

Results of Directional Survey

API number:	30-025-41519			
OGRID:		Operator:	NADEL AND GUSSMAN PERMIAN, LLC	
		Property:	NIGHTHAWK STATE COM	# 1H

surface	ULSTR:	D	29	T 18S	R 35E
				180 FNL	530 FWL

BH Loc	ULSTR:	M	29	T 18S	R 35E
14350	MD	9492.0	TVD	378 FSL	414 FWL
				4902 FNL	

Top Perf/OH	ULSTR:	D	29	T 18S	R 35E
10141	MD	10017.0	TVD	705 FNL	618 FWL

Bot Perf/OH	ULSTR:	M	29	T 18S	R 35E
14175	MD	10013.2	TVD	553 FSL	426 FWL
				4727 FNL	

	MD	N/S	E/W	VD
	10115	-499.30	87.40	9827.1
TOP PERFS/OH	10141	-525.22	87.64	9829.29
	10147	-531.20	87.70	9829.80
	14080	-4452.60	-95.00	10011.40
BOT PERFS/OH	14175	-4547.20	-103.90	10013.20
	14175	-4547.20	-103.90	10013.20

NEXT TO LAST	14284	-4655.90	-111.40	10015.60
LAST READING	14336	-4707.70	-115.30	10016.70
TD	14350	-4721.65	-116.35	10017.00

Surface Location	180	FN	530	FW
Projected BHL	4902	FN	414	FW
Location of				
Top Perfs/OH	705	FN	618	FW
Bottom Perfs/OH	4727	FN	426	FW

SUMMARY of Subsurface Locations

Surface Location	D-29-18S-35E	180	FN	530	FW	Vert. Depth
Top Perfs/OH	D-29-18S-35E	705	FN	618	FW	9829.29
Bottom Perfs/OH	M-29-18S-35E	4727	FN	426	FW	10013.20
Projected TD	M-29-18S-35E	4902	FN	414	FW	10017.00

JUL 30 2014

DDC
Survey Report



Company:	Nadel & Gussman Permian, LLC	Local Co-ordinate Reference:	Well Nighthawk #1H
Project:	Lea County, NM (NAD 27)	TVD Reference:	Well @ 3921.0usft (Patriot #5)
Site:	Sec 29, T18S, R35E	MD Reference:	Well @ 3921.0usft (Patriot #5)
Well:	Nighthawk #1H	North Reference:	Grid
Wellbore:	Curve & Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Curve & Lateral	Database:	EDM 5000.1 Single User Db

Project:	Lea County, NM (NAD 27)		
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 29, T18S, R35E											
Site Position:			Northing:			628,642.70 usft			Latitude:			32° 43' 31.337 N					
From:			Map			Easting:			760,578.20 usft			Longitude:			103° 29' 9.668 W		
Position Uncertainty:			0.0 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.46 °		

Well	Nighthawk #1H				
Well Position	+N/-S	0.0 usft	Northing:	628,642.70 usft	Latitude: 32° 43' 31.337 N
	+E/-W	0.0 usft	Easting:	760,578.20 usft	Longitude: 103° 29' 9.668 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level: 3,921.0 usft

Wellbore		Curve & Lateral			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/14/2014	7.24	60.59	48,648

Design:	Curve & Lateral				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	9,095.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	181.67	

Survey Program		Date	4/21/2014	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
84.0	9,095.0	Gyro Survey (Pilot Hole)	Good_gyro	Good Gyro
9,116.0	14,336.0	MWD (Curve & Lateral)	MWD default	MWD - Standard

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
84.0	0.30	62.07	84.0	0.1	0.2	-0.1	0.36	0.36	0.00	
179.0	0.15	356.36	179.0	0.3	0.4	-0.4	0.29	-0.16	-69.17	
268.0	0.07	8.79	268.0	0.5	0.4	-0.5	0.09	-0.09	13.97	
355.0	0.14	327.88	355.0	0.7	0.4	-0.7	0.11	0.08	-47.02	
443.0	0.11	316.18	443.0	0.8	0.2	-0.8	0.04	-0.03	-13.30	
530.0	0.16	323.22	530.0	1.0	0.1	-1.0	0.06	0.06	8.09	
625.0	0.18	337.14	625.0	1.2	0.0	-1.2	0.05	0.02	14.65	
721.0	0.23	346.96	721.0	1.5	-0.1	-1.5	0.06	0.05	10.23	
816.0	0.28	2.05	816.0	2.0	-0.2	-1.9	0.09	0.05	15.88	

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Well:	Nighthawk #1H	North Reference:	Grid
Wellbore:	Curve & Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Curve & Lateral	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)
912.0	0.07	56.10	912.0	2.2	-0.1	-2.2	0.26	-0.22	56.30
1,007.0	0.15	61.02	1,007.0	2.3	0.1	-2.3	0.08	0.08	5.18
1,102.0	0.19	77.54	1,102.0	2.4	0.3	-2.4	0.07	0.04	17.39
1,197.0	0.20	143.67	1,197.0	2.3	0.6	-2.3	0.22	0.01	69.61
1,292.0	0.22	180.33	1,292.0	2.0	0.7	-2.0	0.14	0.02	38.59
1,387.0	0.43	189.42	1,387.0	1.5	0.6	-1.5	0.23	0.22	9.57
1,483.0	0.44	187.66	1,483.0	0.7	0.5	-0.8	0.02	0.01	-1.83
1,578.0	0.38	190.20	1,578.0	0.1	0.4	-0.1	0.07	-0.06	2.67
1,673.0	0.22	270.33	1,673.0	-0.2	0.2	0.2	0.43	-0.17	84.35
1,768.0	0.45	331.51	1,768.0	0.1	-0.2	-0.1	0.42	0.24	64.40
1,863.0	0.52	3.24	1,863.0	0.8	-0.4	-0.8	0.29	0.07	33.40
1,959.0	0.47	25.76	1,959.0	1.6	-0.2	-1.6	0.21	-0.05	23.46
2,054.0	0.41	25.22	2,054.0	2.3	0.2	-2.3	0.06	-0.06	-0.57
2,149.0	0.35	24.61	2,149.0	2.9	0.4	-2.9	0.06	-0.06	-0.64
2,244.0	0.51	20.74	2,244.0	3.5	0.7	-3.5	0.17	0.17	-4.07
2,339.0	0.46	26.22	2,339.0	4.3	1.0	-4.3	0.07	-0.05	5.77
2,434.0	0.59	30.87	2,434.0	5.0	1.4	-5.1	0.14	0.14	4.89
2,529.0	0.74	40.62	2,529.0	5.9	2.1	-6.0	0.20	0.16	10.26
2,624.0	1.01	37.40	2,623.9	7.0	3.0	-7.1	0.29	0.28	-3.39
2,719.0	1.12	49.79	2,718.9	8.3	4.2	-8.4	0.27	0.12	13.04
2,814.0	1.60	43.80	2,813.9	9.9	5.8	-10.0	0.53	0.51	-6.31
2,909.0	1.91	46.10	2,908.9	11.9	7.9	-12.1	0.33	0.33	2.42
3,003.0	1.90	46.51	3,002.8	14.1	10.1	-14.4	0.02	-0.01	0.44
3,098.0	2.22	49.81	3,097.7	16.3	12.7	-16.7	0.36	0.34	3.47
3,194.0	2.26	50.20	3,193.7	18.8	15.6	-19.2	0.04	0.04	0.41
3,289.0	2.23	54.53	3,288.6	21.0	18.5	-21.6	0.18	-0.03	4.56
3,384.0	1.59	56.07	3,383.5	22.8	21.1	-23.4	0.68	-0.67	1.62
3,479.0	1.79	56.50	3,478.5	24.4	23.4	-25.1	0.21	0.21	0.45
3,575.0	1.97	57.39	3,574.5	26.1	26.1	-26.9	0.19	0.19	0.93
3,670.0	1.93	56.56	3,669.4	27.9	28.8	-28.7	0.05	-0.04	-0.87
3,765.0	1.93	57.09	3,764.3	29.6	31.5	-30.5	0.02	0.00	0.56
3,861.0	1.78	58.17	3,860.3	31.3	34.1	-32.3	0.16	-0.16	1.13
3,956.0	1.74	60.28	3,955.2	32.8	36.6	-33.8	0.08	-0.04	2.22
4,051.0	1.69	61.24	4,050.2	34.2	39.1	-35.3	0.06	-0.05	1.01
4,146.0	1.58	59.86	4,145.2	35.5	41.4	-36.7	0.12	-0.12	-1.45
4,241.0	1.60	56.87	4,240.1	36.9	43.7	-38.1	0.09	0.02	-3.15
4,336.0	1.73	54.16	4,335.1	38.4	46.0	-39.8	0.16	0.14	-2.85
4,431.0	1.79	51.57	4,430.0	40.2	48.3	-41.6	0.10	0.06	-2.73
4,527.0	1.81	52.66	4,526.0	42.1	50.7	-43.5	0.04	0.02	1.14
4,622.0	1.65	52.98	4,621.0	43.8	52.9	-45.3	0.17	-0.17	0.34
4,717.0	1.86	52.76	4,715.9	45.5	55.3	-47.1	0.22	0.22	-0.23
4,812.0	1.92	50.21	4,810.9	47.5	57.7	-49.2	0.11	0.06	-2.68
4,908.0	1.87	49.75	4,906.8	49.5	60.1	-51.3	0.05	-0.05	-0.48

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Survey										
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5,003.0	1.80	50.04	5,001.8	51.5	62.5	-53.3	0.07	-0.07	0.31	
5,099.0	1.70	48.99	5,097.7	53.4	64.7	-55.3	0.11	-0.10	-1.09	
5,194.0	1.69	48.82	5,192.7	55.3	66.8	-57.2	0.01	-0.01	-0.18	
5,289.0	1.73	48.39	5,287.6	57.1	68.9	-59.1	0.04	0.04	-0.45	
5,384.0	1.61	46.10	5,382.6	59.0	71.0	-61.1	0.14	-0.13	-2.41	
5,479.0	1.43	42.46	5,477.6	60.8	72.7	-62.9	0.21	-0.19	-3.83	
5,574.0	1.31	42.06	5,572.5	62.5	74.3	-64.6	0.13	-0.13	-0.42	
5,669.0	1.16	45.33	5,667.5	64.0	75.7	-66.1	0.17	-0.16	3.44	
5,764.0	1.19	37.07	5,762.5	65.4	77.0	-67.6	0.18	0.03	-8.69	
5,859.0	1.13	39.50	5,857.5	66.9	78.2	-69.2	0.08	-0.06	2.56	
5,954.0	0.92	38.58	5,952.5	68.3	79.2	-70.5	0.22	-0.22	-0.97	
6,050.0	0.79	36.59	6,048.4	69.4	80.1	-71.7	0.14	-0.14	-2.07	
6,145.0	0.52	13.26	6,143.4	70.3	80.6	-72.7	0.39	-0.28	-24.56	
6,241.0	0.49	343.64	6,239.4	71.2	80.6	-73.5	0.27	-0.03	-30.85	
6,336.0	0.55	301.27	6,334.4	71.8	80.1	-74.1	0.40	0.06	-44.60	
6,431.0	0.35	266.56	6,429.4	72.0	79.4	-74.3	0.35	-0.21	-36.54	
6,526.0	0.54	265.54	6,524.4	71.9	78.7	-74.2	0.20	0.20	-1.07	
6,621.0	0.84	265.35	6,619.4	71.9	77.5	-74.1	0.32	0.32	-0.20	
6,716.0	1.04	255.76	6,714.4	71.6	76.0	-73.8	0.27	0.21	-10.09	
6,811.0	1.15	254.12	6,809.4	71.1	74.2	-73.3	0.12	0.12	-1.73	
6,906.0	1.47	237.56	6,904.4	70.2	72.3	-72.3	0.52	0.34	-17.43	
7,002.0	1.78	238.61	7,000.3	68.8	70.0	-70.8	0.32	0.32	1.09	
7,097.0	1.20	252.31	7,095.3	67.7	67.8	-69.6	0.71	-0.61	14.42	
7,192.0	1.04	267.31	7,190.3	67.4	66.0	-69.2	0.35	-0.17	15.79	
7,287.0	0.89	279.77	7,285.3	67.4	64.4	-69.3	0.27	-0.16	13.12	
7,382.0	0.58	294.44	7,380.2	67.8	63.2	-69.6	0.38	-0.33	15.44	
7,478.0	0.26	24.07	7,476.2	68.2	62.9	-70.0	0.66	-0.33	93.36	
7,573.0	0.49	58.57	7,571.2	68.6	63.3	-70.4	0.33	0.24	36.32	
7,668.0	1.19	80.10	7,666.2	68.9	64.6	-70.8	0.80	0.74	22.66	
7,763.0	1.58	79.17	7,761.2	69.4	66.9	-71.3	0.41	0.41	-0.98	
7,858.0	2.62	74.50	7,856.1	70.2	70.2	-72.2	1.11	1.09	-4.92	
7,953.0	2.73	77.67	7,951.0	71.3	74.5	-73.4	0.19	0.12	3.34	
8,048.0	2.50	72.40	8,045.9	72.4	78.7	-74.6	0.35	-0.24	-5.55	
8,143.0	2.96	72.66	8,140.8	73.7	83.0	-76.1	0.48	0.48	0.27	
8,238.0	2.62	71.12	8,235.7	75.2	87.4	-77.7	0.37	-0.36	-1.62	
8,333.0	2.83	70.63	8,330.6	76.6	91.7	-79.3	0.22	0.22	-0.52	
8,429.0	2.52	70.80	8,426.5	78.1	95.9	-80.9	0.32	-0.32	0.18	
8,524.0	2.05	65.08	8,521.4	79.5	99.4	-82.4	0.55	-0.49	-6.02	
8,619.0	1.88	60.40	8,616.4	81.0	102.3	-84.0	0.25	-0.18	-4.93	
8,714.0	1.58	60.42	8,711.3	82.4	104.8	-85.4	0.32	-0.32	0.02	
8,809.0	2.08	54.52	8,806.3	84.1	107.4	-87.2	0.56	0.53	-6.21	
8,904.0	1.70	49.61	8,901.2	86.0	109.9	-89.2	0.43	-0.40	-5.17	
8,999.0	1.54	38.18	8,996.2	87.9	111.7	-91.1	0.38	-0.17	-12.03	

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TIE IN @ 9095' MD / 9092'										
9,095.0	1.78	47.66	9,092.2	89.9	113.6	-93.2	0.38	0.25	9.88	
9,116.0	0.30	82.40	9,113.1	90.1	113.9	-93.4	7.35	-7.05	165.43	
9,134.0	1.50	210.90	9,131.1	89.9	113.8	-93.2	9.46	6.67	713.89	
9,166.0	5.20	204.40	9,163.1	88.3	113.0	-91.5	11.60	11.56	-20.31	
9,197.0	8.10	198.00	9,193.9	84.9	111.8	-88.1	9.64	9.35	-20.65	
9,229.0	11.70	194.50	9,225.4	79.6	110.3	-82.8	11.40	11.25	-10.94	
9,261.0	14.30	189.60	9,256.6	72.6	108.8	-75.7	8.82	8.13	-15.31	
9,293.0	16.50	185.00	9,287.4	64.2	107.7	-67.3	7.86	6.88	-14.38	
9,324.0	19.40	182.40	9,316.9	54.6	107.1	-57.7	9.70	9.35	-8.39	
9,356.0	21.50	182.20	9,346.9	43.5	106.7	-46.6	6.57	6.56	-0.63	
9,388.0	23.70	182.60	9,376.4	31.2	106.2	-34.3	6.89	6.88	1.25	
9,419.0	26.40	182.90	9,404.5	18.1	105.5	-21.1	8.72	8.71	0.97	
9,451.0	28.90	184.00	9,432.9	3.2	104.6	-6.3	7.97	7.81	3.44	
9,483.0	31.00	184.70	9,460.6	-12.7	103.4	9.7	6.65	6.56	2.19	
9,514.0	32.90	183.60	9,486.9	-29.0	102.2	26.1	6.41	6.13	-3.55	
9,546.0	34.70	180.60	9,513.5	-46.8	101.6	43.8	7.67	5.63	-9.38	
9,578.0	37.50	179.10	9,539.3	-65.7	101.7	62.7	9.17	8.75	-4.69	
9,610.0	40.10	179.20	9,564.3	-85.7	102.0	82.7	8.13	8.13	0.31	
9,641.0	42.10	179.80	9,587.6	-106.1	102.1	103.1	6.58	6.45	1.94	
9,673.0	44.10	181.50	9,611.0	-128.0	101.9	124.9	7.23	6.25	5.31	
CROSSED 330' HARDLINE @ 9704' MD / 9633' TVD										
9,704.1	43.91	181.50	9,633.4	-149.6	101.3	146.5	0.63	-0.63	0.00	
9,705.0	43.90	181.50	9,634.0	-150.2	101.3	147.2	0.63	-0.63	0.00	
9,736.0	42.90	181.20	9,656.5	-171.5	100.8	168.5	3.29	-3.23	-0.97	
9,768.0	44.40	180.80	9,679.7	-193.6	100.4	190.6	4.77	4.69	-1.25	
9,800.0	47.70	182.00	9,701.9	-216.6	99.8	213.6	10.66	10.31	3.75	
9,831.0	51.00	183.60	9,722.1	-240.1	98.7	237.1	11.34	10.65	5.16	
9,861.0	54.10	184.30	9,740.3	-263.8	97.0	260.9	10.50	10.33	2.33	
9,893.0	58.40	184.00	9,758.1	-290.4	95.1	287.5	13.46	13.44	-0.94	
9,925.0	62.40	183.40	9,773.9	-318.1	93.3	315.3	12.61	12.50	-1.88	
9,957.0	66.60	182.90	9,787.7	-347.0	91.7	344.1	13.20	13.13	-1.56	
9,988.0	70.70	181.90	9,799.0	-375.8	90.5	373.0	13.56	13.23	-3.23	
10,020.0	74.50	181.70	9,808.5	-406.3	89.6	403.5	11.89	11.88	-0.63	
10,052.0	76.90	181.20	9,816.4	-437.3	88.8	434.5	7.65	7.50	-1.56	
10,084.0	80.10	182.00	9,822.8	-468.7	87.9	465.9	10.30	10.00	2.50	
10,115.0	83.90	179.80	9,827.1	-499.3	87.4	496.6	14.13	12.26	-7.10	
10,147.0	86.60	179.40	9,829.8	-531.2	87.7	528.4	8.53	8.44	-1.25	
10,179.0	87.00	178.90	9,831.6	-563.2	88.1	560.4	2.00	1.25	-1.56	
10,211.0	86.60	179.40	9,833.3	-595.1	88.6	592.3	2.00	-1.25	1.56	
10,274.0	86.90	179.40	9,836.9	-658.0	89.3	655.1	0.48	0.48	0.00	
10,369.0	87.10	180.50	9,841.9	-752.9	89.3	750.0	1.18	0.21	1.16	
10,465.0	85.60	181.00	9,848.0	-848.7	88.1	845.7	1.65	-1.56	0.52	
10,560.0	87.40	181.70	9,853.8	-943.5	85.9	940.6	2.03	1.89	0.74	

DDC
Survey Report



Company:	Nadel & Gussman Permian, LLC	Local Co-ordinate Reference:	Well Nighthawk #1H
Project:	Lea County, NM (NAD 27)	TVD Reference:	Well @ 3921.0usft (Patriot #5)
Site:	Sec 29, T18S, R35E	MD Reference:	Well @ 3921.0usft (Patriot #5)
Well:	Nighthawk #1H	North Reference:	Grid
Wellbore:	Curve & Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Curve & Lateral	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)	
10,655.0	87.30	181.30	9,858.2	-1,038.3	83.4	1,035.5	0.43	-0.11	-0.42	
10,750.0	85.50	182.00	9,864.2	-1,133.1	80.6	1,130.3	2.03	-1.89	0.74	
10,845.0	85.30	182.80	9,871.8	-1,227.7	76.7	1,225.0	0.87	-0.21	0.84	
10,940.0	85.30	182.40	9,879.6	-1,322.3	72.4	1,319.6	0.42	0.00	-0.42	
11,036.0	84.70	182.40	9,887.9	-1,417.8	68.4	1,415.2	0.63	-0.63	0.00	
11,130.0	90.70	182.80	9,891.7	-1,511.6	64.1	1,509.1	6.40	6.38	0.43	
11,194.0	89.10	182.90	9,891.8	-1,575.6	60.9	1,573.1	2.50	-2.50	0.16	
11,225.0	88.70	182.80	9,892.4	-1,606.5	59.4	1,604.1	1.33	-1.29	-0.32	
11,268.0	87.00	182.20	9,894.0	-1,649.4	57.5	1,647.1	4.19	-3.95	-1.40	
11,321.0	84.40	182.20	9,898.0	-1,702.2	55.5	1,699.9	4.91	-4.91	0.00	
11,352.0	84.50	181.50	9,901.0	-1,733.1	54.5	1,730.7	2.27	0.32	-2.26	
11,384.0	85.70	181.70	9,903.7	-1,765.0	53.6	1,762.6	3.80	3.75	0.63	
11,416.0	86.60	182.40	9,905.9	-1,796.9	52.5	1,794.6	3.56	2.81	2.19	
11,447.0	86.30	181.90	9,907.8	-1,827.8	51.3	1,825.5	1.88	-0.97	-1.61	
11,479.0	85.90	181.50	9,910.0	-1,859.7	50.4	1,857.4	1.77	-1.25	-1.25	
11,511.0	86.90	181.50	9,912.0	-1,891.6	49.5	1,889.4	3.13	3.13	0.00	
11,543.0	87.40	181.20	9,913.6	-1,923.6	48.8	1,921.3	1.82	1.56	-0.94	
11,575.0	87.70	182.20	9,914.9	-1,955.5	47.8	1,953.3	3.26	0.94	3.13	
11,607.0	88.10	182.20	9,916.1	-1,987.5	46.6	1,985.3	1.25	1.25	0.00	
11,638.0	87.40	181.90	9,917.3	-2,018.4	45.5	2,016.2	2.46	-2.26	-0.97	
11,670.0	87.20	182.60	9,918.8	-2,050.4	44.2	2,048.2	2.27	-0.63	2.19	
11,702.0	87.50	182.40	9,920.3	-2,082.3	42.8	2,080.2	1.13	0.94	-0.63	
11,748.0	88.10	182.00	9,922.1	-2,128.2	41.1	2,126.1	1.57	1.30	-0.87	
11,797.0	88.90	182.00	9,923.4	-2,177.2	39.4	2,175.1	1.63	1.63	0.00	
11,861.0	88.60	181.00	9,924.8	-2,241.2	37.7	2,239.1	1.63	-0.47	-1.56	
11,892.0	88.10	181.70	9,925.7	-2,272.1	37.0	2,270.1	2.77	-1.61	2.26	
11,924.0	87.80	182.40	9,926.8	-2,304.1	35.8	2,302.1	2.38	-0.94	2.19	
11,956.0	87.80	182.80	9,928.0	-2,336.0	34.4	2,334.0	1.25	0.00	1.25	
11,987.0	87.20	182.80	9,929.4	-2,367.0	32.9	2,365.0	1.94	-1.94	0.00	
12,051.0	85.10	183.10	9,933.7	-2,430.7	29.6	2,428.8	3.31	-3.28	0.47	
12,082.0	85.00	183.10	9,936.3	-2,461.6	27.9	2,459.7	0.32	-0.32	0.00	
12,146.0	85.40	182.90	9,941.7	-2,525.3	24.6	2,523.5	0.70	0.63	-0.31	
12,209.0	84.90	182.40	9,947.0	-2,588.0	21.7	2,586.2	1.12	-0.79	-0.79	
12,273.0	85.10	181.90	9,952.6	-2,651.7	19.3	2,650.0	0.84	0.31	-0.78	
12,336.0	84.80	182.20	9,958.2	-2,714.4	17.0	2,712.7	0.67	-0.48	0.48	
12,400.0	84.80	181.70	9,964.0	-2,778.1	14.9	2,776.5	0.78	0.00	-0.78	
12,463.0	85.30	181.20	9,969.4	-2,840.8	13.3	2,839.2	1.12	0.79	-0.79	
12,527.0	85.70	180.10	9,974.4	-2,904.6	12.5	2,903.0	1.82	0.63	-1.72	
12,590.0	87.60	181.20	9,978.1	-2,967.5	11.8	2,965.9	3.48	3.02	1.75	
12,654.0	87.60	180.30	9,980.8	-3,031.5	11.0	3,029.8	1.41	0.00	-1.41	
12,717.0	87.60	180.50	9,983.4	-3,094.4	10.5	3,092.8	0.32	0.00	0.32	
12,780.0	87.20	182.40	9,986.3	-3,157.3	9.0	3,155.7	3.08	-0.63	3.02	
12,844.0	87.10	182.40	9,989.5	-3,221.2	6.3	3,219.6	0.16	-0.16	0.00	

DDC
Survey Report



Company:	Nadel & Gussman Permian, LLC	Local Co-ordinate Reference:	Well Nighthawk #1H
Project:	Lea County, NM (NAD 27)	TVD Reference:	Well @ 3921.0usft (Patriot #5)
Site:	Sec 29, T18S, R35E	MD Reference:	Well @ 3921.0usft (Patriot #5)
Well:	Nighthawk #1H	North Reference:	Grid
Wellbore:	Curve & Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Curve & Lateral	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)	
12,907.0	87.50	183.40	9,992.4	-3,284.0	3.1	3,282.5	1.71	0.63	1.59	
12,971.0	87.80	183.60	9,995.0	-3,347.9	-0.8	3,346.4	0.56	0.47	0.31	
13,034.0	88.80	183.10	9,996.9	-3,410.7	-4.5	3,409.4	1.77	1.59	-0.79	
13,129.0	90.60	185.40	9,997.4	-3,505.4	-11.5	3,504.3	3.07	1.89	2.42	
13,224.0	89.40	185.40	9,997.4	-3,600.0	-20.5	3,599.1	1.26	-1.26	0.00	
13,320.0	89.90	186.10	9,998.0	-3,695.5	-30.1	3,694.8	0.90	0.52	0.73	
13,415.0	89.50	185.40	9,998.5	-3,790.1	-39.6	3,789.6	0.85	-0.42	-0.74	
13,510.0	88.70	185.00	10,000.0	-3,884.7	-48.2	3,884.4	0.94	-0.84	-0.42	
13,605.0	88.60	185.00	10,002.2	-3,979.3	-56.5	3,979.2	0.11	-0.11	0.00	
13,700.0	89.10	184.90	10,004.1	-4,073.9	-64.7	4,074.0	0.54	0.53	-0.11	
13,795.0	87.80	184.90	10,006.7	-4,168.5	-72.8	4,168.9	1.37	-1.37	0.00	
13,890.0	88.50	184.90	10,009.8	-4,263.1	-80.9	4,263.7	0.74	0.74	0.00	
13,985.0	90.10	183.60	10,010.9	-4,357.8	-87.9	4,358.5	2.17	1.68	-1.37	
14,080.0	89.30	184.90	10,011.4	-4,452.6	-95.0	4,453.4	1.61	-0.84	1.37	
14,175.0	88.60	184.70	10,013.2	-4,547.2	-102.9	4,548.3	0.77	-0.74	-0.21	
14,270.0	88.80	184.30	10,015.3	-4,641.9	-110.4	4,643.1	0.47	0.21	-0.42	
14,284.0	88.80	184.30	10,015.6	-4,655.9	-111.4	4,657.1	0.00	0.00	0.00	
TD @ 14336' MD / 10017' TVD										
14,336.0	88.80	184.30	10,016.7	-4,707.7	-115.3	4,709.1	0.00	0.00	0.00	

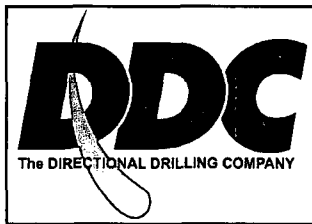
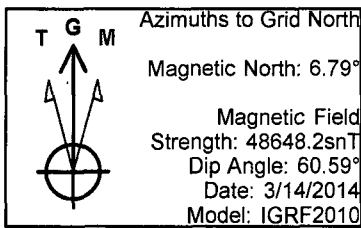
Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
9,095.0	9,092.2	89.9	113.6	TIE IN @ 9095' MD / 9092'	
9,704.1	9,633.4	-149.6	101.3	CROSSED 330' HARDLINE @ 9704' MD / 9633' TVD	
14,336.0	10,016.7	-4,707.7	-115.3	TD @ 14336' MD / 10017' TVD	

Checked By: _____	Approved By: _____	Date: _____
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Company Name: Nadel & Gussman Permian, LLC
 Nighthawk #1H
 Lea County, NM (NAD 27)
 Rig: Patriot 85
 Created By: James Dawson
 Date: 4/21/2014

Nighthawk #1H
 Lea County, NM (NAD 27)
 Q140290 & WT-140279
 Design #4

Nadel & Gussman Permian, LLC



PROJECT DETAILS: Lea County, NM (NAD 27)

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

WELL DETAILS: Nighthawk #1H

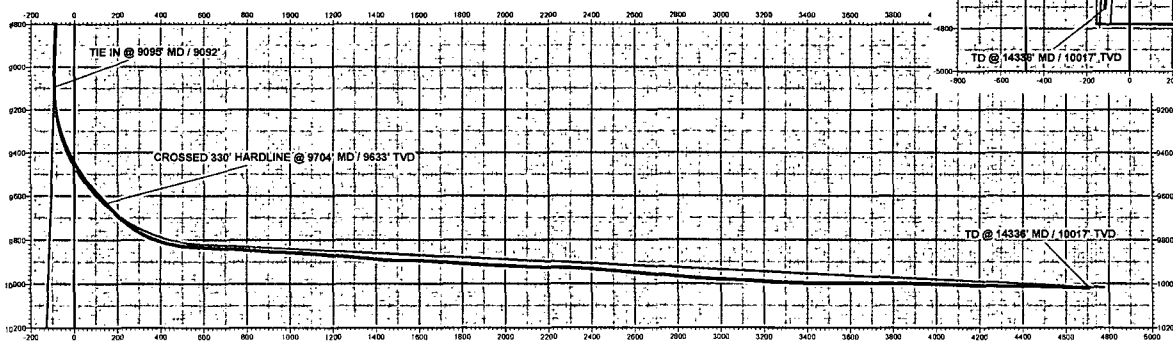
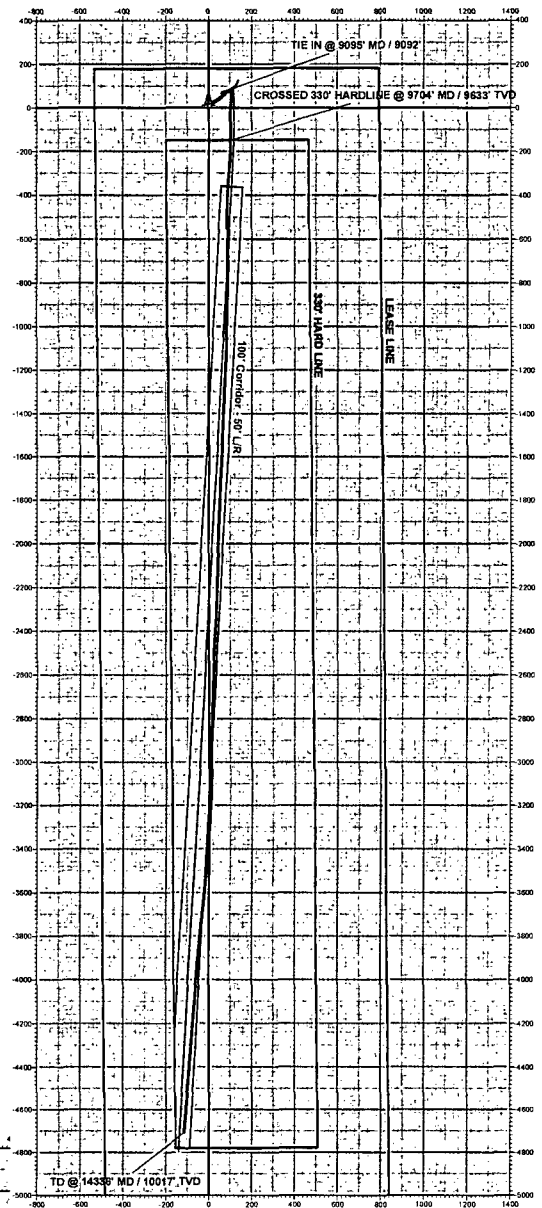
Ground Level:	3521.0
Northing	765578.20
Easting	628442.70
Latitude	32° 43' 51.337" N
Longitude	103° 28' 9.688" W

ANNOTATIONS

MD	Inc	Azi	TVD	+N-S	+E-W	V-Sect	Departure	Annotation
8095.0	1.78	47.66	8092.2	89.9	113.6	-83.2	182.2	TIE IN @ 9095' MD / 9092'
9704.1	43.91	181.50	9633.4	-149.6	101.3	148.5	433.5	CROSSED 330° HARDLINE @ 9704' MD / 9633' TVD
14336.0	89.80	184.30	10016.7	-4707.7	-115.3	4709.1	4998.7	TD @ 14336' MD / 10017' TVD

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
PBHL Nighthawk #1H DDC - plan hfs target center	10018.0	-4776.8	-139.6	623865.91	760438.63	32° 42' 44.084" N	103° 29' 11.748" W



Vertical Section at 181.67° (200 usf/in)



Gyroscopic Survey Report
for
NADEL AND GUSSMAN PERMIAN LLC

Well Location	LEA COUNTY, NM
Well Name	NIGHTHAWK STATE COM #1H
Rig Number	PATRIOT DRILLING 5
Survey Date	4/2/2014
Latitude	32.7250000N
North Reference	Grid North
Grid Correction	-0.46 deg
Depth Reference	RKB (25.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 0.00Azim (deg)
Definitive Survey	FINAL GYRO SURVEY
Operator(s)	LEON LASKOWSKI

Well Notes



Well Name: NIGHTHAWK STATE COM #1H

Survey: FINAL GYRO SURVEY

Survey Date: 4/2/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
84.00	0.30	62.07	84.00	0.10	0.10	0.19	0.35	0.22	62.07
179.00	0.15	356.36	179.00	0.34	0.34	0.40	0.29	0.52	49.99
268.00	0.07	8.79	268.00	0.50	0.50	0.40	0.09	0.64	38.70
355.00	0.14	327.88	355.00	0.64	0.64	0.35	0.11	0.73	28.92
443.00	0.11	316.18	443.00	0.79	0.79	0.24	0.04	0.83	16.79
530.00	0.16	323.22	530.00	0.95	0.95	0.11	0.06	0.96	6.37
625.00	0.18	337.14	625.00	1.20	1.20	-0.03	0.05	1.20	358.49
721.00	0.23	346.96	721.00	1.52	1.52	-0.13	0.06	1.52	355.04
816.00	0.28	2.05	816.00	1.93	1.93	-0.17	0.09	1.94	355.10
912.00	0.07	56.10	912.00	2.20	2.20	-0.11	0.25	2.20	357.18
1007.00	0.15	61.02	1007.00	2.29	2.29	0.05	0.08	2.29	1.18
1102.00	0.19	77.54	1102.00	2.38	2.38	0.31	0.07	2.40	7.41
1197.00	0.20	143.67	1196.99	2.28	2.28	0.56	0.23	2.35	13.89
1292.00	0.22	180.33	1291.99	1.97	1.97	0.66	0.14	2.08	18.59
1387.00	0.43	189.42	1386.99	1.43	1.43	0.60	0.23	1.55	22.80
1483.00	0.44	187.66	1482.99	0.71	0.71	0.49	0.02	0.87	34.79
1578.00	0.38	190.20	1577.99	0.04	0.04	0.39	0.06	0.39	84.45
1673.00	0.22	270.33	1672.99	-0.27	-0.27	0.15	0.43	0.31	151.78
1768.00	0.45	331.51	1767.98	0.06	0.06	-0.22	0.42	0.23	285.02
1863.00	0.52	3.24	1862.98	0.82	0.82	-0.37	0.29	0.90	335.44
1959.00	0.47	25.76	1958.98	1.61	1.61	-0.18	0.21	1.62	353.68
2054.00	0.41	25.22	2053.98	2.27	2.27	0.14	0.07	2.27	3.44
2149.00	0.35	24.61	2148.97	2.84	2.84	0.40	0.06	2.87	8.07
2244.00	0.51	20.74	2243.97	3.50	3.50	0.67	0.17	3.57	10.90
2339.00	0.46	26.22	2338.97	4.24	4.24	0.99	0.07	4.36	13.19
2434.00	0.59	30.87	2433.96	5.01	5.01	1.42	0.14	5.20	15.78
2529.00	0.74	40.62	2528.96	5.89	5.89	2.07	0.19	6.24	19.32
2624.00	1.01	37.40	2623.95	7.02	7.02	2.97	0.29	7.63	22.94
2719.00	1.12	49.79	2718.93	8.29	8.29	4.19	0.27	9.29	26.83
2814.00	1.60	43.80	2813.90	9.85	9.85	5.82	0.52	11.44	30.59
2909.00	1.91	46.10	2908.86	11.91	11.91	7.88	0.34	14.28	33.51
3003.00	1.90	46.51	3002.81	14.06	14.06	10.14	0.02	17.34	35.80
3098.00	2.22	49.81	3097.74	16.33	16.33	12.68	0.36	20.68	37.84
3194.00	2.26	50.20	3193.67	18.74	18.74	15.55	0.05	24.35	39.70
3289.00	2.23	54.53	3288.60	21.01	21.01	18.50	0.18	27.99	41.36



Well Name: NIGHTHAWK STATE COM #1H
 Survey: FINAL GYRO SURVEY
 Survey Date: 4/2/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
3384.00	1.59	56.07	3383.55	22.81	22.81	21.09	0.68	31.07	42.75
3479.00	1.79	56.50	3478.50	24.36	24.36	23.42	0.21	33.79	43.86
3575.00	1.97	57.39	3574.45	26.08	26.08	26.06	0.20	36.87	44.97
3670.00	1.93	56.56	3669.40	27.84	27.84	28.77	0.06	40.03	45.94
3765.00	1.93	57.09	3764.34	29.59	29.59	31.44	0.02	43.18	46.74
3861.00	1.78	58.17	3860.29	31.25	31.25	34.06	0.16	46.23	47.46
3956.00	1.74	60.28	3955.25	32.74	32.74	36.56	0.08	49.08	48.16
4051.00	1.69	61.24	4050.21	34.13	34.13	39.05	0.05	51.86	48.84
4146.00	1.58	59.86	4145.17	35.47	35.47	41.41	0.12	54.53	49.42
4241.00	1.60	56.87	4240.13	36.85	36.85	43.66	0.09	57.14	49.83
4336.00	1.73	54.16	4335.09	38.42	38.42	45.93	0.16	59.88	50.09
4431.00	1.79	51.57	4430.05	40.18	40.18	48.26	0.10	62.79	50.22
4527.00	1.81	52.66	4526.00	42.03	42.03	50.64	0.04	65.81	50.31
4622.00	1.65	52.98	4620.95	43.77	43.77	52.93	0.17	68.68	50.41
4717.00	1.86	52.76	4715.91	45.53	45.53	55.25	0.22	71.59	50.51
4812.00	1.92	50.21	4810.86	47.48	47.48	57.70	0.11	74.73	50.55
4908.00	1.87	49.75	4906.81	49.52	49.52	60.14	0.06	77.90	50.53
5003.00	1.80	50.04	5001.76	51.48	51.48	62.47	0.07	80.95	50.50
5099.00	1.70	48.99	5097.71	53.39	53.39	64.70	0.12	83.88	50.47
5194.00	1.69	48.82	5192.67	55.23	55.23	66.81	0.01	86.69	50.42
5289.00	1.73	48.39	5287.63	57.10	57.10	68.93	0.04	89.51	50.36
5384.00	1.61	46.10	5382.59	58.98	58.98	70.97	0.14	92.27	50.27
5479.00	1.43	42.46	5477.55	60.78	60.78	72.73	0.22	94.78	50.11
5574.00	1.31	42.06	5572.53	62.46	62.46	74.25	0.12	97.03	49.93
5669.00	1.16	45.33	5667.51	63.94	63.94	75.67	0.18	99.06	49.80
5764.00	1.19	37.07	5762.49	65.40	65.40	76.94	0.18	100.98	49.63
5859.00	1.13	39.50	5857.47	66.91	66.91	78.13	0.08	102.87	49.42
5954.00	0.92	38.58	5952.45	68.23	68.23	79.21	0.22	104.55	49.26
6050.00	0.79	36.59	6048.44	69.37	69.37	80.08	0.14	105.95	49.10
6145.00	0.52	13.26	6143.43	70.31	70.31	80.57	0.40	106.94	48.89
6241.00	0.49	343.64	6239.43	71.13	71.13	80.56	0.27	107.46	48.56
6336.00	0.55	301.27	6334.43	71.75	71.75	80.05	0.40	107.50	48.13
6431.00	0.35	266.56	6429.42	71.97	71.97	79.37	0.35	107.14	47.80
6526.00	0.54	265.54	6524.42	71.92	71.92	78.63	0.20	106.56	47.55
6621.00	0.84	265.35	6619.41	71.83	71.83	77.49	0.31	105.66	47.17
6716.00	1.04	255.76	6714.40	71.56	71.56	75.96	0.27	104.36	46.71



Well Name: NIGHTHAWK STATE COM #1H

Survey: FINAL GYRO SURVEY

Survey Date: 4/2/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS ft/100ft	Closure Distance ft	Closure Direction deg
6811.00	1.15	254.12	6809.38	71.09	71.09	74.21	0.12	102.77	46.23
6906.00	1.47	237.56	6904.36	70.17	70.17	72.27	0.52	100.73	45.84
7002.00	1.78	238.61	7000.32	68.74	68.74	69.96	0.33	98.08	45.50
7097.00	1.20	252.31	7095.29	67.67	67.67	67.75	0.72	95.76	45.04
7192.00	1.04	267.31	7190.27	67.33	67.33	65.95	0.35	94.25	44.41
7287.00	0.89	279.77	7285.26	67.41	67.41	64.37	0.27	93.21	43.68
7382.00	0.58	294.44	7380.25	67.73	67.73	63.20	0.38	92.64	43.02
7478.00	0.26	24.07	7476.25	68.13	68.13	62.85	0.66	92.70	42.69
7573.00	0.49	58.57	7571.25	68.54	68.54	63.28	0.33	93.29	42.72
7668.00	1.19	80.10	7666.24	68.92	68.92	64.60	0.80	94.46	43.15
7763.00	1.58	79.17	7761.21	69.33	69.33	66.85	0.41	96.31	43.96
7858.00	2.62	74.50	7856.14	70.16	70.16	70.23	1.11	99.28	45.03
7953.00	2.73	77.67	7951.04	71.23	71.23	74.54	0.19	103.10	46.30
8048.00	2.50	72.40	8045.94	72.34	72.34	78.73	0.35	106.92	47.42
8143.00	2.96	72.66	8140.83	73.69	73.69	83.05	0.48	111.03	48.41
8238.00	2.62	71.12	8235.72	75.13	75.13	87.45	0.36	115.29	49.33
8333.00	2.83	70.63	8330.61	76.61	76.61	91.72	0.22	119.50	50.13
8429.00	2.52	70.80	8426.51	78.09	78.09	95.94	0.33	123.71	50.86
8524.00	2.05	65.08	8521.43	79.49	79.49	99.45	0.55	127.32	51.36
8619.00	1.88	60.40	8616.37	80.98	80.98	102.35	0.24	130.51	51.65
8714.00	1.58	60.42	8711.33	82.40	82.40	104.85	0.32	133.35	51.84
8809.00	2.08	54.52	8806.28	84.05	84.05	107.40	0.56	136.37	51.95
8904.00	1.70	49.61	8901.23	85.96	85.96	109.87	0.44	139.51	51.96
8999.00	1.54	38.18	8996.19	87.88	87.88	111.74	0.38	142.15	51.82
9095.00	1.78	47.66	9092.15	89.89	89.89	113.63	0.38	144.89	51.65
9190.00	2.47	50.53	9187.09	92.19	92.19	116.31	0.74	148.41	51.60
9285.00	2.38	55.47	9282.00	94.61	94.61	119.51	0.24	152.43	51.63
9380.00	2.11	46.04	9376.93	96.94	96.94	122.39	0.48	156.13	51.62
9475.00	2.01	43.60	9471.87	99.36	99.36	124.80	0.14	159.52	51.47
9570.00	2.06	41.84	9566.81	101.83	101.83	127.08	0.08	162.85	51.29
9665.00	2.13	35.41	9661.74	104.54	104.54	129.24	0.26	166.23	51.03
9760.00	2.16	26.92	9756.68	107.58	107.58	131.08	0.34	169.57	50.62
9855.00	2.14	24.02	9851.61	110.79	110.79	132.61	0.12	172.80	50.12
9950.00	2.22	24.55	9946.54	114.09	114.09	134.09	0.08	176.06	49.61
10046.00	2.36	22.80	10042.47	117.60	117.60	135.63	0.17	179.51	49.07
10141.00	2.30	16.64	10137.39	121.22	121.22	136.93	0.27	182.88	48.48

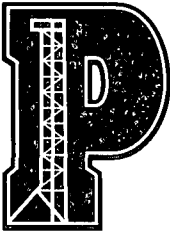


Well Name: NIGHTHAWK STATE COM #1H

Survey: FINAL GYRO SURVEY

Survey Date: 4/2/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS %100ft	Closure Distance ft	Closure Direction deg
10236.00	2.46	18.32	10232.31	124.98	124.98	138.12	0.19	186.27	47.86
10268.00	2.51	19.11	10264.28	126.29	126.29	138.56	0.18	187.48	47.65



PATRIOT DRILLING, LLC

HOBBS OCD

JUL 10 2014

OPERATOR: Nadel & Gussman Permian, LLC
RECEIVED WELL/LEASE: Nighthawk State Com # 1 H
COUNTY: Lea Co., New Mexico
Sec. 29, T18S, R35E

**STATE OF NEW MEXICO
DEVIATION REPORT**

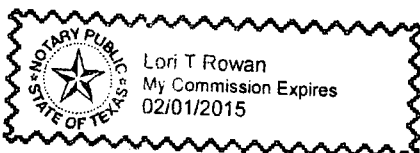
<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
476	1/2	4,917	2
744	1/2	5,365	1 1/2
1,498	1/2	5,843	1
1,800	3/4	6,315	3/4
2,045	1/2	6,790	1 1/4
2,600	1 1/2	7,266	1 1/4
2,967	2	7,742	1 1/2
3,332	2 1/4	8,217	2 1/2
3,490	1 3/4	8,443	2 1/2
3,874	1 1/2	8,885	1 1/2
4,135	2	9,362	3
4,443	2	9,647	2
		10,123	3 1/4

Patriot Drilling, LLC


M. Leroy Peterson, Executive Vice-
President

The foregoing instrument was acknowledged before me on this 21th day of April, 2014 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2015




Lori T. Rowan
Notary Public for Ector Co., Texas