

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Wilson Ranch 9-26HZ Pad

Wilson Ranch 12C-27HZ

Plan B

Plan: Permit Rev-2

Sperry Drilling Services Proposal Report

08 December, 2014

Well Coordinates: 14,629,623.29 N, 1,651,166.89 E (40° 16' 57.15" N, 104° 57' 41.23" W)

Ground Level: 5,040.00 usft

Local Coordinate Origin:

Centered on Well Wilson Ranch 12C-27HZ

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: Wilson Ranch 12C-27HZ
Wellbore: Plan B
Design: Permit Rev-2

US ROCKIES WATTENBERG PLANNING

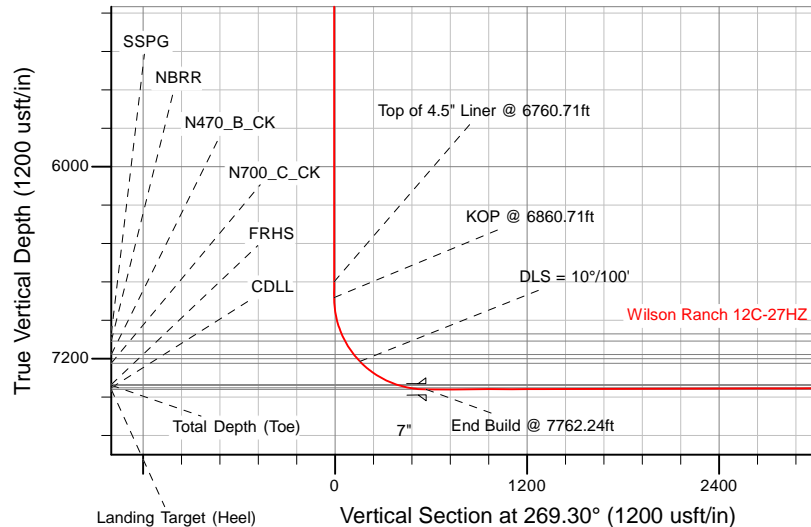
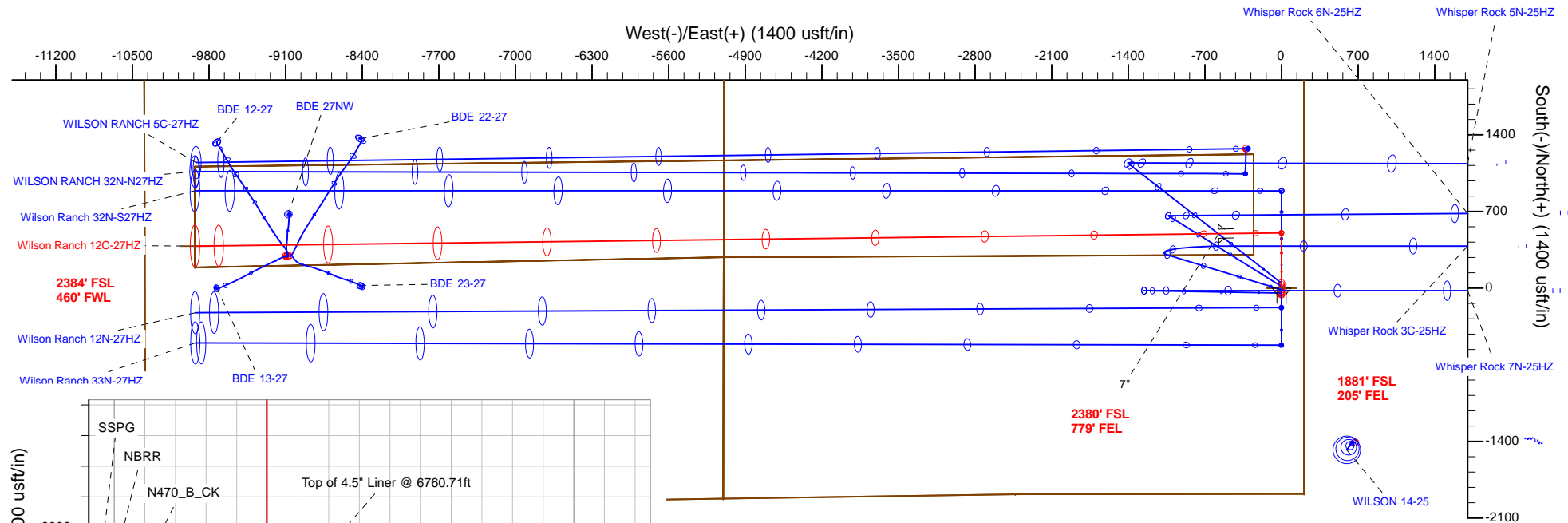
HALLIBURTON
Sperry Drilling

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	1400.00	10.00	0.00	1397.47	43.52	0.00	2.00	0.00	-0.53	
4	3809.13	10.00	0.00	3770.00	461.86	0.00	0.00	0.00	-5.64	
5	4309.13	0.00	0.00	4267.46	505.39	0.00	2.00	180.00	-6.17	
6	6860.71	0.00	0.00	6819.04	505.39	0.00	0.00	0.00	-6.17	
7	7762.24	90.15	269.30	7392.00	498.34	-574.45	10.00	269.30	568.31	
8	17116.98	90.15	269.30	7367.00	383.63	-9928.45	0.00	0.00	9923.02	Wilson Ranch 12C-27HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
Wilson Ranch 12C-27HZ_LD	0.00	0.00	0.00	40.282542	-104.961454	Polygon
Wilson Ranch 12C-27HZ_SHL	0.00	0.00	0.00	40.282542	-104.961454	Polygon
4N-R68W-Sec. 26_Section Lines	88.00	2749.04	-554.10	40.290091	-104.963441	Polygon
4N-R68W-Sec. 27_Section Lines	88.00	2749.04	-554.10	40.290091	-104.963441	Polygon
Wilson Ranch 12C-27HZ_BHL	7367.00	383.63	-9928.45	40.283590	-104.997054	Polygon



TVD MD

6719.04 6760.71 Top of 4.5\"/>

WELL DETAILS: Wilson Ranch 12C-27HZ

Ground Level: 5040.00

RKB = 17' @ 5057.00usft (D Rig)

Plan: Permit Rev-2 (Wilson Ranch 12C-27HZ/Plan B)

Created By: Clint Eshelman Date: 12/08/2014
Reviewed: Date:

Plan Report for Wilson Ranch 12C-27HZ - Permit Rev-2

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
Wilson Ranch 12C-27HZ_SHL - Wilson Ranch 12C-27HZ_LD										
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. 27_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	0.00	999.98	1.75	0.00	-0.02	2.00	2.00	0.00	0.00
1,100.00	4.00	0.00	1,099.84	6.98	0.00	-0.09	2.00	2.00	0.00	0.00
1,200.00	6.00	0.00	1,199.45	15.69	0.00	-0.19	2.00	2.00	0.00	0.00
1,300.00	8.00	0.00	1,298.70	27.88	0.00	-0.34	2.00	2.00	0.00	0.00
1,400.00	10.00	0.00	1,397.47	43.52	0.00	-0.53	2.00	2.00	0.00	0.00
End Nudge @ 1400.00ft										
1,500.00	10.00	0.00	1,495.95	60.89	0.00	-0.74	0.00	0.00	0.00	0.00
1,600.00	10.00	0.00	1,594.43	78.25	0.00	-0.96	0.00	0.00	0.00	0.00
1,700.00	10.00	0.00	1,692.91	95.62	0.00	-1.17	0.00	0.00	0.00	0.00
1,800.00	10.00	0.00	1,791.39	112.98	0.00	-1.38	0.00	0.00	0.00	0.00
1,900.00	10.00	0.00	1,889.87	130.35	0.00	-1.59	0.00	0.00	0.00	0.00
2,000.00	10.00	0.00	1,988.35	147.71	0.00	-1.80	0.00	0.00	0.00	0.00
2,100.00	10.00	0.00	2,086.83	165.08	0.00	-2.02	0.00	0.00	0.00	0.00
2,200.00	10.00	0.00	2,185.31	182.44	0.00	-2.23	0.00	0.00	0.00	0.00
2,300.00	10.00	0.00	2,283.79	199.81	0.00	-2.44	0.00	0.00	0.00	0.00
2,400.00	10.00	0.00	2,382.27	217.17	0.00	-2.65	0.00	0.00	0.00	0.00
2,500.00	10.00	0.00	2,480.75	234.54	0.00	-2.87	0.00	0.00	0.00	0.00
2,600.00	10.00	0.00	2,579.23	251.90	0.00	-3.08	0.00	0.00	0.00	0.00
2,700.00	10.00	0.00	2,677.72	269.27	0.00	-3.29	0.00	0.00	0.00	0.00
2,800.00	10.00	0.00	2,776.20	286.63	0.00	-3.50	0.00	0.00	0.00	0.00
2,900.00	10.00	0.00	2,874.68	303.99	0.00	-3.71	0.00	0.00	0.00	0.00
3,000.00	10.00	0.00	2,973.16	321.36	0.00	-3.93	0.00	0.00	0.00	0.00
3,100.00	10.00	0.00	3,071.64	338.72	0.00	-4.14	0.00	0.00	0.00	0.00
3,200.00	10.00	0.00	3,170.12	356.09	0.00	-4.35	0.00	0.00	0.00	0.00
3,300.00	10.00	0.00	3,268.60	373.45	0.00	-4.56	0.00	0.00	0.00	0.00
3,400.00	10.00	0.00	3,367.08	390.82	0.00	-4.77	0.00	0.00	0.00	0.00
3,500.00	10.00	0.00	3,465.56	408.18	0.00	-4.99	0.00	0.00	0.00	0.00
3,600.00	10.00	0.00	3,564.04	425.55	0.00	-5.20	0.00	0.00	0.00	0.00
3,695.41	10.00	0.00	3,658.00	442.12	0.00	-5.40	0.00	0.00	0.00	0.00
Parkman										
3,700.00	10.00	0.00	3,662.52	442.91	0.00	-5.41	0.00	0.00	0.00	0.00
3,800.00	10.00	0.00	3,761.00	460.28	0.00	-5.62	0.00	0.00	0.00	0.00
3,809.13	10.00	0.00	3,770.00	461.86	0.00	-5.64	0.00	0.00	0.00	0.00
Begin Drop @ 3809.13ft										
3,900.00	8.18	0.00	3,859.72	476.22	0.00	-5.82	2.00	-2.00	0.00	180.00
4,000.00	6.18	0.00	3,958.93	488.72	0.00	-5.97	2.00	-2.00	0.00	180.00
4,100.00	4.18	0.00	4,058.52	497.76	0.00	-6.08	2.00	-2.00	0.00	180.00
4,200.00	2.18	0.00	4,158.36	503.31	0.00	-6.15	2.00	-2.00	0.00	180.00
4,300.00	0.18	0.00	4,258.33	505.37	0.00	-6.17	2.00	-2.00	0.00	-180.00
4,301.67	0.15	0.00	4,260.00	505.38	0.00	-6.17	2.00	-2.00	0.00	180.00

Plan Report for Wilson Ranch 12C-27HZ - Permit Rev-2

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 (°)
Sussex										
4,309.13	0.00	0.00	4,267.46	505.39	0.00	-6.17	2.00	-2.00	0.00	-180.00
End Drop @ 4309.13ft										
4,400.00	0.00	0.00	4,358.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,458.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,558.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,658.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,758.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,858.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,958.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,058.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,158.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,258.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,358.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,458.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,558.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,658.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,758.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,858.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,958.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,058.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,158.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,258.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,358.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,458.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,558.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,658.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
6,760.71	0.00	0.00	6,719.04	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6760.71ft										
6,800.00	0.00	0.00	6,758.33	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
6,860.71	0.00	0.00	6,819.04	505.39	0.00	-6.17	0.00	0.00	0.00	0.00
KOP @ 6860.71ft										
6,900.00	3.93	269.30	6,858.30	505.37	-1.35	-4.83	10.00	10.00	0.00	269.30
7,000.00	13.93	269.30	6,956.96	505.18	-16.85	10.67	10.00	10.00	0.00	0.00
7,092.98	23.23	269.30	7,045.00	504.82	-46.43	40.26	10.00	10.00	0.00	0.00
SSPG										
7,100.00	23.93	269.30	7,051.43	504.78	-49.24	43.07	10.00	10.00	0.00	0.00
7,142.95	28.22	269.30	7,090.00	504.55	-68.11	61.95	10.00	10.00	0.00	0.00
NBRR										
7,200.00	33.93	269.30	7,138.85	504.19	-97.55	91.38	10.00	10.00	0.00	0.00
7,243.52	38.28	269.30	7,174.00	503.88	-123.19	117.02	10.00	10.00	0.00	0.00
N470_B_CK										
7,300.00	43.93	269.30	7,216.54	503.42	-160.30	154.14	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,317.56	45.69	269.30	7,229.00	503.27	-172.68	166.52	10.00	10.00	0.00	0.00
N700_C_CK										
7,400.00	53.93	269.30	7,282.16	502.50	-235.59	229.43	10.00	10.00	0.00	0.00
7,500.00	63.93	269.30	7,333.70	501.45	-321.13	314.98	10.00	10.00	0.00	0.00
7,574.48	71.38	269.30	7,362.00	500.60	-389.96	383.82	10.00	10.00	0.00	0.00
FRHS										
7,600.00	73.93	269.30	7,369.61	500.31	-414.32	408.17	10.00	10.00	0.00	0.00
7,653.51	79.28	269.30	7,382.00	499.67	-466.35	460.21	10.00	10.00	0.00	0.00
CDLL										
7,700.00	83.93	269.30	7,388.79	499.10	-512.32	506.19	10.00	10.00	0.00	0.00
7,762.24	90.15	269.30	7,392.00	498.34	-574.44	568.31	10.00	10.00	0.00	0.00
End Build @ 7762.24ft - Landing Target (Heel) - 7"										
7,800.00	90.15	269.30	7,391.90	497.88	-612.20	606.07	0.00	0.00	0.00	0.00
7,900.00	90.15	269.30	7,391.63	496.65	-712.19	706.07	0.00	0.00	0.00	0.00

Plan Report for Wilson Ranch 12C-27HZ - Permit Rev-2

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 (°)
8,000.00	90.15	269.30	7,391.36	495.43	-812.19	806.07	0.00	0.00	0.00	0.00
8,100.00	90.15	269.30	7,391.09	494.20	-912.18	906.07	0.00	0.00	0.00	0.00
8,200.00	90.15	269.30	7,390.83	492.97	-1,012.17	1,006.07	0.00	0.00	0.00	0.00
8,300.00	90.15	269.30	7,390.56	491.75	-1,112.16	1,106.07	0.00	0.00	0.00	0.00
8,400.00	90.15	269.30	7,390.29	490.52	-1,212.15	1,206.07	0.00	0.00	0.00	0.00
8,500.00	90.15	269.30	7,390.03	489.30	-1,312.15	1,306.07	0.00	0.00	0.00	0.00
8,600.00	90.15	269.30	7,389.76	488.07	-1,412.14	1,406.07	0.00	0.00	0.00	0.00
8,700.00	90.15	269.30	7,389.49	486.84	-1,512.13	1,506.07	0.00	0.00	0.00	0.00
8,800.00	90.15	269.30	7,389.22	485.62	-1,612.12	1,606.07	0.00	0.00	0.00	0.00
8,900.00	90.15	269.30	7,388.96	484.39	-1,712.11	1,706.07	0.00	0.00	0.00	0.00
9,000.00	90.15	269.30	7,388.69	483.16	-1,812.11	1,806.07	0.00	0.00	0.00	0.00
9,100.00	90.15	269.30	7,388.42	481.94	-1,912.10	1,906.07	0.00	0.00	0.00	0.00
9,200.00	90.15	269.30	7,388.15	480.71	-2,012.09	2,006.07	0.00	0.00	0.00	0.00
9,300.00	90.15	269.30	7,387.89	479.49	-2,112.08	2,106.07	0.00	0.00	0.00	0.00
9,400.00	90.15	269.30	7,387.62	478.26	-2,212.08	2,206.07	0.00	0.00	0.00	0.00
9,500.00	90.15	269.30	7,387.35	477.03	-2,312.07	2,306.07	0.00	0.00	0.00	0.00
9,600.00	90.15	269.30	7,387.09	475.81	-2,412.06	2,406.07	0.00	0.00	0.00	0.00
9,700.00	90.15	269.30	7,386.82	474.58	-2,512.05	2,506.07	0.00	0.00	0.00	0.00
9,800.00	90.15	269.30	7,386.55	473.35	-2,612.04	2,606.07	0.00	0.00	0.00	0.00
9,900.00	90.15	269.30	7,386.28	472.13	-2,712.04	2,706.07	0.00	0.00	0.00	0.00
10,000.00	90.15	269.30	7,386.02	470.90	-2,812.03	2,806.07	0.00	0.00	0.00	0.00
10,100.00	90.15	269.30	7,385.75	469.68	-2,912.02	2,906.07	0.00	0.00	0.00	0.00
10,200.00	90.15	269.30	7,385.48	468.45	-3,012.01	3,006.06	0.00	0.00	0.00	0.00
10,300.00	90.15	269.30	7,385.22	467.22	-3,112.00	3,106.06	0.00	0.00	0.00	0.00
10,400.00	90.15	269.30	7,384.95	466.00	-3,212.00	3,206.06	0.00	0.00	0.00	0.00
10,500.00	90.15	269.30	7,384.68	464.77	-3,311.99	3,306.06	0.00	0.00	0.00	0.00
10,600.00	90.15	269.30	7,384.41	463.54	-3,411.98	3,406.06	0.00	0.00	0.00	0.00
10,700.00	90.15	269.30	7,384.15	462.32	-3,511.97	3,506.06	0.00	0.00	0.00	0.00
10,800.00	90.15	269.30	7,383.88	461.09	-3,611.97	3,606.06	0.00	0.00	0.00	0.00
10,900.00	90.15	269.30	7,383.61	459.87	-3,711.96	3,706.06	0.00	0.00	0.00	0.00
11,000.00	90.15	269.30	7,383.34	458.64	-3,811.95	3,806.06	0.00	0.00	0.00	0.00
11,100.00	90.15	269.30	7,383.08	457.41	-3,911.94	3,906.06	0.00	0.00	0.00	0.00
11,200.00	90.15	269.30	7,382.81	456.19	-4,011.93	4,006.06	0.00	0.00	0.00	0.00
11,300.00	90.15	269.30	7,382.54	454.96	-4,111.93	4,106.06	0.00	0.00	0.00	0.00
11,400.00	90.15	269.30	7,382.28	453.73	-4,211.92	4,206.06	0.00	0.00	0.00	0.00
11,500.00	90.15	269.30	7,382.01	452.51	-4,311.91	4,306.06	0.00	0.00	0.00	0.00
11,600.00	90.15	269.30	7,381.74	451.28	-4,411.90	4,406.06	0.00	0.00	0.00	0.00
11,700.00	90.15	269.30	7,381.47	450.06	-4,511.89	4,506.06	0.00	0.00	0.00	0.00
11,800.00	90.15	269.30	7,381.21	448.83	-4,611.89	4,606.06	0.00	0.00	0.00	0.00
11,900.00	90.15	269.30	7,380.94	447.60	-4,711.88	4,706.06	0.00	0.00	0.00	0.00
12,000.00	90.15	269.30	7,380.67	446.38	-4,811.87	4,806.06	0.00	0.00	0.00	0.00
12,100.00	90.15	269.30	7,380.41	445.15	-4,911.86	4,906.06	0.00	0.00	0.00	0.00
12,200.00	90.15	269.30	7,380.14	443.93	-5,011.86	5,006.06	0.00	0.00	0.00	0.00
12,300.00	90.15	269.30	7,379.87	442.70	-5,111.85	5,106.06	0.00	0.00	0.00	0.00
12,400.00	90.15	269.30	7,379.60	441.47	-5,211.84	5,206.06	0.00	0.00	0.00	0.00
12,500.00	90.15	269.30	7,379.34	440.25	-5,311.83	5,306.06	0.00	0.00	0.00	0.00
12,600.00	90.15	269.30	7,379.07	439.02	-5,411.82	5,406.06	0.00	0.00	0.00	0.00
12,700.00	90.15	269.30	7,378.80	437.79	-5,511.82	5,506.06	0.00	0.00	0.00	0.00
12,800.00	90.15	269.30	7,378.54	436.57	-5,611.81	5,606.06	0.00	0.00	0.00	0.00
12,900.00	90.15	269.30	7,378.27	435.34	-5,711.80	5,706.06	0.00	0.00	0.00	0.00
13,000.00	90.15	269.30	7,378.00	434.12	-5,811.79	5,806.05	0.00	0.00	0.00	0.00
13,100.00	90.15	269.30	7,377.73	432.89	-5,911.78	5,906.05	0.00	0.00	0.00	0.00
13,200.00	90.15	269.30	7,377.47	431.66	-6,011.78	6,006.05	0.00	0.00	0.00	0.00
13,300.00	90.15	269.30	7,377.20	430.44	-6,111.77	6,106.05	0.00	0.00	0.00	0.00
13,400.00	90.15	269.30	7,376.93	429.21	-6,211.76	6,206.05	0.00	0.00	0.00	0.00
13,500.00	90.15	269.30	7,376.66	427.98	-6,311.75	6,306.05	0.00	0.00	0.00	0.00
13,600.00	90.15	269.30	7,376.40	426.76	-6,411.74	6,406.05	0.00	0.00	0.00	0.00
13,700.00	90.15	269.30	7,376.13	425.53	-6,511.74	6,506.05	0.00	0.00	0.00	0.00
13,800.00	90.15	269.30	7,375.86	424.31	-6,611.73	6,606.05	0.00	0.00	0.00	0.00
13,900.00	90.15	269.30	7,375.60	423.08	-6,711.72	6,706.05	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 (°)
14,000.00	90.15	269.30	7,375.33	421.85	-6,811.71	6,806.05	0.00	0.00	0.00	0.00
14,100.00	90.15	269.30	7,375.06	420.63	-6,911.71	6,906.05	0.00	0.00	0.00	0.00
14,200.00	90.15	269.30	7,374.79	419.40	-7,011.70	7,006.05	0.00	0.00	0.00	0.00
14,300.00	90.15	269.30	7,374.53	418.17	-7,111.69	7,106.05	0.00	0.00	0.00	0.00
14,400.00	90.15	269.30	7,374.26	416.95	-7,211.68	7,206.05	0.00	0.00	0.00	0.00
14,500.00	90.15	269.30	7,373.99	415.72	-7,311.67	7,306.05	0.00	0.00	0.00	0.00
14,600.00	90.15	269.30	7,373.73	414.50	-7,411.67	7,406.05	0.00	0.00	0.00	0.00
14,700.00	90.15	269.30	7,373.46	413.27	-7,511.66	7,506.05	0.00	0.00	0.00	0.00
14,800.00	90.15	269.30	7,373.19	412.04	-7,611.65	7,606.05	0.00	0.00	0.00	0.00
14,900.00	90.15	269.30	7,372.92	410.82	-7,711.64	7,706.05	0.00	0.00	0.00	0.00
15,000.00	90.15	269.30	7,372.66	409.59	-7,811.63	7,806.05	0.00	0.00	0.00	0.00
15,100.00	90.15	269.30	7,372.39	408.36	-7,911.63	7,906.05	0.00	0.00	0.00	0.00
15,200.00	90.15	269.30	7,372.12	407.14	-8,011.62	8,006.05	0.00	0.00	0.00	0.00
15,300.00	90.15	269.30	7,371.86	405.91	-8,111.61	8,106.05	0.00	0.00	0.00	0.00
15,400.00	90.15	269.30	7,371.59	404.69	-8,211.60	8,206.05	0.00	0.00	0.00	0.00
15,500.00	90.15	269.30	7,371.32	403.46	-8,311.60	8,306.05	0.00	0.00	0.00	0.00
15,600.00	90.15	269.30	7,371.05	402.23	-8,411.59	8,406.05	0.00	0.00	0.00	0.00
15,700.00	90.15	269.30	7,370.79	401.01	-8,511.58	8,506.05	0.00	0.00	0.00	0.00
15,800.00	90.15	269.30	7,370.52	399.78	-8,611.57	8,606.04	0.00	0.00	0.00	0.00
15,900.00	90.15	269.30	7,370.25	398.56	-8,711.56	8,706.04	0.00	0.00	0.00	0.00
16,000.00	90.15	269.30	7,369.98	397.33	-8,811.56	8,806.04	0.00	0.00	0.00	0.00
16,100.00	90.15	269.30	7,369.72	396.10	-8,911.55	8,906.04	0.00	0.00	0.00	0.00
16,200.00	90.15	269.30	7,369.45	394.88	-9,011.54	9,006.04	0.00	0.00	0.00	0.00
16,300.00	90.15	269.30	7,369.18	393.65	-9,111.53	9,106.04	0.00	0.00	0.00	0.00
16,400.00	90.15	269.30	7,368.92	392.42	-9,211.52	9,206.04	0.00	0.00	0.00	0.00
16,500.00	90.15	269.30	7,368.65	391.20	-9,311.52	9,306.04	0.00	0.00	0.00	0.00
16,600.00	90.15	269.30	7,368.38	389.97	-9,411.51	9,406.04	0.00	0.00	0.00	0.00
16,700.00	90.15	269.30	7,368.11	388.75	-9,511.50	9,506.04	0.00	0.00	0.00	0.00
16,800.00	90.15	269.30	7,367.85	387.52	-9,611.49	9,606.04	0.00	0.00	0.00	0.00
16,900.00	90.15	269.30	7,367.58	386.29	-9,711.48	9,706.04	0.00	0.00	0.00	0.00
17,000.00	90.15	269.30	7,367.31	385.07	-9,811.48	9,806.04	0.00	0.00	0.00	0.00
17,100.00	90.15	269.30	7,367.05	383.84	-9,911.47	9,906.04	0.00	0.00	0.00	0.00
17,116.98	90.15	269.30	7,367.00	383.63	-9,928.45	9,923.02	0.00	0.00	0.00	0.00

TD Well @ 17116.98ft - Total Depth (Toe) - Wilson Ranch 12C-27HZ_BHL

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
1,400.00	1,397.47	43.52	0.00	End Nudge @ 1400.00ft
3,809.13	3,770.00	461.86	0.00	Begin Drop @ 3809.13ft
4,309.13	4,267.46	505.39	0.00	End Drop @ 4309.13ft
6,760.71	6,719.04	505.39	0.00	Top of 4.5" Liner @ 6760.71ft
6,860.71	6,819.04	505.39	0.00	KOP @ 6860.71ft
7,300.00	7,216.54	503.42	-160.30	DLS = 10°/100'
7,762.24	7,392.00	498.34	-574.44	End Build @ 7762.24ft
17,116.98	7,367.00	383.63	-9,928.45	TD Well @ 17116.98ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	269.30	Slot	0.00	0.00	0.00

Plan Report for Wilson Ranch 12C-27HZ - Permit Rev-2

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,762.24	Permit Rev-2	MWD+IFR1+MS+sag
7,762.24	17,116.98	Permit Rev-2	MWD+IFR1+MS+sag

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
7,762.24	7,392.00	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	
3,695.41	3,658.00	Parkman		0.00	
4,301.67	4,260.00	Sussex		0.00	
7,092.98	7,045.00	SSPG		0.00	
7,142.95	7,090.00	NBRR		0.00	
7,243.52	7,174.00	N470_B_CK		0.00	
7,317.56	7,229.00	N700_C_CK		0.00	
7,574.48	7,362.00	FRHS		0.00	
7,653.51	7,382.00	CDLL		0.00	
7,762.24	7,392.00	Landing Target (Heel)		0.00	
17,116.98	7,367.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Wilson Ranch 12C-27HZ_SHL	0.00	0.00	0.00	Point
4N-R68W-Sec. 26_Section Lines	88.00	2,749.04	-554.10	Polygon
4N-R68W-Sec. 27_Section Lines	88.00	2,749.04	-554.10	Polygon
Wilson Ranch 12C-27HZ_LD	0.00	0.00	0.00	Polygon
Wilson Ranch 12C-27HZ_BHL	7,367.00	383.63	-9,928.45	Point

North Reference Sheet for Wilson Ranch 9-26HZ Pad - Wilson Ranch 12C-27HZ - Plan B

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 Wilson Ranch 12C-27HZ

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: 14,629,623.29 usft N, 1,651,166.89 usft E

Geographical Coordinates of Well: 40° 16' 57.15" N, 104° 57' 41.23" W

Grid Convergence at Surface is: 0.02°

Based upon Minimum Curvature type calculations, at a Measured Depth of 17,116.98usft
the Bottom Hole Displacement is 9,935.86usft in the Direction of 272.21° (True).

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

