

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Wilson Ranch 9-26HZ Pad

Whisper Rock 7N-25HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

07 November, 2014

Well Coordinates: 14,629,578.13 N, 1,651,166.63 E (40° 16' 56.70" N, 104° 57' 41.24" W)

Ground Level: 5,040.00 usft

Local Coordinate Origin:

Centered on Well Whisper Rock 7N-25HZ

Viewing Datum:

RKB = 17' @ 5057.00usft (D Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Project: WELD-NAD83-UTMFT13N
Site: Wilson Ranch 9-26HZ Pad
Well: Whisper Rock 7N-25HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

HALLIBURTON
Sperry Drilling

SECTION DETAILS

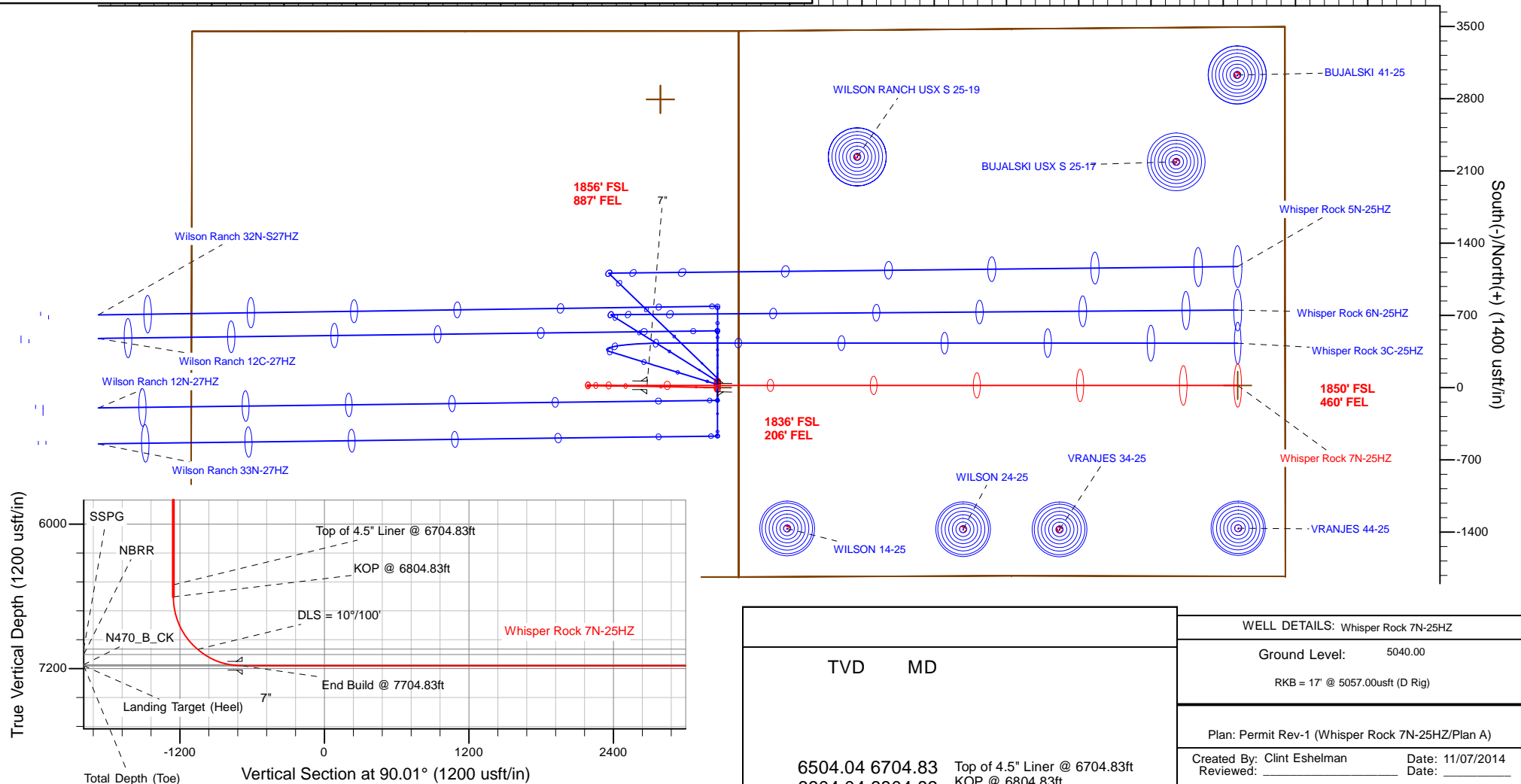
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	
3	1900.00	20.00	271.00	1879.82	3.02	-172.74	2.00	271.00	-172.74	
4	4560.00	20.00	271.00	4379.40	18.89	-1082.38	0.00	0.00	-1082.38	
5	5560.00	0.00	0.00	5359.21	21.91	-1255.12	2.00	180.00	-1255.12	
6	6804.83	0.00	0.00	6604.04	21.91	-1255.12	0.00	0.00	-1255.12	
7	7704.83	90.00	90.01	7177.00	21.85	-682.16	10.00	90.01	-682.16	
8	13427.16	90.00	90.01	7177.00	21.27	5040.17	0.00	0.00	5040.16	Whisper Rock 7N-25HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
Whisper Rock 6N-25HZ_SHL	0.00	0.00	0.00	40.282418	-104.961455	
4N-R68W-Sec. 25_Section Lines	88.00	2794.19	-553.82	40.290091	-104.963441	Polygon
4N-R68W-Sec. 26_Section Lines	88.00	2794.19	-553.82	40.290091	-104.963441	Polygon
Whisper Rock 7N-25HZ_BHL	7177.00	21.27	5040.17	40.282475	-104.943383	

0 usft/in)

1400 2100 2800 3500 4200 4900 5600 6300



Plan Report for Whisper Rock 7N-25HZ - Permit Rev-1

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Whisper Rock 6N-25HZ_SHL										
88.00	0.00	0.00	88.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4N-R68W-Sec. 26_Section Lines - 4N-R68W-Sec. 25_Section Lines										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
469.00	0.00	0.00	469.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Fox Hills										
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
754.00	0.00	0.00	754.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Csg Setting Depth - 9 5/8"										
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 900.00ft										
1,000.00	2.00	271.00	999.98	0.03	-1.74	-1.74	2.00	2.00	0.00	271.00
1,100.00	4.00	271.00	1,099.84	0.12	-6.98	-6.98	2.00	2.00	0.00	0.00
1,200.00	6.00	271.00	1,199.45	0.27	-15.69	-15.69	2.00	2.00	0.00	0.00
1,300.00	8.00	271.00	1,298.70	0.49	-27.88	-27.88	2.00	2.00	0.00	0.00
1,400.00	10.00	271.00	1,397.47	0.76	-43.52	-43.52	2.00	2.00	0.00	0.00
1,500.00	12.00	271.00	1,495.62	1.09	-62.59	-62.59	2.00	2.00	0.00	0.00
1,600.00	14.00	271.00	1,593.06	1.49	-85.08	-85.08	2.00	2.00	0.00	0.00
1,700.00	16.00	271.00	1,689.64	1.94	-110.96	-110.96	2.00	2.00	0.00	0.00
1,800.00	18.00	271.00	1,785.27	2.45	-140.19	-140.19	2.00	2.00	0.00	0.00
1,900.00	20.00	271.00	1,879.82	3.02	-172.74	-172.74	2.00	2.00	0.00	0.00
End Nudge @ 1900.00ft										
2,000.00	20.00	271.00	1,973.78	3.61	-206.94	-206.94	0.00	0.00	0.00	0.00
2,100.00	20.00	271.00	2,067.75	4.21	-241.14	-241.14	0.00	0.00	0.00	0.00
2,200.00	20.00	271.00	2,161.72	4.81	-275.33	-275.33	0.00	0.00	0.00	0.00
2,300.00	20.00	271.00	2,255.69	5.40	-309.53	-309.53	0.00	0.00	0.00	0.00
2,400.00	20.00	271.00	2,349.66	6.00	-343.73	-343.73	0.00	0.00	0.00	0.00
2,500.00	20.00	271.00	2,443.63	6.60	-377.92	-377.92	0.00	0.00	0.00	0.00
2,600.00	20.00	271.00	2,537.60	7.19	-412.12	-412.12	0.00	0.00	0.00	0.00
2,700.00	20.00	271.00	2,631.57	7.79	-446.32	-446.32	0.00	0.00	0.00	0.00
2,800.00	20.00	271.00	2,725.54	8.39	-480.51	-480.51	0.00	0.00	0.00	0.00
2,900.00	20.00	271.00	2,819.51	8.98	-514.71	-514.71	0.00	0.00	0.00	0.00
3,000.00	20.00	271.00	2,913.48	9.58	-548.91	-548.91	0.00	0.00	0.00	0.00
3,100.00	20.00	271.00	3,007.45	10.18	-583.10	-583.11	0.00	0.00	0.00	0.00
3,200.00	20.00	271.00	3,101.42	10.78	-617.30	-617.30	0.00	0.00	0.00	0.00
3,300.00	20.00	271.00	3,195.39	11.37	-651.50	-651.50	0.00	0.00	0.00	0.00
3,400.00	20.00	271.00	3,289.35	11.97	-685.69	-685.70	0.00	0.00	0.00	0.00
3,500.00	20.00	271.00	3,383.32	12.57	-719.89	-719.89	0.00	0.00	0.00	0.00
3,600.00	20.00	271.00	3,477.29	13.16	-754.09	-754.09	0.00	0.00	0.00	0.00
3,700.00	20.00	271.00	3,571.26	13.76	-788.28	-788.29	0.00	0.00	0.00	0.00
3,784.86	20.00	271.00	3,651.00	14.27	-817.30	-817.30	0.00	0.00	0.00	0.00
Parkman										
3,800.00	20.00	271.00	3,665.23	14.36	-822.48	-822.48	0.00	0.00	0.00	0.00
3,900.00	20.00	271.00	3,759.20	14.95	-856.68	-856.68	0.00	0.00	0.00	0.00
4,000.00	20.00	271.00	3,853.17	15.55	-890.87	-890.88	0.00	0.00	0.00	0.00
4,100.00	20.00	271.00	3,947.14	16.15	-925.07	-925.07	0.00	0.00	0.00	0.00
4,200.00	20.00	271.00	4,041.11	16.74	-959.27	-959.27	0.00	0.00	0.00	0.00
4,300.00	20.00	271.00	4,135.08	17.34	-993.46	-993.47	0.00	0.00	0.00	0.00
4,400.00	20.00	271.00	4,229.05	17.94	-1,027.66	-1,027.66	0.00	0.00	0.00	0.00
4,425.49	20.00	271.00	4,253.00	18.09	-1,036.38	-1,036.38	0.00	0.00	0.00	0.00
Sussex										

Plan Report for Whisper Rock 7N-25HZ - Permit Rev-1

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
4,500.00	20.00	271.00	4,323.02	18.53	-1,061.86	-1,061.86	0.00	0.00	0.00	0.00
4,560.00	20.00	271.00	4,379.40	18.89	-1,082.38	-1,082.38	0.00	0.00	0.00	0.00
Begin Drop @ 4560.00ft										
4,600.00	19.20	271.00	4,417.08	19.13	-1,095.79	-1,095.80	2.00	-2.00	0.00	180.00
4,700.00	17.20	271.00	4,512.07	19.67	-1,127.02	-1,127.02	2.00	-2.00	0.00	180.00
4,800.00	15.20	271.00	4,608.10	20.16	-1,154.91	-1,154.92	2.00	-2.00	0.00	180.00
4,900.00	13.20	271.00	4,705.04	20.59	-1,179.44	-1,179.44	2.00	-2.00	0.00	180.00
5,000.00	11.20	271.00	4,802.77	20.96	-1,200.57	-1,200.57	2.00	-2.00	0.00	180.00
5,100.00	9.20	271.00	4,901.19	21.27	-1,218.27	-1,218.28	2.00	-2.00	0.00	180.00
5,200.00	7.20	271.00	5,000.16	21.51	-1,232.53	-1,232.54	2.00	-2.00	0.00	180.00
5,300.00	5.20	271.00	5,099.57	21.70	-1,243.33	-1,243.33	2.00	-2.00	0.00	180.00
5,400.00	3.20	271.00	5,199.30	21.83	-1,250.65	-1,250.66	2.00	-2.00	0.00	180.00
5,500.00	1.20	271.00	5,299.22	21.90	-1,254.49	-1,254.49	2.00	-2.00	0.00	180.00
5,560.00	0.00	0.00	5,359.21	21.91	-1,255.12	-1,255.12	2.00	-2.00	0.00	180.00
End Drop @ 5560.00ft										
5,600.00	0.00	0.00	5,399.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,499.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,599.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,699.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,799.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	5,899.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	5,999.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,099.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,199.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,299.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,399.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,499.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
6,704.83	0.00	0.00	6,504.04	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6704.83ft										
6,800.00	0.00	0.00	6,599.21	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
6,804.83	0.00	0.00	6,604.04	21.91	-1,255.12	-1,255.12	0.00	0.00	0.00	0.00
KOP @ 6804.83ft										
6,900.00	9.52	90.01	6,698.78	21.91	-1,247.23	-1,247.24	10.00	10.00	0.00	90.01
7,000.00	19.52	90.01	6,795.46	21.90	-1,222.20	-1,222.20	10.00	10.00	0.00	0.00
7,100.00	29.52	90.01	6,886.33	21.90	-1,180.75	-1,180.76	10.00	10.00	0.00	0.00
7,200.00	39.52	90.01	6,968.62	21.89	-1,124.16	-1,124.16	10.00	10.00	0.00	0.00
7,297.18	49.24	90.01	7,038.00	21.89	-1,056.28	-1,056.28	10.00	10.00	0.00	0.00
SSPG										
7,300.00	49.52	90.01	7,039.83	21.89	-1,054.14	-1,054.14	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,371.97	56.71	90.01	7,083.00	21.88	-996.61	-996.62	10.00	10.00	0.00	0.00
NBRR										
7,400.00	59.52	90.01	7,097.81	21.88	-972.81	-972.82	10.00	10.00	0.00	0.00
7,500.00	69.52	90.01	7,140.78	21.87	-882.66	-882.66	10.00	10.00	0.00	0.00
7,597.62	79.28	90.01	7,167.00	21.86	-788.75	-788.75	10.00	10.00	0.00	0.00
N470_B_CK										
7,600.00	79.52	90.01	7,167.44	21.86	-786.41	-786.41	10.00	10.00	0.00	0.00
7,700.00	89.52	90.01	7,176.98	21.85	-686.99	-686.99	10.00	10.00	0.00	0.00
7,704.83	90.00	90.01	7,177.00	21.85	-682.16	-682.16	10.00	10.00	0.00	0.00
End Build @ 7704.83ft - Landing Target (Heel) - 7"										
7,800.00	90.00	90.01	7,177.00	21.84	-586.99	-586.99	0.00	0.00	0.00	0.00
7,900.00	90.00	90.01	7,177.00	21.83	-486.99	-486.99	0.00	0.00	0.00	0.00
8,000.00	90.00	90.01	7,177.00	21.82	-386.99	-386.99	0.00	0.00	0.00	0.00
8,100.00	90.00	90.01	7,177.00	21.81	-286.99	-286.99	0.00	0.00	0.00	0.00
8,200.00	90.00	90.01	7,177.00	21.80	-186.99	-186.99	0.00	0.00	0.00	0.00
8,300.00	90.00	90.01	7,177.00	21.79	-86.99	-86.99	0.00	0.00	0.00	0.00
8,400.00	90.00	90.01	7,177.00	21.78	13.01	13.01	0.00	0.00	0.00	0.00
8,500.00	90.00	90.01	7,177.00	21.77	113.01	113.01	0.00	0.00	0.00	0.00

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
8,600.00	90.00	90.01	7,177.00	21.76	213.01	213.01	0.00	0.00	0.00	0.00
8,700.00	90.00	90.01	7,177.00	21.75	313.01	313.01	0.00	0.00	0.00	0.00
8,800.00	90.00	90.01	7,177.00	21.74	413.01	413.01	0.00	0.00	0.00	0.00
8,900.00	90.00	90.01	7,177.00	21.73	513.01	513.01	0.00	0.00	0.00	0.00
9,000.00	90.00	90.01	7,177.00	21.72	613.01	613.01	0.00	0.00	0.00	0.00
9,100.00	90.00	90.01	7,177.00	21.71	713.01	713.01	0.00	0.00	0.00	0.00
9,200.00	90.00	90.01	7,177.00	21.70	813.01	813.01	0.00	0.00	0.00	0.00
9,300.00	90.00	90.01	7,177.00	21.69	913.01	913.01	0.00	0.00	0.00	0.00
9,400.00	90.00	90.01	7,177.00	21.68	1,013.01	1,013.01	0.00	0.00	0.00	0.00
9,500.00	90.00	90.01	7,177.00	21.67	1,113.01	1,113.01	0.00	0.00	0.00	0.00
9,600.00	90.00	90.01	7,177.00	21.66	1,213.01	1,213.01	0.00	0.00	0.00	0.00
9,700.00	90.00	90.01	7,177.00	21.65	1,313.01	1,313.01	0.00	0.00	0.00	0.00
9,800.00	90.00	90.01	7,177.00	21.64	1,413.01	1,413.01	0.00	0.00	0.00	0.00
9,900.00	90.00	90.01	7,177.00	21.63	1,513.01	1,513.01	0.00	0.00	0.00	0.00
10,000.00	90.00	90.01	7,177.00	21.62	1,613.01	1,613.01	0.00	0.00	0.00	0.00
10,100.00	90.00	90.01	7,177.00	21.61	1,713.01	1,713.01	0.00	0.00	0.00	0.00
10,200.00	90.00	90.01	7,177.00	21.60	1,813.01	1,813.01	0.00	0.00	0.00	0.00
10,300.00	90.00	90.01	7,177.00	21.59	1,913.01	1,913.01	0.00	0.00	0.00	0.00
10,400.00	90.00	90.01	7,177.00	21.58	2,013.01	2,013.01	0.00	0.00	0.00	0.00
10,500.00	90.00	90.01	7,177.00	21.57	2,113.01	2,113.01	0.00	0.00	0.00	0.00
10,600.00	90.00	90.01	7,177.00	21.56	2,213.01	2,213.01	0.00	0.00	0.00	0.00
10,700.00	90.00	90.01	7,177.00	21.55	2,313.01	2,313.01	0.00	0.00	0.00	0.00
10,800.00	90.00	90.01	7,177.00	21.54	2,413.01	2,413.01	0.00	0.00	0.00	0.00
10,900.00	90.00	90.01	7,177.00	21.53	2,513.01	2,513.01	0.00	0.00	0.00	0.00
11,000.00	90.00	90.01	7,177.00	21.52	2,613.01	2,613.01	0.00	0.00	0.00	0.00
11,100.00	90.00	90.01	7,177.00	21.51	2,713.01	2,713.01	0.00	0.00	0.00	0.00
11,200.00	90.00	90.01	7,177.00	21.50	2,813.01	2,813.01	0.00	0.00	0.00	0.00
11,300.00	90.00	90.01	7,177.00	21.49	2,913.01	2,913.01	0.00	0.00	0.00	0.00
11,400.00	90.00	90.01	7,177.00	21.48	3,013.01	3,013.01	0.00	0.00	0.00	0.00
11,500.00	90.00	90.01	7,177.00	21.47	3,113.01	3,113.01	0.00	0.00	0.00	0.00
11,600.00	90.00	90.01	7,177.00	21.46	3,213.01	3,213.01	0.00	0.00	0.00	0.00
11,700.00	90.00	90.01	7,177.00	21.45	3,313.01	3,313.01	0.00	0.00	0.00	0.00
11,800.00	90.00	90.01	7,177.00	21.44	3,413.01	3,413.01	0.00	0.00	0.00	0.00
11,900.00	90.00	90.01	7,177.00	21.43	3,513.01	3,513.01	0.00	0.00	0.00	0.00
12,000.00	90.00	90.01	7,177.00	21.42	3,613.01	3,613.01	0.00	0.00	0.00	0.00
12,100.00	90.00	90.01	7,177.00	21.41	3,713.01	3,713.01	0.00	0.00	0.00	0.00
12,200.00	90.00	90.01	7,177.00	21.40	3,813.01	3,813.01	0.00	0.00	0.00	0.00
12,300.00	90.00	90.01	7,177.00	21.38	3,913.01	3,913.01	0.00	0.00	0.00	0.00
12,400.00	90.00	90.01	7,177.00	21.37	4,013.01	4,013.01	0.00	0.00	0.00	0.00
12,500.00	90.00	90.01	7,177.00	21.36	4,113.01	4,113.01	0.00	0.00	0.00	0.00
12,600.00	90.00	90.01	7,177.00	21.35	4,213.01	4,213.01	0.00	0.00	0.00	0.00
12,700.00	90.00	90.01	7,177.00	21.34	4,313.01	4,313.01	0.00	0.00	0.00	0.00
12,800.00	90.00	90.01	7,177.00	21.33	4,413.01	4,413.01	0.00	0.00	0.00	0.00
12,900.00	90.00	90.01	7,177.00	21.32	4,513.01	4,513.01	0.00	0.00	0.00	0.00
13,000.00	90.00	90.01	7,177.00	21.31	4,613.01	4,613.01	0.00	0.00	0.00	0.00
13,100.00	90.00	90.01	7,177.00	21.30	4,713.01	4,713.01	0.00	0.00	0.00	0.00
13,200.00	90.00	90.01	7,177.00	21.29	4,813.01	4,813.01	0.00	0.00	0.00	0.00
13,300.00	90.00	90.01	7,177.00	21.28	4,913.01	4,913.01	0.00	0.00	0.00	0.00
13,400.00	90.00	90.01	7,177.00	21.27	5,013.01	5,013.01	0.00	0.00	0.00	0.00
13,427.15	90.00	90.01	7,177.00	21.27	5,040.16	5,040.16	0.00	0.00	0.00	0.00
Total Depth (Toe)										
13,427.16	90.00	90.01	7,177.00	21.27	5,040.17	5,040.16	0.00	0.00	0.00	0.00
TD Well @ 13427.16ft - Whisper Rock 7N-25HZ_BHL										

Plan Report for Whisper Rock 7N-25HZ - Permit Rev-1

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
900.00	900.00	0.00	0.00	Begin Nudge @ 900.00ft
1,900.00	1,879.82	3.02	-172.74	End Nudge @ 1900.00ft
4,560.00	4,379.40	18.89	-1,082.38	Begin Drop @ 4560.00ft
5,560.00	5,359.21	21.91	-1,255.12	End Drop @ 5560.00ft
6,704.83	6,504.04	21.91	-1,255.12	Top of 4.5" Liner @ 6704.83ft
6,804.83	6,604.04	21.91	-1,255.12	KOP @ 6804.83ft
7,300.00	7,039.83	21.89	-1,054.14	DLS = 10°/100'
7,704.83	7,177.00	21.85	-682.16	End Build @ 7704.83ft
13,427.16	7,177.00	21.27	5,040.17	TD Well @ 13427.16ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	90.01	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,704.83	Permit Rev-1	MWD+IFR1
7,704.83	13,427.16	Permit Rev-1	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
754.00	754.00	9 5/8"	9-5/8	13-1/2
7,704.83	7,177.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
469.00	469.00	Base Fox Hills		0.00	
754.00	754.00	Surface Csg Setting Depth		0.00	
3,784.86	3,651.00	Parkman		0.00	
4,425.49	4,253.00	Sussex		0.00	
7,297.18	7,038.00	SSPG		0.00	
7,371.97	7,083.00	NBRR		0.00	
7,597.62	7,167.00	N470_B_CK		0.00	
7,704.83	7,177.00	Landing Target (Heel)		0.00	
13,427.15	7,177.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Whisper Rock 6N-25HZ_SHL	0.00	0.00	0.00	Point
4N-R68W-Sec. 26_Section Lines	88.00	2,794.19	-553.82	Polygon
4N-R68W-Sec. 25_Section Lines	88.00	2,794.19	-553.82	Polygon
Whisper Rock 7N-25HZ_BHL	7,177.00	21.27	5,040.17	Point

North Reference Sheet for Wilson Ranch 9-26HZ Pad - Whisper Rock 7N-25HZ - Plan A

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB = 17' @ 5057.00usft (D Rig). Northing and Easting are relative to Whisper Rock 7N-25HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.00°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960013

Grid Coordinates of Well: 14,629,578.13 usft N, 1,651,166.63 usft E

Geographical Coordinates of Well: 40° 16' 56.70" N, 104° 57' 41.24" W

Grid Convergence at Surface is: 0.02°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,427.16usft
the Bottom Hole Displacement is 5,040.21usft in the Direction of 89.76° (True).

Magnetic Convergence at surface is: -8.48° (6 November 2014, , IGRF2010)

