



Scientific Drilling

## Directional Survey Certification

7327 West Barton Road  
Casper, WY 82604  
(307)-472-6621 Fax (307) 472-5439

Operator	McElvain Oil & Gas
Well Name & No.	Bullseye #11
County & State	La Plata County, CO
SDI Job No.	33DEF1204503
Rig	Aztec 507

I, Janie Collins, having personal knowledge of all the facts, hereby  
certify that the attached directional survey run from a measured depth of 0 feet to a  
measured depth of 4150 feet is true and correct as determined from all available records.

  
Signature

30-May-12  
Date

**Janie Collins**

Grand Junction Well Planner  
Scientific Drilling - Rocky Mountain District

# **McElvain Oil & Gas**

**La Plata County CO**

**SEC 20-T33N-R8W**

**Bullseye #11**

**Original Hole**

**Design: Original Hole**

## **Standard Survey Report**

**30 May, 2012**

# Scientific Drilling International

## Survey Report

<b>Company:</b>	McElvain Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Bullseye #11
<b>Project:</b>	La Plata County CO	<b>TVD Reference:</b>	DFE-- @ 7162.99usft
<b>Site:</b>	SEC 20-T33N-R8W	<b>MD Reference:</b>	DFE-- @ 7162.99usft
<b>Well:</b>	Bullseye #11	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	Rockies Compass Server

<b>Project</b>	La Plata County CO, FC Wells		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Southern Zone		Using geodetic scale factor

Site		SEC 20-T33N-R8W			
Site Position:		Northing:	760,788.19 usft	Latitude:	36° 0' 0.000 N
From:	Lat/Long	Easting:	2,556,100.64 usft	Longitude:	107° 0' 0.000 W
Position Uncertainty:	0.00 usft	Slot Radius:	6-1/8 "	Grid Convergence:	-0.92 °

Well	Bullseye #11, Slant Fruitland Coal Well					
Well Position	+N/-S	0.00 usft	Northing:	1,160,828.89 usft	Latitude:	37° 5' 12.192 N
	+E/-W	0.00 usft	Easting:	2,344,820.15 usft	Longitude:	107° 44' 46.392 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	7,137.99 usft

<b>Wellbore</b>	Original Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	2010/01/19	10.09	63.81	51,099

<b>Design</b>	Original Hole				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	8.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	8.00	0.00	0.00	130.39	

<b>Survey Program</b>	<b>Date</b>	2012/05/30			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
175.00	769.00	Survey #1 - Surface MWD (Original Hole)	MWD SDI	MWD - Standard ver 1.0.1	
847.00	4,149.99	Survey #2 - Production MWD (Original Ho	MWD SDI	MWD - Standard ver 1.0.1	

<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>	
8.00	0.00	0.00	8.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Bullseye #1 WH</b>										
175.00	0.03	156.68	175.00	-0.04	0.02	0.04	0.02	0.02	0.00	
<b>First SDI Surface MWD</b>										
205.00	0.14	137.94	205.00	-0.07	0.04	0.08	0.37	0.37	-62.47	
235.00	0.12	164.28	235.00	-0.13	0.08	0.14	0.21	-0.07	87.80	
264.00	0.45	143.52	264.00	-0.25	0.15	0.28	1.17	1.14	-71.59	
294.00	0.71	148.90	294.00	-0.51	0.32	0.57	0.88	0.87	17.93	
323.00	1.05	142.20	322.99	-0.87	0.58	1.00	1.22	1.17	-23.10	

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<b>Site:</b>	SEC 20-T33N-R8W	<b>MD Reference:</b>	DFE-- @ 7162.99usft
<b>Well:</b>	Bullseye #11	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	Rockies Compass Server

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
353.00	1.76	139.73	352.98	-1.44	1.04	1.73	2.37	2.37	-8.23
383.00	2.60	138.21	382.96	-2.30	1.79	2.85	2.81	2.80	-5.07
411.00	3.62	138.43	410.92	-3.43	2.80	4.36	3.64	3.64	0.79
440.00	4.42	138.42	439.85	-4.95	4.15	6.37	2.76	2.76	-0.03
471.00	5.28	135.33	470.74	-6.86	5.95	8.98	2.90	2.77	-9.97
502.00	6.20	134.47	501.58	-9.05	8.15	12.07	2.98	2.97	-2.77
533.00	7.02	137.88	532.38	-11.63	10.61	15.62	2.93	2.65	11.00
563.00	7.86	138.60	562.12	-14.53	13.20	19.46	2.82	2.80	2.40
595.00	8.76	138.76	593.79	-18.00	16.25	24.04	2.81	2.81	0.50
625.00	9.08	139.83	623.42	-21.53	19.28	28.63	1.20	1.07	3.57
655.00	10.05	140.85	653.01	-25.36	22.46	33.54	3.28	3.23	3.40
681.00	10.59	144.58	678.59	-29.07	25.28	38.09	3.30	2.08	14.35
712.00	11.67	144.56	709.00	-33.95	28.75	43.89	3.48	3.48	-0.06
743.00	12.18	144.68	739.33	-39.17	32.46	50.10	1.65	1.65	0.39
769.00	12.57	144.37	764.73	-43.71	35.69	55.51	1.52	1.50	-1.19
Last SDI Surface MWD									
847.00	13.06	145.39	840.79	-57.86	45.64	72.25	0.69	0.63	1.31
First SDI Production MWD									
877.00	13.26	144.86	870.00	-63.46	49.55	78.86	0.78	0.67	-1.77
906.00	13.28	143.53	898.22	-68.86	53.44	85.32	1.05	0.07	-4.59
937.00	13.24	143.67	928.40	-74.58	57.66	92.25	0.17	-0.13	0.45
967.00	13.49	144.94	957.58	-80.22	61.71	98.98	1.29	0.83	4.23
997.00	14.01	144.06	986.72	-86.02	65.85	105.89	1.87	1.73	-2.93
1,028.00	14.10	141.81	1,016.80	-92.03	70.38	113.24	1.79	0.29	-7.26
1,058.00	14.09	141.48	1,045.89	-97.75	74.92	120.41	0.27	-0.03	-1.10
1,088.00	14.31	138.56	1,074.98	-103.39	79.65	127.66	2.50	0.73	-9.73
1,119.00	15.12	138.18	1,104.96	-109.28	84.88	135.46	2.63	2.61	-1.23
1,149.00	15.63	137.29	1,133.89	-115.16	90.23	143.35	1.87	1.70	-2.97
1,179.00	15.98	137.60	1,162.75	-121.18	95.75	151.45	1.20	1.17	1.03
1,210.00	16.66	135.73	1,192.50	-127.51	101.73	160.11	2.77	2.19	-6.03
1,241.00	17.72	133.80	1,222.12	-133.96	108.24	169.25	3.88	3.42	-6.23
1,273.00	18.03	133.15	1,252.57	-140.72	115.37	179.05	1.15	0.97	-2.03
1,303.00	18.90	132.40	1,281.03	-147.17	122.34	188.55	3.01	2.90	-2.50
1,335.00	19.49	130.44	1,311.25	-154.13	130.23	199.07	2.73	1.84	-6.13
1,366.00	20.03	129.39	1,340.42	-160.85	138.27	209.54	2.08	1.74	-3.39
1,397.00	20.71	129.19	1,369.49	-167.68	146.62	220.33	2.21	2.19	-0.65
1,428.00	21.54	128.31	1,398.40	-174.68	155.34	231.50	2.87	2.68	-2.84
1,459.00	22.34	127.93	1,427.16	-181.83	164.45	243.07	2.62	2.58	-1.23
1,491.00	22.97	128.60	1,456.69	-189.46	174.13	255.39	2.13	1.97	2.09
1,523.00	23.52	128.52	1,486.09	-197.33	184.00	268.01	1.72	1.72	-0.25
1,555.00	24.17	128.55	1,515.36	-205.39	194.12	280.94	2.03	2.03	0.09
1,587.00	24.88	128.38	1,544.47	-213.65	204.52	294.22	2.23	2.22	-0.53
1,618.00	25.52	128.55	1,572.52	-221.86	214.86	307.41	2.08	2.06	0.55
1,649.00	26.13	129.38	1,600.42	-230.36	225.36	320.91	2.29	1.97	2.68

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<b>Design:</b>	Original Hole	<b>Database:</b>	Rockies Compass Server

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)	
1,680.00	27.22	129.28	1,628.12	-239.18	236.12	334.82	3.52	3.52	-0.32	
1,712.00	28.24	128.22	1,656.45	-248.49	247.73	349.71	3.54	3.19	-3.31	
1,744.00	28.69	127.74	1,684.58	-257.88	259.76	364.95	1.58	1.41	-1.50	
1,775.00	28.69	127.74	1,711.77	-266.99	271.52	379.81	0.00	0.00	0.00	
1,807.00	28.44	128.37	1,739.88	-276.42	283.57	395.10	1.22	-0.78	1.97	
1,837.00	28.02	129.10	1,766.31	-285.30	294.64	409.28	1.81	-1.40	2.43	
1,869.00	27.95	129.11	1,794.57	-294.77	306.29	424.30	0.22	-0.22	0.03	
1,900.00	27.71	129.65	1,821.98	-303.95	317.48	438.77	1.12	-0.77	1.74	
1,931.00	28.10	129.22	1,849.38	-313.17	328.69	453.27	1.42	1.26	-1.39	
1,962.00	27.97	130.06	1,876.74	-322.46	339.91	467.84	1.34	-0.42	2.71	
1,994.00	28.50	129.46	1,904.93	-332.14	351.54	482.98	1.88	1.66	-1.88	
2,023.00	29.05	130.14	1,930.35	-341.08	362.27	496.94	2.21	1.90	2.34	
2,054.00	29.58	130.41	1,957.38	-350.89	373.85	512.11	1.76	1.71	0.87	
2,085.00	30.34	131.25	1,984.24	-361.01	385.56	527.59	2.80	2.45	2.71	
2,117.00	31.00	131.09	2,011.76	-371.76	397.85	543.92	2.08	2.06	-0.50	
2,148.00	31.22	131.08	2,038.30	-382.28	409.92	559.93	0.71	0.71	-0.03	
2,180.00	30.77	131.47	2,065.74	-393.16	422.31	576.41	1.54	-1.41	1.22	
2,212.00	30.50	131.33	2,093.27	-403.94	434.54	592.71	0.87	-0.84	-0.44	
2,244.00	30.53	131.32	2,120.84	-414.67	446.74	608.96	0.10	0.09	-0.03	
2,276.00	30.30	130.74	2,148.43	-425.30	458.96	625.16	1.17	-0.72	-1.81	
2,307.00	30.14	128.59	2,175.22	-435.26	470.97	640.76	3.53	-0.52	-6.94	
2,339.00	30.03	130.02	2,202.91	-445.42	483.38	656.79	2.27	-0.34	4.47	
2,371.00	29.81	129.72	2,230.65	-455.65	495.63	672.75	0.83	-0.69	-0.94	
2,402.00	29.45	129.14	2,257.59	-465.39	507.47	688.08	1.48	-1.16	-1.87	
2,434.00	29.11	128.91	2,285.50	-475.24	519.63	703.72	1.12	-1.06	-0.72	
2,466.00	29.16	128.76	2,313.45	-485.01	531.76	719.30	0.28	0.16	-0.47	
2,497.00	29.89	127.18	2,340.43	-494.41	543.81	734.56	3.44	2.35	-5.10	
2,528.00	30.20	126.72	2,367.26	-503.74	556.21	750.05	1.25	1.00	-1.48	
2,559.99	30.68	126.64	2,394.85	-513.42	569.21	766.23	1.51	1.50	-0.25	
2,590.99	30.73	126.94	2,421.51	-522.90	581.89	782.03	0.52	0.16	0.97	
2,621.99	30.84	126.51	2,448.14	-532.39	594.60	797.86	0.79	0.35	-1.39	
2,653.99	31.09	126.78	2,475.58	-542.22	607.82	814.29	0.89	0.78	0.84	
2,685.99	31.23	127.28	2,502.96	-552.19	621.03	830.82	0.92	0.44	1.56	
2,717.99	31.43	127.77	2,530.29	-562.32	634.23	847.44	1.01	0.63	1.53	
2,748.99	31.55	127.38	2,556.73	-572.20	647.06	863.61	0.76	0.39	-1.26	
2,779.99	31.53	127.52	2,583.15	-582.06	659.94	879.81	0.24	-0.06	0.45	
2,810.99	31.74	127.81	2,609.54	-591.99	672.81	896.05	0.84	0.68	0.94	
2,842.99	31.74	128.04	2,636.76	-602.34	686.09	912.87	0.38	0.00	0.72	
2,874.99	32.17	128.54	2,663.91	-612.83	699.38	929.79	1.58	1.34	1.56	
2,904.99	32.25	128.60	2,689.29	-622.80	711.88	945.77	0.29	0.27	0.20	
2,936.99	31.85	128.63	2,716.41	-633.40	725.15	962.75	1.25	-1.25	0.09	
2,967.99	31.38	128.77	2,742.81	-643.56	737.83	978.99	1.53	-1.52	0.45	
2,999.99	31.14	128.69	2,770.17	-653.95	750.79	995.59	0.76	-0.75	-0.25	

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## Survey Report

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Site:	SEC 20-T33N-R8W	MD Reference:	DFE-- @ 7162.99usft
Well:	Bullseye #11	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Rockies Compass Server

### 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)
3,030.99	30.88	128.68	2,796.74	-663.93	763.25	1,011.55	0.84	-0.84	-0.03
3,061.99	30.56	128.64	2,823.39	-673.83	775.62	1,027.38	1.03	-1.03	-0.13
3,092.99	29.99	128.68	2,850.16	-683.59	787.82	1,043.00	1.84	-1.84	0.13
3,155.99	29.10	129.07	2,904.97	-703.09	812.01	1,074.06	1.45	-1.41	0.62
3,218.99	27.57	128.56	2,960.42	-721.83	835.30	1,103.95	2.46	-2.43	-0.81
3,281.99	26.95	127.81	3,016.42	-739.67	857.98	1,132.78	1.13	-0.98	-1.19
3,345.99	26.99	126.60	3,073.46	-757.22	881.10	1,161.76	0.86	0.06	-1.89
3,408.99	26.97	126.70	3,129.60	-774.28	904.03	1,190.28	0.08	-0.03	0.16
3,471.99	26.71	128.64	3,185.82	-791.66	926.54	1,218.69	1.45	-0.41	3.08
3,535.99	26.74	128.68	3,242.98	-809.64	949.02	1,247.46	0.05	0.05	0.06
3,599.99	25.59	131.25	3,300.42	-827.75	970.65	1,275.67	2.52	-1.80	4.02
3,661.99	24.15	133.19	3,356.67	-845.26	989.97	1,301.73	2.67	-2.32	3.13
3,725.99	22.89	133.64	3,415.35	-862.81	1,008.52	1,327.23	1.99	-1.97	0.70
3,788.99	22.84	132.79	3,473.40	-879.58	1,026.36	1,351.68	0.53	-0.08	-1.35
3,852.99	22.55	131.62	3,532.45	-896.16	1,044.65	1,376.36	0.84	-0.45	-1.83
3,915.99	22.63	131.06	3,590.61	-912.15	1,062.82	1,400.56	0.36	0.13	-0.89
3,979.99	22.58	130.69	3,649.70	-928.25	1,081.42	1,425.16	0.24	-0.08	-0.58
4,042.99	22.91	130.62	3,707.80	-944.12	1,099.90	1,449.51	0.53	0.52	-0.11
4,090.99	23.93	129.49	3,751.84	-956.39	1,114.50	1,468.59	2.32	2.13	-2.35
4,091.00	23.93	129.49	3,751.85	-956.39	1,114.51	1,468.59	0.01	0.00	0.00
Last SDI Production MWD									
4,149.99	25.18	128.10	3,805.51	-971.74	1,133.62	1,493.10	2.33	2.12	-2.36
Bullseye #11 BHL - Bullseye #11 South HL									

### Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
175.00	175.00	-0.04	0.02	First SDI Surface MWD
769.00	764.73	-43.71	35.69	Last SDI Surface MWD
847.00	840.79	-57.86	45.64	First SDI Production MWD
4,091.00	3,751.85	-956.39	1,114.51	Last SDI Production MWD
4,150.00				Projection to TD

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