

# Noble Energy Inc.- Weld County, CO (Grid North)

Well Name: **Rohn State LD04-65-1HN**

Surface Location: Rohn State LD04-63HN Pad Sec.4-T9N-R58W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

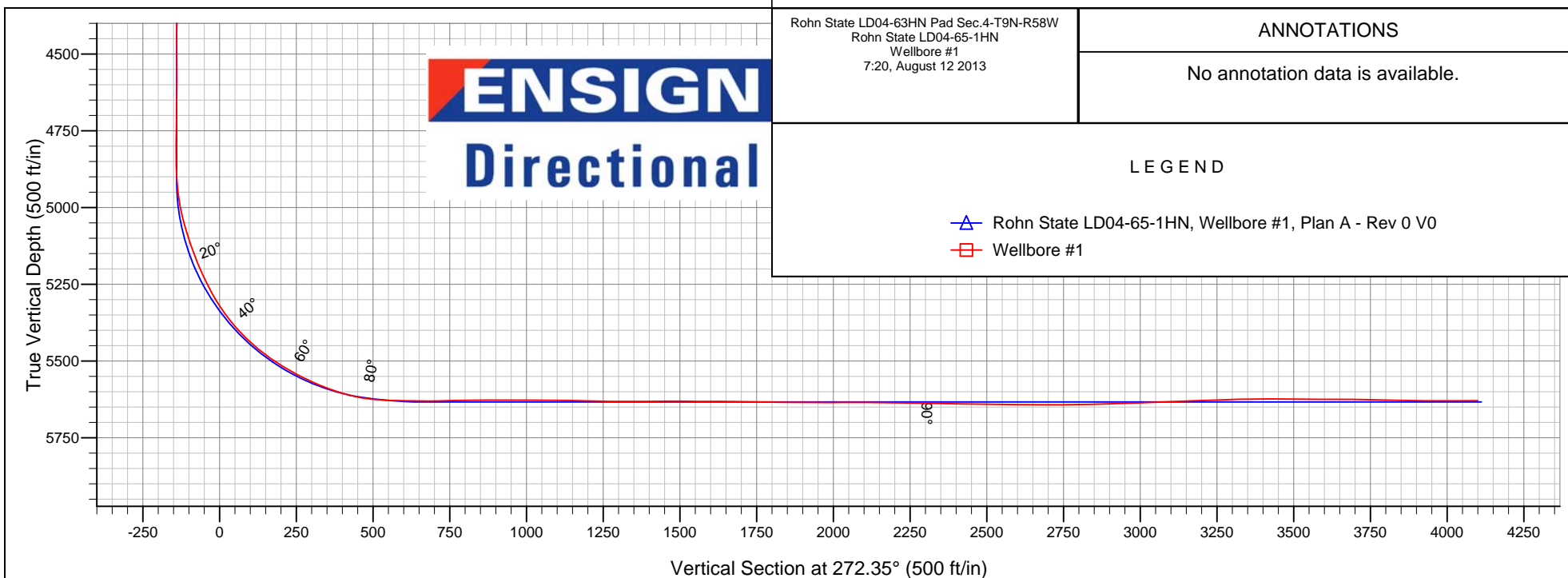
Ground Elevation: 4704.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1530760.36	3453652.54	40.778820	-103.861900	

H&P 273 RKB - 24' WELL @ 4728.0ft (H&P 273 RKB - 24')

## FINAL SURVEY

Projected Bottom Hole Location  
9578' MD 5629' TVD 149' N & 4098' W of SHL  
90.4 degree Incl @ 266.9 degree AZM



Rohn State LD04-63HN Pad Sec.4-T9N-R58W  
Rohn State LD04-65-1HN  
Wellbore #1  
7:20, August 12 2013

### ANNOTATIONS

No annotation data is available.

### LEGEND

- △ Rohn State LD04-65-1HN, Wellbore #1, Plan A - Rev 0 V0
- Wellbore #1



# **Noble Energy Inc.- Weld County, CO (Grid North)**

**Sec.4-T9N-R58W**

**Rohn State LD04-63HN Pad Sec.4-T9N-R58W**

**Rohn State LD04-65-1HN**

**Wellbore #1**

**Design: Wellbore #1**

## **Standard Survey Report**

**12 August, 2013**

Survey										
	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	350.0	0.80	288.34	350.0	0.8	-2.3	2.3	0.23	0.23	0.00
	820.0	0.50	270.74	820.0	1.8	-7.5	7.6	0.08	-0.06	-3.74
	1,157.0	0.50	263.24	1,156.9	1.7	-10.4	10.5	0.02	0.00	-2.23
	1,468.0	0.20	91.40	1,467.9	1.5	-11.2	11.3	0.22	-0.10	-55.25
	1,563.0	1.70	69.10	1,562.9	2.0	-9.7	9.8	1.60	1.58	-23.47
	1,658.0	2.60	68.60	1,657.9	3.3	-6.4	6.5	0.95	0.95	-0.53
	1,752.0	3.80	44.50	1,751.7	6.3	-2.2	2.5	1.89	1.28	-25.64
	1,847.0	5.00	43.80	1,846.4	11.5	2.8	-2.4	1.26	1.26	-0.74
	1,942.0	6.30	38.30	1,941.0	18.6	8.9	-8.2	1.48	1.37	-5.79
	2,037.0	6.40	37.60	2,035.4	26.9	15.4	-14.3	0.13	0.11	-0.74
	2,132.0	5.70	35.50	2,129.9	34.9	21.4	-19.9	0.77	-0.74	-2.21

<b>Company:</b>	Noble Energy Inc.- Weld County, CO (Grid North)	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD04-65-1HN
<b>Project:</b>	Sec.4-T9N-R58W	<b>TVD Reference:</b>	WELL @ 4728.0ft (H&P 273 RKB - 24')
<b>Site:</b>	Rohn State LD04-63HN Pad Sec.4-T9N-R58W	<b>MD Reference:</b>	WELL @ 4728.0ft (H&P 273 RKB - 24')
<b>Well:</b>	Rohn State LD04-65-1HN	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,226.0	6.10	36.40	2,223.4	42.7	27.0	-25.3	0.44	0.43	0.96
2,321.0	6.90	41.20	2,317.7	51.1	33.8	-31.7	1.02	0.84	5.05
2,416.0	7.00	41.50	2,412.1	59.7	41.4	-38.9	0.11	0.11	0.32
2,511.0	7.30	39.10	2,506.3	68.7	49.0	-46.2	0.45	0.32	-2.53
2,605.0	7.10	39.40	2,599.6	77.9	56.5	-53.2	0.22	-0.21	0.32
2,700.0	6.80	38.20	2,693.9	86.8	63.7	-60.1	0.35	-0.32	-1.26
2,795.0	6.20	38.30	2,788.3	95.3	70.3	-66.4	0.63	-0.63	0.11
2,889.0	6.20	37.80	2,881.7	103.3	76.6	-72.3	0.06	0.00	-0.53
2,984.0	7.20	28.70	2,976.1	112.5	82.6	-77.9	1.53	1.05	-9.58
3,079.0	6.20	24.80	3,070.4	122.4	87.6	-82.5	1.16	-1.05	-4.11
3,174.0	6.60	23.40	3,164.8	132.1	91.9	-86.4	0.45	0.42	-1.47
3,269.0	6.90	25.00	3,259.2	142.3	96.5	-90.6	0.37	0.32	1.68
3,364.0	7.50	24.80	3,353.4	153.1	101.5	-95.2	0.63	0.63	-0.21
3,458.0	7.90	24.80	3,446.6	164.5	106.8	-100.0	0.43	0.43	0.00
3,553.0	8.00	23.80	3,540.7	176.5	112.2	-104.9	0.18	0.11	-1.05
3,648.0	7.40	19.40	3,634.8	188.3	116.9	-109.1	0.89	-0.63	-4.63
3,743.0	5.20	24.50	3,729.2	198.0	120.7	-112.5	2.39	-2.32	5.37
3,838.0	4.90	42.20	3,823.9	204.9	125.2	-116.7	1.66	-0.32	18.63
3,933.0	5.50	42.20	3,918.5	211.3	131.0	-122.2	0.63	0.63	0.00
4,027.0	4.70	39.40	4,012.1	217.6	136.5	-127.5	0.89	-0.85	-2.98
4,122.0	5.20	43.30	4,106.7	223.7	141.9	-132.6	0.63	0.53	4.11
4,217.0	5.50	26.60	4,201.3	230.9	146.9	-137.3	1.66	0.32	-17.58
4,312.0	3.10	9.70	4,296.1	237.6	149.4	-139.5	2.83	-2.53	-17.79
4,406.0	1.80	1.80	4,390.0	241.5	149.9	-139.8	1.43	-1.38	-8.40
4,501.0	1.80	330.10	4,484.9	244.3	149.2	-139.0	1.03	0.00	-33.37
4,596.0	1.00	39.90	4,579.9	246.2	148.9	-138.7	1.82	-0.84	73.47
4,691.0	2.10	45.40	4,674.9	248.1	150.7	-140.4	1.17	1.16	5.79
4,786.0	2.10	351.60	4,769.8	251.1	151.7	-141.3	2.00	0.00	-56.63
4,877.0	1.80	358.10	4,860.8	254.1	151.4	-140.9	0.41	-0.33	7.14
4,972.0	7.60	288.80	4,955.4	257.6	145.4	-134.7	7.54	6.11	-72.95
5,067.0	15.10	277.10	5,048.5	261.2	127.1	-116.3	8.22	7.89	-12.32
5,162.0	20.10	274.80	5,139.1	264.1	98.6	-87.7	5.31	5.26	-2.42
5,257.0	24.90	269.90	5,226.8	265.4	62.3	-51.4	5.42	5.05	-5.16
5,351.0	32.00	266.70	5,309.4	264.0	17.6	-6.7	7.72	7.55	-3.40
5,446.0	40.60	267.40	5,385.9	261.1	-38.5	49.2	9.06	9.05	0.74
5,541.0	49.80	268.40	5,452.8	258.7	-105.8	116.3	9.71	9.68	1.05
5,636.0	57.50	269.70	5,509.0	257.5	-182.3	192.7	8.18	8.11	1.37
5,731.0	63.80	269.10	5,555.6	256.6	-265.0	275.3	6.65	6.63	-0.63
5,826.0	70.00	267.20	5,592.8	253.7	-352.3	362.4	6.78	6.53	-2.00
5,920.0	78.90	264.90	5,618.0	247.5	-442.6	452.3	9.76	9.47	-2.45
5,933.0	80.50	264.90	5,620.3	246.3	-455.3	465.0	12.31	12.31	0.00
5,997.0	87.70	268.80	5,626.9	242.8	-518.8	528.3	12.78	11.25	6.09
6,090.0	88.60	268.30	5,629.9	240.5	-611.7	621.1	1.11	0.97	-0.54
6,119.4	89.38	268.08	5,630.4	239.6	-641.1	650.4	2.76	2.66	-0.74
Rohn State LD04-65-1HN Landing Pt.									
6,184.0	91.10	267.60	5,630.2	237.1	-705.7	714.8	2.76	2.66	-0.74
6,277.0	91.00	269.10	5,628.5	234.5	-798.6	807.5	1.62	-0.11	1.61
6,370.0	90.40	268.10	5,627.3	232.2	-891.6	900.3	1.25	-0.65	-1.08
6,464.0	89.30	268.40	5,627.6	229.3	-985.5	994.1	1.21	-1.17	0.32
6,559.0	89.70	267.20	5,628.4	225.7	-1,080.4	1,088.8	1.33	0.42	-1.26
6,654.0	88.50	267.60	5,629.9	221.4	-1,175.3	1,183.4	1.33	-1.26	0.42
6,749.0	89.40	267.40	5,631.6	217.2	-1,270.2	1,278.1	0.97	0.95	-0.21
6,844.0	90.30	267.40	5,631.9	212.9	-1,365.1	1,372.7	0.95	0.95	0.00

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6,939.0	90.30	268.60	5,631.4	209.6	-1,460.1	1,467.4	1.26	0.00	1.26
7,034.0	89.30	268.80	5,631.7	207.4	-1,555.0	1,562.2	1.07	-1.05	0.21
7,129.0	90.00	268.60	5,632.3	205.3	-1,650.0	1,657.0	0.77	0.74	-0.21
7,224.0	88.50	267.20	5,633.5	201.8	-1,744.9	1,751.7	2.16	-1.58	-1.47
7,318.0	90.00	268.40	5,634.8	198.2	-1,838.9	1,845.4	2.04	1.60	1.28
7,413.0	89.30	266.70	5,635.3	194.1	-1,933.8	1,940.1	1.94	-0.74	-1.79
7,508.0	90.60	267.60	5,635.4	189.4	-2,028.6	2,034.7	1.66	1.37	0.95
7,603.0	89.60	268.10	5,635.3	185.8	-2,123.6	2,129.4	1.18	-1.05	0.53
7,698.0	88.60	267.40	5,636.8	182.1	-2,218.5	2,224.1	1.28	-1.05	-0.74
7,793.0	89.40	270.90	5,638.4	180.7	-2,313.4	2,318.9	3.78	0.84	3.68
7,888.0	89.20	270.60	5,639.6	181.9	-2,408.4	2,413.9	0.38	-0.21	-0.32
7,982.0	89.00	270.00	5,641.0	182.4	-2,502.4	2,507.8	0.67	-0.21	-0.64
8,077.0	89.60	270.60	5,642.2	182.9	-2,597.4	2,602.7	0.89	0.63	0.63
8,172.0	89.60	268.10	5,642.9	181.9	-2,692.4	2,697.6	2.63	0.00	-2.63
8,267.0	91.20	270.60	5,642.2	180.8	-2,787.4	2,792.4	3.12	1.68	2.63
8,361.0	91.70	269.50	5,639.8	180.9	-2,881.3	2,886.3	1.29	0.53	-1.17
8,456.0	91.60	269.10	5,637.1	179.7	-2,976.3	2,981.2	0.43	-0.11	-0.42
8,551.0	92.50	268.80	5,633.7	178.0	-3,071.2	3,075.9	1.00	0.95	-0.32
8,646.0	92.10	268.80	5,629.9	176.0	-3,166.1	3,170.7	0.42	-0.42	0.00
8,741.0	91.90	269.10	5,626.6	174.2	-3,261.0	3,265.5	0.38	-0.21	0.32
8,836.0	90.70	268.60	5,624.4	172.3	-3,356.0	3,360.2	1.37	-1.26	-0.53
8,930.0	90.00	268.60	5,623.8	170.0	-3,450.0	3,454.0	0.74	-0.74	0.00
9,025.0	89.20	269.50	5,624.5	168.5	-3,545.0	3,548.9	1.27	-0.84	0.95
9,120.0	90.00	268.30	5,625.2	166.6	-3,639.9	3,643.7	1.52	0.84	-1.26
9,215.0	88.60	268.10	5,626.3	163.6	-3,734.9	3,738.4	1.49	-1.47	-0.21
9,310.0	89.00	267.90	5,628.3	160.3	-3,829.8	3,833.2	0.47	0.42	-0.21
9,405.0	89.50	268.30	5,629.6	157.2	-3,924.7	3,927.9	0.67	0.53	0.42
9,523.0	90.40	266.90	5,629.7	152.2	-4,042.6	4,045.5	1.41	0.76	-1.19
9,578.0	90.40	266.90	5,629.3	149.3	-4,097.5	4,100.2	0.00	0.00	0.00
Rohn State LD04-65-1HN BHL 2310'FSL, 660'FWL									

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_