

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 26-T3N-R68W

DOUTHIT 9C-27HZ

Plan A

Plan: Rev A0 Permit

## Sperry Drilling Services

### Proposal Report

08 April, 2014

Well Coordinates: 1,314,125.11 N, 3,150,258.50 E (40° 11' 39.91" N, 104° 57' 43.63" W)

Ground Level: 4,926.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well DOUTHIT 9C-27HZ

RKB = 17' @ 4943.00usft (Drilling Rig)

N

True

API - US Survey Feet - Custom

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
Site: Sec. 26-T3N-R68W  
Well: DOUTHIT 9C-27HZ  
Wellbore: Plan A  
Design: Rev A0 Permit

# Anadarko Petroleum Corp.

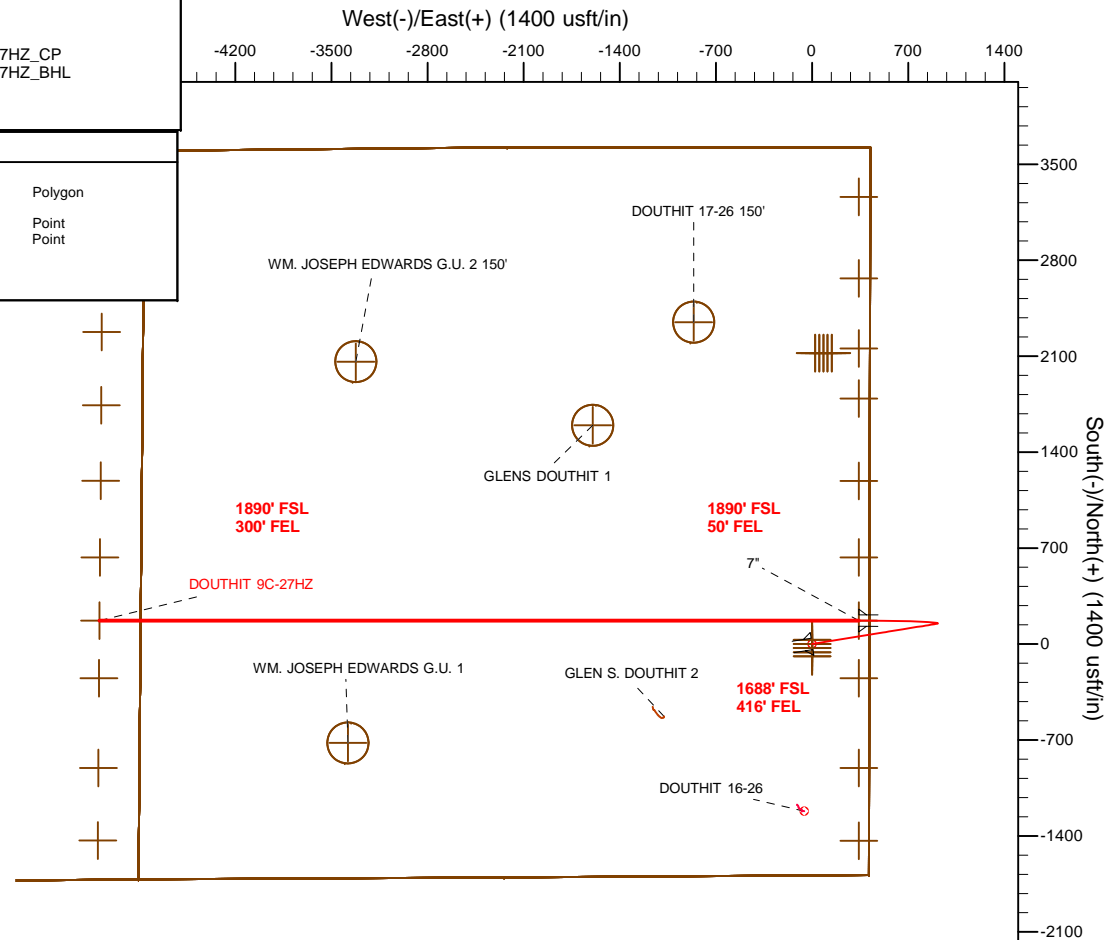
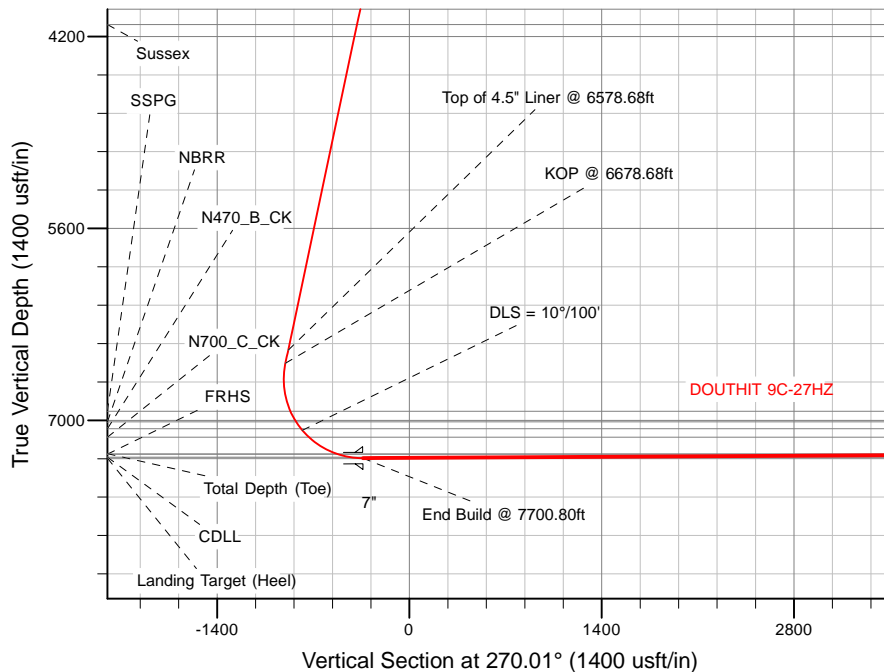
**HALLIBURTON**  
Sperry Drilling

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2602.94	12.06	80.79	2598.50	10.11	62.40	2.00	80.79	-62.40	
4	6678.68	12.06	80.79	6584.30	146.33	902.92	0.00	0.00	-902.90	
5	7700.80	90.31	270.01	7275.00	170.13	339.18	10.00	-170.57	-339.15	DOUTHIT 9C-27HZ_CP
6	13229.26	90.31	270.01	7245.00	170.68	-5189.20	0.00	0.00	5189.23	DOUTHIT 9C-27HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
DOUTHIT 9C-27HZ_SEC	0.00	0.00	0.00	40° 11' 39.908 N	104° 57' 43.632 W	Polygon
DOUTHIT 9C-27HZ_SHL	0.00	0.00	0.00	40° 11' 39.908 N	104° 57' 43.632 W	Polygon
DOUTHIT 9C-27HZ_BHL	7245.00	170.68	-5189.20	40° 11' 41.590 N	104° 58' 50.502 W	Point
DOUTHIT 9C-27HZ_CP	7275.00	170.13	339.18	40° 11' 41.590 N	104° 57' 39.261 W	Point



TVD MD

6486.51 6578.68 Top of 4.5" Liner @ 6578.68ft  
6584.30 6678.68 KOP @ 6678.68ft

WELL DETAILS: DOUTHIT 9C-27HZ

Ground Level: 4926.00

RKB = 17" @ 4943.00usft (Drilling Rig)

Plan: Rev A0 Permit (DOUTHIT 9C-27HZ/Plan A)

Created By: Clint Eshelman Date: 4/8/2014  
Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

**Plan Report for DOUTHIT 9C-27HZ - 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
<b>DOUTHIT 9C-27HZ_SHL - DOUTHIT 9C-27HZ_SEC</b>										
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
1,041.00	0.00	0.00	1,041.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Base</b>										
1,091.00	0.00	0.00	1,091.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
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
1,300.00	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
<b>Begin Nudge @ 2000.00ft</b>										
2,100.00	2.00	80.79	2,099.98	0.28	1.72	-1.72	2.00	2.00	0.00	80.79
2,200.00	4.00	80.79	2,199.84	1.12	6.89	-6.89	2.00	2.00	0.00	0.00
2,300.00	6.00	80.79	2,299.45	2.51	15.49	-15.49	2.00	2.00	0.00	0.00
2,400.00	8.00	80.79	2,398.70	4.46	27.52	-27.52	2.00	2.00	0.00	0.00
2,500.00	10.00	80.79	2,497.47	6.96	42.96	-42.96	2.00	2.00	0.00	0.00
2,600.00	12.00	80.79	2,595.62	10.01	61.80	-61.79	2.00	2.00	0.00	0.00
2,602.94	12.06	80.79	2,598.50	10.11	62.40	-62.40	2.00	2.00	0.00	0.00
<b>End Nudge @ 2602.94ft</b>										
2,700.00	12.06	80.79	2,693.42	13.36	82.42	-82.42	0.00	0.00	0.00	0.00
2,800.00	12.06	80.79	2,791.21	16.70	103.04	-103.04	0.00	0.00	0.00	0.00
2,900.00	12.06	80.79	2,889.00	20.04	123.66	-123.66	0.00	0.00	0.00	0.00
3,000.00	12.06	80.79	2,986.80	23.38	144.29	-144.28	0.00	0.00	0.00	0.00
3,100.00	12.06	80.79	3,084.59	26.72	164.91	-164.90	0.00	0.00	0.00	0.00
3,200.00	12.06	80.79	3,182.38	30.07	185.53	-185.53	0.00	0.00	0.00	0.00
3,300.00	12.06	80.79	3,280.18	33.41	206.15	-206.15	0.00	0.00	0.00	0.00
3,400.00	12.06	80.79	3,377.97	36.75	226.78	-226.77	0.00	0.00	0.00	0.00
3,500.00	12.06	80.79	3,475.76	40.09	247.40	-247.39	0.00	0.00	0.00	0.00
3,600.00	12.06	80.79	3,573.56	43.44	268.02	-268.01	0.00	0.00	0.00	0.00
3,700.00	12.06	80.79	3,671.35	46.78	288.64	-288.64	0.00	0.00	0.00	0.00
3,731.34	12.06	80.79	3,702.00	47.82	295.11	-295.10	0.00	0.00	0.00	0.00
<b>Parkman</b>										
3,800.00	12.06	80.79	3,769.14	50.12	309.27	-309.26	0.00	0.00	0.00	0.00
3,900.00	12.06	80.79	3,866.94	53.46	329.89	-329.88	0.00	0.00	0.00	0.00
4,000.00	12.06	80.79	3,964.73	56.80	350.51	-350.50	0.00	0.00	0.00	0.00
4,100.00	12.06	80.79	4,062.52	60.15	371.13	-371.12	0.00	0.00	0.00	0.00
4,150.59	12.06	80.79	4,112.00	61.84	381.57	-381.56	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,200.00	12.06	80.79	4,160.32	63.49	391.76	-391.75	0.00	0.00	0.00	0.00
4,300.00	12.06	80.79	4,258.11	66.83	412.38	-412.37	0.00	0.00	0.00	0.00
4,400.00	12.06	80.79	4,355.90	70.17	433.00	-432.99	0.00	0.00	0.00	0.00

**Plan Report for DOUTHIT 9C-27HZ - 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 (°)
4,500.00	12.06	80.79	4,453.70	73.51	453.62	-453.61	0.00	0.00	0.00	0.00
4,600.00	12.06	80.79	4,551.49	76.86	474.25	-474.23	0.00	0.00	0.00	0.00
4,700.00	12.06	80.79	4,649.28	80.20	494.87	-494.86	0.00	0.00	0.00	0.00
4,800.00	12.06	80.79	4,747.08	83.54	515.49	-515.48	0.00	0.00	0.00	0.00
4,900.00	12.06	80.79	4,844.87	86.88	536.11	-536.10	0.00	0.00	0.00	0.00
5,000.00	12.06	80.79	4,942.66	90.22	556.74	-556.72	0.00	0.00	0.00	0.00
5,100.00	12.06	80.79	5,040.46	93.57	577.36	-577.34	0.00	0.00	0.00	0.00
5,200.00	12.06	80.79	5,138.25	96.91	597.98	-597.96	0.00	0.00	0.00	0.00
5,300.00	12.06	80.79	5,236.04	100.25	618.60	-618.59	0.00	0.00	0.00	0.00
5,400.00	12.06	80.79	5,333.84	103.59	639.23	-639.21	0.00	0.00	0.00	0.00
5,500.00	12.06	80.79	5,431.63	106.94	659.85	-659.83	0.00	0.00	0.00	0.00
5,600.00	12.06	80.79	5,529.42	110.28	680.47	-680.45	0.00	0.00	0.00	0.00
5,700.00	12.06	80.79	5,627.22	113.62	701.09	-701.07	0.00	0.00	0.00	0.00
5,800.00	12.06	80.79	5,725.01	116.96	721.72	-721.70	0.00	0.00	0.00	0.00
5,900.00	12.06	80.79	5,822.80	120.30	742.34	-742.32	0.00	0.00	0.00	0.00
6,000.00	12.06	80.79	5,920.60	123.65	762.96	-762.94	0.00	0.00	0.00	0.00
6,100.00	12.06	80.79	6,018.39	126.99	783.59	-783.56	0.00	0.00	0.00	0.00
6,200.00	12.06	80.79	6,116.18	130.33	804.21	-804.18	0.00	0.00	0.00	0.00
6,300.00	12.06	80.79	6,213.98	133.67	824.83	-824.81	0.00	0.00	0.00	0.00
6,400.00	12.06	80.79	6,311.77	137.01	845.45	-845.43	0.00	0.00	0.00	0.00
6,500.00	12.06	80.79	6,409.56	140.36	866.08	-866.05	0.00	0.00	0.00	0.00
6,578.68	12.06	80.79	6,486.51	142.99	882.30	-882.28	0.00	0.00	0.00	0.00
<b>Top of 4.5" Liner @ 6578.68ft</b>										
6,600.00	12.06	80.79	6,507.36	143.70	886.70	-886.67	0.00	0.00	0.00	0.00
6,678.68	12.06	80.79	6,584.30	146.33	902.92	-902.90	0.00	0.00	0.00	0.00
<b>KOP @ 6678.68ft</b>										
6,700.00	9.96	78.78	6,605.23	147.04	906.93	-906.91	10.00	-9.84	-9.47	-170.57
6,800.00	1.97	353.29	6,704.70	150.45	915.24	-915.21	10.00	-7.99	-85.49	-168.59
6,900.00	10.42	280.75	6,804.10	153.85	906.13	-906.10	10.00	8.44	-72.54	-83.28
7,000.00	20.32	275.32	6,900.40	157.16	879.89	-879.87	10.00	9.91	-5.43	-10.91
7,035.18	23.83	274.46	6,933.00	158.28	866.72	-866.70	10.00	9.96	-2.44	-5.65
<b>SSPG</b>										
7,100.00	30.29	273.38	6,990.70	160.26	837.32	-837.29	10.00	9.97	-1.68	-4.86
7,122.62	32.55	273.09	7,010.00	160.92	825.55	-825.52	10.00	9.98	-1.26	-3.89
<b>NBRR</b>										
7,185.44	38.82	272.46	7,061.00	162.68	788.97	-788.94	10.00	9.98	-1.01	-3.65
<b>N470_B_CK</b>										
7,200.00	40.27	272.33	7,072.23	163.07	779.71	-779.68	10.00	9.99	-0.84	-3.13
<b>DLS = 10°/100'</b>										
7,268.90	47.15	271.84	7,122.00	164.78	732.16	-732.13	10.00	9.99	-0.72	-3.03
<b>N700_C_CK</b>										
7,300.00	50.26	271.65	7,142.52	165.49	708.80	-708.77	10.00	9.99	-0.61	-2.67
7,400.00	60.25	271.14	7,199.44	167.47	626.76	-626.73	10.00	9.99	-0.51	-2.55
7,500.00	70.24	270.72	7,241.26	168.92	536.08	-536.05	10.00	9.99	-0.42	-2.26
7,514.53	71.70	270.67	7,246.00	169.09	522.34	-522.31	10.00	9.99	-0.38	-2.08
<b>FRHS</b>										
7,600.00	80.24	270.35	7,266.71	169.82	439.50	-439.47	10.00	9.99	-0.36	-2.07
7,607.95	81.03	270.33	7,268.00	169.87	431.66	-431.63	10.00	9.99	-0.35	-1.99
<b>CDLL</b>										
7,700.00	90.23	270.01	7,275.00	170.13	339.98	-339.95	10.00	9.99	-0.34	-1.99
7,700.80	90.31	270.01	7,275.00	170.13	339.18	-339.15	9.99	9.98	-0.34	-1.96
<b>End Build @ 7700.80ft - Landing Target (Heel) - 7" - DOUTHIT 9C-27HZ_CP</b>										
7,800.00	90.31	270.01	7,274.46	170.14	239.98	-239.95	0.00	0.00	0.00	-1.96
7,900.00	90.31	270.01	7,273.92	170.15	139.98	-139.95	0.00	0.00	0.00	0.00
8,000.00	90.31	270.01	7,273.38	170.16	39.98	-39.95	0.00	0.00	0.00	0.00
8,100.00	90.31	270.01	7,272.83	170.17	-60.02	60.05	0.00	0.00	0.00	0.00
8,200.00	90.31	270.01	7,272.29	170.18	-160.02	160.05	0.00	0.00	0.00	0.00
8,300.00	90.31	270.01	7,271.75	170.19	-260.02	260.05	0.00	0.00	0.00	0.00
8,400.00	90.31	270.01	7,271.21	170.20	-360.01	360.04	0.00	0.00	0.00	0.00

**Plan Report for DOUTHIT 9C-27HZ - 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 (°)
8,500.00	90.31	270.01	7,270.66	170.21	-460.01	460.04	0.00	0.00	0.00	0.00
8,600.00	90.31	270.01	7,270.12	170.22	-560.01	560.04	0.00	0.00	0.00	0.00
8,700.00	90.31	270.01	7,269.58	170.23	-660.01	660.04	0.00	0.00	0.00	0.00
8,800.00	90.31	270.01	7,269.04	170.24	-760.01	760.04	0.00	0.00	0.00	0.00
8,900.00	90.31	270.01	7,268.49	170.25	-860.01	860.04	0.00	0.00	0.00	0.00
9,000.00	90.31	270.01	7,267.95	170.26	-960.01	960.03	0.00	0.00	0.00	0.00
9,100.00	90.31	270.01	7,267.41	170.27	-1,060.00	1,060.03	0.00	0.00	0.00	0.00
9,200.00	90.31	270.01	7,266.86	170.28	-1,160.00	1,160.03	0.00	0.00	0.00	0.00
9,300.00	90.31	270.01	7,266.32	170.29	-1,260.00	1,260.03	0.00	0.00	0.00	0.00
9,400.00	90.31	270.01	7,265.78	170.30	-1,360.00	1,360.03	0.00	0.00	0.00	0.00
9,500.00	90.31	270.01	7,265.24	170.31	-1,460.00	1,460.03	0.00	0.00	0.00	0.00
9,600.00	90.31	270.01	7,264.69	170.32	-1,560.00	1,560.03	0.00	0.00	0.00	0.00
9,700.00	90.31	270.01	7,264.15	170.33	-1,659.99	1,660.02	0.00	0.00	0.00	0.00
9,800.00	90.31	270.01	7,263.61	170.34	-1,759.99	1,760.02	0.00	0.00	0.00	0.00
9,900.00	90.31	270.01	7,263.07	170.35	-1,859.99	1,860.02	0.00	0.00	0.00	0.00
10,000.00	90.31	270.01	7,262.52	170.36	-1,959.99	1,960.02	0.00	0.00	0.00	0.00
10,100.00	90.31	270.01	7,261.98	170.37	-2,059.99	2,060.02	0.00	0.00	0.00	0.00
10,200.00	90.31	270.01	7,261.44	170.38	-2,159.99	2,160.02	0.00	0.00	0.00	0.00
10,300.00	90.31	270.01	7,260.90	170.39	-2,259.99	2,260.02	0.00	0.00	0.00	0.00
10,400.00	90.31	270.01	7,260.35	170.40	-2,359.98	2,360.01	0.00	0.00	0.00	0.00
10,500.00	90.31	270.01	7,259.81	170.41	-2,459.98	2,460.01	0.00	0.00	0.00	0.00
10,600.00	90.31	270.01	7,259.27	170.42	-2,559.98	2,560.01	0.00	0.00	0.00	0.00
10,700.00	90.31	270.01	7,258.72	170.43	-2,659.98	2,660.01	0.00	0.00	0.00	0.00
10,800.00	90.31	270.01	7,258.18	170.44	-2,759.98	2,760.01	0.00	0.00	0.00	0.00
10,900.00	90.31	270.01	7,257.64	170.45	-2,859.98	2,860.01	0.00	0.00	0.00	0.00
11,000.00	90.31	270.01	7,257.10	170.46	-2,959.98	2,960.01	0.00	0.00	0.00	0.00
11,100.00	90.31	270.01	7,256.55	170.47	-3,059.97	3,060.00	0.00	0.00	0.00	0.00
11,200.00	90.31	270.01	7,256.01	170.48	-3,159.97	3,160.00	0.00	0.00	0.00	0.00
11,300.00	90.31	270.01	7,255.47	170.49	-3,259.97	3,260.00	0.00	0.00	0.00	0.00
11,400.00	90.31	270.01	7,254.93	170.50	-3,359.97	3,360.00	0.00	0.00	0.00	0.00
11,500.00	90.31	270.01	7,254.38	170.51	-3,459.97	3,460.00	0.00	0.00	0.00	0.00
11,600.00	90.31	270.01	7,253.84	170.52	-3,559.97	3,560.00	0.00	0.00	0.00	0.00
11,700.00	90.31	270.01	7,253.30	170.53	-3,659.97	3,659.99	0.00	0.00	0.00	0.00
11,800.00	90.31	270.01	7,252.76	170.54	-3,759.96	3,759.99	0.00	0.00	0.00	0.00
11,900.00	90.31	270.01	7,252.21	170.54	-3,859.96	3,859.99	0.00	0.00	0.00	0.00
12,000.00	90.31	270.01	7,251.67	170.55	-3,959.96	3,959.99	0.00	0.00	0.00	0.00
12,100.00	90.31	270.01	7,251.13	170.56	-4,059.96	4,059.99	0.00	0.00	0.00	0.00
12,200.00	90.31	270.01	7,250.59	170.57	-4,159.96	4,159.99	0.00	0.00	0.00	0.00
12,300.00	90.31	270.01	7,250.04	170.58	-4,259.96	4,259.99	0.00	0.00	0.00	0.00
12,400.00	90.31	270.01	7,249.50	170.59	-4,359.95	4,359.98	0.00	0.00	0.00	0.00
12,500.00	90.31	270.01	7,248.96	170.60	-4,459.95	4,459.98	0.00	0.00	0.00	0.00
12,600.00	90.31	270.01	7,248.41	170.61	-4,559.95	4,559.98	0.00	0.00	0.00	0.00
12,700.00	90.31	270.01	7,247.87	170.62	-4,659.95	4,659.98	0.00	0.00	0.00	0.00
12,800.00	90.31	270.01	7,247.33	170.63	-4,759.95	4,759.98	0.00	0.00	0.00	0.00
12,900.00	90.31	270.01	7,246.79	170.64	-4,859.95	4,859.98	0.00	0.00	0.00	0.00
13,000.00	90.31	270.01	7,246.24	170.65	-4,959.95	4,959.98	0.00	0.00	0.00	0.00
13,100.00	90.31	270.01	7,245.70	170.66	-5,059.94	5,059.97	0.00	0.00	0.00	0.00
13,200.00	90.31	270.01	7,245.16	170.67	-5,159.94	5,159.97	0.00	0.00	0.00	0.00
13,229.26	90.31	270.01	7,245.00	170.68	-5,189.20	5,189.23	0.00	0.00	0.00	0.00

TD Well @ 13229.26ft - Total Depth (Toe) - DOUTHIT 9C-27HZ\_BHL

## Plan Report for DOUTHIT 9C-27HZ - Rev A0 Permit

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.00	2,000.00	0.00	0.00	Begin Nudge @ 2000.00ft
2,602.94	2,598.50	10.11	62.40	End Nudge @ 2602.94ft
6,578.68	6,486.51	142.99	882.30	Top of 4.5" Liner @ 6578.68ft
6,678.68	6,584.30	146.33	902.92	KOP @ 6678.68ft
7,200.00	7,072.23	163.07	779.71	DLS = 10°/100'
7,700.80	7,275.00	170.13	339.18	End Build @ 7700.80ft
13,229.26	7,245.00	170.68	-5,189.20	TD Well @ 13229.26ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	270.01	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,700.80	Rev A0 Permit	MWD
7,700.80	13,229.26	Rev A0 Permit	MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,091.00	1,091.00	9 5/8"	9-5/8	13-1/2
7,700.80	7,275.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,041.00	1,041.00	Fox Hills Base		0.00	
3,731.34	3,702.00	Parkman		0.00	
4,150.59	4,112.00	Sussex		0.00	
7,035.18	6,933.00	SSPG		0.00	
7,122.62	7,010.00	NBRR		0.00	
7,185.44	7,061.00	N470_B_CK		0.00	
7,268.90	7,122.00	N700_C_CK		0.00	
7,514.53	7,246.00	FRHS		0.00	
7,607.95	7,268.00	CDLL		0.00	
7,700.80	7,275.00	Landing Target (Heel)		0.00	
13,229.26	7,245.00	Total Depth (Toe)		0.00	

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Plan Report for DOUTHIT 9C-27HZ - Rev A0 Permit

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**Targets associated with this wellbore**

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
DOUTHIT 9C-27HZ_SHL	0.00	0.00	0.00	Point
DOUTHIT 9C-27HZ_SEC	0.00	0.00	0.00	Polygon
DOUTHIT 9C-27HZ_BHL	7,245.00	170.68	-5,189.20	Point
DOUTHIT 9C-27HZ_CP	7,275.00	170.13	339.18	Point

**Directional Difficulty Index**

Average Dogleg over Survey:	0.86 °/100usft	Maximum Dogleg over Survey:	10.00 °/100usft at 7,700.80 usft
Net Tortousity applicable to Plans:	0.86 °/100usft	Directional Difficulty Index:	6.343

**Audit Info**

**North Reference Sheet for Sec. 26-T3N-R68W - DOUTHIT 9C-27HZ - 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' @ 4943.00usft (Drilling Rig). Northing and Easting are relative to DOUTHIT 9C-27HZ  
 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° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°  
 False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99995733

Grid Coordinates of Well: 1,314,125.11 usft N, 3,150,258.50 usft E  
 Geographical Coordinates of Well: 40° 11' 39.91" N, 104° 57' 43.63" W  
 Grid Convergence at Surface is: 0.35°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,229.26usft  
 the Bottom Hole Displacement is 5,192.01usft in the Direction of 271.88° ( True).

Magnetic Convergence at surface is: -8.27° ( 8 April 2014, , BGGM2013)

