



December 30, 2014

15-40602

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 06 2015

RECEIVED

Attn: Kanicia Castillo

RE: **Dodd Federal Unit 620**

Please find enclosed a copy of the survey from 0.00' to 860.00' ran on the above referenced well.

If I can be of any further service, please do not hesitate to call me at 800-606-4976.

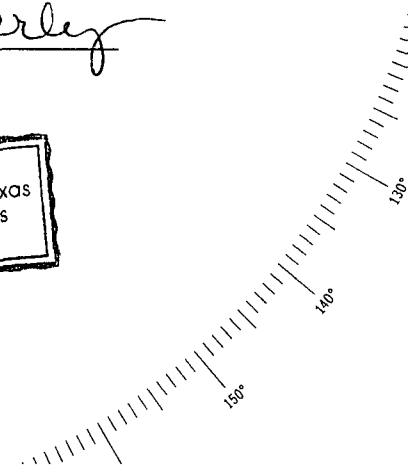
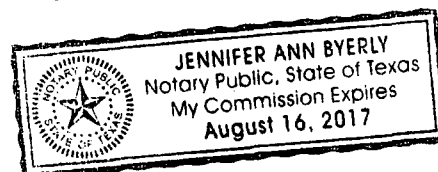
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 30 day of December A.D., 2014, by Keith Havelka.

Jennifer Ann Byerly
Notary Public, State of Texas





Company: COG Operating
Lease/Well: Dodd Federal Unit/620

Location: Sec 15 T17S R29E

Rig Name: Basic 38

State/County: New Mexico/Eddy

Latitude: 32.83, Longitude: -104.06

GRID North is 0.15 Degrees East of True North

VS-Azi: 0.00 Degrees



NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 06 2015
RECEIVED

Depth Reference : RKB = 13 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 12/30/2014 / 14:15

VES Survey International

West Texas

(432) 563-5444

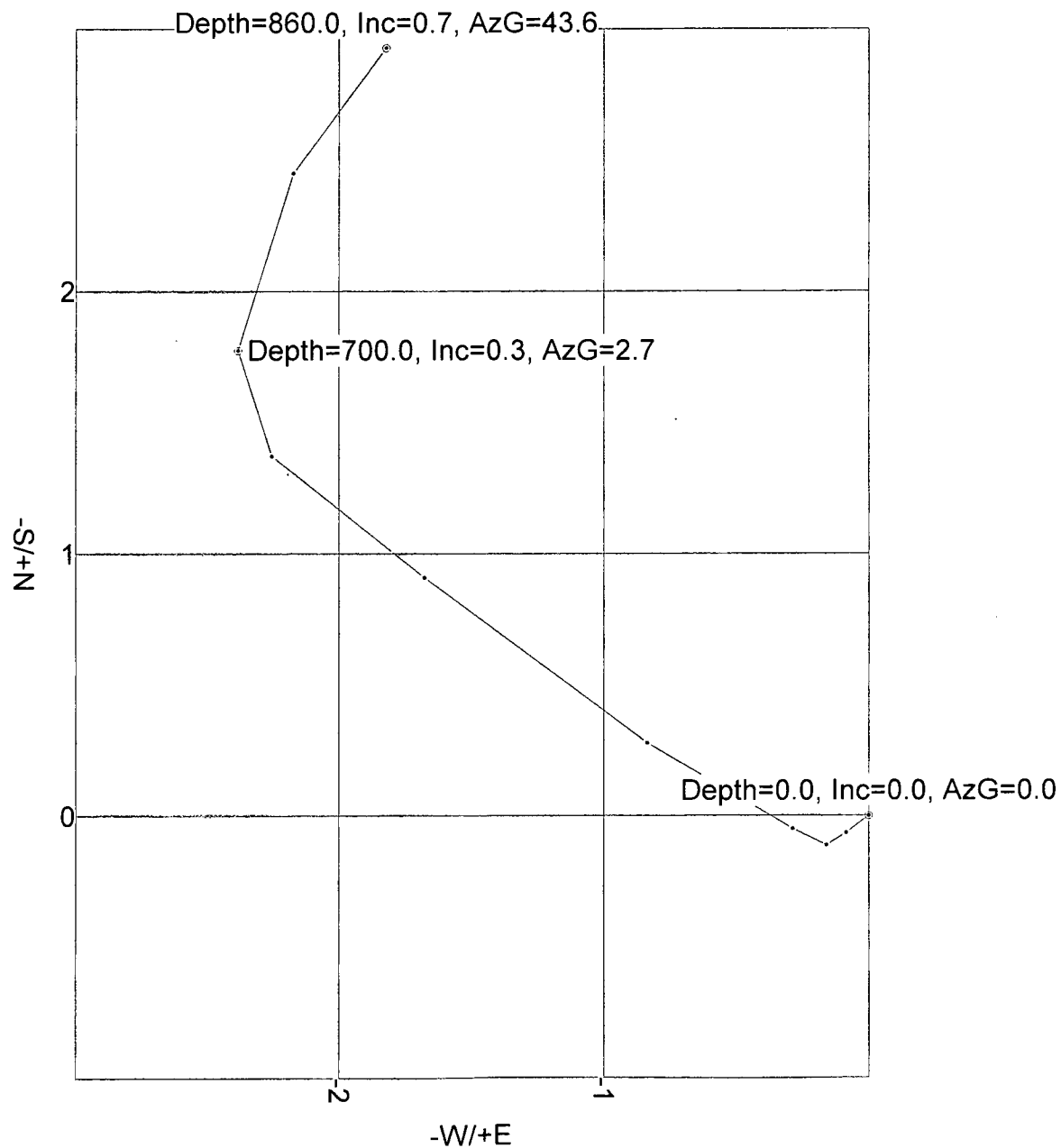
Surveyor: Noe Garza

Dodd Federal Unit 620 / API 30-015-40602

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.12	232.50	100.00	-0.07	-0.09	-0.07	0.11	232.50	0.12
200.00	0.02	30.34	200.00	-0.11	-0.16	-0.11	0.19	234.85	0.15
300.00	0.17	287.48	300.00	-0.05	-0.29	-0.05	0.29	260.04	0.17
400.00	0.57	304.83	400.00	0.28	-0.83	0.28	0.88	288.43	0.42
500.00	0.64	308.57	499.99	0.91	-1.68	0.91	1.91	298.44	0.07
600.00	0.21	309.71	599.99	1.37	-2.25	1.37	2.64	301.34	0.43
700.00	0.33	2.70	699.99	1.77	-2.38	1.77	2.97	306.71	0.26
800.00	0.50	26.50	799.99	2.45	-2.17	2.45	3.27	318.41	0.24
860.00	0.65	43.64	859.98	2.93	-1.82	2.93	3.45	328.12	0.38



VES Survey International
West Texas
(432) 563-5444
Surveyor: Noe Garza
Dodd Federal Unit 620 / API 30-015-40602



VES Survey Date: 12/10/2014

OPERATOR COG Operating
WELL/LEASE Dodd Federal Unit #620
COUNTY Eddy Co., NM.

STATE OF NEW MEXICO
DEVIATION REPORT

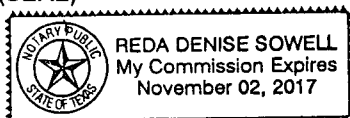
115	0.47
230	0.45
566	0.68
885	1.40
990	0.80
1053	1.50
1180	3.90
1307	5.90
1433	5.60
1623	5.60
1813	5.80
2003	6.20
2192	5.80
2382	6.80
2572	6.40
2762	7.00
2952	7.10
3142	5.70
3331	5.80
3521	5.80
3648	5.80
3901	6.60
4027	6.40
4154	6.50
4280	5.80
4507	5.60

SIGNED BY: *Ron Scandolari*
RON SCANDOLARI, VP-CONTRACT DRILLING

STATE OF TEXAS
COUNTY OF MIDLAND

ON THIS 19 DAY OF December, 2014, BEFORE ME, R SOWELL, A NOTARY PUBLIC, PERSONALLY APPEARED RON SCANDOLARI, WHO ACKNOWLEDGED AND EXECUTED THIS DOCUMENT. WITNESS MY HAND AND OFFICIAL SEAL.

(SEAL)



Reda Denise Sowell
NOTARY PUBLIC



COG Operating LLC

Eddy County, NM (NAD27 NME)

Dodd Federal Unit

#620

WB1 / Job #1412457

Design: Surveys (Basic 38)

Standard Survey Report

13 December, 2014

NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 06 2015

RECEIVED





Phoenix
Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #620
Project:	Eddy County, NM (NAD27/NME)	TVD Reference:	KB @ 3606.00usft (Basic 38)
Site:	Dodd Federal Unit	MD Reference:	KB @ 3606.00usft (Basic 38)
Well:	#620	North Reference:	Grid
Wellbore:	WB1 / Job #1412457	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Basic 38)	Database:	Compass 5000 GCR

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		Dodd Federal Unit			
Site Position:		Northing:	669,009.70 usft	Latitude:	32° 50' 19.97600 N
From:	Map	Easting:	585,704.90 usft	Longitude:	104° 3' 15.44871 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well:	#620					
Well Position	+N/-S	0.00 usft	Northing:	666,359.60 usft	Latitude:	32° 49' 53.76430 N
	+E/-W	0.00 usft	Easting:	585,251.50 usft	Longitude:	104° 3' 20.84456 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,594.00 usft

Wellbore						VB1 / Job #1412457									
Magnetics						Model Name		Sample Date		Declination (°)		Dip Angle (°)		Field Strength (nT)	
						IGRF2010_14		12/10/2014		7.43		60.58		48,578	

Design		Surveys (Basic 38)						
Audit Notes:								
Version:		1.0	Phase:		ACTUAL	Tie On Depth:		0.00
Vertical Section:		Depth From (TVD)		+N/-S		+E/-W		Direction
		(usft)		(usft)		(usft)		(°)
		0.00		0.00		0.00		97.87

Survey Program		Date	12/13/2014	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	860.00	VES Gyro Survey (WB1 / Job #1412457)	NS-GYRO-MS	North sensing gyrocompassing m/s
860.00	4,555.00	Phoenix MWD Survey (WB1 / Job #14124	PHX+MWD+IGRF	PHX+MWD+IGRF v3:standard declination

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	0.12	232.50	100.00	-0.06	-0.08	-0.07	0.12	0.12	0.00
200.00	0.02	30.34	200.00	-0.11	-0.16	-0.14	0.14	-0.10	157.84
300.00	0.17	287.48	300.00	-0.05	-0.29	-0.28	0.18	0.15	-102.86
400.00	0.57	304.83	400.00	0.28	-0.84	-0.87	0.41	0.40	17.35
500.00	0.64	308.57	499.99	0.91	-1.68	-1.79	0.08	0.07	3.74
600.00	0.21	309.71	599.99	1.37	-2.26	-2.43	0.43	-0.43	1.14
700.00	0.33	2.70	699.99	1.78	-2.39	-2.61	0.26	0.12	52.99
800.00	0.50	26.50	799.99	2.46	-2.18	-2.50	0.24	0.17	23.80
860.00	0.65	43.64	859.98	2.94	-1.83	-2.21	0.38	0.25	28.57



Phoenix
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well: #620
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3606.00usft (Basic 38)
Site:	Dodd Federal Unit	MD Reference:	KB @ 3606.00usft (Basic 38)
Well:	#620	North Reference:	Grid
Wellbore:	WB1 / Job #1412457	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Basic 38)	Database:	Compass 5000.GCR

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)
Tie-on to VES Gyro									
990.00	0.80	39.80	989.97	4.17	-0.74	-1.30	0.12	0.12	-2.95
First Phoenix MWD Survey									
1,053.00	1.50	120.60	1,052.96	4.09	0.25	-0.31	2.51	1.11	128.25
1,117.00	3.80	96.60	1,116.89	3.42	3.08	2.58	3.91	3.59	-37.50
1,180.00	3.90	96.10	1,179.75	2.95	7.28	6.81	0.17	0.16	-0.79
1,243.00	4.70	97.30	1,242.57	2.39	11.97	11.53	1.28	1.27	1.90
1,307.00	5.90	97.50	1,306.30	1.63	17.84	17.45	1.88	1.88	0.31
1,370.00	6.00	97.30	1,368.96	0.79	24.31	23.98	0.16	0.16	-0.32
1,433.00	5.60	97.70	1,431.63	-0.04	30.62	30.34	0.64	-0.63	0.63
1,496.00	5.20	99.20	1,494.35	-0.91	36.49	36.27	0.67	-0.63	2.38
1,560.00	5.60	98.30	1,558.07	-1.82	42.44	42.29	0.64	0.63	-1.41
1,623.00	5.60	98.30	1,620.77	-2.71	48.53	48.44	0.00	0.00	0.00
1,686.00	5.90	98.30	1,683.45	-3.62	54.77	54.75	0.48	0.48	0.00
1,749.00	5.40	96.80	1,746.15	-4.44	60.92	60.95	0.83	-0.79	-2.38
1,813.00	5.80	97.90	1,809.84	-5.24	67.11	67.20	0.65	0.63	1.72
1,876.00	5.60	98.40	1,872.53	-6.13	73.31	73.45	0.33	-0.32	0.79
1,939.00	5.80	99.00	1,935.22	-7.08	79.49	79.71	0.33	0.32	0.95
2,003.00	6.20	100.10	1,998.87	-8.19	86.09	86.40	0.65	0.63	1.72
2,066.00	6.00	99.60	2,061.51	-9.33	92.68	93.09	0.33	-0.32	-0.79
2,126.00	5.50	99.00	2,121.21	-10.31	98.62	99.10	0.84	-0.83	-1.00
2,189.00	5.80	96.50	2,183.90	-11.14	104.76	105.30	0.62	0.48	-3.97
2,252.00	6.80	96.20	2,246.52	-11.90	111.63	112.21	1.59	1.59	-0.48
2,317.00	6.90	96.50	2,311.06	-12.76	119.34	119.96	0.16	0.15	0.46
2,380.00	6.80	96.80	2,373.61	-13.63	126.80	127.47	0.17	-0.16	0.48
2,444.00	6.60	97.50	2,437.17	-14.56	134.21	134.94	0.34	-0.31	1.09
2,507.00	6.60	96.90	2,499.75	-15.47	141.39	142.18	0.11	0.00	-0.95
2,570.00	6.40	98.50	2,562.35	-16.42	148.46	149.31	0.43	-0.32	2.54
2,697.00	6.40	94.70	2,688.56	-18.05	162.51	163.45	0.33	0.00	-2.99
2,762.00	7.00	99.60	2,753.11	-19.00	170.03	171.03	1.27	0.92	7.54
2,825.00	7.10	99.80	2,815.64	-20.31	177.65	178.76	0.16	0.16	0.32
2,889.00	7.10	98.90	2,879.15	-21.59	185.46	186.67	0.17	0.00	-1.41
2,952.00	7.10	99.20	2,941.66	-22.82	193.15	194.45	0.06	0.00	0.48
3,015.00	6.50	100.40	3,004.22	-24.08	200.50	201.91	0.98	-0.95	1.90
3,078.00	5.80	101.80	3,066.86	-25.38	207.12	208.65	1.14	-1.11	2.22
3,142.00	5.70	103.40	3,130.53	-26.78	213.38	215.03	0.30	-0.16	2.50
3,205.00	5.70	103.70	3,193.22	-28.24	219.46	221.26	0.05	0.00	0.48
3,268.00	5.70	104.30	3,255.91	-29.75	225.53	227.48	0.09	0.00	0.95
3,331.00	5.80	99.60	3,318.59	-31.06	231.70	233.77	0.76	0.16	-7.46
3,395.00	5.90	97.60	3,382.26	-32.03	238.15	240.29	0.35	0.16	-3.13
3,521.00	5.80	97.50	3,507.61	-33.72	250.88	253.14	0.08	-0.08	-0.08
3,648.00	5.80	98.00	3,633.96	-35.45	263.60	265.97	0.04	0.00	0.39
3,775.00	5.80	99.10	3,760.31	-37.36	276.29	278.80	0.09	0.00	0.87



Phoenix
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #620
Project:	Eddy County, NM (NAD27/NME)	TVD Reference:	KB @ 3606.00usft (Basic 38)
Site:	Dodd Federal Unit	MD Reference:	KB @ 3606.00usft (Basic 38)
Well:	#620	North Reference:	Gnd
Wellbore:	WB1 / Job #1412457	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Basic 38)	Database:	Compass 5000 GCR

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)
3,901.00	6.60	100.00	3,885.57	-39.62	289.71	292.41	0.64	0.63	0.71
4,028.00	6.40	101.10	4,011.75	-42.25	303.84	306.77	0.19	-0.16	0.87
4,154.00	6.50	101.50	4,136.95	-45.03	317.72	320.89	0.09	0.08	0.32
4,281.00	5.80	96.30	4,263.22	-47.16	331.14	334.48	0.70	-0.55	-4.09
4,407.00	5.80	95.00	4,388.58	-48.42	343.81	347.21	0.10	0.00	-1.03
4,507.00	5.60	95.90	4,488.08	-49.36	353.70	357.13	0.22	-0.20	0.90
Last Phoenix MWD Survey									
4,555.00	5.60	95.90	4,535.85	-49.84	358.36	361.81	0.00	0.00	0.00
Projection to TD									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
860.00	859.98	2.94	-1.83	Tie-on to VES Gyro
990.00	989.97	4.17	-0.74	First Phoenix MWD Survey
4,507.00	4,488.08	-49.36	353.70	Last Phoenix MWD Survey
4,555.00	4,535.85	-49.84	358.36	Projection to TD

Checked By: _____ Approved By: _____ Date: _____