

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 10-T1N-R67W

JZM 29C-3HZ

Plan A

Plan: Rev A0 Permit

Sperry Drilling Services

Proposal Report

21 January, 2014

Well Coordinates: 1,265,034.97 N, 3,173,383.93 E (40° 03' 33.29" N, 104° 52' 50.04" W)

Ground Level: 5,078.00 usft

Local Coordinate Origin:

Centered on Well JZM 29C-3HZ

Viewing Datum:

RKB = 17' @ 5095.00usft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 10-T1N-R67W
 Well: JZM 29C-3HZ
 Wellbore: Plan A
 Design: Rev A0 Permit

Anadarko Petroleum Corp.

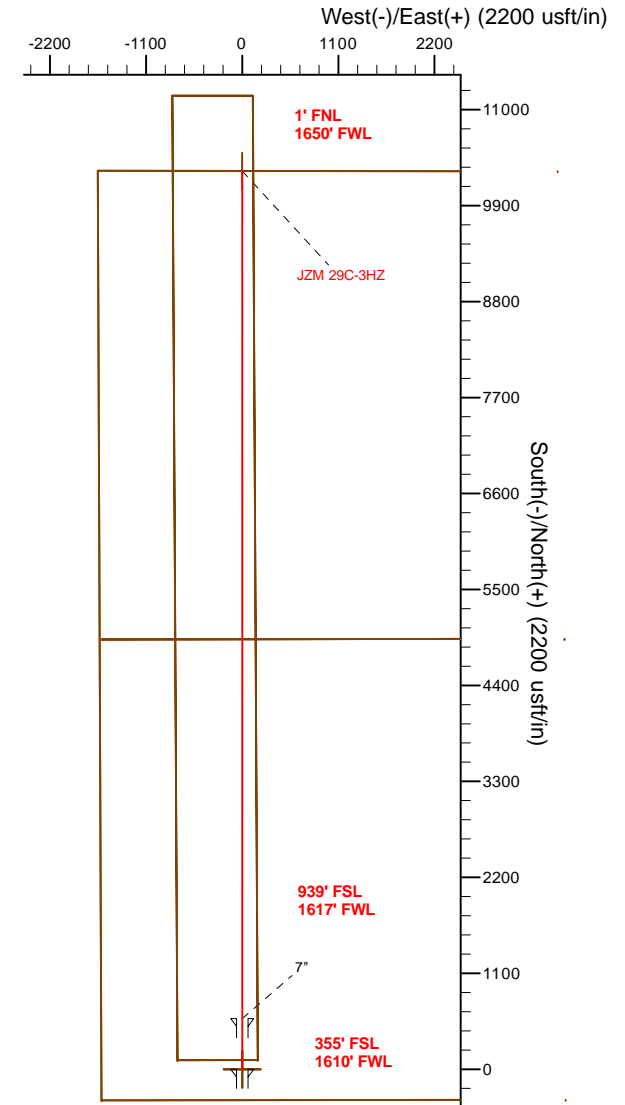
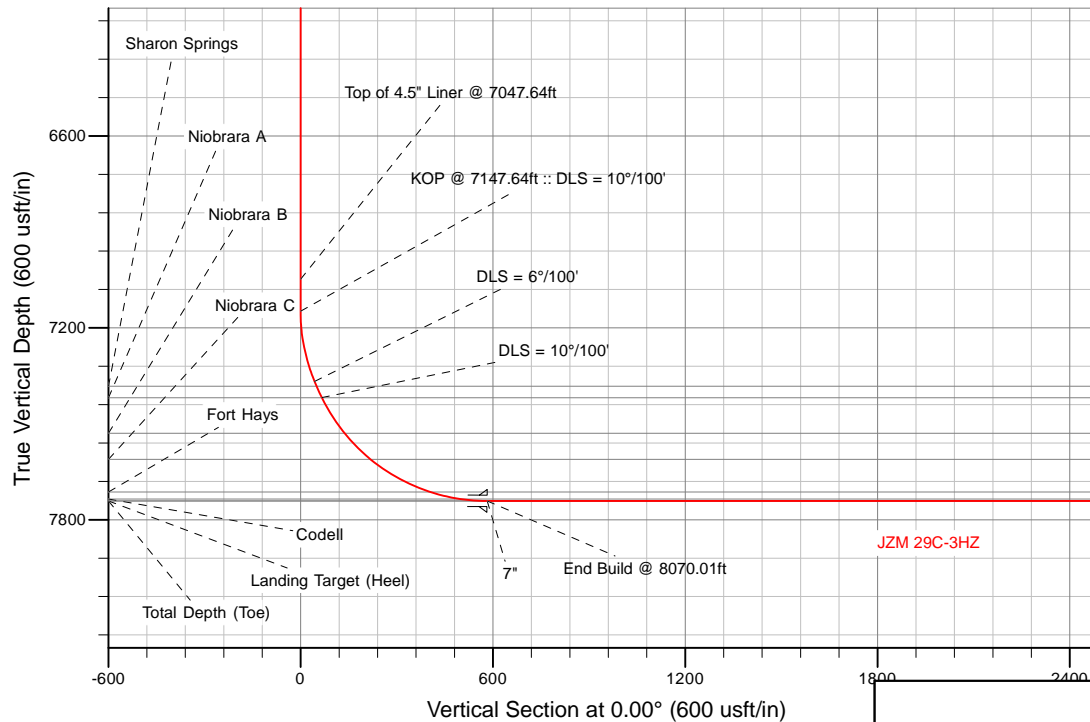


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	7147.64	0.00	0.00	7147.64	0.00	0.00	0.00	0.00	0.00	
3	7372.75	22.51	0.00	7367.00	43.65	0.00	10.00	0.00	43.65	
4	7428.66	25.87	0.00	7418.00	66.56	0.00	6.00	0.00	66.56	
5	8070.01	90.00	0.00	7741.00	582.12	0.00	10.00	0.00	582.12	
6	17784.93	90.00	0.00	7741.00	10297.05	0.00	0.00	0.00	10297.05	

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
JZM 29C-3HZ_LD	0.00	0.00	0.00	40.059248	-104.880568	Polygon
JZM 29C-3HZ_SEC	0.00	0.00	0.00	40.059248	-104.880568	
JZM 29C-3HZ_SHL	0.00	0.00	0.00	40.059248	-104.880568	
JZM 29C-3HZ_BHL	7741.00	10297.05	-0.84	40.087514	-104.880571	



TVD	MD	Description
7047.64	7047.64	Top of 4.5" Liner @ 7047.64ft
7147.64	7147.64	KOP @ 7147.64ft :: DLS = 10°/100'

WELL DETAILS: JZM 29C-3HZ

Ground Level: 5078.00

RKB = 17' @ 5095.00usft (Drilling Rig)

Plan: Rev A0 Permit (JZM 29C-3HZ/Plan A)

Created By: Clint Eshelman Date: 1/21/2013
 Reviewed: _____ Date: _____

Plan Report for JZM 29C-3HZ - Rev A0 Permit

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)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hold 0° INC, 0° AZI @ 0.00ft - JZM 29C-3HZ_SHL - JZM 29C-3HZ_SEC - JZM 29C-3HZ_LD										
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
500.00	0.00	0.00	500.00	0.00	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	0.00
700.00	0.00	0.00	700.00	0.00	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	0.00
900.00	0.00	0.00	900.00	0.00	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	0.00
1,100.00	0.00	0.00	1,100.00	0.00	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	0.00
1,229.00	0.00	0.00	1,229.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker										
1,279.00	0.00	0.00	1,279.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
1,300.00	0.00	0.00	1,300.00	0.00	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	0.00
1,500.00	0.00	0.00	1,500.00	0.00	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	0.00
1,700.00	0.00	0.00	1,700.00	0.00	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	0.00
1,900.00	0.00	0.00	1,900.00	0.00	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	0.00
2,100.00	0.00	0.00	2,100.00	0.00	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	0.00
2,300.00	0.00	0.00	2,300.00	0.00	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	0.00
2,500.00	0.00	0.00	2,500.00	0.00	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	0.00
2,700.00	0.00	0.00	2,700.00	0.00	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	0.00
2,900.00	0.00	0.00	2,900.00	0.00	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	0.00
3,100.00	0.00	0.00	3,100.00	0.00	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	0.00
3,300.00	0.00	0.00	3,300.00	0.00	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	0.00
3,500.00	0.00	0.00	3,500.00	0.00	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	0.00
3,700.00	0.00	0.00	3,700.00	0.00	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	0.00
3,900.00	0.00	0.00	3,900.00	0.00	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	0.00
4,100.00	0.00	0.00	4,100.00	0.00	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	0.00
4,300.00	0.00	0.00	4,300.00	0.00	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	0.00
4,500.00	0.00	0.00	4,500.00	0.00	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	0.00
4,700.00	0.00	0.00	4,700.00	0.00	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	0.00
4,900.00	0.00	0.00	4,900.00	0.00	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	0.00
5,085.00	0.00	0.00	5,085.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sussex										

Plan Report for JZM 29C-3HZ - Rev A0 Permit

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)	Tooface Azimuth (°)
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,222.00	0.00	0.00	5,222.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shannon										
5,300.00	0.00	0.00	5,300.00	0.00	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	0.00
5,500.00	0.00	0.00	5,500.00	0.00	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	0.00
5,700.00	0.00	0.00	5,700.00	0.00	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	0.00
5,900.00	0.00	0.00	5,900.00	0.00	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	0.00
6,100.00	0.00	0.00	6,100.00	0.00	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	0.00
6,300.00	0.00	0.00	6,300.00	0.00	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	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,047.64	0.00	0.00	7,047.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 7047.64ft										
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,147.64	0.00	0.00	7,147.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP @ 7147.64ft :: DLS = 10°/100'										
7,200.00	5.24	0.00	7,199.93	2.39	0.00	2.39	10.00	10.00	0.00	0.00
7,300.00	15.24	0.00	7,298.21	20.14	0.00	20.14	10.00	10.00	0.00	0.00
7,372.75	22.51	0.00	7,367.00	43.66	0.00	43.66	10.00	10.00	0.00	0.00
DLS = 6°/100'										
7,389.04	23.49	0.00	7,382.00	50.02	0.00	50.02	6.00	6.00	0.00	0.00
Sharon Springs										
7,400.00	24.15	0.00	7,392.02	54.45	0.00	54.45	6.00	6.00	0.00	0.00
7,428.66	25.87	0.00	7,418.00	66.56	0.00	66.56	6.00	6.00	0.00	0.00
DLS = 10°/100' - Niobrara A										
7,500.00	33.00	0.00	7,480.09	101.59	0.00	101.59	10.00	10.00	0.00	0.00
7,560.50	39.05	0.00	7,529.00	137.16	0.00	137.16	10.00	10.00	0.00	0.00
Niobrara B										
7,600.00	43.00	0.00	7,558.79	163.08	0.00	163.08	10.00	10.00	0.00	0.00
7,676.35	50.63	0.00	7,611.00	218.71	0.00	218.71	10.00	10.00	0.00	0.00
Niobrara C										
7,700.00	53.00	0.00	7,625.62	237.30	0.00	237.30	10.00	10.00	0.00	0.00
7,800.00	63.00	0.00	7,678.55	322.00	0.00	322.00	10.00	10.00	0.00	0.00
7,890.15	72.01	0.00	7,713.00	405.20	0.00	405.20	10.00	10.00	0.00	0.00
Fort Hays										
7,900.00	73.00	0.00	7,715.96	414.60	0.00	414.60	10.00	10.00	0.00	0.00
7,987.03	81.70	0.00	7,735.00	499.43	0.00	499.43	10.00	10.00	0.00	0.00
Codell										
8,000.00	83.00	0.00	7,736.73	512.29	0.00	512.29	10.00	10.00	0.00	0.00
8,070.01	90.00	0.00	7,741.00	582.12	0.00	582.12	10.00	10.00	0.00	0.00
End Build @ 8070.01ft - Landing Target (Heel) - 7"										
8,100.00	90.00	0.00	7,741.00	612.11	0.00	612.11	0.00	0.00	0.00	0.00
8,200.00	90.00	0.00	7,741.00	712.11	0.00	712.11	0.00	0.00	0.00	0.00
8,300.00	90.00	0.00	7,741.00	812.11	0.00	812.11	0.00	0.00	0.00	0.00
8,400.00	90.00	0.00	7,741.00	912.11	0.00	912.11	0.00	0.00	0.00	0.00
8,500.00	90.00	0.00	7,741.00	1,012.11	0.00	1,012.11	0.00	0.00	0.00	0.00
8,600.00	90.00	0.00	7,741.00	1,112.11	0.00	1,112.11	0.00	0.00	0.00	0.00

Plan Report for JZM 29C-3HZ - Rev A0 Permit

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)	Toolface Azimuth (°)
8,700.00	90.00	0.00	7,741.00	1,212.11	0.00	1,212.11	0.00	0.00	0.00	0.00
8,800.00	90.00	0.00	7,741.00	1,312.11	0.00	1,312.11	0.00	0.00	0.00	0.00
8,900.00	90.00	0.00	7,741.00	1,412.11	0.00	1,412.11	0.00	0.00	0.00	0.00
9,000.00	90.00	0.00	7,741.00	1,512.11	0.00	1,512.11	0.00	0.00	0.00	0.00
9,100.00	90.00	0.00	7,741.00	1,612.11	0.00	1,612.11	0.00	0.00	0.00	0.00
9,200.00	90.00	0.00	7,741.00	1,712.11	0.00	1,712.11	0.00	0.00	0.00	0.00
9,300.00	90.00	0.00	7,741.00	1,812.11	0.00	1,812.11	0.00	0.00	0.00	0.00
9,400.00	90.00	0.00	7,741.00	1,912.11	0.00	1,912.11	0.00	0.00	0.00	0.00
9,500.00	90.00	0.00	7,741.00	2,012.11	0.00	2,012.11	0.00	0.00	0.00	0.00
9,600.00	90.00	0.00	7,741.00	2,112.11	0.00	2,112.11	0.00	0.00	0.00	0.00
9,700.00	90.00	0.00	7,741.00	2,212.11	0.00	2,212.11	0.00	0.00	0.00	0.00
9,800.00	90.00	0.00	7,741.00	2,312.11	0.00	2,312.11	0.00	0.00	0.00	0.00
9,900.00	90.00	0.00	7,741.00	2,412.11	0.00	2,412.11	0.00	0.00	0.00	0.00
10,000.00	90.00	0.00	7,741.00	2,512.11	0.00	2,512.11	0.00	0.00	0.00	0.00
10,100.00	90.00	0.00	7,741.00	2,612.11	0.00	2,612.11	0.00	0.00	0.00	0.00
10,200.00	90.00	0.00	7,741.00	2,712.11	0.00	2,712.11	0.00	0.00	0.00	0.00
10,300.00	90.00	0.00	7,741.00	2,812.11	0.00	2,812.11	0.00	0.00	0.00	0.00
10,400.00	90.00	0.00	7,741.00	2,912.11	0.00	2,912.11	0.00	0.00	0.00	0.00
10,500.00	90.00	0.00	7,741.00	3,012.11	0.00	3,012.11	0.00	0.00	0.00	0.00
10,600.00	90.00	0.00	7,741.00	3,112.11	0.00	3,112.11	0.00	0.00	0.00	0.00
10,700.00	90.00	0.00	7,741.00	3,212.11	0.00	3,212.11	0.00	0.00	0.00	0.00
10,800.00	90.00	0.00	7,741.00	3,312.11	0.00	3,312.11	0.00	0.00	0.00	0.00
10,900.00	90.00	0.00	7,741.00	3,412.11	0.00	3,412.11	0.00	0.00	0.00	0.00
11,000.00	90.00	0.00	7,741.00	3,512.11	0.00	3,512.11	0.00	0.00	0.00	0.00
11,100.00	90.00	0.00	7,741.00	3,612.11	0.00	3,612.11	0.00	0.00	0.00	0.00
11,200.00	90.00	0.00	7,741.00	3,712.11	0.00	3,712.11	0.00	0.00	0.00	0.00
11,300.00	90.00	0.00	7,741.00	3,812.11	0.00	3,812.11	0.00	0.00	0.00	0.00
11,400.00	90.00	0.00	7,741.00	3,912.11	0.00	3,912.11	0.00	0.00	0.00	0.00
11,500.00	90.00	0.00	7,741.00	4,012.11	0.00	4,012.11	0.00	0.00	0.00	0.00
11,600.00	90.00	0.00	7,741.00	4,112.11	0.00	4,112.11	0.00	0.00	0.00	0.00
11,700.00	90.00	0.00	7,741.00	4,212.11	0.00	4,212.11	0.00	0.00	0.00	0.00
11,800.00	90.00	0.00	7,741.00	4,312.11	0.00	4,312.11	0.00	0.00	0.00	0.00
11,900.00	90.00	0.00	7,741.00	4,412.11	0.00	4,412.11	0.00	0.00	0.00	0.00
12,000.00	90.00	0.00	7,741.00	4,512.11	0.00	4,512.11	0.00	0.00	0.00	0.00
12,100.00	90.00	0.00	7,741.00	4,612.11	0.00	4,612.11	0.00	0.00	0.00	0.00
12,200.00	90.00	0.00	7,741.00	4,712.11	0.00	4,712.11	0.00	0.00	0.00	0.00
12,300.00	90.00	0.00	7,741.00	4,812.11	0.00	4,812.11	0.00	0.00	0.00	0.00
12,400.00	90.00	0.00	7,741.00	4,912.11	0.00	4,912.11	0.00	0.00	0.00	0.00
12,500.00	90.00	0.00	7,741.00	5,012.11	0.00	5,012.11	0.00	0.00	0.00	0.00
12,600.00	90.00	0.00	7,741.00	5,112.11	0.00	5,112.11	0.00	0.00	0.00	0.00
12,700.00	90.00	0.00	7,741.00	5,212.11	0.00	5,212.11	0.00	0.00	0.00	0.00
12,800.00	90.00	0.00	7,741.00	5,312.11	0.00	5,312.11	0.00	0.00	0.00	0.00
12,900.00	90.00	0.00	7,741.00	5,412.11	0.00	5,412.11	0.00	0.00	0.00	0.00
13,000.00	90.00	0.00	7,741.00	5,512.11	0.00	5,512.11	0.00	0.00	0.00	0.00
13,100.00	90.00	0.00	7,741.00	5,612.11	0.00	5,612.11	0.00	0.00	0.00	0.00
13,200.00	90.00	0.00	7,741.00	5,712.11	0.00	5,712.11	0.00	0.00	0.00	0.00
13,300.00	90.00	0.00	7,741.00	5,812.11	0.00	5,812.11	0.00	0.00	0.00	0.00
13,400.00	90.00	0.00	7,741.00	5,912.11	0.00	5,912.11	0.00	0.00	0.00	0.00
13,500.00	90.00	0.00	7,741.00	6,012.11	0.00	6,012.11	0.00	0.00	0.00	0.00
13,600.00	90.00	0.00	7,741.00	6,112.11	0.00	6,112.11	0.00	0.00	0.00	0.00
13,700.00	90.00	0.00	7,741.00	6,212.11	0.00	6,212.11	0.00	0.00	0.00	0.00
13,800.00	90.00	0.00	7,741.00	6,312.11	0.00	6,312.11	0.00	0.00	0.00	0.00
13,900.00	90.00	0.00	7,741.00	6,412.11	0.00	6,412.11	0.00	0.00	0.00	0.00
14,000.00	90.00	0.00	7,741.00	6,512.11	0.00	6,512.11	0.00	0.00	0.00	0.00
14,100.00	90.00	0.00	7,741.00	6,612.11	0.00	6,612.11	0.00	0.00	0.00	0.00
14,200.00	90.00	0.00	7,741.00	6,712.11	0.00	6,712.11	0.00	0.00	0.00	0.00
14,300.00	90.00	0.00	7,741.00	6,812.11	0.00	6,812.11	0.00	0.00	0.00	0.00
14,400.00	90.00	0.00	7,741.00	6,912.11	0.00	6,912.11	0.00	0.00	0.00	0.00
14,500.00	90.00	0.00	7,741.00	7,012.11	0.00	7,012.11	0.00	0.00	0.00	0.00
14,600.00	90.00	0.00	7,741.00	7,112.11	0.00	7,112.11	0.00	0.00	0.00	0.00

Plan Report for JZM 29C-3HZ - Rev A0 Permit

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)	Toolface Azimuth (°)
14,700.00	90.00	0.00	7,741.00	7,212.11	0.00	7,212.11	0.00	0.00	0.00	0.00
14,800.00	90.00	0.00	7,741.00	7,312.11	0.00	7,312.11	0.00	0.00	0.00	0.00
14,900.00	90.00	0.00	7,741.00	7,412.11	0.00	7,412.11	0.00	0.00	0.00	0.00
15,000.00	90.00	0.00	7,741.00	7,512.11	0.00	7,512.11	0.00	0.00	0.00	0.00
15,100.00	90.00	0.00	7,741.00	7,612.11	0.00	7,612.11	0.00	0.00	0.00	0.00
15,200.00	90.00	0.00	7,741.00	7,712.11	0.00	7,712.11	0.00	0.00	0.00	0.00
15,300.00	90.00	0.00	7,741.00	7,812.11	0.00	7,812.11	0.00	0.00	0.00	0.00
15,400.00	90.00	0.00	7,741.00	7,912.11	0.00	7,912.11	0.00	0.00	0.00	0.00
15,500.00	90.00	0.00	7,741.00	8,012.11	0.00	8,012.11	0.00	0.00	0.00	0.00
15,600.00	90.00	0.00	7,741.00	8,112.11	0.00	8,112.11	0.00	0.00	0.00	0.00
15,700.00	90.00	0.00	7,741.00	8,212.11	0.00	8,212.11	0.00	0.00	0.00	0.00
15,800.00	90.00	0.00	7,741.00	8,312.11	0.00	8,312.11	0.00	0.00	0.00	0.00
15,900.00	90.00	0.00	7,741.00	8,412.11	0.00	8,412.11	0.00	0.00	0.00	0.00
16,000.00	90.00	0.00	7,741.00	8,512.11	0.00	8,512.11	0.00	0.00	0.00	0.00
16,100.00	90.00	0.00	7,741.00	8,612.11	0.00	8,612.11	0.00	0.00	0.00	0.00
16,200.00	90.00	0.00	7,741.00	8,712.11	0.00	8,712.11	0.00	0.00	0.00	0.00
16,300.00	90.00	0.00	7,741.00	8,812.11	0.00	8,812.11	0.00	0.00	0.00	0.00
16,400.00	90.00	0.00	7,741.00	8,912.11	0.00	8,912.11	0.00	0.00	0.00	0.00
16,500.00	90.00	0.00	7,741.00	9,012.11	0.00	9,012.11	0.00	0.00	0.00	0.00
16,600.00	90.00	0.00	7,741.00	9,112.11	0.00	9,112.11	0.00	0.00	0.00	0.00
16,700.00	90.00	0.00	7,741.00	9,212.11	0.00	9,212.11	0.00	0.00	0.00	0.00
16,800.00	90.00	0.00	7,741.00	9,312.11	0.00	9,312.11	0.00	0.00	0.00	0.00
16,900.00	90.00	0.00	7,741.00	9,412.11	0.00	9,412.11	0.00	0.00	0.00	0.00
17,000.00	90.00	0.00	7,741.00	9,512.11	0.00	9,512.11	0.00	0.00	0.00	0.00
17,100.00	90.00	0.00	7,741.00	9,612.11	0.00	9,612.11	0.00	0.00	0.00	0.00
17,200.00	90.00	0.00	7,741.00	9,712.11	0.00	9,712.11	0.00	0.00	0.00	0.00
17,300.00	90.00	0.00	7,741.00	9,812.11	0.00	9,812.11	0.00	0.00	0.00	0.00
17,400.00	90.00	0.00	7,741.00	9,912.11	0.00	9,912.11	0.00	0.00	0.00	0.00
17,500.00	90.00	0.00	7,741.00	10,012.11	0.00	10,012.11	0.00	0.00	0.00	0.00
17,600.00	90.00	0.00	7,741.00	10,112.11	0.00	10,112.11	0.00	0.00	0.00	0.00
17,700.00	90.00	0.00	7,741.00	10,212.11	0.00	10,212.11	0.00	0.00	0.00	0.00
17,784.93	90.00	0.00	7,741.00	10,297.04	0.00	10,297.04	0.00	0.00	0.00	0.00

TD Well @ 17784.93ft - Total Depth (Toe) - JZM 29C-3HZ_BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
0.00	0.00	0.00	0.00	Hold 0° INC, 0° AZI @ 0.00ft
7,047.64	7,047.64	0.00	0.00	Top of 4.5" Liner @ 7047.64ft
7,147.64	7,147.64	0.00	0.00	KOP @ 7147.64ft :: DLS = 10°/100'
7,372.75	7,367.00	43.66	0.00	DLS = 6°/100'
7,428.66	7,418.00	66.56	0.00	DLS = 10°/100'
8,070.01	7,741.00	582.12	0.00	End Build @ 8070.01ft
17,784.93	7,741.00	10,297.04	0.00	TD Well @ 17784.93ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	+E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	8,070.01	Rev A0 Permit	MWD

Plan Report for JZM 29C-3HZ - Rev A0 Permit**Survey tool program**

From (usft)	To (usft)	Survey/Plan	Survey Tool
8,070.01	17,784.93	Rev A0 Permit	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,279.00	1,279.00	9 5/8"	9-5/8	13-1/2
8,070.01	7,741.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,229.00	1,229.00	Fox Hills Marker		0.00	
5,085.00	5,085.00	Sussex		0.00	
5,222.00	5,222.00	Shannon		0.00	
7,389.04	7,382.00	Sharon Springs		0.00	
7,428.66	7,418.00	Niobrara A		0.00	
7,560.50	7,529.00	Niobrara B		0.00	
7,676.35	7,611.00	Niobrara C		0.00	
7,890.15	7,713.00	Fort Hays		0.00	
7,987.03	7,735.00	Codell		0.00	
8,070.01	7,741.00	Landing Target (Heel)		0.00	
17,784.93	7,741.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
JZM 29C-3HZ_SHL	0.00	0.00	0.00	Point
JZM 29C-3HZ_SEC	0.00	0.00	0.00	Polygon
JZM 29C-3HZ_LD	0.00	0.00	0.00	Polygon
JZM 29C-3HZ_BHL	7,741.00	10,297.05	-0.84	Point

Directional Difficulty Index

Average Dogleg over Survey:	0.00 °/100usft	Maximum Dogleg over Survey:	0.00 °/100usft at 1.00 usft
Net Tortosity applicable to Plans:	0.00 °/100usft	Directional Difficulty Index:	6.615

Audit Info

North Reference Sheet for Sec. 10-T1N-R67W - JZM 29C-3HZ - Plan A

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
Vertical Depths are relative to RKB = 17' @ 5095.00usft (Drilling Rig). Northing and Easting are relative to JZM 29C-3HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980
Projection method is Lambert Conformal Conic (2 parallel)
Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°
False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99996240

Grid Coordinates of Well: 1,265,034.97 usft N, 3,173,383.93 usft E
Geographical Coordinates of Well: 40° 03' 33.29" N, 104° 52' 50.04" W
Grid Convergence at Surface is: 0.40°

Based upon Minimum Curvature type calculations, at a Measured Depth of 17,784.93usft
the Bottom Hole Displacement is 10,297.04usft in the Direction of 0.00° (True).

Magnetic Convergence at surface is: -8.19° (21 January 2014, , BGGM2013)

Magnetic Model: BGGM2013
Date: 21-Jan-14
Declination: 8.59°
Inclination/Dip: 66.66°
Field Strength: 52585

Grid North is 0.40° East of True North (Grid Convergence)
Magnetic North is 8.59° East of True North (Magnetic Declination)
Magnetic North is 8.19° East of Grid North (Magnetic Convergence)

To convert a True Direction to a Grid Direction, Subtract 0.40°
To convert a Magnetic Direction to a True Direction, Add 8.59° East
To convert a Magnetic Direction to a Grid Direction, Add 8.19°