



EOG Resources

Weld Co., CO

Sec 21-T12N-R62W

Randall Creek #12-21H

Hz

Survey: Survey #1

Standard Survey Report

26 July, 2011





WELL DETAILS: Randall Creek #12-21H

Ground Level: 5336.0						Slot
+N/-S 0.0	+E/-W 0.0	Northing 609610.06	Easting 2324657.24	Latitude 41° 0' 3.070 N	Longitude 104° 19' 25.970 W	

SECTION DETAILS

No plan data is available



Azimuths to True North
Magnetic North: 8.67°
Magnetic Field
Strength: 53482.8nT
Dip Angle: 67.80°
Date: 09/25/2011
Model: IGRF2010-14

FORMATION TOP DETAILS

No formation data is available

ANNOTATIONS

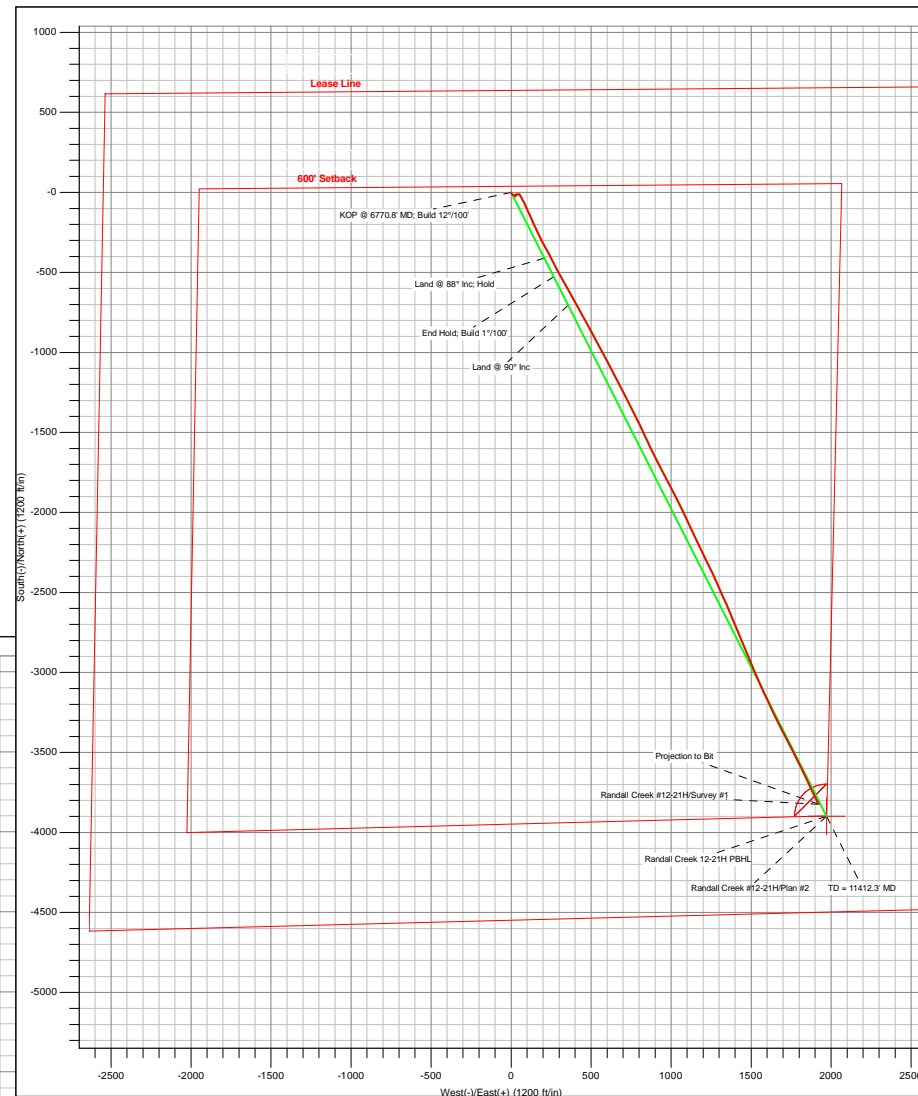
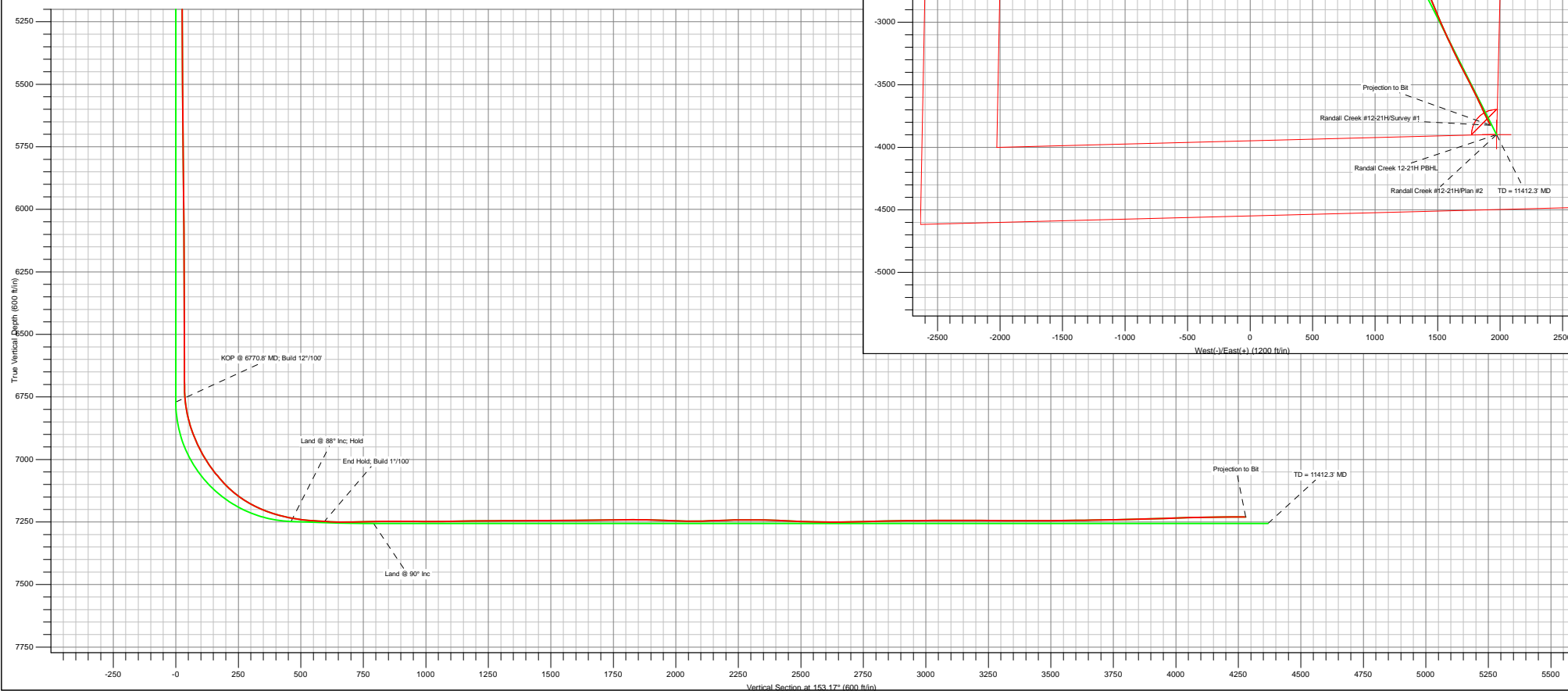
TVD	MD	Annotation
7226.8	11267.0	Projection to Bit

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape	No wellbore target data is available.
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Company:	EOG Resources	Local Co-ordinate Reference:	Well Randall Creek #12-21H
Project:	Weld Co., CO	TVD Reference:	Randall Creek 12-21H KBE @ 5361.0ft (True 30)
Site:	Sec 21-T12N-R62W	MD Reference:	Randall Creek 12-21H KBE @ 5361.0ft (True 30)
Well:	Randall Creek #12-21H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	Hz	Database:	Local

Project	Weld Co., CO		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado North 501		

Site	Sec 21-T12N-R62W		
Site Position:		Northing:	
From:	Lat/Long	Easting:	
Position Uncertainty:	0.0 ft	Slot Radius:	
		Latitude:	
		Longitude:	
		Grid Convergence:	1.00

Well	Randall Creek #12-21H		
Well Position	+N/-S	0.0 ft	Northing: 609,610.06 ft
	+E/-W	0.0 ft	Easting: 2,324,657.24 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	41° 0' 3.070 N
		Longitude:	104° 19' 25.970 W
		Ground Level:	5,336.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010-14	06/22/11	8.67	67.61	53,483

Design	Hz				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	153.17	

Survey Program	Date	07/26/11			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
1,417.0	11,267.0	Survey #1 (Hz)	MWD		

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	-5,361.0	0.0	0.0	0.0	0.00	0.00	0.00
1,417.0	0.00	0.00	1,417.0	-3,944.0	0.0	0.0	0.0	0.00	0.00	0.00
1,494.0	0.84	171.36	1,494.0	-3,867.0	-0.6	0.1	0.5	1.09	1.09	0.00
1,769.0	1.14	139.63	1,769.0	-3,592.0	-4.6	2.2	5.1	0.22	0.11	-11.54
2,047.0	1.32	144.02	2,046.9	-3,314.1	-9.3	5.8	11.0	0.07	0.06	1.58
2,334.0	1.41	124.60	2,333.8	-3,027.2	-14.0	10.7	17.3	0.16	0.03	-6.77
2,620.0	0.97	111.50	2,619.8	-2,741.2	-16.9	15.8	22.2	0.18	-0.15	-4.58
2,907.0	0.84	110.10	2,906.7	-2,454.3	-18.5	20.1	25.6	0.05	-0.05	-0.49
3,195.0	0.62	102.10	3,194.7	-2,166.3	-19.6	23.6	28.1	0.08	-0.08	-2.78
3,484.0	0.62	143.76	3,483.7	-1,877.3	-21.2	26.0	30.6	0.15	0.00	14.42

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Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	Hz	Database:	Local

Survey											
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	Subsea Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)		Build Rate (°/100ft)	Turn Rate (°/100ft)
3,772.0	0.57	168.98	3,771.7	-1,589.3	-23.8	27.2	33.5	0.09	-0.02		8.76
4,060.0	0.57	31.52	4,059.7	-1,301.3	-24.0	28.2	34.2	0.37	0.00		-47.73
4,348.0	0.88	12.45	4,347.6	-1,013.4	-20.6	29.5	31.7	0.13	0.11		-6.62
4,639.0	0.92	334.94	4,638.6	-722.4	-16.3	29.0	27.6	0.20	0.01		-12.89
4,928.0	0.40	58.33	4,927.6	-433.4	-13.7	28.8	25.2	0.33	-0.18		28.85
5,217.0	0.79	75.47	5,216.6	-144.4	-12.7	31.6	25.6	0.15	0.13		5.93
5,503.0	1.19	81.00	5,502.5	141.5	-11.7	36.5	26.9	0.14	0.14		1.93
5,791.0	0.84	114.31	5,790.5	429.5	-12.1	41.3	29.5	0.23	-0.12		11.57
6,080.0	0.84	94.89	6,079.5	718.5	-13.2	45.4	32.2	0.10	0.00		-6.72
6,305.0	0.70	84.52	6,304.4	943.4	-13.2	48.4	33.6	0.09	-0.06		-4.61
6,592.0	0.57	68.26	6,591.4	1,230.4	-12.5	51.5	34.4	0.08	-0.05		-5.67
6,666.0	0.31	78.19	6,665.4	1,304.4	-12.3	52.0	34.4	0.36	-0.35		13.42
6,689.0	0.22	117.13	6,688.4	1,327.4	-12.3	52.1	34.5	0.85	-0.39		169.30
6,722.0	1.36	136.11	6,721.4	1,360.4	-12.6	52.4	34.9	3.50	3.45		57.52
6,754.0	4.48	147.63	6,753.4	1,392.4	-13.9	53.4	36.5	9.87	9.75		36.00
6,787.0	8.22	151.05	6,786.2	1,425.2	-17.1	55.2	40.2	11.39	11.33		10.36
6,819.0	11.78	150.17	6,817.7	1,456.7	-21.9	57.9	45.7	11.13	11.13		-2.75
6,851.0	15.56	149.56	6,848.8	1,487.8	-28.5	61.7	53.3	11.82	11.81		-1.91
6,884.0	18.64	150.44	6,880.3	1,519.3	-36.9	66.6	63.0	9.37	9.33		2.67
6,916.0	21.85	151.32	6,910.3	1,549.3	-46.5	72.0	74.0	10.08	10.03		2.75
6,947.0	24.79	152.37	6,938.8	1,577.8	-57.4	77.7	86.3	9.58	9.48		3.39
6,979.0	27.96	153.87	6,967.4	1,606.4	-70.1	84.2	100.5	10.12	9.91		4.69
7,011.0	31.30	155.36	6,995.2	1,634.2	-84.3	90.9	116.3	10.69	10.44		4.66
7,044.0	34.77	155.97	7,022.9	1,661.9	-100.7	98.3	134.3	10.56	10.52		1.85
7,076.0	38.02	156.41	7,048.7	1,687.7	-118.1	106.0	153.2	10.19	10.16		1.38
7,108.0	40.92	155.45	7,073.4	1,712.4	-136.7	114.3	173.5	9.26	9.06		-3.00
7,141.0	44.09	155.71	7,097.7	1,736.7	-157.0	123.5	195.8	9.62	9.61		0.79
7,172.0	47.25	155.62	7,119.4	1,758.4	-177.2	132.7	218.0	10.20	10.19		-0.29
7,204.0	51.25	155.89	7,140.2	1,779.2	-199.3	142.6	242.2	12.52	12.50		0.84
7,237.0	55.91	155.54	7,159.8	1,798.8	-223.5	153.5	268.7	14.15	14.12		-1.06
7,269.0	60.70	155.01	7,176.6	1,815.6	-248.2	164.9	295.9	15.03	14.97		-1.66
7,302.0	65.63	153.51	7,191.5	1,830.5	-274.7	177.7	325.3	15.48	14.94		-4.55
7,333.0	69.23	152.55	7,203.4	1,842.4	-300.2	190.7	354.0	11.96	11.61		-3.10
7,365.0	72.00	151.58	7,214.0	1,853.0	-326.9	204.8	384.1	9.12	8.66		-3.03
7,398.0	74.20	151.58	7,223.6	1,862.6	-354.6	219.9	415.7	6.67	6.67		0.00
7,430.0	77.10	152.28	7,231.6	1,870.6	-382.0	234.4	446.7	9.31	9.06		2.19
7,461.0	81.89	152.72	7,237.2	1,876.2	-409.0	248.5	477.2	15.51	15.45		1.42
7,553.0	86.77	151.76	7,246.3	1,885.3	-490.0	291.1	568.7	5.40	5.30		-1.04
7,586.0	86.24	150.70	7,248.3	1,887.3	-518.9	307.0	601.6	3.59	-1.61		-3.21
7,618.0	87.78	150.79	7,250.0	1,889.0	-546.8	322.6	633.5	4.82	4.81		0.28
7,650.0	89.63	150.53	7,250.7	1,889.7	-574.7	338.3	665.5	5.84	5.78		-0.81
7,683.0	91.21	150.35	7,250.5	1,889.5	-603.4	354.6	698.4	4.82	4.79		-0.55
7,714.0	91.47	150.61	7,249.7	1,888.7	-630.3	369.8	729.4	1.19	0.84		0.84

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7,745.0	91.56	150.61	7,248.9	1,887.9	-657.3	385.0	760.3	0.29	0.29	0.00
7,777.0	90.90	151.32	7,248.2	1,887.2	-685.3	400.6	792.3	3.03	-2.06	2.22
7,809.0	90.02	152.20	7,248.0	1,887.0	-713.5	415.7	824.3	3.89	-2.75	2.75
7,841.0	90.37	151.76	7,247.9	1,886.9	-741.7	430.7	856.3	1.76	1.09	-1.38
7,873.0	90.51	151.76	7,247.6	1,886.6	-769.9	445.9	888.3	0.44	0.44	0.00
7,905.0	89.80	151.93	7,247.5	1,886.5	-798.1	461.0	920.3	2.28	-2.22	0.53
7,937.0	89.93	151.76	7,247.6	1,886.6	-826.4	476.1	952.3	0.67	0.41	-0.53
8,002.0	89.58	150.96	7,247.9	1,886.9	-883.4	507.2	1,017.2	1.34	-0.54	-1.23
8,034.0	89.89	150.26	7,248.0	1,887.0	-911.3	522.9	1,049.2	2.39	0.97	-2.19
8,099.0	91.21	151.76	7,247.4	1,886.4	-968.1	554.4	1,114.2	3.07	2.03	2.31
8,131.0	91.25	152.28	7,246.7	1,885.7	-996.4	569.4	1,146.1	1.63	0.13	1.63
8,164.0	91.25	151.67	7,246.0	1,885.0	-1,025.5	585.0	1,179.1	1.85	0.00	-1.85
8,196.0	90.02	151.40	7,245.6	1,884.6	-1,053.6	600.2	1,211.1	3.94	-3.84	-0.84
8,228.0	89.71	151.40	7,245.7	1,884.7	-1,081.7	615.5	1,243.1	0.97	-0.97	0.00
8,260.0	90.77	153.07	7,245.6	1,884.6	-1,110.0	630.4	1,275.1	6.18	3.31	5.22
8,293.0	90.46	153.25	7,245.2	1,884.2	-1,139.5	645.3	1,308.1	1.09	-0.94	0.55
8,325.0	90.07	153.43	7,245.1	1,884.1	-1,168.1	659.7	1,340.1	1.34	-1.22	0.56
8,357.0	90.29	153.87	7,245.0	1,884.0	-1,196.8	673.9	1,372.1	1.54	0.69	1.38
8,421.0	90.11	152.37	7,244.8	1,883.8	-1,253.8	702.8	1,436.1	2.36	-0.28	-2.34
8,454.0	90.68	152.55	7,244.5	1,883.5	-1,283.1	718.1	1,469.1	1.81	1.73	0.55
8,518.0	90.95	152.55	7,243.6	1,882.6	-1,339.9	747.6	1,533.1	0.42	0.42	0.00
8,581.0	89.93	153.69	7,243.1	1,882.1	-1,396.1	776.1	1,596.1	2.43	-1.62	1.81
8,645.0	90.20	154.30	7,243.1	1,882.1	-1,453.6	804.1	1,660.1	1.04	0.42	0.95
8,708.0	90.64	154.74	7,242.6	1,881.6	-1,510.5	831.2	1,723.0	0.99	0.70	0.70
8,773.0	91.21	155.10	7,241.6	1,880.6	-1,569.3	858.8	1,788.0	1.04	0.88	0.55
8,836.0	89.36	153.95	7,241.2	1,880.2	-1,626.2	885.9	1,851.0	3.46	-2.94	-1.83
8,899.0	88.13	153.43	7,242.6	1,881.6	-1,682.7	913.8	1,914.0	2.12	-1.95	-0.83
8,963.0	87.87	151.58	7,244.9	1,883.9	-1,739.4	943.3	1,977.9	2.92	-0.41	-2.89
9,027.0	88.92	152.37	7,246.7	1,885.7	-1,795.9	973.4	2,041.9	2.05	1.64	1.23
9,060.0	90.15	152.02	7,246.9	1,885.9	-1,825.1	988.8	2,074.9	3.88	3.73	-1.06
9,092.0	91.60	153.51	7,246.4	1,885.4	-1,853.5	1,003.4	2,106.9	6.50	4.53	4.66
9,124.0	92.09	153.69	7,245.4	1,884.4	-1,882.2	1,017.6	2,138.8	1.63	1.53	0.56
9,155.0	92.26	153.25	7,244.2	1,883.2	-1,909.9	1,031.5	2,169.8	1.52	0.55	-1.42
9,186.0	91.78	152.36	7,243.1	1,882.1	-1,937.4	1,045.6	2,200.8	3.26	-1.55	-2.87
9,218.0	90.95	153.95	7,242.4	1,881.4	-1,966.0	1,060.1	2,232.8	5.60	-2.59	4.97
9,281.0	89.63	154.22	7,242.0	1,881.0	-2,022.6	1,087.6	2,295.8	2.14	-2.10	0.43
9,312.0	90.07	154.74	7,242.1	1,881.1	-2,050.6	1,101.0	2,326.8	2.20	1.42	1.68
9,345.0	89.36	154.74	7,242.3	1,881.3	-2,080.5	1,115.0	2,359.8	2.15	-2.15	0.00
9,376.0	87.65	155.18	7,243.1	1,882.1	-2,108.5	1,128.1	2,390.7	5.70	-5.52	1.42
9,408.0	87.34	155.36	7,244.5	1,883.5	-2,137.6	1,141.5	2,422.7	1.12	-0.97	0.56
9,440.0	86.99	154.48	7,246.1	1,885.1	-2,166.5	1,155.1	2,454.6	2.96	-1.09	-2.75
9,472.0	87.74	155.01	7,247.6	1,886.6	-2,195.4	1,168.7	2,486.6	2.87	2.34	1.66

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9,505.0	89.01	154.74	7,248.5	1,887.5	-2,225.3	1,182.7	2,519.5	3.93	3.85	-0.82	
9,537.0	89.01	153.51	7,249.0	1,888.0	-2,254.1	1,196.7	2,551.5	3.84	0.00	-3.84	
9,568.0	88.70	153.69	7,249.7	1,888.7	-2,281.8	1,210.5	2,582.5	1.16	-1.00	0.58	
9,601.0	89.01	153.16	7,250.3	1,889.3	-2,311.3	1,225.2	2,615.5	1.86	0.94	-1.61	
9,633.0	90.02	154.39	7,250.6	1,889.6	-2,340.0	1,239.4	2,647.5	4.97	3.16	3.84	
9,665.0	90.86	154.57	7,250.3	1,889.3	-2,368.9	1,253.1	2,679.5	2.68	2.63	0.56	
9,729.0	92.00	156.06	7,248.8	1,887.8	-2,427.1	1,279.9	2,743.4	2.93	1.78	2.33	
9,761.0	91.91	155.89	7,247.7	1,886.7	-2,456.3	1,292.9	2,775.4	0.60	-0.28	-0.53	
9,826.0	90.59	156.06	7,246.2	1,885.2	-2,515.6	1,319.3	2,840.3	2.05	-2.03	0.26	
9,890.0	90.33	155.71	7,245.7	1,884.7	-2,574.0	1,345.5	2,904.2	0.68	-0.41	-0.55	
9,954.0	91.08	157.64	7,244.9	1,883.9	-2,632.8	1,370.8	2,968.1	3.24	1.17	3.02	
10,017.0	90.37	157.38	7,244.1	1,883.1	-2,691.0	1,394.9	3,030.9	1.20	-1.13	-0.41	
10,081.0	90.29	157.56	7,243.8	1,882.8	-2,750.1	1,419.4	3,094.7	0.31	-0.13	0.28	
10,145.0	89.89	157.56	7,243.7	1,882.7	-2,809.3	1,443.9	3,158.5	0.63	-0.63	0.00	
10,209.0	90.02	156.85	7,243.7	1,882.7	-2,868.3	1,468.7	3,222.4	1.13	0.20	-1.11	
10,272.0	89.54	157.21	7,244.0	1,883.0	-2,926.3	1,493.3	3,285.2	0.95	-0.76	0.57	
10,335.0	88.79	156.77	7,244.9	1,883.9	-2,984.3	1,517.9	3,348.1	1.38	-1.19	-0.70	
10,398.0	89.45	156.59	7,245.9	1,884.9	-3,042.1	1,542.8	3,411.0	1.09	1.05	-0.29	
10,463.0	91.43	155.10	7,245.4	1,884.4	-3,101.4	1,569.4	3,475.9	3.81	3.05	-2.29	
10,495.0	91.56	155.62	7,244.5	1,883.5	-3,130.5	1,582.7	3,507.8	1.67	0.41	1.63	
10,559.0	90.37	155.27	7,243.4	1,882.4	-3,188.7	1,609.3	3,571.8	1.94	-1.86	-0.55	
10,590.0	90.29	155.10	7,243.3	1,882.3	-3,216.8	1,622.3	3,602.8	0.61	-0.26	-0.55	
10,622.0	90.07	154.92	7,243.2	1,882.2	-3,245.8	1,635.9	3,634.7	0.89	-0.69	-0.56	
10,654.0	90.64	153.60	7,243.0	1,882.0	-3,274.6	1,649.8	3,666.7	4.49	1.78	-4.13	
10,685.0	91.25	153.07	7,242.5	1,881.5	-3,302.3	1,663.7	3,697.7	2.61	1.97	-1.71	
10,717.0	91.56	152.81	7,241.7	1,880.7	-3,330.8	1,678.2	3,729.7	1.26	0.97	-0.81	
10,749.0	91.25	152.63	7,240.9	1,879.9	-3,359.3	1,692.9	3,761.7	1.12	-0.97	-0.56	
10,781.0	91.60	152.81	7,240.1	1,879.1	-3,387.7	1,707.6	3,793.7	1.23	1.09	0.56	
10,845.0	91.16	152.99	7,238.5	1,877.5	-3,444.7	1,736.7	3,857.7	0.74	-0.69	0.28	
10,877.0	91.52	153.25	7,237.8	1,876.8	-3,473.2	1,751.2	3,889.7	1.39	1.13	0.81	
10,941.0	91.96	153.60	7,235.9	1,874.9	-3,530.4	1,779.8	3,953.6	0.88	0.69	0.55	
10,973.0	92.22	153.43	7,234.7	1,873.7	-3,559.0	1,794.0	3,985.6	0.97	0.81	-0.53	
11,006.0	92.18	153.78	7,233.4	1,872.4	-3,588.6	1,808.7	4,018.6	1.07	-0.12	1.06	
11,038.0	91.38	154.04	7,232.4	1,871.4	-3,617.3	1,822.8	4,050.6	2.63	-2.50	0.81	
11,070.0	90.86	154.57	7,231.8	1,870.8	-3,646.1	1,836.6	4,082.6	2.32	-1.63	1.66	
11,100.0	90.64	154.83	7,231.4	1,870.4	-3,673.2	1,849.5	4,112.6	1.14	-0.73	0.87	
11,164.0	90.59	154.66	7,230.7	1,869.7	-3,731.1	1,876.8	4,176.5	0.28	-0.08	-0.27	
11,212.0	90.46	154.22	7,230.3	1,869.3	-3,774.4	1,897.5	4,224.5	0.96	-0.27	-0.92	
Projection to Bit											
11,267.0	90.46	154.22	7,229.8	1,868.8	-3,823.9	1,921.4	4,279.5	0.00	0.00	0.00	



Company:	EOG Resources	Local Co-ordinate Reference:	Well Randall Creek #12-21H
Project:	Weld Co., CO	TVD Reference:	Randall Creek 12-21H KBE @ 5361.0ft (True 30)
Site:	Sec 21-T12N-R62W	MD Reference:	Randall Creek 12-21H KBE @ 5361.0ft (True 30)
Well:	Randall Creek #12-21H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	Hz	Database:	Local

Survey Annotations				
Measured Depth ()	Vertical Depth ()	Local Coordinates		Comment
		+N/-S ()	+E/-W ()	
11,267.0	7,229.8	-3,823.9	1,921.4	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____