

30-015-39183

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
11885 S. ST. FRANCIS DR., SANTA FE, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised July 16, 2010
Submit to Appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-39183		Pool Code 26770	Pool Name FREN; GLORIETA-YESO
Property Code	Property Name PUCKETT 12 FEDERAL		Well Number 3H
OGRID No. 229137	Operator Name COG OPERATING, LLC		Elevation 3998'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	12	17-S	31-E		75	NORTH	1650	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
N	12	17-S	31-E		330	SOUTH	1650	WEST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.
------------------------	-----------------	--------------------	-----------

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

Penetration Point
330' FWL +
1650' FWL

1650'

75'

S.L. SEE DETAIL

Project Area

GRID AZ = 179°40'48"

HORIZ DIST = 4878.0'

Producing Area

B.H.

330'

1650'

GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=675540.7 N
X=655841.4 E
LAT.=32.856116° N
LONG =103.825842° W

BOTTOM HOLE LOCATION
Y=670664.1 N
X=655868.5 E

SECTION TABLE
QUARTER & SIXTEENTH CORNER
COORDINATES

Ⓐ - Y=675613.3 N, X=655512.2 E
Ⓑ - Y=675622.8 N, X=656833.0 E
Ⓒ - Y=670332.0 N, X=655543.0 E
Ⓓ - Y=670340.7 N, X=656865.1 E

DETAIL
3993.8' 4000.5'
600'
600'
3992.0' 3991.4'

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

Robyn Odom 8/3/2011
Signature Date

Robyn Odom
Printed Name

Rodom@concho.com
E-mail Address

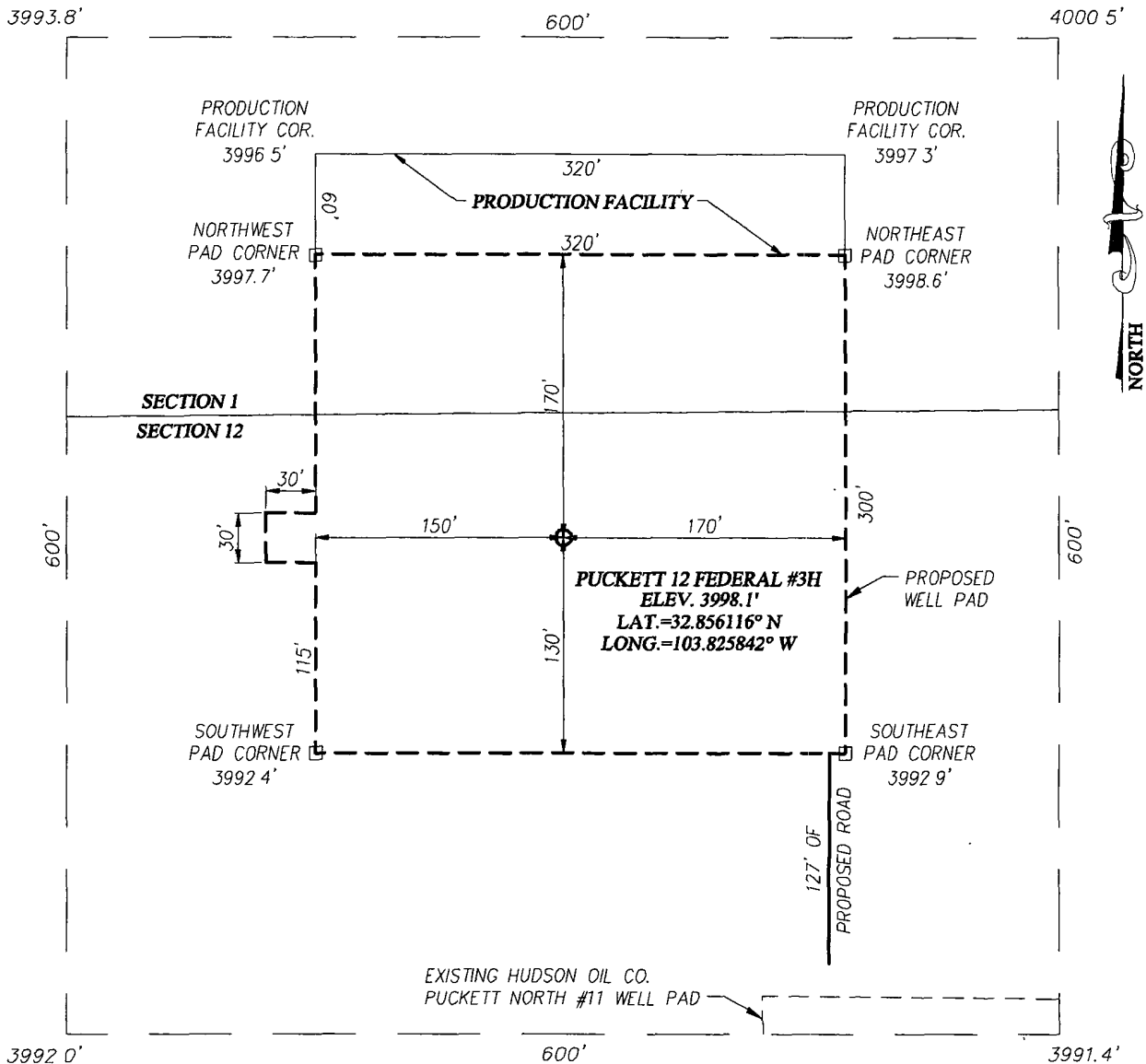
SURVEYOR CERTIFICATION
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

JUNE 16, 2011
Date of Survey

Signature & Seal of Professional Surveyor:

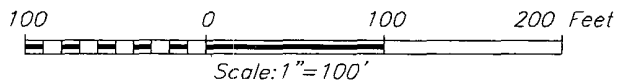
Certificate Number Gary O. Eidson 12641
Ronald J. Eidson 3239
DSS REVISED 11/11/13 JWSC W.O. 11 11 1397

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. THE LOCATION STAKE IS APPROX 485 FEET NORTHWEST OF THE EXISTING WELL HEAD.



COG OPERATING, LLC

PUCKETT 12 FEDERAL #3H WELL
 LOCATED 75 FEET FROM THE NORTH LINE
 AND 1650 FEET FROM THE WEST LINE OF SECTION 12,
 TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO

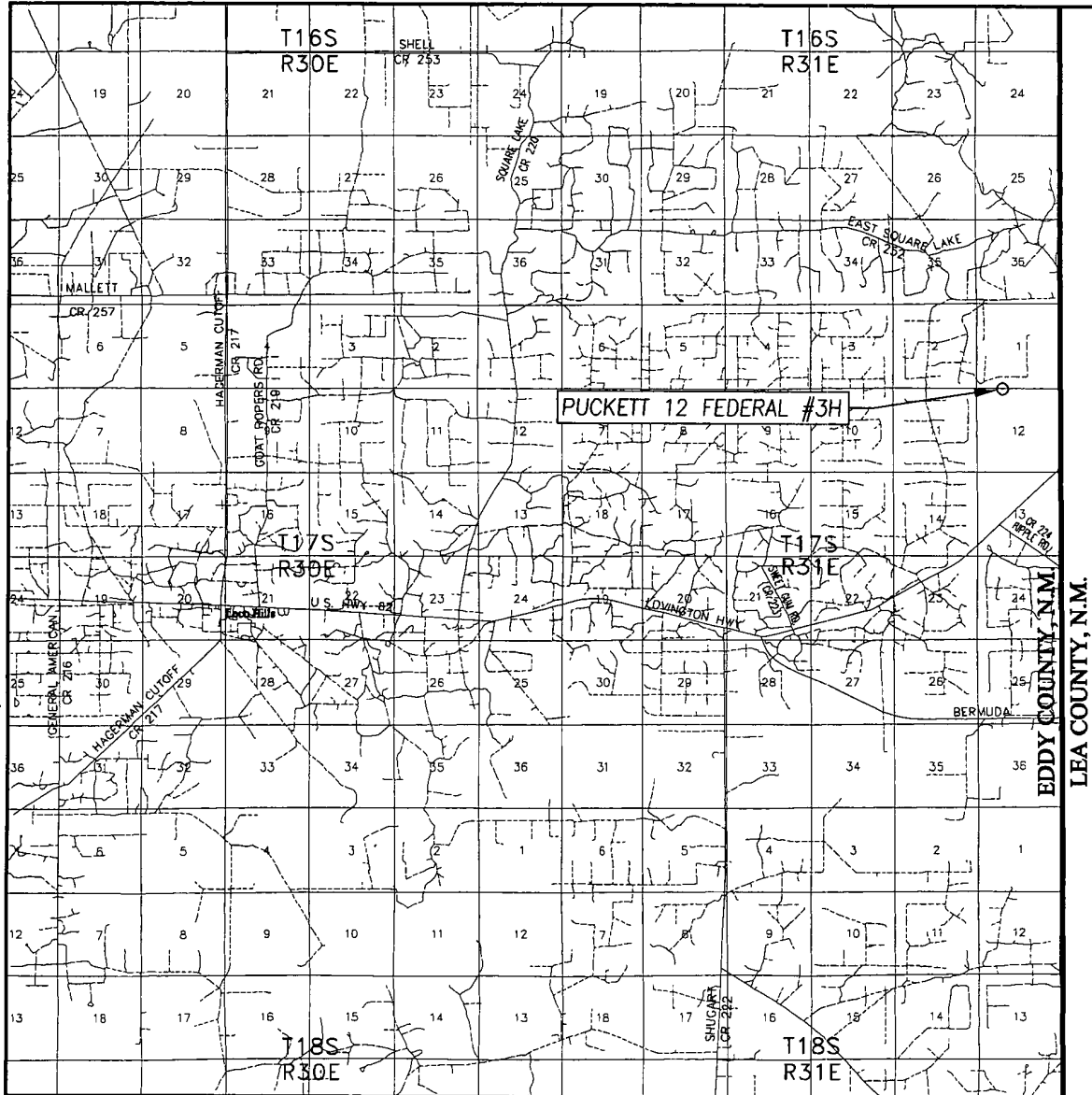
PROVIDING SURVEYING SERVICES
 SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N DAL PASO
 HOBBS, N.M. 88240
 (575) 393-3117

Survey Date: 6/16/11	Sheet 1 of 1 Sheets
W.O. Number. 11.11.1527	Dr By. DSS
Date: 6/25/11	Rev 2.8/2/11
Rel. W.O. 11111397	11111527
Scale: 1"=100'	

VICINITY MAP



SCALE: 1" = 2 MILES

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

SURVEY N.M.P.M.

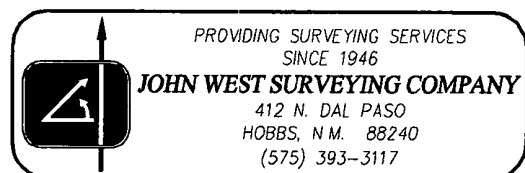
COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 75' FNL & 1650' FWL

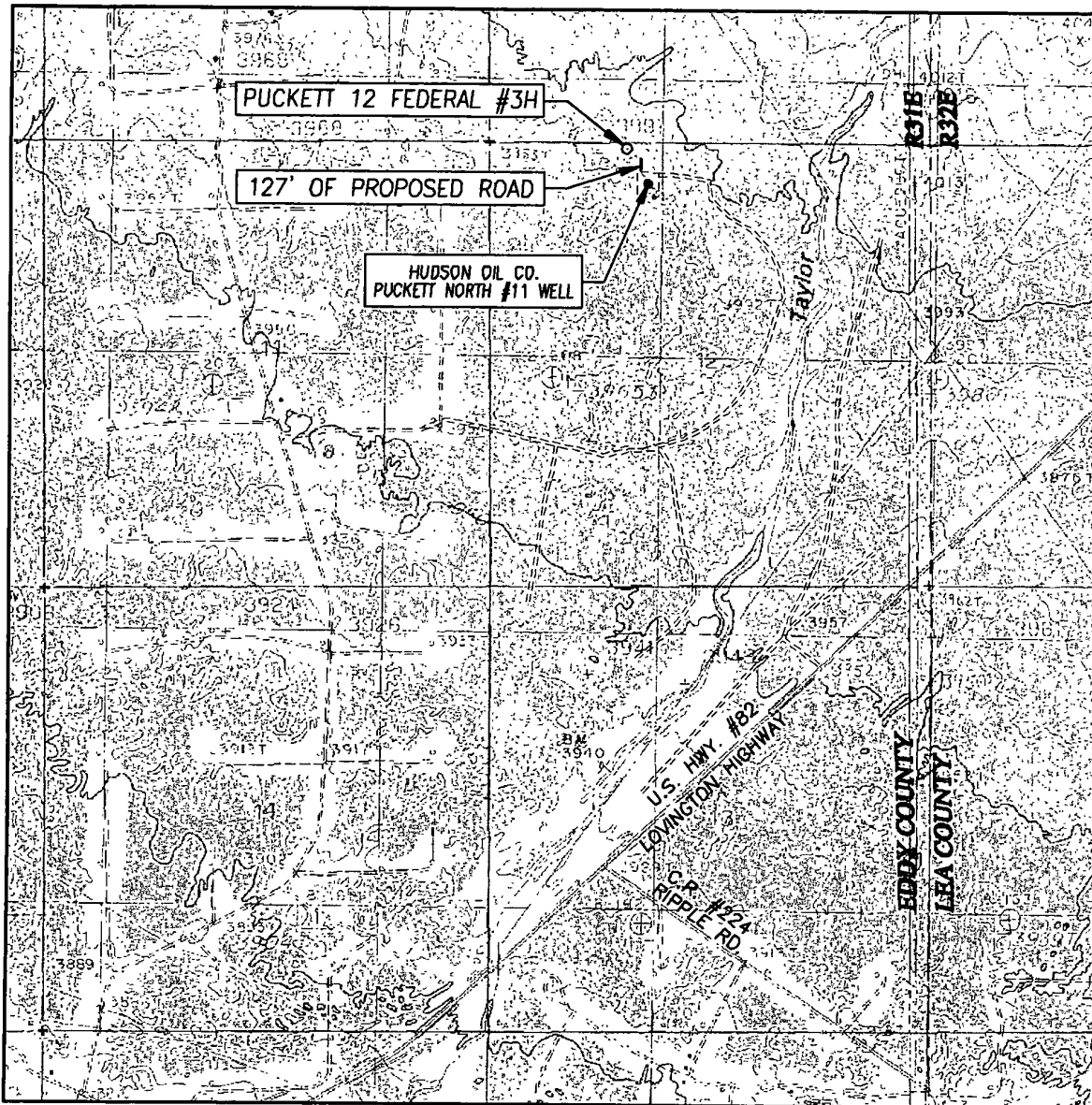
ELEVATION 3998'

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

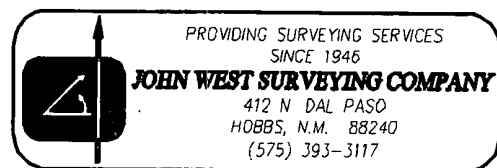
DESCRIPTION 75' FNL & 1650' FWL

ELEVATION 3998'

OPERATOR COG OPERATING, INC

LEASE PUCKETT 12 FEDERAL

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

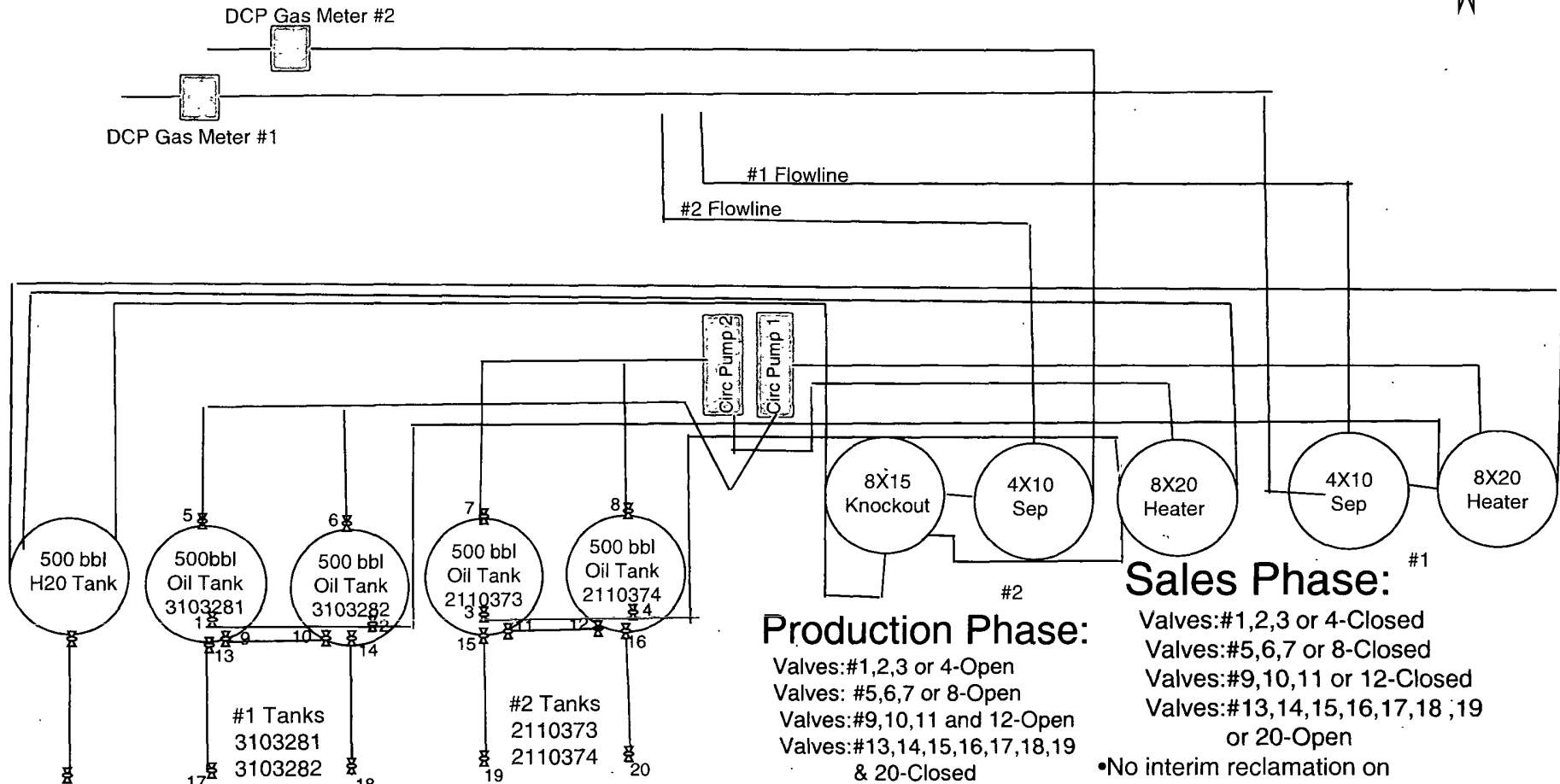
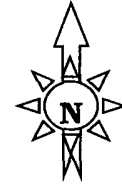


COG OPERATING LLC

550 W. Texas Ave Ste 100 Midland, Texas 79701
(432)-683-7443

Puckett 12 North Federal Battery

Approx. 50' FSL, 1650' FWL * Sec 1-T17S-R31E * Unit N * Eddy CO, NM



•Road access will be use the same access as the road to the Puckett 12 #3H well location

•Battery pad will be approx. 60' x 300' extending 60' on the North side of the Puckett 12 #3H well location

Production Phase:

Valves: #1, 2, 3 or 4-Open
Valves: #5, 6, 7 or 8-Open
Valves: #9, 10, 11 and 12-Open
Valves: #13, 14, 15, 16, 17, 18, 19 & 20-Closed

Water Transfer by Truck

Sales Phase:

Valves: #1, 2, 3 or 4-Closed
Valves: #5, 6, 7 or 8-Closed
Valves: #9, 10, 11 or 12-Closed
Valves: #13, 14, 15, 16, 17, 18, 19 or 20-Open

•No interim reclamation on battery pad until production or foreseeable production ceases. Reclamation standards will follow Section 10 B from the Surface Use Plan from the Puckett 12 #3H well attached.

Road Route



COG Operating LLC

Eddy County, NM (NAN27 NME)

Puckett 12 Federal #3H

Puckett 12 Federal #3H

OH

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

SHL = 75' FNL & 1650' FWL

BHL = 330' FSL & 1650' FWL

Standard Planning Report

29 July, 2011



Scientific Drilling
Directional Drilling Operations



Scientific Drilling Planning Report



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

Local Co-ordinate Reference: Site Puckett 12 Federal #3H
TVD Reference: GL Elev @ 3998 00usft
MD Reference: GL Elev @ 3998 00usft
North Reference: Grid
Survey Calculation Method: 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 #3H		
Site Position:	Northings:	675,540 70 usft	Latitude: 32° 51' 22.017 N
From: Map	Easting:	655,841 40 usft	Longitude: 103° 49' 33 029 W
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0 28 °

Well:	Puckett 12 Federal #3H		
Well Position	+N/-S	0 00 usft	Northings: 675,540 70 usft
	+E/-W	0 00 usft	Easting: 655,841 40 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level: 3,998 00 usft

Wellbore:	OH		
Magnetics:	Model Name	Sample Date	Declination
			(°)
	IGRF2010	2011/07/29	7.74
			Dip/Angle (°)
			60 72
			Field Strength (nT)
			48,953

Design:	Plan #1 8-3/4" Hole		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0 00	0 00	0 00
			Direction (°)
			179 68

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	179 68	6,600 00	-477 46	2 65	12 00	12 00	0.00	179 68	
11,271.75	90 00	179 68	6,600 00	-4,876 60	27 10	0 00	0 00	0 00	0 00	PBHL-Puckett 12 #3H



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Puckett 12 Federal #3H
Well: Puckett 12 Federal #3H
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 #3H
GL Elev @ 3998 00usft
GL Elev @ 3998 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	179 68	6,199.66	-6.27	0 03	6 27	12 00	12 00	0 00
6,300.00	21 30	179 68	6,295.94	-32.60	0 18	32 60	12.00	12 00	0 00
6,400.00	33 30	179 68	6,384.65	-78.38	0 44	78 38	12.00	12 00	0 00
6,500.00	45 30	179 68	6,461.89	-141.59	0 79	141 59	12 00	12 00	0 00
6,600.00	57.30	179 68	6,524.31	-219.49	1 22	219 49	12 00	12 00	0 00
6,700.00	69 30	179 68	6,569.16	-308.66	1 72	308.66	12.00	12 00	0 00
6,800.00	81.30	179.68	6,594.50	-405.20	2 25	405.21	12.00	12.00	0 00
6,872.54	90 00	179 68	6,600.00	-477.46	2 65	477 47	12 00	12 00	0 00
Land EOC hold 90.00°									
6,900.00	90 00	179 68	6,600.00	-504.92	2 81	504.93	0 00	0.00	0.00
7,000.00	90 00	179 68	6,600.00	-604.92	3 36	604 93	0 00	0 00	0 00
7,100.00	90 00	179 68	6,600.00	-704.92	3 92	704 93	0 00	0.00	0 00
7,200.00	90 00	179 68	6,600.00	-804.92	4 47	804.93	0 00	0 00	0 00
7,300.00	90 00	179 68	6,600.00	-904.92	5 03	904 93	0 00	0 00	0 00
7,400.00	90 00	179 68	6,600.00	-1,004.91	5 58	1,004 93	0 00	0 00	0 00
7,500.00	90 00	179 68	6,600.00	-1,104.91	6 14	1,104 93	0 00	0 00	0 00
7,600.00	90 00	179 68	6,600.00	-1,204.91	6 70	1,204 93	0 00	0 00	0 00
7,700.00	90 00	179 68	6,600.00	-1,304.91	7 25	1,304 93	0 00	0 00	0 00
7,800.00	90 00	179.68	6,600.00	-1,404.91	7 81	1,404 93	0 00	0 00	0 00
7,900.00	90 00	179 68	6,600.00	-1,504.91	8 36	1,504.93	0 00	0 00	0 00
8,000.00	90 00	179.68	6,600.00	-1,604.90	8 92	1,604 93	0 00	0 00	0 00
8,100.00	90 00	179 68	6,600.00	-1,704.90	9 47	1,704 93	0 00	0 00	0 00
8,200.00	90 00	179 68	6,600.00	-1,804.90	10 03	1,804 93	0 00	0 00	0 00
8,300.00	90 00	179 68	6,600.00	-1,904.90	10 59	1,904 93	0 00	0 00	0 00
8,400.00	90 00	179 68	6,600.00	-2,004.90	11 14	2,004.93	0 00	0 00	0 00
8,500.00	90 00	179 68	6,600.00	-2,104.90	11 70	2,104 93	0 00	0 00	0 00
8,600.00	90 00	179 68	6,600.00	-2,204.90	12.25	2,204 93	0 00	0 00	0 00
8,700.00	90 00	179 68	6,600.00	-2,304.89	12 81	2,304 93	0 00	0 00	0 00
8,800.00	90 00	179 68	6,600.00	-2,404.89	13 36	2,404 93	0 00	0 00	0 00
8,900.00	90 00	179 68	6,600.00	-2,504.89	13 92	2,504 93	0 00	0 00	0 00
9,000.00	90 00	179 68	6,600.00	-2,604.89	14 48	2,604 93	0 00	0 00	0 00
9,100.00	90 00	179 68	6,600.00	-2,704.89	15 03	2,704 93	0 00	0 00	0 00
9,200.00	90 00	179 68	6,600.00	-2,804.89	15 59	2,804 93	0 00	0 00	0 00
9,300.00	90 00	179.68	6,600.00	-2,904.88	16 14	2,904 93	0 00	0 00	0 00
9,400.00	90 00	179 68	6,600.00	-3,004.88	16 70	3,004 93	0 00	0 00	0 00
9,500.00	90 00	179 68	6,600.00	-3,104.88	17.25	3,104 93	0 00	0 00	0 00
9,600.00	90 00	179 68	6,600.00	-3,204.88	17 81	3,204 93	0 00	0 00	0 00
9,700.00	90 00	179 68	6,600.00	-3,304.88	18 37	3,304.93	0 00	0 00	0 00
9,800.00	90 00	179 68	6,600.00	-3,404.88	18 92	3,404.93	0 00	0 00	0 00
9,900.00	90 00	179 68	6,600.00	-3,504.88	19.48	3,504 93	0 00	0 00	0 00
10,000.00	90 00	179 68	6,600.00	-3,604.87	20.03	3,604 93	0 00	0 00	0 00
10,100.00	90 00	179 68	6,600.00	-3,704.87	20 59	3,704 93	0 00	0 00	0 00
10,200.00	90 00	179 68	6,600.00	-3,804.87	21.14	3,804 93	0 00	0 00	0 00
10,300.00	90 00	179 68	6,600.00	-3,904.87	21 70	3,904 93	0 00	0 00	0 00
10,400.00	90 00	179 68	6,600.00	-4,004.87	22 26	4,004 93	0 00	0 00	0 00
10,500.00	90 00	179 68	6,600.00	-4,104.87	22 81	4,104.93	0 00	0 00	0 00
10,600.00	90 00	179 68	6,600.00	-4,204.86	23.37	4,204 93	0 00	0 00	0 00
10,700.00	90 00	179 68	6,600.00	-4,304.86	23 92	4,304 93	0 00	0 00	0 00
10,800.00	90 00	179 68	6,600.00	-4,404.86	24 48	4,404.93	0 00	0 00	0 00
10,900.00	90 00	179 68	6,600.00	-4,504.86	25 03	4,504 93	0 00	0 00	0 00
11,000.00	90 00	179 68	6,600.00	-4,604.86	25 59	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 #3H
Well: Puckett 12 Federal #3H
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 #3H
GL Elev @ 3998 00usft
GL Elev @ 3998 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)
11,100.00	90.00	179.68	6,600.00	-4,704.86	26.15	4,704.93	0.00	0.00	0.00
11,200.00	90.00	179.68	6,600.00	-4,804.86	26.70	4,804.93	0.00	0.00	0.00
11,271.75	90.00	179.68	6,600.00	-4,876.60	27.10	4,876.68	0.00	0.00	0.00

PBHL-Puckett 12 #3H

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 #3H	- plan hits target center - Point	0.00	0.00	6,600.00	-4,876.60	27.10	670,664.10	655,868.50	32° 50' 33.762 N	103° 49' 32.986 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +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	-477.46	2.65	Land EOC hold 90.00°



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



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	6120.00	0.00	0.00	6120.00	0.00	0.00	0.00	0.00	0.00	
3	6874.01	90.00	359.68	6600.00	480.00	-2.69	11.94	359.68	480.00	
4	11269.88	90.00	359.68	6600.00	4875.80	-27.30	0.00	0.00	4875.88	PBHL-Puckett 12 #1H

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL-Puckett 12 #1H	6600.00	4875.80	-27.30	675276.30	654523.10	32°51' 19.464 N 103°49' 48.498 W		Point

WELL DETAILS: Puckett 12 #1H

	Ground Level	3946.00		
+N/-S	+E/-W	Northing	Easting	Latitude
0.00	0.00	670400.50	654550.40	32°50' 31.216 N 103°49' 48.451 W

Puckett 12 #1H

Created By: Julio Pina Date: 07-Jul-11

Checked: Date:

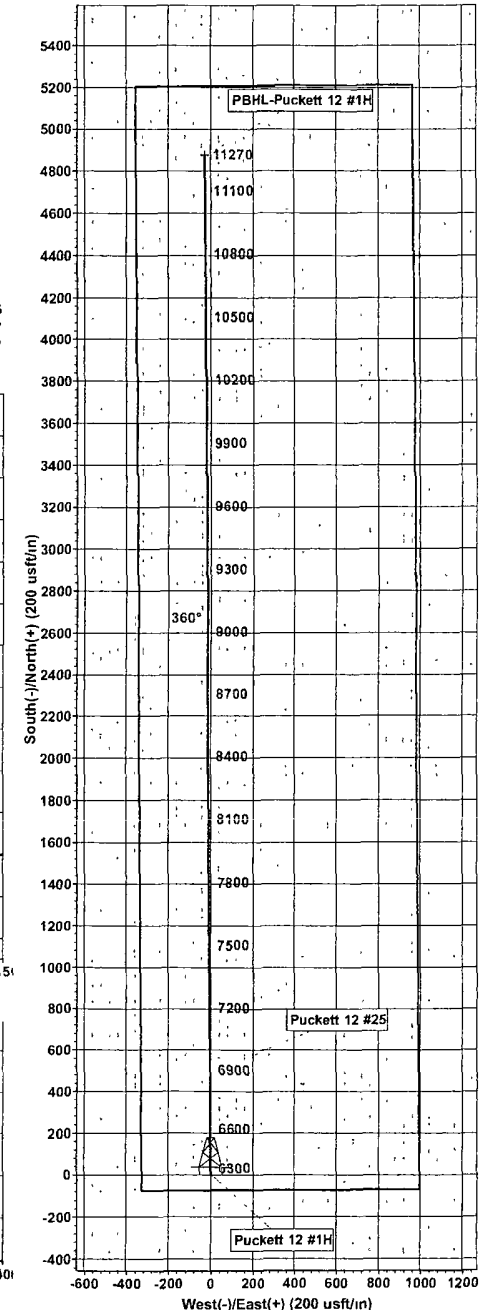
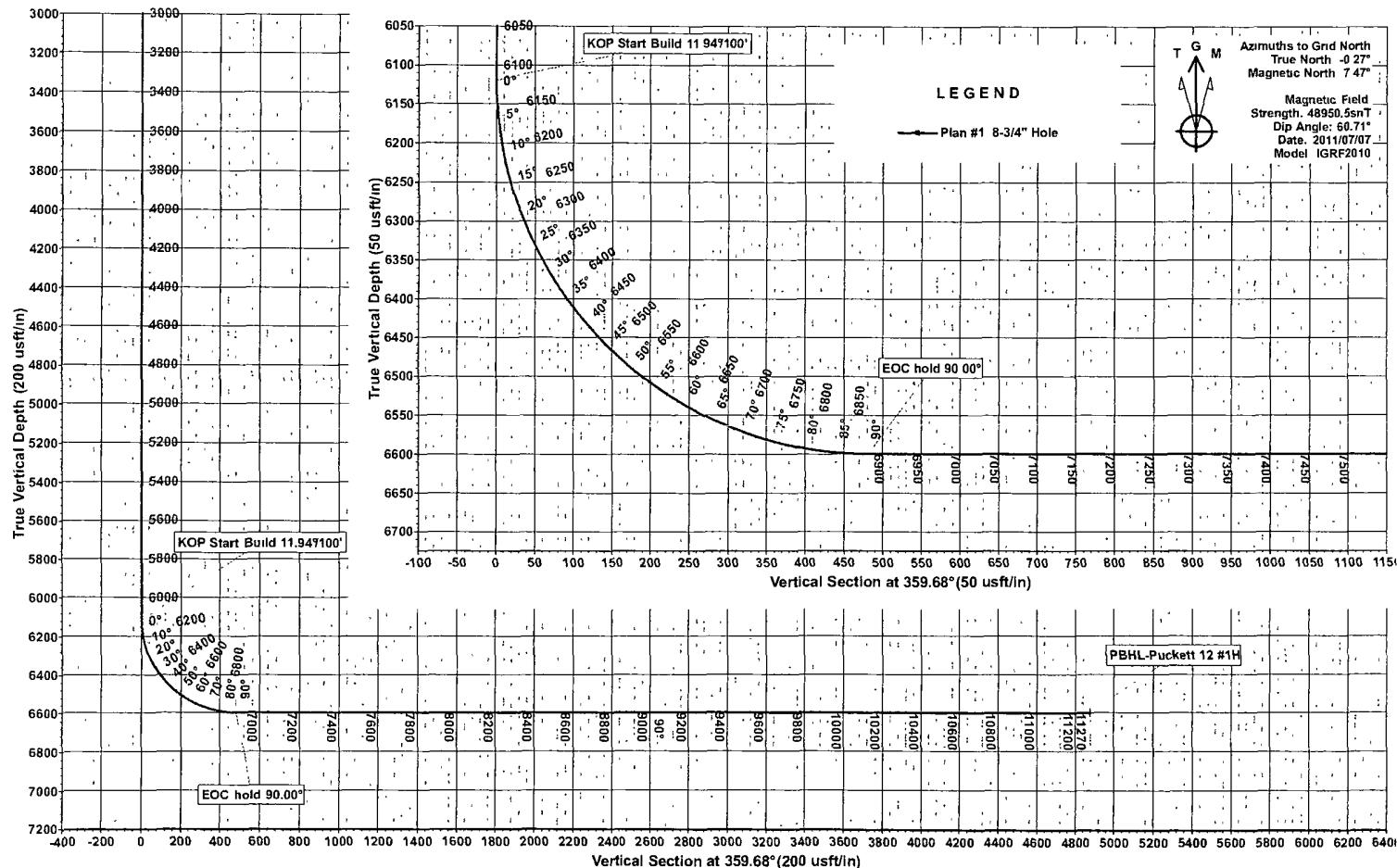
Reviewed: Date:

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 #3H
SHL: 75' FNL & 1650' FWL, Unit C
BHL: 330' FSL & 1650' FWL, Unit N
Sec 12, T17S, R31E
Eddy County, NM

1. Proration Unit Spacing: 160 Acres
2. Ground Elevation: 3998'
3. Proposed Depths: Horizontal TVD = 6,600', MD = 11272'
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'
Blinberry	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
Blinberry	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 #3H
Page 2 of 4

6. Casing Program - Proposed

see COA

Hole size	Interval	OD of Casing	Weight	Cond.	Collar	Grade
17-1/2"	0' - +/-600'	785 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' – 11272'	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.

7 x 5 1/2" Production Csg: Set at +/- 11272' 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 58% 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 11272' MD to DV at 3550') Lead Slurry: 450 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; 6% 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.

see COA

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

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' ⁷⁸⁵	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
600' - 2000'	10	30	NC	Brine mud, lime for PH and paper for seepage and sweeps.
2000' - 11272'	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:

Drill 8 3/4" hole and kick off at +/- 6123', building curve over +/- 750' to horizontal at 6600' TVD. Drill horizontal section in a Southerly direction for +/-4399' lateral to TD at +/-11272' MD, 6600' TVD. Run 7" x 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.

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

12. Logging, Testing and Coring Program:

- A. No electric logging to be performed on this well. *See COA*
- B. The mud logging program will consist of lagged 10' samples from intermediate casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.
- C. Drill Stem test is not anticipated.
- D. No conventional coring is anticipated.
- E. Further testing procedures will be determined after the 7" x 5 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.

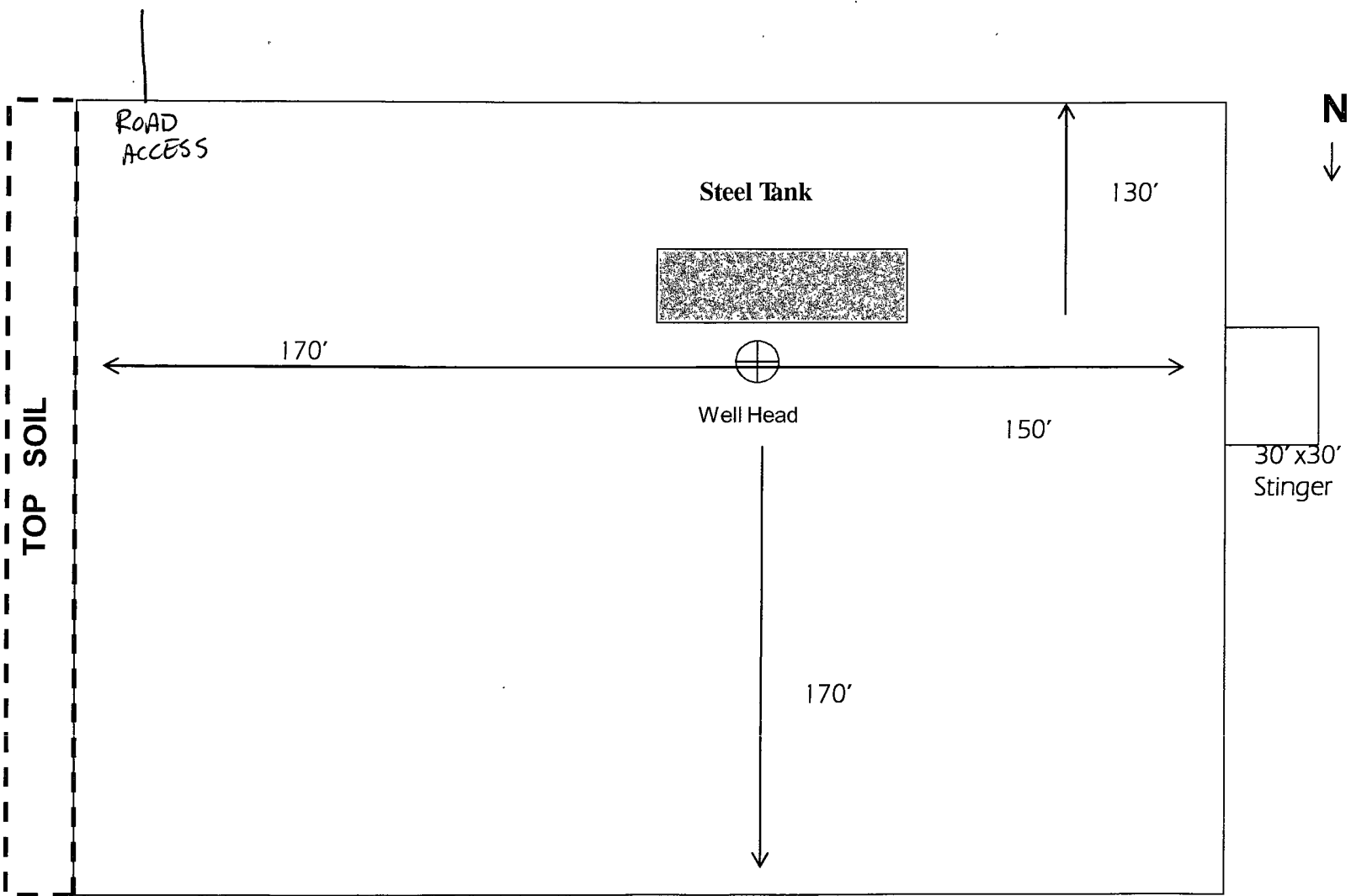
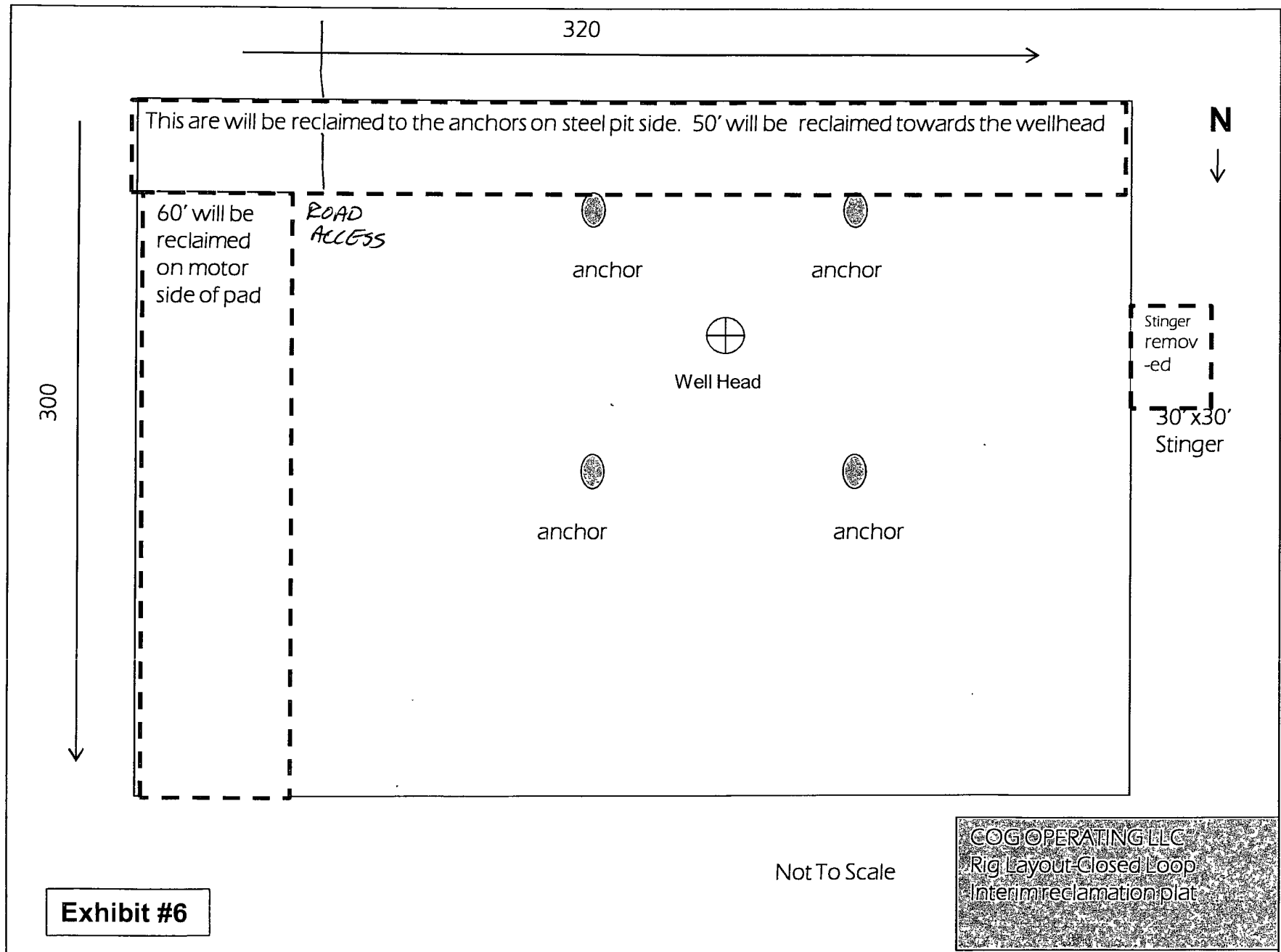
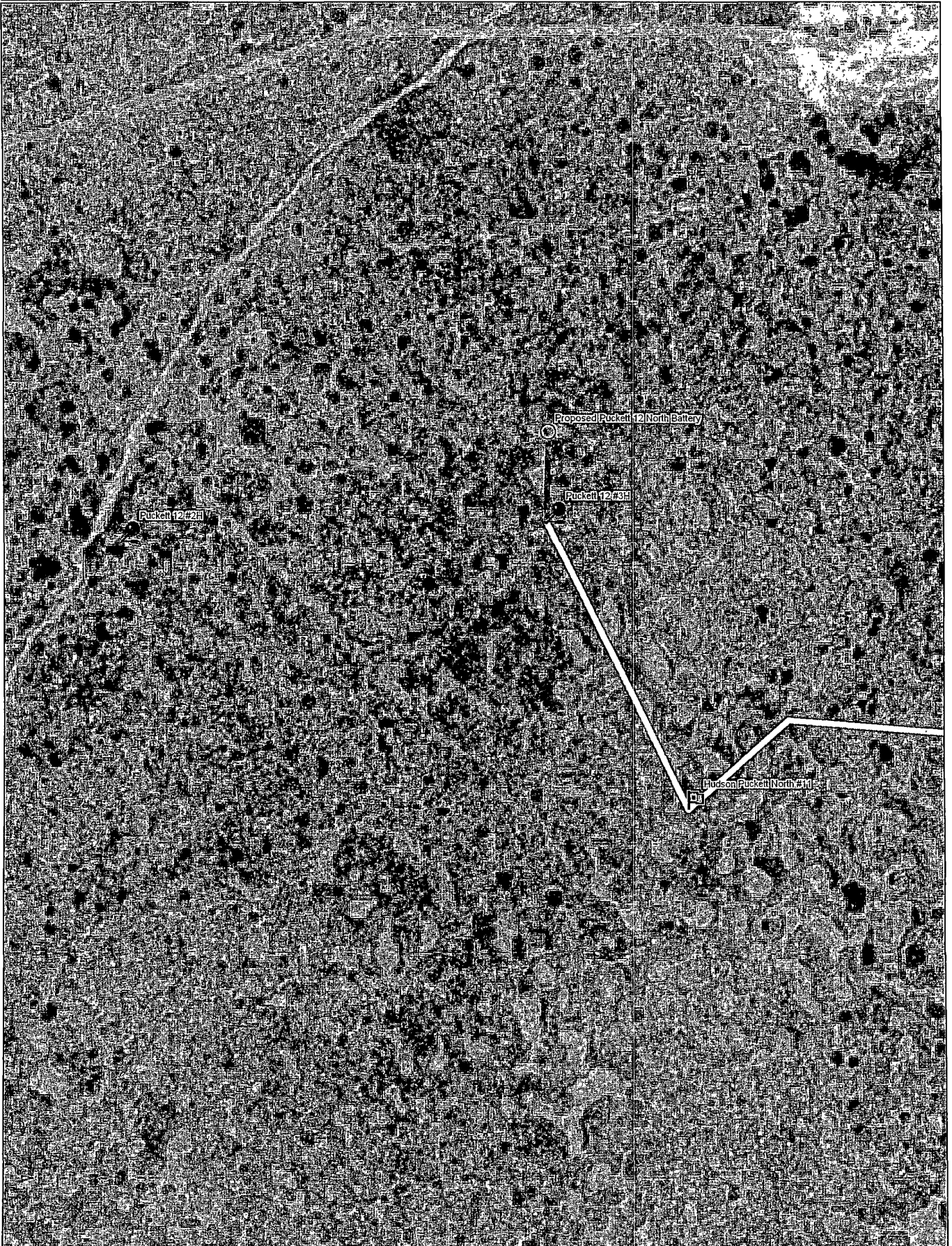


Exhibit #6

Not To Scale

COG OPERATING LLC
Rig Layout-Closed Loop
System: Puckett 12 #3H

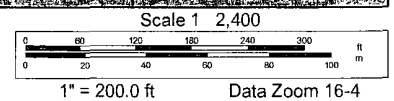


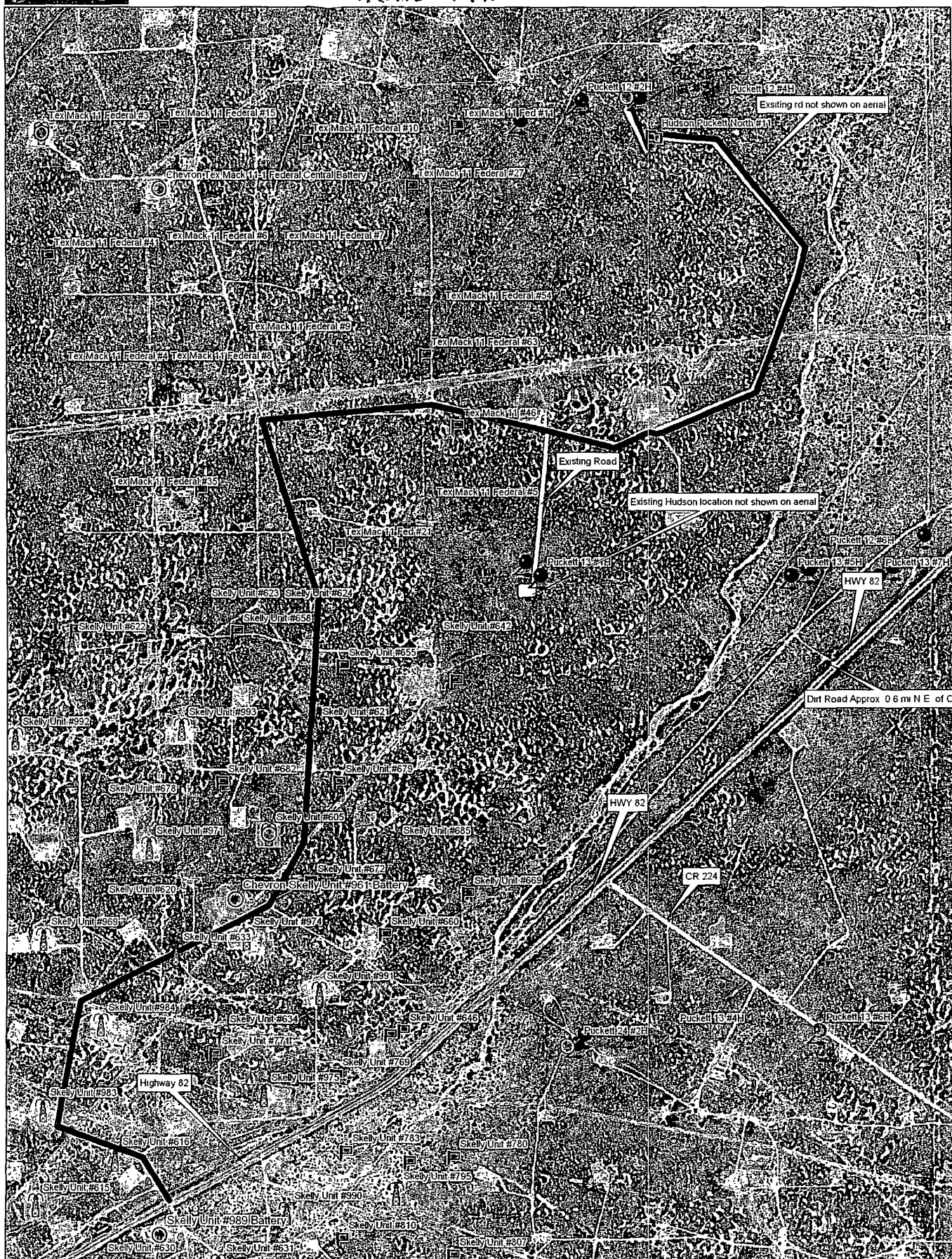


Data use subject to license.

© DeLorme. XMap® 7

www.delorme.com





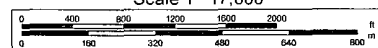
Data use subject to license

© DeLorme XMap® 7.

www.delorme.com



Scale 1 17,600



1" = 1,466.7 ft Data Zoom 13-5