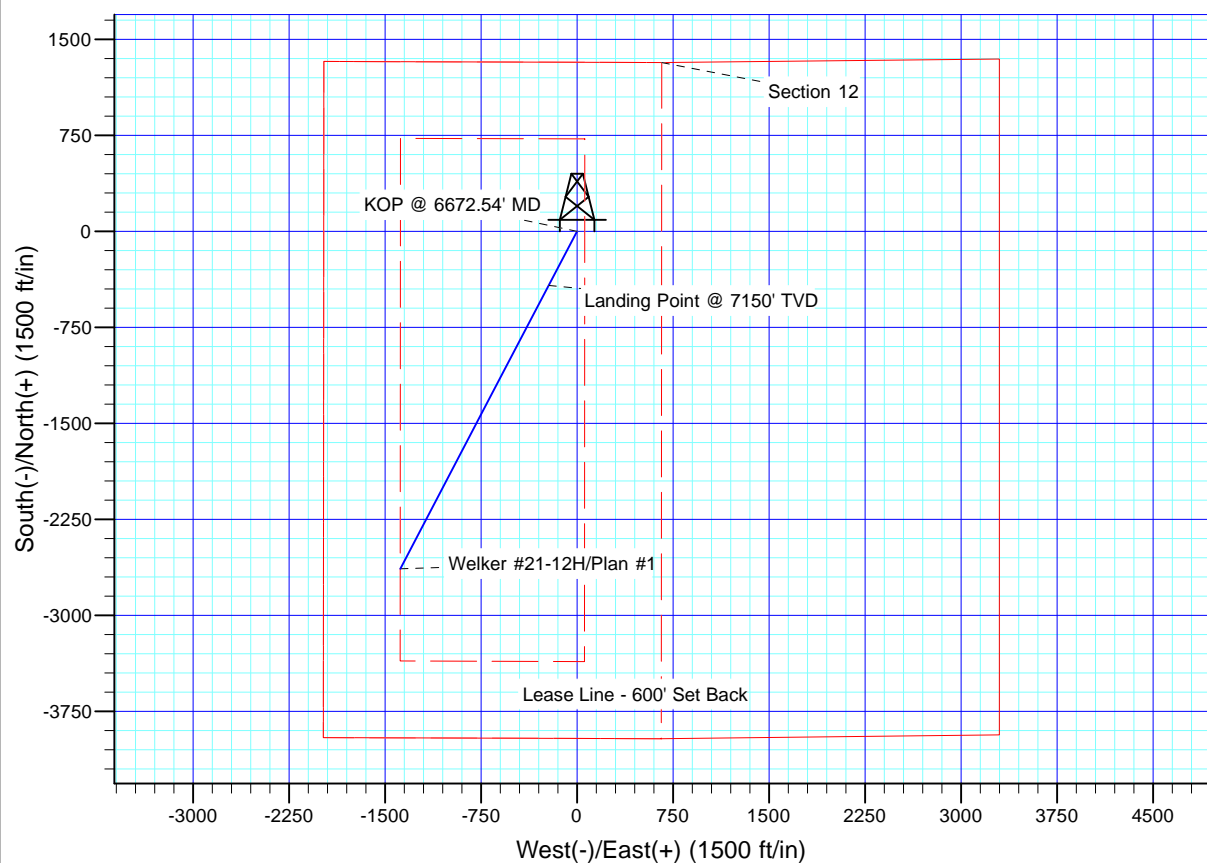
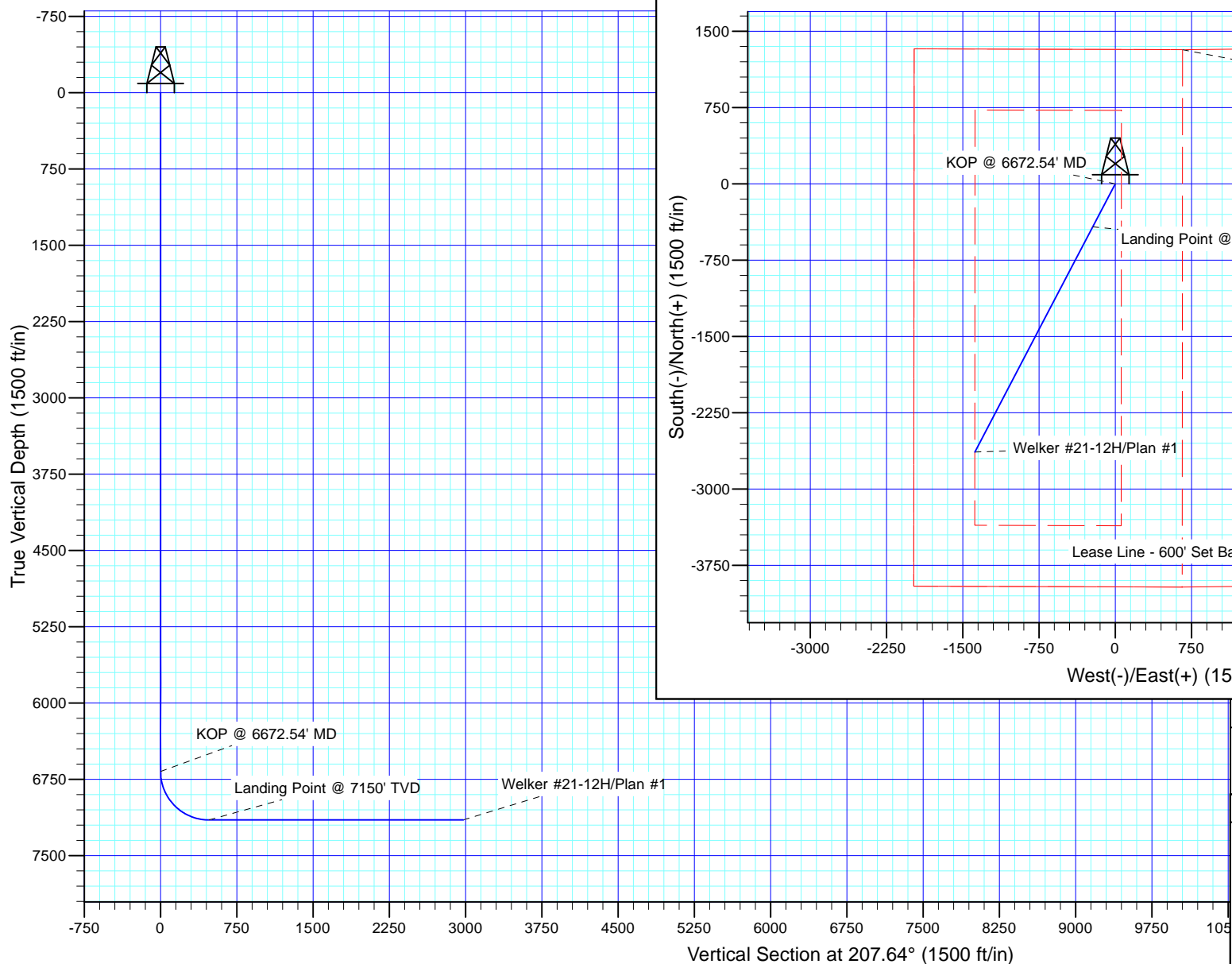


WELL DETAILS: Welker #21-12H

+N/-S	+E/-W	Northing	Ground Level: Easting	6437.00 Latitude	Longitude	Slot
0.00	0.00	1428334.53	2396403.46	40° 29' 20.050 N	107° 40' 13.060 W	



Plan: Plan #1 (Welker #21-12H/OH)

Created By: Janie Cooke Date: 14:14, April 02 2012

PROJECT DETAILS: Moffat County, CO NAD83

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone

System Datum: Mean Sea Level

Quicksilver Resources, Inc.

Moffat County, CO NAD83

Welker

Welker #21-12H

OH

Plan: Plan #1

Standard Planning Report

02 April, 2012



Database:	EDM-R5000-JanieCooke-Local	Local Co-ordinate Reference:	Well Welker #21-12H
Company:	Quicksilver Resources, Inc.	TVD Reference:	WELL @ 6437.00ft (Original Well Elev)
Project:	Moffat County, CO NAD83	MD Reference:	WELL @ 6437.00ft (Original Well Elev)
Site:	Welker	North Reference:	True
Well:	Welker #21-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Moffat County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Welker			
Site Position:		Northing:	1,428,334.53 usft	Latitude:	40° 29' 20.050 N
From:	Lat/Long	Easting:	2,396,403.46 usft	Longitude:	107° 40' 13.060 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.40 °

Well	Welker #21-12H					
Well Position	+N/-S	0.00 ft	Northing:	1,428,334.53 usft	Latitude:	40° 29' 20.050 N
	+E/-W	0.00 ft	Easting:	2,396,403.46 usft	Longitude:	107° 40' 13.060 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	6,437.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	03/30/2012	10.23	66.59	52,743

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	207.64

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,672.54	0.00	0.00	6,672.54	0.00	0.00	0.00	0.00	0.00	0.00	
7,422.54	90.00	207.64	7,150.00	-422.97	-221.51	12.00	12.00	-20.31	207.64	
9,923.09	90.00	207.64	7,150.00	-2,638.14	-1,381.60	0.00	0.00	0.00	0.00	Welker #21-12H Targ

Database: EDM-R5000-JanieCooke-Local
Company: Quicksilver Resources, Inc.
Project: Moffat County, CO NAD83
Site: Welker
Well: Welker #21-12H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Welker #21-12H
 WELL @ 6437.00ft (Original Well Elev)
 WELL @ 6437.00ft (Original Well Elev)
 True
 Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	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
300.00	0.00	0.00	300.00	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
500.00	0.00	0.00	500.00	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
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	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
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Mesaverde									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
Mancos									
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00

Database: EDM-R5000-JanieCooke-Local
Company: Quicksilver Resources, Inc.
Project: Moffat County, CO NAD83
Site: Welker
Well: Welker #21-12H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Welker #21-12H
TVD Reference: WELL @ 6437.00ft (Original Well Elev)
MD Reference: WELL @ 6437.00ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,550.00	0.00	0.00	6,550.00	0.00	0.00	0.00	0.00	0.00	0.00
Niobrara									
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,672.54	0.00	0.00	6,672.54	0.00	0.00	0.00	0.00	0.00	0.00
KOP @ 6672.54' MD									
6,700.00	3.30	207.64	6,699.99	-0.70	-0.37	0.79	12.00	12.00	0.00
6,800.00	15.30	207.64	6,798.49	-14.98	-7.85	16.91	12.00	12.00	0.00
6,900.00	27.30	207.64	6,891.49	-47.10	-24.66	53.16	12.00	12.00	0.00
7,000.00	39.30	207.64	6,974.93	-95.64	-50.09	107.96	12.00	12.00	0.00
7,033.38	43.30	207.64	7,000.00	-115.15	-60.30	129.98	12.00	12.00	0.00
Buck Peak									
7,100.00	51.30	207.64	7,045.14	-158.48	-83.00	178.90	12.00	12.00	0.00
7,200.00	63.30	207.64	7,099.08	-232.89	-121.97	262.90	12.00	12.00	0.00
7,300.00	75.30	207.64	7,134.37	-315.60	-165.28	356.27	12.00	12.00	0.00
7,400.00	87.30	207.64	7,149.47	-403.01	-211.06	454.93	12.00	12.00	0.00
7,422.54	90.00	207.64	7,150.00	-422.97	-221.51	477.46	12.00	12.00	0.00
Landing Point @ 7150' TVD									
7,500.00	90.00	207.64	7,150.00	-491.59	-257.45	554.92	0.00	0.00	0.00
7,600.00	90.00	207.64	7,150.00	-580.18	-303.84	654.92	0.00	0.00	0.00
7,700.00	90.00	207.64	7,150.00	-668.76	-350.24	754.92	0.00	0.00	0.00
7,800.00	90.00	207.64	7,150.00	-757.35	-396.63	854.92	0.00	0.00	0.00
7,900.00	90.00	207.64	7,150.00	-845.94	-443.02	954.92	0.00	0.00	0.00
8,000.00	90.00	207.64	7,150.00	-934.53	-489.42	1,054.92	0.00	0.00	0.00
8,100.00	90.00	207.64	7,150.00	-1,023.11	-535.81	1,154.92	0.00	0.00	0.00
8,200.00	90.00	207.64	7,150.00	-1,111.70	-582.20	1,254.92	0.00	0.00	0.00
8,300.00	90.00	207.64	7,150.00	-1,200.29	-628.60	1,354.92	0.00	0.00	0.00
8,400.00	90.00	207.64	7,150.00	-1,288.87	-674.99	1,454.92	0.00	0.00	0.00
8,500.00	90.00	207.64	7,150.00	-1,377.46	-721.38	1,554.92	0.00	0.00	0.00
8,600.00	90.00	207.64	7,150.00	-1,466.05	-767.78	1,654.92	0.00	0.00	0.00
8,700.00	90.00	207.64	7,150.00	-1,554.63	-814.17	1,754.92	0.00	0.00	0.00
8,800.00	90.00	207.64	7,150.00	-1,643.22	-860.56	1,854.92	0.00	0.00	0.00
8,900.00	90.00	207.64	7,150.00	-1,731.81	-906.96	1,954.92	0.00	0.00	0.00
9,000.00	90.00	207.64	7,150.00	-1,820.40	-953.35	2,054.92	0.00	0.00	0.00
9,100.00	90.00	207.64	7,150.00	-1,908.98	-999.74	2,154.92	0.00	0.00	0.00
9,200.00	90.00	207.64	7,150.00	-1,997.57	-1,046.14	2,254.92	0.00	0.00	0.00
9,300.00	90.00	207.64	7,150.00	-2,086.16	-1,092.53	2,354.92	0.00	0.00	0.00
9,400.00	90.00	207.64	7,150.00	-2,174.74	-1,138.92	2,454.92	0.00	0.00	0.00
9,500.00	90.00	207.64	7,150.00	-2,263.33	-1,185.32	2,554.92	0.00	0.00	0.00
9,600.00	90.00	207.64	7,150.00	-2,351.92	-1,231.71	2,654.92	0.00	0.00	0.00

Database:	EDM-R5000-JanieCooke-Local	Local Co-ordinate Reference:	Well Welker #21-12H
Company:	Quicksilver Resources, Inc.	TVD Reference:	WELL @ 6437.00ft (Original Well Elev)
Project:	Moffat County, CO NAD83	MD Reference:	WELL @ 6437.00ft (Original Well Elev)
Site:	Welker	North Reference:	True
Well:	Welker #21-12H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,700.00	90.00	207.64	7,150.00	-2,440.50	-1,278.10	2,754.92	0.00	0.00	0.00
9,800.00	90.00	207.64	7,150.00	-2,529.09	-1,324.50	2,854.92	0.00	0.00	0.00
9,900.00	90.00	207.64	7,150.00	-2,617.68	-1,370.89	2,954.92	0.00	0.00	0.00
9,923.09	90.00	207.64	7,150.00	-2,638.14	-1,381.60	2,978.02	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Welker #21-12H Target	0.00	0.00	7,150.00	-2,638.14	-1,381.60	1,425,731.00	2,394,957.71	40° 28' 53.980 N	107° 40' 30.940 W
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,000.00	1,000.00	Mesaverde		0.00		
3,400.00	3,400.00	Mancos		0.00		
6,550.00	6,550.00	Niobrara		0.00		
7,033.38	7,000.00	Buck Peak		0.00		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,672.54	6,672.54	0.00	0.00	KOP @ 6672.54' MD
7,422.54	7,150.00	-423.30	-220.88	Landing Point @ 7150' TVD