

Form 3160-5
(April 2004)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

SUNDRY NOTICES AND REPORTS ON WELLS

*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE- Other instructions on reverse side.**1 Type of Well
☒ Oil Well ☐ Gas Well ☐ Other2 Name of Operator
COG Operating LLC3a Address
550 W. Texas Ave., Suite 1300 Midland, TX 797013b Phone No (include area code)
432-685-4385

4. Location of Well (Footage, Sec, T, R, M, or Survey Description)

792' FNL & 330' FWL Sec.12, T17S, R31E, Unit D

5. Lease Serial No.

NMLC-029415B

6 If Indian, Allottee or Tribe Name

N/A

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

N/A

8. Well Name and No.

Puckett 12 #37

9 API Well No.

30-015-39184

10. Field and Pool, or Exploratory Area

Fren; Glorieta-Yeso 26770

11. County or Parish, State

Eddy, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change Name & Location
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

COG respectfully requests permission to change the name of this well to:
Puckett 12 Federal #9H

Original Location :
792' FNL & 330' FWL Sec.12, T17S, R31E, Unit D

COG respectfully requests to change the Location to:
SHL: 330' FNL & 330' FWL Sec.12, T17S, R31E, Unit D
BHL: 330' FNL & 330' FEL Sec.12, T17S, R31E, Unit A

This move is requested to drill this well as a horizontal.

A revised C-102, Directional Plan and Drilling Plan are attached for your review.

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

OPER. OGRID NO. 229137

PROPERTY NO. 38858

POOL CODE 26770 SUBJECT TO LIKE

SEE DATE 11-16-11 APPROVAL BY STATE

API NO. 30-015-39184

RECEIVED

NOV 18 2011

NMOC D ARTESIA

Accepted for record

NMOC D 105

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Robyn M. Odom

Title Regulatory Analyst

Signature

Date

08/03/2011

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

/s/ Don Peterson

Title

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

CARLSBAD FIELD OFFICE

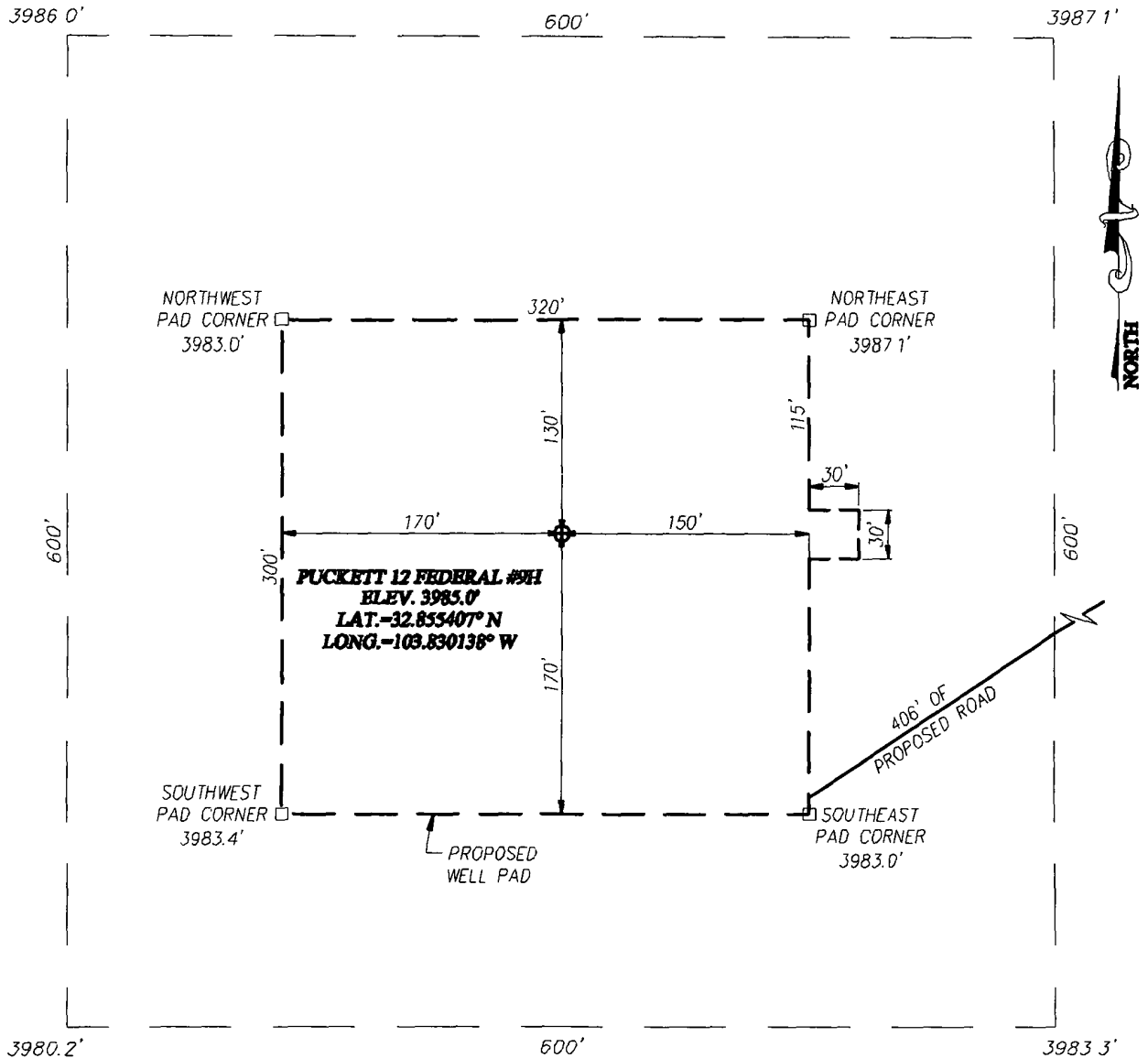
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

SECTION 12, TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.

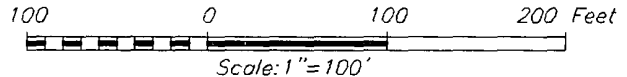
EDDY COUNTY

NEW MEXICO



DIRECTIONS TO LOCATION

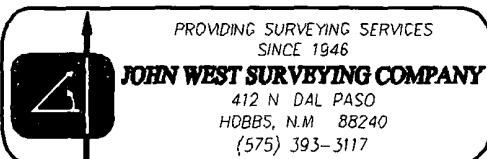
FROM THE INTERSECTION OF U.S. HWY. #82 AND CO. RD #224 (RIPPLE RD), GO SOUTHWEST ON U.S. HWY #82 APPROX 1.1 MILES. TURN RIGHT AND GO NORTHWEST APPROX. 0.3 MILES. TURN RIGHT AND GO NORTH APPROX. 0.3 MILES. TURN RIGHT AND GO NORTHEAST APPROX. 0.5 MILES. TURN LEFT AND GO NORTH APPROX. 0.9 MILES. TURN RIGHT AND GO EAST APPROX. 1.0 MILE. TURN LEFT AND GO NORTH APPROX. 0.5 MILES. TURN LEFT AND GO NORTHWEST APPROX. 0.1 MILE TO THE EXISTING HUDSON OIL CO. PUCKETT NORTH #11 WELL PAD. FOLLOW PROPOSED ROAD SURVEY STAKES WEST APPROX. 0.3 MILES TO THIS LOCATION.



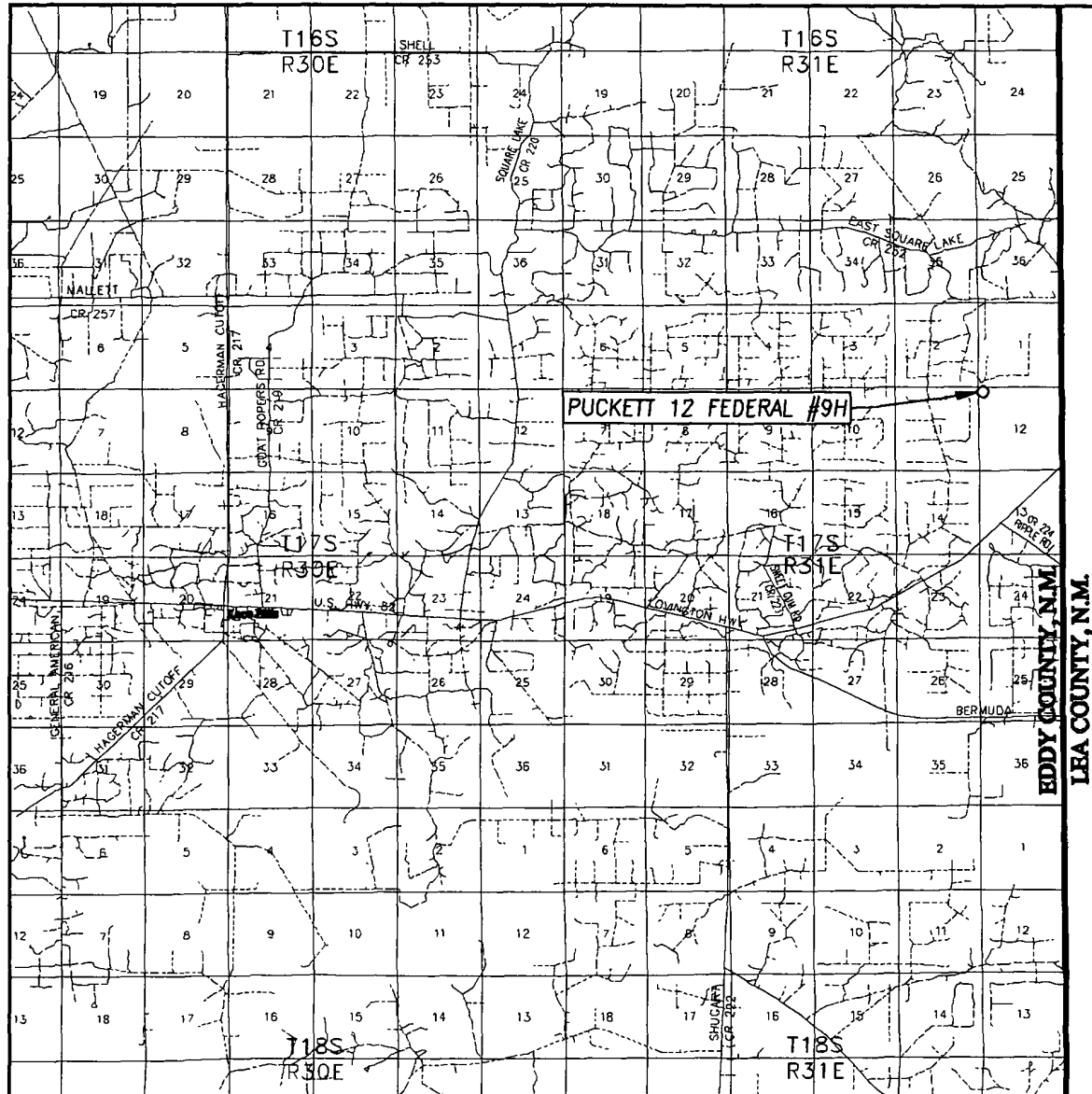
COG OPERATING, LLC

PUCKETT 12 FEDERAL #9H WELL
LOCATED 330 FEET FROM THE NORTH LINE
AND 330 FEET FROM THE WEST LINE OF SECTION 12,
TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date. 6/28/11	Sheet 1 of 1 Sheets
W.O. Number: 11.11.1160	Dr By: DSS
Date: 7/1/11	11111160
	Scale: 1"=100'



VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 12 TWP. 17-S RGE 31-E

SURVEY N.M.P.M.

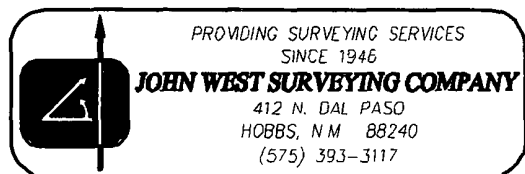
COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 330' FNL & 330' FWL

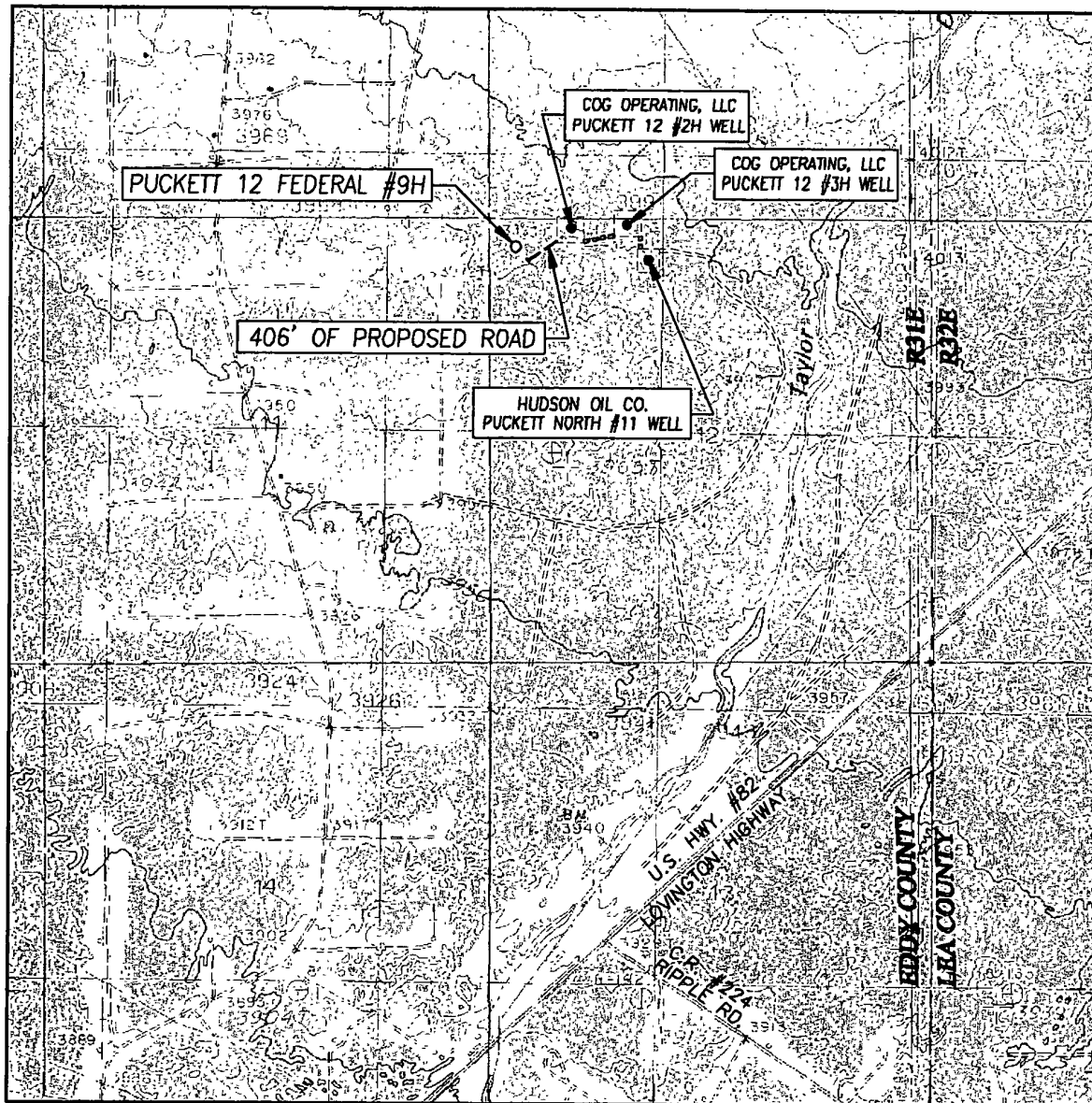
ELEVATION 3985'

OPERATOR COG OPERATING, LLC

LEASE PUCKETT 12 FEDERAL



LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
MALJAMAR, N M - 10'

SEC. 12 TWP. 17-S RGE. 31-E

SURVEY N M P M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 330' FNL & 330' FWL

ELEVATION 3985'

OPERATOR COG OPERATING, INC

LEASE PUCKETT 12 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
MALJAMAR, N.M.



PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N DAL PASO
HOBBS, N M 88240
(575) 393-3117



COG Operating LLC

Eddy County, NM (NAN27 NME)

Puckett 12 Federal #9H

Puckett 12 Federal #9H

OH

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

SHL = 330' FNL & 330' FWL

BHL = 330' FNL & 330' FEL

Standard Planning Report

03 August, 2011





Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Puckett 12 Federal #9H
Well: Puckett 12 Federal #9H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Site Puckett 12 Federal #9H

GL Elev @ 3985 00usft

GL Elev @ 3985 00usft

Grid

Minimum Curvature

Project: Eddy County, NM (NAN27 NME)

Map System: US State Plane 1927 (Exact solution)

System Datum:

Mean Sea Level

Geo Datum: NAD 1927 (NADCON CONUS)

Map Zone: New Mexico East 3001

Site: Puckett 12 Federal #9H

Site Position: Northing: 675,276 30 usft Latitude: 32° 51' 19 464 N
From: Map Easting: 654,523.10 usft Longitude: 103° 49' 48 498 W
Position Uncertainty: 0 00 usft Slot Radius: 13-3/16 " Grid Convergence: 0 27 °

Well: Puckett 12 Federal #9H

Well Position: +N/-S 0 00 usft Northing: 675,276 30 usft Latitude: 32° 51' 19 464 N
+E/-W 0 00 usft Easting: 654,523.10 usft Longitude: 103° 49' 48 498 W
Position Uncertainty: 0 00 usft Wellhead Elevation: Ground Level: 3,985 00 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/07/29	7 74	60 72	48,952

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

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0 00

Vertical Section	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 00	0 00	0 00	89 60

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
6,122 54	0 00	0 00	6,122 54	0 00	0 00	0 00	0 00	0 00	0 00	
6,872 54	90 00	89 60	6,600 00	3 33	477 45	12 00	12 00	0 00	89 60	
11,017 28	90 00	89 60	6,600 00	32 20	4,622 10	0 00	0 00	0 00	0 00	PBHL-Puckett 12 #9H



Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Puckett 12 Federal #9H
Well: Puckett 12 Federal #9H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Site Puckett 12 Federal #9H
GL Elev @ 3985 00usft
GL Elev @ 3985 00usft
Grid
Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
6,122 54	0 00	0 00	6,122 54	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 12.00°/100'									
6,200 00	9 30	89 60	6,199 66	0 04	6 27	6 27	12 00	12 00	0 00
6,300 00	21 30	89 60	6,295 94	0 23	32 60	32 60	12 00	12 00	0 00
6,400 00	33 30	89 60	6,384 65	0 55	78 37	78 38	12 00	12 00	0 00
6,500 00	45 30	89 60	6,461 89	0 99	141 59	141 59	12 00	12 00	0 00
6,600 00	57 30	89 60	6,524 31	1 53	219 48	219 49	12 00	12 00	0 00
6,700 00	69 30	89 60	6,569 16	2 15	308 65	308 66	12 00	12 00	0 00
6,800 00	81 30	89 60	6,594 50	2 82	405 20	405 21	12 00	12 00	0 00
6,872 54	90 00	89 60	6,600 00	3 33	477 46	477 47	12 00	12 00	0 00
Land EOC hold 90.00°									
6,900 00	90 00	89 60	6,600 00	3 52	504 92	504 93	0 00	0 00	0 00
7,000 00	90 00	89 60	6,600 00	4 21	604 91	604 93	0 00	0 00	0 00
7,100 00	90 00	89 60	6,600 00	4 91	704 91	704 93	0 00	0 00	0 00
7,200 00	90 00	89 60	6,600 00	5 61	804 91	804 93	0 00	0 00	0 00
7,300 00	90 00	89 60	6,600 00	6 30	904 91	904 93	0 00	0 00	0 00
7,400 00	90 00	89 60	6,600 00	7 00	1,004 91	1,004 93	0 00	0 00	0 00
7,500 00	90 00	89 60	6,600 00	7 70	1,104 90	1,104 93	0 00	0 00	0 00
7,600 00	90 00	89 60	6,600 00	8 39	1,204 90	1,204 93	0 00	0 00	0 00
7,700 00	90 00	89 60	6,600 00	9 09	1,304 90	1,304 93	0 00	0 00	0 00
7,800 00	90 00	89 60	6,600 00	9 79	1,404 90	1,404 93	0 00	0 00	0 00
7,900 00	90 00	89 60	6,600 00	10 48	1,504 89	1,504 93	0 00	0 00	0 00
8,000 00	90 00	89 60	6,600 00	11 18	1,604 89	1,604 93	0 00	0 00	0 00
8,100 00	90 00	89 60	6,600 00	11 88	1,704 89	1,704 93	0 00	0 00	0 00
8,200 00	90 00	89 60	6,600 00	12 57	1,804 89	1,804 93	0 00	0 00	0 00
8,300 00	90 00	89 60	6,600 00	13 27	1,904 88	1,904 93	0 00	0 00	0 00
8,400 00	90 00	89 60	6,600 00	13 97	2,004 88	2,004 93	0 00	0 00	0 00
8,500 00	90 00	89 60	6,600 00	14 66	2,104 88	2,104 93	0 00	0 00	0 00
8,600 00	90 00	89 60	6,600 00	15 36	2,204 88	2,204 93	0 00	0 00	0 00
8,700 00	90 00	89 60	6,600 00	16 06	2,304 87	2,304 93	0 00	0 00	0 00
8,800 00	90 00	89 60	6,600 00	16 75	2,404 87	2,404 93	0 00	0 00	0 00
8,900 00	90 00	89 60	6,600 00	17 45	2,504 87	2,504 93	0 00	0 00	0 00
9,000 00	90 00	89 60	6,600 00	18 15	2,604 87	2,604 93	0 00	0 00	0 00
9,100 00	90 00	89 60	6,600 00	18 84	2,704 86	2,704 93	0 00	0 00	0 00
9,200 00	90 00	89 60	6,600 00	19 54	2,804 86	2,804 93	0 00	0 00	0 00
9,300 00	90 00	89 60	6,600 00	20 24	2,904 86	2,904 93	0 00	0 00	0 00
9,400 00	90 00	89 60	6,600 00	20 93	3,004 86	3,004 93	0 00	0 00	0 00
9,500 00	90 00	89 60	6,600 00	21 63	3,104 85	3,104 93	0 00	0 00	0 00
9,600 00	90 00	89 60	6,600 00	22 33	3,204 85	3,204 93	0 00	0 00	0 00
9,700 00	90 00	89 60	6,600 00	23 02	3,304 85	3,304 93	0 00	0 00	0 00
9,800 00	90 00	89 60	6,600 00	23 72	3,404 85	3,404 93	0 00	0 00	0 00
9,900 00	90 00	89 60	6,600 00	24 42	3,504 84	3,504 93	0 00	0 00	0 00
10,000 00	90 00	89 60	6,600 00	25 11	3,604 84	3,604 93	0 00	0 00	0 00
10,100 00	90 00	89 60	6,600 00	25 81	3,704 84	3,704 93	0 00	0 00	0 00
10,200 00	90 00	89 60	6,600 00	26 51	3,804 84	3,804 93	0 00	0 00	0 00
10,300 00	90 00	89 60	6,600 00	27 20	3,904 83	3,904 93	0 00	0 00	0 00
10,400 00	90 00	89 60	6,600 00	27 90	4,004 83	4,004 93	0 00	0 00	0 00
10,500 00	90 00	89 60	6,600 00	28 60	4,104 83	4,104 93	0 00	0 00	0 00
10,600 00	90 00	89 60	6,600 00	29 29	4,204 83	4,204 93	0 00	0 00	0 00
10,700 00	90 00	89 60	6,600 00	29 99	4,304 83	4,304 93	0 00	0 00	0 00
10,800 00	90 00	89 60	6,600 00	30 69	4,404 82	4,404 93	0 00	0 00	0 00
10,900 00	90 00	89 60	6,600 00	31 38	4,504 82	4,504 93	0 00	0 00	0 00
11,000 00	90 00	89 60	6,600 00	32 08	4,604 82	4,604 93	0 00	0 00	0 00



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Puckett 12 Federal #9H
Well: Puckett 12 Federal #9H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Site Puckett 12 Federal #9H
GL Elev @ 3985 00usft
GL Elev @ 3985 00usft
Grid
Minimum Curvature

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,017 28	90 00	89 60	6,600 00	32 20	4,622 10	4,622 21	0 00	0 00	0 00
PBHL-Puckett 12 #9H									

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude
PBHL-Puckett 12 #9H	- plan hits target center - Point	0 00	0 00	6,600 00	32 20	4,622 10	675,308 50	659,145 20	32° 51' 19 561 N 103° 48' 54 313 W

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
6,122.54	6,122.54	0 00	0 00	KOP Start Build 12 00°/100'
6,872.54	6,600 00	-36 28	476 09	Land EOC hold 90 00°



Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Puckett 12 Federal #9H
Wellbore: OH
Design: Plan #1 8-3/4" Hole



SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
6122 54	0 00	0 00	6122.54	0 00	0 00	0 00	0 00	0 00	
6872 54	90 00	89.60	6600.00	3 33	477 45	12.00	89 60	477 46	
11017.28	90 00	89.60	6600 00	32 20	4622.10	0.00	0.00	4622 21	PBHL-Puckett 12 #9H

Plan: Plan #1 8-3/4" Hole (Puckett 12 Federal #9H/OH)

Created By Julio Pina Date: 29-Jul-11

Checked _____ Date: _____

Reviewed: _____ Date: _____

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL-Puckett 12 #9H	6600 00	32 20	4622.10	675308.50	659145 20	32°51' 19 561 N	103°48' 54.313 W	Point

WELL DETAILS: Puckett 12 Federal #9H

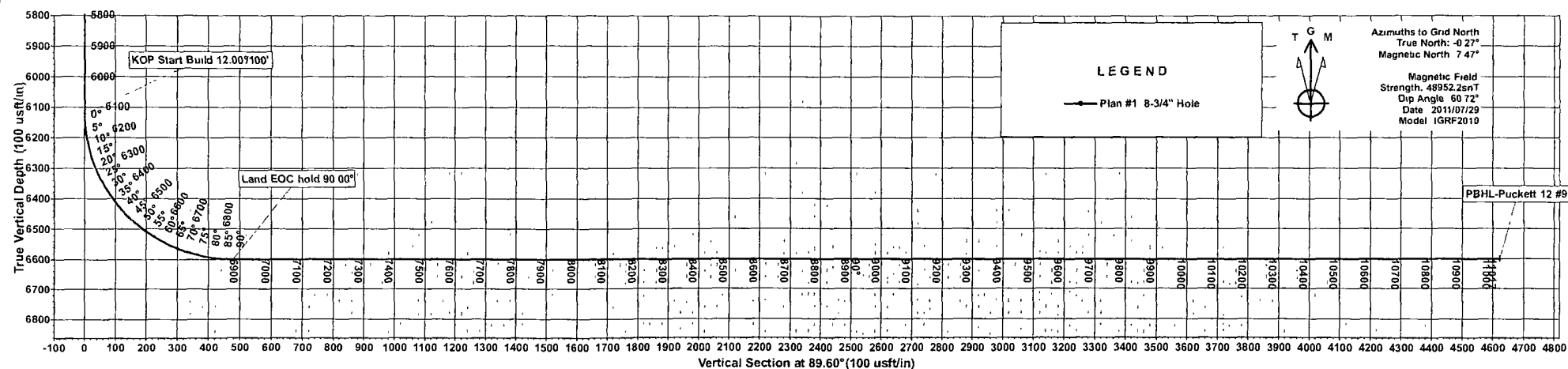
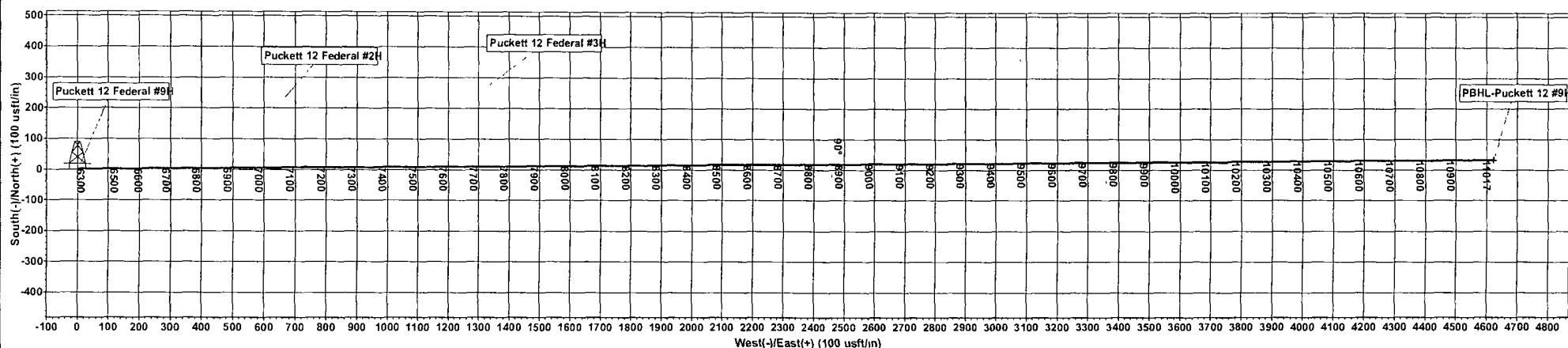
+N/-S	+E/-W	Northing	Ground Level	Easting	Latitude	Longitude	Slot
0 00	0.00	675276.30	3985.00	654523 10	32°51' 19.464 N	103°49' 48 498 W	

PROJECT DETAILS: Eddy County, NM (NAN27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

AZIMUTH CORRECTIONS

ALL AZIMUTHS MUST BE CORRECTED TO GRID
GRID CORRECTIONS MUST BE APPLIED BEFORE PLOTTING
To convert a Magnetic Direction to a Grid Direction, Add 7.47°
To convert a True Direction to a Grid Direction, Subtract 0.27°



ATTACHMENT TO FORM 3160-3
 COG Operating, LLC
 Puckett 12 Federal #9H
 SHL: 330' FNL & 330' FWL, Unit D
 BHL: 330' FNL & 330' FEL, Unit A
 Sec 12, T17S, R31E
 Eddy County, NM

1. Proration Unit Spacing: 160 Acres
2. Ground Elevation: 3985'
3. Proposed Depths: Horizontal TVD = 6,600', MD = 11,017' Pilot Hole = 6,900'
4. Estimated tops of geological markers:

Quaternary	Surface
Rustler	682'
Top of Salt	900'
Base of Salt	1923'
Yates	2028'
Seven Rivers	2356'
Queen	2980'
Grayburg	3415'
San Andres	3739'
Glorieta	5247'
Paddock	5317'
Blaine	5745'
Tubb	6700'

5. Possible mineral bearing formations:

Water Sand	150'	Fresh Water
Grayburg	3415'	Oil/Gas
San Andres	3739'	Oil/Gas
Glorieta	5247'	Oil/Gas
Paddock	5317'	Oil/Gas
Blaine	5745'	Oil/Gas
Tubb	6700'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 600' and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 9 5/8" casing to 2000' and circulating cement, in a single or multi-stage job and/or with an ECP, back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them. This will be achieved by cementing, with a single or multi-stage job, the 5 1/2" production casing back 200' into the intermediate casing (although cement volume is actually calculated to surface), to be run at TD. If wellbore conditions arise that require immediate action and/or a change to this program, COG Operating LLC personnel will always react to protect the wellbore and/or environment.

see CoA

see CoA

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Puckett 12 Federal #9H
Page 2 of 4

6. Casing Program - Proposed

Hole size	Interval	OD of Casing	Weight	Cond.	Collar	Grade
17-1/2"	0' - +/-600'	13-3/8"	48#	New	STC	H-40 or J/K-55
Collapse sf – 3.87, Burst sf – 8.70, Tension sf – 14.91						
12-1/4"	0' - +/-2000'	9-5/8"	36#	New	STC	J/K-55
Collapse sf – 2.88, Burst sf – 5.01, Tension sf – 8.11						
8-3/4"	0' – 11017'	7" x 5-1/2"	26#/17#	New	LTC	L-80
Collapse sf – 1.87, Burst sf – 2.48, Tension sf – 2.08						

Production string will be a tapered string with 7" 26# L-80 LTC ran from surface to kick off point and then crossed over to 5 1/2" 17# L-80 LTC.

7. Cement Program

13 3/8" Surface Csg: Set at +/- 600'MD, Lead Slurry: 450sx Class "C" w/ 2% CaCl₂ & .25 pps CF, 1.32 yield. 45% excess, calculated to surface.

9 5/8" Intrmd. Csg: Set at +/- 2000'MD. **Single Stage:** Lead Slurry: 300 sx 50:50:10:C:Poz:Gel w/ 5% salt, 5 pps LCM-1 .25 pps CF, 2.45 yield. Tail Slurry: 200 sx Class "C" w/ 2% CaCl₂, 1.32 yield. 76% excess, calculated to surface.

Multi Stage: **Stage 1:** 200 sx Class "C" w/ 2% CaCl₂, 1.32 yield. 76% excess. **Stage 2:** 300 sx 50:50:10:C:Poz:Gel w/ 5% salt, 5 pps LCM-1 .25 pps CF, 2.45 yield, back to surface, 176% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 500' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

Pilot Hole Cement: 7-7/8" hole +/- 6000'-6900', 350sx Class C, 16.8 ppg, 1.02 yd, 17% excess, calculated to surface. Cement volume to be adjusted proportionally with pilot hole td.

7 x 5 1/2" Production Csg: Set at +/- 11017'MD. **Single Stage:** Lead Slurry: 400 sx 35:65:6:C:Poz:Gel w/ 5% salt, 5 pps LCM, .2% SMS, .3% FL-52A, .125 pps CF, 2.01 yd. Inter. Slurry: 300 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, .6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, .3% FL-52A; 1.37 yield Tail Slurry: 450 sx Class "H" SOLUCEM-H w/ .7% HR-601, 2.62 yield 67% excess in open hole, calculated to surface. **This is a minimum volume and will be adjusted up after caliper is run.**

Multi Stage: **Stage 1:** (Assumed TD of 11017'MD to DV at 3550') Lead Slurry: 350 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, .6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, .3% FL-52A; 1.37 yield Tail Slurry: 450 sx Class "H" SOLUCEM-H w/ .7% HR-601, 2.62 yield; 11% excess. **This is a minimum volume and will be adjusted up after caliper is run.** **Stage 2:** Lead Slurry: 350 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, .6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, .3% FL-52A; 1.37 yield. Tail Slurry: 150 sx Class C w/ 0.3% R-3 + 1.5% CD-32, 1.02 yield. 28% excess calculated back to surface (no need for excess in casing overlap). **This is a minimum volume and will be adjusted up after caliper is run.**

Multi stage tool to be set at approximately, depending on hole conditions, 3550'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool; assumption for use of tool is water flow.

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8. Pressure Control Equipment:

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer, and in some cases possibly a 2000 psi Hydril type annular preventer as provided for in Onshore Order #2. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on the bottom. A 13-5/8" will be used during the drilling of the well. The BOP will be nipped up on the 13 3/8" surface casing with BOP equipment and tested to 2000 psi. After setting 9-5/8" the BOP will then be nipped up on the 9-5/8" intermediate casing and tested by a third party to 2000 psi and used continuously until total depth is reached. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve, choke lines and a choke manifold (Exhibit #11) with a 2000 psi WP rating.

9. Proposed Mud Circulating System

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 600' ⁷⁶⁰	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
600' - 2000' ²¹⁷⁰	10	30	NC	Brine mud, lime for PH and paper for seepage and sweeps.
2000' - 11017'	9.1	29	NC	Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal.

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

10. Production Hole Drilling Summary:

Reduce hole size at 6000' to 7 7/8", drill pilot hole to 6900'. After evaluation, plug back pilot hole to 6,000'. Drill 8 3/4" hole and kick off at +/- 6123', building curve over +/- 750' to horizontal at 6600' TVD. Drill horizontal section in a Easterly direction for +/-4144' lateral to TD at +/-11017' MD, 6600' TVD. Run 5-1/2" production casing in Open hole lateral and cement to surface.

11. Auxiliary Well Control and Monitoring Equipment

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

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12. Logging, Testing and Coring Program:

See conA

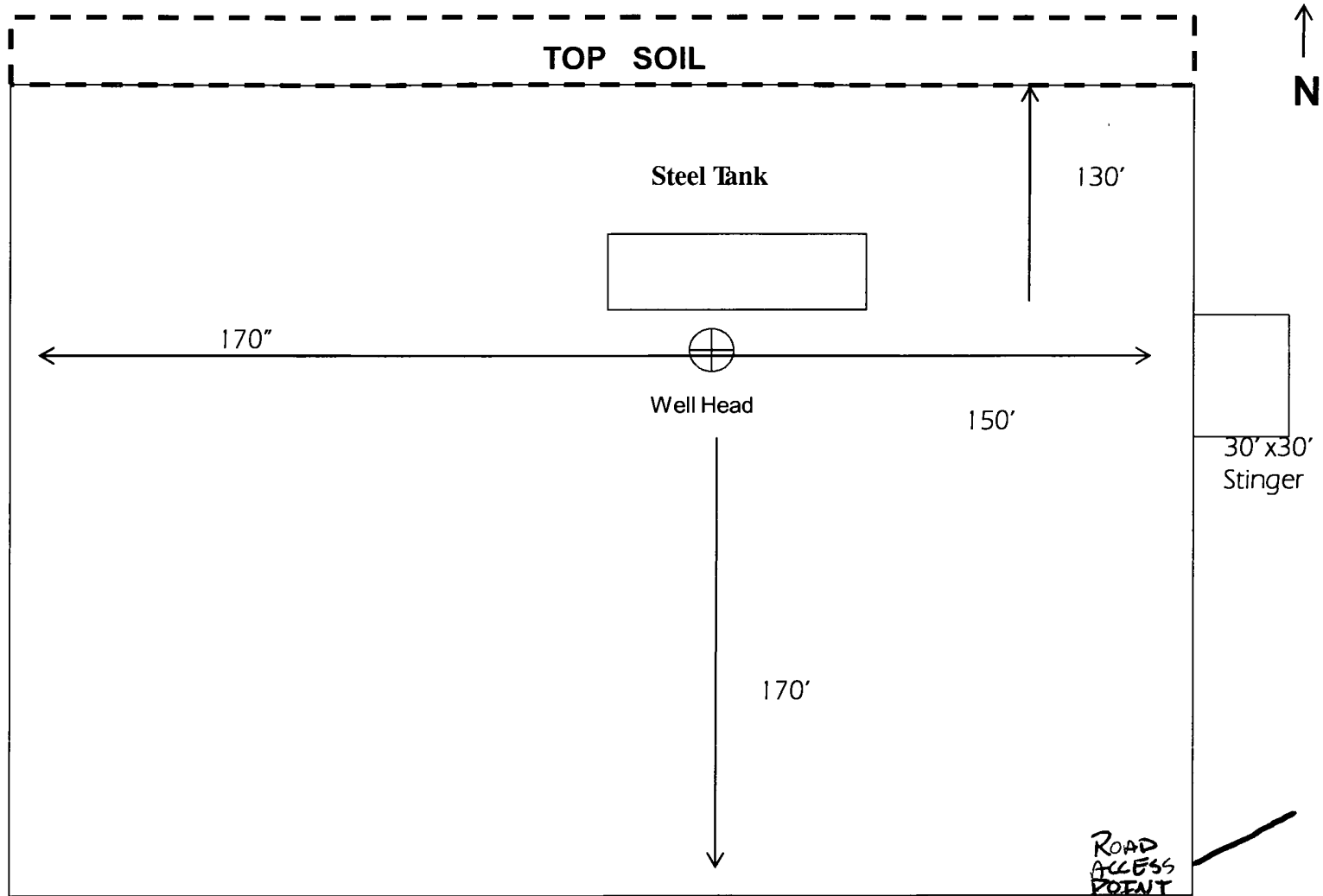
- A. The evaluation program will consist of PEX, LDT-CNL-GR, HRLA_GR, FMI, Rotary Cores and will be ran from T.D. in vertical pilot hole to 9 5/8" casing shoe.
- B. The mud logging program will consist of lagged 10' samples from intermediate casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.
- C. Drill Stem test is not anticipated.
- D. No conventional coring is anticipated.
- E. Further testing procedures will be determined after the 7" x 5 1/2" production casing has been cemented at TD based on drill shows and log evaluation.

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

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 90 degrees and estimated maximum bottom hole pressure is 1800 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, however an H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

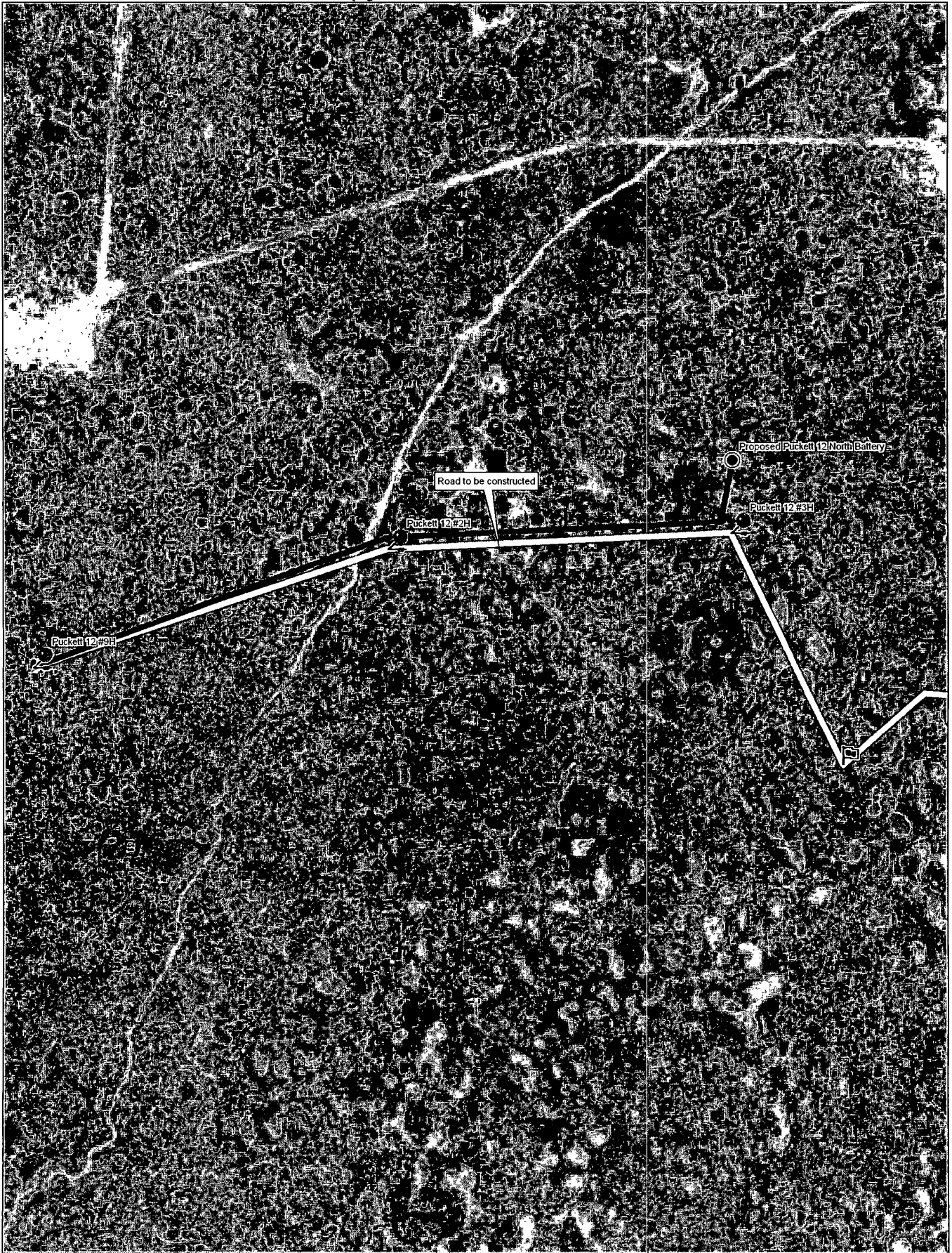
Drilling operations will commence approximately on October 30, 2011 with drilling and completion operations lasting approximately 90 days.



Not To Scale

Exhibit #6

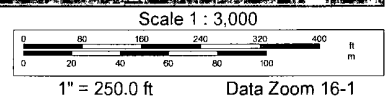
COG OPERATING LLC
Rig Layout-Closed Loop
System Puckett 12 #9H

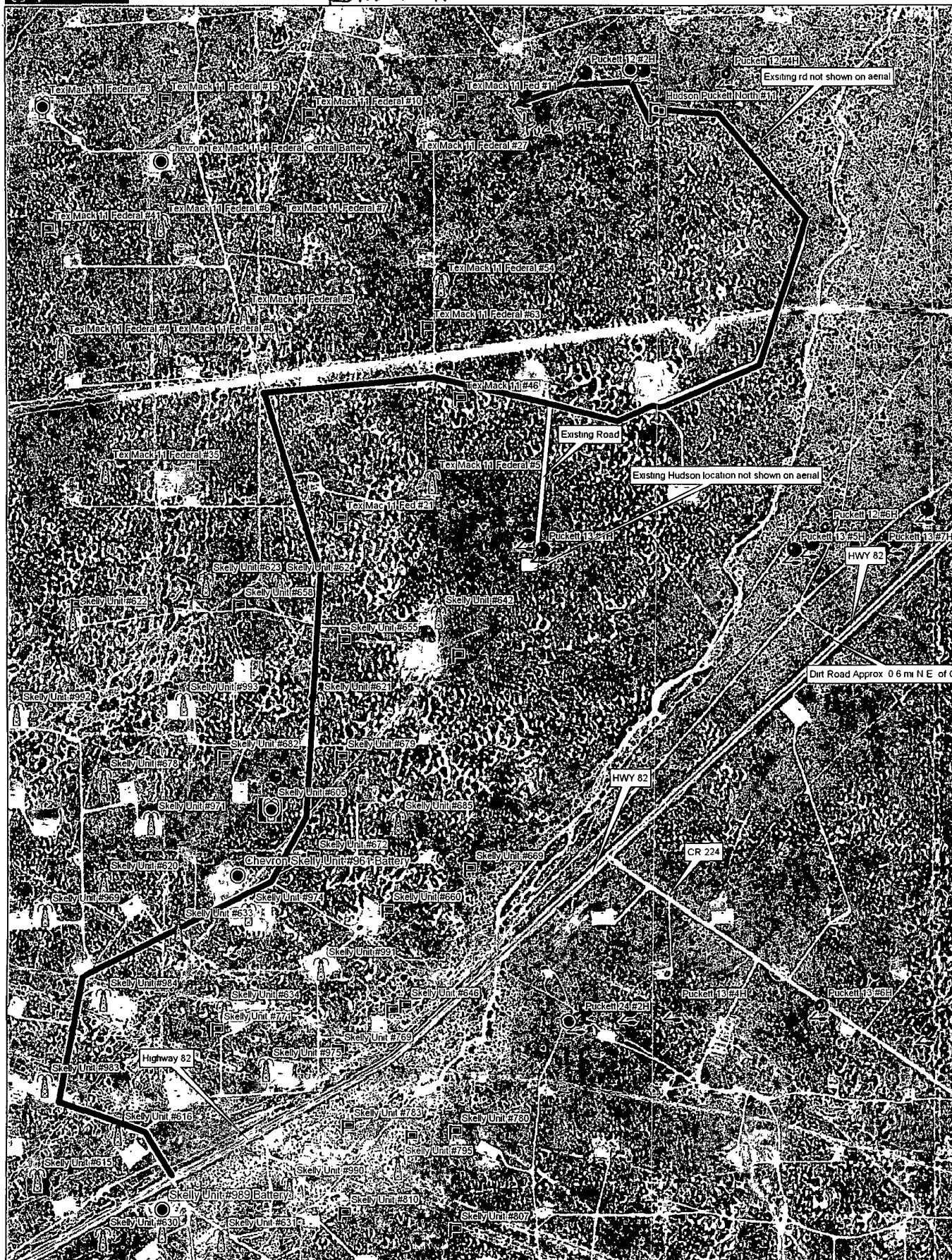


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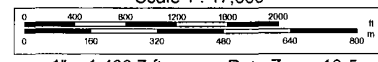


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Scale 1 : 17,600


$$1'' = 1,466.7 \text{ ft}$$

Data Zoom 13-5