



COG Operating L L C

Lea County, NM (NAD27 NME)

Sec. 21, T 18 S. , R 34 E

Iggles State Com #2H

Wellbore #1

Plan: Plan #1

Standard Survey Report

25 July, 2016





Integrity Directional Services, LLC
Survey Report



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Iggle State Com #2H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=26' @ 4059.80ft (Scan Freedom)
Site:	Sec. 21, T 18 S., R 34 E	MD Reference:	KB=26' @ 4059.80ft (Scan Freedom)
Well:	Iggle State Com #2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Multi User Db

Project	Lea 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	Sec. 21, T 18 S., R 34 E		
Site Position:		Northing:	628,836.50 usft
From:	Map	Easting:	735,676.70 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 43' 35.130 N
		Longitude:	103° 34' 1.125 W
		Grid Convergence:	0.41°

Well	Iggle State Com #2H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft
		Latitude:	32° 43' 35.130 N
		Longitude:	103° 34' 1.125 W
		Ground Level:	4,033.80 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	7/25/2016	7.08
			Dip Angle
			60.54
			Field Strength
			48,325

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			359.46

Survey Tool Program	Date 7/25/2016		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		Description
0.00	17,070.84	Plan #1 (Wellbore #1)	MWD
			MWD - Standard

Planned Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Rate	
(ft)			(ft)			(ft)	(°/100usft)	(°/100usft)	(°/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	



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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



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5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,412.85	0.00	0.00	9,412.85	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 12.00									



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9,500.00	10.46	359.46	9,499.52	7.93	-0.07	7.93	12.00	12.00	0.00
9,600.00	22.46	359.46	9,595.24	36.21	-0.34	36.21	12.00	12.00	0.00
9,700.00	34.46	359.46	9,683.00	83.77	-0.79	83.78	12.00	12.00	0.00
9,800.00	46.46	359.46	9,758.95	148.54	-1.40	148.55	12.00	12.00	0.00
9,900.00	58.46	359.46	9,819.77	227.68	-2.15	227.69	12.00	12.00	0.00
10,000.00	70.46	359.46	9,862.81	317.74	-3.00	317.76	12.00	12.00	0.00
10,100.00	82.46	359.46	9,886.18	414.78	-3.91	414.80	12.00	12.00	0.00
10,180.17	92.08	359.46	9,890.00	494.77	-4.67	494.79	12.00	12.00	0.00
Start 6891.29 hold at 10180.17 MD									
10,200.00	92.08	359.46	9,889.28	514.58	-4.85	514.60	0.00	0.00	0.00
10,300.00	92.08	359.46	9,885.65	614.51	-5.79	614.53	0.00	0.00	0.00
10,400.00	92.08	359.46	9,882.02	714.44	-6.74	714.47	0.00	0.00	0.00
10,500.00	92.08	359.46	9,878.40	814.37	-7.68	814.40	0.00	0.00	0.00
10,600.00	92.08	359.46	9,874.77	914.30	-8.62	914.34	0.00	0.00	0.00
10,700.00	92.08	359.46	9,871.14	1,014.23	-9.56	1,014.27	0.00	0.00	0.00
10,800.00	92.08	359.46	9,867.51	1,114.16	-10.51	1,114.21	0.00	0.00	0.00
10,900.00	92.08	359.46	9,863.89	1,214.09	-11.45	1,214.14	0.00	0.00	0.00
11,000.00	92.08	359.46	9,860.26	1,314.02	-12.39	1,314.07	0.00	0.00	0.00
11,100.00	92.08	359.46	9,856.63	1,413.95	-13.33	1,414.01	0.00	0.00	0.00
11,200.00	92.08	359.46	9,853.00	1,513.88	-14.27	1,513.94	0.00	0.00	0.00
11,300.00	92.08	359.46	9,849.37	1,613.80	-15.22	1,613.88	0.00	0.00	0.00
11,400.00	92.08	359.46	9,845.75	1,713.73	-16.16	1,713.81	0.00	0.00	0.00
11,500.00	92.08	359.46	9,842.12	1,813.66	-17.10	1,813.74	0.00	0.00	0.00
11,600.00	92.08	359.46	9,838.49	1,913.59	-18.04	1,913.68	0.00	0.00	0.00
11,700.00	92.08	359.46	9,834.86	2,013.52	-18.99	2,013.61	0.00	0.00	0.00
11,800.00	92.08	359.46	9,831.24	2,113.45	-19.93	2,113.55	0.00	0.00	0.00
11,900.00	92.08	359.46	9,827.61	2,213.38	-20.87	2,213.48	0.00	0.00	0.00
12,000.00	92.08	359.46	9,823.98	2,313.31	-21.81	2,313.42	0.00	0.00	0.00
12,100.00	92.08	359.46	9,820.35	2,413.24	-22.76	2,413.35	0.00	0.00	0.00
12,200.00	92.08	359.46	9,816.72	2,513.17	-23.70	2,513.28	0.00	0.00	0.00
12,300.00	92.08	359.46	9,813.10	2,613.10	-24.64	2,613.22	0.00	0.00	0.00
12,400.00	92.08	359.46	9,809.47	2,713.03	-25.58	2,713.15	0.00	0.00	0.00
12,500.00	92.08	359.46	9,805.84	2,812.96	-26.52	2,813.09	0.00	0.00	0.00
12,600.00	92.08	359.46	9,802.21	2,912.89	-27.47	2,913.02	0.00	0.00	0.00
12,700.00	92.08	359.46	9,798.59	3,012.82	-28.41	3,012.96	0.00	0.00	0.00
12,800.00	92.08	359.46	9,794.96	3,112.75	-29.35	3,112.89	0.00	0.00	0.00
12,900.00	92.08	359.46	9,791.33	3,212.68	-30.29	3,212.82	0.00	0.00	0.00
13,000.00	92.08	359.46	9,787.70	3,312.61	-31.24	3,312.76	0.00	0.00	0.00
13,100.00	92.08	359.46	9,784.07	3,412.54	-32.18	3,412.69	0.00	0.00	0.00
13,200.00	92.08	359.46	9,780.45	3,512.47	-33.12	3,512.63	0.00	0.00	0.00
13,300.00	92.08	359.46	9,776.82	3,612.40	-34.06	3,612.56	0.00	0.00	0.00
13,400.00	92.08	359.46	9,773.19	3,712.33	-35.00	3,712.49	0.00	0.00	0.00
13,500.00	92.08	359.46	9,769.56	3,812.26	-35.95	3,812.43	0.00	0.00	0.00
13,600.00	92.08	359.46	9,765.94	3,912.19	-36.89	3,912.36	0.00	0.00	0.00



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Survey Report



Company:	COG Operating L L C	Local Co-ordinate Reference:	Well Igles State Com #2H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=26' @ 4059.80ft (Scan Freedom)
Site:	Sec. 21, T 18 S., R 34 E	MD Reference:	KB=26' @ 4059.80ft (Scan Freedom)
Well:	Igges State Com #2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,700.00	92.08	359.46	9,762.31	4,012.12	-37.83	4,012.30	0.00	0.00	0.00
13,800.00	92.08	359.46	9,758.68	4,112.05	-38.77	4,112.23	0.00	0.00	0.00
13,900.00	92.08	359.46	9,755.05	4,211.98	-39.72	4,212.17	0.00	0.00	0.00
14,000.00	92.08	359.46	9,751.43	4,311.91	-40.66	4,312.10	0.00	0.00	0.00
14,100.00	92.08	359.46	9,747.80	4,411.84	-41.60	4,412.03	0.00	0.00	0.00
14,200.00	92.08	359.46	9,744.17	4,511.77	-42.54	4,511.97	0.00	0.00	0.00
14,300.00	92.08	359.46	9,740.54	4,611.70	-43.49	4,611.90	0.00	0.00	0.00
14,400.00	92.08	359.46	9,736.91	4,711.63	-44.43	4,711.84	0.00	0.00	0.00
14,500.00	92.08	359.46	9,733.29	4,811.56	-45.37	4,811.77	0.00	0.00	0.00
14,600.00	92.08	359.46	9,729.66	4,911.49	-46.31	4,911.70	0.00	0.00	0.00
14,700.00	92.08	359.46	9,726.03	5,011.42	-47.25	5,011.64	0.00	0.00	0.00
14,800.00	92.08	359.46	9,722.40	5,111.35	-48.20	5,111.57	0.00	0.00	0.00
14,900.00	92.08	359.46	9,718.78	5,211.28	-49.14	5,211.51	0.00	0.00	0.00
15,000.00	92.08	359.46	9,715.15	5,311.20	-50.08	5,311.44	0.00	0.00	0.00
15,100.00	92.08	359.46	9,711.52	5,411.13	-51.02	5,411.38	0.00	0.00	0.00
15,200.00	92.08	359.46	9,707.89	5,511.06	-51.97	5,511.31	0.00	0.00	0.00
15,300.00	92.08	359.46	9,704.26	5,610.99	-52.91	5,611.24	0.00	0.00	0.00
15,400.00	92.08	359.46	9,700.64	5,710.92	-53.85	5,711.18	0.00	0.00	0.00
15,500.00	92.08	359.46	9,697.01	5,810.85	-54.79	5,811.11	0.00	0.00	0.00
15,600.00	92.08	359.46	9,693.38	5,910.78	-55.73	5,911.05	0.00	0.00	0.00
15,700.00	92.08	359.46	9,689.75	6,010.71	-56.68	6,010.98	0.00	0.00	0.00
15,800.00	92.08	359.46	9,686.13	6,110.64	-57.62	6,110.91	0.00	0.00	0.00
15,900.00	92.08	359.46	9,682.50	6,210.57	-58.56	6,210.85	0.00	0.00	0.00
16,000.00	92.08	359.46	9,678.87	6,310.50	-59.50	6,310.78	0.00	0.00	0.00
16,100.00	92.08	359.46	9,675.24	6,410.43	-60.45	6,410.72	0.00	0.00	0.00
16,200.00	92.08	359.46	9,671.61	6,510.36	-61.39	6,510.65	0.00	0.00	0.00
16,300.00	92.08	359.46	9,667.99	6,610.29	-62.33	6,610.59	0.00	0.00	0.00
16,400.00	92.08	359.46	9,664.36	6,710.22	-63.27	6,710.52	0.00	0.00	0.00
16,500.00	92.08	359.46	9,660.73	6,810.15	-64.22	6,810.45	0.00	0.00	0.00
16,600.00	92.08	359.46	9,657.10	6,910.08	-65.16	6,910.39	0.00	0.00	0.00
16,700.00	92.08	359.46	9,653.48	7,010.01	-66.10	7,010.32	0.00	0.00	0.00
16,800.00	92.08	359.46	9,649.85	7,109.94	-67.04	7,110.26	0.00	0.00	0.00
16,900.00	92.08	359.46	9,646.22	7,209.87	-67.98	7,210.19	0.00	0.00	0.00
17,000.00	92.08	359.46	9,642.59	7,309.80	-68.93	7,310.12	0.00	0.00	0.00
17,071.47	92.08	359.46	9,640.00	7,381.21	-69.60	7,381.54	0.00	0.00	0.00
TD at 17071.47									



Integrity Directional Services, LLC
Survey Report



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Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=26' @ 4059.80ft (Scan Freedom)
Site:	Sec. 21, T 18 S. , R 34 E	MD Reference:	KB=26' @ 4059.80ft (Scan Freedom)
Well:	Iggles State Com #2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Multi User Db

Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
GulfState 1 (P&A'd 4E	0.00	0.00	0.00	1,771.95	-38.00	630,608.46	735,638.70	32° 43' 52.666 N	103° 34' 1.420 W
- plan misses target center by 1772.36ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 100.00)									
TP State#1 (Active 97	0.00	0.00	0.00	9,711.18	2,515.24	638,547.66	738,191.93	32° 45' 11.038 N	103° 33' 30.852 W
- plan misses target center by 10031.62ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 100.00)									
New Mexico Z ST #1	0.00	0.00	0.00	621.37	-1,167.61	629,457.88	734,509.09	32° 43' 41.362 N	103° 34' 14.740 W
- plan misses target center by 1322.65ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 100.00)									
Iggles State Com #2H-	0.00	0.00	9,640.00	7,381.21	-69.60	636,217.70	735,607.10	32° 44' 48.170 N	103° 34' 1.315 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
9413	9413	0	0	Start Build 12.00
10,180	9890	495	-5	Start 6891.29 hold at 10180.17 MD
17,071	9640	7381	-70	TD at 17071.47

Checked By: _____ Approved By: _____ Date: _____



COG Operating L.L.C
Project: Lea County, NM (NAD27 NME)
Site: Sec. 21, T 18 S., R 34 E
Well: Iggle State Com #2H
Wellbore: Wellbore #1
Plan: Plan #1 (Iggle State Com #2H / Wellbore #1)
Scan Freedom



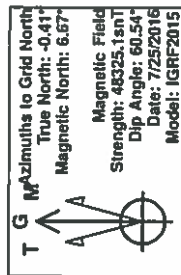
WELL DETAILS: Iggle State Com #2H

Ground Elevation: 4033.80
RKB Elevation: KB=26' @ 4059.80ft (Scan Freedom)
Rig Name: Scan Freedom

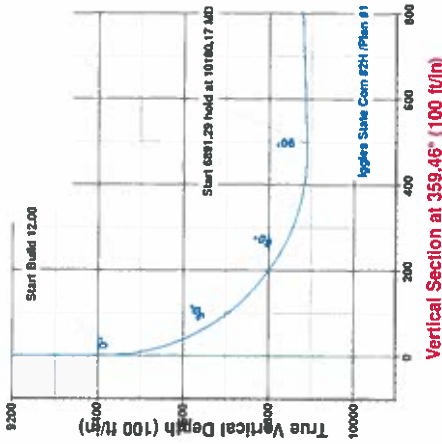
Northing 628836.50 Easting 735676.70 Latitude 32° 43' 35.130 N Longitude 103° 34' 1.125 W

Section Details

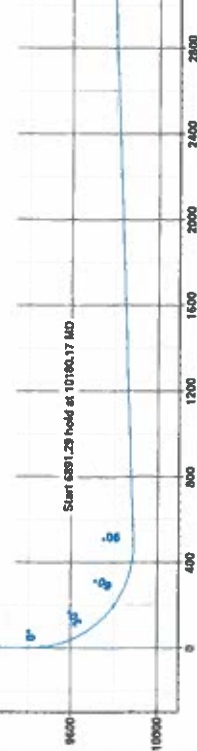
Sec	MD	Inc	Azi	TVD	+N/-S	ΔE/-W	Dleg	IFace	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	9412.85	0.00	0.00	9412.85	0.00	0.00	0.00	0.00	0.00
3	10180.17	92.08	359.46	9890.00	494.77	-4.67	12.00	359.46	494.79
4	17071.47	92.08	359.46	9640.00	7381.21	-59.60	0.00	0.00	7381.54



PROJECT DETAILS: Lea 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
Local North: Grid



Vertical Section at 359.46° (100 ft/in)



Vertical Section at 359.46° (200 ft/in)

