

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
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RECEIVED

□ AMENDED REPORT

API Number 30-015- 42641	Pool Code 3250	Pool Name Atoka; Glorieta Yeso
Property Code 38976 ✓	Property Name STONEWALL 9 FEE	Well Number 5H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3362'

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	9	19-S	26-E		150	SOUTH	990	WEST	EDDY

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	9	19-S	26-E		330	NORTH	984	WEST	EDDY

Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.
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Project Area

Producing Area

GRID AZ. = 358' 43' 35"

HORIZ. DIST. = 4868.9'

B.H.

330'

984'

330'

330'

990'

330'

150'

Estimated Completed Interval:
330 FSL +
970 FWL

GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=606784.6 N
X=482098.0 E

LAT.=32.668138° N
LONG.=104.391508° W

BOTTOM HOLE LOCATION
Y=611651.0 N
X=481989.8 E

CORNER COORDINATES TABLE

A	-	Y=611974.5 N,	X=480999.1 E
B	-	Y=611983.0 N,	X=482312.6 E
C	-	Y=606635.0 N,	X=482433.5 E
D	-	Y=606633.7 N,	X=481111.2 E

kholly@concho.com
E-mail Address

RONALD J. EIDSON
NEW MEXICO
REG. 3239
Ronald J. Eidson 09/14/2013
Corrificate Number Gary G. Eidson 12641
Ronald J. Eidson 3239
ACK
ED PROFESSIONAL WSC 13.11.0972



COG Operating LLC

Eddy County, NM (NAD27 NME)

Stonewall 9 Fee

#5H

WB1

Plan: Plan #1 08-26-14

Surface: 150' FSL, 990' FWL, Sec 9, T19S, R26E, Unit A

PP: 330' FSL, 990' FWL, Sec 9, T19S, R26E, Unit A

BHL: 330' FNL, 984' FWL, Sec 9, T19S, R26E, Unit P

Standard Planning Report

26 August, 2014





Phoenix Technology Services
Planning Report



Database:	GCR-DB	Local Co-ordinate Reference:	Well #5H
Company:	COG Operating LLC	TVD Reference:	KB @ 3380.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3380.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	North Reference:	Grid
Well:	#5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1,08-26-14		

Project	Eddy County, NM (NAD27 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	Stonewall 9 Fee		
Site Position:		Northing:	611,835.50 usft
From:	Map	Easting:	482,702.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 40' 55.28160 N
		Longitude:	104° 23' 22.39586 W
		Grid Convergence:	-0.03 °

Well	#5H		
Well Position	+N/-S	-5,050.90 usft	Northing:
	+E/-W	-604.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level:
			3,362.00 usft

Wellbore	WB1		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	04/03/14	7.65	60.39	48,513

Design	Plan #1,08-26-14		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			358.73

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	
2,600.51	0.00	0.00	2,600.51	0.00	0.00	0.00	0.00	0.00	0.00	
3,422.33	90.40	358.73	3,121.37	524.38	-11.66	11.00	11.00	0.00	358.73	
7,765.53	90.40	358.73	3,091.05	4,866.40	-108.20	0.00	0.00	0.00	0.00	PBHL-Stonewall 9 #5H



Phoenix Technology Services
Planning Report



Database:	GCR-DB	Local Co-ordinate Reference:	Well #5H
Company:	COG Operating LLC	TVD Reference:	KB @ 3380.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27/NME)	MD Reference:	KB @ 3380.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	North Reference:	Grid
Well:	#5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1.08-26-14		

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
2,600.51	0.00	0.00	2,600.51	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 11°/100° Build									
2,700.00	10.94	358.73	2,699.40	9.47	-0.21	9.47	11.00	11.00	0.00
2,800.00	21.94	358.73	2,795.16	37.73	-0.84	37.74	11.00	11.00	0.00
2,900.00	32.94	358.73	2,883.77	83.73	-1.86	83.75	11.00	11.00	0.00
3,000.00	43.94	358.73	2,961.97	145.80	-3.24	145.83	11.00	11.00	0.00
3,047.15	49.13	358.73	2,994.39	180.00	-4.00	180.04	11.00	11.00	0.00
PP-Stonewall 9 #5H									
3,100.00	54.94	358.73	3,026.89	221.64	-4.93	221.69	11.00	11.00	0.00
3,200.00	65.94	358.73	3,076.14	308.47	-6.86	308.54	11.00	11.00	0.00
3,300.00	76.94	358.73	3,107.92	403.10	-8.96	403.20	11.00	11.00	0.00
3,400.00	87.94	358.73	3,121.05	502.06	-11.16	502.18	11.00	11.00	0.00
3,416.48	89.76	358.73	3,121.38	518.53	-11.53	518.66	11.00	11.00	0.00
TL, 3125° TVD @ 0 VZ, 90.4° Inc									
3,422.33	90.40	358.73	3,121.37	524.38	-11.66	524.51	11.00	11.00	0.00
Hold 90.4° Inc, 358.73° Azm									
3,500.00	90.40	358.73	3,120.83	602.03	-13.39	602.17	0.00	0.00	0.00
3,600.00	90.40	358.73	3,120.13	702.00	-15.61	702.17	0.00	0.00	0.00
3,700.00	90.40	358.73	3,119.43	801.97	-17.83	802.17	0.00	0.00	0.00
3,800.00	90.40	358.73	3,118.73	901.94	-20.05	902.17	0.00	0.00	0.00
3,900.00	90.40	358.73	3,118.04	1,001.92	-22.28	1,002.16	0.00	0.00	0.00
4,000.00	90.40	358.73	3,117.34	1,101.89	-24.50	1,102.16	0.00	0.00	0.00
4,100.00	90.40	358.73	3,116.64	1,201.86	-26.72	1,202.16	0.00	0.00	0.00
4,200.00	90.40	358.73	3,115.94	1,301.84	-28.95	1,302.16	0.00	0.00	0.00
4,300.00	90.40	358.73	3,115.24	1,401.81	-31.17	1,402.15	0.00	0.00	0.00
4,400.00	90.40	358.73	3,114.55	1,501.78	-33.39	1,502.15	0.00	0.00	0.00
4,500.00	90.40	358.73	3,113.85	1,601.75	-35.61	1,602.15	0.00	0.00	0.00
4,600.00	90.40	358.73	3,113.15	1,701.73	-37.84	1,702.15	0.00	0.00	0.00
4,700.00	90.40	358.73	3,112.45	1,801.70	-40.06	1,802.14	0.00	0.00	0.00
4,800.00	90.40	358.73	3,111.75	1,901.67	-42.28	1,902.14	0.00	0.00	0.00
4,900.00	90.40	358.73	3,111.06	2,001.65	-44.50	2,002.14	0.00	0.00	0.00
5,000.00	90.40	358.73	3,110.36	2,101.62	-46.73	2,102.14	0.00	0.00	0.00
5,100.00	90.40	358.73	3,109.66	2,201.59	-48.95	2,202.14	0.00	0.00	0.00
5,200.00	90.40	358.73	3,108.96	2,301.56	-51.17	2,302.13	0.00	0.00	0.00
5,300.00	90.40	358.73	3,108.26	2,401.54	-53.40	2,402.13	0.00	0.00	0.00
5,400.00	90.40	358.73	3,107.56	2,501.51	-55.62	2,502.13	0.00	0.00	0.00
5,500.00	90.40	358.73	3,106.87	2,601.48	-57.84	2,602.13	0.00	0.00	0.00
5,600.00	90.40	358.73	3,106.17	2,701.46	-60.06	2,702.12	0.00	0.00	0.00
5,700.00	90.40	358.73	3,105.47	2,801.43	-62.29	2,802.12	0.00	0.00	0.00
5,800.00	90.40	358.73	3,104.77	2,901.40	-64.51	2,902.12	0.00	0.00	0.00
5,900.00	90.40	358.73	3,104.07	3,001.37	-66.73	3,002.12	0.00	0.00	0.00
6,000.00	90.40	358.73	3,103.38	3,101.35	-68.96	3,102.11	0.00	0.00	0.00
6,100.00	90.40	358.73	3,102.68	3,201.32	-71.18	3,202.11	0.00	0.00	0.00
6,200.00	90.40	358.73	3,101.98	3,301.29	-73.40	3,302.11	0.00	0.00	0.00
6,300.00	90.40	358.73	3,101.28	3,401.27	-75.62	3,402.11	0.00	0.00	0.00
6,400.00	90.40	358.73	3,100.58	3,501.24	-77.85	3,502.10	0.00	0.00	0.00
6,500.00	90.40	358.73	3,099.89	3,601.21	-80.07	3,602.10	0.00	0.00	0.00
6,600.00	90.40	358.73	3,099.19	3,701.18	-82.29	3,702.10	0.00	0.00	0.00
6,700.00	90.40	358.73	3,098.49	3,801.16	-84.52	3,802.10	0.00	0.00	0.00
6,800.00	90.40	358.73	3,097.79	3,901.13	-86.74	3,902.09	0.00	0.00	0.00
6,900.00	90.40	358.73	3,097.09	4,001.10	-88.96	4,002.09	0.00	0.00	0.00
7,000.00	90.40	358.73	3,096.39	4,101.08	-91.18	4,102.09	0.00	0.00	0.00
7,100.00	90.40	358.73	3,095.70	4,201.05	-93.41	4,202.09	0.00	0.00	0.00



Phoenix Technology Services
Planning Report



Database:	GCR DB	Local Co-ordinate Reference:	Well #5H
Company:	COG Operating LLC	TVD Reference:	KB @ 3380.00usft (Silver Oak 3)
Project:	Eddy County, NM (NAD27 NME)	MD Reference:	KB @ 3380.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	North Reference:	Grid
Well:	#5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	WB1		
Design:	Plan #1 08-26-14		

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)
7,200.00	90.40	358.73	3,095.00	4,301.02	-95.63	4,302.08	0.00	0.00	0.00
7,300.00	90.40	358.73	3,094.30	4,400.99	-97.85	4,402.08	0.00	0.00	0.00
7,400.00	90.40	358.73	3,093.60	4,500.97	-100.07	4,502.08	0.00	0.00	0.00
7,500.00	90.40	358.73	3,092.90	4,600.94	-102.30	4,602.08	0.00	0.00	0.00
7,600.00	90.40	358.73	3,092.21	4,700.91	-104.52	4,702.07	0.00	0.00	0.00
7,700.00	90.40	358.73	3,091.51	4,800.89	-106.74	4,802.07	0.00	0.00	0.00
7,765.53	90.40	358.73	3,091.05	4,866.40	-108.20	4,867.60	0.00	0.00	0.00
TD at 7765.53 - PBHL-Stonewall 9 #5H									

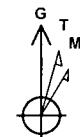
Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	
Shape									Latitude Longitude
PP-Stonewall 9 #5H	- plan hits target center	0.00	360.00	2,994.40	180.00	-4.00	606,964.60	482,094.00	32° 40' 7.07759 N 104° 23' 29.47856 W
	- Point								
PBHL-Stonewall 9 #5H	- plan hits target center	0.00	360.00	3,091.05	4,866.40	-108.20	611,651.00	481,989.80	32° 40' 53.45205 N 104° 23' 30.72779 W
	- Point								

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,416.48	3,121.38	TL, 3125' TVD @ 0 VZ, 90.4° Inc		-0.40	358.73

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2,600.51	2,600.51	0.00	0.00	KOP, 11°/100' Build	
3,422.33	3,121.37	524.38	-11.66	Hold 90.4° Inc, 358.73° Azm	
7,765.53	3,091.05	4,866.40	-108.20	TD at 7765.53	

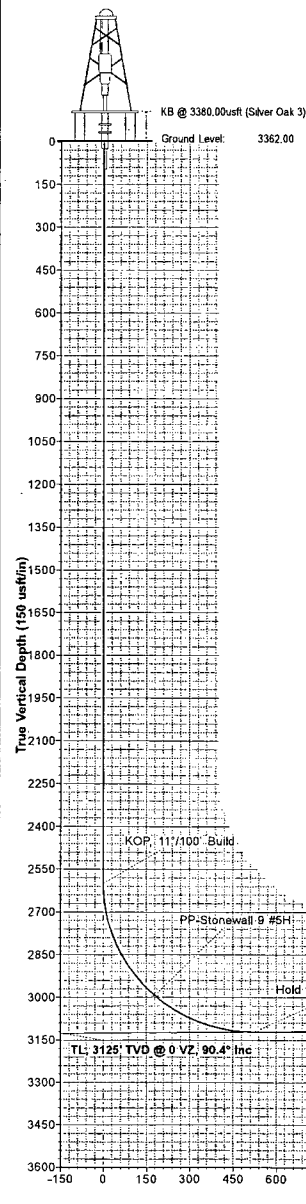


Project: Eddy County, NM (NAD27 NME)
Site: Stonewall 9 Fee
Well: #5H
Wellbore: WB1
Design: Plan #1 08-26-14
Rig: Silver Oak 3



Azimuths to Grid North
True North: 0.03°
Magnetic North: 7.68°

Magnetic Field
Strength: 48513.35nT
Dip Angle: 60.39°
Date: 04/03/2014
Model: IGRF2010_14



WELL DETAILS						
			Ground Level	3362.00		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	606784.60	482098.00	32° 40' 5.29639 N	104° 23' 29.43059 W	

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2600.51	0.00	0.00	2600.51	0.00	0.00	0.00	0.00	0.00		KOP, 117°100' Build
3	3422.33	90.40	358.73	3121.37	524.38	-11.66	11.00	358.73	524.51		Hold 90.4° Inc, 358.73° Azm
4	7765.53	90.40	358.73	3091.05	4866.40	-108.20	0.00	0.00	4867.60	PBHL-Stonewall 9 #5H	TD at 7765.53

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PP-Stonewall 9 #5H	2994.40	180.00	-4.00	606964.60	482094.00	32° 40' 7.07759 N	104° 23' 29.47856 W	Point	
PBHL-Stonewall 9 #5H	-	-	-	3091.05	4866.40	-	-	-	- plan hits target center
				-108.20	611651.00	481989.80	32° 40' 53.45204 N	104° 23' 30.72779 W	Point

PROJECT DETAILS: Eddy County, NM (NAD27 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

SITE DETAILS: Stonewall 9 Fee
Site Centre Northing: 611835.50
Easting: 482702.00
Positional Uncertainty: 0.00
Convergence: -0.03
Local North: Grid

LEGEND
— Plan #1 08-26-14

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well #5H, Grid North
Latitude: 32° 40' 5.29539 N
Longitude: 104° 23' 29.43059 W
Grid East: 482098.00
Grid North: 606784.60
Scale Factor: 1.000
Geomagnetic Model: IGRF2010_14
Sample Date: 03-Apr-14
Magnetic Declination: 7.65°
Dip Angle from Horizontal: 60.39°
Magnetic Field Strength: 48513
To convert a Magnetic Direction to a Grid Direction, Add 7.68°
To convert a Magnetic Direction to a True Direction, Add 7.65° East
To convert a True Direction to a Grid Direction, Add 0.03°

FORMATION TOP DETAILS				
TVDPath	MDPath	Formation	DipAngle	DgDir
3121.38	3416.48	TL 3125' TVD @ 0 VZ, 90.4° Inc	-0.40	358.73

