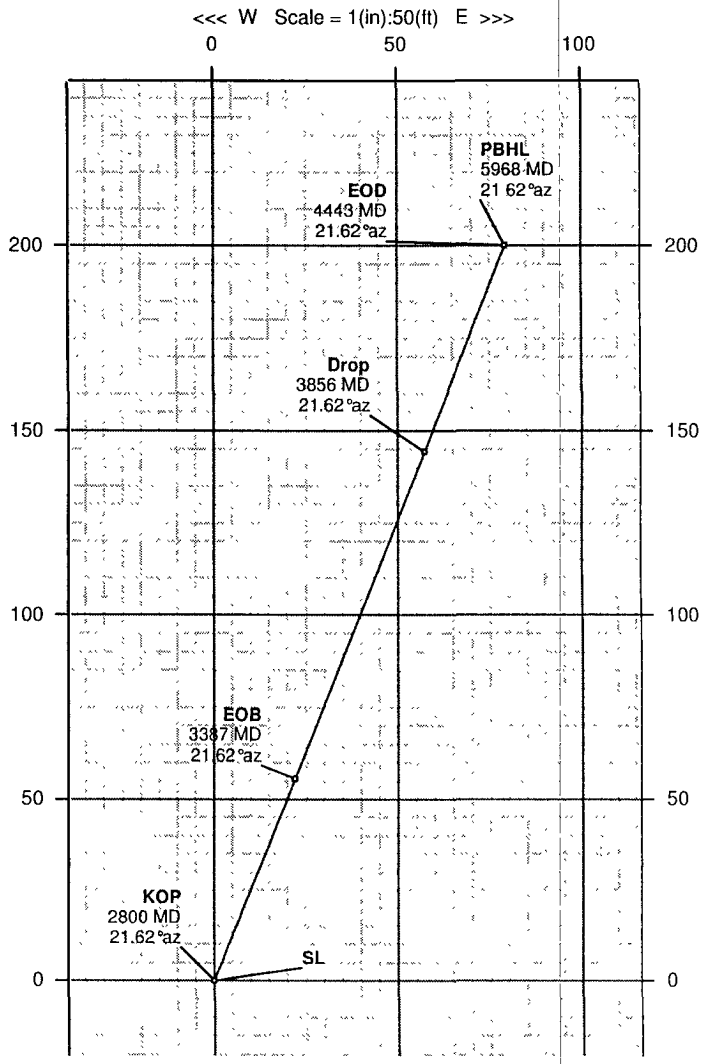
Magnetic Parameters					Surface Location					Miscellaneous			
Model	IGRF 2005	Dip	60 798°	Date	October 05, 2007	Lat	N32 50 57 369	Northing	672870 40 ftUS	Grid Conv	+0 19869113°	Slot	Electra Federal #23
		Mag Dec	+8 249°	FS	49367 5 nT	Lon	W103 58 1 341	Easting	612490 50 ftUS	Scale Fact	0 9999235818	Plan	Electra Federal #23 (1)

NAD27 New Mexico State Planes, Eastern Zone, US Feet

TVD Ref RKB (0 00 ft above)
Srvy Date October 05 2007



Vertical Section (ft) Azim = 21.62°, Scale = 1(in).500(ft) Origin = 0 N/-S, 0 E/-W



INTREPID
Directional Drilling Specialists

INTREPID
Directional Drilling Specialists

Proposal

Report Date:	October 8, 2007	Survey / DLS Computation Method:	Minimum Curvature / Lubinski
Client:	COG Operating, LLC.	Vertical Section Azimuth:	21 620°
Field:	Eddy County, NM	Vertical Section Origin:	N 0 000 ft, E 0 000 ft
Structure / Slot:	Electra Federal #23 / Electra Federal #23	TVD Reference Datum:	RKB
Well:	Electra Federal #23	TVD Reference Elevation:	0.0 ft relative to
Borehole:	Electra Federal #23	Sea Bed / Ground Level Elevation:	0 000 ft relative to
UWI/API#:		Magnetic Declination:	8.249°
Survey Name / Date:	Electra Federal #23_r1 / October 5, 2007	Total Field Strength:	49367.517 nT
Tort / AHD / DDI / ERD ratio:	23.473° / 215 26 ft / 3.705 / 0.036	Magnetic Dip:	60.798°
Grid Coordinate System:	NAD27 New Mexico State Planes, Eastern Zone, US Feet	Declination Date:	October 05, 2007
Location Lat/Long:	N 32 50 57 369, W 103 58 1.341	Magnetic Declination Model:	IGRF 2005
Location Grid N/E Y/X:	N 672870.400 ftUS, E 612490.500 ftUS	North Reference:	Grid North
Grid Convergence Angle:	+0.19869113°	Total Corr Mag North -> Grid North:	+8.050°
Grid Scale Factor:	0.99992358	Local Coordinates Referenced To:	Well Head

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Mag / Grav Tool Face (deg)
Tie-In	0.00	0.00	21.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	100.00	0.00	21.62	100.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	200.00	0.00	21.62	200.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	300.00	0.00	21.62	300.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	400.00	0.00	21.62	400.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	500 00	0.00	21.62	500.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	600.00	0.00	21.62	600.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	700.00	0.00	21.62	700.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	800.00	0.00	21.62	800.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	900.00	0.00	21.62	900.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1000 00	0.00	21.62	1000.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1100.00	0.00	21.62	1100.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1200.00	0.00	21.62	1200.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1300.00	0.00	21.62	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1400 00	0.00	21.62	1400.00	0.00	0.00	0.00	0.00	0.00	0 00	---
	1500.00	0.00	21.62	1500.00	0.00	0.00	0 00	0.00	0.00	0.00	---
	1600.00	0.00	21.62	1600.00	0.00	0.00	0.00	0.00	0 00	0.00	---
	1700.00	0.00	21.62	1700.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1800.00	0.00	21.62	1800.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	1900.00	0.00	21.62	1900.00	0.00	0.00	0 00	0.00	0.00	0.00	---
	2000.00	0.00	21.62	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2100.00	0.00	21.62	2100.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2200.00	0.00	21.62	2200.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2300 00	0.00	21.62	2300.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2400 00	0.00	21.62	2400.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2500.00	0.00	21.62	2500.00	0.00	0.00	0.00	0 00	0.00	0.00	---
	2600 00	0.00	21.62	2600.00	0.00	0.00	0.00	0.00	0.00	0.00	---
	2700 00	0.00	21.62	2700.00	0.00	0.00	0.00	0.00	0.00	0.00	---
KOP	2800.00	0.00	21.62	2800.00	0.00	0.00	0.00	0.00	0.00	0.00	21.62M
	2900 00	2.00	21.62	2899.98	1.75	1.62	0.64	1.75	21.62	2.00	21.62M
	3000.00	4.00	21.62	2999.84	6.98	6.49	2.57	6.98	21.62	2.00	21.62M
	3100.00	6.00	21 62	3099.45	15.69	14.59	5.78	15.69	21.62	2.00	HS
	3200.00	8.00	21 62	3198.70	27.88	25.92	10.27	27 88	21 62	2 00	HS
	3300.00	10.00	21.62	3297.47	43 52	40.46	16.03	43 52	21.62	2.00	HS
EOB	3386.83	11.74	21.62	3382.73	59 89	55.68	22.07	59 89	21 62	2 00	---
	3400.00	11 74	21.62	3395.63	62.57	58.17	23.05	62.57	21.62	0.00	---
	3500.00	11 74	21 62	3493 54	82 91	77.08	30.55	82 91	21 62	0 00	---
	3600.00	11.74	21.62	3591.45	103 26	95.99	38.04	103 26	21 62	0.00	---

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Mag / Grav Tool Face (deg)
	3700.00	11.74	21.62	3689.36	123 60	114.90	45.54	123.60	21.62	0.00	---
	3800.00	11.74	21.62	3787.27	143.94	133.81	53.03	143.94	21.62	0.00	---
Drop	3856.18	11.74	21.62	3842.27	155.36	144.44	57.24	155.36	21.62	0.00	LS
	3900.00	10.86	21.62	3885.24	163.95	152.42	60.40	163.95	21.62	2.00	LS
	4000.00	8.86	21.62	3983.76	181.07	168.34	66.71	181.07	21.62	2.00	LS
	4100.00	6.86	21.62	4082.82	194.75	181.05	71.75	194.75	21.62	2.00	LS
	4200.00	4.86	21.62	4182.29	204.96	190.54	75.51	204.96	21.62	2.00	LS
	4300.00	2.86	21.62	4282.06	211.69	196.80	77.99	211.69	21.62	2.00	21.62M
	4400.00	0.86	21.62	4382.00	214.93	199.82	79.19	214.93	21.62	2.00	21.62M
EOD	4443.00	0.00	21.62	4425.00	215.26	200.12	79.31	215.26	21.62	2.00	---
	4500.00	0.00	21.62	4482.00	215.26	200.12	79.31	215.26	21.62	0.00	---
	4600.00	0.00	21.62	4582.00	215.26	200.12	79.31	215.26	21.62	0.00	---
	4700.00	0.00	21.62	4682.00	215.26	200.12	79.31	215.26	21.62	0.00	---
	4800.00	0.00	21.62	4782.00	215.26	200.12	79.31	215.26	21.62	0.00	---
	4900.00	0.00	21.62	4882.00	215.26	200.12	79.31	215.26	21.62	0.00	---
	5000.00	0.00	21.62	4982.00	215.26	200.12	79.31	215.26	21.62	0.00	---
	5100.00	0.00	21 62	5082.00	215.26	200.12	79.31	215.26	21.62	0.00	---
	5200.00	0.00	21.62	5182.00	215.26	200.12	79.31	215.26	21.62	0.00	---
	5300.00	0.00	21.62	5282.00	215.26	200.12	79.31	215.26	21.62	0.00	---
	5400.00	0.00	21.62	5382.00	215.26	200.12	79.31	215 26	21.62	0.00	---
	5500.00	0.00	21.62	5482 00	215.26	200.12	79.31	215.26	21.62	0.00	---
	5600.00	0.00	21.62	5582.00	215.26	200.12	79.31	215 26	21.62	0.00	---
	5700.00	0.00	21.62	5682.00	215.26	200.12	79 31	215 26	21.62	0.00	---
	5800.00	0.00	21.62	5782.00	215.26	200.12	79.31	215 26	21.62	0.00	---
	5900.00	0.00	21.62	5882.00	215.26	200.12	79.31	215.26	21.62	0.00	---
PBHL	5968.00	0.00	21.62	5950.00	215 26	200.12	79.31	215.26	21.62	0.00	---

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

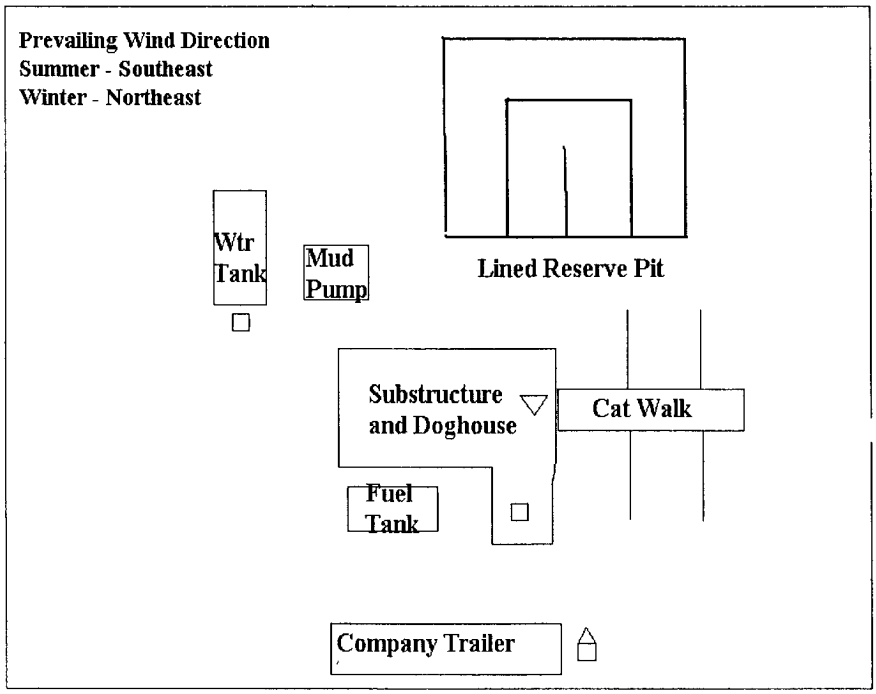
YOU ARE ENTERING AN H2S

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

DRILLING LOCATION
H2S SAFETY EQUIPMENT
Exhibit # 8



▽ H2S Monitors with alarms at the bell nipple

□ Wind Direction Indicators

⛫ Safe Briefing areas with caution signs and breathing equipment min 150 feet from

SURFACE USE AND OPERATING PLAN

1. Existing & Proposed Access Roads

A. The well site survey and elevation plat for the proposed well is shown in Exhibit #1. It was staked by John West Engineering, Hobbs, NM.

B. All roads to the location are shown in the topographic map Exhibit #2. The existing lease roads are illustrated and are adequate for travel during drilling and production operations. Upgrading existing roads prior to drilling the well will be done where necessary.

C. Directions to Location: From Loco Hills, at the intersection US Highway 82 and Co. Rd. #217 (Hagerman Cutoff), Go north on Co. Rd. #217 for approximately 1.8 miles. Turn right on lease road and go approximately 0.6 miles and turn left and go 0.3 miles then veer northwest on new lease road approximately 1000' to location on the left. See Vicinity Map, Exhibit #3

D. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

2. Proposed Access Road:

Exhibit #4 shows that approximately 833' of new access road will be constructed. The road will be constructed as follows:

A. The maximum width of the running surface will be 14'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.

B. The average grade will be less than 1%.

C. No turnouts are planned.

D. No culverts, cattleguard, gates, low water crossings or fence cuts are necessary.

E. Surfacing material will consist of native caliche. Caliche will be obtained from the nearest BLM approved caliche pit or reserve pit area.

3. Location of Existing Well:

Exhibit #5 shows all existing wells within a one-mile radius of this well. As shown on this plat there are numerous wells producing from the San Andres and Yeso formations.

4. Location of Existing and/or Proposed Facilities:

A. COG Operating LLC does operate a production facility on this lease.

B. If the well is productive, contemplated facilities will be as follows:

1) Production will be sent to the Electra Federal tank battery located at the Electra Federal #1 well location. The facility location is shown in Exhibit #5.

2) The tank battery and facilities including all flow lines and piping will be installed according to API specifications.

3) Any additional caliche will be obtained from a BLM approved caliche pit. Any additional construction materials will be purchased from contractors.

4) Proposed flow lines, will follow an archaeologically approved route to the Tank Battery located at the Electra Fed. #1 well location. The flowline will be SDR 7 3" poly line laid on the surface and will be approximately 6600' in length.

5) It will be necessary to run electric power if this well is productive. Power will be provided by CVE and they will submit a separate plan and ROW for service to the well location.

6) If the well is productive, rehabilitation plans will include the following:
   a) The reserve pit contents will be allowed to dry and the cuttings will then be removed and placed into lined burial trench located adjacent to the pit area.(within 120 days after completion, weather permitting)
   b) Sampling of the reserve pit bottom will be performed if required by the NMOCD and submitted for approval for closure.
   c) All pit plastic and other materials will be removed and disposed of in the cuttings trench or at an approved NMOCD disposal facility.
   d) The reserve pit will then be backfilled.
   e) The original topsoil from the well site will be returned to the location. And the site will be re-contoured to as close to possible to the original site.

5. Location and Type of Water Supply:

The well will be drilled with combination brine and fresh water mud system as outlined in the drilling program. The water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access roads shown in Exhibit #2. If a commercial fresh water source is nearby, fast line may be laid along existing road ROW's and fresh water pumped to the well. No water well will be drilled on the location.

6. Source of Construction Materials:

All caliche required for construction of the drill pad and proposed new access road (approximately 3000 cubic yards) will be obtained from a BLM approved caliche pit or the reserve pit.

7. Methods of Handling Water Disposal:

A. Drill cuttings not retained for evaluation purposes will be disposed into the reserve pit.

B. Drilling fluids will be contained in a lined working pit. The reserve pit will contain any excess drilling fluid or flow from the well during drilling, cementing and completion operations. The reserve pit will be an earthen pit, approximately 125' X 125' X 10' deep with a wall dividing it into two horseshoe style pits and fenced on three sides prior to drilling. It will be fenced on the fourth side immediately following rig removal. The reserve pit will be lined (12-mil thickness) to minimize loss of drilling fluids and saturation of the ground with brine water.

C. Water produced from the well during completion may be disposed into the reserve pit or a steel tank (depending on the rates). After the well is permanently placed on production, produced water will be collected in tanks (fiberglass) until pumped to an approved disposal system, produced oil will be collected in steel tanks until sold.

D. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill. All water and fluids will be disposed of into the reserve pit. Salts and other chemicals produced during drilling or testing will be disposed into the reserve pit. No toxic waste or hazardous chemicals will be produced by this operation.

E. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days. The reserve pit will be completely fenced and kept closed until it has dried. When the reserve pit is dry the pit will be backfill and reseeded as per BLM specifications as weather permits. In the event of a dry hole only a dry hole marker will remain.

8. Ancillary Facilities:

No airstrip, campsite or other facilities will be built as a result of the operation on this well.

9. Well Site Layout:

A. The drill pad layout, with elevations staked by John West Engineering, is shown in Exhibit #4. Dimensions of the pad and pits are shown on Exhibit #6. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level no major cuts will be required.

B. Exhibit #6 also shows the proposed orientation of reserve pit, working pit and access road. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

C. The reserve pit will be lined with high quality plastic sheeting (12 mil thickness).

10. Plans for Restoration of the Surface:

A. Upon completion of the drilling and/or completion operations, it the well is found to be non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations in the area. The road will be reclaimed as directed by the BLM. The reserve pit will be reclaimed as described in Section 4.6 above. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography. The pit will be closed to NMOCD compliance regulations.

B. The pit lining material will be buried in the cuttings trench or hauled to an approved NMOCD disposal facility in order to return the location and road to their pristine nature. All pits will be filled and the location leveled, weather permitting, within 120 days after abandonment.

C. The location and road will be rehabilitated as recommended by the BLM.

D. Three sides of the reserve pit will be fenced prior to and during drilling operations. At the time that the rig is removed, the reserve pit will be fenced on the rig (fourth) side to prevent livestock from being entrapped. The fencing will remain in place until the pit area is cleaned up and leveled. No oil will be left on the surface of the fluid in the pit.

E. Upon completion of proposed operations, if the well is completed, the reserve pit area will be closed as outlined in Section 4.6 above within the same prescribed time. Any additional caliche required for facilities will be obtained from a BLM approved caliche pit. Topsoil removed from the drill site will be used to re-contour the pit area to its original natural level and reseeded as per BLM specifications.

11. Surface Ownership:

A. The surface is owned by the U.S. Government and is administered by the Bureau of Land Management. The surface is multiple uses with the primary uses of the region for grazing of livestock and the production of oil and gas.

B. The surface tenant for this site is Charles Martin, P.O. Box 706, Artesia NM 88211.

C. The proposed road routes and surface location will be restored as directed by the BLM.

12. Other Information:

A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.

B. There is no permanent or live water in the immediate area.

C. There are no dwellings within 2 miles of this location.

D. A Cultural Resources Examination is being prepared by Southern New Mexico Archaeological Services, Inc. P.O. Box 1, Bent New Mexico, 88314, phone # 505-671-4797 and the results will be forwarded to your office in the near future.

13. Bond Coverage:

Bond Coverage is Nationwide Bond # 000215

14. Lessee's and Operator's Representative:

The COG Operating LLC representative responsible for assuring compliance with the surface use plan is as follows:

John Coffman,
Drilling Superintendent
COG Operating LLC
550 W. Texas, Suite 1300
Midland, TX 79701
Phone (432) 683-7443 (office)
(432) 631-9762 (cell)

Erick Nelson.
Division Operations Manager
COG Operating LLC
550 W. Texas, Suite 1300
Midland, TX 79701
Phone (505) 746-2210 (office)
(432) 238-7591 (cell)

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements make in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or COG Operating, LLC, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 19th day of September, 2007.

Signed: John Coffman

Printed Name: John Coffman
Position: Drilling Superintendent
Address: 550 W. Texas, Suite 1300, Midland, Texas 79701
Telephone: (432) 683-7443
Field Representative (if not above signatory): Same
Address (if different from above):
Telephone (if different from above):
E-mail: JCoffman@conchoresources.com

Exhibits:

Exhibit #1	**Wellsite and Elevation Plat** **Form C-102 Well location and acreage dedication plat**
Exhibit #2	**Topographic Map (West)**
Exhibit #3	**Vicinity Map and area roads**
Exhibit #4	**Elevation Plat (West)**
Exhibit #5	**Topographic extract showing wells, roads and flowlines**
Exhibit #6	**Pad Layout and orientation**
Exhibit #7	**H2S Signage**
Exhibit #8	**H2S Equipment location**
Exhibit #9	**BOP and Choke diagrams**
Exhibit #10	**Form C-144 NMOCD pit permit application**

CONCHO

August 20, 2007

U.S. Department of Interior
Bureau of Land Management

Sirs:

Please accept this letter as authorization for Gary E. Miller of Highlander Environmental Corp. to act as an agent of COG Operating, L.L.C. He will be submitting and signing permits and correspondence with your personnel on these matters for our company.

If you have any questions please call.

Sincerely,

COG Operating, L.L.C.

Fasken Center, Tower II 550 West Texas Avenue, Suite 1300 Midland, Texas 79701 PHONE 432 683 7443 FAX 432-683-7441

VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 2 hours in advance for a representative to witness:

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

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

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Grayburg** formation. **Measurements between 500-1800 ppm in the gas stream.**

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

B. CASING

1. The **13-3/8** inch surface casing shall be set **a minimum of 25 feet into the Rustler Anhydrite at approximately 425** feet and cemented to the surface.

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

   b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement).

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

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

Possible lost circulation in the Grayburg and San Andres formations.
Possible water flows in the Salado and Artesia Groups.

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

   ☒ Cement to surface. If cement does not circulate see B.1.a-d above.

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

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

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

C. PRESSURE CONTROL

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

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

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

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

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

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

   e. A variance to test the surface casing and BOP/BOPE to the reduced pressure of **1500** psi with a third party tester is approved.

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

WWI 102307