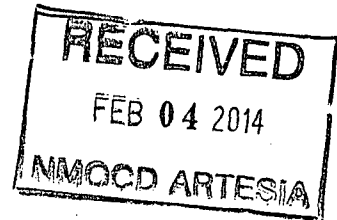




PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

COG OPER, LLC
RECEIVED
DEC 23 2013
ARTESIA WEST



December 9, 2013

COG, LLC
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

RE: SRO State 12H
190' FSL & 660' FEL
Sec. 32, T25S, R28E
Eddy County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

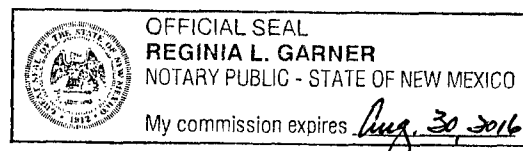
Very truly yours,

Eddie LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 9th day of December, 2013.

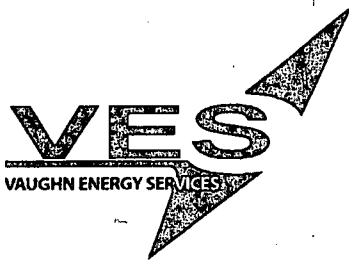
Notary Public



SRO State 12H

Date	Depth	Deviation	Direction	TVD	Horiz Disp
11/21/2013	82	0.00	0.00	0.00	0.00
11/22/2013	262	0.30	0.00	0.00	0.00
11/23/2013	414	0.80	0.00	0.00	0.00
11/23/2013	532	0.60	0.00	0.00	0.00
11/23/2013	624	0.50	0.00	0.00	0.00
11/24/2013	868	0.40	0.00	0.00	0.00
11/24/2013	1113	0.60	0.00	0.00	0.00
11/24/2013	1297	0.40	0.00	0.00	0.00
11/24/2013	1541	0.90	0.00	0.00	0.00
11/24/2013	1786	0.90	0.00	0.00	0.00
11/24/2013	2030	0.60	0.00	0.00	0.00
11/25/2013	2318	0.00	0.00	0.00	0.00
11/26/2013	2574	0.40	0.00	0.00	0.00
11/27/2013	3047	1.50	0.00	0.00	0.00
11/27/2013	3299	0.40	0.00	0.00	0.00
11/27/2013	3739	0.50	0.00	0.00	0.00
11/27/2013	4179	1.80	0.00	0.00	0.00
11/27/2013	4401	0.80	0.00	0.00	0.00
11/27/2013	4840	0.80	0.00	0.00	0.00
11/28/2013	5313	0.70	0.00	0.00	0.00
11/28/2013	5753	2.30	0.00	0.00	0.00
11/28/2013	5846	1.10	0.00	0.00	0.00
11/28/2013	5972	1.40	0.00	0.00	0.00
11/28/2013	6266	1.40	0.00	0.00	0.00
11/29/2013	6545	1.80	0.00	0.00	0.00
11/29/2013	6797	1.90	0.00	0.00	0.00
11/29/2013	6856	1.90	0.00	0.00	0.00
11/29/2013	6982	1.70	0.00	0.00	0.00
11/29/2013	7170	1.30	0.00	0.00	0.00
11/30/2013	7412	2.20	0.00	0.00	0.00
11/30/2013	7478	2.60	215.00	7476.00	58.71
11/30/2013	7509	0.50	356.10	7507.00	59.15
11/30/2013	7540	4.60	32.70	7538.00	57.97
12/1/2013	7572	9.10	26.40	7570.67	54.62
12/1/2013	7697	26.60	10.40	7689.06	17.47
12/1/2013	7792	36.10	0.00	7770.08	31.71
12/1/2013	7886	48.50	5.50	7839.00	94.65
12/1/2013	7949	55.30	5.50	7878.00	144.30
12/1/2013	8043	61.50	0.50	7927.00	223.94
12/2/2013	8074	64.50	0.90	7941.74	251.55
12/2/2013	8232	72.80	359.80	7998.66	398.81
12/2/2013	8326	76.60	0.70	8023.09	489.55
12/2/2013	8452	88.60	359.50	8040.00	614.00

Date	Depth	Deviation	Direction	TVD	Horiz Disp
12/2/2013	8641	89.70	359.30	8042.00	803.00
12/2/2013	8827	89.40	359.00	8043.00	989.00
12/2/2013	9016	89.30	0.90	8046.00	1177.00
12/2/2013	9110	90.70	0.70	8046.00	1271.00
12/2/2013	9298	90.40	0.40	8043.00	1459.00
12/3/2013	9486	90.20	0.00	8043.00	1647.91
12/3/2013	9675	90.20	359.70	8042.01	1836.91
12/3/2013	9864	89.90	359.00	8041.93	2025.89
12/3/2013	9959	89.80	359.00	8042.00	2120.00
12/3/2013	10147	90.50	358.40	8041.00	2308.00
12/3/2013	10336	90.30	0.50	8041.00	2497.00
12/3/2013	10431	87.80	0.90	8042.85	2592.93
12/3/2013	10525	90.00	0.70	8044.66	2686.90
12/3/2013	10808	90.70	359.80	8043.59	2969.89
12/4/2013	10903	90.70	359.50	8042.43	3064.88
12/4/2013	10997	91.30	359.10	8040.78	3158.88
12/4/2013	11092	91.90	359.80	8038.13	3253.82
12/4/2013	11185	88.90	3.70	8037.48	3346.74
12/5/2013	11279	89.00	3.90	8039.21	3440.52
12/5/2013	11374	89.80	3.90	8640.20	3535.29
12/5/2013	11563	88.50	2.80	8045.24	3723.93
12/5/2013	11658	89.40	2.70	8047.00	3818.00
12/5/2013	11939	89.60	1.80	8048.00	4099.00
12/5/2013	12034	90.10	1.60	8048.00	4194.00
12/5/2013	12128	91.30	1.40	8047.70	4288.47
12/5/2013	12316	89.40	359.70	8045.98	4476.44
12/5/2013	12479	91.00	359.00	8045.60	4639.42

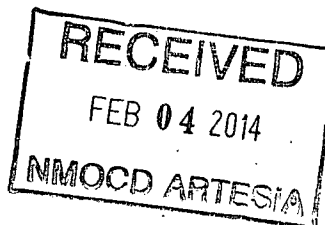


A GYRO TECHNOLOGIES INC. COMPANY

P.O. Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

December 19, 2013

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



Attn: Kanicia Castillo

RE: **SRO State Unit No. 012H**

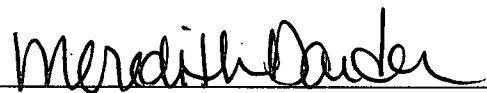
Please find enclosed a copy of the survey from 0.00' to 7413.00' ran on the above referenced well.

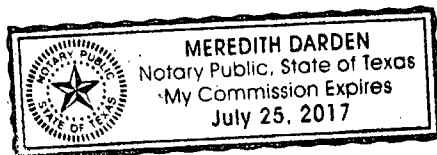
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 19th day of December
A.D., 2013, by Keith Havelka.


Meredith Darden
Notary Public, State of Texas



Company: COG Operating, LLC (Concho)

Lease/Well: SRO State Unit/No. 012H



Rig Name: Silveroak 7

State/County: New Mexico/Eddy

Latitude: 32.08, Longitude: -104.10

GRID North is 0.12 Degrees East of True North

VS-Azi: 0.00 Degrees



Depth Reference : RKB = 18

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...state unit 12h_gyro survey.ut

Minimum Curvature Method

Report Date/Time: 12/19/2013 / 15:07

Vaughn Energy Services

Midland, Texas

432-563-5444

Surveyor: Gene Heiss

SRO State Unit No. 012H / API 30-015-41660



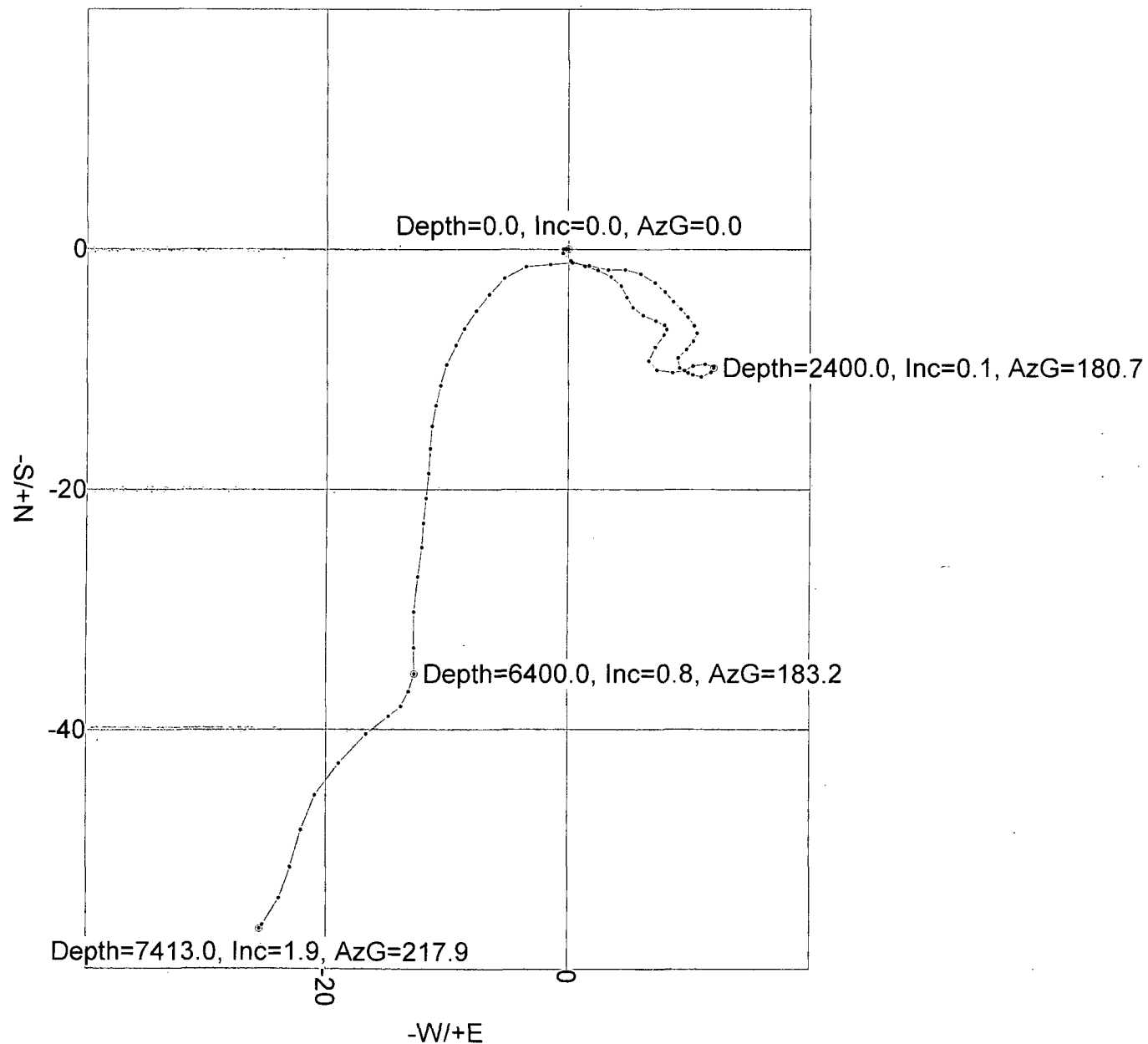
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.23	275.67	100.00	0.02	-0.20	0.02	0.20	275.67	0.23
200.00	0.03	229.73	200.00	0.02	-0.42	0.02	0.42	273.35	0.22
300.00	0.38	183.15	300.00	-0.32	-0.46	-0.32	0.56	235.26	0.36
400.00	0.84	115.08	399.99	-0.96	0.19	-0.96	0.98	169.07	0.78
500.00	0.59	105.34	499.99	-1.41	1.35	-1.41	1.95	136.24	0.28
600.00	0.71	109.65	599.98	-1.75	2.43	-1.75	2.99	125.81	0.13
700.00	0.72	121.91	699.97	-2.29	3.54	-2.29	4.22	122.89	0.15
800.00	0.60	143.52	799.97	-3.04	4.38	-3.04	5.33	124.74	0.27
900.00	0.63	162.98	899.96	-3.98	4.85	-3.98	6.28	129.38	0.21
1000.00	0.55	134.37	999.95	-4.85	5.36	-4.85	7.22	132.13	0.30
1100.00	0.69	119.11	1099.95	-5.48	6.23	-5.48	8.30	131.32	0.22
1200.00	0.62	106.73	1199.94	-5.93	7.28	-5.93	9.39	129.16	0.16
1300.00	0.35	138.26	1299.94	-6.31	8.00	-6.31	10.19	128.26	0.37
1400.00	0.15	182.77	1399.94	-6.67	8.20	-6.67	10.57	129.13	0.27
1500.00	0.46	217.09	1499.94	-7.12	7.95	-7.12	10.68	131.86	0.35
1600.00	0.93	213.51	1599.93	-8.13	7.26	-8.13	10.90	138.24	0.47
1700.00	0.54	190.09	1699.92	-9.27	6.72	-9.27	11.45	144.05	0.49
1800.00	0.93	110.94	1799.91	-10.02	7.40	-10.02	12.46	143.57	0.98

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
1900.00	0.62	84.24	1899.90	-10.26	8.69	-10.26	13.45	139.72	0.47
2000.00	0.50	72.59	1999.90	-10.07	9.65	-10.07	13.95	136.23	0.17
2100.00	0.43	49.67	2099.90	-9.70	10.35	-9.70	14.19	133.15	0.20
2200.00	0.80	98.06	2199.89	-9.56	11.33	-9.56	14.82	130.17	0.61
2300.00	0.09	168.72	2299.89	-9.73	12.03	-9.73	15.48	128.97	0.78
2400.00	0.06	180.74	2399.89	-9.86	12.05	-9.86	15.57	129.30	0.03
2500.00	0.47	217.94	2499.89	-10.24	11.80	-10.24	15.62	130.96	0.42
2600.00	0.60	265.62	2599.88	-10.60	11.02	-10.60	15.29	133.89	0.45
2700.00	0.31	320.73	2699.88	-10.43	10.32	-10.43	14.68	135.30	0.50
2800.00	0.25	255.69	2799.88	-10.28	9.94	-10.28	14.30	135.94	0.30
2900.00	0.76	313.00	2899.88	-9.87	9.25	-9.87	13.53	136.89	0.66
3000.00	0.61	43.88	2999.87	-9.04	9.13	-9.04	12.84	134.72	0.98
3100.00	0.51	44.07	3099.87	-8.34	9.80	-8.34	12.87	130.38	0.10
3200.00	0.54	32.93	3199.86	-7.62	10.37	-7.62	12.87	126.32	0.11
3300.00	0.31	7.39	3299.86	-6.96	10.66	-6.96	12.73	123.13	0.30
3400.00	0.48	322.83	3399.86	-6.36	10.44	-6.36	12.22	121.33	0.34
3500.00	0.54	325.09	3499.85	-5.64	9.92	-5.64	11.41	119.61	0.06
3600.00	0.48	311.93	3599.85	-4.97	9.34	-4.97	10.58	118.03	0.13
3700.00	0.52	319.19	3699.84	-4.34	8.73	-4.34	9.75	116.47	0.08
3800.00	0.68	320.12	3799.84	-3.54	8.05	-3.54	8.79	113.75	0.16
3900.00	0.64	306.09	3899.83	-2.75	7.21	-2.75	7.72	110.90	0.17
4000.00	0.96	297.04	3999.82	-2.04	6.02	-2.04	6.35	108.77	0.34
4100.00	0.65	266.90	4099.81	-1.70	4.71	-1.70	5.01	109.80	0.51
4200.00	0.98	271.49	4199.80	-1.70	3.29	-1.70	3.71	117.37	0.34
4300.00	0.90	294.46	4299.79	-1.36	1.72	-1.36	2.19	128.23	0.38
4400.00	0.81	261.50	4399.78	-1.14	0.31	-1.14	1.18	164.87	0.49
4500.00	1.25	268.74	4499.76	-1.27	-1.48	-1.27	1.95	229.53	0.45
4600.00	1.08	260.37	4599.74	-1.45	-3.51	-1.45	3.79	247.56	0.24
4700.00	1.36	226.93	4699.72	-2.41	-5.30	-2.41	5.83	245.52	0.75
4800.00	0.77	217.09	4799.70	-3.76	-6.57	-3.76	7.57	240.23	0.61
4900.00	1.22	219.46	4899.69	-5.12	-7.65	-5.12	9.21	236.24	0.45
5000.00	0.84	204.41	4999.67	-6.60	-8.63	-6.60	10.87	232.59	0.46
5100.00	0.93	209.46	5099.66	-7.98	-9.33	-7.98	12.28	229.49	0.12
5200.00	1.12	202.50	5199.64	-9.59	-10.11	-9.59	13.93	226.51	0.23
5300.00	0.98	190.62	5299.63	-11.33	-10.64	-11.33	15.54	223.20	0.26
5400.00	1.00	194.90	5399.61	-13.01	-11.02	-13.01	17.05	220.27	0.08
5500.00	0.99	185.72	5499.60	-14.70	-11.33	-14.70	18.56	217.61	0.16
5600.00	1.18	183.25	5599.58	-16.58	-11.47	-16.58	20.17	214.68	0.19
5700.00	1.17	183.43	5699.56	-18.63	-11.59	-18.63	21.94	211.89	0.00

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
5800.00	1.23	187.09	5799.54	-20.72	-11.79	-20.72	23.83	209.64	0.09
5900.00	1.16	184.62	5899.52	-22.79	-12.00	-22.79	25.75	207.77	0.08
6000.00	1.16	181.79	5999.49	-24.81	-12.11	-24.81	27.61	206.02	0.06
6100.00	1.68	191.09	6099.46	-27.27	-12.43	-27.27	29.97	204.50	0.57
6200.00	1.69	181.36	6199.42	-30.18	-12.75	-30.18	32.77	202.89	0.29
6300.00	1.73	177.92	6299.38	-33.17	-12.73	-33.17	35.53	200.99	0.11
6400.00	0.76	183.19	6399.35	-35.34	-12.71	-35.34	37.55	199.78	0.98
6500.00	1.03	206.67	6499.34	-36.80	-13.15	-36.80	39.08	199.66	0.46
6600.00	0.59	209.01	6599.33	-38.06	-13.80	-38.06	40.48	199.94	0.45
6700.00	1.00	245.16	6699.32	-38.87	-14.84	-38.87	41.60	200.90	0.63
6800.00	1.79	222.96	6799.29	-40.38	-16.69	-40.38	43.69	202.46	0.95
6900.00	2.02	222.62	6899.23	-42.82	-18.96	-42.82	46.83	203.88	0.23
7000.00	1.78	209.39	6999.18	-45.47	-20.91	-45.47	50.05	204.70	0.50
7100.00	1.85	193.69	7099.13	-48.39	-22.05	-48.39	53.18	204.50	0.50
7200.00	1.86	198.15	7199.08	-51.49	-22.94	-51.49	56.37	204.01	0.14
7300.00	1.29	201.80	7299.04	-54.09	-23.87	-54.09	59.12	203.81	0.58
7400.00	1.75	219.06	7399.00	-56.32	-25.25	-56.32	61.72	204.15	0.64
7413.00	1.90	217.87	7412.00	-56.65	-25.51	-56.65	62.12	204.24	1.16



Vaughn Energy Services
Midland, Texas
432-563-5444
Surveyor: Gene Heiss
SRO State Unit No. 012H / API 30-015-41660



VES Survey Date: 11/29/2013



Concho Oil and Gas

Eddy County, NM

Section 32-25S-28E SRO

SRO State #12H

Original Hole

Design: Original Hole

Standard Survey Report

06 December, 2013





Stryker Directional Survey Report



Company:	Concho Oil and Gas	Local Co-ordinate Reference:	Well SRO State #12H
Project:	Eddy County, NM	TVD Reference:	GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
Site:	Section 32-25S-28E SRO	MD Reference:	GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
Well:	SRO State #12H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

Project	Eddy 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	Section 32-25S-28E SRO		
-------------	------------------------	--	--

Site Position:		Northing:	392,660.60 usft	Latitude:	32° 4' 45.585 N
From:	Map	Easting:	571,508.50 usft	Longitude:	104° 6' 8.849 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.12 °

Well	SRO State #12H				
Well Position	+N/-S	0.0 usft	Northing:	392,660.60 usft	Latitude: 32° 4' 45.585 N
	+E/-W	0.0 usft	Easting:	571,508.50 usft	Longitude: 104° 6' 8.849 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level: 3,001.7 usft

Wellbore	Original Hole				
-----------------	---------------	--	--	--	--

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/8/2013	7.52	59.90	48,234

Survey Program		Date 12/6/2013			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	7,413.0	VES Gyro Survey #1 (Original Hole)	GyroFlex		
7,446.0	12,531.0	MWD Survey #2 (Original Hole)	MWD	MWD - Standard	

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.23	275.67	100.0	0.0	-0.2	0.0	0.23	0.23	0.00
200.0	0.03	229.73	200.0	0.0	-0.4	0.0	0.21	-0.20	-45.94
300.0	0.38	183.15	300.0	-0.3	-0.5	-0.3	0.36	0.35	-46.58
400.0	0.84	115.08	400.0	-1.0	0.2	-1.0	0.78	0.46	-68.07
500.0	0.59	105.34	500.0	-1.4	1.3	-1.4	0.28	-0.25	-9.74
600.0	0.71	109.65	600.0	-1.8	2.4	-1.7	0.13	0.12	4.31
700.0	0.72	121.91	700.0	-2.3	3.5	-2.3	0.15	0.01	12.26
800.0	0.60	143.52	800.0	-3.1	4.4	-3.0	0.27	-0.12	21.61
900.0	0.63	162.98	900.0	-4.0	4.9	-4.0	0.21	0.03	19.46
1,000.0	0.55	134.37	1,000.0	-4.9	5.4	-4.8	0.30	-0.08	-28.61
1,100.0	0.69	119.11	1,099.9	-5.5	6.2	-5.4	0.22	0.14	-15.26
1,200.0	0.62	106.73	1,199.9	-5.9	7.3	-5.9	0.16	-0.07	-12.38
1,300.0	0.35	138.26	1,299.9	-6.3	8.0	-6.3	0.37	-0.27	31.53
1,400.0	0.15	182.77	1,399.9	-6.7	8.2	-6.6	0.26	-0.20	44.51
1,500.0	0.46	217.09	1,499.9	-7.1	7.9	-7.1	0.35	0.31	34.32



Stryker Directional Survey Report



Company:	Concho Oil and Gas	Local Co-ordinate Reference:	Well SRO State #12H
Project:	Eddy County, NM	TVD Reference:	GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
Site:	Section 32-25S-28E SRO	MD Reference:	GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
Well:	SRO State #12H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

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)
1,600.0	0.93	213.51	1,599.9	-8.1	7.3	-8.1	0.47	0.47	-3.58
1,700.0	0.54	190.09	1,699.9	-9.3	6.7	-9.2	0.48	-0.39	-23.42
1,800.0	0.93	110.94	1,799.9	-10.0	7.4	-10.0	0.98	0.39	-79.15
1,900.0	0.62	84.24	1,899.9	-10.3	8.7	-10.2	0.47	-0.31	-26.70
2,000.0	0.50	72.59	1,999.9	-10.1	9.7	-10.0	0.16	-0.12	-11.65
2,100.0	0.43	49.67	2,099.9	-9.7	10.4	-9.6	0.20	-0.07	-22.92
2,200.0	0.80	98.06	2,199.9	-9.6	11.3	-9.5	0.61	0.37	48.39
2,300.0	0.09	168.72	2,299.9	-9.7	12.0	-9.6	0.77	-0.71	70.66
2,400.0	0.06	180.74	2,399.9	-9.9	12.1	-9.8	0.03	-0.03	12.02
2,500.0	0.47	217.94	2,499.9	-10.2	11.8	-10.1	0.42	0.41	37.20
2,600.0	0.60	265.62	2,599.9	-10.6	11.0	-10.5	0.45	0.13	47.68
2,700.0	0.31	320.73	2,699.9	-10.4	10.3	-10.3	0.49	-0.29	55.11
2,800.0	0.25	255.69	2,799.9	-10.3	10.0	-10.2	0.31	-0.06	-65.04
2,900.0	0.76	313.00	2,899.9	-9.9	9.3	-9.8	0.66	0.51	57.31
3,000.0	0.61	43.88	2,999.9	-9.0	9.1	-9.0	0.98	-0.15	90.88
3,100.0	0.51	44.07	3,099.9	-8.3	9.8	-8.3	0.10	-0.10	0.19
3,200.0	0.54	32.93	3,199.9	-7.6	10.4	-7.5	0.11	0.03	-11.14
3,300.0	0.31	7.39	3,299.9	-7.0	10.7	-6.9	0.29	-0.23	-25.54
3,400.0	0.48	322.83	3,399.9	-6.4	10.5	-6.3	0.34	0.17	-44.56
3,500.0	0.54	325.09	3,499.9	-5.6	9.9	-5.6	0.06	0.06	2.26
3,600.0	0.48	311.93	3,599.8	-5.0	9.4	-4.9	0.13	-0.06	-13.16
3,700.0	0.52	319.19	3,699.8	-4.3	8.7	-4.3	0.07	0.04	7.26
3,800.0	0.68	320.12	3,799.8	-3.5	8.1	-3.5	0.16	0.16	0.93
3,900.0	0.64	306.09	3,899.8	-2.8	7.2	-2.7	0.17	-0.04	-14.03
4,000.0	0.96	297.04	3,999.8	-2.1	6.0	-2.0	0.34	0.32	-9.05
4,100.0	0.65	266.90	4,099.8	-1.7	4.7	-1.7	0.51	-0.31	-30.14
4,200.0	0.98	271.49	4,199.8	-1.7	3.3	-1.7	0.34	0.33	4.59
4,300.0	0.90	294.46	4,299.8	-1.4	1.7	-1.3	0.38	-0.08	22.97
4,400.0	0.81	261.50	4,399.8	-1.1	0.3	-1.1	0.49	-0.09	-32.96
4,500.0	1.25	268.74	4,499.8	-1.3	-1.5	-1.3	0.46	0.44	7.24
4,600.0	1.08	260.37	4,599.7	-1.5	-3.5	-1.5	0.24	-0.17	-8.37
4,700.0	1.36	226.93	4,699.7	-2.4	-5.3	-2.5	0.75	0.28	-33.44
4,800.0	0.77	217.09	4,799.7	-3.8	-6.6	-3.8	0.62	-0.59	-9.84
4,900.0	1.22	219.46	4,899.7	-5.1	-7.6	-5.2	0.45	0.45	2.37
5,000.0	0.84	204.41	4,999.7	-6.6	-8.6	-6.7	0.46	-0.38	-15.05
5,100.0	0.93	209.46	5,099.7	-8.0	-9.3	-8.1	0.12	0.09	5.05
5,200.0	1.12	202.50	5,199.6	-9.6	-10.1	-9.7	0.23	0.19	-6.96
5,300.0	0.98	190.62	5,299.6	-11.3	-10.6	-11.4	0.26	-0.14	-11.88
5,400.0	1.00	194.90	5,399.6	-13.0	-11.0	-13.1	0.08	0.02	4.28
5,500.0	0.99	185.72	5,499.6	-14.7	-11.3	-14.8	0.16	-0.01	-9.18
5,600.0	1.18	183.25	5,599.6	-16.6	-11.5	-16.7	0.20	0.19	-2.47
5,700.0	1.17	183.43	5,699.6	-18.7	-11.6	-18.8	0.01	-0.01	0.18
5,800.0	1.23	187.09	5,799.5	-20.7	-11.8	-20.8	0.10	0.06	3.66
5,900.0	1.16	184.62	5,899.5	-22.8	-12.0	-22.9	0.09	-0.07	-2.47



Stryker Directional Survey Report



Company:	Concho Oil and Gas	Local Co-ordinate Reference:	Well SRO State #12H
Project:	Eddy County, NM	TVD Reference:	GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
Site:	Section 32-25S-28E SRO	MD Reference:	GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
Well:	SRO State #12H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

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)
6,000.0	1.16	181.79	5,999.5	-24.8	-12.1	-24.9	0.06	0.00	-2.83
6,100.0	1.68	191.09	6,099.5	-27.3	-12.4	-27.4	0.57	0.52	9.30
6,200.0	1.69	181.36	6,199.4	-30.2	-12.7	-30.3	0.29	0.01	-9.73
6,300.0	1.73	177.92	6,299.4	-33.2	-12.7	-33.3	0.11	0.04	-3.44
6,400.0	0.76	183.19	6,399.4	-35.4	-12.7	-35.5	0.98	-0.97	5.27
6,500.0	1.03	206.67	6,499.3	-36.8	-13.1	-36.9	0.45	0.27	23.48
6,600.0	0.59	209.01	6,599.3	-38.1	-13.8	-38.2	0.44	-0.44	2.34
6,700.0	1.00	245.16	6,699.3	-38.9	-14.8	-39.0	0.63	0.41	36.15
6,800.0	1.79	222.96	6,799.3	-40.4	-16.7	-40.5	0.94	0.79	-22.20
6,900.0	2.02	222.62	6,899.2	-42.8	-18.9	-43.0	0.23	0.23	-0.34
7,000.0	1.78	209.39	6,999.2	-45.5	-20.9	-45.7	0.50	-0.24	-13.23
7,100.0	1.85	193.69	7,099.1	-48.4	-22.0	-48.6	0.50	0.07	-15.70
7,200.0	1.86	198.15	7,199.1	-51.5	-22.9	-51.7	0.14	0.01	4.46
7,300.0	1.29	201.80	7,299.0	-54.1	-23.9	-54.3	0.58	-0.57	3.65
7,400.0	1.75	219.06	7,399.0	-56.3	-25.2	-56.5	0.64	0.46	17.26
7,413.0	1.90	217.87	7,412.0	-56.7	-25.5	-56.9	1.19	1.15	-9.15
7413' MD VES Gyro Survey									
7,446.0	2.00	218.00	7,445.0	-57.6	-26.2	-57.8	0.30	0.30	0.39
7,478.0	2.60	215.00	7,477.0	-58.6	-26.9	-58.8	1.91	1.88	-9.38
7,509.0	0.50	356.10	7,507.9	-59.0	-27.4	-59.2	9.70	-6.77	455.16
7,540.0	4.60	32.70	7,538.9	-57.8	-26.7	-58.1	13.58	13.23	118.06
7,572.0	9.10	26.40	7,570.7	-54.5	-24.9	-54.7	14.24	14.06	-19.69
7,603.0	13.50	20.20	7,601.1	-48.9	-22.5	-49.1	14.70	14.19	-20.00
7,634.0	18.10	13.60	7,630.9	-40.8	-20.1	-41.0	15.91	14.84	-21.29
7,666.0	22.60	12.70	7,660.9	-30.0	-17.6	-30.1	14.10	14.06	-2.81
7,697.0	26.60	10.40	7,689.1	-17.3	-15.1	-17.5	13.27	12.90	-7.42
7,729.0	29.80	6.90	7,717.3	-2.4	-12.8	-2.5	11.25	10.00	-10.94
7,760.0	33.00	1.80	7,743.7	13.7	-11.6	13.6	13.41	10.32	-16.45
7,792.0	36.10	0.00	7,770.1	31.8	-11.3	31.7	10.20	9.69	-5.63
7,823.0	40.00	1.20	7,794.5	50.9	-11.1	50.8	12.80	12.58	3.87
7,854.0	44.20	3.40	7,817.5	71.7	-10.3	71.6	14.36	13.55	7.10
7,886.0	48.50	5.50	7,839.6	94.8	-8.5	94.7	14.25	13.44	6.56
7,917.0	52.80	5.10	7,859.2	118.6	-6.3	118.6	13.91	13.87	-1.29
7,949.0	55.30	5.50	7,878.0	144.4	-3.9	144.4	7.88	7.81	1.25
7,980.0	56.90	3.90	7,895.3	170.1	-1.8	170.0	6.71	5.16	-5.16
8,011.0	58.90	1.40	7,911.8	196.3	-0.6	196.3	9.40	6.45	-8.06
8,043.0	61.50	0.50	7,927.7	224.1	-0.1	224.1	8.48	8.13	-2.81
8,074.0	64.50	0.90	7,941.7	251.7	0.2	251.7	9.75	9.68	1.29
8,106.0	67.10	0.20	7,954.9	280.9	0.5	280.9	8.37	8.13	-2.19
8,137.0	68.10	359.00	7,966.7	309.5	0.3	309.5	4.82	3.23	-3.87
8,169.0	69.40	359.10	7,978.3	339.3	-0.2	339.3	4.07	4.06	0.31
8,200.0	71.10	359.00	7,988.7	368.5	-0.7	368.5	5.49	5.48	-0.32
8,232.0	72.80	359.80	7,998.7	398.9	-1.0	398.9	5.82	5.31	2.50



Stryker Directional Survey Report



Company:	Concho Oil and Gas	Local Co-ordinate Reference:	Well SRO State #12H
Project:	Eddy County, NM	TVD Reference:	GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
Site:	Section 32-25S-28E SRO	MD Reference:	GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
Well:	SRO State #12H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

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)
8,263.0	74.60	0.70	8,007.4	428.7	-0.9	428.7	6.44	5.81	2.90
8,295.0	75.50	1.40	8,015.6	459.6	-0.3	459.6	3.52	2.81	2.19
8,326.0	76.60	0.70	8,023.1	489.7	0.3	489.7	4.17	3.55	-2.26
8,358.0	78.50	359.70	8,030.0	520.9	0.4	520.9	6.68	5.94	-3.13
8,389.0	81.60	358.80	8,035.3	551.4	0.0	551.4	10.40	10.00	-2.90
8,421.0	85.20	359.30	8,039.0	583.2	-0.6	583.2	11.36	11.25	1.56
8,452.0	88.60	359.50	8,040.7	614.2	-0.9	614.1	10.99	10.97	0.65
8,546.0	89.80	359.70	8,042.0	708.2	-1.5	708.1	1.29	1.28	0.21
8,641.0	89.70	359.30	8,042.4	803.2	-2.4	803.1	0.43	-0.11	-0.42
8,733.0	89.70	359.30	8,042.9	895.1	-3.5	895.1	0.00	0.00	0.00
8,827.0	89.40	359.00	8,043.6	989.1	-4.9	989.1	0.45	-0.32	-0.32
8,921.0	89.00	358.40	8,045.0	1,083.1	-7.0	1,083.0	0.77	-0.43	-0.64
9,016.0	89.30	0.90	8,046.4	1,178.1	-7.6	1,178.0	2.65	0.32	2.63
9,110.0	90.70	0.70	8,046.4	1,272.1	-6.3	1,272.0	1.50	1.49	-0.21
9,203.0	90.90	0.90	8,045.1	1,365.0	-5.0	1,365.0	0.30	0.22	0.22
9,298.0	90.40	0.40	8,044.0	1,460.0	-3.9	1,460.0	0.74	-0.53	-0.53
9,392.0	90.30	0.00	8,043.4	1,554.0	-3.6	1,554.0	0.44	-0.11	-0.43
9,486.0	90.20	0.00	8,043.0	1,648.0	-3.6	1,648.0	0.11	-0.11	0.00
9,581.0	90.40	359.80	8,042.5	1,743.0	-3.7	1,742.9	0.30	0.21	-0.21
9,675.0	90.20	359.70	8,042.0	1,837.0	-4.2	1,836.9	0.24	-0.21	-0.11
9,770.0	90.00	359.10	8,041.8	1,932.0	-5.1	1,931.9	0.67	-0.21	-0.63
9,864.0	89.90	359.00	8,041.9	2,026.0	-6.7	2,025.9	0.15	-0.11	-0.11
9,959.0	89.80	359.00	8,042.2	2,121.0	-8.4	2,120.9	0.11	-0.11	0.00
10,053.0	90.00	359.00	8,042.3	2,215.0	-10.0	2,214.8	0.21	0.21	0.00
10,147.0	90.50	358.40	8,041.9	2,309.0	-12.1	2,308.8	0.83	0.53	-0.64
10,241.0	90.00	0.50	8,041.5	2,402.9	-13.0	2,402.8	2.30	-0.53	2.23
10,336.0	90.30	0.50	8,041.3	2,497.9	-12.2	2,497.8	0.32	0.32	0.00
10,431.0	87.80	0.90	8,042.9	2,592.9	-11.1	2,592.7	2.67	-2.63	0.42
10,525.0	90.00	0.70	8,044.7	2,686.9	-9.7	2,686.7	2.35	2.34	-0.21
10,619.0	90.20	0.20	8,044.5	2,780.9	-9.0	2,780.7	0.57	0.21	-0.53
10,713.0	90.10	359.80	8,044.2	2,874.9	-9.0	2,874.7	0.44	-0.11	-0.43
10,808.0	90.70	359.80	8,043.6	2,969.9	-9.3	2,969.7	0.63	0.63	0.00
10,903.0	90.70	359.50	8,042.4	3,064.9	-9.9	3,064.7	0.32	0.00	-0.32
10,997.0	91.30	359.10	8,040.8	3,158.8	-11.1	3,158.7	0.77	0.64	-0.43
11,092.0	91.90	359.80	8,038.1	3,253.8	-12.0	3,253.6	0.97	0.63	0.74
11,185.0	88.90	3.70	8,037.5	3,346.7	-9.1	3,346.6	5.29	-3.23	4.19
11,279.0	88.90	4.00	8,039.3	3,440.5	-2.8	3,440.4	0.32	0.00	0.32
11,374.0	89.80	3.80	8,040.4	3,535.3	3.6	3,535.2	0.97	0.95	-0.21
11,468.0	87.80	3.00	8,042.3	3,629.1	9.2	3,629.0	2.29	-2.13	-0.85
11,563.0	88.50	2.80	8,045.4	3,723.9	14.0	3,723.9	0.77	0.74	-0.21
11,658.0	89.40	2.70	8,047.1	3,818.8	18.6	3,818.8	0.95	0.95	-0.11
11,752.0	90.70	2.30	8,047.1	3,912.7	22.7	3,912.7	1.45	1.38	-0.43
11,846.0	88.80	2.30	8,047.5	4,006.6	26.4	4,006.7	2.02	-2.02	0.00



Stryker Directional Survey Report



Company:	Concho Oil and Gas	Local Co-ordinate Reference:	Well SRO State #12H
Project:	Eddy County, NM	TVD Reference:	GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
Site:	Section 32-25S-28E SRO	MD Reference:	GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
Well:	SRO State #12H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

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)
11,939.0	89.60	1.80	8,048.8	4,099.5	29.8	4,099.6	1.01	0.86	-0.54
12,034.0	90.10	1.60	8,049.0	4,194.5	32.6	4,194.6	0.57	0.53	-0.21
12,128.0	91.30	1.40	8,047.9	4,288.5	35.1	4,288.6	1.29	1.28	-0.21
12,222.0	90.70	0.40	8,046.2	4,382.4	36.5	4,382.6	1.24	-0.64	-1.06
12,316.0	89.40	359.70	8,046.1	4,476.4	36.6	4,476.6	1.57	-1.38	-0.74
12,411.0	90.20	359.10	8,046.5	4,571.4	35.6	4,571.6	1.05	0.84	-0.63
12,479.0	91.00	359.00	8,045.8	4,639.4	34.5	4,639.5	1.19	1.18	-0.15
12,531.0	91.00	359.00	8,044.9	4,691.4	33.6	4,691.5	0.00	0.00	0.00
12531' MD Projected to Bit									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,413.0	7,412.0	-56.7	-25.5	7413' MD VES Gyro Survey
12,531.0	8,044.9	4,691.4	33.6	12531' MD Projected to Bit



COMPANY: Concho Oil and Gas
WELL: SRO State #12H
COUNTY: Eddy County, NM
DATUM: NAD 1927 (NADCON CONUS)
RIG: Silver Oak #7



GRID CORRECTION: To convert a Magnetic Direction to a Grid Direction, Add 7.40°

OFFICE: 936.582.7296

GEODETTIC ZONE: New Mexico East 3001
GL 3001.7 + 18 @ 3019.7usft (Silver Oak #7)
GROUND ELEVATION: 3001.7

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	392660.60	571508.50	32° 4' 45.585 N	104° 6' 8.849 W	

PLAN SECTIONS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	7413.0	1.90	217.87	7412.0	-56.7	-25.5	0.00	0.00	-56.9	
2	7556.1	1.90	217.87	7555.0	-60.4	-28.4	0.00	0.00	-60.6	
3	8318.8	90.00	0.90	8045.0	417.0	-30.7	12.00	143.02	416.7	
4	12606.5	90.00	0.90	8045.0	4704.2	36.8	0.00	0.00	4704.3	PBHL SRO State #12H

