



Directional Survey

JAN 10 2020

DELAWARE BASIN UNRESTRICTED

RECEIVED

Well Name: JAYHAWK 7 FED 13H

Sub-Division DELAWARE BASIN	Region LEA COUNTY CORE	Field Name RATTLESNAKE DBBU	County LEA	State/Province NM
Surface Legal Location 7-26S-34E	API/UWI 3002545551	Latitude (°) 32° 3' 49.322" N	Longitude (°) 103° 30' 39.63" W	Orig KB Elevation (ft) 3,372.60
				Ground Elev MSL (ft) 3,339.60
				KB - GL (ft) 33.00

Wellbores	Parent Wellbore	SAP Well ID	Vertical Section Direction (°) 179.92
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Kick Offs & Key Depths			
Date 6/3/2019	Type CURVE	Top Depth (ftKB) 12,239.4	
Date 6/8/2019	Type CURVE	Top Depth (ftKB) 12,207.0	

Actual Deviation Survey COMPOSITE OH, Proposed? No	Definitive? No	Proposed? No	Proposed Deviation Survey COMPOSITE WELL PLAN - OH, Proposed? Yes
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Deviation Survey			
Date 5/26/2019	Description COMPOSITE OH		
MD Tie In (ftKB) 0.00	TVD Tie In (ftKB) 0.00	Inclination Tie In (°) 0.00	Azimuth Tie In (°) 0.00
		NSTie In (ft) 0.00	EWtie In (ft) 0.00

Survey Data										
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
5/27/2019	181.00	0.30	224.20	181.00	0.34	-0.34	-0.33	0.17	MWD	TOTAL DIRECTIONAL SERV...
5/27/2019	233.00	0.10	196.20	233.00	0.48	-0.48	-0.44	0.42	MWD	TOTAL DIRECTIONAL SERV...
5/27/2019	328.00	0.40	166.10	328.00	0.88	-0.88	-0.38	0.33	MWD	TOTAL DIRECTIONAL SERV...
5/27/2019	423.00	0.40	172.30	423.00	1.53	-1.53	-0.26	0.05	MWD	TOTAL DIRECTIONAL SERV...
5/27/2019	517.00	0.50	177.30	516.99	2.27	-2.27	-0.19	0.11	MWD	TOTAL DIRECTIONAL SERV...
5/27/2019	612.00	0.60	171.50	611.99	3.17	-3.17	-0.10	0.12	MWD	TOTAL DIRECTIONAL SERV...
5/27/2019	707.00	0.70	163.50	706.98	4.22	-4.22	0.14	0.14	MWD	TOTAL DIRECTIONAL SERV...
5/27/2019	768.00	0.90	162.90	767.98	5.04	-5.04	0.38	0.33	MWD	TOTAL DIRECTIONAL SERV...
5/27/2019	848.00	1.00	163.60	847.97	6.31	-6.31	0.77	0.13	MWD	TOTAL DIRECTIONAL SERV...
5/29/2019	980.00	0.70	182.40	979.95	8.22	-8.22	1.06	0.31	MWD	TOTAL DIRECTIONAL SERV...
5/29/2019	1,075.00	0.90	192.00	1,074.94	9.53	-9.53	0.88	0.25	MWD	TOTAL DIRECTIONAL SERV...
5/29/2019	1,169.00	0.90	184.60	1,168.93	10.99	-10.99	0.67	0.12	MWD	TOTAL DIRECTIONAL SERV...
5/29/2019	1,264.00	0.60	36.70	1,263.93	11.33	-11.33	0.90	1.52	MWD	TOTAL DIRECTIONAL SERV...
5/29/2019	1,358.00	1.20	32.30	1,357.91	10.11	-10.10	1.72	0.64	MWD	TOTAL DIRECTIONAL SERV...
5/29/2019	1,454.00	1.10	44.80	1,453.90	8.60	-8.60	2.91	0.28	MWD	TOTAL DIRECTIONAL SERV...
5/29/2019	1,548.00	1.10	41.40	1,547.88	7.29	-7.28	4.14	0.07	MWD	TOTAL DIRECTIONAL SERV...
5/29/2019	1,643.00	1.10	38.70	1,642.86	5.90	-5.89	5.31	0.05	MWD	TOTAL DIRECTIONAL SERV...
5/29/2019	1,738.00	1.00	37.30	1,737.84	4.53	-4.52	6.39	0.11	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	1,832.00	1.10	38.30	1,831.83	3.17	-3.16	7.44	0.11	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	1,927.00	1.20	39.50	1,926.81	1.68	-1.67	8.64	0.11	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,022.00	0.90	323.70	2,021.80	0.32	-0.30	8.83	1.38	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,116.00	1.10	296.80	2,115.78	-0.69	0.70	7.59	0.54	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,211.00	0.90	299.60	2,210.77	-1.47	1.48	6.13	0.22	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,305.00	0.80	308.70	2,304.76	-2.25	2.25	4.97	0.18	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,400.00	0.70	316.40	2,399.75	-3.08	3.09	4.06	0.15	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,495.00	0.70	307.60	2,494.74	-3.86	3.86	3.20	0.11	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,590.00	0.40	308.20	2,589.74	-4.42	4.43	2.48	0.32	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,685.00	0.20	5.00	2,684.74	-4.80	4.80	2.24	0.35	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,780.00	0.30	41.80	2,779.74	-5.15	5.15	2.42	0.19	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,874.00	0.40	85.80	2,873.74	-5.35	5.36	2.91	0.30	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	2,969.00	0.80	103.30	2,968.73	-5.22	5.23	3.88	0.46	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	3,064.00	1.10	100.10	3,063.72	-4.91	4.92	5.43	0.32	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	3,158.00	1.50	93.90	3,157.69	-4.67	4.68	7.54	0.45	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	3,253.00	1.50	61.30	3,252.66	-5.17	5.19	9.87	0.89	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	3,347.00	1.50	32.80	3,346.63	-6.80	6.81	11.62	0.79	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	3,442.00	2.20	345.40	3,441.59	-9.61	9.62	11.83	1.70	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	3,537.00	3.50	320.90	3,536.47	-13.62	13.64	9.55	1.85	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	3,632.00	4.40	318.50	3,631.24	-18.61	18.62	5.30	0.96	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	3,727.00	5.10	314.40	3,725.92	-24.30	24.30	-0.13	0.82	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	3,822.00	6.30	302.50	3,820.45	-30.07	30.06	-7.54	1.77	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	3,917.00	7.30	292.90	3,914.78	-35.23	35.21	-17.50	1.59	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,012.00	6.80	291.20	4,009.06	-39.63	39.59	-28.30	0.57	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,107.00	7.10	289.90	4,103.37	-43.68	43.62	-39.07	0.36	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,201.00	8.20	291.00	4,196.53	-48.07	48.00	-50.79	1.18	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,296.00	9.40	288.50	4,290.41	-52.98	52.89	-64.47	1.33	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,390.00	10.00	277.50	4,383.07	-56.50	56.39	-79.84	2.07	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,485.00	9.40	277.50	4,476.71	-58.62	58.48	-95.71	0.63	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,580.00	8.50	280.40	4,570.56	-60.92	60.76	-110.31	1.06	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,674.00	7.40	280.80	4,663.65	-63.32	63.15	-123.09	1.17	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,769.00	6.60	281.40	4,757.94	-65.56	65.38	-134.45	0.85	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,863.00	6.40	284.00	4,851.34	-67.91	67.71	-144.83	0.38	MWD	TOTAL DIRECTIONAL SERV...
5/30/2019	4,958.00	7.80	284.20	4,945.61	-70.79	70.57	-156.22	1.47	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	5,052.00	9.20	282.30	5,038.57	-73.98	73.74	-169.74	1.52	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	5,147.00	8.90	282.50	5,132.39	-77.20	76.95	-184.34	0.32	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	5,241.00	8.00	282.70	5,225.37	-80.24	79.96	-197.82	0.96	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	5,336.00	7.40	281.80	5,319.51	-82.96	82.66	-210.26	0.64	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	5,431.00	8.40	283.10	5,413.61	-85.80	85.49	-223.00	1.07	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	5,525.00	9.40	283.20	5,506.48	-89.13	88.80	-237.17	1.06	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	5,620.00	9.40	283.60	5,600.20	-92.74	92.39	-252.26	0.07	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	5,715.00	9.40	282.90	5,693.92	-96.32	95.95	-267.36	0.12	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	5,809.00	9.10	283.30	5,786.70	-99.77	99.37	-282.08	0.33	MWD	TOTAL DIRECTIONAL SERV...



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Surface Legal Location 7-26S-34E	API/UWI 3002545551	Latitude (°) 32° 3' 49.322" N	Longitude (°) 103° 30' 39.63" W	Orig KB Elevation (ft) 3,372.60
				Ground Elev MSL (ft) 3,339.60
				KB - GL (ft) 33.00

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
5/31/2019	5,904.00	8.90	282.30	5,880.53	-103.08	102.67	-296.57	0.27	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	5,999.00	9.00	281.20	5,974.38	-106.11	105.67	-311.04	0.21	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	6,093.00	9.10	280.00	6,067.21	-108.85	108.39	-325.57	0.23	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	6,188.00	8.00	282.40	6,161.15	-111.59	111.12	-339.43	1.22	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	6,283.00	7.60	280.80	6,255.27	-114.21	113.71	-352.05	0.48	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	6,378.00	7.40	279.80	6,349.46	-116.44	115.93	-364.25	0.25	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	6,473.00	7.30	279.00	6,443.68	-118.44	117.92	-376.24	0.15	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	6,568.00	7.20	278.50	6,537.92	-120.28	119.74	-388.09	0.12	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	6,663.00	6.70	281.50	6,632.22	-122.29	121.73	-399.41	0.65	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	6,757.00	6.20	285.00	6,725.62	-124.71	124.13	-409.69	0.68	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	6,852.00	6.20	284.20	6,820.07	-127.31	126.72	-419.62	0.09	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	6,946.00	6.20	284.40	6,913.52	-129.83	129.23	-429.45	0.02	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,041.00	6.20	284.40	7,007.96	-132.39	131.78	-439.39	0.00	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,136.00	6.10	284.30	7,102.42	-134.93	134.30	-449.25	0.11	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,231.00	5.90	282.70	7,196.90	-137.26	136.62	-458.91	0.27	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,325.00	6.60	284.10	7,290.34	-139.66	139.00	-468.86	0.76	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,420.00	6.60	285.10	7,384.71	-142.42	141.75	-479.42	0.12	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,514.00	6.40	283.60	7,478.10	-145.08	144.39	-489.73	0.28	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,609.00	5.80	282.60	7,572.56	-147.38	146.68	-499.56	0.64	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,704.00	5.80	282.70	7,667.08	-149.50	148.79	-508.93	0.01	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,799.00	6.90	293.20	7,761.50	-152.81	152.09	-518.86	1.68	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,893.00	7.30	293.90	7,854.78	-157.47	156.73	-529.51	0.44	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	7,988.00	7.00	292.50	7,949.04	-162.15	161.39	-540.37	0.37	MWD	TOTAL DIRECTIONAL SERV...
5/31/2019	8,083.00	6.50	291.00	8,043.38	-166.31	165.54	-550.74	0.56	MWD	TOTAL DIRECTIONAL SERV...
6/1/2019	8,178.00	6.80	290.60	8,137.74	-170.23	169.44	-561.03	0.32	MWD	TOTAL DIRECTIONAL SERV...
6/1/2019	8,272.00	7.10	292.00	8,231.05	-174.38	173.58	-571.62	0.37	MWD	TOTAL DIRECTIONAL SERV...
6/1/2019	8,367.00	7.10	291.50	8,325.32	-178.74	177.93	-582.53	0.07	MWD	TOTAL DIRECTIONAL SERV...
6/1/2019	8,462.00	6.70	290.52	8,419.63	-182.85	182.02	-593.18	0.44	MWD	TOTAL DIRECTIONAL SERV...
6/1/2019	8,557.00	6.40	289.60	8,514.01	-186.58	185.74	-603.36	0.33	MWD	TOTAL DIRECTIONAL SERV...
6/1/2019	8,652.00	6.80	290.00	8,608.38	-190.30	189.44	-613.63	0.42	MWD	TOTAL DIRECTIONAL SERV...
6/1/2019	8,746.00	6.40	290.00	8,701.76	-194.01	193.14	-623.79	0.43	MWD	TOTAL DIRECTIONAL SERV...
6/2/2019	8,841.00	6.90	287.90	8,796.12	-197.59	196.70	-634.19	0.59	MWD	TOTAL DIRECTIONAL SERV...
6/2/2019	8,935.00	6.90	285.60	8,889.44	-200.86	199.96	-645.00	0.29	MWD	TOTAL DIRECTIONAL SERV...
6/2/2019	9,030.00	6.60	285.10	8,983.78	-203.83	202.91	-655.77	0.32	MWD	TOTAL DIRECTIONAL SERV...
6/2/2019	9,124.00	7.20	284.50	9,077.10	-206.72	205.79	-666.69	0.64	MWD	TOTAL DIRECTIONAL SERV...
6/2/2019	9,219.00	7.20	283.00	9,171.35	-209.57	208.62	-678.25	0.20	MWD	TOTAL DIRECTIONAL SERV...
6/2/2019	9,314.00	6.80	283.20	9,265.64	-212.21	211.25	-689.53	0.42	MWD	TOTAL DIRECTIONAL SERV...
6/2/2019	9,409.00	6.90	286.30	9,359.96	-215.11	214.13	-700.48	0.40	MWD	TOTAL DIRECTIONAL SERV...
6/2/2019	9,504.00	7.50	288.80	9,454.21	-218.73	217.73	-711.83	0.71	MWD	TOTAL DIRECTIONAL SERV...
6/2/2019	9,599.00	6.30	288.00	9,548.52	-222.35	221.34	-722.66	1.27	MWD	TOTAL DIRECTIONAL SERV...
6/2/2019	9,694.00	5.40	287.40	9,643.03	-225.31	224.29	-731.88	0.95	MWD	TOTAL DIRECTIONAL SERV...
6/3/2019	9,789.00	6.20	295.90	9,737.54	-228.90	227.87	-740.76	1.23	MWD	TOTAL DIRECTIONAL SERV...
6/3/2019	9,884.00	7.20	294.50	9,831.89	-233.62	232.58	-750.79	1.07	MWD	TOTAL DIRECTIONAL SERV...
6/3/2019	9,979.00	8.60	288.80	9,925.99	-238.40	237.34	-762.93	1.69	MWD	TOTAL DIRECTIONAL SERV...
6/3/2019	10,074.00	7.30	284.10	10,020.08	-242.18	241.09	-775.51	1.53	MWD	TOTAL DIRECTIONAL SERV...
6/3/2019	10,169.00	5.90	281.30	10,114.45	-244.62	243.52	-786.15	1.51	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	10,264.00	6.90	291.30	10,208.86	-247.66	246.55	-796.26	1.57	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	10,359.00	7.30	293.90	10,303.13	-252.20	251.07	-807.09	0.54	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	10,454.00	6.00	289.00	10,397.49	-256.27	255.13	-817.31	1.49	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	10,549.00	5.50	289.00	10,492.01	-259.38	258.23	-826.31	0.53	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	10,644.00	4.20	290.60	10,586.67	-262.10	260.94	-833.87	1.38	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	10,740.00	3.20	291.40	10,682.46	-264.32	263.15	-839.65	1.04	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	10,834.00	3.60	280.90	10,776.30	-265.85	264.67	-844.99	0.79	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	10,929.00	3.00	278.20	10,871.14	-266.77	265.59	-850.38	0.65	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	11,023.00	2.50	280.60	10,965.03	-267.51	266.31	-854.83	0.55	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	11,117.00	2.30	273.20	11,058.95	-267.99	266.80	-858.73	0.39	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	11,212.00	2.10	268.50	11,153.88	-268.06	266.86	-862.38	0.28	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	11,307.00	2.20	260.80	11,248.81	-267.73	266.52	-865.92	0.32	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	11,402.00	2.20	256.50	11,343.74	-267.02	265.80	-869.49	0.17	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	11,497.00	2.50	257.50	11,438.66	-266.15	264.93	-873.28	0.32	MWD	TOTAL DIRECTIONAL SERV...
6/4/2019	11,591.00	2.30	244.70	11,532.58	-264.90	263.68	-876.99	0.61	MWD	TOTAL DIRECTIONAL SERV...
6/5/2019	11,686.00	2.50	243.90	11,627.50	-263.18	261.95	-880.58	0.21	MWD	TOTAL DIRECTIONAL SERV...
6/5/2019	11,781.00	1.80	244.50	11,722.43	-261.63	260.40	-883.78	0.74	MWD	TOTAL DIRECTIONAL SERV...
6/5/2019	11,875.00	2.20	239.20	11,816.37	-260.08	258.84	-886.66	0.47	MWD	TOTAL DIRECTIONAL SERV...
6/5/2019	11,970.00	2.20	227.30	11,911.31	-257.91	256.67	-889.57	0.48	MWD	TOTAL DIRECTIONAL SERV...
6/5/2019	12,064.00	2.40	220.20	12,005.23	-255.19	253.94	-892.17	0.37	MWD	TOTAL DIRECTIONAL SERV...
6/5/2019	12,112.00	2.20	214.70	12,053.19	-253.66	252.42	-893.34	0.62	MWD	TOTAL DIRECTIONAL SERV...
6/8/2019	12,176.00	2.10	207.30	12,117.15	-251.61	250.36	-894.58	0.46	MWD	TOTAL DIRECTIONAL SERV...
6/8/2019	12,271.00	11.70	192.30	12,211.35	-240.63	239.38	-897.44	10.20	MWD	TOTAL DIRECTIONAL SERV...
6/8/2019	12,366.00	21.30	185.90	12,302.34	-214.00	212.74	-901.27	10.27	MWD	TOTAL DIRECTIONAL SERV...
6/8/2019	12,461.00	35.90	187.90	12,385.52	-169.01	167.75	-906.90	15.40	MWD	TOTAL DIRECTIONAL SERV...
6/9/2019	12,556.00	45.60	185.00	12,457.41	-107.47	106.20	-913.71	10.40	MWD	TOTAL DIRECTIONAL SERV...
6/9/2019	12,650.00	50.00	184.60	12,520.54	-38.11	36.82	-919.52	4.69	MWD	TOTAL DIRECTIONAL SERV...



Directional Survey

DELAWARE BASIN UNRESTRICTED

Well Name: JAYHAWK 7 FED 13H

Sub-Division DELAWARE BASIN	Region LEA COUNTY CORE	Field Name RATTLESNAKE DBBU	County LEA	State/Province NM
Surface Legal Location 7-26S-34E	API/UWI 3002545551	Latitude (") 32° 3' 49.322" N	Longitude (") 103° 30' 39.63" W	Orig KB Elevation (ft) 3,372.60
				Ground Elev MSL (ft) 3,339.60
				KB - GL (ft) 33.00

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
6/9/2019	12,745.00	59.50	187.50	12,575.31	38.92	-40.21	-927.80	10.30	MWD	TOTAL DIRECTIONAL SERV...
6/9/2019	12,840.00	71.60	187.20	12,614.56	124.51	-125.83	-938.83	12.74	MWD	TOTAL DIRECTIONAL SERV...
6/9/2019	12,935.00	78.60	185.30	12,638.98	215.70	-217.03	-948.80	7.62	MWD	TOTAL DIRECTIONAL SERV...
6/9/2019	13,029.00	83.90	183.10	12,653.27	308.31	-309.64	-955.59	6.09	MWD	TOTAL DIRECTIONAL SERV...
6/9/2019	13,124.00	88.20	182.70	12,659.81	402.93	-404.28	-960.38	4.55	MWD	TOTAL DIRECTIONAL SERV...
6/9/2019	13,219.00	90.00	183.50	12,661.31	497.77	-499.12	-965.52	2.07	MWD	TOTAL DIRECTIONAL SERV...
6/9/2019	13,313.00	90.00	183.50	12,661.31	591.59	-592.94	-971.26	0.00	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	13,410.00	90.60	183.10	12,660.80	688.42	-689.78	-976.84	0.74	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	13,505.00	88.20	182.10	12,661.79	783.30	-784.67	-981.15	2.74	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	13,599.00	87.70	182.40	12,665.16	877.16	-878.54	-984.84	0.62	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	13,693.00	87.60	182.40	12,669.01	970.99	-972.38	-988.77	0.11	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	13,788.00	88.00	181.40	12,672.66	1,065.87	-1,067.25	-991.92	1.13	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	13,883.00	88.90	179.70	12,675.23	1,160.82	-1,162.21	-992.83	2.02	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	13,978.00	87.60	178.80	12,678.13	1,255.77	-1,257.15	-991.58	1.66	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	14,072.00	91.30	179.60	12,679.03	1,349.74	-1,351.12	-990.27	4.03	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	14,166.00	90.60	179.10	12,677.47	1,443.72	-1,445.10	-989.21	0.92	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	14,260.00	91.00	179.90	12,676.16	1,537.71	-1,539.09	-988.39	0.95	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	14,355.00	91.20	181.40	12,674.34	1,632.68	-1,634.06	-989.46	1.59	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	14,449.00	89.40	180.60	12,673.84	1,726.66	-1,728.04	-991.10	2.10	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	14,543.00	92.00	184.10	12,672.70	1,820.54	-1,821.93	-994.96	4.64	MWD	TOTAL DIRECTIONAL SERV...
6/10/2019	14,631.00	89.70	181.60	12,671.39	1,908.41	-1,909.80	-999.33	3.86	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	14,726.00	90.50	180.20	12,671.22	2,003.39	-2,004.79	-1,000.82	1.70	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	14,820.00	90.90	178.40	12,670.08	2,097.37	-2,098.77	-999.67	1.96	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	14,915.00	90.90	178.20	12,668.58	2,192.32	-2,193.72	-996.86	0.21	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,010.00	90.90	177.60	12,667.09	2,287.25	-2,288.64	-993.38	0.63	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,104.00	90.30	178.00	12,666.11	2,381.18	-2,382.57	-989.77	0.77	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,198.00	90.00	178.60	12,665.86	2,475.14	-2,476.52	-986.98	0.71	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,293.00	91.10	180.90	12,664.95	2,570.13	-2,571.51	-986.56	2.68	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,387.00	89.10	180.30	12,664.78	2,664.12	-2,665.50	-987.55	2.22	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,481.00	88.00	180.30	12,667.16	2,758.08	-2,759.47	-988.04	1.17	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,576.00	88.20	179.40	12,670.31	2,853.03	-2,854.41	-987.79	0.97	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,671.00	90.30	178.50	12,671.56	2,948.00	-2,949.38	-986.05	2.40	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,766.00	89.60	178.60	12,671.64	3,042.97	-3,044.35	-983.65	0.74	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,860.00	91.40	177.60	12,670.82	3,136.92	-3,138.29	-980.53	2.19	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	15,955.00	90.90	177.70	12,668.91	3,231.82	-3,233.19	-976.64	0.54	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	16,050.00	90.20	178.10	12,668.00	3,326.76	-3,328.12	-973.16	0.85	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	16,144.00	90.20	178.60	12,667.67	3,420.72	-3,422.08	-970.45	0.53	MWD	TOTAL DIRECTIONAL SERV...
6/11/2019	16,239.00	89.00	178.10	12,668.34	3,515.68	-3,517.04	-967.71	1.37	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	16,333.00	91.60	177.90	12,667.84	3,609.62	-3,610.97	-964.43	2.77	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	16,428.00	91.30	177.80	12,665.44	3,704.53	-3,705.88	-960.87	0.33	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	16,522.00	91.50	180.30	12,663.14	3,798.48	-3,799.83	-959.31	2.67	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	16,617.00	89.00	180.70	12,662.73	3,893.47	-3,894.81	-960.14	2.67	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	16,711.00	91.60	180.00	12,662.24	3,987.46	-3,988.80	-960.72	2.86	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	16,806.00	91.20	180.20	12,659.91	4,082.43	-4,083.77	-960.88	0.47	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	16,900.00	89.10	179.10	12,659.67	4,176.42	-4,177.77	-960.31	2.52	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	16,994.00	89.90	179.10	12,660.49	4,270.41	-4,271.75	-958.83	0.85	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	17,089.00	92.30	178.90	12,658.67	4,365.37	-4,366.71	-957.17	2.54	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	17,184.00	89.40	177.60	12,657.26	4,460.31	-4,461.64	-954.27	3.35	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	17,278.00	90.10	177.70	12,657.67	4,554.23	-4,555.56	-950.42	0.75	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	17,373.00	90.60	180.70	12,657.09	4,649.21	-4,650.54	-949.09	3.20	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	17,403.00	90.60	181.10	12,656.77	4,679.20	-4,680.54	-949.56	1.33	MWD	TOTAL DIRECTIONAL SERV...
6/12/2019	17,454.00	90.60	181.10	12,656.24	4,730.19	-4,731.52	-950.54	0.00	BIT	