

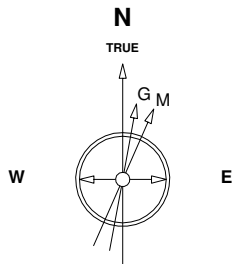
Great Western Operating Company, LLC

Location Colorado
Field Wattenburg
Installation Land

Slot Land JG 31-24D
Well Land JG 31-24D
Wellbore Land JG 31-24D (AWB)

Created by admin
Date plotted 14-Mar-2016

Plot reference is Land JG 31-24D (AWB).
Ref wellpath is Land JG 31-24D (AWP#1).
Coordinates are in Feet reference Land JG 31-24D.
True Vertical Depths are reference Rig Datum.
Measured Depths are reference Rig Datum.
Rig Datum: Actual Datum #1
Rig Datum to Mean Sea Level: 4946.60 ft.
Plot North is aligned to TRUE North.



28-Aug-2015
IGRF Model [1900.0-2020.0] Dip: 66.68 deg Field: 52453.1 nT
Lat: N40 5 17.5596 Long: W104 35 57.6708 Elev: 4932.60 ft
Magnetic North is 8.29 deg East of TRUE North
To correct azimuth from Magnetic to TRUE add 8.29 deg

Scale 1 cm = 200 ft

East (Feet) ->

-1200 -800 -400 0 400 800 1200 1600 2000 2400 2800 3200 3600 4000 4400

W2 Sec 31, T2N, R64W

3200

2800

2400

2000

1600

1200

800

400

0

-400

-800

<- North(Feet)

Scale 1 cm = 200 ft

Surface Location: 248 FSL, 929 FWL

TPZ - 7040' MD, 679 FSL, 1831 FWL

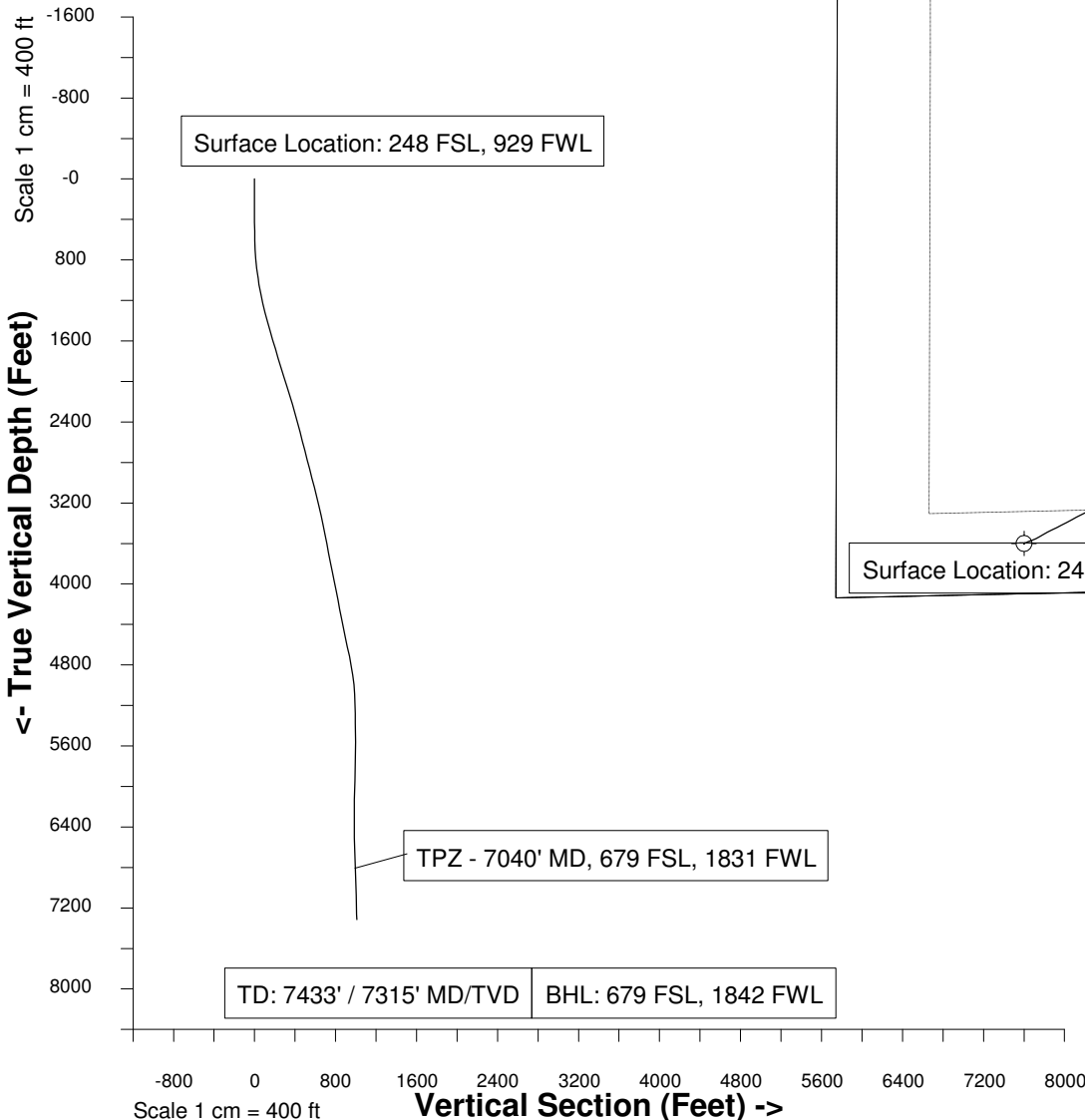
BHL: 679 FSL, 1842 FWL

Surface Location: 248 FSL, 929 FWL

TPZ - 7040' MD, 679 FSL, 1831 FWL

TD: 7433' / 7315' MD/TVD

BHL: 679 FSL, 1842 FWL





Company: GREAT WESTERN
Field: WATTENBERG
Cty/Blk/Par: WELD
Well Name: Land JG 31-24D
Rig: CADE 25

Job Number: PA-2518
Magnetic Decl.: 8.56
Grid Corr.: TRUE
Total Survey Corr.: 8.56
Target Info: 670' FSL & 1795' FWL

Calculation Method: Minimum Curvature
Proposed Azimuth: 63.10
Depth Reference: RKB
Tie Into: Drill SURFACE

No.	Tool Type	Survey Depth (ft)	Incl (°)	Azimuth (°)	Course Lgth (ft)	TVD (ft)	VS (ft)	Coordinates		DLS (°/100')	Bld Rate (°/100')	Wlk Rate (°/100')	Remarks
								N/S (ft)	E/W (ft)				
0	Tie In	0	0.00	0.00		0.00	0.00	0.00	0.00				SURFACE
1	MWD	243	0.60	195.40	243	243.00	-0.86	1.23	S 0.34	W 0.25	0.2	80.4	
2	MWD	336	0.40	49.70	93	335.99	-0.87	1.49	S 0.22	W 1.03	-0.2	-156.7	
3	MWD	427	0.60	78.20	91	426.99	-0.10	1.18	S 0.49	E 0.34	0.2	31.3	
4	MWD	517	1.10	60.80	90	516.98	1.22	0.67	S 1.70	E 0.62	0.6	-19.3	
5	MWD	607	1.10	63.10	90	606.96	2.95	0.15	N 3.23	E 0.05	0.0	2.6	
6	MWD	698	2.80	59.00	91	697.91	6.04	1.69	N 5.91	E 1.87	1.9	-4.5	
7	MWD	791	4.60	62.20	93	790.71	12.03	4.60	N 11.16	E 1.95	1.9	3.4	
8	MWD	885	6.70	71.30	94	884.25	21.23	8.11	N 19.69	E 2.42	2.2	9.7	
9	MWD	988	9.10	68.70	103	986.27	35.28	13.00	N 32.97	E 2.36	2.3	-2.5	
10	MWD	1043	9.70	68.10	55	1040.53	44.23	16.31	N 41.32	E 1.11	1.1	-1.1	
11	MWD	1138	10.80	64.30	95	1134.01	61.10	23.15	N 56.77	E 1.36	1.2	-4.0	
12	MWD	1233	13.00	61.80	95	1226.96	80.69	32.06	N 74.21	E 2.38	2.3	-2.6	
13	MWD	1328	15.10	60.60	95	1319.12	103.73	43.19	N 94.41	E 2.23	2.2	-1.3	
14	MWD	1423	14.80	60.80	95	1410.90	128.22	55.18	N 115.78	E 0.32	-0.3	0.2	
15	MWD	1515	16.30	64.10	92	1499.53	152.87	66.55	N 137.65	E 1.89	1.6	3.6	
16	MWD	1609	16.60	63.80	94	1589.69	179.49	78.24	N 161.57	E 0.33	0.3	-0.3	
17	MWD	1703	16.60	63.10	94	1679.77	206.34	90.25	N 185.59	E 0.21	0.0	-0.7	
18	MWD	1798	16.60	61.60	95	1770.81	233.48	102.84	N 209.63	E 0.45	0.0	-1.6	
19	MWD	1893	17.50	61.60	95	1861.63	261.32	116.09	N 234.13	E 0.95	0.9	0.0	
20	MWD	1988	17.60	63.60	95	1952.21	289.96	129.27	N 259.56	E 0.64	0.1	2.1	
21	MWD	2082	17.10	61.50	94	2041.93	317.99	142.18	N 284.43	E 0.85	-0.5	-2.2	
22	MWD	2177	17.60	64.50	95	2132.61	346.31	155.03	N 309.67	E 1.08	0.5	3.2	
23	MWD	2272	16.30	64.80	95	2223.49	373.99	166.89	N 334.70	E 1.37	-1.4	0.3	
24	MWD	2366	15.00	62.30	94	2314.00	399.34	178.16	N 357.41	E 1.56	-1.4	-2.7	
25	MWD	2461	15.90	61.10	95	2405.57	424.64	190.17	N 379.69	E 1.01	0.9	-1.3	
26	MWD	2556	14.50	63.40	95	2497.24	449.54	201.78	N 401.71	E 1.60	-1.5	2.4	
27	MWD	2651	14.50	65.20	95	2589.22	473.32	212.10	N 423.14	E 0.47	0.0	1.9	
28	MWD	2745	14.70	59.50	94	2680.18	496.98	223.09	N 444.10	E 1.54	0.2	-6.1	
29	MWD	2840	14.10	63.40	95	2772.20	520.59	234.39	N 464.84	E 1.20	-0.6	4.1	
30	MWD	2935	14.00	62.70	95	2864.36	543.65	244.84	N 485.40	E 0.21	-0.1	-0.7	
31	MWD	3030	15.50	62.20	95	2956.23	567.83	256.03	N 506.84	E 1.58	1.6	-0.5	
32	MWD	3124	13.90	61.50	94	3047.15	591.68	267.27	N 527.87	E 1.71	-1.7	-0.7	
33	MWD	3218	13.80	59.50	94	3138.41	614.15	278.35	N 547.45	E 0.52	-0.1	-2.1	
34	MWD	3313	13.10	57.80	95	3230.81	636.18	289.84	N 566.33	E 0.85	-0.7	-1.8	
35	MWD	3408	12.00	58.00	95	3323.54	656.74	300.81	N 583.81	E 1.16	-1.2	0.2	
36	MWD	3502	12.00	57.30	94	3415.48	676.19	311.27	N 600.32	E 0.15	0.0	-0.7	
37	MWD	3597	11.40	58.70	95	3508.51	695.38	321.48	N 616.66	E 0.70	-0.6	1.5	
38	MWD	3692	11.30	62.70	95	3601.65	714.05	330.63	N 632.95	E 0.84	-0.1	4.2	
39	MWD	3786	10.90	60.60	94	3693.89	732.14	339.21	N 648.88	E 0.60	-0.4	-2.2	
40	MWD	3881	10.40	58.50	95	3787.26	749.66	348.10	N 664.01	E 0.67	-0.5	-2.2	
41	MWD	3975	11.40	57.80	94	3879.56	767.37	357.49	N 679.11	E 1.07	1.1	-0.7	
42	MWD	4070	11.70	66.60	95	3972.64	786.33	366.32	N 695.89	E 1.88	0.3	9.3	
43	MWD	4164	11.30	63.20	94	4064.76	805.05	374.25	N 712.86	E 0.84	-0.4	-3.6	
44	MWD	4259	11.90	68.10	95	4157.82	824.12	382.10	N 730.26	E 1.21	0.6	5.2	
45	MWD	4354	10.30	67.60	95	4251.04	842.35	388.99	N 747.20	E 1.69	-1.7	-0.5	
46	MWD	4447	11.00	61.60	93	4342.44	859.50	396.38	N 762.69	E 1.41	0.8	-6.5	
47	MWD	4543	11.10	68.00	96	4436.66	877.87	404.20	N 779.32	E 1.28	0.1	6.7	
48	MWD	4638	11.90	74.30	95	4529.76	896.59	410.28	N 797.23	E 1.57	0.8	6.6	
49	MWD	4733	12.90	71.50	95	4622.54	916.69	416.29	N 816.71	E 1.23	1.1	-2.9	
50	MWD	4828	12.80	71.10	95	4715.16	937.60	423.07	N 836.73	E 0.14	-0.1	-0.4	
51	MWD	4922	9.80	73.40	94	4807.33	955.79	428.73	N 854.25	E 3.23	-3.2	2.4	
52	MWD	5017	7.70	64.60	95	4901.23	970.11	433.77	N 867.75	E 2.62	-2.2	-9.3	
53	MWD	5111	6.20	56.70	94	4994.53	981.45	439.26	N 877.68	E 1.89	-1.6	-8.4	
54	MWD	5207	2.80	44.60	96	5090.23	988.82	443.77	N 883.66	E 3.66	-3.5	-12.6	
55	MWD	5302	1.80	19.50	95	5185.15	992.10	446.83	N 885.79	E 1.47	-1.1	-26.4	
56	MWD	5396	1.70	22.30	94	5279.11	994.23	449.51	N 886.81	E 0.14	-0.1	3.0	
57	MWD	5491	1.50	21.40	95	5374.07	996.22	451.97	N 887.80	E 0.21	-0.2	-0.9	
58	MWD	5680	0.40	219.50	189	5563.05	997.47	453.77	N 888.28	E 1.00	-0.6	104.8	
59	MWD	5870	0.80	215.10	190	5753.04	995.69	452.17	N 887.10	E 0.21	0.2	-2.3	
60	MWD	6060	2.30	206.80	190	5942.97	991.44	447.68	N 884.61	E 0.80	0.8	-4.4	
61	MWD	6248	1.50	188.70	188	6130.86	986.97	441.88	N 882.54	E 0.53	-0.4	-9.6	
62	MWD	6437	1.30	151.80	189	6319.81	985.58	437.55	N 883.18	E 0.48	-0.1	-19.5	
63	MWD	6626	1.50	126.70	189	6508.76	986.73	434.18	N 886.18	E 0.34	0.1	-13.3	
64	MWD	6815	2.40	99.10	189	6697.65	991.03	432.08	N 892.07	E 0.68	0.5	-14.6	
65	MWD	7003	2.70	90.60	188	6885.46	998.14	431.41	N 900.38	E 0.26	0.2	-4.5	
66	MWD	7193	1.70	89.80	190	7075.32	1004.63	431.37	N 907.68	E 0.53	-0.5	-0.4	
67	MWD	7383	1.10	104.40	190	7265.26	1008.52	430.93	N 912.26	E 0.36	-0.3	7.7	TD
68	PRJ	7433	1.10	104.40	50	7315.25	1009.24	430.69	N 913.19	E 0.00	0.0	0.0	Proj. to bit