



Wellbore Details

APR 05 2019

DISTRICT # ARTESIA O.C.D.

Well Name HH SO 10 P3 24H	Lease HH SO 10 P3	Field Name Purple Sage	Business Unit Mid-Continent
Ground Elevation (ft) 3,279.00	Original RKB Elevation (ft) 3,307.00	Current RKB Elevation 3,307.00, 3/23/2017	Mud Line Elevation (ft)
Current KB to Ground (ft) 28.00	Current KB to Mud Line (ft)	Current KB to Csg Flange (ft)	Water Depth (ft)
		Current KB to Tubing Head (ft)	

Logs

Type	Logging Company	Date	Planned?	Cased?
Wellbore	Job	Depth Top (MD) (ftKB)		Bottom Depth (ftKB)
Comment				

Wellbores

Wellbore Name Original Hole	Parent Wellbore Original Hole	Directional Type Horizontal	Start Depth (MD) (ftKB)
Alt. Wellbore Identifier	TAML Classification N/A	TAML Functionality	Casing Configuration Class 1
Bottom Hole Legal Location	Wellbore UWI 300154392600	Wellbore ChevNo PJ8434-00	Vertical Section Direction (*) 173.76

Wellbore Sections

Hole Size (in)	Start Date	End Date	Act Top (ftKB)	Act Btm (ftKB)	Prop Top (ftKB)	Prop Btm (ftKB)
17 1/2	3/23/2017 22:30	3/24/2017 02:30	28.0	467.0	0.0	450.0
12 1/4	4/14/2017 09:30	4/26/2017 10:00	467.0	9,557.0	450.0	9,300.0
8 1/2	7/17/2017 21:30	7/27/2017 18:00	9,557.0	19,728.0	9,300.0	19,500.0

Kick Offs & Key Depths

Date	Type	Point or Interval	Top Depth (ftKB)	Depth Top (TVD) (ftKB)	Method Open-hole
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Last 5 PBTD's

Type	Date	PBTD (ftKB)	Depth (TVD) (ftKB)	Method	Com
	11/20/2018	19,500	9,219.7	Deepest depth reached w/ CT	

Geologic Horizons

Formation Name	Prog Top (TVD SS) Override (ft(elv))	Prog Top (TVD) (ftKB)	Prog Btm (TVD SS) Override (ft(elv))	Prog Btm (TVD) (ftKB)	Drill Top MD (ftKB)	Drill Btm MD (ftKB)

Directional Surveys

Description MWD	Date 3/24/2017	Definitive? N	Planned? N	Job Drill and Suspend, 3/23/2017 12:00
Azimuth Tie In (")	MD Tie In (ftKB)	Inclination Tie In (")	NSTie In (ft)	EW Tie In (ft)
				TVD Tie In (ftKB)

Comment

Survey Data

Date	MD (ftKB)	Incl (")	Azim (")	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	OLS ("/100ft)	Method	Survey Company
3/24/2017	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Magn MWD	
3/24/2017	171	1.50	280.40	170.98	-0.64	0.40	-2.20	0.88	Magn MWD	
3/24/2017	266	2.20	284.40	265.93	-1.64	1.08	-5.19	0.75	Magn MWD	
3/24/2017	359	2.40	297.40	358.86	-3.35	2.42	-8.65	0.60	Magn MWD	
3/24/2017	443	2.90	278.40	442.77	-4.86	3.54	-12.31	1.20	Magn MWD	
4/14/2017	526	3.52	278.87	525.64	-6.05	4.24	-16.91	0.75	Magn MWD	
4/14/2017	588	3.43	274.23	587.52	-6.89	4.67	-20.64	0.48	Magn MWD	
4/14/2017	681	1.02	203.90	680.46	-6.68	4.12	-23.75	3.48	Magn MWD	
4/14/2017	775	5.41	107.79	774.32	-4.15	2.00	-19.86	5.97	Magn MWD	
4/15/2017	867	8.10	110.53	865.67	0.54	-1.60	-9.66	2.94	Magn MWD	
4/15/2017	963	8.07	111.68	960.71	6.74	-6.46	2.93	0.17	Magn MWD	
4/15/2017	1,057	7.64	113.74	1,053.83	12.95	-11.41	14.78	0.55	Magn MWD	
4/15/2017	1,153	8.48	119.07	1,148.88	20.23	-17.42	26.81	1.17	Magn MWD	
4/15/2017	1,248	11.49	120.62	1,242.43	29.96	-25.65	41.08	3.18	Magn MWD	
4/15/2017	1,343	13.23	120.59	1,335.23	42.15	-36.00	58.58	1.83	Magn MWD	
4/15/2017	1,438	13.21	120.49	1,427.71	55.16	-47.04	77.29	0.03	Magn MWD	
4/15/2017	1,533	12.91	120.04	1,520.25	67.93	-57.86	95.83	0.33	Magn MWD	
4/15/2017	1,628	13.70	116.66	1,612.71	80.32	-68.22	115.08	1.17	Magn MWD	
4/15/2017	1,722	16.26	110.37	1,703.51	92.27	-77.80	137.37	3.22	Magn MWD	
4/15/2017	1,816	16.46	108.83	1,793.70	103.80	-86.68	162.31	0.51	Magn MWD	
4/15/2017	1,911	16.21	110.44	1,884.87	115.46	-95.65	187.47	0.54	Magn MWD	
4/15/2017	2,006	16.84	108.77	1,975.95	127.23	-104.71	212.93	0.83	Magn MWD	
4/15/2017	2,100	17.41	109.37	2,065.78	139.07	-113.75	239.08	0.63	Magn MWD	
4/15/2017	2,195	17.64	110.19	2,156.37	151.62	-123.44	266.00	0.36	Magn MWD	



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Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Method	Survey Company
4/15/2017	2,290	17.33	109.63	2,246.98	164.20	-133.16	292.84	0.37	Magn MWD	
4/16/2017	2,385	16.81	111.17	2,337.79	176.70	-142.87	318.98	0.73	Magn MWD	
4/16/2017	2,479	16.76	112.03	2,427.79	189.37	-152.86	344.21	0.27	Magn MWD	
4/16/2017	2,575	16.99	112.91	2,519.66	202.76	-163.52	369.96	0.36	Magn MWD	
4/16/2017	2,670	17.56	112.54	2,610.37	216.42	-174.41	395.99	0.61	Magn MWD	
4/16/2017	2,765	17.65	114.04	2,700.92	230.58	-185.77	422.38	0.49	Magn MWD	
4/16/2017	2,860	17.94	115.71	2,791.38	245.59	-197.99	448.71	0.62	Magn MWD	
4/16/2017	2,955	18.04	115.54	2,881.73	261.08	-210.68	475.17	0.12	Magn MWD	
4/16/2017	3,050	18.44	117.24	2,971.96	277.11	-223.90	501.80	0.70	Magn MWD	
4/16/2017	3,146	17.46	118.41	3,063.29	293.68	-237.70	527.96	1.09	Magn MWD	
4/16/2017	3,241	16.65	119.40	3,154.11	309.71	-251.16	552.36	0.91	Magn MWD	
4/16/2017	3,336	16.58	119.00	3,245.14	325.46	-264.41	576.07	0.14	Magn MWD	
4/16/2017	3,431	16.79	119.38	3,336.14	341.27	-277.72	599.88	0.25	Magn MWD	
4/16/2017	3,526	17.47	119.62	3,426.93	357.62	-291.50	624.23	0.72	Magn MWD	
4/16/2017	3,621	17.73	119.48	3,517.48	374.42	-305.66	649.22	0.28	Magn MWD	
4/16/2017	3,715	15.88	115.23	3,607.46	389.49	-318.19	673.32	2.36	Magn MWD	
4/16/2017	3,809	15.01	110.11	3,698.07	401.61	-327.86	696.38	1.72	Magn MWD	
4/16/2017	3,903	14.66	107.87	3,788.94	411.87	-335.69	719.14	0.71	Magn MWD	
4/16/2017	3,998	14.12	108.00	3,880.96	421.54	-342.96	741.60	0.57	Magn MWD	
4/17/2017	4,093	12.34	112.31	3,973.44	431.15	-350.40	762.01	2.14	Magn MWD	
4/17/2017	4,187	12.34	113.25	4,065.27	440.89	-358.17	780.53	0.21	Magn MWD	
4/17/2017	4,282	12.68	113.15	4,158.01	451.01	-366.28	799.45	0.36	Magn MWD	
4/17/2017	4,376	11.25	113.34	4,249.96	460.60	-373.97	817.35	1.52	Magn MWD	
4/17/2017	4,471	11.07	113.18	4,343.17	469.65	-381.23	834.25	0.19	Magn MWD	
4/17/2017	4,565	11.09	112.95	4,435.42	478.49	-388.31	850.87	0.05	Magn MWD	
4/17/2017	4,660	10.79	114.16	4,528.69	487.45	-395.51	867.39	0.40	Magn MWD	
4/17/2017	4,754	10.29	115.08	4,621.10	496.26	-402.67	883.03	0.56	Magn MWD	
4/17/2017	4,848	9.82	114.28	4,713.66	504.70	-409.53	897.94	0.52	Magn MWD	
4/17/2017	4,942	9.78	116.48	4,806.29	513.09	-416.38	912.39	0.40	Magn MWD	
4/17/2017	5,036	9.91	117.61	4,898.90	521.91	-423.69	926.70	0.25	Magn MWD	
4/17/2017	5,131	10.01	118.30	4,992.47	531.14	-431.39	941.22	0.16	Magn MWD	
4/17/2017	5,226	9.84	117.92	5,086.05	540.38	-439.11	955.66	0.19	Magn MWD	
4/17/2017	5,321	10.19	119.23	5,179.60	549.82	-447.01	970.17	0.44	Magn MWD	
4/18/2017	5,416	8.95	117.48	5,273.28	558.79	-454.53	984.06	1.34	Magn MWD	
4/18/2017	5,511	7.08	110.77	5,367.35	565.56	-460.01	996.09	2.20	Magn MWD	
4/18/2017	5,606	5.74	107.37	5,461.75	570.12	-463.51	1,006.10	1.47	Magn MWD	
4/18/2017	5,700	5.55	107.97	5,555.30	573.87	-466.31	1,014.91	0.21	Magn MWD	
4/18/2017	5,794	5.59	106.75	5,648.85	577.52	-469.04	1,023.61	0.13	Magn MWD	
4/18/2017	5,889	5.29	110.68	5,743.43	581.31	-471.92	1,032.14	0.50	Magn MWD	
4/18/2017	5,983	5.16	114.04	5,837.04	585.40	-475.17	1,040.06	0.35	Magn MWD	
4/19/2017	6,078	4.50	114.44	5,931.70	589.46	-478.45	1,047.35	0.70	Magn MWD	
4/19/2017	6,172	4.03	112.11	6,025.44	592.91	-481.22	1,053.77	0.53	Magn MWD	
4/19/2017	6,267	3.90	115.24	6,120.21	596.18	-483.85	1,059.78	0.27	Magn MWD	
4/19/2017	6,362	2.96	114.30	6,215.04	599.11	-486.24	1,064.94	0.99	Magn MWD	
4/19/2017	6,456	2.36	120.49	6,308.94	601.50	-488.22	1,068.82	0.71	Magn MWD	
4/19/2017	6,551	1.66	144.29	6,403.88	603.87	-490.33	1,071.31	1.13	Magn MWD	
4/19/2017	6,645	1.49	185.92	6,497.85	606.25	-492.65	1,071.98	1.20	Magn MWD	
4/19/2017	6,740	1.81	210.43	6,592.81	608.66	-495.17	1,071.09	0.81	Magn MWD	
4/19/2017	6,835	1.92	229.41	6,687.76	610.76	-497.50	1,069.12	0.66	Magn MWD	
4/19/2017	6,930	1.99	259.17	6,782.71	611.79	-498.85	1,066.29	1.06	Magn MWD	
4/19/2017	7,025	2.24	260.40	6,877.64	612.03	-499.47	1,062.84	0.27	Magn MWD	
4/20/2017	7,120	2.06	262.00	6,972.57	612.19	-500.02	1,059.32	0.20	Magn MWD	
4/20/2017	7,214	2.18	264.42	7,066.51	612.23	-500.42	1,055.87	0.16	Magn MWD	
4/20/2017	7,309	2.14	274.99	7,161.44	611.86	-500.45	1,052.30	0.42	Magn MWD	
4/20/2017	7,403	1.96	275.34	7,255.38	611.20	-500.14	1,048.96	0.19	Magn MWD	
4/20/2017	7,498	1.31	250.08	7,350.35	611.13	-500.36	1,046.32	1.01	Magn MWD	
4/20/2017	7,593	1.13	234.94	7,445.32	611.83	-501.27	1,044.53	0.39	Magn MWD	



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Survey Data										
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Method	Survey Company
4/20/2017	7,688	0.97	225.11	7,540.31	612.79	-502.38	1,043.19	0.25	Magn MWD	
4/20/2017	7,784	1.23	230.26	7,636.29	613.86	-503.61	1,041.83	0.29	Magn MWD	
4/21/2017	7,878	1.25	231.03	7,730.27	614.98	-504.90	1,040.25	0.03	Magn MWD	
4/21/2017	7,973	1.46	234.87	7,825.24	616.12	-506.25	1,038.46	0.24	Magn MWD	
4/21/2017	8,068	2.04	239.83	7,920.20	617.39	-507.79	1,036.01	0.63	Magn MWD	
4/22/2017	8,179	2.59	248.97	8,031.11	618.83	-509.69	1,031.96	0.60	Magn MWD	
4/22/2017	8,274	2.53	248.02	8,126.01	619.95	-511.24	1,028.01	0.08	Magn MWD	
4/23/2017	8,369	2.05	277.83	8,220.94	620.11	-511.79	1,024.38	1.33	Magn MWD	
4/23/2017	8,464	2.54	324.97	8,315.87	617.85	-509.84	1,021.49	1.99	Magn MWD	
4/23/2017	8,559	2.55	325.12	8,410.78	614.15	-506.38	1,019.07	0.01	Magn MWD	
4/23/2017	8,653	2.58	325.96	8,504.68	610.44	-502.91	1,016.69	0.05	Magn MWD	
4/23/2017	8,748	2.68	328.65	8,599.58	606.54	-499.24	1,014.34	0.17	Magn MWD	
4/23/2017	8,843	2.63	322.75	8,694.48	602.66	-495.61	1,011.86	0.29	Magn MWD	
4/23/2017	8,874	2.01	322.56	8,725.45	601.58	-494.61	1,011.10	2.00	Magn MWD	
4/23/2017	8,906	1.46	309.43	8,757.44	600.81	-493.91	1,010.45	2.11	Magn MWD	
4/23/2017	8,938	1.19	295.86	8,789.43	600.34	-493.51	1,009.83	1.29	Magn MWD	
4/23/2017	8,970	0.94	271.20	8,821.43	600.13	-493.36	1,009.27	1.61	Magn MWD	
4/24/2017	9,001	1.10	188.27	8,852.42	600.39	-493.65	1,008.97	4.37	Magn MWD	
4/24/2017	9,033	1.77	178.93	8,884.41	601.18	-494.44	1,008.94	2.21	Magn MWD	
4/24/2017	9,094	6.68	167.44	8,945.23	605.65	-498.85	1,009.73	8.13	Magn MWD	
4/24/2017	9,126	11.61	166.26	8,976.81	610.69	-503.80	1,010.90	15.42	Magn MWD	
4/24/2017	9,158	18.59	166.06	9,007.69	618.95	-511.89	1,012.90	21.81	Magn MWD	
4/24/2017	9,189	26.08	166.80	9,036.34	630.63	-523.33	1,015.65	24.18	Magn MWD	
4/25/2017	9,221	32.04	166.82	9,064.30	646.05	-538.46	1,019.19	18.63	Magn MWD	
4/25/2017	9,266	38.59	167.37	9,101.00	671.87	-563.80	1,024.99	14.57	Magn MWD	
4/26/2017	9,316	43.50	168.35	9,138.70	704.52	-595.89	1,031.88	9.90	Magn MWD	
4/26/2017	9,363	49.79	170.08	9,170.95	738.57	-629.45	1,038.24	13.65	Magn MWD	
4/26/2017	9,411	53.87	171.12	9,200.61	776.24	-666.67	1,044.39	8.67	Magn MWD	
4/26/2017	9,459	59.72	173.83	9,226.89	816.37	-706.47	1,049.62	13.07	Magn MWD	
4/26/2017	9,486	62.38	174.57	9,239.96	839.99	-729.97	1,052.00	10.14	Magn MWD	
7/18/2017	9,636	68.47	176.51	9,302.31	976.27	-865.91	1,062.55	4.23	Magn MWD	
7/18/2017	9,731	73.32	177.04	9,333.40	1,065.88	-955.50	1,067.59	5.13	Magn MWD	
7/18/2017	9,920	87.90	176.04	9,364.15	1,251.63	-1,141.12	1,078.85	7.73	Magn MWD	
7/18/2017	10,015	88.95	176.34	9,366.76	1,346.51	-1,235.88	1,085.16	1.15	Magn MWD	
7/18/2017	10,110	89.79	176.80	9,367.81	1,441.38	-1,330.70	1,090.84	1.01	Magn MWD	
7/18/2017	10,206	89.07	176.62	9,368.76	1,537.25	-1,426.54	1,096.35	0.77	Magn MWD	
7/18/2017	10,301	90.27	178.52	9,369.31	1,632.03	-1,521.44	1,100.38	2.37	Magn MWD	
7/18/2017	10,396	90.99	178.19	9,368.27	1,726.72	-1,616.40	1,103.11	0.83	Magn MWD	
7/18/2017	10,490	90.11	178.26	9,367.36	1,820.43	-1,710.35	1,106.02	0.94	Magn MWD	
7/18/2017	10,585	90.51	179.86	9,366.85	1,915.02	-1,805.33	1,107.58	1.74	Magn MWD	
7/18/2017	10,680	90.15	179.76	9,366.30	2,009.49	-1,900.33	1,107.89	0.39	Magn MWD	
7/18/2017	10,775	90.68	180.42	9,365.61	2,103.91	-1,995.32	1,107.74	0.89	Magn MWD	
7/19/2017	10,869	91.59	181.21	9,363.75	2,197.18	-2,089.30	1,106.41	1.28	Magn MWD	
7/19/2017	10,962	89.41	180.71	9,362.94	2,289.43	-2,182.27	1,104.85	2.40	Magn MWD	
7/19/2017	11,054	90.65	180.65	9,362.89	2,380.76	-2,274.26	1,103.76	1.35	Magn MWD	
7/19/2017	11,147	87.23	180.66	9,364.61	2,473.06	-2,367.23	1,102.69	3.68	Magn MWD	
7/19/2017	11,239	88.22	181.08	9,368.26	2,564.28	-2,459.14	1,101.30	1.17	Magn MWD	
7/19/2017	11,332	89.14	181.08	9,370.41	2,656.49	-2,552.10	1,099.55	0.99	Magn MWD	
7/19/2017	11,424	89.50	181.23	9,371.50	2,747.72	-2,644.08	1,097.69	0.42	Magn MWD	
7/19/2017	11,611	90.24	179.86	9,371.92	2,933.41	-2,831.06	1,095.91	0.83	Magn MWD	
7/19/2017	11,706	91.57	181.35	9,370.42	3,027.71	-2,926.04	1,094.91	2.10	Magn MWD	
7/19/2017	11,800	90.06	179.88	9,369.09	3,121.03	-3,020.02	1,093.90	2.24	Magn MWD	
7/20/2017	11,895	90.30	179.46	9,368.79	3,215.52	-3,115.02	1,094.45	0.51	Magn MWD	
7/20/2017	12,084	89.03	177.65	9,369.89	3,403.84	-3,303.94	1,099.21	1.17	Magn MWD	
7/20/2017	12,274	90.22	176.88	9,371.14	3,593.48	-3,493.72	1,108.28	0.75	Magn MWD	
7/20/2017	12,369	90.83	177.81	9,370.26	3,688.29	-3,588.61	1,112.68	1.17	Magn MWD	
7/20/2017	12,464	88.94	176.63	9,370.46	3,783.11	-3,683.49	1,117.29	2.35	Magn MWD	



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Ground Elevation (ft) 3,279.00	Original RKB Elevation (ft) 3,307.00	Current RKB Elevation 3,307.00, 3/23/2017	Mud Line Elevation (ft)
Current KB to Ground (ft) 28.00	Current KB to Mud Line (ft)	Current KB to Csg Flange (ft)	Water Depth (ft)
			Current KB to Tubing Head (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Method	Survey Company
7/20/2017	12,558	90.22	180.02	9,371.14	3,876.79	-3,777.43	1,120.03	3.85	Magn MWD	
7/20/2017	12,653	88.78	179.61	9,371.97	3,971.26	-3,872.43	1,120.34	1.58	Magn MWD	
7/20/2017	12,748	88.80	179.26	9,373.98	4,065.77	-3,967.40	1,121.28	0.37	Magn MWD	
7/20/2017	12,843	88.71	178.41	9,376.04	4,160.37	-4,062.36	1,123.21	0.90	Magn MWD	
7/20/2017	12,937	88.27	178.81	9,378.52	4,254.01	-4,156.30	1,125.49	0.63	Magn MWD	
7/20/2017	13,032	89.35	179.31	9,380.49	4,348.58	-4,251.26	1,127.05	1.25	Magn MWD	
7/20/2017	13,128	90.70	179.36	9,380.45	4,444.12	-4,347.25	1,128.16	1.41	Magn MWD	
7/20/2017	13,223	90.43	177.53	9,379.52	4,538.79	-4,442.21	1,130.74	1.95	Magn MWD	
7/20/2017	13,317	88.12	176.47	9,380.70	4,632.63	-4,536.07	1,135.66	2.70	Magn MWD	
7/20/2017	13,411	91.02	176.95	9,381.41	4,726.49	-4,629.90	1,141.05	3.13	Magn MWD	
7/21/2017	13,506	93.21	176.91	9,377.90	4,821.28	-4,724.69	1,146.13	2.31	Magn MWD	
7/21/2017	13,601	93.21	176.45	9,372.58	4,916.00	-4,819.38	1,151.63	0.48	Magn MWD	
7/21/2017	13,695	93.40	176.29	9,367.17	5,009.75	-4,913.04	1,157.57	0.26	Magn MWD	
7/21/2017	13,885	91.92	179.49	9,358.35	5,199.02	-5,102.67	1,164.55	1.85	Magn MWD	
7/21/2017	13,980	91.73	179.56	9,355.32	5,293.49	-5,197.62	1,165.34	0.21	Magn MWD	
7/21/2017	14,075	87.94	178.46	9,355.59	5,388.08	-5,292.59	1,166.98	4.15	Magn MWD	
7/21/2017	14,171	88.08	178.17	9,358.93	5,483.71	-5,388.49	1,169.80	0.34	Magn MWD	
7/21/2017	14,266	88.05	177.96	9,362.14	5,578.39	-5,483.38	1,173.01	0.22	Magn MWD	
7/21/2017	14,361	87.16	177.89	9,366.10	5,673.06	-5,578.24	1,176.44	0.94	Magn MWD	
7/21/2017	14,456	84.86	177.51	9,372.71	5,767.60	-5,672.92	1,180.25	2.45	Magn MWD	
7/21/2017	14,551	89.41	179.18	9,377.46	5,862.15	-5,767.74	1,182.98	5.10	Magn MWD	
7/22/2017	14,646	90.19	178.62	9,377.79	5,956.76	-5,862.72	1,184.81	1.01	Magn MWD	
7/22/2017	14,741	91.17	178.52	9,376.67	6,051.42	-5,957.68	1,187.18	1.04	Magn MWD	
7/22/2017	14,836	91.15	180.48	9,374.74	6,145.92	-6,052.65	1,188.01	2.06	Magn MWD	
7/22/2017	15,025	89.51	178.54	9,373.65	6,333.95	-6,241.63	1,189.62	1.34	Magn MWD	
7/23/2017	15,120	91.39	182.52	9,372.91	6,428.26	-6,336.60	1,188.75	4.63	Magn MWD	
7/23/2017	15,214	91.82	181.63	9,370.28	6,521.24	-6,430.50	1,185.34	1.05	Magn MWD	
7/23/2017	15,309	92.30	182.21	9,366.86	6,615.21	-6,525.38	1,182.16	0.79	Magn MWD	
7/23/2017	15,404	93.10	182.30	9,362.39	6,709.07	-6,620.20	1,178.43	0.85	Magn MWD	
7/23/2017	15,594	90.15	180.85	9,357.00	6,897.20	-6,810.03	1,173.21	1.73	Magn MWD	
7/24/2017	15,689	89.14	180.11	9,357.59	6,991.54	-6,905.02	1,172.41	1.32	Magn MWD	
7/24/2017	15,784	88.62	179.89	9,359.44	7,085.96	-7,000.00	1,172.41	0.59	Magn MWD	
7/24/2017	15,879	88.06	179.87	9,362.20	7,180.38	-7,094.96	1,172.61	0.59	Magn MWD	
7/24/2017	15,973	87.02	179.14	9,366.23	7,273.82	-7,188.87	1,173.42	1.35	Magn MWD	
7/24/2017	16,067	87.03	178.30	9,371.11	7,367.34	-7,282.72	1,175.52	0.89	Magn MWD	
7/24/2017	16,162	87.65	179.62	9,375.52	7,461.85	-7,377.60	1,177.24	1.53	Magn MWD	
7/24/2017	16,258	90.76	182.48	9,376.85	7,557.04	-7,473.55	1,175.48	4.40	Magn MWD	
7/24/2017	16,352	93.38	181.93	9,373.45	7,649.95	-7,567.41	1,171.87	2.85	Magn MWD	
7/24/2017	16,447	94.08	181.77	9,367.27	7,743.81	-7,662.16	1,168.81	0.76	Magn MWD	
7/24/2017	16,542	95.54	181.82	9,359.31	7,837.54	-7,756.78	1,165.84	1.54	Magn MWD	
7/24/2017	16,637	92.99	181.54	9,352.24	7,931.36	-7,851.46	1,163.07	2.70	Magn MWD	
7/25/2017	16,732	94.36	182.34	9,346.15	8,025.20	-7,946.21	1,159.86	1.67	Magn MWD	
7/25/2017	16,827	91.22	181.43	9,341.53	8,119.12	-8,041.03	1,156.74	3.44	Magn MWD	
7/25/2017	16,922	90.42	181.30	9,340.17	8,213.28	-8,136.00	1,154.48	0.85	Magn MWD	
7/25/2017	17,016	90.61	181.71	9,339.33	8,306.42	-8,229.96	1,152.01	0.48	Magn MWD	
7/25/2017	17,111	90.54	181.08	9,338.37	8,400.57	-8,324.93	1,149.70	0.67	Magn MWD	
7/25/2017	17,206	93.72	180.96	9,334.84	8,494.73	-8,419.83	1,148.01	3.35	Magn MWD	
7/25/2017	17,301	94.26	180.99	9,328.23	8,588.75	-8,514.59	1,146.39	0.57	Magn MWD	
7/25/2017	17,396	93.92	180.11	9,321.46	8,682.84	-8,609.34	1,145.48	0.99	Magn MWD	
7/25/2017	17,491	93.07	179.11	9,315.67	8,777.17	-8,704.16	1,146.13	1.38	Magn MWD	
7/25/2017	17,586	93.66	179.55	9,310.09	8,871.56	-8,798.99	1,147.24	0.77	Magn MWD	
7/25/2017	17,680	93.09	178.62	9,304.56	8,964.99	-8,892.81	1,148.74	1.16	Magn MWD	
7/25/2017	17,774	93.57	179.01	9,299.10	9,058.46	-8,986.63	1,150.68	0.66	Magn MWD	
7/26/2017	17,869	93.71	179.76	9,293.06	9,152.81	-9,081.44	1,151.70	0.80	Magn MWD	
7/26/2017	17,964	94.36	179.66	9,286.38	9,247.07	-9,176.20	1,152.17	0.69	Magn MWD	
7/26/2017	18,059	94.76	179.53	9,278.83	9,341.28	-9,270.90	1,152.84	0.44	Magn MWD	
7/26/2017	18,154	94.40	179.46	9,271.24	9,435.50	-9,365.59	1,153.68	0.39	Magn MWD	



Wellbore Details

Well Name HH SO 10 P3 24H	Lease HH SO 10 P3	Field Name Purple Sage	Business Unit Mid-Continent	
Ground Elevation (ft) 3,279.00	Original RKB Elevation (ft) 3,307.00	Current RKB Elevation 3,307.00, 3/23/2017	Mud Line Elevation (ft)	Water Depth (ft)
Current KB to Ground (ft) 28.00	Current KB to Mud Line (ft)	Current KB to Csg Flange (ft)	Current KB to Tubing Head (ft)	

Survey Data										
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Method	Survey Company
7/26/2017	18,249	93.52	179.46	9,264.68	9,529.80	-9,460.36	1,154.57	0.93	Magn MWD	
7/26/2017	18,345	91.60	179.44	9,260.39	9,625.23	-9,556.25	1,155.49	2.00	Magn MWD	
7/26/2017	18,440	88.94	178.45	9,259.94	9,719.83	-9,651.23	1,157.24	2.99	Magn MWD	
7/26/2017	18,534	91.24	178.09	9,259.80	9,813.53	-9,745.18	1,160.08	2.48	Magn MWD	
7/26/2017	18,630	92.10	178.22	9,257.00	9,909.21	-9,841.08	1,163.17	0.91	Magn MWD	
7/26/2017	18,724	91.96	177.19	9,253.67	10,002.93	-9,934.95	1,166.93	1.11	Magn MWD	
7/26/2017	18,819	91.08	175.57	9,251.15	10,097.79	-10,029.72	1,172.93	1.94	Magn MWD	
7/27/2017	18,915	92.10	176.49	9,248.49	10,193.67	-10,125.45	1,179.57	1.43	Magn MWD	
7/27/2017	19,010	92.30	177.74	9,244.84	10,288.44	-10,220.26	1,184.35	1.33	Magn MWD	
7/27/2017	19,105	92.07	178.42	9,241.22	10,383.10	-10,315.14	1,187.53	0.76	Magn MWD	
7/27/2017	19,200	92.56	178.69	9,237.38	10,477.69	-10,410.03	1,189.92	0.59	Magn MWD	
7/27/2017	19,295	93.65	179.77	9,232.23	10,572.12	-10,504.88	1,191.20	1.61	Magn MWD	
7/27/2017	19,391	94.52	179.59	9,225.39	10,667.36	-10,600.63	1,191.73	0.93	Magn MWD	
7/27/2017	19,486	91.86	178.48	9,220.11	10,761.80	-10,695.46	1,193.33	3.03	Magn MWD	
7/27/2017	19,581	92.00	178.93	9,216.91	10,856.39	-10,790.38	1,195.48	0.50	Magn MWD	
7/27/2017	19,675	92.41	178.98	9,213.29	10,949.94	-10,884.30	1,197.19	0.44	Magn MWD	
7/27/2017	19,728	92.41	178.98	9,211.06	11,002.67	-10,937.24	1,198.13	0.00	Extrap.	

Zones						
Zone Name	Top (ftKB)	Btm (ftKB)	Zone Comp Method	Completion ChevNo	Completion UWI	Completion License No.
Wolfcamp A	9,725.0	19,462.0	Proppant Frac	PJ8434-00-01	30015439260001	