

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. Frengh Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised August 1, 2011

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

WELL API NO. 30-015-40413
5. Indicate Type of Lease STATE ☒ FEE ☐
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Hogan State Com
8. Well Number 1H
9. OGRID Number 229137
10. Pool name or Wildcat Empire; Glorieta Yeso East 96610
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3666'

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

COG Operating LLC

3. Address of Operator

One Concho Center - 600 W Illinois Ave Midland, TX 79701

4. Well Location

Unit Letter **I** : **2035** feet from the **SOUTH** line and **330** feet from the **EAST** line

Section **2** Township **17S** Range **29E** NMPM County **EDDY**

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
3666'

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

OTHER: **Change SHL**



OTHER:



13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

COG Operating LLC submitted APD for this well at this location:

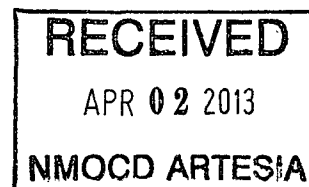
SHL: 2035' FSL 330' FEL, Unit I

BHL: 2310' FSL 330' FWL, Unit L

COG Operating LLC respectfully requests permission to change the SHL:

SHL: 2010' FSL 220' FEL, Unit I

BHL: 2310' FSL 330' FWL, Unit L



Reason for changing the SHL is to capture as many reserves as possible.

A revised C-102 and directional plan are attached for your review.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [Signature] TITLE Permitting Tech DATE 03/28/2013

Type or print name Kelly J. Holly E-mail address: kholly@concho.com PHONE: 432-685-4384

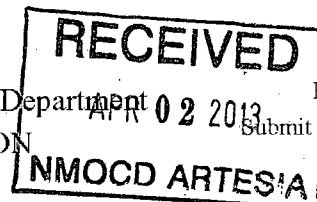
For State Use Only

APPROVED BY: [Signature] TITLE Asst. Dir. DATE 4/3/2013

Conditions of Approval (if any):

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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



Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-40413	² Pool Code 96610	³ Pool Name Empire; Glorieta Yeso East
⁴ Property Code 39291	⁵ Property Name HOGAN STATE COM	
⁷ OGRID No. 229137	⁸ Operator Name COG OPERATING, LLC	⁶ Well Number 1H ⁹ Elevation 3666'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	2	17-S	29-E		2010	SOUTH	220	EAST	EDDY

¹¹ 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
L	2	17-S	29-E		2310	SOUTH	330	WEST	EDDY

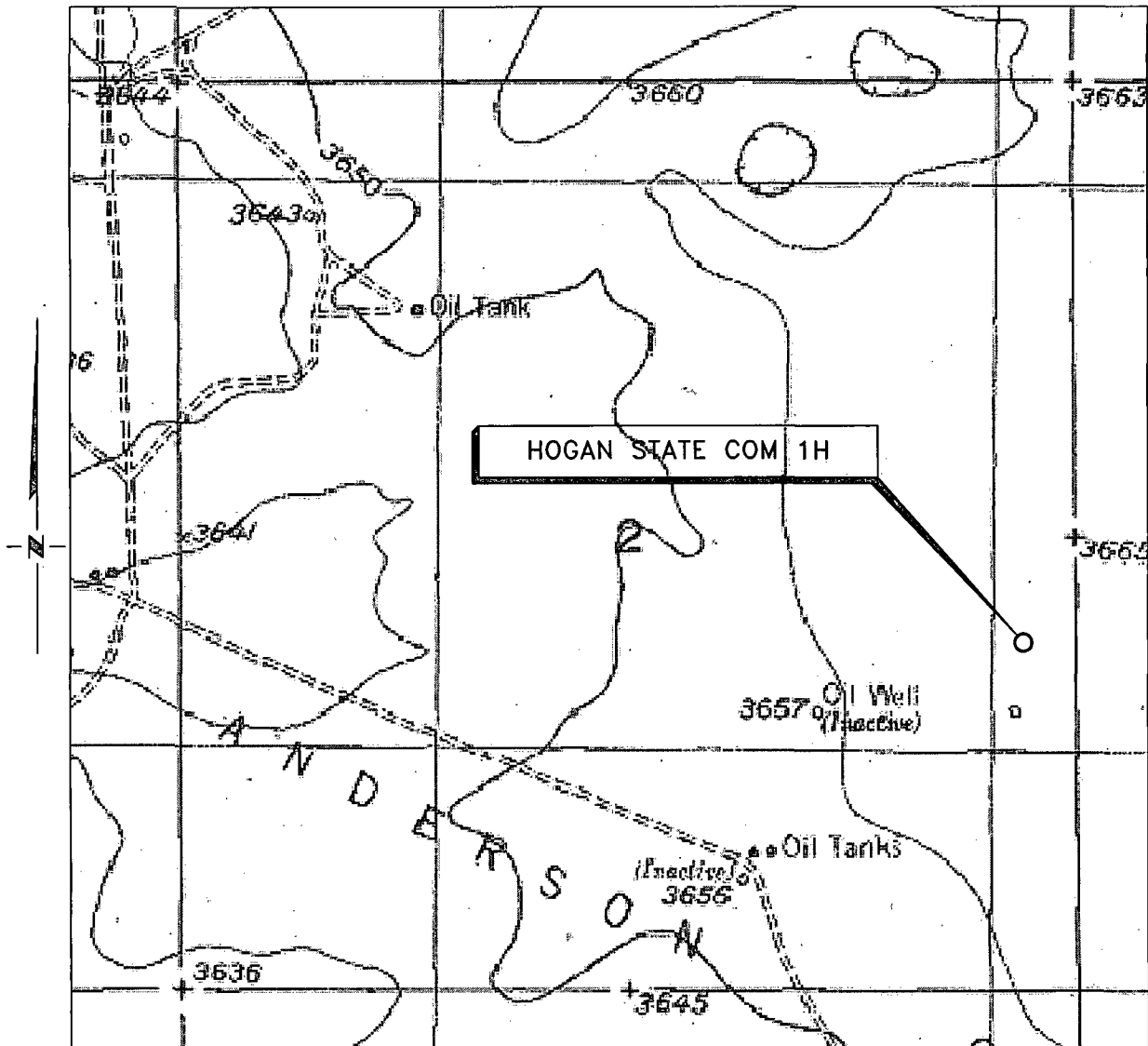
¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁶ GEODETIC DATA NAD 27 GRID - NM EAST SURFACE LOCATION N 677332.0 - E 590979.3 LAT: 32.86172° N LONG: 104.03704° W BOTTOM LOCATION N 677638.4 - E 586232.9	CORNER DATA NAD 27 GRID - NM EAST A: FND 1/2" REBAR N 675329.9 - E 585912.5 B: BRASS CAP "1914" N 677971.0 - E 585901.6 C: BRASS CAP "1914" N 680600.2 - E 585904.0 D: BRASS CAP "1914" N 680599.8 - E 588550.2 E: BRASS CAP "1916" N 680599.9 - E 591196.5 F: BRASS CAP "1914" N 677961.6 - E 591198.9 G: BRASS CAP "1914" N 675322.5 - E 591200.4 H: BRASS CAP "1914" N 675322.8 - E 588553.7	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: Date: 3-28-13 Printed Name: Kelly J. Holly Email Address: kholly@concho.com
		¹⁸ 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. 2/6/13 Date of Survey Signature and Seal of Professional Surveyor: 19680 Certificate Number

Project Area
Producing Area
Estimated Completed Interval: 2017 FSL + 330 FEL

LOCATION VERIFICATION MAP



SECTION 2, TWP. 17 SOUTH, RGE. 29 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

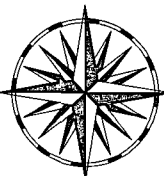
OPERATOR: COG Operating, LLC
LEASE: Hogan State Com
WELL NO.: 1H
ELEVATION: 3666'

LOCATION: 2010' FSL & 220' FEL
CONTOUR INTERVAL: 10'
USGS TOPO. SOURCE MAP:
Red Lake SE, NM (1955)

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NO.	REVISION	DATE
JOB NO.: LS130048		
DWG. NO.: 130048LVM		

PROSPERITY CONSULTANTS, LLC

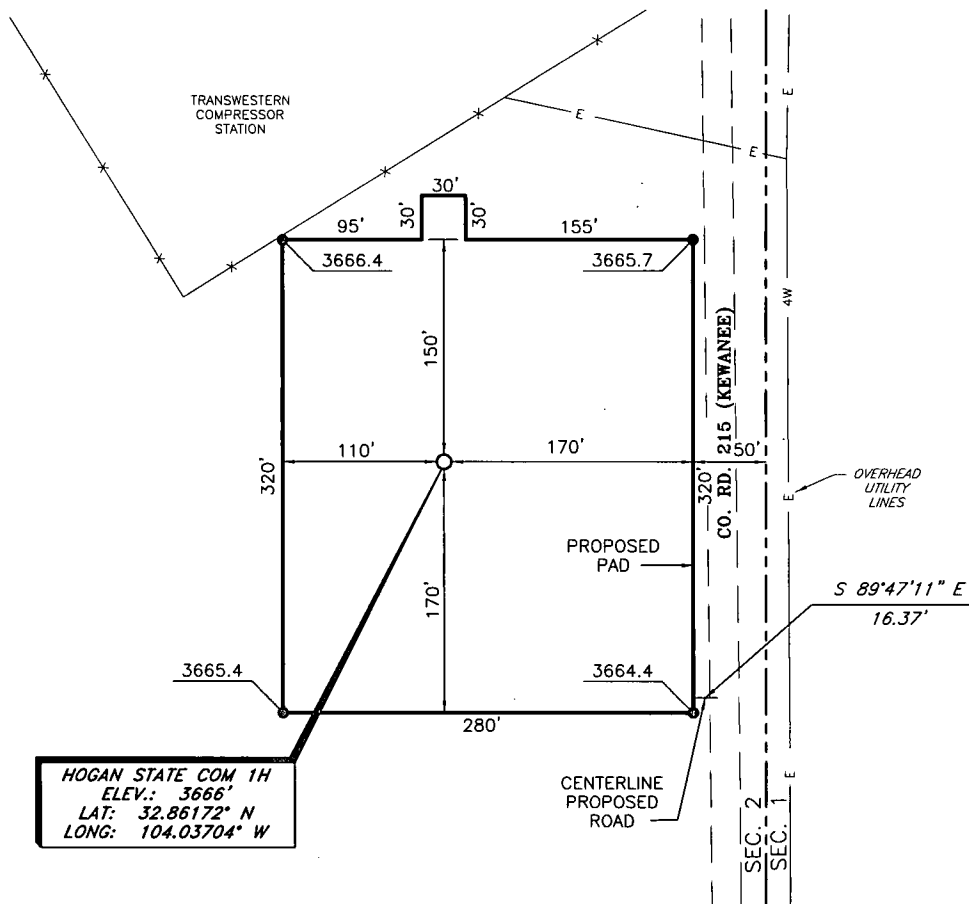


2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

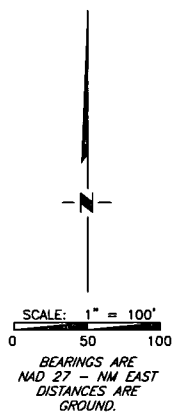
SCALE: 1" = 1000'
DATE: 2/6/13
SURVEYED BY: RH/GB
DRAWN BY: LWB
APPROVED BY: LWB
SHEET : 1 OF 1

HOGAN STATE COM 1H
(2010' FSL & 220' FEL)
Section 2, T-17-S, R-29-E,
N. M. P. M., Eddy Co., New Mexico



From the intersection of U. S. Hwy. No. 82 and
County Road No. 215 (Kewanee);

Location is approx. 190' West of Kewanee Road.



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NO.	REVISION	DATE
JOB NO.: LS130048		
DWG. NO.: 130048PAD		

PROSPERITY CONSULTANTS, LLC



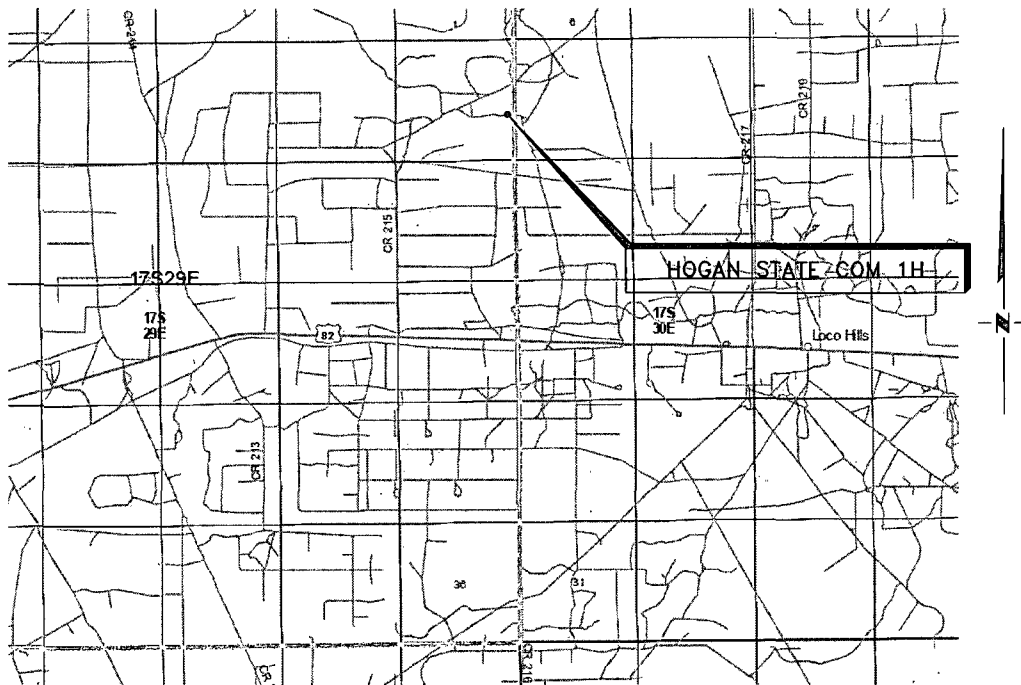
2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

SCALE: 1" = 100'
DATE: 2/6/13
SURVEYED BY: RH/GB
DRAWN BY: LWB
APPROVED BY: LWB
SHEET : 1 OF 1

VICINITY MAP

NOT TO SCALE



SECTION 2, TWP. 17 SOUTH, RGE. 29 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

OPERATOR: COG Operating, LLC
LEASE: Hogan State Com
WELL NO.: 1H
ELEVATION: 3666'
LOCATION: 2010' FSL & 220' FEL

DIRECTIONS TO LOCATION

From the intersection of U. S. Hwy. No. 82 and
County Road No. 215 (Kewanee);

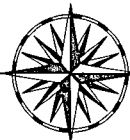
Go North on County Road 215 approx. 2.8 miles;

Location is approx. 190' West of Kewanee Road.

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NO.	REVISION	DATE
JOB NO.:	LS130048	
DWG. NO.:	130048VM	

PROSPERITY CONSULTANTS, LLC



SCALE: 1" = 1000'
DATE: 2-6-13
SURVEYED BY: RH/GB
DRAWN BY: LWB
APPROVED BY: LWB
SHEET : 1 OF 1

2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

RECEIVED

APR 02 2013

NMOCD ARTESIA

Plan Proposal

FOR

COG Operating, LLC
Hogan State Com #1H
Eddy Co., NM

Design #1

Presented By:

Aaron Boger
Account Manager

Bret Wolford
Well Planner

SHL

2009' FSL & 220' FEL

Penetration Point

2017' FSL & 330' FEL

PBHL

2309' FSL & 330' FWL

Sec.2-T17S-R29E

ARTESIA



COG Operating, LLC

Eddy County(NM27E)

Sec.2-T17S-R29E

Hogan State Com #1H

Wellbore #1

Plan: Design #1

Standard Planning Report

25 March, 2013

Archer

Database:	EDM15000.1 Single User Db	Local Co-ordinate Reference:	Well Hogan State Com #1H
Company:	COG Operating, LLC	TVD Reference:	WELL @ 3680.00usft
Project:	Eddy County (NM27E)	MD Reference:	WELL @ 3680.00usft
Site:	Sec.2-T17S-R29E	North Reference:	Grid
Well:	Hogan State Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Eddy County (NM27E)...		
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	Sec.2-T17S-R29E		
Site Position:		Northing:	678,180.600 usft
From:	Map	Easting:	590,868.800 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 51' 50.585 N
		Longitude:	104° 2' 14.622 W
		Grid Convergence:	0.16 °

Well	Hogan State Com #1H		
Well Position	+N-S	-848.60 usft	Northing:
	+E-W	110.50 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 51' 42.185 N
		Longitude:	104° 2' 13.354 W
		Ground Level:	3,666.00 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	03/25/13	7.63
			Dip Angle
			(°)
			Field Strength
			(nT)
			48,769

Design	Design #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	4,226.23	0.00	0.00
			Direction
			(°)
			273.69

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N-S	+E-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,779.21	0.00	0.00	3,779.21	0.00	0.00	0.00	0.00	0.00	0.00	
4,606.48	91.00	273.69	4,300.00	34.14	-528.86	11.00	11.00	0.00	273.69	HSC #1H PBHL
8,833.44	91.00	273.69	4,226.23	306.40	-4,746.40	0.00	0.00	0.00	0.00	HSC #1H PBHL

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Hogan State Com #1H
Company:	COG Operating, LLC	TVD Reference:	WELL @ 3680.00usft
Project:	Eddy County(NM27E)	MD Reference:	WELL @ 3680.00usft
Site:	Sec.2-T17S-R29E	North Reference:	Grid
Well:	Hogan State Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP / Start Build 11:00									
3,779.21	0.00	0.00	3,779.21	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	2.29	273.69	3,799.99	0.03	-0.41	0.41	11.00	11.00	0.00
3,850.00	7.79	273.69	3,849.78	0.31	-4.79	4.80	11.00	11.00	0.00
3,900.00	13.29	273.69	3,898.92	0.90	-13.91	13.94	11.00	11.00	0.00
3,950.00	18.79	273.69	3,946.96	1.79	-27.69	27.75	11.00	11.00	0.00
4,000.00	24.29	273.69	3,993.45	2.97	-46.00	46.10	11.00	11.00	0.00
4,050.00	29.79	273.69	4,037.97	4.43	-68.68	68.82	11.00	11.00	0.00
4,100.00	35.29	273.69	4,080.10	6.17	-95.50	95.70	11.00	11.00	0.00
PP @ 4124' MD									
4,124.00	37.93	273.69	4,099.37	7.09	-109.78	110.01	11.00	11.00	0.00
4,150.00	40.79	273.69	4,119.47	8.15	-126.23	126.50	11.00	11.00	0.00
4,200.00	46.29	273.69	4,155.70	10.37	-160.59	160.93	11.00	11.00	0.00
4,250.00	51.79	273.69	4,188.47	12.80	-198.25	198.67	11.00	11.00	0.00
4,300.00	57.29	273.69	4,217.46	15.42	-238.88	239.38	11.00	11.00	0.00
4,350.00	62.79	273.69	4,242.43	18.21	-282.09	282.68	11.00	11.00	0.00

Database:	EDM 5000.1 Single User.Db	Local Co-ordinate Reference:	Well/Hogan State Com #1H
Company:	COG Operating, LLC	TVD Reference:	WELL @ 3680.00usft
Project:	Eddy County(NM27E)	MD Reference:	WELL @ 3680.00usft
Site:	Sec 2-T17S-R29E	North Reference:	Grid
Well:	Hogan State Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
4,400.00	68.29	273.69	4,263.12	21.14	-327.49	328.17	11.00	11.00	0.00
4,450.00	73.79	273.69	4,279.36	24.19	-374.66	375.44	11.00	11.00	0.00
4,500.00	79.29	273.69	4,291.00	27.32	-423.17	424.05	11.00	11.00	0.00
4,550.00	84.79	273.69	4,297.92	30.51	-472.56	473.55	11.00	11.00	0.00
4,600.00	90.29	273.69	4,300.07	33.72	-522.39	523.48	11.00	11.00	0.00
EOC / Start 4226.96 hold at 4606.48 MD									
4,606.48	91.00	273.69	4,300.00	34.14	-528.86	529.96	11.00	11.00	0.00
4,700.00	91.00	273.69	4,298.37	40.16	-622.17	623.47	0.00	0.00	0.00
4,800.00	91.00	273.69	4,296.62	46.60	-721.95	723.45	0.00	0.00	0.00
4,900.00	91.00	273.69	4,294.88	53.05	-821.72	823.44	0.00	0.00	0.00
5,000.00	91.00	273.69	4,293.13	59.49	-921.50	923.42	0.00	0.00	0.00
5,100.00	91.00	273.69	4,291.39	65.93	-1,021.28	1,023.40	0.00	0.00	0.00
5,200.00	91.00	273.69	4,289.64	72.37	-1,121.06	1,123.39	0.00	0.00	0.00
5,300.00	91.00	273.69	4,287.90	78.81	-1,220.83	1,223.37	0.00	0.00	0.00
5,400.00	91.00	273.69	4,286.15	85.25	-1,320.61	1,323.36	0.00	0.00	0.00
5,500.00	91.00	273.69	4,284.41	91.69	-1,420.39	1,423.34	0.00	0.00	0.00
5,600.00	91.00	273.69	4,282.66	98.13	-1,520.16	1,523.33	0.00	0.00	0.00
5,700.00	91.00	273.69	4,280.92	104.57	-1,619.94	1,623.31	0.00	0.00	0.00
5,800.00	91.00	273.69	4,279.17	111.02	-1,719.72	1,723.30	0.00	0.00	0.00
5,900.00	91.00	273.69	4,277.42	117.46	-1,819.50	1,823.28	0.00	0.00	0.00
6,000.00	91.00	273.69	4,275.68	123.90	-1,919.27	1,923.27	0.00	0.00	0.00
6,100.00	91.00	273.69	4,273.93	130.34	-2,019.05	2,023.25	0.00	0.00	0.00
6,200.00	91.00	273.69	4,272.19	136.78	-2,118.83	2,123.24	0.00	0.00	0.00
6,300.00	91.00	273.69	4,270.44	143.22	-2,218.60	2,223.22	0.00	0.00	0.00
6,400.00	91.00	273.69	4,268.70	149.66	-2,318.38	2,323.21	0.00	0.00	0.00
6,500.00	91.00	273.69	4,266.95	156.10	-2,418.16	2,423.19	0.00	0.00	0.00
6,600.00	91.00	273.69	4,265.21	162.54	-2,517.94	2,523.18	0.00	0.00	0.00
6,700.00	91.00	273.69	4,263.46	168.98	-2,617.71	2,623.16	0.00	0.00	0.00
6,800.00	91.00	273.69	4,261.72	175.43	-2,717.49	2,723.15	0.00	0.00	0.00
6,900.00	91.00	273.69	4,259.97	181.87	-2,817.27	2,823.13	0.00	0.00	0.00
7,000.00	91.00	273.69	4,258.23	188.31	-2,917.04	2,923.12	0.00	0.00	0.00
7,100.00	91.00	273.69	4,256.48	194.75	-3,016.82	3,023.10	0.00	0.00	0.00
7,200.00	91.00	273.69	4,254.74	201.19	-3,116.60	3,123.08	0.00	0.00	0.00
7,300.00	91.00	273.69	4,252.99	207.63	-3,216.37	3,223.07	0.00	0.00	0.00
7,400.00	91.00	273.69	4,251.25	214.07	-3,316.15	3,323.05	0.00	0.00	0.00
7,500.00	91.00	273.69	4,249.50	220.51	-3,415.93	3,423.04	0.00	0.00	0.00
7,600.00	91.00	273.69	4,247.76	226.95	-3,515.71	3,523.02	0.00	0.00	0.00
7,700.00	91.00	273.69	4,246.01	233.39	-3,615.48	3,623.01	0.00	0.00	0.00
7,800.00	91.00	273.69	4,244.27	239.84	-3,715.26	3,722.99	0.00	0.00	0.00
7,900.00	91.00	273.69	4,242.52	246.28	-3,815.04	3,822.98	0.00	0.00	0.00
8,000.00	91.00	273.69	4,240.77	252.72	-3,914.81	3,922.96	0.00	0.00	0.00
8,100.00	91.00	273.69	4,239.03	259.16	-4,014.59	4,022.95	0.00	0.00	0.00
8,200.00	91.00	273.69	4,237.28	265.60	-4,114.37	4,122.93	0.00	0.00	0.00
8,300.00	91.00	273.69	4,235.54	272.04	-4,214.15	4,222.92	0.00	0.00	0.00
8,400.00	91.00	273.69	4,233.79	278.48	-4,313.92	4,322.90	0.00	0.00	0.00
8,500.00	91.00	273.69	4,232.05	284.92	-4,413.70	4,422.89	0.00	0.00	0.00
8,600.00	91.00	273.69	4,230.30	291.36	-4,513.48	4,522.87	0.00	0.00	0.00
8,700.00	91.00	273.69	4,228.56	297.80	-4,613.25	4,622.86	0.00	0.00	0.00
8,800.00	91.00	273.69	4,226.81	304.25	-4,713.03	4,722.84	0.00	0.00	0.00
TD at 8833.44 - HSC #1H PBHL									
8,833.44	91.00	273.69	4,226.23	306.40	-4,746.40	4,756.28	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Hogan State Com #1H
Company:	COG Operating, LLC	TVD Reference:	WELL @ 3680.00usft
Project:	Eddy County(NM27E)	MD Reference:	WELL @ 3680.00usft
Site:	Sec.2-T17S-R29E	North Reference:	Grid
Well:	Hogan State Com #1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
HSC #1H PBHL	0.00	0.00	4,226.23	306.40	-4,746.40	677,638.400	586,232.900	32° 51' 45.345 N	104° 3' 8.991 W
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
3,779.21	3,779.21	0.00	0.00	KOP / Start Build 11.00°
4,124.00	4,099.37	7.09	-109.78	PP @ 4124' MD
4,606.48	4,300.00	34.14	-528.86	EOC / Start 4226.96' hold at 4606.48 MD
8,833.44	4,226.23	306.40	-4,746.40	TD at 8833.44

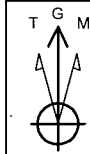


Project: Eddy County(NM27E)
Site: Sec.2-T17S-R29E
Well: Hogan State Com #1H
Wellbore: Wellbore #1
Design: Design #1
Lat: 32° 51' 42.185 N
Long: 104° 2' 13.354 W
GL: 3666.00
KB: WELL @ 3680.00usft

Archer

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3779.21	0.00	0.00	3779.21	0.00	0.00	0.00	0.00	0.00	KOP / Start Build 11.00°
4606.48	91.00	273.69	4300.00	34.14	-528.86	11.00	273.69	529.96	EOC / Start 4226.96' hold at 4606.48 MD
8833.44	91.00	273.69	4226.23	306.40	-4746.40	0.00	0.00	4756.28	TD at 8833.44



Azimuths to Grid North
True North: -0.16°
Magnetic North: 7.47°

Magnetic Field
Strength: 48769.0snT
Dip Angle: 60.65°
Date: 2013/03/25
Model: IGRF2010

WELL DETAILS: Hogan State Com #1H

+N/-S	+E/-W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.00	0.00	677332.000	3666.00	590979.300	32° 51' 42.185 N	104° 2' 13.354 W	

PROJECT DETAILS: Eddy County(NM27E)

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

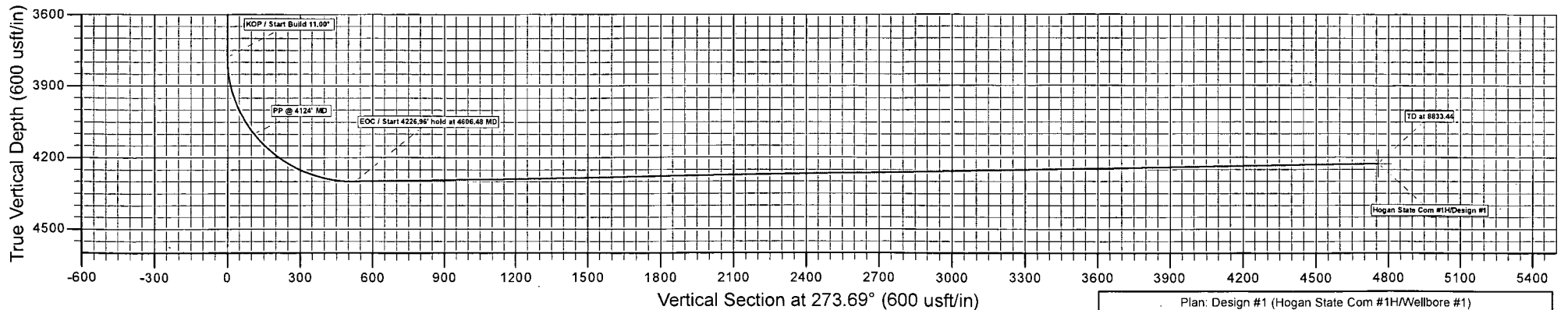
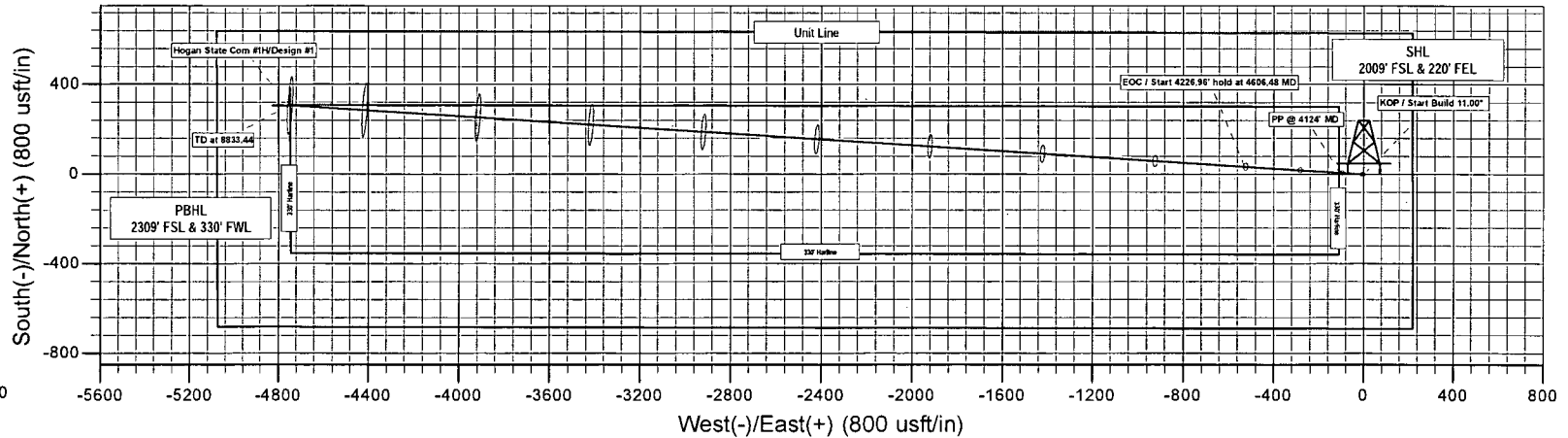
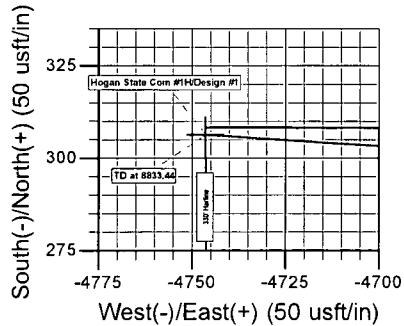
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HSC #1H PBHL	4226.23	306.40	-4746.40	32° 51' 45.345 N	104° 3' 8.991 W	Point

SITE DETAILS: Sec.2-T17S-R29E

Site Centre Latitude: 32° 51' 50.585 N
Longitude: 104° 2' 14.622 W

Positional Uncertainty: 0.00
Convergence: 0.16
Local North: Grid



Plan: Design #1 (Hogan State Com #1H/Wellbore #1)

Created By: Bret Wolford Date: 10:05, March 25 2013