

# **EOG Resources, Inc - RM**

**Weld County, CO**

**Sec. 19, T11N, R63W, 6th P.M.**

**Critter Creek #23-19H**

**Wellbore #1**

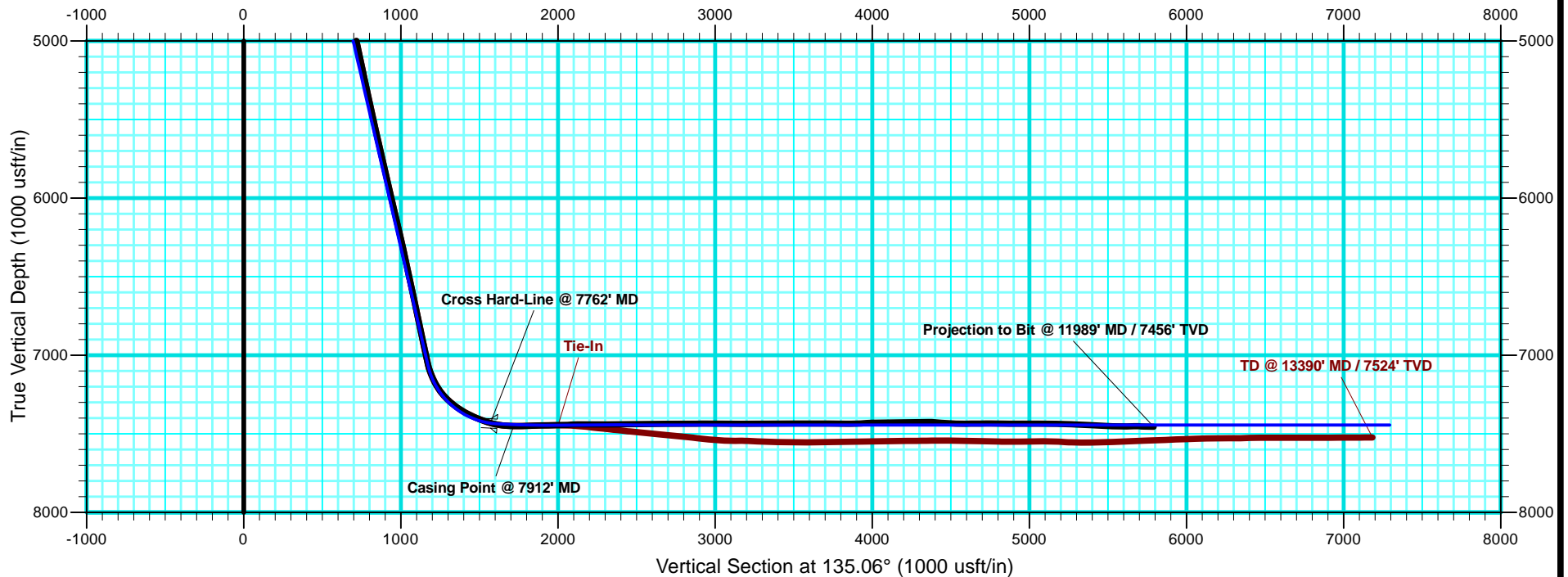
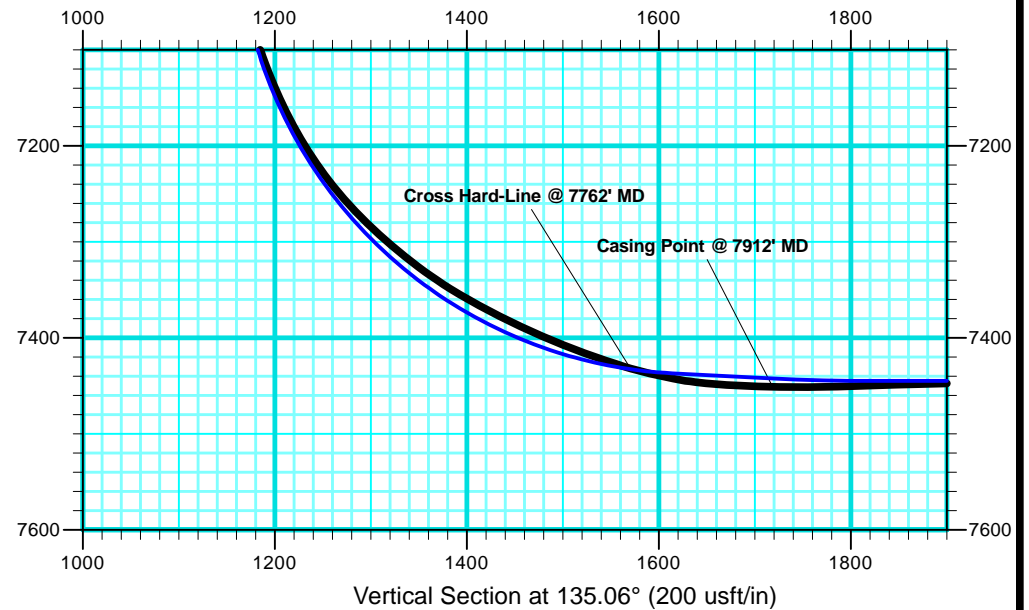
**Survey: Critter Creek #23-19H - MWD Surveys**

## **DDC Survey Report**

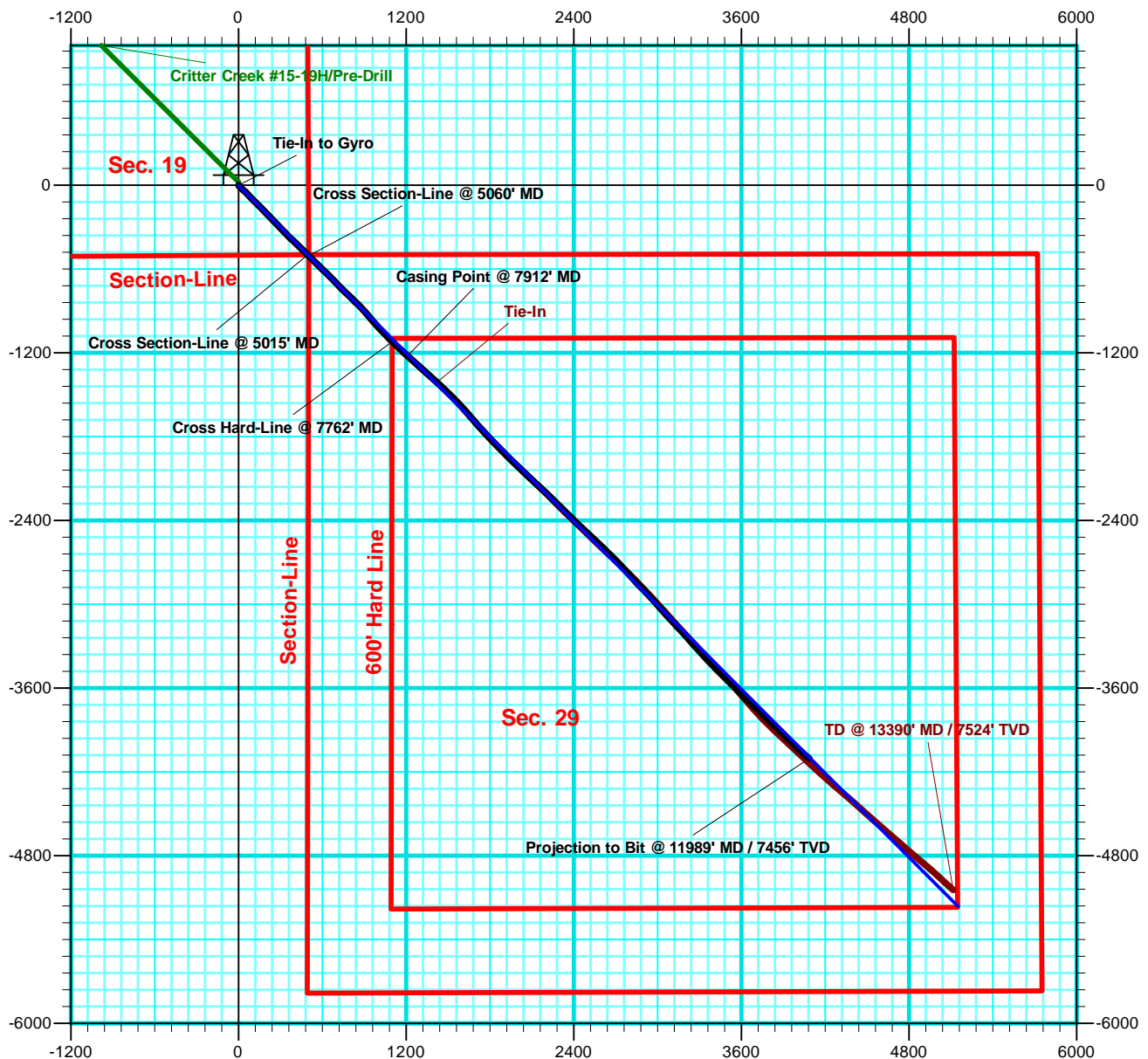
**28 January, 2011**



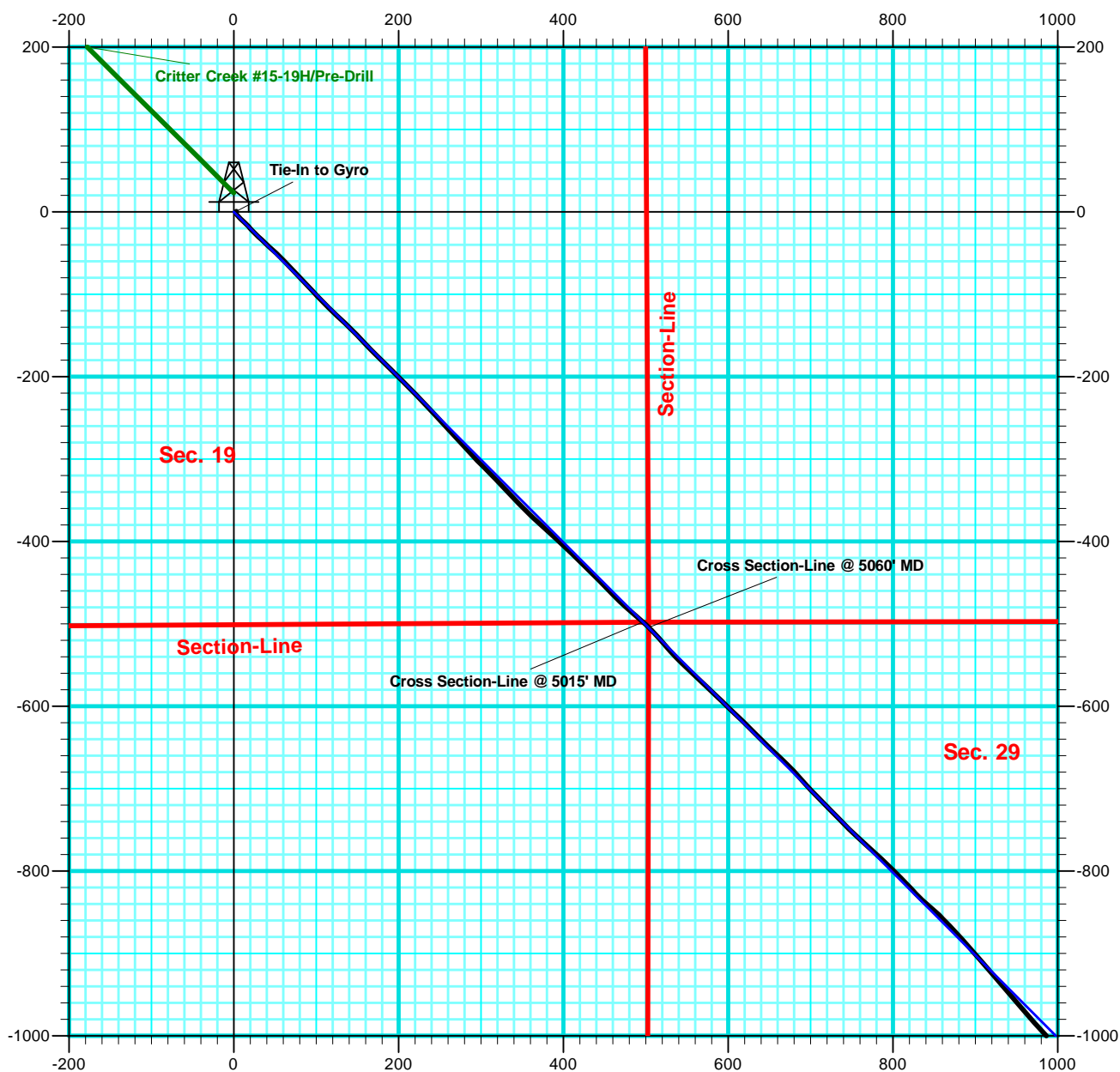
Weld County, CO  
Sec. 19, T11N, R63W, 6th P.M.  
Crittter Creek #23-19H  
Wellbore #1  
Pre-Drill Rev #1



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Crittter Creek #23-19H  
Wellbore #1  
Pre-Drill Rev #1**



<b>Company:</b>	EOG Resources, Inc - RM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek #23-19H
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Site:</b>	Sec. 19, T11N, R63W, 6th P.M.	<b>MD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Well:</b>	Critter Creek #23-19H	<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>	EDM 5000.1 Single User Db

Project	Weld County, 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. 19, T11N, R63W, 6th P.M.				
Site Position:		Northing:	573,082.11 usft	Latitude:	40° 54' 7.010 N
From:	Lat/Long	Easting:	2,285,413.15 usft	Longitude:	104° 28' 3.270 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.67 °

Well	Critter Creek #23-19H					
Well Position	+N-S	0.0 usft	Northing:	573,082.11 usft	Latitude:	40° 54' 7.010 N
	+E-W	0.0 usft	Easting:	2,285,413.15 usft	Longitude:	104° 28' 3.270 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,289.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/7/2011	8.81	67.52	53,467

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.0	0.0	0.0	135.06	

Survey Program		Date	1/28/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
1,515.0	11,989.0	Critter Creek #23-19H - MWD Surveys (W	MWD default	MWD - Standard	

Survey										
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)	
Tie-In to Gyro										
1,433.0	0.50	188.10	1,433.0	0.7	3.0	1.6	0.00	0.00	0.00	
1,515.0	0.20	221.10	1,515.0	0.2	2.9	1.8	0.43	-0.37	40.24	
1,607.0	0.60	222.00	1,607.0	-0.2	2.4	1.9	0.43	0.43	0.98	
1,638.0	0.50	192.00	1,638.0	-0.5	2.3	2.0	0.97	-0.32	-96.77	
1,669.0	1.10	167.50	1,669.0	-0.9	2.3	2.3	2.19	1.94	-79.03	
1,699.0	2.70	148.40	1,699.0	-1.8	2.8	3.2	5.66	5.33	-63.67	
1,730.0	4.00	144.30	1,729.9	-3.3	3.8	5.0	4.26	4.19	-13.23	
1,792.0	4.90	133.40	1,791.7	-6.9	7.0	9.8	1.99	1.45	-17.58	
1,823.0	5.10	133.40	1,822.6	-8.7	8.9	12.5	0.65	0.65	0.00	
1,854.0	5.10	134.00	1,853.5	-10.6	10.9	15.2	0.17	0.00	1.94	

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<b>Well:</b>	Critter Creek #23-19H	<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>	EDM 5000.1 Single User Db

**Survey**

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)
1,915.0	5.90	134.90	1,914.2	-14.7	15.1	21.1	1.32	1.31	1.48
1,977.0	7.30	139.20	1,975.8	-20.0	19.9	28.2	2.39	2.26	6.94
2,041.0	9.10	134.30	2,039.1	-26.6	26.2	37.3	3.01	2.81	-7.66
2,104.0	10.60	132.70	2,101.2	-34.0	34.0	48.1	2.42	2.38	-2.54
2,168.0	10.80	132.70	2,164.1	-42.0	42.8	60.0	0.31	0.31	0.00
2,232.0	11.40	132.60	2,226.9	-50.4	51.8	72.3	0.94	0.94	-0.16
2,295.0	12.80	136.40	2,288.5	-59.7	61.2	85.5	2.56	2.22	6.03
2,358.0	13.60	136.30	2,349.8	-70.1	71.1	99.9	1.27	1.27	-0.16
2,421.0	13.40	136.10	2,411.1	-80.7	81.3	114.6	0.33	-0.32	-0.32
2,517.0	12.60	138.20	2,504.6	-96.5	96.0	136.1	0.97	-0.83	2.19
2,549.0	12.30	136.90	2,535.9	-101.6	100.7	143.0	1.28	-0.94	-4.06
2,644.0	12.80	134.70	2,628.6	-116.4	115.1	163.7	0.73	0.53	-2.32
2,707.0	12.70	132.70	2,690.1	-126.0	125.1	177.6	0.72	-0.16	-3.17
2,770.0	12.10	132.40	2,751.6	-135.1	135.1	191.1	0.96	-0.95	-0.48
2,865.0	12.40	136.30	2,844.4	-149.2	149.5	211.2	0.93	0.32	4.11
2,929.0	12.50	137.50	2,906.9	-159.3	158.9	225.0	0.43	0.16	1.88
3,023.0	14.20	134.30	2,998.4	-174.9	174.0	246.7	1.97	1.81	-3.40
3,119.0	13.80	134.50	3,091.5	-191.1	190.6	269.9	0.42	-0.42	0.21
3,214.0	13.10	135.00	3,183.9	-206.7	206.3	292.0	0.75	-0.74	0.53
3,309.0	13.30	136.10	3,276.4	-222.1	221.5	313.7	0.34	0.21	1.16
3,404.0	12.80	136.90	3,369.0	-237.7	236.3	335.2	0.56	-0.53	0.84
3,468.0	12.40	136.40	3,431.4	-247.9	245.9	349.1	0.65	-0.63	-0.78
3,562.0	13.00	138.20	3,523.1	-263.0	259.9	369.8	0.76	0.64	1.91
3,657.0	13.00	136.60	3,615.7	-278.8	274.3	391.1	0.38	0.00	-1.68
3,752.0	12.40	138.00	3,708.4	-294.1	288.5	412.0	0.71	-0.63	1.47
3,848.0	13.40	134.30	3,801.9	-309.6	303.4	433.4	1.35	1.04	-3.85
3,943.0	12.80	136.80	3,894.5	-324.9	318.4	454.9	0.87	-0.63	2.63
4,039.0	12.00	136.10	3,988.2	-339.9	332.6	475.5	0.85	-0.83	-0.73
4,134.0	11.20	136.40	4,081.3	-353.7	345.9	494.6	0.84	-0.84	0.32
4,230.0	11.80	134.00	4,175.4	-367.2	359.3	513.8	0.80	0.63	-2.50
4,325.0	14.30	132.00	4,267.9	-381.8	375.0	535.2	2.67	2.63	-2.11
4,420.0	14.90	132.70	4,359.8	-398.0	392.7	559.1	0.66	0.63	0.74
4,515.0	14.90	134.10	4,451.6	-414.7	410.5	583.5	0.38	0.00	1.47
4,609.0	14.50	134.90	4,542.6	-431.5	427.5	607.4	0.48	-0.43	0.85
4,704.0	14.30	134.70	4,634.6	-448.1	444.3	631.0	0.22	-0.21	-0.21
4,799.0	14.00	136.30	4,726.7	-464.7	460.5	654.2	0.52	-0.32	1.68
4,894.0	13.00	132.00	4,819.1	-480.1	476.4	676.4	1.49	-1.05	-4.53
4,989.0	12.80	129.90	4,911.7	-494.0	492.4	697.5	0.54	-0.21	-2.21
<b>Cross Section-Line @ 5015' MD</b>									
5,015.0	12.62	131.59	4,937.0	-497.8	496.8	703.2	1.59	-0.69	6.50
<b>Cross Section-Line @ 5060' MD</b>									
5,060.0	12.34	134.63	4,981.0	-504.4	503.9	713.0	1.59	-0.63	6.75
5,084.0	12.20	136.30	5,004.4	-508.0	507.5	718.1	1.59	-0.57	6.97

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5,147.0	11.90	137.80	5,066.0	-517.7	516.4	731.2	0.69	-0.48	2.38
5,243.0	12.10	139.90	5,159.9	-532.7	529.5	751.1	0.50	0.21	2.19
5,339.0	12.20	133.30	5,253.8	-547.3	543.4	771.3	1.45	0.10	-6.88
5,434.0	12.80	133.60	5,346.5	-561.5	558.3	791.8	0.64	0.63	0.32
5,529.0	11.90	133.80	5,439.3	-575.5	573.0	812.1	0.95	-0.95	0.21
5,623.0	12.80	132.40	5,531.2	-589.2	587.7	832.2	1.01	0.96	-1.49
5,654.0	12.50	133.80	5,561.4	-593.9	592.7	839.0	1.38	-0.97	4.52
5,718.0	12.80	134.10	5,623.9	-603.6	602.8	853.0	0.48	0.47	0.47
5,812.0	12.80	133.40	5,715.5	-618.0	617.8	873.9	0.16	0.00	-0.74
5,908.0	13.00	136.30	5,809.1	-633.1	633.0	895.3	0.71	0.21	3.02
6,004.0	13.70	133.30	5,902.5	-648.7	648.7	917.4	1.03	0.73	-3.13
6,099.0	12.50	133.30	5,995.0	-663.5	664.4	939.0	1.26	-1.26	0.00
6,193.0	13.70	136.80	6,086.6	-678.6	679.4	960.3	1.53	1.28	3.72
6,287.0	12.80	138.70	6,178.1	-694.5	693.9	981.8	1.06	-0.96	2.02
6,383.0	13.40	134.70	6,271.6	-710.3	708.8	1,003.5	1.13	0.63	-4.17
6,478.0	11.80	136.30	6,364.3	-725.1	723.4	1,024.2	1.72	-1.68	1.68
6,574.0	12.10	135.40	6,458.2	-739.4	737.2	1,044.1	0.37	0.31	-0.94
6,638.0	12.30	134.50	6,520.8	-748.9	746.8	1,057.6	0.43	0.31	-1.41
6,702.0	12.40	132.70	6,583.3	-758.4	756.7	1,071.3	0.62	0.16	-2.81
6,796.0	11.90	131.30	6,675.2	-771.6	771.4	1,091.1	0.62	-0.53	-1.49
6,892.0	11.80	134.30	6,769.1	-785.0	785.9	1,110.8	0.65	-0.10	3.13
6,955.0	11.70	133.60	6,830.8	-793.9	795.1	1,123.6	0.28	-0.16	-1.11
7,050.0	12.90	136.10	6,923.6	-808.2	809.4	1,143.8	1.38	1.26	2.63
7,107.0	12.20	135.60	6,979.3	-817.1	818.1	1,156.2	1.24	-1.23	-0.88
7,144.0	11.50	137.80	7,015.5	-822.6	823.3	1,163.8	2.25	-1.89	5.95
7,175.0	12.30	136.60	7,045.8	-827.3	827.6	1,170.2	2.70	2.58	-3.87
7,207.0	15.60	133.10	7,076.9	-832.7	833.1	1,177.9	10.64	10.31	-10.94
7,239.0	19.60	131.70	7,107.4	-839.2	840.2	1,187.6	12.57	12.50	-4.38
7,271.0	23.00	131.10	7,137.2	-846.9	849.0	1,199.2	10.65	10.63	-1.88
7,302.0	26.60	135.00	7,165.3	-855.8	858.4	1,212.1	12.75	11.61	12.58
7,334.0	30.60	136.10	7,193.4	-866.7	869.2	1,227.5	12.61	12.50	3.44
7,366.0	34.90	138.00	7,220.3	-879.4	880.9	1,244.7	13.81	13.44	5.94
7,397.0	39.30	138.40	7,245.0	-893.3	893.4	1,263.4	14.21	14.19	1.29
7,429.0	43.80	139.20	7,269.0	-909.3	907.4	1,284.6	14.16	14.06	2.50
7,460.0	47.60	139.60	7,290.6	-926.2	921.8	1,306.7	12.29	12.26	1.29
7,493.0	50.80	139.40	7,312.2	-945.1	938.0	1,331.6	9.71	9.70	-0.61
7,524.0	54.20	139.10	7,331.1	-963.8	954.1	1,356.1	10.99	10.97	-0.97
7,556.0	58.00	138.40	7,348.9	-983.7	971.6	1,382.6	12.01	11.88	-2.19
7,588.0	61.20	137.70	7,365.1	-1,004.3	990.0	1,410.2	10.18	10.00	-2.19
7,619.0	64.10	136.10	7,379.3	-1,024.4	1,008.9	1,437.7	10.42	9.35	-5.16
7,651.0	65.40	135.90	7,393.0	-1,045.2	1,029.0	1,466.6	4.10	4.06	-0.63
7,683.0	67.50	136.40	7,405.8	-1,066.3	1,049.3	1,496.0	6.72	6.56	1.56
7,714.0	70.00	136.10	7,417.0	-1,087.2	1,069.3	1,524.9	8.11	8.06	-0.97
7,747.0	72.60	134.90	7,427.6	-1,109.5	1,091.2	1,556.1	8.60	7.88	-3.64

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Survey

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)
<b>Cross Hard-Line @ 7762' MD</b>									
7,762.0	74.05	134.51	7,431.9	-1,119.6	1,101.4	1,570.5	9.99	9.67	-2.60
7,778.0	75.60	134.10	7,436.1	-1,130.4	1,112.4	1,585.9	9.99	9.68	-2.56
7,810.0	79.40	134.10	7,443.0	-1,152.1	1,134.9	1,617.2	11.88	11.88	0.00
7,842.0	84.40	133.40	7,447.5	-1,174.0	1,157.7	1,648.8	15.77	15.63	-2.19
7,873.0	87.10	133.40	7,449.8	-1,195.3	1,180.2	1,679.7	8.71	8.71	0.00
<b>Casing Point @ 7912' MD</b>									
7,912.0	88.79	131.86	7,451.2	-1,221.7	1,208.9	1,718.7	5.87	4.34	-3.95
7,949.0	90.40	130.40	7,451.5	-1,246.0	1,236.7	1,755.6	5.87	4.34	-3.94
7,980.0	91.90	131.10	7,450.8	-1,266.2	1,260.2	1,786.5	5.34	4.84	2.26
8,041.0	91.60	131.90	7,449.0	-1,306.6	1,305.9	1,847.3	1.40	-0.49	1.31
8,102.0	90.80	131.50	7,447.7	-1,347.2	1,351.4	1,908.2	1.47	-1.31	-0.66
8,133.0	90.40	132.60	7,447.4	-1,368.0	1,374.4	1,939.2	3.78	-1.29	3.55
8,164.0	91.60	132.40	7,446.8	-1,388.9	1,397.3	1,970.1	3.92	3.87	-0.65
8,195.0	91.70	133.60	7,445.9	-1,410.0	1,419.9	2,001.1	3.88	0.32	3.87
8,225.0	92.90	134.70	7,444.7	-1,430.9	1,441.5	2,031.1	5.42	4.00	3.67
8,256.0	93.10	134.00	7,443.1	-1,452.5	1,463.6	2,062.0	2.35	0.65	-2.26
8,287.0	93.50	133.30	7,441.3	-1,473.9	1,486.0	2,093.0	2.60	1.29	-2.26
8,318.0	90.80	133.60	7,440.2	-1,495.2	1,508.5	2,123.9	8.76	-8.71	0.97
8,349.0	90.40	133.40	7,439.8	-1,516.5	1,531.0	2,154.9	1.44	-1.29	-0.65
8,380.0	89.00	136.30	7,440.0	-1,538.4	1,552.9	2,185.9	10.39	-4.52	9.35
8,410.0	88.60	136.40	7,440.6	-1,560.1	1,573.6	2,215.9	1.37	-1.33	0.33
8,441.0	88.30	136.60	7,441.5	-1,582.6	1,595.0	2,246.9	1.16	-0.97	0.65
8,472.0	90.00	138.70	7,441.9	-1,605.5	1,615.8	2,277.8	8.71	5.48	6.77
8,504.0	90.40	138.90	7,441.8	-1,629.6	1,636.9	2,309.8	1.40	1.25	0.63
8,535.0	90.90	138.50	7,441.5	-1,652.9	1,657.4	2,340.7	2.07	1.61	-1.29
8,567.0	91.70	140.10	7,440.7	-1,677.1	1,678.2	2,372.6	5.59	2.50	5.00
8,598.0	92.00	139.90	7,439.7	-1,700.8	1,698.2	2,403.5	1.16	0.97	-0.65
8,630.0	90.80	136.90	7,439.0	-1,724.8	1,719.4	2,435.4	10.09	-3.75	-9.38
8,661.0	89.80	137.10	7,438.8	-1,747.4	1,740.5	2,466.4	3.29	-3.23	0.65
8,693.0	89.90	136.90	7,438.9	-1,770.8	1,762.4	2,498.4	0.70	0.31	-0.63
8,725.0	90.80	137.50	7,438.7	-1,794.3	1,784.1	2,530.3	3.38	2.81	1.88
8,757.0	91.60	136.80	7,438.0	-1,817.8	1,805.9	2,562.3	3.32	2.50	-2.19
8,788.0	90.00	136.30	7,437.6	-1,840.3	1,827.2	2,593.3	5.41	-5.16	-1.61
8,820.0	90.40	134.90	7,437.5	-1,863.1	1,849.6	2,625.3	4.55	1.25	-4.38
8,851.0	90.80	136.10	7,437.1	-1,885.2	1,871.3	2,656.3	4.08	1.29	3.87
8,883.0	90.10	135.70	7,436.9	-1,908.2	1,893.6	2,688.3	2.52	-2.19	-1.25
8,916.0	89.30	135.40	7,437.1	-1,931.8	1,916.7	2,721.3	2.59	-2.42	-0.91
8,947.0	89.30	134.30	7,437.4	-1,953.6	1,938.6	2,752.3	3.55	0.00	-3.55
8,980.0	89.90	135.40	7,437.7	-1,976.9	1,962.0	2,785.3	3.80	1.82	3.33
9,012.0	90.80	134.10	7,437.5	-1,999.4	1,984.8	2,817.3	4.94	2.81	-4.06
9,044.0	90.80	132.90	7,437.0	-2,021.5	2,008.0	2,849.3	3.75	0.00	-3.75
9,075.0	91.10	133.40	7,436.5	-2,042.7	2,030.6	2,880.2	1.88	0.97	1.61



<b>Company:</b>	EOG Resources, Inc - RM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek #23-19H
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Site:</b>	Sec. 19, T11N, R63W, 6th P.M.	<b>MD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Well:</b>	Critter Creek #23-19H	<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>	EDM 5000.1 Single User Db

**Survey**

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)
9,107.0	91.50	134.00	7,435.8	-2,064.8	2,053.7	2,912.2	2.25	1.25	1.88
9,139.0	89.60	133.40	7,435.5	-2,086.9	2,076.8	2,944.2	6.23	-5.94	-1.88
9,170.0	89.10	132.20	7,435.8	-2,107.9	2,099.6	2,975.2	4.19	-1.61	-3.87
9,203.0	88.70	133.10	7,436.5	-2,130.3	2,123.9	3,008.1	2.98	-1.21	2.73
9,235.0	88.90	132.20	7,437.1	-2,152.0	2,147.4	3,040.1	2.88	0.63	-2.81
9,266.0	88.80	131.50	7,437.8	-2,172.6	2,170.5	3,071.0	2.28	-0.32	-2.26
9,298.0	90.40	133.10	7,438.0	-2,194.2	2,194.1	3,103.0	7.07	5.00	5.00
9,329.0	91.30	134.90	7,437.5	-2,215.7	2,216.4	3,134.0	6.49	2.90	5.81
9,362.0	91.00	135.00	7,436.9	-2,239.0	2,239.8	3,167.0	0.96	-0.91	0.30
9,393.0	90.80	133.40	7,436.4	-2,260.6	2,262.0	3,198.0	5.20	-0.65	-5.16
9,425.0	90.70	134.30	7,436.0	-2,282.8	2,285.1	3,230.0	2.83	-0.31	2.81
9,457.0	90.50	135.00	7,435.6	-2,305.3	2,307.8	3,262.0	2.27	-0.63	2.19
9,489.0	90.40	134.70	7,435.4	-2,327.8	2,330.5	3,294.0	0.99	-0.31	-0.94
9,521.0	90.20	134.00	7,435.2	-2,350.2	2,353.4	3,326.0	2.28	-0.63	-2.19
9,552.0	90.00	134.10	7,435.1	-2,371.8	2,375.7	3,357.0	0.72	-0.65	0.32
9,584.0	89.90	134.70	7,435.2	-2,394.2	2,398.6	3,389.0	1.90	-0.31	1.88
9,616.0	89.80	134.00	7,435.3	-2,416.5	2,421.4	3,421.0	2.21	-0.31	-2.19
9,647.0	89.80	134.30	7,435.4	-2,438.1	2,443.7	3,452.0	0.97	0.00	0.97
9,679.0	89.80	134.10	7,435.5	-2,460.4	2,466.6	3,483.9	0.62	0.00	-0.63
9,711.0	89.70	132.40	7,435.6	-2,482.4	2,489.9	3,515.9	5.32	-0.31	-5.31
9,743.0	89.80	131.90	7,435.8	-2,503.8	2,513.7	3,547.9	1.59	0.31	-1.56
9,775.0	90.30	132.90	7,435.7	-2,525.4	2,537.3	3,579.9	3.49	1.56	3.13
9,807.0	90.40	134.70	7,435.5	-2,547.6	2,560.4	3,611.8	5.63	0.31	5.63
9,838.0	90.60	133.30	7,435.3	-2,569.1	2,582.7	3,642.8	4.56	0.65	-4.52
9,870.0	90.50	133.10	7,435.0	-2,591.0	2,606.0	3,674.8	0.70	-0.31	-0.63
9,902.0	89.70	135.70	7,434.9	-2,613.4	2,628.9	3,706.8	8.50	-2.50	8.13
9,934.0	89.40	133.80	7,435.2	-2,635.9	2,651.6	3,738.8	6.01	-0.94	-5.94
9,966.0	89.60	134.30	7,435.4	-2,658.2	2,674.6	3,770.8	1.68	0.63	1.56
9,998.0	89.30	135.40	7,435.7	-2,680.7	2,697.3	3,802.8	3.56	-0.94	3.44
10,029.0	89.30	135.40	7,436.1	-2,702.8	2,719.0	3,833.8	0.00	0.00	0.00
10,061.0	90.50	137.10	7,436.2	-2,725.9	2,741.2	3,865.8	6.50	3.75	5.31
10,093.0	91.80	137.80	7,435.5	-2,749.5	2,762.8	3,897.8	4.61	4.06	2.19
10,124.0	93.50	139.40	7,434.1	-2,772.7	2,783.3	3,928.7	7.53	5.48	5.16
10,156.0	93.30	139.10	7,432.2	-2,796.9	2,804.1	3,960.5	1.13	-0.63	-0.94
10,188.0	91.90	137.10	7,430.7	-2,820.7	2,825.5	3,992.4	7.62	-4.38	-6.25
10,219.0	91.60	135.90	7,429.8	-2,843.2	2,846.8	4,023.4	3.99	-0.97	-3.87
10,251.0	90.80	135.70	7,429.1	-2,866.1	2,869.1	4,055.4	2.58	-2.50	-0.63
10,282.0	90.10	135.70	7,428.9	-2,888.3	2,890.8	4,086.4	2.26	-2.26	0.00
10,314.0	90.80	136.90	7,428.6	-2,911.4	2,912.9	4,118.4	4.34	2.19	3.75
10,345.0	90.50	135.60	7,428.3	-2,933.8	2,934.3	4,149.4	4.30	-0.97	-4.19
10,377.0	90.70	136.40	7,428.0	-2,956.8	2,956.5	4,181.4	2.58	0.63	2.50
10,409.0	90.80	139.10	7,427.5	-2,980.5	2,978.0	4,213.3	8.44	0.31	8.44
10,440.0	91.00	138.50	7,427.0	-3,003.8	2,998.5	4,244.3	2.04	0.65	-1.94
10,472.0	90.30	137.80	7,426.7	-3,027.7	3,019.8	4,276.2	3.09	-2.19	-2.19

<b>Company:</b>	EOG Resources, Inc - RM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek #23-19H
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Site:</b>	Sec. 19, T11N, R63W, 6th P.M.	<b>MD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Well:</b>	Critter Creek #23-19H	<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>	EDM 5000.1 Single User Db

**Survey**

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)
10,503.0	91.70	140.10	7,426.1	-3,051.0	3,040.2	4,307.1	8.68	4.52	7.42
10,535.0	90.50	137.30	7,425.5	-3,075.1	3,061.3	4,339.1	9.52	-3.75	-8.75
10,567.0	88.70	136.90	7,425.7	-3,098.5	3,083.1	4,371.0	5.76	-5.63	-1.25
10,599.0	85.80	137.80	7,427.3	-3,122.0	3,104.7	4,403.0	9.49	-9.06	2.81
10,632.0	85.60	137.70	7,429.8	-3,146.4	3,126.8	4,435.8	0.68	-0.61	-0.30
10,664.0	85.60	135.60	7,432.2	-3,169.6	3,148.7	4,467.7	6.54	0.00	-6.56
10,696.0	87.20	136.60	7,434.2	-3,192.6	3,170.9	4,499.7	5.89	5.00	3.13
10,728.0	88.80	138.70	7,435.3	-3,216.2	3,192.4	4,531.6	8.25	5.00	6.56
10,760.0	89.10	139.40	7,435.9	-3,240.4	3,213.4	4,563.5	2.38	0.94	2.19
10,792.0	90.60	138.00	7,436.0	-3,264.4	3,234.5	4,595.5	6.41	4.69	-4.38
10,824.0	90.60	137.50	7,435.7	-3,288.1	3,256.0	4,627.4	1.56	0.00	-1.56
10,856.0	90.40	136.60	7,435.4	-3,311.5	3,277.8	4,659.4	2.88	-0.63	-2.81
10,888.0	90.80	139.40	7,435.1	-3,335.3	3,299.2	4,691.4	8.84	1.25	8.75
10,920.0	91.10	137.10	7,434.5	-3,359.2	3,320.5	4,723.3	7.25	0.94	-7.19
10,951.0	89.80	137.80	7,434.3	-3,382.0	3,341.5	4,754.3	4.76	-4.19	2.26
10,983.0	89.00	136.90	7,434.6	-3,405.6	3,363.2	4,786.2	3.76	-2.50	-2.81
11,015.0	89.10	135.20	7,435.2	-3,428.6	3,385.4	4,818.2	5.32	0.31	-5.31
11,047.0	89.20	134.90	7,435.6	-3,451.2	3,408.0	4,850.2	0.99	0.31	-0.94
11,110.0	89.20	136.30	7,436.5	-3,496.2	3,452.1	4,913.2	2.22	0.00	2.22
11,173.0	90.30	135.70	7,436.8	-3,541.6	3,495.8	4,976.2	1.99	1.75	-0.95
11,206.0	90.60	134.70	7,436.5	-3,565.0	3,519.1	5,009.2	3.16	0.91	-3.03
11,271.0	90.00	132.70	7,436.2	-3,609.9	3,566.1	5,074.2	3.21	-0.92	-3.08
11,335.0	89.20	135.00	7,436.6	-3,654.2	3,612.2	5,138.2	3.80	-1.25	3.59
11,367.0	89.30	133.40	7,437.0	-3,676.5	3,635.2	5,170.2	5.01	0.31	-5.00
11,398.0	89.20	133.30	7,437.5	-3,697.8	3,657.7	5,201.1	0.46	-0.32	-0.32
11,431.0	87.80	134.00	7,438.3	-3,720.6	3,681.6	5,234.1	4.74	-4.24	2.12
11,463.0	87.20	134.00	7,439.7	-3,742.8	3,704.6	5,266.1	1.88	-1.88	0.00
11,496.0	87.20	133.10	7,441.3	-3,765.5	3,728.5	5,299.0	2.72	0.00	-2.73
11,528.0	87.20	134.10	7,442.9	-3,787.5	3,751.6	5,331.0	3.12	0.00	3.13
11,559.0	87.10	134.50	7,444.4	-3,809.1	3,773.8	5,361.9	1.33	-0.32	1.29
11,591.0	87.30	132.90	7,446.0	-3,831.2	3,796.9	5,393.9	5.03	0.63	-5.00
11,623.0	87.10	134.10	7,447.6	-3,853.2	3,820.0	5,425.8	3.80	-0.63	3.75
11,654.0	87.30	134.10	7,449.1	-3,874.8	3,842.3	5,456.8	0.65	0.65	0.00
11,686.0	87.30	134.00	7,450.6	-3,897.0	3,865.3	5,488.8	0.31	0.00	-0.31
11,718.0	87.30	133.40	7,452.1	-3,919.1	3,888.4	5,520.7	1.87	0.00	-1.88
11,750.0	89.20	132.40	7,453.1	-3,940.9	3,911.8	5,552.7	6.71	5.94	-3.13
11,783.0	90.60	134.90	7,453.1	-3,963.6	3,935.7	5,585.7	8.68	4.24	7.58
11,847.0	90.40	134.30	7,452.6	-4,008.6	3,981.2	5,649.7	0.99	-0.31	-0.94
11,910.0	88.20	132.20	7,453.3	-4,051.7	4,027.1	5,712.6	4.83	-3.49	-3.33
11,942.0	88.10	131.10	7,454.4	-4,073.0	4,051.0	5,744.5	3.45	-0.31	-3.44
<b>Projection to Bit @ 11989' MD / 7456' TVD</b>									
11,989.0	88.10	131.10	7,455.9	-4,103.9	4,086.4	5,791.4	0.00	0.00	0.00

<b>Company:</b>	EOG Resources, Inc - RM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek #23-19H
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Site:</b>	Sec. 19, T11N, R63W, 6th P.M.	<b>MD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Well:</b>	Critter Creek #23-19H	<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>	EDM 5000.1 Single User Db

#### Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
7,912.0	7,451.2	7"	7	8-3/4

#### Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,433.0	1,433.0	0.7	3.0	Tie-In to Gyro
5,015.0	4,937.0	-497.8	496.8	Cross Section-Line @ 5015' MD
5,060.0	4,981.0	-504.4	503.9	Cross Section-Line @ 5060' MD
7,762.0	7,431.9	-1,119.6	1,101.4	Cross Hard-Line @ 7762' MD
7,912.0	7,451.2	-1,221.7	1,208.9	Casing Point @ 7912' MD
11,989.0	7,455.9	-4,103.9	4,086.4	Projection to Bit @ 11989' MD / 7456' TVD

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

# **EOG Resources, Inc - RM**

**Weld County, CO**

**Sec. 19, T11N, R63W, 6th P.M.**

**Critter Creek #23-19H**

**ST #1**

**Survey: Critter Creek #23-19H - ST #1 - MWD Surveys**

## **DDC Survey Report**

**08 February, 2011**

<b>Company:</b>	EOG Resources, Inc - RM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek #23-19H
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Site:</b>	Sec. 19, T11N, R63W, 6th P.M.	<b>MD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Well:</b>	Critter Creek #23-19H	<b>North Reference:</b>	True
<b>Wellbore:</b>	ST #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST #1	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Weld County, CO		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Colorado North 501		

<b>Site</b>	Sec. 19, T11N, R63W, 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	573,082.11 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,285,413.15 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40° 54' 7.010 N
		<b>Longitude:</b>	104° 28' 3.270 W
		<b>Grid Convergence:</b>	0.67 °

<b>Well</b>	Critter Creek #23-19H		
<b>Well Position</b>	<b>+N-S</b>	0.0 usft	<b>Northing:</b> 573,082.11 usft
	<b>+E-W</b>	0.0 usft	<b>Easting:</b> 2,285,413.15 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40° 54' 7.010 N
		<b>Longitude:</b>	104° 28' 3.270 W
		<b>Ground Level:</b>	5,289.0 usft

<b>Wellbore</b>	ST #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2/8/2011	8.79	67.52	53,457

<b>Design</b>	ST #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	8,195.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	135.06	

<b>Survey Program</b>	<b>Date</b>	2/8/2011			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
1,515.0	8,195.0	Critter Creek #23-19H - MWD Surveys (W	MWD default	MWD - Standard	
8,237.0	13,390.0	Critter Creek #23-19H - ST #1 - MWD Sur	MWD default	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
<b>Tie-In</b>										
8,195.0	91.70	133.60	7,445.9	-1,410.0	1,419.9	2,001.1	0.00	0.00	0.00	
8,237.0	88.40	134.10	7,445.9	-1,439.1	1,450.2	2,043.1	7.95	-7.86	1.19	
8,267.0	87.00	132.20	7,447.1	-1,459.6	1,472.1	2,073.0	7.86	-4.67	-6.33	
8,298.0	84.60	133.60	7,449.4	-1,480.7	1,494.7	2,103.9	8.96	-7.74	4.52	
8,329.0	83.80	134.50	7,452.5	-1,502.1	1,516.9	2,134.8	3.87	-2.58	2.90	
8,360.0	83.90	137.50	7,455.8	-1,524.3	1,538.3	2,165.6	9.63	0.32	9.68	
8,421.0	84.90	136.40	7,461.8	-1,568.6	1,579.8	2,226.2	2.43	1.64	-1.80	
8,452.0	84.60	138.00	7,464.6	-1,591.3	1,600.7	2,257.1	5.23	-0.97	5.16	
8,483.0	84.30	136.80	7,467.6	-1,614.0	1,621.6	2,287.9	3.97	-0.97	-3.87	

<b>Company:</b>	EOG Resources, Inc - RM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek #23-19H
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Site:</b>	Sec. 19, T11N, R63W, 6th P.M.	<b>MD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Well:</b>	Critter Creek #23-19H	<b>North Reference:</b>	True
<b>Wellbore:</b>	ST #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST #1	<b>Database:</b>	EDM 5000.1 Single User Db

### Survey

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)
8,515.0	84.20	138.90	7,470.8	-1,637.6	1,643.0	2,319.7	6.54	-0.31	6.56
8,547.0	84.20	138.90	7,474.1	-1,661.6	1,663.9	2,351.5	0.00	0.00	0.00
8,578.0	84.10	138.20	7,477.2	-1,684.7	1,684.3	2,382.3	2.27	-0.32	-2.26
8,609.0	83.60	138.90	7,480.5	-1,707.8	1,704.7	2,413.0	2.76	-1.61	2.26
8,641.0	83.40	138.40	7,484.2	-1,731.7	1,725.7	2,444.8	1.67	-0.63	-1.56
8,673.0	84.90	138.00	7,487.4	-1,755.4	1,747.0	2,476.5	4.85	4.69	-1.25
8,705.0	84.90	136.10	7,490.3	-1,778.7	1,768.7	2,508.4	5.91	0.00	-5.94
8,736.0	84.40	136.80	7,493.2	-1,801.1	1,789.9	2,539.3	2.77	-1.61	2.26
8,768.0	84.50	136.10	7,496.3	-1,824.2	1,811.9	2,571.1	2.20	0.31	-2.19
8,800.0	84.60	136.80	7,499.3	-1,847.3	1,833.8	2,602.9	2.20	0.31	2.19
8,833.0	84.20	136.80	7,502.5	-1,871.2	1,856.3	2,635.8	1.21	-1.21	0.00
8,864.0	84.10	136.30	7,505.7	-1,893.6	1,877.5	2,666.6	1.64	-0.32	-1.61
8,896.0	83.60	133.10	7,509.1	-1,916.0	1,900.1	2,698.4	10.06	-1.56	-10.00
8,927.0	83.20	134.70	7,512.7	-1,937.3	1,922.3	2,729.2	5.29	-1.29	5.16
8,958.0	84.90	133.30	7,515.9	-1,958.7	1,944.5	2,760.0	7.09	5.48	-4.52
8,991.0	84.80	133.80	7,518.8	-1,981.4	1,968.3	2,792.9	1.54	-0.30	1.52
9,023.0	84.50	133.40	7,521.8	-2,003.4	1,991.4	2,824.7	1.56	-0.94	-1.25
9,054.0	84.20	134.30	7,524.9	-2,024.7	2,013.6	2,855.6	3.05	-0.97	2.90
9,087.0	84.20	133.60	7,528.2	-2,047.5	2,037.3	2,888.4	2.11	0.00	-2.12
9,120.0	84.00	133.80	7,531.6	-2,070.2	2,061.0	2,921.2	0.85	-0.61	0.61
9,152.0	83.70	135.20	7,535.0	-2,092.5	2,083.7	2,953.0	4.45	-0.94	4.38
9,184.0	83.90	133.10	7,538.5	-2,114.7	2,106.5	2,984.8	6.55	0.63	-6.56
9,216.0	86.30	133.80	7,541.2	-2,136.6	2,129.7	3,016.7	7.81	7.50	2.19
9,248.0	87.00	132.70	7,543.1	-2,158.5	2,152.9	3,048.6	4.07	2.19	-3.44
9,279.0	89.00	132.90	7,544.2	-2,179.5	2,175.7	3,079.6	6.48	6.45	0.65
9,311.0	89.80	135.00	7,544.5	-2,201.7	2,198.7	3,111.6	7.02	2.50	6.56
9,343.0	90.80	135.60	7,544.3	-2,224.5	2,221.2	3,143.6	3.64	3.13	1.88
9,374.0	88.30	135.20	7,544.6	-2,246.5	2,243.0	3,174.6	8.17	-8.06	-1.29
9,406.0	86.90	135.70	7,545.9	-2,269.3	2,265.4	3,206.5	4.65	-4.38	1.56
9,438.0	86.90	134.50	7,547.7	-2,292.0	2,288.0	3,238.5	3.74	0.00	-3.75
9,470.0	87.00	134.50	7,549.4	-2,314.4	2,310.7	3,270.4	0.31	0.31	0.00
9,502.0	87.80	133.80	7,550.8	-2,336.6	2,333.7	3,302.4	3.32	2.50	-2.19
9,534.0	87.80	134.50	7,552.0	-2,358.9	2,356.6	3,334.4	2.19	0.00	2.19
9,565.0	88.90	134.00	7,552.9	-2,380.5	2,378.8	3,365.4	3.90	3.55	-1.61
9,597.0	89.10	134.10	7,553.5	-2,402.8	2,401.8	3,397.3	0.70	0.63	0.31
9,629.0	88.90	134.10	7,554.0	-2,425.0	2,424.8	3,429.3	0.63	-0.63	0.00
9,661.0	89.40	134.70	7,554.5	-2,447.4	2,447.7	3,461.3	2.44	1.56	1.88
9,692.0	90.00	134.30	7,554.7	-2,469.1	2,469.8	3,492.3	2.33	1.94	-1.29
9,724.0	90.70	133.40	7,554.5	-2,491.3	2,492.8	3,524.3	3.56	2.19	-2.81
9,756.0	90.40	134.50	7,554.2	-2,513.5	2,515.9	3,556.3	3.56	-0.94	3.44
9,787.0	90.50	133.80	7,553.9	-2,535.1	2,538.1	3,587.3	2.28	0.32	-2.26
9,819.0	90.40	134.50	7,553.7	-2,557.4	2,561.1	3,619.3	2.21	-0.31	2.19
9,851.0	90.50	134.10	7,553.4	-2,579.7	2,584.0	3,651.3	1.29	0.31	-1.25

<b>Company:</b>	EOG Resources, Inc - RM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek #23-19H
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Site:</b>	Sec. 19, T11N, R63W, 6th P.M.	<b>MD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Well:</b>	Critter Creek #23-19H	<b>North Reference:</b>	True
<b>Wellbore:</b>	ST #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST #1	<b>Database:</b>	EDM 5000.1 Single User Db

**Survey**

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)
9,882.0	90.20	133.60	7,553.2	-2,601.2	2,606.3	3,682.3	1.88	-0.97	-1.61
9,913.0	90.30	133.40	7,553.1	-2,622.6	2,628.8	3,713.3	0.72	0.32	-0.65
9,945.0	90.30	133.10	7,552.9	-2,644.5	2,652.1	3,745.3	0.94	0.00	-0.94
9,977.0	90.50	133.30	7,552.7	-2,666.4	2,675.5	3,777.2	0.88	0.63	0.63
10,009.0	90.60	132.90	7,552.4	-2,688.3	2,698.8	3,809.2	1.29	0.31	-1.25
10,041.0	90.30	133.10	7,552.2	-2,710.1	2,722.2	3,841.2	1.13	-0.94	0.63
10,072.0	90.70	132.70	7,551.9	-2,731.2	2,744.9	3,872.2	1.82	1.29	-1.29
10,104.0	90.40	134.00	7,551.6	-2,753.1	2,768.2	3,904.2	4.17	-0.94	4.06
10,136.0	90.40	135.40	7,551.4	-2,775.6	2,790.9	3,936.2	4.37	0.00	4.38
10,167.0	91.40	135.90	7,550.9	-2,797.8	2,812.6	3,967.2	3.61	3.23	1.61
10,199.0	92.20	136.80	7,549.9	-2,821.0	2,834.7	3,999.1	3.76	2.50	2.81
10,231.0	92.00	136.40	7,548.7	-2,844.2	2,856.7	4,031.1	1.40	-0.63	-1.25
10,262.0	91.60	135.70	7,547.7	-2,866.5	2,878.2	4,062.1	2.60	-1.29	-2.26
10,295.0	90.70	136.10	7,547.1	-2,890.2	2,901.1	4,095.1	2.98	-2.73	1.21
10,327.0	90.80	136.40	7,546.6	-2,913.3	2,923.3	4,127.1	0.99	0.31	0.94
10,358.0	91.20	136.80	7,546.1	-2,935.8	2,944.5	4,158.0	1.82	1.29	1.29
10,390.0	90.00	136.80	7,545.8	-2,959.2	2,966.5	4,190.0	3.75	-3.75	0.00
10,421.0	89.90	136.60	7,545.8	-2,981.7	2,987.7	4,221.0	0.72	-0.32	-0.65
10,453.0	90.50	137.70	7,545.7	-3,005.2	3,009.5	4,253.0	3.92	1.88	3.44
10,485.0	90.80	138.00	7,545.3	-3,028.9	3,030.9	4,285.0	1.33	0.94	0.94
10,516.0	90.80	138.20	7,544.9	-3,052.0	3,051.6	4,315.9	0.65	0.00	0.65
10,548.0	90.80	138.70	7,544.4	-3,075.9	3,072.9	4,347.8	1.56	0.00	1.56
10,580.0	90.90	139.20	7,544.0	-3,100.0	3,093.9	4,379.8	1.59	0.31	1.56
10,611.0	90.60	138.70	7,543.6	-3,123.4	3,114.2	4,410.7	1.88	-0.97	-1.61
10,643.0	90.40	137.30	7,543.3	-3,147.2	3,135.6	4,442.6	4.42	-0.63	-4.38
10,675.0	89.60	136.80	7,543.3	-3,170.6	3,157.5	4,474.6	2.95	-2.50	-1.56
10,707.0	89.20	136.60	7,543.6	-3,193.9	3,179.4	4,506.6	1.40	-1.25	-0.63
10,738.0	89.30	136.40	7,544.0	-3,216.4	3,200.7	4,537.6	0.72	0.32	-0.65
10,770.0	89.10	137.30	7,544.5	-3,239.7	3,222.6	4,569.6	2.88	-0.63	2.81
10,802.0	88.90	137.10	7,545.0	-3,263.2	3,244.4	4,601.6	0.88	-0.63	-0.63
10,833.0	89.00	137.10	7,545.6	-3,285.9	3,265.5	4,632.5	0.32	0.32	0.00
10,864.0	88.60	136.60	7,546.2	-3,308.5	3,286.7	4,663.5	2.07	-1.29	-1.61
10,896.0	88.40	136.40	7,547.1	-3,331.7	3,308.7	4,695.5	0.88	-0.63	-0.63
10,928.0	88.20	136.90	7,548.0	-3,355.0	3,330.6	4,727.5	1.68	-0.63	1.56
10,959.0	88.60	136.80	7,548.9	-3,377.6	3,351.8	4,758.4	1.33	1.29	-0.32
10,991.0	88.60	135.60	7,549.7	-3,400.7	3,374.0	4,790.4	3.75	0.00	-3.75
11,023.0	89.70	136.30	7,550.1	-3,423.7	3,396.2	4,822.4	4.07	3.44	2.19
11,054.0	89.70	136.10	7,550.3	-3,446.1	3,417.7	4,853.4	0.65	0.00	-0.65
11,086.0	90.00	137.10	7,550.4	-3,469.3	3,439.7	4,885.4	3.26	0.94	3.13
11,118.0	90.60	137.50	7,550.2	-3,492.8	3,461.4	4,917.4	2.25	1.88	1.25
11,150.0	90.90	138.70	7,549.8	-3,516.6	3,482.7	4,949.3	3.87	0.94	3.75
11,182.0	91.20	138.90	7,549.2	-3,540.7	3,503.8	4,981.2	1.13	0.94	0.63
11,214.0	90.00	138.40	7,548.9	-3,564.7	3,524.9	5,013.2	4.06	-3.75	-1.56

<b>Company:</b>	EOG Resources, Inc - RM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek #23-19H
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Site:</b>	Sec. 19, T11N, R63W, 6th P.M.	<b>MD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Well:</b>	Critter Creek #23-19H	<b>North Reference:</b>	True
<b>Wellbore:</b>	ST #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST #1	<b>Database:</b>	EDM 5000.1 Single User Db

### Survey

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)
11,246.0	89.70	138.40	7,549.0	-3,588.7	3,546.2	5,045.1	0.94	-0.94	0.00
11,278.0	90.30	139.20	7,549.0	-3,612.7	3,567.3	5,077.1	3.12	1.88	2.50
11,310.0	90.80	139.20	7,548.7	-3,637.0	3,588.2	5,109.0	1.56	1.56	0.00
11,341.0	89.30	139.40	7,548.6	-3,660.5	3,608.4	5,139.9	4.88	-4.84	0.65
11,373.0	87.00	138.40	7,549.7	-3,684.6	3,629.4	5,171.8	7.84	-7.19	-3.13
11,404.0	86.70	138.70	7,551.4	-3,707.8	3,649.9	5,202.7	1.37	-0.97	0.97
11,436.0	86.60	139.10	7,553.2	-3,731.8	3,670.9	5,234.6	1.29	-0.31	1.25
11,468.0	87.60	137.50	7,554.9	-3,755.7	3,692.2	5,266.5	5.89	3.13	-5.00
11,500.0	88.40	137.80	7,556.0	-3,779.3	3,713.7	5,298.4	2.67	2.50	0.94
11,531.0	89.00	136.90	7,556.7	-3,802.1	3,734.7	5,329.4	3.49	1.94	-2.90
11,564.0	90.70	135.70	7,556.8	-3,826.0	3,757.5	5,362.4	6.31	5.15	-3.64
11,595.0	91.20	134.70	7,556.3	-3,848.0	3,779.3	5,393.4	3.61	1.61	-3.23
11,627.0	91.70	133.40	7,555.4	-3,870.2	3,802.3	5,425.4	4.35	1.56	-4.06
11,659.0	91.70	133.40	7,554.5	-3,892.2	3,825.6	5,457.3	0.00	0.00	0.00
11,690.0	91.60	133.80	7,553.6	-3,913.6	3,848.0	5,488.3	1.33	-0.32	1.29
11,722.0	91.50	132.90	7,552.7	-3,935.5	3,871.3	5,520.3	2.83	-0.31	-2.81
11,754.0	91.70	132.90	7,551.8	-3,957.3	3,894.7	5,552.2	0.63	0.63	0.00
11,786.0	92.40	133.40	7,550.7	-3,979.2	3,918.0	5,584.2	2.69	2.19	1.56
11,817.0	92.60	134.30	7,549.3	-4,000.6	3,940.4	5,615.2	2.97	0.65	2.90
11,849.0	92.40	133.80	7,548.0	-4,022.9	3,963.3	5,647.1	1.68	-0.63	-1.56
11,880.0	92.20	133.60	7,546.7	-4,044.3	3,985.7	5,678.1	0.91	-0.65	-0.65
11,944.0	92.40	132.90	7,544.1	-4,088.1	4,032.3	5,742.0	1.14	0.31	-1.09
12,007.0	92.20	133.30	7,541.6	-4,131.1	4,078.3	5,804.9	0.71	-0.32	0.63
12,070.0	92.30	132.40	7,539.1	-4,173.9	4,124.4	5,867.8	1.44	0.16	-1.43
12,134.0	92.20	131.50	7,536.6	-4,216.6	4,172.0	5,931.7	1.41	-0.16	-1.41
12,197.0	91.70	130.40	7,534.5	-4,257.9	4,219.5	5,994.5	1.92	-0.79	-1.75
12,260.0	91.70	130.60	7,532.6	-4,298.8	4,267.4	6,057.3	0.32	0.00	0.32
12,324.0	91.80	131.90	7,530.7	-4,341.0	4,315.5	6,121.1	2.04	0.16	2.03
12,356.0	91.50	130.80	7,529.7	-4,362.1	4,339.5	6,153.0	3.56	-0.94	-3.44
12,420.0	90.40	130.80	7,528.7	-4,403.9	4,388.0	6,216.8	1.72	-1.72	0.00
12,483.0	89.70	131.70	7,528.6	-4,445.5	4,435.3	6,279.7	1.81	-1.11	1.43
12,546.0	91.10	131.70	7,528.2	-4,487.4	4,482.4	6,342.6	2.22	2.22	0.00
12,609.0	91.30	132.70	7,526.9	-4,529.7	4,529.0	6,405.5	1.62	0.32	1.59
12,673.0	90.90	131.50	7,525.6	-4,572.6	4,576.5	6,469.4	1.98	-0.63	-1.88
12,736.0	89.80	131.10	7,525.2	-4,614.2	4,623.8	6,532.2	1.86	-1.75	-0.63
12,799.0	89.50	129.80	7,525.6	-4,655.0	4,671.8	6,595.0	2.12	-0.48	-2.06
12,863.0	90.30	131.90	7,525.7	-4,696.9	4,720.2	6,658.9	3.51	1.25	3.28
12,926.0	90.10	131.00	7,525.5	-4,738.6	4,767.4	6,721.7	1.46	-0.32	-1.43
12,990.0	89.80	130.40	7,525.6	-4,780.3	4,815.9	6,785.5	1.05	-0.47	-0.94
13,053.0	90.30	130.10	7,525.5	-4,821.0	4,864.0	6,848.3	0.93	0.79	-0.48
13,117.0	90.40	130.30	7,525.1	-4,862.3	4,912.9	6,912.1	0.35	0.16	0.31
13,181.0	90.00	130.80	7,524.9	-4,903.9	4,961.5	6,975.9	1.00	-0.63	0.78
13,245.0	90.50	132.40	7,524.6	-4,946.4	5,009.4	7,039.8	2.62	0.78	2.50
13,309.0	90.60	132.70	7,524.0	-4,989.7	5,056.5	7,103.7	0.49	0.16	0.47



<b>Company:</b>	EOG Resources, Inc - RM	<b>Local Co-ordinate Reference:</b>	Well Critter Creek #23-19H
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Site:</b>	Sec. 19, T11N, R63W, 6th P.M.	<b>MD Reference:</b>	WELL @ 5312.0usft (SST #53)
<b>Well:</b>	Critter Creek #23-19H	<b>North Reference:</b>	True
<b>Wellbore:</b>	ST #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	ST #1	<b>Database:</b>	EDM 5000.1 Single User Db

#### Survey

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)
13,340.0	90.30	132.20	7,523.8	-5,010.6	5,079.4	7,134.7	1.88	-0.97	-1.61
<b>TD @ 13390' MD / 7524' TVD</b>									
13,390.0	90.30	132.20	7,523.5	-5,044.2	5,116.4	7,184.6	0.00	0.00	0.00

#### Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
7,912.0	7,451.2	7"	7	8-3/4

#### Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,195.0	7,445.9	-1,410.0	1,419.9	Tie-In
13,390.0	7,523.5	-5,044.2	5,116.4	TD @ 13390' MD / 7524' TVD

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



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## Survey Certification Sheet

EOG Resources, Inc.  
Company

RM-11023  
Job Number

01/27/2011  
Date

Sec. 19, T11N, R63W  
Lease

Critter Creek #23-19H  
Well Name

Weld, CO  
County & State

Surveyed from a depth of: 1433 feet to 11989 feet MD

Type of Survey: MWD

Directional Supervisor/Surveyor: Mark Snyder

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by **The Directional Drilling Company (DDC)**. This report represents a true and correct Directional survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.

Digitally signed by  
Larry Wright  
DN: cn=Larry Wright,  
o, ou,  
email=larryw@directio  
naldrillers.com, c=US  
Date: 2011.01.27  
16:10:59 -06'00'

Larry Wright  
MWD General Manager



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## Survey Certification Sheet

EOG Resources, Inc.  
Company

RM-11023  
Job Number

02/08/2011  
Date

Sec. 19, T11N, R63W  
Lease

Critter Creek #23-19H  
Well Name

Weld, CO  
County & State

Surveyed from a depth of: 8195 feet to 13390 feet MD

Type of Survey: MWD

Directional Supervisor/Surveyor: Ryan Jensen

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by **The Directional Drilling Company (DDC)**. This report represents a true and correct Directional survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.

Digitally signed by  
Larry Wright  
DN: cn=Larry Wright,  
o, ou,  
email=larryw@directi  
onaldrillers.com,  
c=US  
Date: 2011.02.09  
10:01:53 -06'00'

Larry Wright  
MWD General Manager