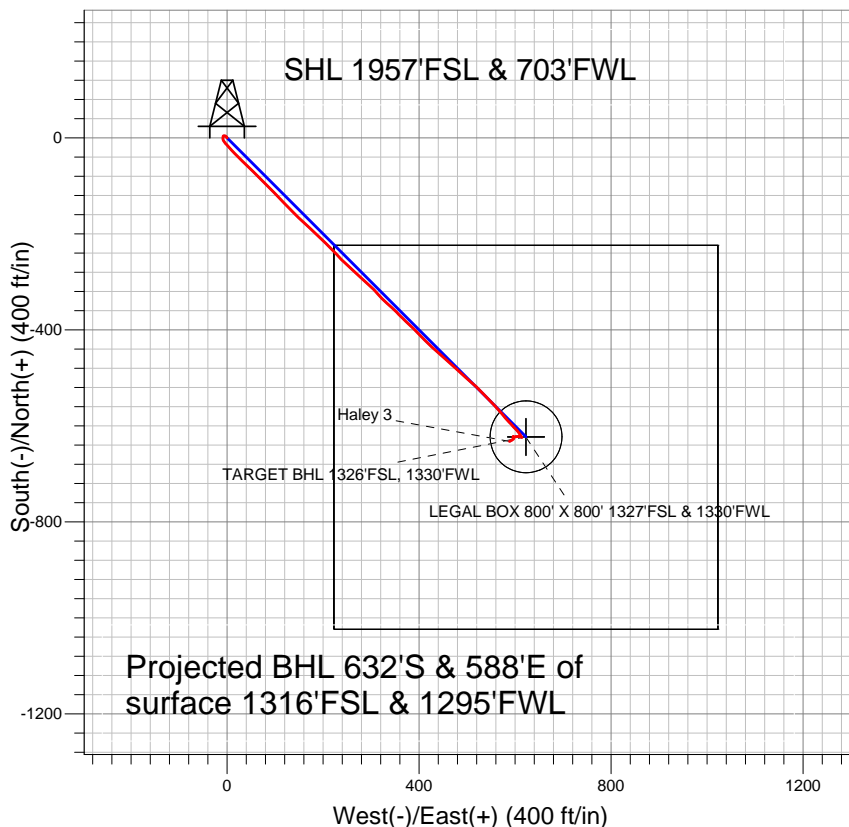


## Top Operating Company



## LEGEND

- x Haley 3, Wellbore #1, Plan #1 (11-07-12) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7828'MD & 7737'TVD @ 863'VS  
1.0 deg Inc 244.3 deg AZ

Project: SEC.20-T3N-R68W  
Site: Haley 1 Pad Sec.20-T3N-R68W  
Well: Haley 3  
Plan: Wellbore #1



# **Directional**

## **Top Operating Company**

**SEC.20-T3N-R68W**

**Haley 1 Pad Sec.20-T3N-R68W**

**Haley 3**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**11 March, 2013**

Survey	Wellbore Data									
	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)
Survey A	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	106.0	0.60	329.70	106.0	0.5	-0.3	-0.5	0.57	0.57	0.00
	196.0	0.40	327.60	196.0	1.2	-0.7	-1.3	0.22	-0.22	-2.33
	284.0	0.80	317.30	284.0	1.9	-1.3	-2.2	0.47	0.45	-11.70
	413.0	0.90	313.40	413.0	3.2	-2.6	-4.1	0.09	0.08	-3.02
	467.0	0.60	303.40	467.0	3.7	-3.2	-4.8	0.60	-0.56	-18.52
	594.0	1.10	290.90	594.0	4.5	-4.9	-6.6	0.42	0.39	-9.84
	722.0	1.00	243.30	721.9	4.4	-7.0	-8.0	0.67	-0.08	-37.19
	850.0	1.30	187.90	849.9	2.5	-8.2	-7.4	0.86	0.23	-43.28
	979.0	1.60	192.60	978.9	-0.7	-8.8	-5.4	0.25	0.23	3.64
	1,107.0	3.70	151.30	1,106.7	-6.1	-7.2	-0.4	2.12	1.64	-32.27
	1,235.0	5.90	137.60	1,234.3	-14.6	-0.8	10.2	1.93	1.72	-10.70
	1,363.0	8.00	137.40	1,361.3	-26.0	9.7	25.6	1.64	1.64	-0.16

<b>Company:</b>	Top Operating Company	<b>Local Co-ordinate Reference:</b>	Well Haley 3
<b>Project:</b>	SEC.20-T3N-R68W	<b>TVD Reference:</b>	WELL @ 5091.0ft (Original Well Elev)
<b>Site:</b>	Haley 1 Pad Sec.20-T3N-R68W	<b>MD Reference:</b>	WELL @ 5091.0ft (Original Well Elev)
<b>Well:</b>	Haley 3	<b>North Reference:</b>	True
<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)	
1,492.0	9.90	135.30	1,488.8	-40.5	23.6	45.7	1.49	1.47	-1.63	
1,620.0	11.80	134.10	1,614.5	-57.4	40.7	69.8	1.49	1.48	-0.94	
1,748.0	12.80	133.40	1,739.5	-76.3	60.4	97.0	0.79	0.78	-0.55	
1,876.0	12.80	136.20	1,864.3	-96.3	80.5	125.3	0.48	0.00	2.19	
2,004.0	12.40	135.70	1,989.3	-116.3	99.9	153.2	0.32	-0.31	-0.39	
2,133.0	12.80	136.70	2,115.2	-136.6	119.4	181.4	0.35	0.31	0.78	
2,261.0	12.90	134.80	2,240.0	-157.0	139.3	209.8	0.34	0.08	-1.48	
2,389.0	11.70	132.00	2,365.0	-175.8	159.1	237.0	1.05	-0.94	-2.19	
2,517.0	11.90	133.60	2,490.3	-193.6	178.3	263.1	0.30	0.16	1.25	
2,645.0	12.80	133.00	2,615.3	-212.3	198.2	290.5	0.71	0.70	-0.47	
2,774.0	12.90	137.40	2,741.1	-232.7	218.4	319.1	0.76	0.08	3.41	
2,902.0	12.70	135.00	2,865.9	-253.1	238.0	347.5	0.44	-0.16	-1.88	
3,031.0	12.00	132.20	2,992.0	-272.2	258.0	375.0	0.71	-0.54	-2.17	
3,158.0	11.30	132.50	3,116.3	-289.5	276.9	400.6	0.55	-0.55	0.24	
3,287.0	12.40	132.30	3,242.6	-307.3	296.5	427.0	0.85	0.85	-0.16	
3,415.0	11.00	139.20	3,367.9	-325.8	314.6	452.9	1.54	-1.09	5.39	
3,543.0	14.90	132.90	3,492.7	-346.3	334.7	481.5	3.24	3.05	-4.92	
3,672.0	14.30	134.40	3,617.5	-368.7	358.2	513.9	0.55	-0.47	1.16	
3,800.0	12.00	132.90	3,742.1	-388.8	379.3	543.0	1.82	-1.80	-1.17	
3,929.0	11.50	136.00	3,868.4	-407.2	398.0	569.2	0.62	-0.39	2.40	
4,057.0	11.80	135.10	3,993.8	-425.7	416.1	595.1	0.27	0.23	-0.70	
4,185.0	13.30	131.50	4,118.7	-444.7	436.4	622.8	1.32	1.17	-2.81	
4,313.0	12.40	131.10	4,243.5	-463.5	457.8	651.1	0.71	-0.70	-0.31	
4,442.0	12.10	133.60	4,369.6	-481.9	478.0	678.4	0.47	-0.23	1.94	
4,570.0	12.80	130.40	4,494.6	-500.3	498.5	705.9	0.77	0.55	-2.50	
4,699.0	12.20	133.00	4,620.5	-518.9	519.4	733.7	0.64	-0.47	2.02	
4,827.0	11.70	136.50	4,745.7	-537.5	538.2	760.1	0.69	-0.39	2.73	
4,955.0	12.20	137.30	4,871.0	-556.9	556.3	786.6	0.41	0.39	0.63	
5,084.0	10.60	139.90	4,997.4	-576.0	573.2	812.1	1.30	-1.24	2.02	
5,212.0	9.10	137.10	5,123.5	-592.4	587.6	834.0	1.23	-1.17	-2.19	
5,340.0	6.20	135.10	5,250.4	-604.7	599.4	851.0	2.27	-2.27	-1.56	
5,468.0	4.40	144.10	5,377.8	-613.6	607.2	862.8	1.54	-1.41	7.03	
5,597.0	2.50	145.50	5,506.6	-619.9	611.7	870.5	1.47	-1.47	1.09	
5,725.0	1.30	165.20	5,634.5	-623.6	613.6	874.6	1.05	-0.94	15.39	
5,790.5	0.38	160.06	5,700.0	-624.6	613.9	875.4	1.40	-1.40	-7.85	
TARGET BHL 1326'FSL, 1330'FWL										
5,853.0	0.50	352.90	5,762.5	-624.5	613.9	875.4	1.40	0.19	-267.46	
5,982.0	1.00	306.50	5,891.5	-623.3	613.0	873.8	0.58	0.39	-35.97	
6,110.0	1.40	279.30	6,019.5	-622.3	610.5	871.5	0.54	0.31	-21.25	
6,238.0	1.90	267.20	6,147.4	-622.2	606.8	868.9	0.47	0.39	-9.45	
6,367.0	1.40	259.60	6,276.4	-622.6	603.2	866.7	0.42	-0.39	-5.89	
6,495.0	0.40	309.50	6,404.3	-622.6	601.3	865.4	0.92	-0.78	38.98	
6,623.0	1.80	236.40	6,532.3	-623.4	599.3	864.6	1.35	1.09	-57.11	
6,751.0	1.20	315.50	6,660.3	-623.6	596.6	862.9	1.54	-0.47	61.80	
6,790.4	0.57	308.53	6,699.7	-623.1	596.2	862.3	1.61	-1.59	-17.68	
TARGET CIRCLE 1326'FSL & 1330'FWL										
6,790.6	0.57	308.46	6,699.9	-623.1	596.2	862.3	1.61	-1.57	-37.24	
LEGAL BOX 800' X 800' 1327'FSL & 1330'FWL										
6,880.0	0.90	150.10	6,789.3	-623.5	596.2	862.6	1.61	0.37	-177.17	
7,008.0	0.60	155.20	6,917.3	-625.0	597.0	864.2	0.24	-0.23	3.98	
7,137.0	0.60	193.50	7,046.3	-626.2	597.1	865.2	0.31	0.00	29.69	
7,265.0	0.80	222.00	7,174.3	-627.5	596.4	865.7	0.31	0.16	22.27	
7,393.0	0.70	246.60	7,302.2	-628.5	595.0	865.5	0.26	-0.08	19.22	
7,521.0	1.00	226.20	7,430.2	-629.6	593.5	865.2	0.33	0.23	-15.94	

<b>Company:</b>	Top Operating Company	<b>Local Co-ordinate Reference:</b>	Well Haley 3
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7,650.0	1.30	244.50	7,559.2	-631.0	591.4	864.8	0.36	0.23	14.19	
7,778.0	1.00	244.30	7,687.2	-632.1	589.1	864.0	0.23	-0.23	-0.16	
7,828.0	1.00	244.30	7,737.2	-632.5	588.3	863.8	0.00	0.00	0.00	

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