

HOBBS OCEAN
JUL 21 2017
RECEIVED

Well Name: SALADO DRAW 6 FEDERAL 2H

Sub-Division DELAWARE BASIN	Region LEA COUNTY CORE	Field Name RATTLESNAKE (NM)	County LEA	State/Province NM
Surface Legal Location SEC 6-26S-34E	API/UMI 3002542919	Latitude (°) 32° 3' 56.33" N	Longitude (°) 103° 30' 38.421" W	Orig KB Elevation (ft) 3,357.00
			Ground Elev MSL (ft) 3,327.00	KB - GL (ft) 30.00

Wellbore Name OH	Parent Wellbore OH	SAP Well ID 39142	Vertical Section Direction (°)
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Kick Offs & Key Depths

Date 12/5/2015	Type CURVE	Top Depth (ftKB) 11,833.0
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Actual Deviation Survey MWD, Proposed? No	Definitive? No	Proposed? No	Proposed Deviation Survey
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Deviation Survey

Date 11/26/2015	Description MWD
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MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NS Tie In (ft)	EW Tie In (ft)
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Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	EW (ft)	DLS (°/100ft)	Survey Tool	Survey Company
12/4/2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD	EXTREME
12/4/2015	160.00	0.30	296.30	160.00	0.19	-0.38	0.19	0.19	MWD	EXTREME
12/4/2015	330.00	0.90	232.30	329.99	-0.40	-0.43	-1.83	0.48	MWD	EXTREME
12/4/2015	512.00	1.10	240.40	511.96	-2.08	-2.17	-4.48	0.13	MWD	EXTREME
12/4/2015	700.00	0.90	201.20	699.94	-4.30	-4.44	-6.58	0.37	MWD	EXTREME
12/4/2015	830.00	0.80	207.30	829.92	-6.05	-6.20	-7.37	0.10	MWD	EXTREME
12/4/2015	961.00	1.32	166.15	960.90	-8.32	-8.47	-7.43	0.68	MWD	EXTREME
12/4/2015	1,143.00	1.10	167.65	1,142.86	-12.08	-12.22	-6.55	0.12	MWD	EXTREME
12/4/2015	1,239.00	1.10	169.50	1,238.84	-13.89	-14.02	-6.19	0.04	MWD	EXTREME
12/4/2015	1,420.00	0.62	170.15	1,419.82	-16.58	-16.70	-5.70	0.27	MWD	EXTREME
12/4/2015	1,611.00	0.40	156.35	1,610.81	-18.21	-18.32	-5.26	0.13	MWD	EXTREME
12/4/2015	1,800.00	0.31	158.55	1,799.81	-19.30	-19.40	-4.81	0.05	MWD	EXTREME
12/4/2015	1,990.00	0.48	148.27	1,989.81	-20.47	-20.56	-4.20	0.10	MWD	EXTREME
12/4/2015	2,179.00	0.09	202.67	2,178.80	-21.29	-21.37	-3.84	0.23	MWD	EXTREME
12/4/2015	2,370.00	0.00	53.96	2,369.80	-21.43	-21.51	-3.90	0.05	MWD	EXTREME
12/4/2015	2,560.00	0.09	39.46	2,559.80	-21.31	-21.39	-3.80	0.05	MWD	EXTREME
12/4/2015	2,746.00	0.22	47.97	2,745.80	-20.97	-21.04	-3.45	0.07	MWD	EXTREME
12/4/2015	2,942.00	0.31	64.95	2,941.80	-20.51	-20.57	-2.69	0.06	MWD	EXTREME
12/4/2015	3,131.00	0.70	57.04	3,130.79	-19.69	-19.72	-1.25	0.21	MWD	EXTREME
12/4/2015	3,321.00	1.59	58.05	3,320.75	-17.73	-17.69	1.96	0.47	MWD	EXTREME
12/4/2015	3,512.00	2.29	50.36	3,511.64	-14.00	-13.86	7.14	0.39	MWD	EXTREME
12/4/2015	3,702.00	2.59	48.16	3,701.47	-8.84	-8.57	13.26	0.17	MWD	EXTREME
12/4/2015	3,892.00	2.59	47.37	3,891.28	-3.20	-2.80	19.62	0.02	MWD	EXTREME
12/4/2015	3,987.00	2.90	46.36	3,986.17	-0.16	0.31	22.94	0.33	MWD	EXTREME
12/4/2015	4,082.00	3.12	47.15	4,081.04	3.19	3.73	26.57	0.24	MWD	EXTREME
12/4/2015	4,177.00	2.11	50.84	4,175.94	5.98	6.59	29.83	1.08	MWD	EXTREME
12/4/2015	4,270.00	1.49	54.53	4,268.89	7.72	8.37	32.14	0.68	MWD	EXTREME
12/4/2015	4,365.00	1.41	48.25	4,363.86	9.17	9.87	34.02	0.19	MWD	EXTREME
12/4/2015	4,460.00	1.71	50.97	4,458.82	10.81	11.54	35.99	0.33	MWD	EXTREME
12/4/2015	4,555.00	1.89	58.75	4,553.78	12.46	13.24	38.43	0.32	MWD	EXTREME
12/4/2015	4,647.00	1.80	59.54	4,645.73	13.93	14.76	40.97	0.10	MWD	EXTREME
12/4/2015	4,745.00	1.58	60.46	4,743.69	15.32	16.21	43.47	0.23	MWD	EXTREME
12/4/2015	4,837.00	1.71	68.77	4,835.65	16.40	17.33	45.86	0.29	MWD	EXTREME
12/4/2015	4,933.00	1.58	75.05	4,931.61	17.20	18.19	48.47	0.23	MWD	EXTREME
12/4/2015	5,027.00	1.41	76.24	5,025.58	17.76	18.80	50.85	0.18	MWD	EXTREME
12/4/2015	5,123.00	1.19	74.75	5,121.55	18.27	19.34	52.96	0.23	MWD	EXTREME
12/4/2015	5,144.00	1.19	74.83	5,142.55	18.37	19.46	53.38	0.01	MWD	EXTREME
12/4/2015	5,320.00	0.62	72.15	5,318.52	19.09	20.23	56.05	0.32	MWD	EXTREME
12/4/2015	5,497.00	0.62	70.13	5,495.51	19.67	20.85	57.86	0.01	MWD	EXTREME
12/4/2015	5,685.00	0.88	60.95	5,683.50	20.67	21.90	60.08	0.15	MWD	EXTREME
12/4/2015	5,869.00	0.88	77.65	5,867.48	21.61	22.88	62.69	0.14	MWD	EXTREME
12/4/2015	6,060.00	0.62	68.64	6,058.46	22.25	23.57	65.09	0.15	MWD	EXTREME
12/4/2015	6,246.00	0.79	63.45	6,244.45	23.14	24.51	67.17	0.10	MWD	EXTREME
12/4/2015	6,437.00	0.62	49.35	6,435.43	24.37	25.78	69.13	0.13	MWD	EXTREME
12/4/2015	6,607.00	0.79	61.56	6,605.42	25.49	26.93	70.86	0.13	MWD	EXTREME
12/4/2015	6,816.00	0.70	38.14	6,814.40	27.14	28.62	72.92	0.15	MWD	EXTREME
12/4/2015	7,009.00	1.01	39.94	7,007.38	29.33	30.85	74.74	0.16	MWD	EXTREME
12/4/2015	7,195.00	1.01	39.94	7,193.35	31.80	33.37	76.84	0.00	MWD	EXTREME
12/4/2015	7,387.00	0.88	35.37	7,385.33	34.26	35.87	78.78	0.08	MWD	EXTREME
12/4/2015	7,575.00	0.62	34.27	7,573.31	36.25	37.89	80.19	0.14	MWD	EXTREME
12/4/2015	7,765.00	0.22	182.94	7,763.31	36.72	38.37	80.75	0.43	MWD	EXTREME
12/4/2015	7,954.00	0.31	206.36	7,952.30	35.91	37.55	80.51	0.07	MWD	EXTREME
12/4/2015	8,148.00	1.01	201.13	8,146.29	33.86	35.48	79.66	0.36	MWD	EXTREME
12/4/2015	8,334.00	1.32	175.16	8,332.25	30.20	31.82	79.25	0.32	MWD	EXTREME
12/4/2015	8,523.00	1.58	164.26	8,521.19	25.51	27.14	80.14	0.20	MWD	EXTREME
12/4/2015	8,714.00	1.58	161.45	8,712.12	20.45	22.11	81.69	0.04	MWD	EXTREME
12/4/2015	8,903.00	1.49	172.26	8,901.05	15.52	17.21	82.85	0.16	MWD	EXTREME
12/4/2015	9,097.00	1.19	191.55	9,095.00	11.05	12.74	82.78	0.28	MWD	EXTREME
12/4/2015	9,286.00	1.10	230.75	9,283.96	8.02	9.66	80.99	0.41	MWD	EXTREME
12/4/2015	9,476.00	0.68	248.94	9,473.94	6.51	8.11	78.52	0.26	MWD	EXTREME
12/4/2015	9,760.00	1.58	274.96	9,757.89	6.35	7.84	73.05	0.36	MWD	EXTREME
12/4/2015	9,950.00	3.30	273.33	9,947.71	7.06	8.38	64.98	0.91	MWD	EXTREME
12/4/2015	10,031.00	2.99	283.05	10,028.58	7.76	8.99	60.59	0.76	MWD	EXTREME
12/4/2015	10,126.00	3.21	273.64	10,123.45	8.59	9.72	55.53	0.58	MWD	EXTREME
12/4/2015	10,328.00	3.30	280.15	10,325.12	10.21	11.11	44.16	0.19	MWD	EXTREME
12/4/2015	10,423.00	2.50	285.77	10,420.00	11.35	12.15	39.47	0.89	MWD	EXTREME



Directional Survey

DELAWARE BASIN UNRESTRICTED

Well Name: SALADO DRAW 6 FEDERAL 2H

Sub-Division DELAWARE BASIN	Region LEA COUNTY CORE	Field Name RATTLESNAKE (NM)	County LEA	State/Province NM
Surface Legal Location SEC 6-26S-34E	API/UWI 3002542919	Latitude (°) 32° 3' 56.33" N	Longitude (°) 103° 30' 38.421" W	Orig KB Elevation (ft) 3,357.00
				Ground Elev MSL (ft) 3,327.00
				KB - GL (ft) 30.00

Survey Data

Date	MD (ft/B)	Incl (°)	Azm (°)	TVD (ft/B)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
12/4/2015	10,518.00	2.59	293.55	10,514.91	12.85	13.57	35.51	0.38	MWD	EXTREME
12/4/2015	10,708.00	2.90	312.45	10,704.69	17.96	18.53	28.03	0.50	MWD	EXTREME
12/4/2015	10,898.00	2.11	302.47	10,894.51	23.21	23.65	21.53	0.47	MWD	EXTREME
12/4/2015	11,088.00	2.68	305.25	11,084.34	27.79	28.10	14.95	0.31	MWD	EXTREME
12/4/2015	11,183.00	1.32	302.87	11,179.28	29.72	29.97	12.22	1.43	MWD	EXTREME
12/4/2015	11,373.00	1.10	241.34	11,369.25	30.10	30.28	8.78	0.68	MWD	EXTREME
12/4/2015	11,562.00	1.71	175.56	11,558.20	26.45	26.60	7.41	0.85	MWD	EXTREME
12/4/2015	11,783.00	1.10	175.16	11,779.13	21.04	21.20	7.84	0.28	MWD	EXTREME
12/4/2015	11,862.00	1.90	23.20	11,858.12	21.47	21.65	8.42	3.69	MWD	LEAM DRILLING SYSTEMS
12/4/2015	11,894.00	6.20	2.30	11,890.03	23.68	23.86	8.70	13.99	MWD	LEAM DRILLING SYSTEMS
12/4/2015	11,925.00	10.40	358.20	11,920.70	28.15	28.34	8.68	13.67	MWD	LEAM DRILLING SYSTEMS
12/4/2015	11,957.00	13.40	357.90	11,952.01	34.75	34.93	8.45	9.38	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,004.00	17.70	358.10	11,997.28	47.35	47.52	8.02	9.15	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,052.00	22.40	358.60	12,042.36	63.80	63.96	7.55	9.80	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,099.00	27.50	0.20	12,084.96	83.61	83.78	7.37	10.94	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,147.00	32.40	1.80	12,126.54	107.55	107.73	7.81	10.34	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,194.00	36.10	0.50	12,165.38	133.98	134.17	8.33	8.02	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,242.00	40.10	359.50	12,203.15	163.58	163.78	8.32	8.43	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,289.00	44.30	0.50	12,237.96	195.14	195.35	8.33	9.05	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,336.00	48.50	0.90	12,270.36	229.15	229.37	8.75	8.96	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,383.00	52.30	1.20	12,300.31	265.33	265.57	9.42	8.10	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,431.00	56.10	0.50	12,328.39	304.23	304.49	9.99	8.00	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,478.00	59.90	358.90	12,353.29	344.07	344.34	9.77	8.58	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,526.00	63.50	358.40	12,376.04	386.33	386.58	8.77	7.56	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,573.00	67.80	360.00	12,395.42	429.13	429.39	8.18	9.66	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,621.00	71.20	1.90	12,412.23	474.05	474.33	8.93	7.99	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,668.00	75.30	2.50	12,425.77	518.97	519.30	10.66	8.81	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,716.00	80.00	2.50	12,436.03	565.75	566.13	12.71	9.79	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,766.00	85.20	0.90	12,442.47	615.25	615.67	14.17	10.87	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,814.00	88.40	359.80	12,445.15	663.16	663.59	14.47	7.05	MWD	LEAM DRILLING SYSTEMS
12/4/2015	12,909.00	90.70	0.20	12,445.90	758.13	758.58	14.47	2.46	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,004.00	92.20	359.50	12,443.49	853.08	853.54	14.22	1.74	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,099.00	93.20	359.60	12,439.02	947.96	948.43	13.47	1.06	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,194.00	92.60	0.50	12,434.21	1,042.82	1,043.31	13.56	1.14	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,289.00	91.50	0.20	12,430.81	1,137.72	1,138.25	14.14	1.20	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,383.00	90.30	0.50	12,429.34	1,231.68	1,232.23	14.71	1.32	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,478.00	91.20	0.90	12,428.09	1,326.62	1,327.22	15.87	1.04	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,573.00	89.90	0.50	12,427.18	1,421.56	1,422.20	17.03	1.43	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,668.00	89.20	0.20	12,427.93	1,516.53	1,517.20	17.61	0.80	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,763.00	91.30	0.30	12,427.51	1,611.49	1,612.19	18.03	2.21	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,858.00	89.80	358.40	12,426.60	1,706.47	1,707.17	16.95	2.55	MWD	LEAM DRILLING SYSTEMS
12/4/2015	13,952.00	90.50	358.90	12,426.35	1,800.47	1,801.14	14.73	0.92	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,047.00	89.10	357.40	12,426.69	1,895.46	1,896.09	11.67	2.16	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,142.00	89.70	357.90	12,427.68	1,990.43	1,991.00	7.77	0.82	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,237.00	90.70	357.50	12,427.35	2,085.41	2,085.92	3.96	1.13	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,331.00	91.90	357.20	12,425.22	2,179.36	2,179.80	-0.39	1.32	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,426.00	90.10	357.50	12,423.56	2,274.31	2,274.68	-4.78	1.92	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,521.00	89.40	358.20	12,423.97	2,369.29	2,369.61	-8.34	1.04	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,616.00	90.50	357.90	12,424.06	2,464.28	2,464.55	-11.57	1.20	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,711.00	89.10	358.40	12,424.39	2,559.27	2,559.50	-14.64	1.56	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,805.00	88.90	358.40	12,426.03	2,653.25	2,653.45	-17.26	0.21	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,900.00	89.80	358.20	12,427.11	2,748.24	2,748.40	-20.08	0.97	MWD	LEAM DRILLING SYSTEMS
12/4/2015	14,995.00	91.20	358.10	12,426.28	2,843.23	2,843.34	-23.15	1.48	MWD	LEAM DRILLING SYSTEMS
12/4/2015	15,090.00	89.50	358.20	12,425.70	2,938.22	2,938.29	-26.22	1.79	MWD	LEAM DRILLING SYSTEMS
12/4/2015	15,185.00	90.20	358.10	12,425.95	3,033.21	3,033.24	-29.28	0.74	MWD	LEAM DRILLING SYSTEMS
12/4/2015	15,280.00	90.70	357.90	12,425.20	3,128.19	3,128.18	-32.60	0.57	MWD	LEAM DRILLING SYSTEMS
12/4/2015	15,375.00	91.50	357.70	12,423.38	3,223.16	3,223.09	-36.24	0.87	MWD	LEAM DRILLING SYSTEMS
12/4/2015	15,469.00	89.50	358.40	12,422.56	3,317.14	3,317.03	-39.44	2.25	MWD	LEAM DRILLING SYSTEMS
12/4/2015	15,564.00	90.40	358.10	12,422.64	3,412.14	3,411.98	-42.34	1.00	MWD	LEAM DRILLING SYSTEMS
12/4/2015	15,659.00	91.20	357.00	12,421.31	3,507.10	3,506.88	-46.40	1.43	MWD	LEAM DRILLING SYSTEMS
12/4/2015	15,754.00	88.60	357.50	12,421.48	3,602.06	3,601.76	-50.96	2.79	MWD	LEAM DRILLING SYSTEMS
12/4/2015	15,849.00	89.30	357.00	12,423.22	3,697.00	3,696.64	-55.52	0.91	MWD	LEAM DRILLING SYSTEMS
12/4/2015	15,944.00	90.10	356.80	12,423.72	3,791.95	3,791.50	-60.66	0.87	MWD	LEAM DRILLING SYSTEMS
12/4/2015	16,039.00	90.90	356.80	12,422.89	3,886.88	3,886.34	-65.96	0.84	MWD	LEAM DRILLING SYSTEMS
12/4/2015	16,134.00	91.20	357.00	12,421.15	3,981.81	3,981.19	-71.10	0.38	MWD	LEAM DRILLING SYSTEMS
12/4/2015	16,229.00	89.90	357.70	12,420.23	4,076.77	4,076.08	-75.49	1.55	MWD	LEAM DRILLING SYSTEMS
12/4/2015	16,324.00	89.80	357.90	12,420.48	4,171.76	4,171.01	-79.13	0.24	MWD	LEAM DRILLING SYSTEMS
12/4/2015	16,419.00	90.20	357.90	12,420.48	4,266.74	4,265.95	-82.62	0.42	MWD	LEAM DRILLING SYSTEMS
12/4/2015	16,514.00	90.90	358.40	12,419.57	4,361.73	4,360.89	-85.68	0.91	MWD	LEAM DRILLING SYSTEMS
12/4/2015	16,608.00	91.10	358.20	12,417.93	4,455.71	4,454.84	-88.47	0.30	MWD	LEAM DRILLING SYSTEMS
12/4/2015	16,703.00	91.20	358.60	12,416.02	4,550.69	4,549.78	-91.12	0.43	MWD	LEAM DRILLING SYSTEMS
12/9/2015	16,798.00	91.10	358.40	12,414.12	4,645.67	4,644.73	-93.61	0.24	MWD	LEAM DRILLING SYSTEMS
12/9/2015	16,843.00	91.20	358.40	12,413.21	4,690.66	4,689.70	-94.86	0.22	MWD	LEAM DRILLING SYSTEMS
12/9/2015	16,900.00	91.20	358.40	12,412.02	4,747.65	4,746.67	-96.46	0.00	BIT	LEAM DRILLING SYSTEMS