



Directional Survey

Well Name: RAGIN CAJUN 14 FEDERAL 1H

Sub-Division DELAWARE BASIN	Region DELAWARE BASIN EAST	Field Name RATTLESNAKE (NM)	County LEA	State NM
Surface Legal Location Sec 14 26S 34E	APN 3002541541	Latitude (°) 32° 2' 13.007" N	Longitude (°) 103° 25' 58.126" W	Ground Elev MSL (ft) 3,223.70
				Orig KB Elevation (ft) 3,248.70

Survey Data

Date	MD (ft)	Incl (°)	Asm (°)	TVD (ft)	VS (ft)	N/S (ft)	E/W (ft)	DLS (ft/100ft)	Survey Tool	Survey Company
2/24/2015	6,796.00	2.50	114.93	6,792.58	-19.58	-18.36	107.98	0.23	MWD	ANADRILL SCHLUMBERGER
2/24/2015	6,892.00	2.42	115.15	6,888.49	-21.37	-20.10	111.71	0.08	MWD	ANADRILL SCHLUMBERGER
2/24/2015	6,970.00	2.59	111.46	6,966.42	-22.75	-21.45	114.84	0.30	MWD	ANADRILL SCHLUMBERGER
2/24/2015	7,065.00	2.50	112.12	7,061.32	-24.36	-23.01	118.78	0.10	MWD	ANADRILL SCHLUMBERGER
2/24/2015	7,160.00	2.50	113.13	7,156.23	-25.98	-24.61	122.58	0.05	MWD	ANADRILL SCHLUMBERGER
2/24/2015	7,254.00	2.50	113.22	7,250.14	-27.65	-26.22	126.35	0.00	MWD	ANADRILL SCHLUMBERGER
2/24/2015	7,349.00	2.42	114.14	7,345.05	-29.33	-27.86	130.09	0.09	MWD	ANADRILL SCHLUMBERGER
2/24/2015	7,538.00	2.42	115.46	7,533.89	-32.76	-31.20	137.33	0.03	MWD	ANADRILL SCHLUMBERGER
2/24/2015	7,634.00	2.42	119.33	7,629.80	-34.66	-33.07	140.93	0.17	MWD	ANADRILL SCHLUMBERGER
2/24/2015	7,730.00	2.29	117.92	7,725.72	-36.59	-34.96	144.39	0.15	MWD	ANADRILL SCHLUMBERGER
2/24/2015	7,825.00	2.42	121.83	7,820.84	-38.58	-36.90	147.77	0.22	MWD	ANADRILL SCHLUMBERGER
2/24/2015	7,920.00	2.29	119.72	7,915.56	-40.62	-38.90	151.12	0.16	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,012.00	2.20	118.76	8,007.49	-42.41	-40.66	154.27	0.11	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,106.00	2.29	118.14	8,101.42	-44.20	-42.42	157.51	0.10	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,202.00	2.20	112.32	8,197.34	-45.84	-44.02	160.90	0.26	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,296.00	2.20	114.32	8,291.27	-47.31	-45.45	164.21	0.08	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,391.00	2.50	108.74	8,386.19	-48.77	-46.87	167.84	0.40	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,423.00	2.29	110.32	8,418.17	-49.23	-47.31	169.10	0.69	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,501.00	1.78	107.88	8,496.12	-50.17	-48.23	171.71	0.66	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,533.00	0.30	301.15	8,528.11	-50.28	-48.34	172.11	6.48	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,584.00	3.42	291.41	8,559.09	-49.89	-47.96	171.18	10.08	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,596.00	6.60	287.65	8,590.96	-48.96	-47.05	168.54	9.99	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,627.00	9.15	293.12	8,621.67	-47.41	-45.54	164.58	8.56	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,659.00	12.46	298.38	8,653.10	-44.70	-42.90	159.20	10.78	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,690.00	15.39	300.69	8,683.19	-40.94	-39.21	152.72	9.62	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,722.00	17.90	305.17	8,713.84	-35.85	-34.21	145.04	8.80	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,753.00	20.79	311.12	8,743.09	-29.40	-27.85	137.00	11.27	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,785.00	23.34	314.79	8,772.75	-21.10	-19.64	128.22	9.06	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,816.00	25.90	315.43	8,800.93	-11.84	-10.49	119.11	8.30	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,848.00	28.92	316.02	8,829.33	-1.18	0.06	108.83	9.48	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,879.00	32.32	316.77	8,856.01	10.38	11.49	97.95	11.04	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,911.00	36.27	317.07	8,882.44	23.69	24.66	85.64	12.36	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,942.00	40.77	319.09	8,908.69	38.20	39.03	72.76	15.07	MWD	ANADRILL SCHLUMBERGER
2/24/2015	8,973.00	44.71	321.46	8,929.45	54.54	55.22	59.33	13.73	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,005.00	48.60	323.96	8,951.41	73.22	73.74	45.25	13.42	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,036.00	52.62	326.82	8,971.08	93.09	93.46	31.66	14.80	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,068.00	55.55	330.44	8,989.86	115.37	115.58	18.18	12.95	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,099.00	58.06	334.26	9,006.83	138.48	138.56	6.16	13.11	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,131.00	60.61	338.82	9,023.16	163.85	163.80	-4.78	14.62	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,163.00	63.29	343.25	9,038.21	190.65	190.50	-13.94	14.81	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,194.00	65.63	346.92	9,051.58	217.75	217.53	-21.13	13.08	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,226.00	68.80	351.18	9,063.97	246.77	246.48	-26.72	15.77	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,257.00	72.32	355.24	9,074.29	275.82	275.50	-30.16	16.77	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,289.00	75.80	357.76	9,083.08	306.55	306.20	-32.03	13.25	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,320.00	77.45	358.71	9,090.25	336.70	336.35	-32.96	6.10	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,352.00	79.39	359.22	9,096.68	368.05	367.69	-33.53	6.26	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,383.00	81.86	359.59	9,101.73	398.63	398.27	-33.84	8.05	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,415.00	84.47	0.20	9,105.53	430.40	430.04	-33.90	8.37	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,446.00	86.78	0.14	9,107.90	461.30	460.95	-33.81	7.45	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,473.00	88.32	0.96	9,109.05	488.27	487.92	-33.55	6.46	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,504.00	90.00	0.62	9,109.51	519.26	518.91	-33.12	5.53	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,599.00	89.86	0.71	9,109.62	614.23	613.91	-32.02	0.18	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,694.00	90.91	0.12	9,108.98	709.21	708.90	-31.33	1.27	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,788.00	90.70	0.24	9,107.65	803.19	802.89	-31.04	0.26	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,882.00	90.00	0.51	9,107.09	897.17	896.89	-30.42	0.80	MWD	ANADRILL SCHLUMBERGER
2/24/2015	9,977.00	90.35	359.61	9,106.80	992.16	991.88	-30.32	1.02	MWD	ANADRILL SCHLUMBERGER
2/24/2015	10,072.00	89.86	359.50	9,106.62	1,087.16	1,086.88	-31.06	0.53	MWD	ANADRILL SCHLUMBERGER
2/24/2015	10,166.00	89.58	359.87	9,107.08	1,181.16	1,180.88	-31.58	0.49	MWD	ANADRILL SCHLUMBERGER
2/24/2015	10,261.00	89.09	359.64	9,108.19	1,276.15	1,275.87	-31.98	0.57	MWD	ANADRILL SCHLUMBERGER
2/24/2015	10,355.00	90.21	359.22	9,108.76	1,370.15	1,369.86	-32.92	1.27	MWD	ANADRILL SCHLUMBERGER
2/24/2015	10,450.00	89.65	358.81	9,108.88	1,465.15	1,464.85	-34.55	0.73	MWD	ANADRILL SCHLUMBERGER
2/24/2015	10,544.00	91.47	358.52	9,107.96	1,559.13	1,558.81	-36.74	1.96	MWD	ANADRILL SCHLUMBERGER
2/24/2015	10,639.00	91.54	358.85	9,105.46	1,654.09	1,653.78	-38.92	0.35	MWD	ANADRILL SCHLUMBERGER
2/24/2015	10,733.00	91.12	358.88	9,103.28	1,748.06	1,747.71	-40.78	0.45	MWD	ANADRILL SCHLUMBERGER
2/24/2015	10,828.00	90.70	359.97	9,101.77	1,843.05	1,842.69	-41.74	1.23	MWD	ANADRILL SCHLUMBERGER
2/24/2015	10,922.00	90.21	0.21	9,101.03	1,937.04	1,936.69	-41.59	0.58	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,017.00	89.58	0.22	9,101.20	2,032.03	2,031.69	-41.23	0.66	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,112.00	88.95	0.27	9,102.42	2,127.01	2,126.68	-40.82	0.67	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,206.00	88.74	0.45	9,104.31	2,220.97	2,220.65	-40.23	0.29	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,301.00	89.86	359.16	9,105.47	2,315.96	2,315.65	-40.56	1.80	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,396.00	89.51	359.30	9,106.00	2,410.96	2,410.64	-41.83	0.40	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,490.00	88.88	359.17	9,107.32	2,504.95	2,504.62	-43.09	0.68	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,585.00	90.49	358.41	9,107.84	2,599.94	2,599.59	-45.10	1.87	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,680.00	90.77	358.87	9,106.80	2,694.92	2,694.56	-47.35	0.57	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,774.00	90.35	358.62	9,105.88	2,788.91	2,788.53	-49.41	0.52	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,869.00	89.16	358.40	9,106.28	2,883.90	2,883.50	-51.88	1.27	MWD	ANADRILL SCHLUMBERGER
2/24/2015	11,964.00	90.07	359.17	9,106.92	2,978.88	2,978.47	-53.89	1.25	MWD	ANADRILL SCHLUMBERGER

NOV 05 2015



Directional Survey

Well Name: RAGIN CAJUN 14 FEDERAL 1H

Sub-Division DELAWARE BASIN		Region DELAWARE BASIN EAST		Field Name RATTLESNAKE (NM)		County LEA		State NM			
Surface Legal Location Sec 14 26S 34E		APN 3002541541		Latitude (°) 32° 2' 13.007" N		Longitude (°) 103° 25' 58.126" W		Ground Elev MSL (ft) 3,223.70		Orig KB Elevation (ft) 3,248.70	
Wellbores		Parent Wellbore OH		SAP Well ID 38027		Vertical Section Direction (°)					
Kick Offs & Key Depths											
Date 3/8/2015				Type Kick Off				Top Depth (ftKB) 8,513.0			
Actual Deviation Survey EXTREME SURVEY, Proposed? No				Definitive? Yes		Proposed? No		Proposed Deviation Survey			
Deviation Survey											
Date 2/24/2015		Description EXTREME SURVEY									
MD Tie In (ftKB)		TVD Tie In (ftKB)		Inclination Tie In (°)		Azimuth Tie In (°)		NSTie In (ft)		EWtie In (ft)	
Survey Data											
Date	MD (ftKB)	Incl (°)	Azim (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company	
2/24/2015	127.00	0.62	169.73	127.00	-0.68	-0.68	0.12	0.49	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	222.00	1.00	277.36	221.99	-1.07	-1.08	-0.61	1.40	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	282.00	0.88	256.83	281.98	-1.10	-1.11	-1.58	0.59	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	343.00	0.79	268.13	342.98	-1.21	-1.23	-2.45	0.31	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	407.00	1.19	266.72	406.97	-1.26	-1.29	-3.56	0.63	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	463.00	1.10	280.52	462.96	-1.17	-1.22	-4.67	0.52	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	579.00	0.88	267.25	578.94	-0.99	-1.06	-6.65	0.27	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	734.00	0.88	279.86	733.92	-0.81	-0.91	-9.01	0.12	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	827.00	1.10	270.06	826.91	-0.67	-0.79	-10.61	0.30	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	889.00	1.41	279.55	888.89	-0.53	-0.66	-11.96	0.60	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	1,064.00	1.10	278.54	1,063.85	0.12	-0.06	-15.74	0.18	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	1,156.00	1.19	273.22	1,155.83	0.33	0.13	-17.57	0.15	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	1,341.00	0.79	251.65	1,340.80	0.07	-0.17	-20.70	0.29	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	1,531.00	0.79	260.04	1,530.79	-0.54	-0.80	-23.23	0.08	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	1,625.00	0.79	260.04	1,624.78	0.00	-0.27	-23.86	1.29	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	1,718.00	0.88	284.74	1,717.77	0.83	0.55	-24.54	1.11	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	1,809.00	1.10	274.94	1,808.76	1.10	0.81	-26.09	0.30	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	1,904.00	0.70	278.85	1,903.75	1.29	0.97	-27.57	0.43	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,015.00	0.70	274.54	2,014.74	1.46	1.13	-28.91	0.05	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,110.00	0.70	269.14	2,109.73	1.51	1.17	-30.07	0.07	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,205.00	0.40	234.33	2,204.73	1.32	0.97	-30.92	0.46	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,300.00	0.62	256.04	2,299.72	1.01	0.65	-31.69	0.30	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,396.00	0.09	293.35	2,395.72	0.92	0.55	-32.26	0.57	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,491.00	0.22	274.22	2,490.72	0.97	0.60	-32.51	0.15	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,566.00	0.22	212.54	2,565.72	0.86	0.49	-32.74	0.30	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,659.00	0.22	151.14	2,658.72	0.55	0.18	-32.75	0.24	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,754.00	0.22	56.44	2,753.72	0.49	0.12	-32.51	0.34	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,849.00	0.22	92.65	2,848.72	0.58	0.21	-32.17	0.14	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	2,944.00	0.31	81.75	2,943.72	0.60	0.24	-31.73	0.11	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	3,039.00	0.48	112.96	3,038.72	0.48	0.12	-31.11	0.28	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	3,134.00	0.70	75.95	3,133.71	0.45	0.11	-30.18	0.45	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	3,242.00	0.79	93.05	3,241.70	0.56	0.23	-28.80	0.22	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	3,338.00	1.10	86.16	3,337.69	0.57	0.26	-27.22	0.34	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	3,433.00	1.58	69.14	3,432.66	1.07	0.78	-25.09	0.65	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	3,529.00	1.80	66.33	3,528.62	2.12	1.86	-22.47	0.24	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	3,625.00	1.80	74.46	3,624.58	3.09	2.87	-19.64	0.27	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	3,720.00	1.89	72.44	3,719.53	3.93	3.74	-16.70	0.12	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	3,891.00	1.01	81.12	3,890.47	4.97	4.83	-12.53	0.63	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	3,983.00	1.10	74.24	3,982.45	5.31	5.19	-10.88	0.17	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	4,080.00	1.01	75.12	4,079.44	5.77	5.66	-9.15	0.09	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	4,173.00	1.41	69.93	4,172.42	6.35	6.27	-7.29	0.45	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	4,268.00	1.58	70.33	4,267.38	7.16	7.11	-4.96	0.18	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	4,362.00	1.58	79.50	4,361.35	7.81	7.78	-2.46	0.27	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	4,457.00	1.41	91.42	4,456.32	7.98	7.99	-0.01	0.37	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	4,567.00	1.71	91.25	4,566.28	7.89	7.92	2.99	0.27	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	4,663.00	2.11	96.04	4,662.22	7.63	7.70	6.18	0.45	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	4,757.00	2.42	97.53	4,756.15	7.15	7.26	9.87	0.34	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	4,855.00	2.68	97.22	4,854.05	6.54	6.70	14.19	0.27	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	4,950.00	3.12	101.35	4,948.93	5.70	5.91	18.93	0.51	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	5,040.00	3.52	97.93	5,038.78	4.78	5.05	24.07	0.50	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	5,125.00	3.21	99.33	5,123.63	3.98	4.31	29.00	0.38	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	5,145.00	3.38	99.86	5,143.60	3.77	4.11	30.13	0.86	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	5,359.00	2.90	100.52	5,357.28	1.57	2.05	41.67	0.22	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	5,454.00	2.81	101.75	5,452.16	0.81	1.13	46.31	0.11	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	5,549.00	2.81	100.83	5,547.05	-0.36	0.22	50.88	0.05	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	5,645.00	2.90	102.06	5,642.93	-1.36	-0.73	55.57	0.11	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	5,740.00	2.81	105.22	5,737.81	-2.52	-1.84	60.16	0.19	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	5,835.00	2.90	103.55	5,832.69	-3.75	-3.02	64.75	0.13	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	5,930.00	2.81	109.35	5,927.57	-5.14	-4.35	69.28	0.32	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	6,025.00	3.69	105.44	6,022.42	-6.78	-5.94	74.42	0.95	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	6,118.00	2.81	110.63	6,115.27	-8.44	-7.54	79.44	1.00	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	6,213.00	2.90	107.73	6,210.15	-10.04	-9.09	83.91	0.18	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	6,308.00	2.59	110.23	6,305.04	-11.56	-10.56	88.21	0.35	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	6,513.00	2.42	110.93	6,509.85	-14.81	-13.71	96.60	0.08	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	6,608.00	2.42	113.35	6,604.76	-16.36	-15.22	100.32	0.11	MWD	ANADRILL SCHLUMBERGER	
2/24/2015	6,702.00	2.59	110.45	6,698.67	-17.93	-16.75	104.13	0.23	MWD	ANADRILL SCHLUMBERGER	



Directional Survey

Well Name: RAGIN CAJUN 14 FEDERAL 1H

Sub-Division	Region	Field Name	County	State
DELAWARE BASIN	DELAWARE BASIN EAST	RATTLESNAKE (NM)	LEA	NM
Surface Legal Location	Section	Latitude (°)	Longitude (°)	Ground Elev. MSL (ft)
Sec 14 28S 34E	3002341541	32° 2' 13.007" N	103° 25' 58.126" W	3,223.70
				Orig. KB Elevation (ft)
				3,248.70

Survey Data

Date	MD (ft)	Incl (°)	Azm (°)	TVD (ft)	VS (ft)	NS (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
2/24/2015	12,059.00	89.65	359.67	9,107.15	3,073.89	3,073.47	-54.85	0.69	MWD	ANADRILL SCHLUMBERGER
2/24/2015	12,153.00	88.95	359.70	9,108.30	3,167.88	3,167.46	-55.37	0.76	MWD	ANADRILL SCHLUMBERGER
2/24/2015	12,248.00	89.79	358.61	9,109.35	3,262.87	3,262.44	-56.77	1.45	MWD	ANADRILL SCHLUMBERGER
2/24/2015	12,343.00	89.93	358.97	9,109.58	3,357.87	3,357.42	-58.78	0.41	MWD	ANADRILL SCHLUMBERGER
2/24/2015	12,437.00	89.68	359.51	9,109.98	3,451.87	3,451.41	-60.03	0.68	MWD	ANADRILL SCHLUMBERGER
2/24/2015	12,532.00	89.16	359.67	9,111.02	3,546.86	3,546.40	-60.71	0.47	MWD	ANADRILL SCHLUMBERGER
2/24/2015	12,627.00	90.70	359.36	9,111.14	3,641.86	3,641.39	-61.51	1.65	MWD	ANADRILL SCHLUMBERGER
2/24/2015	12,721.00	90.36	359.16	9,110.28	3,735.85	3,735.38	-62.72	0.43	MWD	ANADRILL SCHLUMBERGER
2/24/2015	12,816.00	90.00	357.92	9,109.99	3,830.84	3,830.35	-65.14	1.36	MWD	ANADRILL SCHLUMBERGER
2/24/2015	12,911.00	90.42	358.42	9,109.64	3,925.82	3,925.30	-68.16	0.69	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,005.00	89.44	358.91	9,109.76	4,019.81	4,019.27	-70.37	1.17	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,100.00	90.91	359.61	9,109.47	4,114.81	4,114.26	-71.59	1.71	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,195.00	90.70	359.64	9,108.13	4,209.80	4,209.25	-72.22	0.22	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,290.00	90.98	0.20	9,106.74	4,304.78	4,304.24	-72.35	0.66	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,384.00	90.28	359.53	9,105.70	4,398.77	4,398.23	-72.57	1.03	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,479.00	90.14	359.80	9,105.36	4,493.77	4,493.23	-73.13	0.32	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,574.00	90.63	0.37	9,104.72	4,588.76	4,588.23	-72.98	0.79	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,669.00	90.42	359.67	9,103.85	4,683.74	4,683.22	-72.79	0.57	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,763.00	90.21	0.67	9,103.33	4,777.73	4,777.22	-72.34	0.88	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,858.00	90.28	1.75	9,102.92	4,872.68	4,872.19	-70.34	1.14	MWD	ANADRILL SCHLUMBERGER
2/24/2015	13,953.00	89.72	0.48	9,102.92	4,967.63	4,967.17	-68.49	1.46	MWD	ANADRILL SCHLUMBERGER
2/24/2015	14,047.00	90.70	0.72	9,102.58	5,061.61	5,061.17	-67.50	1.07	MWD	ANADRILL SCHLUMBERGER
2/24/2015	14,142.00	90.84	0.75	9,101.30	5,156.57	5,156.15	-66.29	0.15	MWD	ANADRILL SCHLUMBERGER
2/24/2015	14,236.00	90.70	0.55	9,100.04	5,250.54	5,250.14	-65.22	0.26	MWD	ANADRILL SCHLUMBERGER
2/24/2015	14,330.00	91.12	359.99	9,098.55	5,344.51	5,344.12	-64.76	0.74	MWD	ANADRILL SCHLUMBERGER
2/24/2015	14,425.00	90.63	359.74	9,097.10	5,439.50	5,439.11	-65.00	0.58	MWD	ANADRILL SCHLUMBERGER
2/24/2015	14,519.00	90.42	0.08	9,096.24	5,533.49	5,533.11	-65.15	0.43	MWD	ANADRILL SCHLUMBERGER
2/24/2015	14,614.00	89.79	0.26	9,096.06	5,628.48	5,628.10	-64.87	0.69	MWD	ANADRILL SCHLUMBERGER
2/24/2015	14,686.00	89.79	0.26	9,096.33	5,700.47	5,700.10	-64.54	0.00	BIT	ANADRILL SCHLUMBERGER