



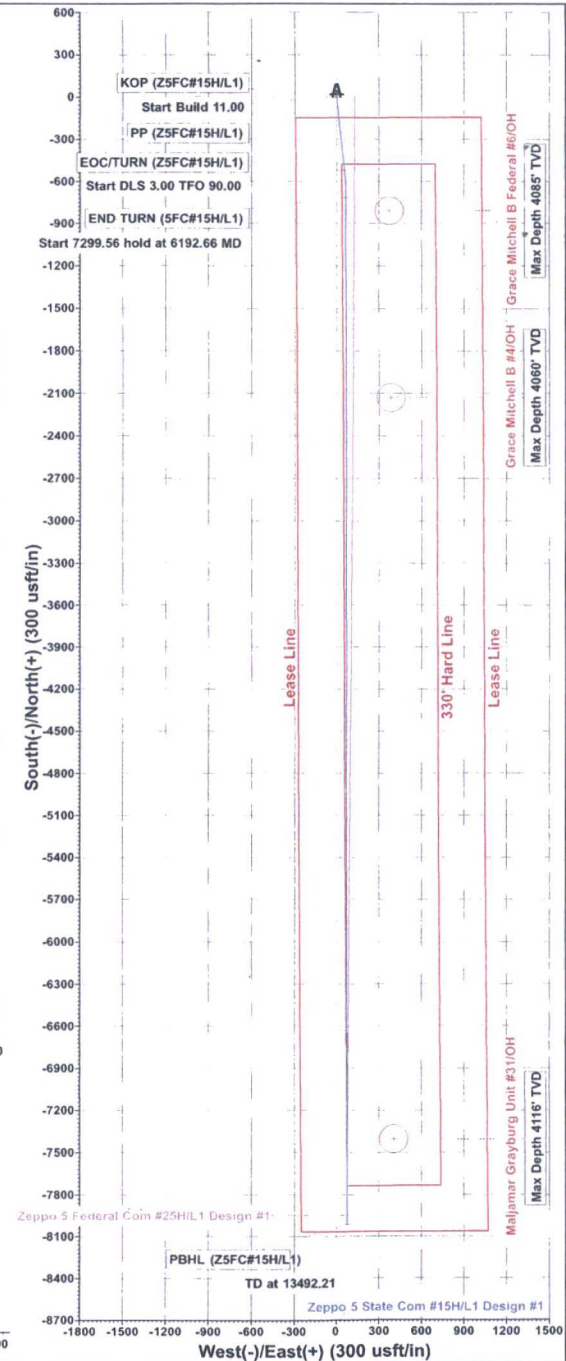
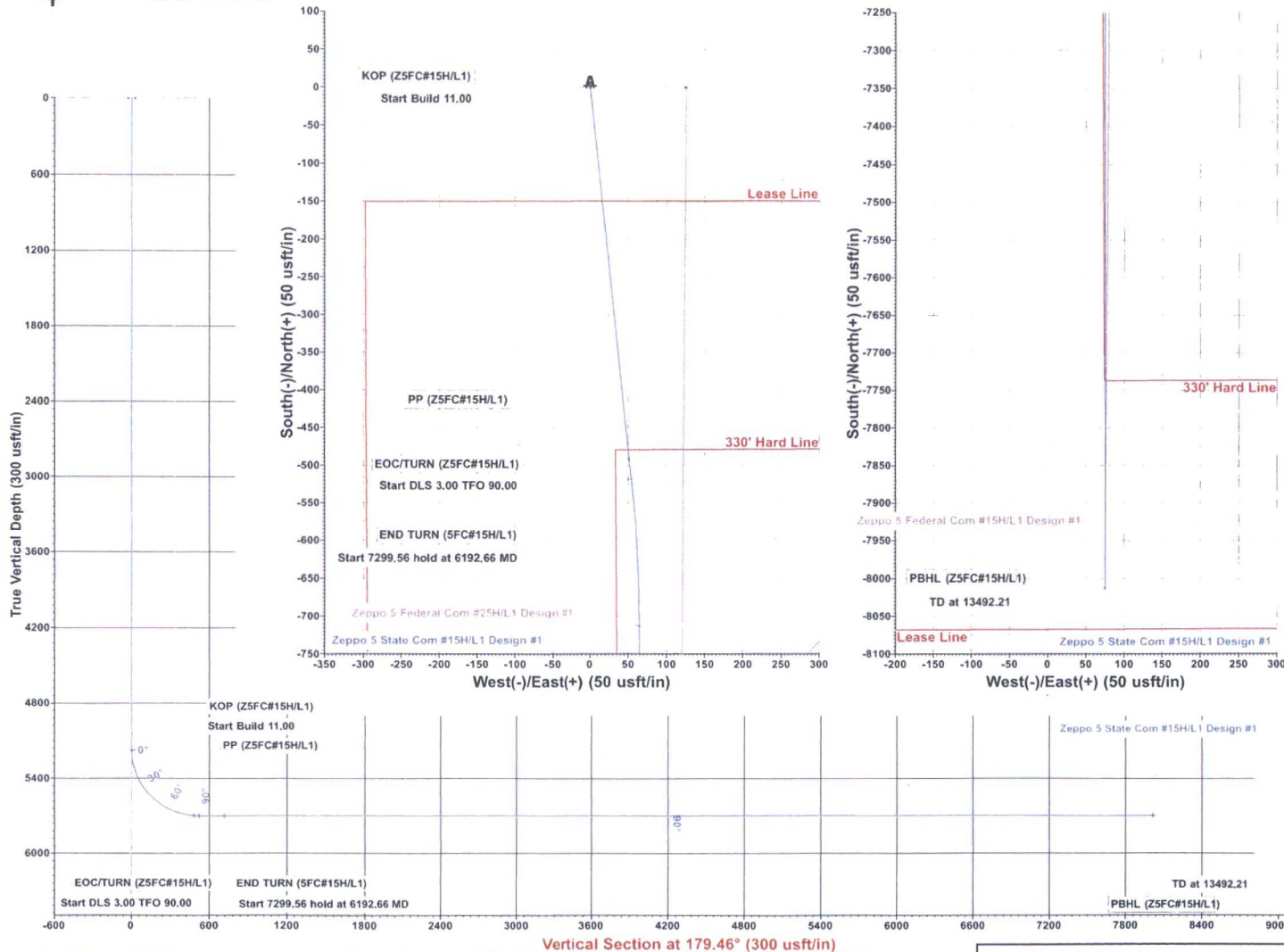
Azimuths to Grid North
True North: -0.30°
Magnetic North: 6.84°

Magnetic Field
Strength: 48326.9nT
Dip Angle: 60.62°
Date: 2/6/2017
Model: IGRF2015

Project: COG Operating LLC
Site: Zeppo 5 Federal Com #15H
Well: SHL: 2490' FNL, 2335' FEL, Sec 5, T17S, R32E, Unit G
Wellbore: BHL: 55' FSL, 2308' FEL, Sec 8, T17S, R32E, Unit O
Plan: Design #1 (SHL: 2490' FNL, 2335' FEL, Sec 5, T17S, R32E, Unit G/BHL: 55' FSL, 2308' FEL, Sec 8, T17S, R32E, Unit O)

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	5179.13	0.00	0.00	5179.13	0.00	0.00	0.00	0.00	0.00	
3	5997.31	90.00	174.05	5700.00	-518.06	53.99	11.00	174.05	518.55	
4	6192.66	90.00	179.91	5700.00	-713.05	64.28	3.00	90.00	713.63	
5	13492.21	90.00	179.91	5700.00	-8012.60	75.70	0.00	0.00	8012.96	PBHL (Z5FC#15H/L1)

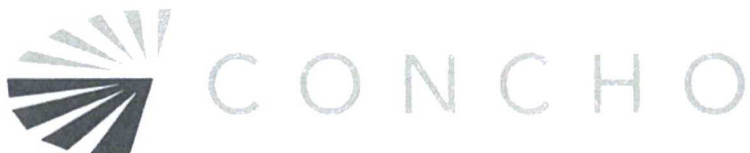


Terra Directional Services LLC
3705 South County Road 1210, Midland, TX 79706
Phone: 432-618-1210

Ground Elevation: 4099.00
RKB Elevation: KB @ 4117.00usft (Patriot 6)

Northing	Easting	Latitude	Longitude
678459.10	667703.00	32° 51' 50.309 N	103° 47' 13.801 W

PROJECT DETAILS: Lea County, NM (NAD-27 2015)
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
Local North: Grid



COG Operating LLC

Lea County, NM (NAD-27 2015)

Zeppo 5 Federal Com #15H

SHL: 2490' FNL, 2335' FEL, Sec 5, T17S, R32E, Unit G

PP: 2970' FNL, 2289' FEL, Sec 5, T17S, R32E, Unit J

BHL: 55' FSL, 2308' FEL, Sec 8, T17S, R32E, Unit O

Plan: Design #1

HOBBS OCD

OCT 24 2017

RECEIVED

Standard Planning Report

06 February, 2017





Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Lea County, NM (NAD-27 2015)
Site: Zeppo 5 Federal Com #15H
Well: SHL: 2490' FNL, 2335' FEL, Sec 5, T17S, R32E, Unit G
Wellbore: BHL: 55' FSL, 2308' FEL, Sec 8, T17S, R32E, Unit O
Design: Design #1

Local Co-ordinate Reference: Site Zeppo 5 Federal Com #15H
TVD Reference: KB @ 4117.00usft (Patriot 6)
MD Reference: KB @ 4117.00usft (Patriot 6)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD-27 2015)		
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 Zeppo 5 Federal Com #15H

Site Position:		Northing:	678,459.10 usft	Latitude:	32° 51' 50.309 N
From:	Map	Easting:	667,703.00 usft	Longitude:	103° 47' 13.801 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.30 °

Well SHL: 2490' FNL, 2335' FEL, Sec 5, T17S, R32E, Unit G

Well Position	+N/-S	0.00 usft	Northing:	678,459.10 usft	Latitude:	32° 51' 50.309 N
	+E/-W	0.00 usft	Easting:	667,703.00 usft	Longitude:	103° 47' 13.801 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,099.00 usft	

Wellbore BHL: 55' FSL, 2308' FEL, Sec 8, T17S, R32E, Unit O

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/6/2017	7.14	60.62	48,327

Design Design #1

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	179.46

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	
5,179.13	0.00	0.00	5,179.13	0.00	0.00	0.00	0.00	0.00	0.00	
5,997.31	90.00	174.05	5,700.00	-518.06	53.99	11.00	11.00	0.00	174.05	
6,192.66	90.00	179.91	5,700.00	-713.05	64.28	3.00	0.00	3.00	90.00	
13,492.21	90.00	179.91	5,700.00	-8,012.60	75.70	0.00	0.00	0.00	0.00	PBHL (Z5FC#15H/L1)



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Lea County, NM (NAD-27 2015)
Site: Zeppo 5 Federal Com #15H
Well: SHL: 2490' FNL, 2335' FEL, Sec 5, T17S, R32E, Unit G
Wellbore: BHL: 55' FSL, 2308' FEL, Sec 8, T17S, R32E, Unit O
Design: Design #1

Local Co-ordinate Reference: Site Zeppo 5 Federal Com #15H
TVD Reference: KB @ 4117.00usft (Patriot 6)
MD Reference: KB @ 4117.00usft (Patriot 6)
North Reference: Grid
Survey Calculation Method: 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
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
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
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Site: Zeppo 5 Federal Com #15H
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Design: Design #1

Local Co-ordinate Reference: Site Zeppo 5 Federal Com #15H
TVD Reference: KB @ 4117.00usft (Patriot 6)
MD Reference: KB @ 4117.00usft (Patriot 6)
North Reference: Grid
Survey Calculation Method: 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)
5,179.13	0.00	0.00	5,179.13	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 11.00									
5,200.00	2.30	174.05	5,199.99	-0.42	0.04	0.42	11.00	11.00	0.00
5,250.00	7.80	174.05	5,249.78	-4.79	0.50	4.79	11.00	11.00	0.00
5,300.00	13.30	174.05	5,298.92	-13.89	1.45	13.90	11.00	11.00	0.00
5,350.00	18.80	174.05	5,346.95	-27.63	2.88	27.65	11.00	11.00	0.00
5,400.00	24.30	174.05	5,393.44	-45.88	4.78	45.93	11.00	11.00	0.00
5,450.00	29.80	174.05	5,437.96	-68.49	7.14	68.55	11.00	11.00	0.00
5,500.00	35.30	174.05	5,480.09	-95.23	9.93	95.32	11.00	11.00	0.00
5,550.00	40.80	174.05	5,519.45	-125.87	13.12	125.99	11.00	11.00	0.00
5,600.00	46.30	174.05	5,555.68	-160.11	16.69	160.27	11.00	11.00	0.00
5,650.00	51.80	174.05	5,588.44	-197.66	20.60	197.84	11.00	11.00	0.00
5,700.00	57.30	174.05	5,617.43	-238.15	24.82	238.38	11.00	11.00	0.00
5,750.00	62.80	174.05	5,642.38	-281.22	29.31	281.49	11.00	11.00	0.00
5,800.00	68.30	174.05	5,663.07	-326.48	34.03	326.78	11.00	11.00	0.00
5,850.00	73.80	174.05	5,679.31	-373.49	38.93	373.84	11.00	11.00	0.00
5,900.00	79.30	174.05	5,690.94	-421.84	43.96	422.24	11.00	11.00	0.00
5,950.00	84.80	174.05	5,697.85	-471.07	49.10	471.52	11.00	11.00	0.00
5,997.31	90.00	174.05	5,700.00	-518.06	53.99	518.55	11.00	11.00	0.00
Start DLS 3.00 TFO 90.00									
6,000.00	90.00	174.13	5,700.00	-520.74	54.27	521.23	3.00	0.00	3.00
6,100.00	90.00	177.13	5,700.00	-620.44	61.89	620.99	3.00	0.00	3.00
6,192.66	90.00	179.91	5,700.00	-713.05	64.28	713.63	3.00	0.00	3.00
Start 7299.56 hold at 6192.66 MD									
6,200.00	90.00	179.91	5,700.00	-720.40	64.29	720.97	0.00	0.00	0.00
6,300.00	90.00	179.91	5,700.00	-820.40	64.45	820.97	0.00	0.00	0.00
6,400.00	90.00	179.91	5,700.00	-920.40	64.60	920.97	0.00	0.00	0.00
6,500.00	90.00	179.91	5,700.00	-1,020.40	64.76	1,020.96	0.00	0.00	0.00
6,600.00	90.00	179.91	5,700.00	-1,120.40	64.92	1,120.96	0.00	0.00	0.00
6,700.00	90.00	179.91	5,700.00	-1,220.40	65.07	1,220.96	0.00	0.00	0.00
6,800.00	90.00	179.91	5,700.00	-1,320.40	65.23	1,320.95	0.00	0.00	0.00
6,900.00	90.00	179.91	5,700.00	-1,420.40	65.39	1,420.95	0.00	0.00	0.00
7,000.00	90.00	179.91	5,700.00	-1,520.40	65.54	1,520.95	0.00	0.00	0.00
7,100.00	90.00	179.91	5,700.00	-1,620.40	65.70	1,620.94	0.00	0.00	0.00
7,200.00	90.00	179.91	5,700.00	-1,720.40	65.86	1,720.94	0.00	0.00	0.00
7,300.00	90.00	179.91	5,700.00	-1,820.40	66.01	1,820.94	0.00	0.00	0.00
7,400.00	90.00	179.91	5,700.00	-1,920.40	66.17	1,920.93	0.00	0.00	0.00
7,500.00	90.00	179.91	5,700.00	-2,020.39	66.33	2,020.93	0.00	0.00	0.00
7,600.00	90.00	179.91	5,700.00	-2,120.39	66.48	2,120.93	0.00	0.00	0.00
7,700.00	90.00	179.91	5,700.00	-2,220.39	66.64	2,220.93	0.00	0.00	0.00
7,800.00	90.00	179.91	5,700.00	-2,320.39	66.79	2,320.92	0.00	0.00	0.00
7,900.00	90.00	179.91	5,700.00	-2,420.39	66.95	2,420.92	0.00	0.00	0.00
8,000.00	90.00	179.91	5,700.00	-2,520.39	67.11	2,520.92	0.00	0.00	0.00
8,100.00	90.00	179.91	5,700.00	-2,620.39	67.26	2,620.91	0.00	0.00	0.00
8,200.00	90.00	179.91	5,700.00	-2,720.39	67.42	2,720.91	0.00	0.00	0.00
8,300.00	90.00	179.91	5,700.00	-2,820.39	67.58	2,820.91	0.00	0.00	0.00
8,400.00	90.00	179.91	5,700.00	-2,920.39	67.73	2,920.90	0.00	0.00	0.00
8,500.00	90.00	179.91	5,700.00	-3,020.39	67.89	3,020.90	0.00	0.00	0.00
8,600.00	90.00	179.91	5,700.00	-3,120.39	68.05	3,120.90	0.00	0.00	0.00
8,700.00	90.00	179.91	5,700.00	-3,220.39	68.20	3,220.89	0.00	0.00	0.00
8,800.00	90.00	179.91	5,700.00	-3,320.39	68.36	3,320.89	0.00	0.00	0.00



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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)
8,900.00	90.00	179.91	5,700.00	-3,420.39	68.52	3,420.89	0.00	0.00	0.00
9,000.00	90.00	179.91	5,700.00	-3,520.39	68.67	3,520.88	0.00	0.00	0.00
9,100.00	90.00	179.91	5,700.00	-3,620.39	68.83	3,620.88	0.00	0.00	0.00
9,200.00	90.00	179.91	5,700.00	-3,720.39	68.99	3,720.88	0.00	0.00	0.00
9,300.00	90.00	179.91	5,700.00	-3,820.39	69.14	3,820.88	0.00	0.00	0.00
9,400.00	90.00	179.91	5,700.00	-3,920.39	69.30	3,920.87	0.00	0.00	0.00
9,500.00	90.00	179.91	5,700.00	-4,020.39	69.45	4,020.87	0.00	0.00	0.00
9,600.00	90.00	179.91	5,700.00	-4,120.39	69.61	4,120.87	0.00	0.00	0.00
9,700.00	90.00	179.91	5,700.00	-4,220.39	69.77	4,220.86	0.00	0.00	0.00
9,800.00	90.00	179.91	5,700.00	-4,320.39	69.92	4,320.86	0.00	0.00	0.00
9,900.00	90.00	179.91	5,700.00	-4,420.39	70.08	4,420.86	0.00	0.00	0.00
10,000.00	90.00	179.91	5,700.00	-4,520.39	70.24	4,520.85	0.00	0.00	0.00
10,100.00	90.00	179.91	5,700.00	-4,620.39	70.39	4,620.85	0.00	0.00	0.00
10,200.00	90.00	179.91	5,700.00	-4,720.39	70.55	4,720.85	0.00	0.00	0.00
10,300.00	90.00	179.91	5,700.00	-4,820.39	70.71	4,820.84	0.00	0.00	0.00
10,400.00	90.00	179.91	5,700.00	-4,920.39	70.86	4,920.84	0.00	0.00	0.00
10,500.00	90.00	179.91	5,700.00	-5,020.39	71.02	5,020.84	0.00	0.00	0.00
10,600.00	90.00	179.91	5,700.00	-5,120.39	71.18	5,120.84	0.00	0.00	0.00
10,700.00	90.00	179.91	5,700.00	-5,220.39	71.33	5,220.83	0.00	0.00	0.00
10,800.00	90.00	179.91	5,700.00	-5,320.39	71.49	5,320.83	0.00	0.00	0.00
10,900.00	90.00	179.91	5,700.00	-5,420.39	71.64	5,420.83	0.00	0.00	0.00
11,000.00	90.00	179.91	5,700.00	-5,520.39	71.80	5,520.82	0.00	0.00	0.00
11,100.00	90.00	179.91	5,700.00	-5,620.39	71.96	5,620.82	0.00	0.00	0.00
11,200.00	90.00	179.91	5,700.00	-5,720.39	72.11	5,720.82	0.00	0.00	0.00
11,300.00	90.00	179.91	5,700.00	-5,820.39	72.27	5,820.81	0.00	0.00	0.00
11,400.00	90.00	179.91	5,700.00	-5,920.39	72.43	5,920.81	0.00	0.00	0.00
11,500.00	90.00	179.91	5,700.00	-6,020.39	72.58	6,020.81	0.00	0.00	0.00
11,600.00	90.00	179.91	5,700.00	-6,120.39	72.74	6,120.80	0.00	0.00	0.00
11,700.00	90.00	179.91	5,700.00	-6,220.39	72.90	6,220.80	0.00	0.00	0.00
11,800.00	90.00	179.91	5,700.00	-6,320.39	73.05	6,320.80	0.00	0.00	0.00
11,900.00	90.00	179.91	5,700.00	-6,420.39	73.21	6,420.79	0.00	0.00	0.00
12,000.00	90.00	179.91	5,700.00	-6,520.39	73.37	6,520.79	0.00	0.00	0.00
12,100.00	90.00	179.91	5,700.00	-6,620.39	73.52	6,620.79	0.00	0.00	0.00
12,200.00	90.00	179.91	5,700.00	-6,720.39	73.68	6,720.79	0.00	0.00	0.00
12,300.00	90.00	179.91	5,700.00	-6,820.39	73.83	6,820.78	0.00	0.00	0.00
12,400.00	90.00	179.91	5,700.00	-6,920.39	73.99	6,920.78	0.00	0.00	0.00
12,500.00	90.00	179.91	5,700.00	-7,020.39	74.15	7,020.78	0.00	0.00	0.00
12,600.00	90.00	179.91	5,700.00	-7,120.39	74.30	7,120.77	0.00	0.00	0.00
12,700.00	90.00	179.91	5,700.00	-7,220.39	74.46	7,220.77	0.00	0.00	0.00
12,800.00	90.00	179.91	5,700.00	-7,320.39	74.62	7,320.77	0.00	0.00	0.00
12,900.00	90.00	179.91	5,700.00	-7,420.39	74.77	7,420.76	0.00	0.00	0.00
13,000.00	90.00	179.91	5,700.00	-7,520.39	74.93	7,520.76	0.00	0.00	0.00
13,100.00	90.00	179.91	5,700.00	-7,620.39	75.09	7,620.76	0.00	0.00	0.00
13,200.00	90.00	179.91	5,700.00	-7,720.39	75.24	7,720.75	0.00	0.00	0.00
13,300.00	90.00	179.91	5,700.00	-7,820.39	75.40	7,820.75	0.00	0.00	0.00
13,400.00	90.00	179.91	5,700.00	-7,920.39	75.56	7,920.75	0.00	0.00	0.00
13,492.21	90.00	179.91	5,700.00	-8,012.60	75.70	8,012.96	0.00	0.00	0.00

TD at 13492.21



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Lea County, NM (NAD-27 2015)
Site: Zeppo 5 Federal Com #15H
Well: SHL: 2490' FNL, 2335' FEL, Sec 5, T17S, R32E, Unit G
Wellbore: BHL: 55' FSL, 2308' FEL, Sec 8, T17S, R32E, Unit O
Design: Design #1

Local Co-ordinate Reference: Site Zeppo 5 Federal Com #15H
TVD Reference: KB @ 4117.00usft (Patriot 6)
MD Reference: KB @ 4117.00usft (Patriot 6)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Max Depth 4085' TVD - plan misses target center by 887.78usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Circle (radius 100.00)	0.00	0.00	-1.00	-808.56	366.58	677,650.54	668,069.58	32° 51' 42.290 N	103° 47' 9.552 W
Max Depth 4116' TVD - plan misses target center by 5710.31usft at 12884.84usft MD (5700.00 TVD, -7405.23 N, 74.75 E) - Circle (radius 100.00)	0.00	0.00	-1.00	-7,404.72	400.71	671,054.38	668,103.71	32° 50' 37.020 N	103° 47' 9.553 W
Max Depth 4060' TVD - plan misses target center by 2161.70usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Circle (radius 100.00)	0.00	0.00	-1.00	-2,128.53	377.26	676,330.57	668,080.26	32° 51' 29.228 N	103° 47' 9.507 W
KOP (Z5FC#15H/L1) - plan hits target center - Point	0.00	0.00	5,179.13	0.00	0.00	678,459.10	667,703.00	32° 51' 50.309 N	103° 47' 13.801 W
PP (Z5FC#15H/L1) - plan hits target center - Point	0.00	0.00	5,698.55	-479.41	49.96	677,979.69	667,752.97	32° 51' 45.563 N	103° 47' 13.244 W
END TURN (5FC#15H/L - plan hits target center - Point	0.00	0.00	5,700.00	-713.06	64.28	677,746.04	667,767.29	32° 51' 43.250 N	103° 47' 13.090 W
PBHL (Z5FC#15H/L1) - plan hits target center - Point	0.00	0.01	5,700.00	-8,012.60	75.70	670,446.50	667,778.70	32° 50' 31.021 N	103° 47' 13.399 W
EOC/TURN (Z5FC#15H - plan hits target center - Point	0.00	0.00	5,700.00	-518.06	53.99	677,941.03	667,757.00	32° 51' 45.180 N	103° 47' 13.199 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,179.13	5,179.13	0.00	0.00	Start Build 11.00
5,997.31	5,700.00	-518.06	53.99	Start DLS 3.00 TFO 90.00
6,192.66	5,700.00	-713.05	64.28	Start 7299.56 hold at 6192.66 MD
13,492.21	5,700.00	-8,012.60	75.70	TD at 13492.21