



Company: COG Operating
Lease/Well: Flying Squirrel Federal/2H
Location: Sec 29 T18S R31E
Rig Name: Patriot 6
State/County: New Mexico/Eddy
Latitude: 32.71, Longitude: -103.90
GRID North is 0.23 Degrees East of True North
VS-Azi: 0.00 Degrees



30 015 42913

Depth Reference : RKB = 17 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: flying squirrel fed #2h-de_01.ut

Minimum Curvature Method

Report Date/Time: 3/17/2015 / 13:48

VES Survey International

West Texas

(432) 563-5444

Surveyor: Chris Bankson

Flying Squirrel Federal 2H / API 30-015-42913

NM OIL CONSERVATION

ARTESIA DISTRICT

APR 29 2015

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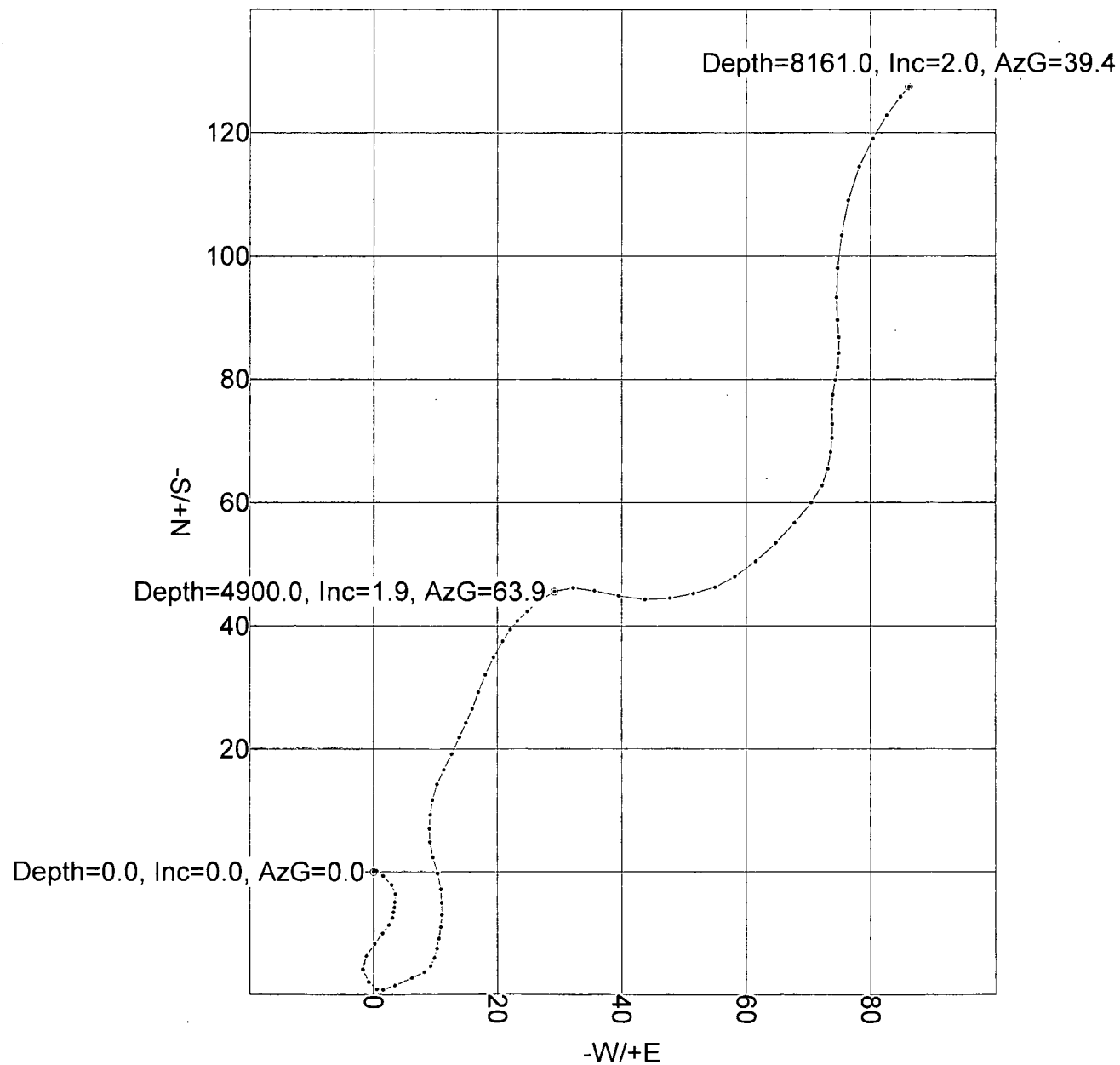
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.26	26.65	100.00	0.20	0.10	0.20	0.22	26.65	0.26
200.00	0.37	123.48	200.00	0.22	0.47	0.22	0.52	64.70	0.48
300.00	1.18	132.26	299.99	-0.65	1.50	-0.65	1.64	113.33	0.81
400.00	1.15	139.82	399.97	-2.11	2.91	-2.11	3.59	125.90	0.16
500.00	0.85	185.37	499.95	-3.62	3.49	-3.62	5.03	136.03	0.82
600.00	0.59	182.02	599.95	-4.88	3.40	-4.88	5.95	145.09	0.27
700.00	0.45	190.70	699.94	-5.77	3.31	-5.77	6.65	150.15	0.16
800.00	0.49	186.45	799.94	-6.58	3.19	-6.58	7.31	154.11	0.05
900.00	0.61	195.35	899.93	-7.51	3.00	-7.51	8.09	158.22	0.15
1000.00	0.84	214.83	999.93	-8.64	2.44	-8.64	8.97	164.22	0.34
1100.00	1.09	216.44	1099.91	-10.01	1.45	-10.01	10.11	171.73	0.25
1200.00	1.34	217.48	1199.89	-11.70	0.18	-11.70	11.70	179.12	0.25
1300.00	1.45	211.17	1299.86	-13.70	-1.18	-13.70	13.76	184.94	0.19
1400.00	1.25	173.69	1399.83	-15.87	-1.72	-15.87	15.96	186.19	0.89
1500.00	1.47	139.82	1499.81	-17.92	-0.77	-17.92	17.94	182.47	0.82
1600.00	0.63	117.11	1599.79	-19.15	0.54	-19.15	19.16	178.39	0.92
1700.00	0.63	72.85	1699.78	-19.24	1.55	-19.24	19.30	175.38	0.47
1800.00	1.70	66.41	1799.76	-18.48	3.44	-18.48	18.80	169.46	1.07

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	1.69	66.83	1899.72	-17.31	6.15	-17.31	18.37	160.43	0.01
2000.00	0.86	57.85	1999.69	-16.33	8.15	-16.33	18.25	153.47	0.85
2100.00	0.78	32.63	2099.68	-15.35	9.16	-15.35	17.87	149.17	0.37
2200.00	0.92	19.89	2199.67	-14.01	9.80	-14.01	17.10	145.03	0.24
2300.00	0.91	10.71	2299.66	-12.48	10.22	-12.48	16.13	140.66	0.15
2400.00	0.95	10.10	2399.65	-10.88	10.52	-10.88	15.13	135.97	0.04
2500.00	1.22	9.22	2499.63	-9.01	10.83	-9.01	14.09	129.76	0.27
2600.00	1.10	0.82	2599.61	-7.00	11.02	-7.00	13.05	122.44	0.21
2700.00	1.14	357.52	2699.59	-5.05	10.99	-5.05	12.09	114.67	0.08
2800.00	1.44	354.43	2799.56	-2.80	10.82	-2.80	11.18	104.51	0.31
2900.00	1.50	342.49	2899.53	-0.30	10.31	-0.30	10.31	91.67	0.31
3000.00	1.68	345.97	2999.49	2.37	9.56	2.37	9.85	76.10	0.21
3100.00	1.23	353.05	3099.46	4.85	9.07	4.85	10.29	61.87	0.48
3200.00	1.30	1.82	3199.44	7.05	8.98	7.05	11.42	51.87	0.21
3300.00	1.31	5.12	3299.41	9.32	9.12	9.32	13.04	44.38	0.08
3400.00	1.51	11.47	3399.38	11.75	9.48	11.75	15.10	38.91	0.25
3500.00	1.52	21.02	3499.34	14.27	10.22	14.27	17.55	35.60	0.25
3600.00	1.50	29.31	3599.31	16.65	11.34	16.65	20.14	34.24	0.22
3700.00	1.74	25.17	3699.27	19.17	12.62	19.17	22.95	33.36	0.27
3800.00	1.66	21.93	3799.23	21.89	13.81	21.89	25.88	32.25	0.12
3900.00	1.35	27.98	3899.19	24.27	14.90	24.27	28.48	31.55	0.35
4000.00	1.55	20.94	3999.16	26.57	15.94	26.57	30.99	30.95	0.27
4100.00	1.71	19.09	4099.12	29.25	16.91	29.25	33.79	30.03	0.17
4200.00	1.75	24.13	4199.07	32.06	18.03	32.06	36.78	29.35	0.16
4300.00	1.84	25.93	4299.02	34.90	19.35	34.90	39.91	29.01	0.10
4400.00	1.61	33.79	4398.98	37.51	20.84	37.51	42.91	29.05	0.32
4500.00	0.94	30.26	4498.95	39.39	22.03	39.39	45.13	29.22	0.68
4600.00	1.17	47.93	4598.94	40.78	23.20	40.78	46.92	29.64	0.40
4700.00	1.39	43.71	4698.91	42.34	24.80	42.34	49.07	30.36	0.24
4800.00	1.50	52.21	4798.88	44.02	26.67	44.02	51.46	31.21	0.24
4900.00	1.89	63.86	4898.84	45.54	29.18	45.54	54.09	32.65	0.52
5000.00	1.75	94.15	4998.79	46.16	32.18	46.16	56.27	34.89	0.96
5100.00	2.24	101.09	5098.73	45.67	35.62	45.67	57.92	37.95	0.54
5200.00	2.32	102.42	5198.65	44.86	39.52	44.86	59.78	41.38	0.10
5300.00	2.55	93.67	5298.56	44.28	43.71	44.28	62.22	44.63	0.43
5400.00	2.07	79.05	5398.48	44.48	47.71	44.48	65.23	47.00	0.75
5500.00	2.31	77.82	5498.40	45.25	51.45	45.25	68.52	48.67	0.24
5600.00	1.90	68.99	5598.34	46.27	54.96	46.27	71.84	49.91	0.52
5700.00	2.27	56.23	5698.27	47.96	58.16	47.96	75.38	50.49	0.60

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	2.51	50.92	5798.18	50.45	61.51	50.45	79.55	50.64	0.32
5900.00	2.51	43.65	5898.09	53.42	64.72	53.42	83.92	50.47	0.32
6000.00	2.62	41.09	5997.99	56.73	67.74	56.73	88.35	50.06	0.15
6100.00	2.23	37.59	6097.90	59.99	70.42	59.99	92.51	49.58	0.41
6200.00	1.56	24.43	6197.84	62.77	72.17	62.77	95.65	48.99	0.80
6300.00	1.75	12.91	6297.80	65.50	73.08	65.50	98.13	48.13	0.38
6400.00	1.41	5.94	6397.76	68.21	73.55	68.21	100.31	47.15	0.39
6500.00	1.23	5.45	6497.74	70.51	73.78	70.51	102.05	46.30	0.19
6600.00	1.37	357.28	6597.71	72.77	73.82	72.77	103.66	45.41	0.24
6700.00	1.35	358.31	6697.68	75.15	73.73	75.15	105.28	44.45	0.03
6800.00	1.37	9.43	6797.66	77.51	73.89	77.51	107.09	43.63	0.26
6900.00	1.39	9.81	6897.63	79.88	74.29	79.88	109.09	42.92	0.02
7000.00	1.09	10.17	6997.60	82.01	74.67	82.01	110.91	42.32	0.30
7100.00	1.54	1.40	7097.58	84.28	74.87	84.28	112.73	41.61	0.49
7200.00	1.43	357.00	7197.54	86.87	74.84	86.87	114.66	40.74	0.16
7300.00	1.74	355.46	7297.50	89.63	74.65	89.63	116.64	39.79	0.32
7400.00	2.49	358.89	7397.44	93.31	74.49	93.31	119.40	38.60	0.75
7500.00	2.98	4.99	7497.32	98.07	74.67	98.07	123.26	37.29	0.57
7600.00	3.17	8.26	7597.18	103.39	75.29	103.39	127.90	36.06	0.26
7700.00	3.46	13.13	7697.01	109.06	76.38	109.06	133.15	35.00	0.40
7800.00	3.12	23.88	7796.85	114.49	78.16	114.49	138.63	34.32	0.70
7900.00	2.70	28.30	7896.72	119.06	80.38	119.06	143.65	34.03	0.48
8000.00	2.30	32.70	7996.62	122.83	82.59	122.83	148.01	33.92	0.45
8100.00	2.00	40.01	8096.55	125.86	84.80	125.86	151.76	33.97	0.40
8161.00	1.98	39.40	8157.52	127.49	86.15	127.49	153.87	34.05	0.05



VES Survey International
West Texas
(432) 563-5444
Surveyor: Chris Bankson
Flying Squirrel Federal 2H / API 30-015-42913



VES Survey Date: 03/03/2015



NM OIL CONSERVATION
ARTESIA DISTRICT

APR 29 2015

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COG Operating LLC

Eddy County, NM

Flying Squirrel Federal

#2H

OH

Survey: MWD #1

Survey Report - Geographic

09 March, 2015



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3599.1usft (Original Well Elev)
Site:	Flying Squirrel Federal	MD Reference:	WELL @ 3599.1usft (Original Well Elev)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	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	Flying Squirrel Federal		
Site Position:		Northing:	624,658.00 usft
From:	Map	Easting:	632,913.60 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 42' 59.533 N
		Longitude:	103° 54' 4.247 W
		Grid Convergence:	0.23 °

Well	#2H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 42' 49.945 N
		Longitude:	103° 53' 56.736 W
		Ground Level:	3,581.1 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	2/18/2015	7.32	60.49	48,506

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	97.42	

Survey Program	Date 3/9/2015			
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.0	8,161.0	GYRO (OH)	NS-GYRO-SS	NS Gyro single shots
8,206.0	13,315.0	MWD #1 (OH)	MWD	MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map	Latitude	Longitude	
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting			
(usft)			(usft)			(usft)	(usft)			
8,161.0	1.98	39.40	8,157.5	127.5	86.1	623,819.16	633,645.44	32° 42' 51.202 N	103° 53' 55.722 W	
8,206.0	2.20	34.50	8,202.5	128.8	87.1	623,820.47	633,646.42	32° 42' 51.215 N	103° 53' 55.710 W	
8,238.0	2.30	38.00	8,234.5	129.8	87.9	623,821.48	633,647.16	32° 42' 51.225 N	103° 53' 55.701 W	
8,270.0	4.80	69.80	8,266.4	130.7	89.5	623,822.45	633,648.82	32° 42' 51.235 N	103° 53' 55.682 W	
8,301.0	10.00	87.60	8,297.1	131.3	93.4	623,823.01	633,652.73	32° 42' 51.240 N	103° 53' 55.636 W	
8,333.0	15.40	92.70	8,328.3	131.2	100.4	623,822.93	633,659.75	32° 42' 51.239 N	103° 53' 55.554 W	
8,364.0	20.40	95.50	8,357.8	130.5	109.9	623,822.22	633,669.25	32° 42' 51.232 N	103° 53' 55.443 W	
8,396.0	23.60	99.40	8,387.5	128.9	121.8	623,820.64	633,681.12	32° 42' 51.216 N	103° 53' 55.304 W	
8,428.0	26.00	104.20	8,416.5	126.2	134.9	623,817.87	633,694.24	32° 42' 51.188 N	103° 53' 55.150 W	
8,459.0	28.70	109.60	8,444.1	122.0	148.5	623,813.70	633,707.85	32° 42' 51.146 N	103° 53' 54.991 W	
8,491.0	32.10	114.40	8,471.7	115.9	163.5	623,807.61	633,722.84	32° 42' 51.085 N	103° 53' 54.816 W	



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
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Site:	Flying Squirrel Federal	MD Reference:	WELL @ 3599.1usft (Original Well Elev)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,523.0	34.20	116.40	8,498.5	108.4	179.3	623,800.10	633,738.64	32° 42' 51.010 N	103° 53' 54.632 W
8,554.0	36.50	117.60	8,523.8	100.2	195.3	623,791.95	633,754.61	32° 42' 50.929 N	103° 53' 54.445 W
8,586.0	39.10	118.90	8,549.0	91.0	212.6	623,782.66	633,771.88	32° 42' 50.836 N	103° 53' 54.243 W
8,618.0	42.30	120.90	8,573.3	80.6	230.7	623,772.25	633,789.96	32° 42' 50.732 N	103° 53' 54.032 W
8,649.0	45.60	120.60	8,595.6	69.6	249.1	623,761.26	633,808.45	32° 42' 50.623 N	103° 53' 53.816 W
8,681.0	48.50	119.80	8,617.4	57.8	269.4	623,749.48	633,828.70	32° 42' 50.506 N	103° 53' 53.580 W
8,713.0	51.50	118.80	8,638.0	45.8	290.8	623,737.49	633,850.07	32° 42' 50.386 N	103° 53' 53.330 W
8,744.0	54.30	118.50	8,656.7	33.9	312.5	623,725.64	633,871.77	32° 42' 50.268 N	103° 53' 53.077 W
8,776.0	56.10	119.70	8,674.9	21.2	335.4	623,712.86	633,894.73	32° 42' 50.140 N	103° 53' 52.809 W
8,808.0	57.80	119.80	8,692.4	7.8	358.7	623,699.55	633,918.01	32° 42' 50.008 N	103° 53' 52.537 W
8,839.0	59.90	120.40	8,708.4	-5.5	381.7	623,686.24	633,940.96	32° 42' 49.875 N	103° 53' 52.269 W
8,871.0	62.20	120.60	8,723.9	-19.7	405.8	623,672.03	633,965.09	32° 42' 49.734 N	103° 53' 51.987 W
8,900.0	65.50	120.80	8,736.7	-33.0	428.2	623,658.74	633,987.47	32° 42' 49.601 N	103° 53' 51.726 W
8,932.0	68.60	120.60	8,749.2	-48.0	453.5	623,643.70	634,012.80	32° 42' 49.451 N	103° 53' 51.430 W
8,964.0	71.00	120.50	8,760.2	-63.3	479.4	623,628.43	634,038.66	32° 42' 49.299 N	103° 53' 51.128 W
8,995.0	73.20	120.20	8,769.8	-78.2	504.8	623,613.53	634,064.12	32° 42' 49.151 N	103° 53' 50.831 W
9,027.0	75.30	120.60	8,778.4	-93.8	531.4	623,597.95	634,090.68	32° 42' 48.995 N	103° 53' 50.521 W
9,059.0	77.60	121.10	8,785.9	-109.7	558.1	623,581.99	634,117.39	32° 42' 48.836 N	103° 53' 50.209 W
9,090.0	79.70	121.70	8,792.0	-125.5	584.0	623,566.16	634,143.33	32° 42' 48.679 N	103° 53' 49.906 W
9,122.0	81.30	121.50	8,797.3	-142.1	610.9	623,549.62	634,170.21	32° 42' 48.514 N	103° 53' 49.592 W
9,154.0	82.80	121.30	8,801.7	-158.6	638.0	623,533.11	634,197.26	32° 42' 48.349 N	103° 53' 49.277 W
9,185.0	84.40	121.10	8,805.2	-174.6	664.3	623,517.15	634,223.61	32° 42' 48.191 N	103° 53' 48.969 W
9,217.0	86.80	120.50	8,807.7	-190.9	691.7	623,500.82	634,251.01	32° 42' 48.028 N	103° 53' 48.649 W
9,248.0	88.90	119.10	8,808.8	-206.3	718.6	623,485.42	634,277.89	32° 42' 47.874 N	103° 53' 48.335 W
9,280.0	90.20	117.00	8,809.1	-221.3	746.8	623,470.38	634,306.13	32° 42' 47.724 N	103° 53' 48.005 W
9,312.0	89.20	115.00	8,809.2	-235.4	775.6	623,456.35	634,334.89	32° 42' 47.584 N	103° 53' 47.669 W
9,344.0	88.10	112.80	8,810.0	-248.3	804.8	623,443.39	634,364.13	32° 42' 47.455 N	103° 53' 47.328 W
9,375.0	87.60	110.60	8,811.2	-259.8	833.6	623,431.94	634,392.91	32° 42' 47.340 N	103° 53' 46.991 W
9,407.0	87.60	108.50	8,812.5	-270.5	863.7	623,421.24	634,423.04	32° 42' 47.233 N	103° 53' 46.639 W
9,439.0	88.40	106.40	8,813.6	-280.1	894.2	623,411.65	634,453.55	32° 42' 47.137 N	103° 53' 46.283 W
9,470.0	89.60	104.00	8,814.1	-288.2	924.2	623,403.52	634,483.46	32° 42' 47.056 N	103° 53' 45.933 W
9,502.0	90.10	101.60	8,814.2	-295.3	955.4	623,396.43	634,514.66	32° 42' 46.984 N	103° 53' 45.568 W
9,597.0	90.00	97.40	8,814.2	-310.9	1,049.0	623,380.76	634,608.34	32° 42' 46.825 N	103° 53' 44.473 W
9,692.0	91.00	97.10	8,813.3	-322.9	1,143.3	623,368.77	634,702.57	32° 42' 46.703 N	103° 53' 43.370 W
9,787.0	90.90	96.00	8,811.7	-333.8	1,237.6	623,357.93	634,796.94	32° 42' 46.592 N	103° 53' 42.266 W
9,882.0	89.90	95.90	8,811.1	-343.6	1,332.1	623,348.09	634,891.42	32° 42' 46.490 N	103° 53' 41.161 W
9,977.0	89.80	95.90	8,811.3	-353.4	1,426.6	623,338.32	634,985.92	32° 42' 46.390 N	103° 53' 40.055 W
10,072.0	90.60	95.90	8,811.0	-363.1	1,521.1	623,328.56	635,080.41	32° 42' 46.289 N	103° 53' 38.950 W
10,167.0	91.60	94.90	8,809.2	-372.1	1,615.7	623,319.62	635,174.97	32° 42' 46.197 N	103° 53' 37.843 W
10,262.0	90.70	93.90	8,807.3	-379.4	1,710.4	623,312.33	635,269.67	32° 42' 46.121 N	103° 53' 36.735 W
10,357.0	90.20	94.20	8,806.5	-386.1	1,805.1	623,305.62	635,364.43	32° 42' 46.051 N	103° 53' 35.627 W
10,452.0	91.00	93.80	8,805.5	-392.7	1,899.9	623,299.00	635,459.19	32° 42' 45.981 N	103° 53' 34.518 W
10,579.0	88.80	92.30	8,805.8	-399.5	2,026.7	623,292.24	635,586.00	32° 42' 45.909 N	103° 53' 33.034 W
10,674.0	88.90	92.10	8,807.7	-403.1	2,121.6	623,288.59	635,680.91	32° 42' 45.869 N	103° 53' 31.923 W
10,769.0	89.20	91.70	8,809.2	-406.3	2,216.5	623,285.44	635,775.85	32° 42' 45.834 N	103° 53' 30.812 W
10,864.0	90.20	92.10	8,809.7	-409.4	2,311.5	623,282.29	635,870.79	32° 42' 45.799 N	103° 53' 29.701 W
10,959.0	89.30	93.00	8,810.1	-413.6	2,406.4	623,278.07	635,965.69	32° 42' 45.753 N	103° 53' 28.591 W
11,054.0	90.10	91.90	8,810.6	-417.7	2,501.3	623,274.01	636,060.60	32° 42' 45.709 N	103° 53' 27.480 W
11,149.0	91.30	92.40	8,809.5	-421.3	2,596.2	623,270.44	636,155.53	32° 42' 45.670 N	103° 53' 26.369 W
11,244.0	90.80	93.10	8,807.7	-425.8	2,691.1	623,265.89	636,250.40	32° 42' 45.621 N	103° 53' 25.259 W
11,339.0	89.30	93.70	8,807.7	-431.5	2,785.9	623,260.25	636,345.23	32° 42' 45.561 N	103° 53' 24.149 W
11,434.0	88.30	94.60	8,809.6	-438.3	2,880.7	623,253.38	636,439.96	32° 42' 45.489 N	103° 53' 23.041 W
11,528.0	88.60	94.80	8,812.2	-446.0	2,974.3	623,245.68	636,533.61	32° 42' 45.409 N	103° 53' 21.945 W
11,655.0	90.70	94.10	8,813.0	-455.9	3,100.9	623,235.83	636,660.22	32° 42' 45.307 N	103° 53' 20.464 W
11,750.0	92.20	93.30	8,810.6	-462.0	3,195.7	623,229.70	636,754.98	32° 42' 45.242 N	103° 53' 19.355 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3599.1usft (Original Well Elev)
Site:	Flying Squirrel Federal	MD Reference:	WELL @ 3599.1usft (Original Well Elev)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,877.0	90.60	94.00	8,807.5	-470.1	3,322.4	623,221.62	636,881.68	32° 42' 45.157 N	103° 53' 17.873 W
12,003.0	87.20	94.90	8,809.9	-479.9	3,448.0	623,211.84	637,007.26	32° 42' 45.055 N	103° 53' 16.403 W
12,098.0	88.00	95.30	8,813.9	-488.3	3,542.5	623,203.41	637,101.80	32° 42' 44.967 N	103° 53' 15.297 W
12,193.0	88.40	95.20	8,816.8	-497.0	3,637.1	623,194.72	637,196.36	32° 42' 44.877 N	103° 53' 14.191 W
12,288.0	90.30	95.10	8,817.9	-505.5	3,731.7	623,186.19	637,290.96	32° 42' 44.789 N	103° 53' 13.084 W
12,415.0	90.50	93.80	8,817.0	-515.4	3,858.3	623,176.34	637,417.57	32° 42' 44.686 N	103° 53' 11.603 W
12,541.0	92.00	94.90	8,814.3	-524.9	3,983.9	623,166.78	637,543.17	32° 42' 44.587 N	103° 53' 10.133 W
12,636.0	92.80	94.30	8,810.3	-532.5	4,078.5	623,159.17	637,637.78	32° 42' 44.507 N	103° 53' 9.026 W
12,731.0	93.10	94.20	8,805.4	-539.6	4,173.1	623,152.14	637,732.40	32° 42' 44.434 N	103° 53' 7.919 W
12,858.0	93.10	95.20	8,798.5	-550.0	4,299.5	623,141.75	637,858.78	32° 42' 44.326 N	103° 53' 6.440 W
12,953.0	92.20	94.90	8,794.2	-558.3	4,394.0	623,133.40	637,953.31	32° 42' 44.239 N	103° 53' 5.334 W
13,048.0	89.80	96.00	8,792.5	-567.3	4,488.6	623,124.38	638,047.86	32° 42' 44.146 N	103° 53' 4.228 W
13,122.0	91.00	95.70	8,792.0	-574.9	4,562.2	623,116.83	638,121.47	32° 42' 44.068 N	103° 53' 3.367 W
13,315.0	91.00	95.70	8,788.6	-594.0	4,754.2	623,097.67	638,313.49	32° 42' 43.870 N	103° 53' 1.121 W
PBHL(FSF#2H)									

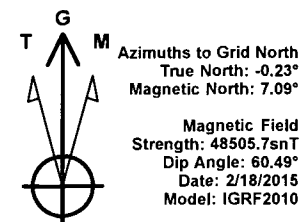
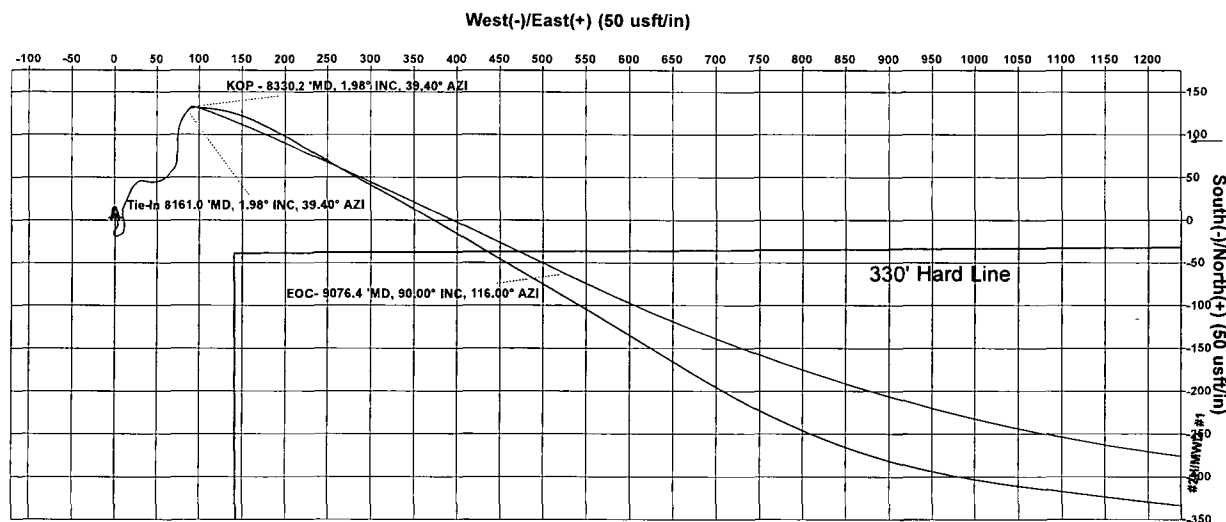
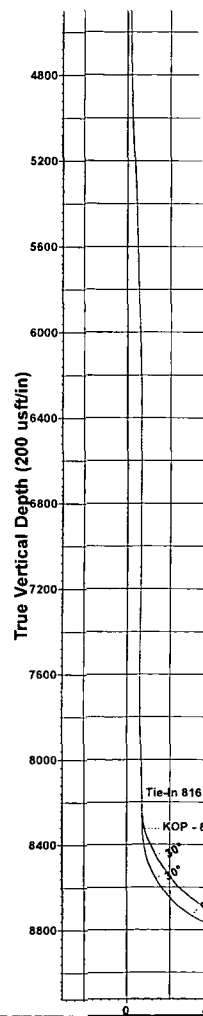
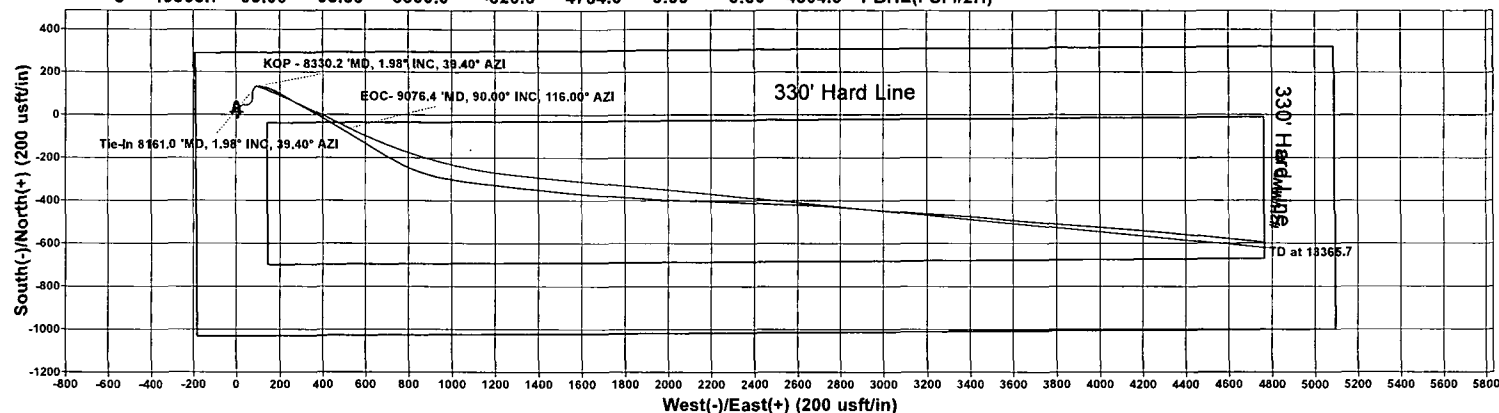
Checked By: _____ Approved By: _____ Date: _____



COG Operating LLC
Project: Eddy County, NM
Site: Flying Squirrel Federal
Well: #2H
Wellbore: OH
Plan: Plan #2 (#2H/OH)

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
1	8161.0	1.98	39.40	8157.5	127.5	86.1	0.00	0.00	68.9	
2	8330.2	1.98	39.40	8326.6	132.0	89.8	0.00	0.00	72.0	
3	9076.4	90.00	116.00	8800.0	-63.0	526.0	12.00	76.61	529.7	
4	9894.0	90.00	95.56	8800.0	-284.2	1308.6	2.50	-90.00	1334.3	
5	13365.7	90.00	95.56	8800.0	-620.6	4764.0	0.00	0.00	4804.3	PBHL(FSF#2H)



NEXUS
DIRECTIONAL SOLUTIONS, L.P.

Vertical Section at 97.42° (200 usft/in)

Nexus Directional Solutions

PROJECT DETAILS: Eddy County, NM
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



March 17, 2015

NM OIL CONSERVATION
ARTESIA DISTRICT

APR 29 2015

RECEIVED

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

Attn: Kanicia Castillo

RE: Flying Squirrel Federal 2H

Please find enclosed a copy of the survey from 0.00' to 8161.00' 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,

Kimberly D Moller
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 17 day of March, A.D., 2015, by Kimberly D Moller.

Jennifer Ann Byerly
Notary Public, State of Texas

