



CONCHO

COG OPERATING LLC

LEA COUNTY, NM

BULLDOG

BASEBALL CAP FED COM #26H

OWB

Plan: PWP0

Survey Report - Geographic

04 January, 2017

**HOBBS OCD
OCT 30 2017
RECEIVED**



COG Operating LLC

Survey Report - Geographic

Company: COG OPERATING LLC
Project: LEA COUNTY, NM
Site: BULLDOG
Well: BASEBALL CAP FED COM #26H
Wellbore: OWB
Design: PWP0

Local Co-ordinate Reference: Well BASEBALL CAP FED COM #26H
TVD Reference: RKB=3406+26 @ 3432.0usft (MCVAY 8)
MD Reference: RKB=3406+26 @ 3432.0usft (MCVAY 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Project	LEA COUNTY, NM		
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	BULLDOG				
Site Position:		Northing:	398,637.10 usft	Latitude:	32° 5' 36.820 N
From:	Map	Easting:	741,887.40 usft	Longitude:	103° 33' 8.116 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.42 °

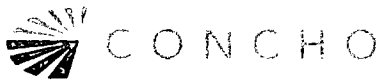
Well	BASEBALL CAP FED COM #26H					
Well Position	+N/-S	0.0 usft	Northing:	431,084.20 usf	Latitude:	32° 10' 54.870 N
	+E/-W	0.0 usft	Easting:	780,910.50 usf	Longitude:	103° 25' 31.348 W
Position Uncertainty	3.0 usft		Wellhead Elevation:	usf	Ground Level:	3,406.0 usf

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	1/4/2017	6.95	60.04	47,964.92660757

Design	PWP0				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	12,560.0	0.0	0.0	357.71	

Survey Tool Program	Date	1/4/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	22,769.4	PWP0 (OWB)	MWD	OWSG MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
100.0	0.00	0.00	100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
200.0	0.00	0.00	200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
300.0	0.00	0.00	300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
400.0	0.00	0.00	400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
500.0	0.00	0.00	500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
600.0	0.00	0.00	600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
700.0	0.00	0.00	700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
800.0	0.00	0.00	800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
900.0	0.00	0.00	900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W



COG Operating LLC

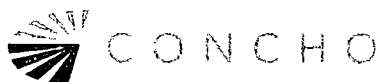
Survey Report - Geographic

Company: COG OPERATING LLC
Project: LEA COUNTY, NM
Site: BULLDOG
Well: BASEBALL CAP FED COM #26H
Wellbore: OWB
Design: PWP0

Local Co-ordinate Reference: Well BASEBALL CAP FED COM #26H
TVD Reference: RKB=3406+26 @ 3432.0usft (MCVAY 8)
MD Reference: RKB=3406+26 @ 3432.0usft (MCVAY 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,200.0	0.00	0.00	1,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
2,100.0	0.00	0.00	2,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
2,200.0	0.00	0.00	2,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
2,300.0	0.00	0.00	2,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
2,400.0	0.00	0.00	2,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
2,500.0	0.00	0.00	2,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
2,600.0	0.00	0.00	2,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
2,700.0	0.00	0.00	2,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
2,800.0	0.00	0.00	2,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
2,900.0	0.00	0.00	2,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
3,000.0	0.00	0.00	3,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
3,100.0	0.00	0.00	3,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
3,200.0	0.00	0.00	3,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
3,300.0	0.00	0.00	3,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
3,400.0	0.00	0.00	3,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
3,500.0	0.00	0.00	3,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
3,600.0	0.00	0.00	3,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
3,700.0	0.00	0.00	3,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
3,800.0	0.00	0.00	3,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
3,900.0	0.00	0.00	3,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
4,000.0	0.00	0.00	4,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
4,100.0	0.00	0.00	4,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
4,200.0	0.00	0.00	4,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
4,300.0	0.00	0.00	4,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
4,400.0	0.00	0.00	4,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
4,500.0	0.00	0.00	4,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
4,600.0	0.00	0.00	4,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
4,700.0	0.00	0.00	4,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
4,800.0	0.00	0.00	4,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
4,900.0	0.00	0.00	4,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
5,000.0	0.00	0.00	5,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
5,100.0	0.00	0.00	5,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
5,200.0	0.00	0.00	5,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
5,300.0	0.00	0.00	5,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
5,400.0	0.00	0.00	5,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
5,500.0	0.00	0.00	5,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
5,600.0	0.00	0.00	5,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
5,700.0	0.00	0.00	5,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
5,800.0	0.00	0.00	5,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
5,900.0	0.00	0.00	5,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
6,000.0	0.00	0.00	6,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
6,100.0	0.00	0.00	6,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
6,200.0	0.00	0.00	6,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
6,300.0	0.00	0.00	6,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
6,400.0	0.00	0.00	6,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
6,500.0	0.00	0.00	6,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
6,600.0	0.00	0.00	6,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W



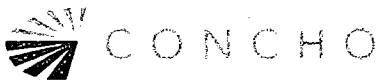
COG Operating LLC
Survey Report - Geographic

Company: COG OPERATING LLC
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: BASEBALL CAP FED COM #26H
 Wellbore: OWB
 Design: PWP0

Local Co-ordinate Reference: Well BASEBALL CAP FED COM #26H
 TVD Reference: RKB=3406+26 @ 3432.0usft (MCVAY 8)
 MD Reference: RKB=3406+26 @ 3432.0usft (MCVAY 8)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM_Users

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,700.0	0.00	0.00	6,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
6,800.0	0.00	0.00	6,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
6,900.0	0.00	0.00	6,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
7,000.0	0.00	0.00	7,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
7,100.0	0.00	0.00	7,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
7,200.0	0.00	0.00	7,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
7,300.0	0.00	0.00	7,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
7,400.0	0.00	0.00	7,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
7,500.0	0.00	0.00	7,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
7,600.0	0.00	0.00	7,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
7,700.0	0.00	0.00	7,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
7,800.0	0.00	0.00	7,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
7,900.0	0.00	0.00	7,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
8,000.0	0.00	0.00	8,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
8,100.0	0.00	0.00	8,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
8,200.0	0.00	0.00	8,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
8,300.0	0.00	0.00	8,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
8,400.0	0.00	0.00	8,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
8,500.0	0.00	0.00	8,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
8,600.0	0.00	0.00	8,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
8,700.0	0.00	0.00	8,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
8,800.0	0.00	0.00	8,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
8,900.0	0.00	0.00	8,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
9,000.0	0.00	0.00	9,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
9,100.0	0.00	0.00	9,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
9,200.0	0.00	0.00	9,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
9,300.0	0.00	0.00	9,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
9,400.0	0.00	0.00	9,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
9,500.0	0.00	0.00	9,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
9,600.0	0.00	0.00	9,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
9,700.0	0.00	0.00	9,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
9,800.0	0.00	0.00	9,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
9,900.0	0.00	0.00	9,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
10,000.0	0.00	0.00	10,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
10,100.0	0.00	0.00	10,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
10,200.0	0.00	0.00	10,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
10,300.0	0.00	0.00	10,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
10,400.0	0.00	0.00	10,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
10,500.0	0.00	0.00	10,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
10,600.0	0.00	0.00	10,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
10,700.0	0.00	0.00	10,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
10,800.0	0.00	0.00	10,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
10,900.0	0.00	0.00	10,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
11,000.0	0.00	0.00	11,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
11,100.0	0.00	0.00	11,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
11,200.0	0.00	0.00	11,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
11,300.0	0.00	0.00	11,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
11,400.0	0.00	0.00	11,400.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
11,500.0	0.00	0.00	11,500.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
11,600.0	0.00	0.00	11,600.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
11,700.0	0.00	0.00	11,700.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
11,800.0	0.00	0.00	11,800.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
11,900.0	0.00	0.00	11,900.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
12,000.0	0.00	0.00	12,000.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
12,100.0	0.00	0.00	12,100.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W



COG Operating LLC

Survey Report - Geographic

Company: COG OPERATING LLC
Project: LEA COUNTY, NM
Site: BULLDOG
Well: BASEBALL CAP FED COM #26H
Wellbore: OWB
Design: PWP0

Local Co-ordinate Reference: Well BASEBALL CAP FED COM #26H
TVD Reference: RKB=3406+26 @ 3432.0usft (MCVAY 8)
MD Reference: RKB=3406+26 @ 3432.0usft (MCVAY 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
12,200.0	0.00	0.00	12,200.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
12,300.0	0.00	0.00	12,300.0	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
12,362.5	0.00	0.00	12,362.5	0.0	0.0	431,084.20	780,910.50	32° 10' 54.870 N	103° 25' 31.348 W
12,400.0	4.50	335.60	12,400.0	1.3	-0.6	431,085.54	780,909.89	32° 10' 54.884 N	103° 25' 31.355 W
12,500.0	16.50	335.60	12,498.1	17.9	-8.1	431,102.10	780,902.38	32° 10' 55.048 N	103° 25' 31.440 W
12,600.0	28.50	335.60	12,590.3	52.7	-23.9	431,136.89	780,886.60	32° 10' 55.394 N	103° 25' 31.620 W
12,700.0	40.50	335.60	12,672.6	104.2	-47.3	431,188.37	780,863.24	32° 10' 55.905 N	103° 25' 31.887 W
12,800.0	52.50	335.60	12,741.3	170.1	-77.2	431,254.31	780,833.33	32° 10' 56.560 N	103° 25' 32.229 W
12,900.0	64.50	335.60	12,793.5	247.6	-112.3	431,331.81	780,798.18	32° 10' 57.330 N	103° 25' 32.630 W
13,000.0	76.49	335.60	12,826.8	333.3	-151.2	431,417.50	780,759.31	32° 10' 58.181 N	103° 25' 33.074 W
13,100.0	88.49	335.60	12,839.8	423.4	-192.1	431,507.62	780,718.43	32° 10' 59.076 N	103° 25' 33.541 W
13,112.6	90.00	335.60	12,840.0	434.9	-197.3	431,519.05	780,713.24	32° 10' 59.190 N	103° 25' 33.600 W
13,200.0	90.26	339.09	12,839.8	515.5	-230.9	431,599.74	780,679.56	32° 10' 59.991 N	103° 25' 33.984 W
13,300.0	90.55	343.08	12,839.1	610.1	-263.3	431,694.31	780,647.15	32° 11' 0.930 N	103° 25' 34.352 W
13,400.0	90.84	347.07	12,837.9	706.7	-289.1	431,790.91	780,621.40	32° 11' 1.888 N	103° 25' 34.642 W
13,500.0	91.13	351.06	12,836.2	804.9	-308.1	431,889.06	780,602.43	32° 11' 2.860 N	103° 25' 34.853 W
13,600.0	91.41	355.05	12,834.0	904.1	-320.2	431,988.28	780,590.34	32° 11' 3.843 N	103° 25' 34.984 W
13,700.0	91.68	359.04	12,831.3	1,003.9	-325.3	432,088.09	780,585.19	32° 11' 4.831 N	103° 25' 35.034 W
13,711.9	91.71	359.52	12,830.9	1,015.8	-325.5	432,099.99	780,585.04	32° 11' 4.949 N	103° 25' 35.035 W
13,800.0	91.71	359.52	12,828.3	1,103.8	-326.2	432,188.04	780,584.29	32° 11' 5.820 N	103° 25' 35.035 W
13,900.0	91.71	359.52	12,825.3	1,203.8	-327.0	432,288.00	780,583.45	32° 11' 6.810 N	103° 25' 35.035 W
14,000.0	91.71	359.52	12,822.3	1,303.7	-327.9	432,387.95	780,582.61	32° 11' 7.799 N	103° 25' 35.035 W
14,100.0	91.71	359.52	12,819.3	1,403.7	-328.7	432,487.90	780,581.76	32° 11' 8.788 N	103° 25' 35.035 W
14,200.0	91.71	359.52	12,816.3	1,503.7	-329.6	432,587.85	780,580.92	32° 11' 9.777 N	103° 25' 35.035 W
14,300.0	91.71	359.52	12,813.3	1,603.6	-330.4	432,687.80	780,580.08	32° 11' 10.766 N	103° 25' 35.035 W
14,400.0	91.71	359.52	12,810.3	1,703.6	-331.3	432,787.75	780,579.23	32° 11' 11.755 N	103° 25' 35.035 W
14,500.0	91.71	359.52	12,807.3	1,803.5	-332.1	432,887.71	780,578.39	32° 11' 12.744 N	103° 25' 35.035 W
14,600.0	91.71	359.52	12,804.3	1,903.5	-333.0	432,987.66	780,577.54	32° 11' 13.733 N	103° 25' 35.035 W
14,700.0	91.71	359.52	12,801.4	2,003.4	-333.8	433,087.61	780,576.70	32° 11' 14.722 N	103° 25' 35.035 W
14,800.0	91.71	359.52	12,798.4	2,103.4	-334.6	433,187.56	780,575.86	32° 11' 15.712 N	103° 25' 35.035 W
14,900.0	91.71	359.52	12,795.4	2,203.3	-335.5	433,287.51	780,575.01	32° 11' 16.701 N	103° 25' 35.035 W
15,000.0	91.71	359.52	12,792.4	2,303.3	-336.3	433,387.46	780,574.17	32° 11' 17.690 N	103° 25' 35.035 W
15,100.0	91.71	359.52	12,789.4	2,403.2	-337.2	433,487.42	780,573.32	32° 11' 18.679 N	103° 25' 35.035 W
15,200.0	91.71	359.52	12,786.4	2,503.2	-338.0	433,587.37	780,572.48	32° 11' 19.668 N	103° 25' 35.035 W
15,300.0	91.71	359.52	12,783.4	2,603.1	-338.9	433,687.32	780,571.64	32° 11' 20.657 N	103° 25' 35.035 W
15,400.0	91.71	359.52	12,780.4	2,703.1	-339.7	433,787.27	780,570.79	32° 11' 21.646 N	103° 25' 35.035 W
15,500.0	91.71	359.52	12,777.4	2,803.0	-340.5	433,887.22	780,569.95	32° 11' 22.635 N	103° 25' 35.035 W
15,600.0	91.71	359.52	12,774.4	2,903.0	-341.4	433,987.17	780,569.10	32° 11' 23.624 N	103° 25' 35.035 W
15,700.0	91.71	359.52	12,771.4	3,002.9	-342.2	434,087.13	780,568.26	32° 11' 24.614 N	103° 25' 35.035 W
15,800.0	91.71	359.52	12,768.5	3,102.9	-343.1	434,187.08	780,567.42	32° 11' 25.603 N	103° 25' 35.035 W
15,900.0	91.71	359.52	12,765.5	3,202.8	-343.9	434,287.03	780,566.57	32° 11' 26.592 N	103° 25' 35.035 W
16,000.0	91.71	359.52	12,762.5	3,302.8	-344.8	434,386.98	780,565.73	32° 11' 27.581 N	103° 25' 35.035 W
16,100.0	91.71	359.52	12,759.5	3,402.7	-345.6	434,486.93	780,564.89	32° 11' 28.570 N	103° 25' 35.035 W
16,200.0	91.71	359.52	12,756.5	3,502.7	-346.5	434,586.88	780,564.04	32° 11' 29.559 N	103° 25' 35.035 W
16,300.0	91.71	359.52	12,753.5	3,602.6	-347.3	434,686.84	780,563.20	32° 11' 30.548 N	103° 25' 35.035 W
16,400.0	91.71	359.52	12,750.5	3,702.6	-348.1	434,786.79	780,562.35	32° 11' 31.537 N	103° 25' 35.035 W
16,500.0	91.71	359.52	12,747.5	3,802.5	-349.0	434,886.74	780,561.51	32° 11' 32.526 N	103° 25' 35.035 W
16,600.0	91.71	359.52	12,744.5	3,902.5	-349.8	434,986.69	780,560.67	32° 11' 33.516 N	103° 25' 35.035 W
16,700.0	91.71	359.52	12,741.5	4,002.4	-350.7	435,086.64	780,559.82	32° 11' 34.505 N	103° 25' 35.035 W
16,800.0	91.71	359.52	12,738.5	4,102.4	-351.5	435,186.59	780,558.98	32° 11' 35.494 N	103° 25' 35.035 W
16,900.0	91.71	359.52	12,735.6	4,202.3	-352.4	435,286.55	780,558.13	32° 11' 36.483 N	103° 25' 35.035 W
17,000.0	91.71	359.52	12,732.6	4,302.3	-353.2	435,386.50	780,557.29	32° 11' 37.472 N	103° 25' 35.035 W
17,100.0	91.71	359.52	12,729.6	4,402.2	-354.1	435,486.45	780,556.45	32° 11' 38.461 N	103° 25' 35.035 W
17,200.0	91.71	359.52	12,726.6	4,502.2	-354.9	435,586.40	780,555.60	32° 11' 39.450 N	103° 25' 35.035 W
17,300.0	91.71	359.52	12,723.6	4,602.2	-355.7	435,686.35	780,554.76	32° 11' 40.439 N	103° 25' 35.035 W



COG Operating LLC

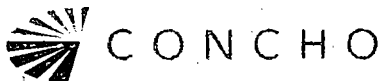
Survey Report - Geographic

Company: COG OPERATING LLC
Project: LEA COUNTY, NM
Site: BULLDOG
Well: BASEBALL CAP FED COM #26H
Wellbore: OWB
Design: PWP0

Local Co-ordinate Reference: Well BASEBALL CAP FED COM #26H
TVD Reference: RKB=3406+26 @ 3432.0usft (MCVAY 8)
MD Reference: RKB=3406+26 @ 3432.0usft (MCVAY 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
17,400.0	91.71	359.52	12,720.6	4,702.1	-356.6	435,786.30	780,553.91	32° 11' 41.428 N	103° 25' 35.035 W
17,500.0	91.71	359.52	12,717.6	4,802.1	-357.4	435,886.26	780,553.07	32° 11' 42.418 N	103° 25' 35.035 W
17,600.0	91.71	359.52	12,714.6	4,902.0	-358.3	435,986.21	780,552.23	32° 11' 43.407 N	103° 25' 35.035 W
17,700.0	91.71	359.52	12,711.6	5,002.0	-359.1	436,086.16	780,551.38	32° 11' 44.396 N	103° 25' 35.035 W
17,800.0	91.71	359.52	12,708.6	5,101.9	-360.0	436,186.11	780,550.54	32° 11' 45.385 N	103° 25' 35.035 W
17,900.0	91.71	359.52	12,705.6	5,201.9	-360.8	436,286.06	780,549.70	32° 11' 46.374 N	103° 25' 35.035 W
18,000.0	91.71	359.52	12,702.7	5,301.8	-361.6	436,386.02	780,548.85	32° 11' 47.363 N	103° 25' 35.035 W
18,100.0	91.71	359.52	12,699.7	5,401.8	-362.5	436,485.97	780,548.01	32° 11' 48.352 N	103° 25' 35.035 W
18,200.0	91.71	359.52	12,696.7	5,501.7	-363.3	436,585.92	780,547.16	32° 11' 49.341 N	103° 25' 35.035 W
18,300.0	91.71	359.52	12,693.7	5,601.7	-364.2	436,685.87	780,546.32	32° 11' 50.330 N	103° 25' 35.035 W
18,400.0	91.71	359.52	12,690.7	5,701.6	-365.0	436,785.82	780,545.48	32° 11' 51.320 N	103° 25' 35.035 W
18,500.0	91.71	359.52	12,687.7	5,801.6	-365.9	436,885.77	780,544.63	32° 11' 52.309 N	103° 25' 35.035 W
18,600.0	91.71	359.52	12,684.7	5,901.5	-366.7	436,985.73	780,543.79	32° 11' 53.298 N	103° 25' 35.035 W
18,700.0	91.71	359.52	12,681.7	6,001.5	-367.6	437,085.68	780,542.94	32° 11' 54.287 N	103° 25' 35.035 W
18,800.0	91.71	359.52	12,678.7	6,101.4	-368.4	437,185.63	780,542.10	32° 11' 55.276 N	103° 25' 35.035 W
18,900.0	91.71	359.52	12,675.7	6,201.4	-369.2	437,285.58	780,541.26	32° 11' 56.265 N	103° 25' 35.035 W
19,000.0	91.71	359.52	12,672.8	6,301.3	-370.1	437,385.53	780,540.41	32° 11' 57.254 N	103° 25' 35.035 W
19,100.0	91.71	359.52	12,669.8	6,401.3	-370.9	437,485.48	780,539.57	32° 11' 58.243 N	103° 25' 35.035 W
19,200.0	91.71	359.52	12,666.8	6,501.2	-371.8	437,585.44	780,538.72	32° 11' 59.232 N	103° 25' 35.035 W
19,300.0	91.71	359.52	12,663.8	6,601.2	-372.6	437,685.39	780,537.88	32° 12' 0.222 N	103° 25' 35.035 W
19,400.0	91.71	359.52	12,660.8	6,701.1	-373.5	437,785.34	780,537.04	32° 12' 1.211 N	103° 25' 35.035 W
19,500.0	91.71	359.52	12,657.8	6,801.1	-374.3	437,885.29	780,536.19	32° 12' 2.200 N	103° 25' 35.035 W
19,600.0	91.71	359.52	12,654.8	6,901.0	-375.1	437,985.24	780,535.35	32° 12' 3.189 N	103° 25' 35.035 W
19,700.0	91.71	359.52	12,651.8	7,001.0	-376.0	438,085.19	780,534.50	32° 12' 4.178 N	103° 25' 35.035 W
19,800.0	91.71	359.52	12,648.8	7,100.9	-376.8	438,185.15	780,533.66	32° 12' 5.167 N	103° 25' 35.035 W
19,900.0	91.71	359.52	12,645.8	7,200.9	-377.7	438,285.10	780,532.82	32° 12' 6.156 N	103° 25' 35.035 W
20,000.0	91.71	359.52	12,642.8	7,300.8	-378.5	438,385.05	780,531.97	32° 12' 7.145 N	103° 25' 35.035 W
20,100.0	91.71	359.52	12,639.9	7,400.8	-379.4	438,485.00	780,531.13	32° 12' 8.134 N	103° 25' 35.035 W
20,200.0	91.71	359.52	12,636.9	7,500.8	-380.2	438,584.95	780,530.29	32° 12' 9.124 N	103° 25' 35.035 W
20,300.0	91.71	359.52	12,633.9	7,600.7	-381.1	438,684.90	780,529.44	32° 12' 10.113 N	103° 25' 35.035 W
20,400.0	91.71	359.52	12,630.9	7,700.7	-381.9	438,784.86	780,528.60	32° 12' 11.102 N	103° 25' 35.035 W
20,500.0	91.71	359.52	12,627.9	7,800.6	-382.7	438,884.81	780,527.75	32° 12' 12.091 N	103° 25' 35.035 W
20,600.0	91.71	359.52	12,624.9	7,900.6	-383.6	438,984.76	780,526.91	32° 12' 13.080 N	103° 25' 35.035 W
20,700.0	91.71	359.52	12,621.9	8,000.5	-384.4	439,084.71	780,526.07	32° 12' 14.069 N	103° 25' 35.035 W
20,800.0	91.71	359.52	12,618.9	8,100.5	-385.3	439,184.66	780,525.22	32° 12' 15.058 N	103° 25' 35.035 W
20,900.0	91.71	359.52	12,615.9	8,200.4	-386.1	439,284.61	780,524.38	32° 12' 16.047 N	103° 25' 35.035 W
21,000.0	91.71	359.52	12,612.9	8,300.4	-387.0	439,384.57	780,523.53	32° 12' 17.036 N	103° 25' 35.035 W
21,100.0	91.71	359.52	12,609.9	8,400.3	-387.8	439,484.52	780,522.69	32° 12' 18.026 N	103° 25' 35.035 W
21,200.0	91.71	359.52	12,607.0	8,500.3	-388.7	439,584.47	780,521.85	32° 12' 19.015 N	103° 25' 35.035 W
21,300.0	91.71	359.52	12,604.0	8,600.2	-389.5	439,684.42	780,521.00	32° 12' 20.004 N	103° 25' 35.035 W
21,400.0	91.71	359.52	12,601.0	8,700.2	-390.3	439,784.37	780,520.16	32° 12' 20.993 N	103° 25' 35.035 W
21,500.0	91.71	359.52	12,598.0	8,800.1	-391.2	439,884.32	780,519.31	32° 12' 21.982 N	103° 25' 35.035 W
21,600.0	91.71	359.52	12,595.0	8,900.1	-392.0	439,984.28	780,518.47	32° 12' 22.971 N	103° 25' 35.035 W
21,700.0	91.71	359.52	12,592.0	9,000.0	-392.9	440,084.23	780,517.63	32° 12' 23.960 N	103° 25' 35.035 W
21,800.0	91.71	359.52	12,589.0	9,100.0	-393.7	440,184.18	780,516.78	32° 12' 24.949 N	103° 25' 35.035 W
21,900.0	91.71	359.52	12,586.0	9,199.9	-394.6	440,284.13	780,515.94	32° 12' 25.938 N	103° 25' 35.035 W
22,000.0	91.71	359.52	12,583.0	9,299.9	-395.4	440,384.08	780,515.10	32° 12' 26.928 N	103° 25' 35.035 W
22,100.0	91.71	359.52	12,580.0	9,399.8	-396.2	440,484.04	780,514.25	32° 12' 27.917 N	103° 25' 35.035 W
22,200.0	91.71	359.52	12,577.0	9,499.8	-397.1	440,583.99	780,513.41	32° 12' 28.906 N	103° 25' 35.035 W
22,300.0	91.71	359.52	12,574.1	9,599.7	-397.9	440,683.94	780,512.56	32° 12' 29.895 N	103° 25' 35.035 W
22,400.0	91.71	359.52	12,571.1	9,699.7	-398.8	440,783.89	780,511.72	32° 12' 30.884 N	103° 25' 35.035 W
22,500.0	91.71	359.52	12,568.1	9,799.6	-399.6	440,883.84	780,510.88	32° 12' 31.873 N	103° 25' 35.035 W
22,600.0	91.71	359.52	12,565.1	9,899.6	-400.5	440,983.79	780,510.03	32° 12' 32.862 N	103° 25' 35.035 W
22,700.0	91.71	359.52	12,562.1	9,999.5	-401.3	441,083.75	780,509.19	32° 12' 33.851 N	103° 25' 35.035 W
22,770.0	91.71	359.52	12,560.0	10,069.5	-401.9	441,153.70	780,508.60	32° 12' 34.544 N	103° 25' 35.035 W



COG Operating LLC
Survey Report - Geographic

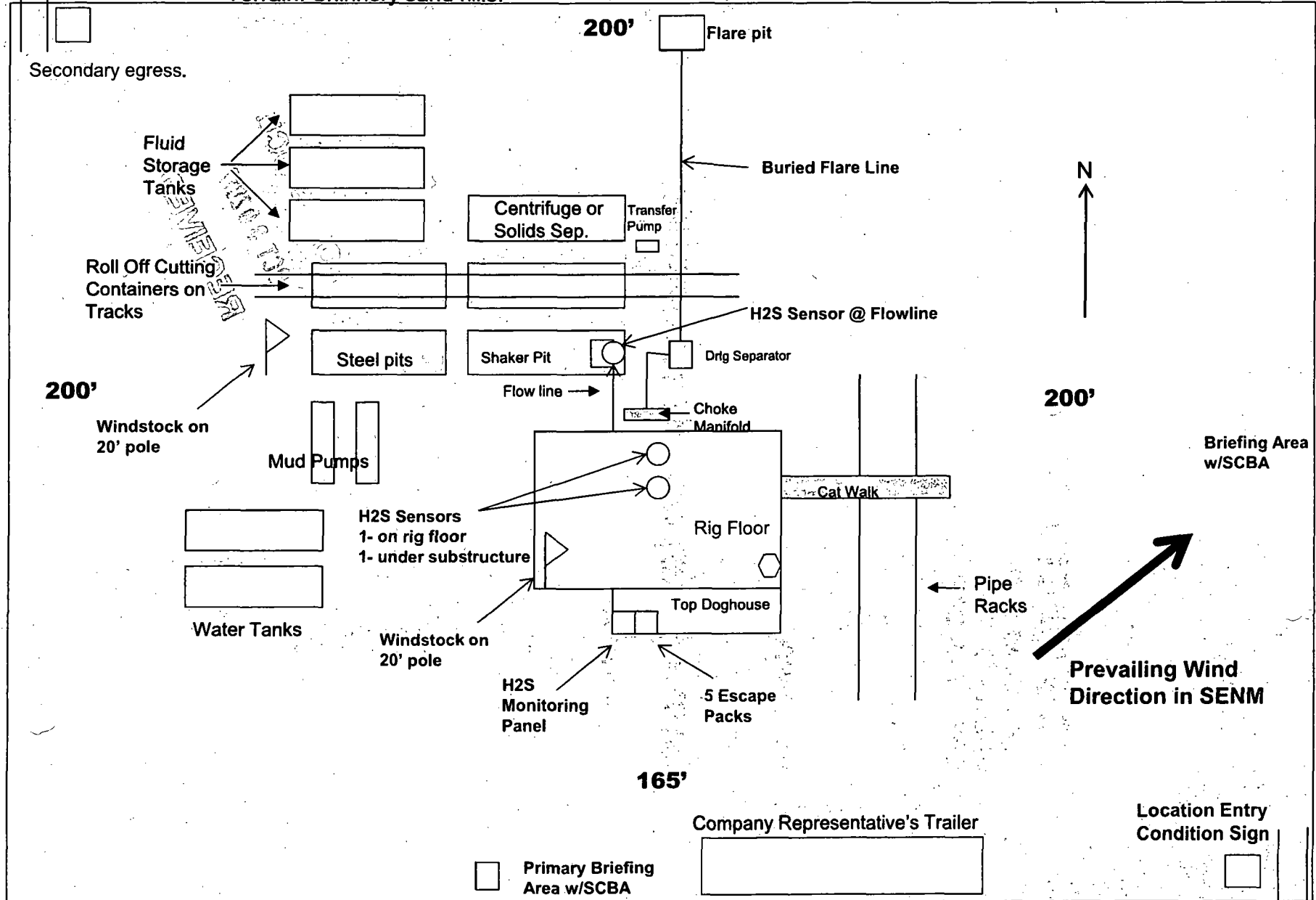
Company:	COG OPERATING LLC	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #26H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3406+26 @ 3432.0usft (MCVAY 8)
Site:	BULLDOG	MD Reference:	RKB=3406+26 @ 3432.0usft (MCVAY 8)
Well:	BASEBALL CAP FED COM #26H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP0	Database:	EDM_Users

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL-Baseball Cap - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	12,560.0	10,069.5	-401.9	441,153.70	780,508.60	32° 12' 34.544 N	103° 25' 35.035 W

Checked By: _____ Approved By: _____ Date: _____

COG Operating LLC
H₂S Equipment Schematic
Terrain: Shinnery sand hills.

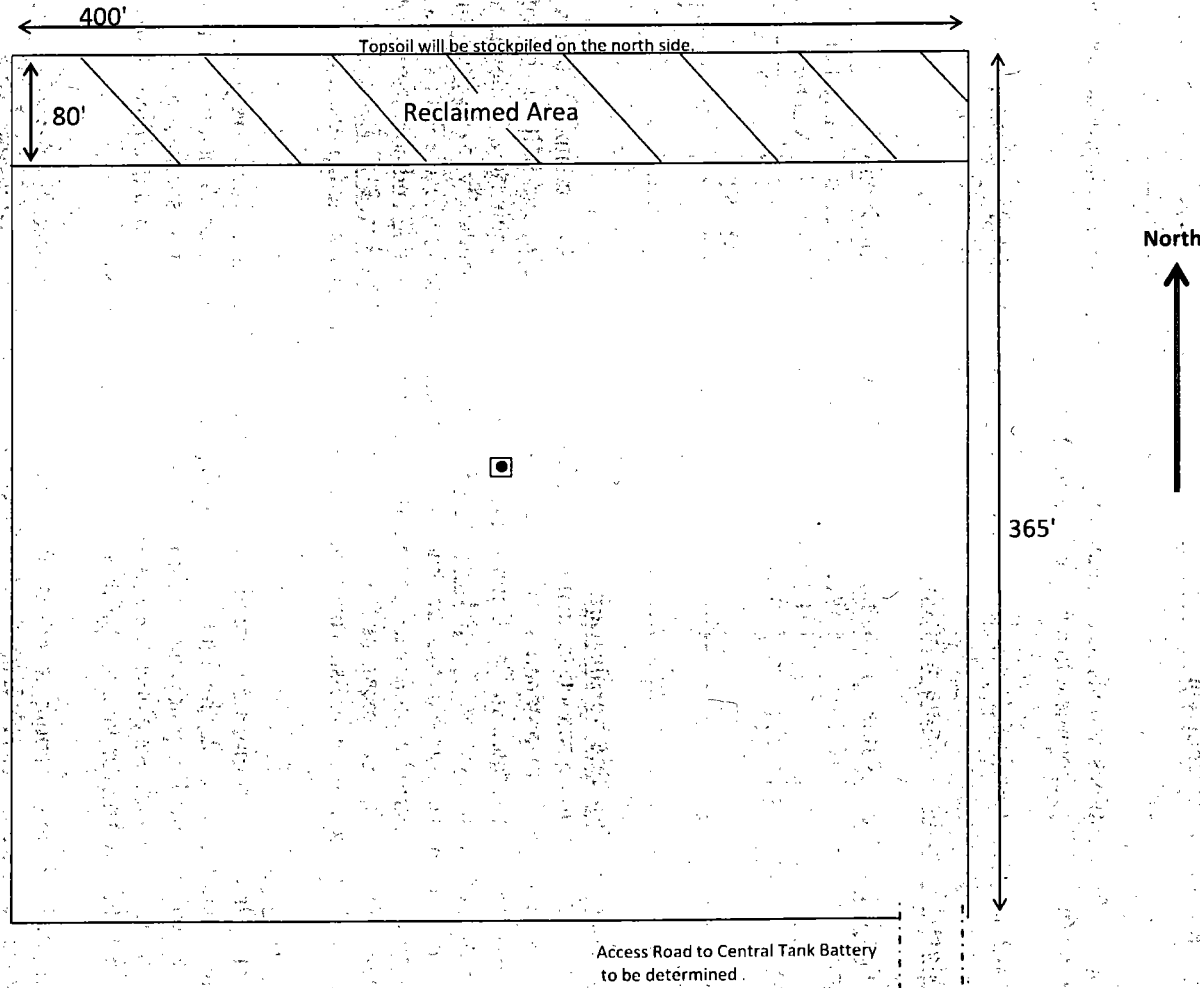
Well pad will be 400' x 365'
with cellar in center of pad



CONCHO
COG Operating LLC
2208 West Main Street
Artesia, NM 88210

Well Site Layout
Production Facility Layout
Baseball Cap Federal Com #26H
Section 25 - T24S - R34E

Exhibit 3



MECF
01.13.2011
HOE