

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 13-T2N-67W

KERR 14C-25HZ

Plan A0

Plan: Plan A0 Permit

Sperry Drilling Services

Proposal Report

07 August, 2013

Well Coordinates: 1,291,735.05 N, 3,184,103.58 E (40° 07' 56.39" N, 104° 50' 29.63" W)

Ground Level: 4,883.00 ft

Local Coordinate Origin:

Centered on Well KERR 14C-25HZ

Viewing Datum:

RKB = 25' @ 4908.00ft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

HALLIBURTON

Project: Weld County, CO (NAD 83)

Site: Sec. 13-T2N-67W

Well: KERR 14C-25HZ

Wellbore: Plan A0

Design: Plan A0 Permit



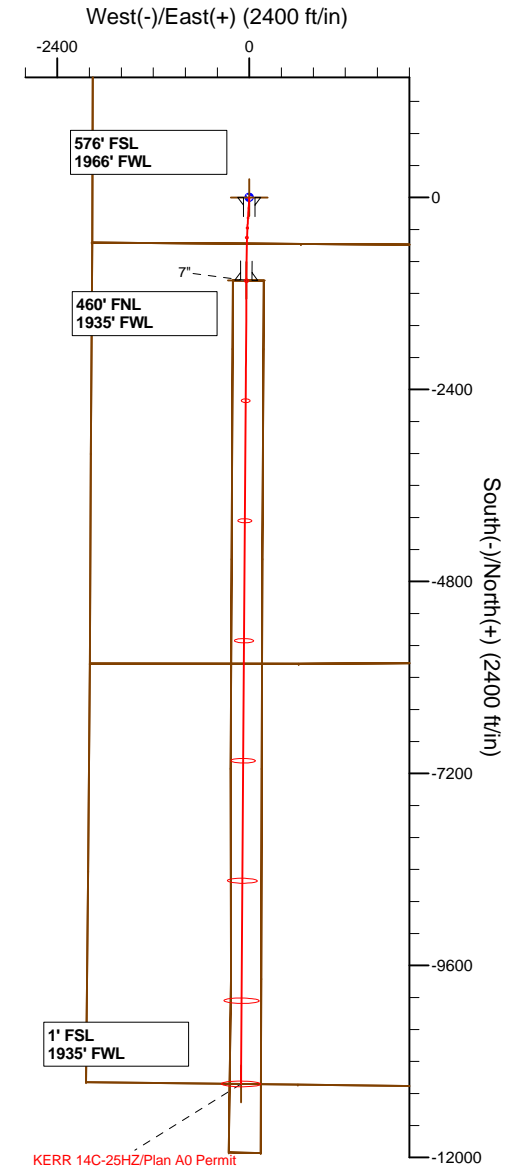
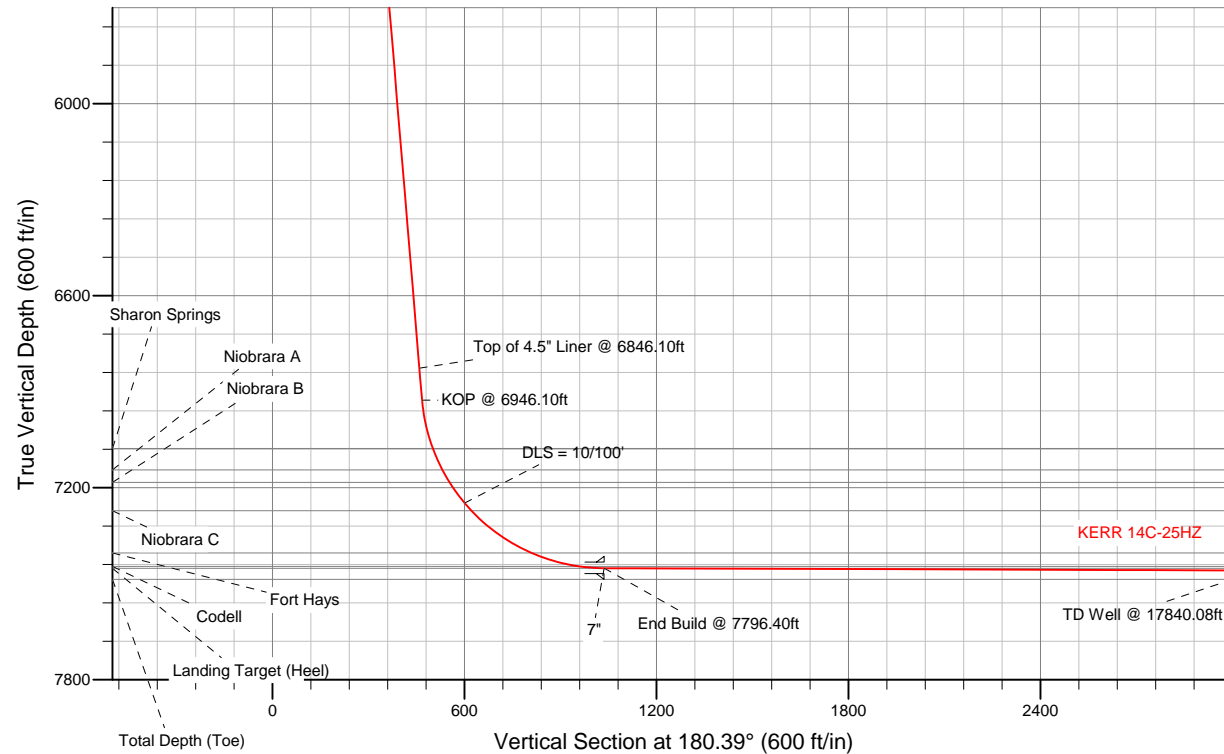
HALLIBURTON
Sperry Drilling

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	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	
3	1438.84	4.78	183.55	1438.56	-9.93	-0.62	2.00	183.55	9.93	
4	6946.10	4.78	183.55	6926.69	-467.66	-28.99	0.00	0.00	467.84	
5	7796.40	89.80	180.39	7452.00	-1036.61	-35.30	10.00	-3.16	1036.82	Kerr 14C-25HZ_CP
6	17840.08	89.80	180.39	7487.00	-11079.98	-104.35	0.00	0.00	11080.43	Kerr 14C-25HZ_BHL

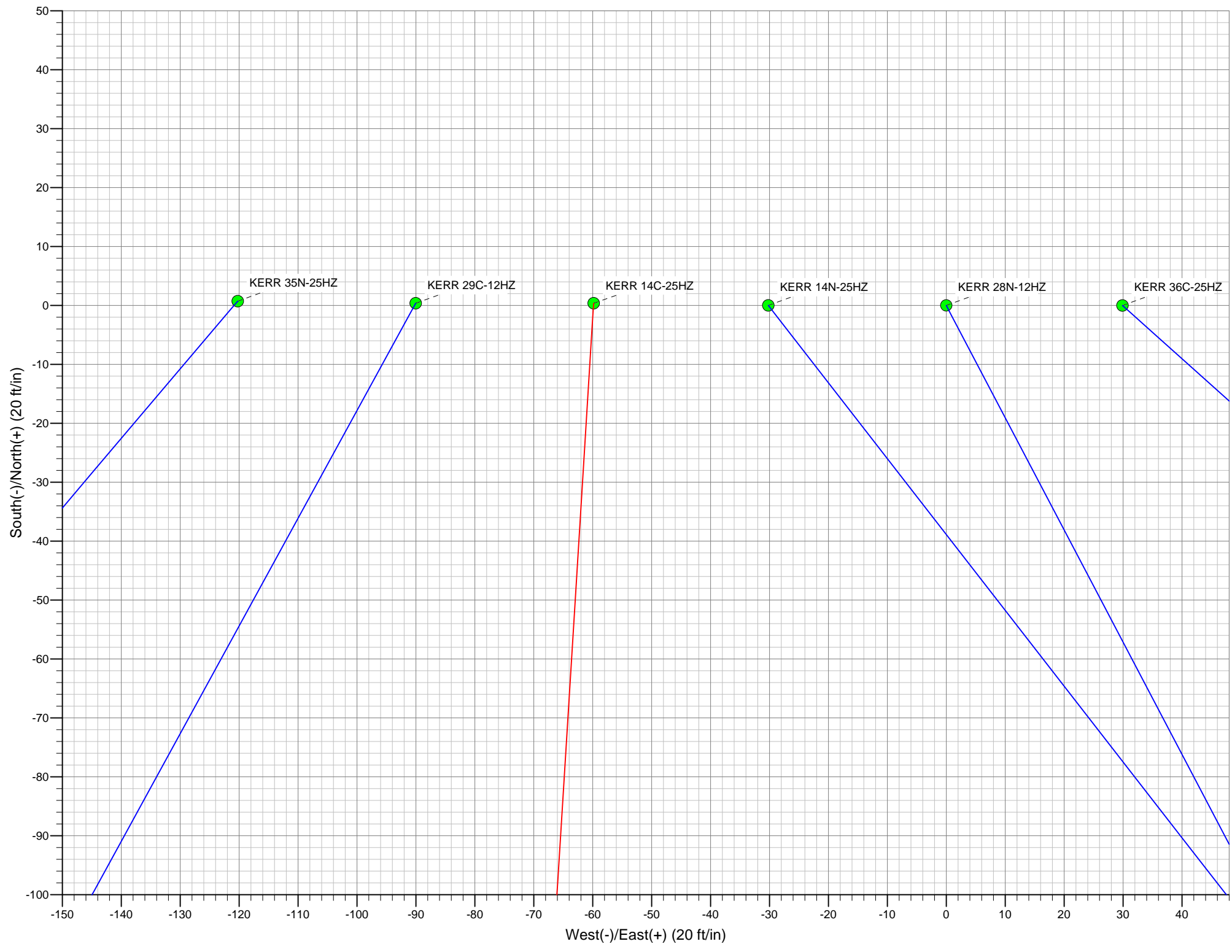
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Kerr 14C-25HZ_LD	0.00	2699.21	659.18	40.139739	-104.839206	Polygon
Kerr 14C-25HZ_SHL	0.00	0.00	0.00	40.132330	-104.841564	Point
Kerr_SEC	0.00	2699.21	659.18	40.139739	-104.839206	Polygon
Kerr 14C-25HZ_CP	7452.00	-1036.61	-35.30	40.129484	-104.841690	Point
Kerr 14C-25HZ_BHL	7487.00	-11079.98	-104.35	40.101915	-104.841937	Point



WELL DETAILS: KERR 14C-25HZ		
Ground Level: 4883.00 RKB = 25' @ 4908.00ft (Drilling Rig)		
Plan: Plan A0 Permit (KERR 14C-25HZ/Plan A0)		
Created By: Clint Eshelman Date: 07/08/2013		

TVD	MD	
6827.04	6846.10	Top of 4.5" Liner @ 6846.10ft
6926.70	6946.10	KOP @ 6946.10ft



Plan Report for KERR 14C-25HZ - Plan A0 Permit

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)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kerr 14C-25HZ_LD - Kerr 14C-25HZ_SHL - Kerr_SEC										
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
367.00	0.00	0.00	367.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base										
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
995.00	0.00	0.00	995.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
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
Begin Nudge @ 1200.00ft										
1,300.00	2.00	183.55	1,299.98	-1.74	-0.11	1.74	2.00	2.00	0.00	183.55
1,400.00	4.00	183.55	1,399.84	-6.97	-0.43	6.97	2.00	2.00	0.00	0.00
1,438.84	4.78	183.55	1,438.56	-9.93	-0.62	9.94	2.00	2.00	0.00	0.00
End Nudge @ 1438.84ft										
1,500.00	4.78	183.55	1,499.51	-15.01	-0.93	15.02	0.00	0.00	0.00	0.00
1,600.00	4.78	183.55	1,599.16	-23.33	-1.45	23.34	0.00	0.00	0.00	0.00
1,700.00	4.78	183.55	1,698.82	-31.64	-1.96	31.65	0.00	0.00	0.00	0.00
1,800.00	4.78	183.55	1,798.47	-39.95	-2.48	39.96	0.00	0.00	0.00	0.00
1,900.00	4.78	183.55	1,898.12	-48.26	-2.99	48.28	0.00	0.00	0.00	0.00
2,000.00	4.78	183.55	1,997.77	-56.57	-3.51	56.59	0.00	0.00	0.00	0.00
2,100.00	4.78	183.55	2,097.43	-64.88	-4.02	64.91	0.00	0.00	0.00	0.00
2,200.00	4.78	183.55	2,197.08	-73.19	-4.54	73.22	0.00	0.00	0.00	0.00
2,300.00	4.78	183.55	2,296.73	-81.51	-5.05	81.54	0.00	0.00	0.00	0.00
2,400.00	4.78	183.55	2,396.39	-89.82	-5.57	89.85	0.00	0.00	0.00	0.00
2,500.00	4.78	183.55	2,496.04	-98.13	-6.08	98.17	0.00	0.00	0.00	0.00
2,600.00	4.78	183.55	2,595.69	-106.44	-6.60	106.48	0.00	0.00	0.00	0.00
2,700.00	4.78	183.55	2,695.34	-114.75	-7.11	114.80	0.00	0.00	0.00	0.00
2,800.00	4.78	183.55	2,795.00	-123.06	-7.63	123.11	0.00	0.00	0.00	0.00
2,900.00	4.78	183.55	2,894.65	-131.37	-8.14	131.43	0.00	0.00	0.00	0.00
3,000.00	4.78	183.55	2,994.30	-139.68	-8.66	139.74	0.00	0.00	0.00	0.00
3,100.00	4.78	183.55	3,093.95	-148.00	-9.17	148.06	0.00	0.00	0.00	0.00
3,200.00	4.78	183.55	3,193.61	-156.31	-9.69	156.37	0.00	0.00	0.00	0.00
3,300.00	4.78	183.55	3,293.26	-164.62	-10.20	164.68	0.00	0.00	0.00	0.00
3,400.00	4.78	183.55	3,392.91	-172.93	-10.72	173.00	0.00	0.00	0.00	0.00
3,500.00	4.78	183.55	3,492.56	-181.24	-11.23	181.31	0.00	0.00	0.00	0.00
3,600.00	4.78	183.55	3,592.22	-189.55	-11.75	189.63	0.00	0.00	0.00	0.00
3,700.00	4.78	183.55	3,691.87	-197.86	-12.26	197.94	0.00	0.00	0.00	0.00
3,800.00	4.78	183.55	3,791.52	-206.18	-12.78	206.26	0.00	0.00	0.00	0.00
3,900.00	4.78	183.55	3,891.18	-214.49	-13.29	214.57	0.00	0.00	0.00	0.00
4,000.00	4.78	183.55	3,990.83	-222.80	-13.81	222.89	0.00	0.00	0.00	0.00
4,100.00	4.78	183.55	4,090.48	-231.11	-14.32	231.20	0.00	0.00	0.00	0.00
4,200.00	4.78	183.55	4,190.13	-239.42	-14.84	239.52	0.00	0.00	0.00	0.00
4,300.00	4.78	183.55	4,289.79	-247.73	-15.36	247.83	0.00	0.00	0.00	0.00
4,396.55	4.78	183.55	4,386.00	-255.76	-15.85	255.86	0.00	0.00	0.00	0.00
Sussex										
4,400.00	4.78	183.55	4,389.44	-256.04	-15.87	256.15	0.00	0.00	0.00	0.00
4,500.00	4.78	183.55	4,489.09	-264.35	-16.39	264.46	0.00	0.00	0.00	0.00
4,600.00	4.78	183.55	4,588.74	-272.67	-16.90	272.77	0.00	0.00	0.00	0.00
4,700.00	4.78	183.55	4,688.40	-280.98	-17.42	281.09	0.00	0.00	0.00	0.00

Plan Report for KERR 14C-25HZ - Plan A0 Permit

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)	Toolface Azimuth (°)
4,800.00	4.78	183.55	4,788.05	-289.29	-17.93	289.40	0.00	0.00	0.00	0.00
4,900.00	4.78	183.55	4,887.70	-297.60	-18.45	297.72	0.00	0.00	0.00	0.00
5,000.00	4.78	183.55	4,987.35	-305.91	-18.96	306.03	0.00	0.00	0.00	0.00
5,100.00	4.78	183.55	5,087.01	-314.22	-19.48	314.35	0.00	0.00	0.00	0.00
5,200.00	4.78	183.55	5,186.66	-322.53	-19.99	322.66	0.00	0.00	0.00	0.00
5,300.00	4.78	183.55	5,286.31	-330.85	-20.51	330.98	0.00	0.00	0.00	0.00
5,400.00	4.78	183.55	5,385.97	-339.16	-21.02	339.29	0.00	0.00	0.00	0.00
5,500.00	4.78	183.55	5,485.62	-347.47	-21.54	347.61	0.00	0.00	0.00	0.00
5,600.00	4.78	183.55	5,585.27	-355.78	-22.05	355.92	0.00	0.00	0.00	0.00
5,700.00	4.78	183.55	5,684.92	-364.09	-22.57	364.24	0.00	0.00	0.00	0.00
5,800.00	4.78	183.55	5,784.58	-372.40	-23.08	372.55	0.00	0.00	0.00	0.00
5,900.00	4.78	183.55	5,884.23	-380.71	-23.60	380.87	0.00	0.00	0.00	0.00
6,000.00	4.78	183.55	5,983.88	-389.03	-24.11	389.18	0.00	0.00	0.00	0.00
6,100.00	4.78	183.55	6,083.53	-397.34	-24.63	397.49	0.00	0.00	0.00	0.00
6,200.00	4.78	183.55	6,183.19	-405.65	-25.14	405.81	0.00	0.00	0.00	0.00
6,300.00	4.78	183.55	6,282.84	-413.96	-25.66	414.12	0.00	0.00	0.00	0.00
6,400.00	4.78	183.55	6,382.49	-422.27	-26.17	422.44	0.00	0.00	0.00	0.00
6,500.00	4.78	183.55	6,482.14	-430.58	-26.69	430.75	0.00	0.00	0.00	0.00
6,600.00	4.78	183.55	6,581.80	-438.89	-27.20	439.07	0.00	0.00	0.00	0.00
6,700.00	4.78	183.55	6,681.45	-447.20	-27.72	447.38	0.00	0.00	0.00	0.00
6,800.00	4.78	183.55	6,781.10	-455.52	-28.23	455.70	0.00	0.00	0.00	0.00
6,846.10	4.78	183.55	6,827.04	-459.35	-28.47	459.53	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6846.10ft										
6,900.00	4.78	183.55	6,880.76	-463.83	-28.75	464.01	0.00	0.00	0.00	0.00
6,946.10	4.78	183.55	6,926.70	-467.66	-28.99	467.85	0.00	0.00	0.00	0.00
KOP @ 6946.10ft										
7,000.00	10.16	181.86	6,980.12	-474.66	-29.28	474.85	10.00	9.99	-3.12	-3.16
7,100.00	20.16	181.11	7,076.51	-500.77	-29.90	500.96	10.00	10.00	-0.75	-1.49
7,101.58	20.32	181.10	7,078.00	-501.32	-29.91	501.51	10.00	10.00	-0.38	-0.76
Sharon Springs										
7,174.97	27.66	180.90	7,145.00	-531.13	-30.43	531.32	10.00	10.00	-0.28	-0.76
Niobrara A										
7,200.00	30.16	180.85	7,166.91	-543.23	-30.61	543.42	10.00	10.00	-0.20	-0.57
7,219.97	32.16	180.81	7,184.00	-553.56	-30.76	553.76	10.00	10.00	-0.17	-0.52
Niobrara B										
7,300.00	40.16	180.71	7,248.56	-600.74	-31.38	600.94	10.00	10.00	-0.13	-0.49
DLS = 10/100'										
7,331.41	43.30	180.67	7,272.00	-621.64	-31.63	621.84	10.00	10.00	-0.10	-0.41
Niobrara C										
7,400.00	50.16	180.61	7,318.98	-671.55	-32.19	671.75	10.00	10.00	-0.09	-0.38
7,500.00	60.16	180.54	7,376.04	-753.52	-33.01	753.73	10.00	10.00	-0.07	-0.34
7,562.19	66.38	180.51	7,404.00	-809.04	-33.52	809.24	10.00	10.00	-0.06	-0.30
Fort Hays										
7,600.00	70.16	180.49	7,418.00	-844.15	-33.83	844.36	10.00	10.00	-0.05	-0.29
7,700.00	80.16	180.44	7,443.57	-940.69	-34.61	940.90	10.00	10.00	-0.05	-0.28
7,715.39	81.70	180.43	7,446.00	-955.88	-34.72	956.09	10.00	10.00	-0.05	-0.27
Codell										
7,796.40	89.80	180.39	7,452.00	-1,036.61	-35.30	1,036.82	10.00	10.00	-0.05	-0.27
End Build @ 7796.40ft - Landing Target (Heel) - 7" - Kerr 14C-25HZ_CP										
7,800.00	89.80	180.39	7,452.01	-1,040.20	-35.33	1,040.42	0.01	0.01	0.00	-0.26
7,900.00	89.80	180.39	7,452.36	-1,140.20	-36.02	1,140.42	0.00	0.00	0.00	0.00
8,000.00	89.80	180.39	7,452.71	-1,240.20	-36.70	1,240.42	0.00	0.00	0.00	0.00
8,100.00	89.80	180.39	7,453.06	-1,340.19	-37.39	1,340.42	0.00	0.00	0.00	0.00
8,200.00	89.80	180.39	7,453.41	-1,440.19	-38.08	1,440.42	0.00	0.00	0.00	0.00
8,300.00	89.80	180.39	7,453.75	-1,540.19	-38.77	1,540.41	0.00	0.00	0.00	0.00
8,400.00	89.80	180.39	7,454.10	-1,640.18	-39.45	1,640.41	0.00	0.00	0.00	0.00
8,500.00	89.80	180.39	7,454.45	-1,740.18	-40.14	1,740.41	0.00	0.00	0.00	0.00
8,600.00	89.80	180.39	7,454.80	-1,840.18	-40.83	1,840.41	0.00	0.00	0.00	0.00

Plan Report for KERR 14C-25HZ - Plan A0 Permit

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)	Toolface Azimuth (°)
8,700.00	89.80	180.39	7,455.15	-1,940.17	-41.52	1,940.41	0.00	0.00	0.00	0.00
8,800.00	89.80	180.39	7,455.50	-2,040.17	-42.20	2,040.41	0.00	0.00	0.00	0.00
8,900.00	89.80	180.39	7,455.85	-2,140.17	-42.89	2,140.41	0.00	0.00	0.00	0.00
9,000.00	89.80	180.39	7,456.19	-2,240.17	-43.58	2,240.41	0.00	0.00	0.00	0.00
9,100.00	89.80	180.39	7,456.54	-2,340.16	-44.26	2,340.41	0.00	0.00	0.00	0.00
9,200.00	89.80	180.39	7,456.89	-2,440.16	-44.95	2,440.41	0.00	0.00	0.00	0.00
9,300.00	89.80	180.39	7,457.24	-2,540.16	-45.64	2,540.41	0.00	0.00	0.00	0.00
9,400.00	89.80	180.39	7,457.59	-2,640.15	-46.33	2,640.41	0.00	0.00	0.00	0.00
9,500.00	89.80	180.39	7,457.94	-2,740.15	-47.01	2,740.41	0.00	0.00	0.00	0.00
9,600.00	89.80	180.39	7,458.29	-2,840.15	-47.70	2,840.41	0.00	0.00	0.00	0.00
9,700.00	89.80	180.39	7,458.63	-2,940.14	-48.39	2,940.41	0.00	0.00	0.00	0.00
9,800.00	89.80	180.39	7,458.98	-3,040.14	-49.08	3,040.41	0.00	0.00	0.00	0.00
9,900.00	89.80	180.39	7,459.33	-3,140.14	-49.76	3,140.40	0.00	0.00	0.00	0.00
10,000.00	89.80	180.39	7,459.68	-3,240.14	-50.45	3,240.40	0.00	0.00	0.00	0.00
10,100.00	89.80	180.39	7,460.03	-3,340.13	-51.14	3,340.40	0.00	0.00	0.00	0.00
10,200.00	89.80	180.39	7,460.38	-3,440.13	-51.83	3,440.40	0.00	0.00	0.00	0.00
10,300.00	89.80	180.39	7,460.72	-3,540.13	-52.51	3,540.40	0.00	0.00	0.00	0.00
10,400.00	89.80	180.39	7,461.07	-3,640.12	-53.20	3,640.40	0.00	0.00	0.00	0.00
10,500.00	89.80	180.39	7,461.42	-3,740.12	-53.89	3,740.40	0.00	0.00	0.00	0.00
10,600.00	89.80	180.39	7,461.77	-3,840.12	-54.58	3,840.40	0.00	0.00	0.00	0.00
10,700.00	89.80	180.39	7,462.12	-3,940.12	-55.26	3,940.40	0.00	0.00	0.00	0.00
10,800.00	89.80	180.39	7,462.47	-4,040.11	-55.95	4,040.40	0.00	0.00	0.00	0.00
10,900.00	89.80	180.39	7,462.82	-4,140.11	-56.64	4,140.40	0.00	0.00	0.00	0.00
11,000.00	89.80	180.39	7,463.16	-4,240.11	-57.33	4,240.40	0.00	0.00	0.00	0.00
11,100.00	89.80	180.39	7,463.51	-4,340.10	-58.01	4,340.40	0.00	0.00	0.00	0.00
11,200.00	89.80	180.39	7,463.86	-4,440.10	-58.70	4,440.40	0.00	0.00	0.00	0.00
11,300.00	89.80	180.39	7,464.21	-4,540.10	-59.39	4,540.40	0.00	0.00	0.00	0.00
11,400.00	89.80	180.39	7,464.56	-4,640.09	-60.08	4,640.40	0.00	0.00	0.00	0.00
11,500.00	89.80	180.39	7,464.91	-4,740.09	-60.76	4,740.40	0.00	0.00	0.00	0.00
11,600.00	89.80	180.39	7,465.25	-4,840.09	-61.45	4,840.39	0.00	0.00	0.00	0.00
11,700.00	89.80	180.39	7,465.60	-4,940.09	-62.14	4,940.39	0.00	0.00	0.00	0.00
11,800.00	89.80	180.39	7,465.95	-5,040.08	-62.83	5,040.39	0.00	0.00	0.00	0.00
11,900.00	89.80	180.39	7,466.30	-5,140.08	-63.51	5,140.39	0.00	0.00	0.00	0.00
12,000.00	89.80	180.39	7,466.65	-5,240.08	-64.20	5,240.39	0.00	0.00	0.00	0.00
12,100.00	89.80	180.39	7,467.00	-5,340.07	-64.89	5,340.39	0.00	0.00	0.00	0.00
12,200.00	89.80	180.39	7,467.35	-5,440.07	-65.57	5,440.39	0.00	0.00	0.00	0.00
12,300.00	89.80	180.39	7,467.69	-5,540.07	-66.26	5,540.39	0.00	0.00	0.00	0.00
12,400.00	89.80	180.39	7,468.04	-5,640.06	-66.95	5,640.39	0.00	0.00	0.00	0.00
12,500.00	89.80	180.39	7,468.39	-5,740.06	-67.64	5,740.39	0.00	0.00	0.00	0.00
12,600.00	89.80	180.39	7,468.74	-5,840.06	-68.32	5,840.39	0.00	0.00	0.00	0.00
12,700.00	89.80	180.39	7,469.09	-5,940.06	-69.01	5,940.39	0.00	0.00	0.00	0.00
12,800.00	89.80	180.39	7,469.44	-6,040.05	-69.70	6,040.39	0.00	0.00	0.00	0.00
12,900.00	89.80	180.39	7,469.78	-6,140.05	-70.39	6,140.39	0.00	0.00	0.00	0.00
13,000.00	89.80	180.39	7,470.13	-6,240.05	-71.07	6,240.39	0.00	0.00	0.00	0.00
13,100.00	89.80	180.39	7,470.48	-6,340.04	-71.76	6,340.39	0.00	0.00	0.00	0.00
13,200.00	89.80	180.39	7,470.83	-6,440.04	-72.45	6,440.38	0.00	0.00	0.00	0.00
13,300.00	89.80	180.39	7,471.18	-6,540.04	-73.14	6,540.38	0.00	0.00	0.00	0.00
13,400.00	89.80	180.39	7,471.53	-6,640.04	-73.82	6,640.38	0.00	0.00	0.00	0.00
13,500.00	89.80	180.39	7,471.88	-6,740.03	-74.51	6,740.38	0.00	0.00	0.00	0.00
13,600.00	89.80	180.39	7,472.22	-6,840.03	-75.20	6,840.38	0.00	0.00	0.00	0.00
13,700.00	89.80	180.39	7,472.57	-6,940.03	-75.89	6,940.38	0.00	0.00	0.00	0.00
13,800.00	89.80	180.39	7,472.92	-7,040.02	-76.57	7,040.38	0.00	0.00	0.00	0.00
13,900.00	89.80	180.39	7,473.27	-7,140.02	-77.26	7,140.38	0.00	0.00	0.00	0.00
14,000.00	89.80	180.39	7,473.62	-7,240.02	-77.95	7,240.38	0.00	0.00	0.00	0.00
14,100.00	89.80	180.39	7,473.97	-7,340.01	-78.64	7,340.38	0.00	0.00	0.00	0.00
14,200.00	89.80	180.39	7,474.32	-7,440.01	-79.32	7,440.38	0.00	0.00	0.00	0.00
14,300.00	89.80	180.39	7,474.66	-7,540.01	-80.01	7,540.38	0.00	0.00	0.00	0.00
14,400.00	89.80	180.39	7,475.01	-7,640.01	-80.70	7,640.38	0.00	0.00	0.00	0.00
14,500.00	89.80	180.39	7,475.36	-7,740.00	-81.39	7,740.38	0.00	0.00	0.00	0.00
14,600.00	89.80	180.39	7,475.71	-7,840.00	-82.07	7,840.38	0.00	0.00	0.00	0.00

Plan Report for KERR 14C-25HZ - Plan A0 Permit

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)	Toolface Azimuth (°)
14,700.00	89.80	180.39	7,476.06	-7,940.00	-82.76	7,940.38	0.00	0.00	0.00	0.00
14,800.00	89.80	180.39	7,476.41	-8,039.99	-83.45	8,040.38	0.00	0.00	0.00	0.00
14,900.00	89.80	180.39	7,476.75	-8,139.99	-84.13	8,140.37	0.00	0.00	0.00	0.00
15,000.00	89.80	180.39	7,477.10	-8,239.99	-84.82	8,240.37	0.00	0.00	0.00	0.00
15,100.00	89.80	180.39	7,477.45	-8,339.98	-85.51	8,340.37	0.00	0.00	0.00	0.00
15,200.00	89.80	180.39	7,477.80	-8,439.98	-86.20	8,440.37	0.00	0.00	0.00	0.00
15,300.00	89.80	180.39	7,478.15	-8,539.98	-86.88	8,540.37	0.00	0.00	0.00	0.00
15,400.00	89.80	180.39	7,478.50	-8,639.98	-87.57	8,640.37	0.00	0.00	0.00	0.00
15,500.00	89.80	180.39	7,478.85	-8,739.97	-88.26	8,740.37	0.00	0.00	0.00	0.00
15,600.00	89.80	180.39	7,479.19	-8,839.97	-88.95	8,840.37	0.00	0.00	0.00	0.00
15,700.00	89.80	180.39	7,479.54	-8,939.97	-89.63	8,940.37	0.00	0.00	0.00	0.00
15,800.00	89.80	180.39	7,479.89	-9,039.96	-90.32	9,040.37	0.00	0.00	0.00	0.00
15,900.00	89.80	180.39	7,480.24	-9,139.96	-91.01	9,140.37	0.00	0.00	0.00	0.00
16,000.00	89.80	180.39	7,480.59	-9,239.96	-91.70	9,240.37	0.00	0.00	0.00	0.00
16,100.00	89.80	180.39	7,480.94	-9,339.95	-92.38	9,340.37	0.00	0.00	0.00	0.00
16,200.00	89.80	180.39	7,481.28	-9,439.95	-93.07	9,440.37	0.00	0.00	0.00	0.00
16,300.00	89.80	180.39	7,481.63	-9,539.95	-93.76	9,540.37	0.00	0.00	0.00	0.00
16,400.00	89.80	180.39	7,481.98	-9,639.95	-94.45	9,640.37	0.00	0.00	0.00	0.00
16,500.00	89.80	180.39	7,482.33	-9,739.94	-95.13	9,740.36	0.00	0.00	0.00	0.00
16,600.00	89.80	180.39	7,482.68	-9,839.94	-95.82	9,840.36	0.00	0.00	0.00	0.00
16,700.00	89.80	180.39	7,483.03	-9,939.94	-96.51	9,940.36	0.00	0.00	0.00	0.00
16,800.00	89.80	180.39	7,483.38	-10,039.93	-97.20	10,040.36	0.00	0.00	0.00	0.00
16,900.00	89.80	180.39	7,483.72	-10,139.93	-97.88	10,140.36	0.00	0.00	0.00	0.00
17,000.00	89.80	180.39	7,484.07	-10,239.93	-98.57	10,240.36	0.00	0.00	0.00	0.00
17,100.00	89.80	180.39	7,484.42	-10,339.93	-99.26	10,340.36	0.00	0.00	0.00	0.00
17,200.00	89.80	180.39	7,484.77	-10,439.92	-99.95	10,440.36	0.00	0.00	0.00	0.00
17,300.00	89.80	180.39	7,485.12	-10,539.92	-100.63	10,540.36	0.00	0.00	0.00	0.00
17,400.00	89.80	180.39	7,485.47	-10,639.92	-101.32	10,640.36	0.00	0.00	0.00	0.00
17,500.00	89.80	180.39	7,485.81	-10,739.91	-102.01	10,740.36	0.00	0.00	0.00	0.00
17,600.00	89.80	180.39	7,486.16	-10,839.91	-102.70	10,840.36	0.00	0.00	0.00	0.00
17,700.00	89.80	180.39	7,486.51	-10,939.91	-103.38	10,940.36	0.00	0.00	0.00	0.00
17,800.00	89.80	180.39	7,486.86	-11,039.90	-104.07	11,040.36	0.00	0.00	0.00	0.00
17,840.08	89.80	180.39	7,487.00	-11,079.98	-104.35	11,080.43	0.00	0.00	0.00	0.00

Total Depth (Toe) - Kerr 14C-25HZ_BHL**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.00	1,200.00	0.00	0.00	Begin Nudge @ 1200.00ft
1,438.84	1,438.56	-9.93	-0.62	End Nudge @ 1438.84ft
6,846.10	6,827.04	-459.35	-28.47	Top of 4.5" Liner @ 6846.10ft
6,946.10	6,926.70	-467.66	-28.99	KOP @ 6946.10ft
7,300.00	7,248.56	-600.74	-31.38	DLS = 10/100'
7,796.40	7,452.00	-1,036.60	-35.30	End Build @ 7796.40ft
17,840.08	7,487.00	-11,079.98	-104.35	TD Well @ 17840.08ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
User	No Target (Freehand)	180.39	Slot	0.00	0.00	0.00

Plan Report for KERR 14C-25HZ - Plan A0 Permit**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,796.40	Plan A0 Permit	MWD
7,796.40	17,840.08	Plan A0 Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
995.00	995.00	9 5/8"	9-5/8	13-1/2
7,796.40	7,452.00	7"	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
367.00	367.00	Fox Hills Base			
4,396.55	4,386.00	Sussex			
7,101.58	7,078.00	Sharon Springs			
7,174.97	7,145.00	Niobrara A			
7,219.97	7,184.00	Niobrara B			
7,331.41	7,272.00	Niobrara C			
7,562.19	7,404.00	Fort Hays			
7,715.39	7,446.00	Codell			
7,796.40	7,452.00	Landing Target (Heel)			
17,840.08	7,487.00	Total Depth (Toe)			

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Kerr 14C-25HZ_BHL	7,487.00	-11,079.98	-104.35	Point
Kerr 14C-25HZ_SHL	0.00	0.00	0.00	Point
Kerr 14C-25HZ_LD	0.00	2,699.21	659.18	Polygon
Kerr 14C-25HZ_CP	7,452.00	-1,036.61	-35.30	Point
Kerr_SEC	0.00	2,699.21	659.18	Polygon

North Reference Sheet for Sec. 13-T2N-67W - KERR 14C-25HZ - Plan A0

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB = 25' @ 4908.00ft (Drilling Rig). Northing and Easting are relative to KERR 14C-25HZ

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: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99995897

Grid Coordinates of Well: 1,291,735.05 ft N, 3,184,103.58 ft E

Geographical Coordinates of Well: 40° 07' 56.39" N, 104° 50' 29.63" W

Grid Convergence at Surface is: 0.43°

Based upon Minimum Curvature type calculations, at a Measured Depth of 17,840.08ft
the Bottom Hole Displacement is 11,080.47ft in the Direction of 180.54° (True).

Magnetic Convergence at surface is: -8.20° (7 August 2013, , BGGM2013)

