

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 8-T2N-R67W

Sater 25C-5HZ

Plan A 0

Plan: Plan A 0 Permit

Sperry Drilling Services

Proposal Report

28 June, 2013

Well Coordinates: 1,299,461.85 N, 3,164,003.71 E (40° 09' 14.14" N, 104° 54' 47.75" W)

Ground Level: 4,913.00 ft

Local Coordinate Origin:

Centered on Well Sater 25C-5HZ

Viewing Datum:

RKB @ 17' @ 4930.00ft (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. 8-T2N-R67W

Well: Sater 25C-5HZ

Wellbore: Plan A 0

Design: Plan A 0 Permit



HALLIBURTON
Sperry Drilling

SECTION DETAILS

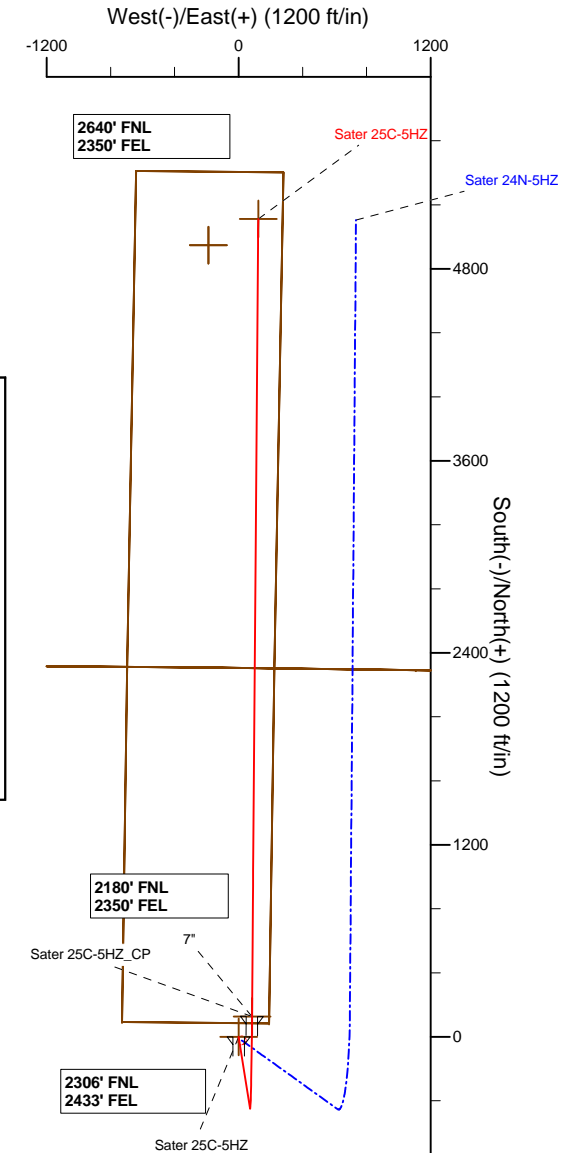
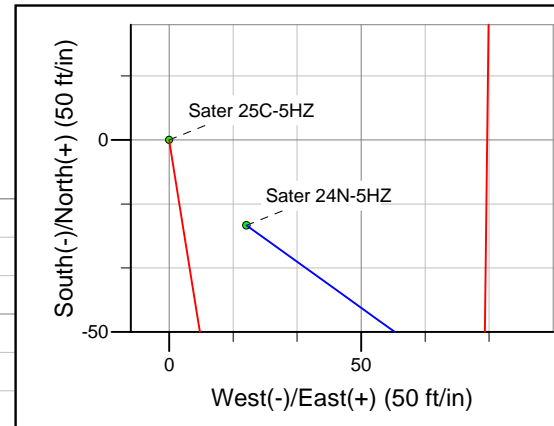
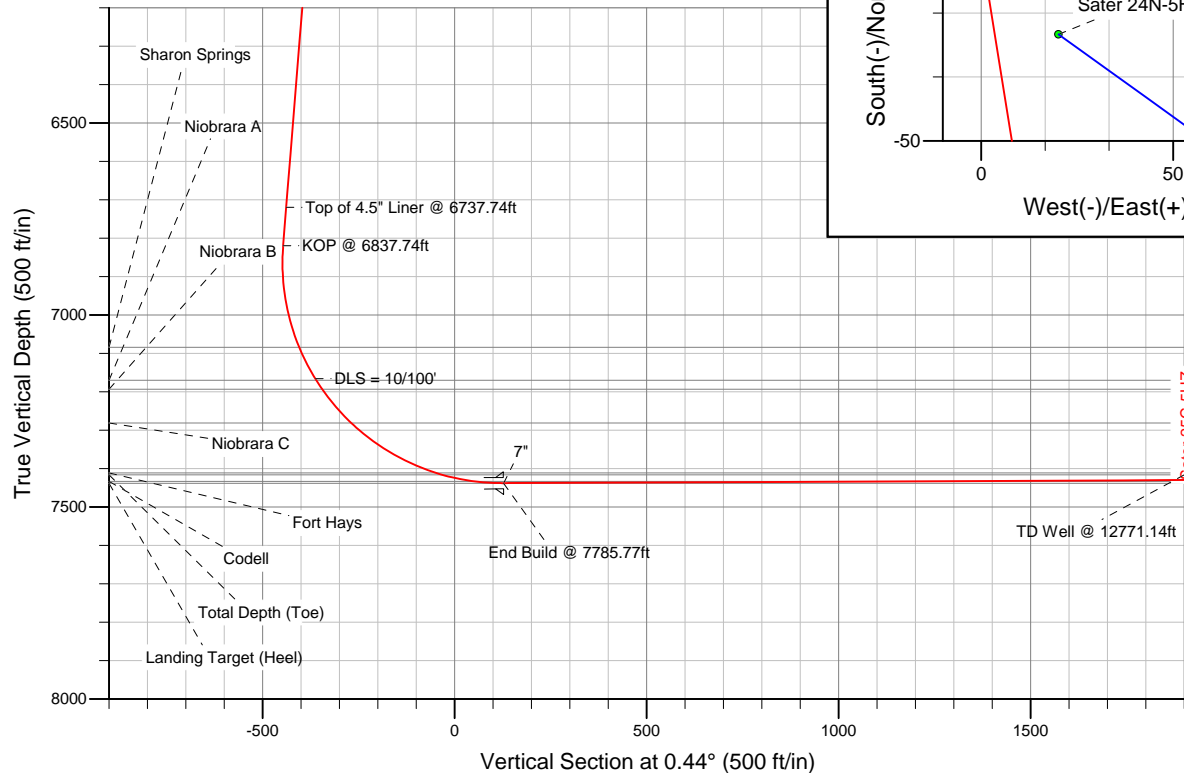
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
3	1330.68	4.61	170.93	1330.43	-9.17	1.46	2.00	170.93	-9.16	
4	6837.74	4.61	170.93	6819.65	-446.60	71.27	0.00	0.00	-446.04	
5	7785.77	90.25	0.44	7438.00	127.00	84.00	10.00	-170.46	127.64	Sater 25C-5HZ_CP
6	12771.14	90.25	0.44	7416.00	5112.17	122.69	0.00	0.00	5112.96	Sater 25C-5HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Sater 25C-5HZ_LD	0.00	4947.27	-188.70	40.167508	-104.913940	Polygon
Sater 25C-5HZ_SHL	0.00	0.00	0.00	40.153928	-104.913265	Point
Sater_SEC	0.00	4947.27	-188.70	40.167508	-104.913940	Polygon
Sater 25C-5HZ_BHL	7416.00	5112.17	122.69	40.167961	-104.912826	Point
Sater 25C-5HZ_CP	7438.00	127.00	84.00	40.154277	-104.912964	Point

TVD MD

6719.97 6737.74 Top of 4.5" Liner @ 6737.74ft
6819.65 6837.74 KOP @ 6837.74ft



WELL DETAILS: Sater 25C-5HZ

Ground Level: 4913.00
RKB @ 17' @ 4930.00ft (Drilling Rig)

Plan: Plan A 0 Permit (Sater 25C-5HZ/Plan A 0)

Created By: Clint Eshelmar Date: 06/28/2013

Plan Report for Sater 25C-5HZ - Plan A 0 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
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
875.00	0.00	0.00	875.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base										
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
925.00	0.00	0.00	925.00	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
Begin Nudge @ 1100.00ft										
1,200.00	2.00	170.93	1,199.98	-1.72	0.28	-1.72	2.00	2.00	0.00	170.93
1,300.00	4.00	170.93	1,299.84	-6.89	1.10	-6.88	2.00	2.00	0.00	0.00
1,330.68	4.61	170.93	1,330.43	-9.17	1.46	-9.15	2.00	2.00	0.00	0.00
End Nudge @ 1330.68ft										
1,400.00	4.61	170.93	1,399.53	-14.67	2.34	-14.65	0.00	0.00	0.00	0.00
1,500.00	4.61	170.93	1,499.20	-22.62	3.61	-22.59	0.00	0.00	0.00	0.00
1,600.00	4.61	170.93	1,598.88	-30.56	4.88	-30.52	0.00	0.00	0.00	0.00
1,700.00	4.61	170.93	1,698.55	-38.50	6.14	-38.45	0.00	0.00	0.00	0.00
1,800.00	4.61	170.93	1,798.23	-46.45	7.41	-46.39	0.00	0.00	0.00	0.00
1,900.00	4.61	170.93	1,897.91	-54.39	8.68	-54.32	0.00	0.00	0.00	0.00
2,000.00	4.61	170.93	1,997.58	-62.33	9.95	-62.25	0.00	0.00	0.00	0.00
2,100.00	4.61	170.93	2,097.26	-70.27	11.21	-70.19	0.00	0.00	0.00	0.00
2,200.00	4.61	170.93	2,196.93	-78.22	12.48	-78.12	0.00	0.00	0.00	0.00
2,300.00	4.61	170.93	2,296.61	-86.16	13.75	-86.05	0.00	0.00	0.00	0.00
2,400.00	4.61	170.93	2,396.29	-94.10	15.02	-93.99	0.00	0.00	0.00	0.00
2,500.00	4.61	170.93	2,495.96	-102.05	16.28	-101.92	0.00	0.00	0.00	0.00
2,600.00	4.61	170.93	2,595.64	-109.99	17.55	-109.85	0.00	0.00	0.00	0.00
2,700.00	4.61	170.93	2,695.31	-117.93	18.82	-117.79	0.00	0.00	0.00	0.00
2,800.00	4.61	170.93	2,794.99	-125.88	20.09	-125.72	0.00	0.00	0.00	0.00
2,900.00	4.61	170.93	2,894.67	-133.82	21.35	-133.65	0.00	0.00	0.00	0.00
3,000.00	4.61	170.93	2,994.34	-141.76	22.62	-141.58	0.00	0.00	0.00	0.00
3,100.00	4.61	170.93	3,094.02	-149.71	23.89	-149.52	0.00	0.00	0.00	0.00
3,200.00	4.61	170.93	3,193.69	-157.65	25.16	-157.45	0.00	0.00	0.00	0.00
3,300.00	4.61	170.93	3,293.37	-165.59	26.42	-165.38	0.00	0.00	0.00	0.00
3,400.00	4.61	170.93	3,393.05	-173.53	27.69	-173.32	0.00	0.00	0.00	0.00
3,500.00	4.61	170.93	3,492.72	-181.48	28.96	-181.25	0.00	0.00	0.00	0.00
3,600.00	4.61	170.93	3,592.40	-189.42	30.23	-189.18	0.00	0.00	0.00	0.00
3,700.00	4.61	170.93	3,692.07	-197.36	31.49	-197.12	0.00	0.00	0.00	0.00
3,800.00	4.61	170.93	3,791.75	-205.31	32.76	-205.05	0.00	0.00	0.00	0.00
3,851.42	4.61	170.93	3,843.00	-209.39	33.41	-209.13	0.00	0.00	0.00	0.00
Parkman										
3,900.00	4.61	170.93	3,891.43	-213.25	34.03	-212.98	0.00	0.00	0.00	0.00
4,000.00	4.61	170.93	3,991.10	-221.19	35.30	-220.92	0.00	0.00	0.00	0.00
4,100.00	4.61	170.93	4,090.78	-229.14	36.56	-228.85	0.00	0.00	0.00	0.00
4,200.00	4.61	170.93	4,190.45	-237.08	37.83	-236.78	0.00	0.00	0.00	0.00
4,298.87	4.61	170.93	4,289.00	-244.93	39.09	-244.63	0.00	0.00	0.00	0.00
Sussex										
4,300.00	4.61	170.93	4,290.13	-245.02	39.10	-244.72	0.00	0.00	0.00	0.00
4,400.00	4.61	170.93	4,389.81	-252.97	40.37	-252.65	0.00	0.00	0.00	0.00
4,500.00	4.61	170.93	4,489.48	-260.91	41.63	-260.58	0.00	0.00	0.00	0.00
4,600.00	4.61	170.93	4,589.16	-268.85	42.90	-268.51	0.00	0.00	0.00	0.00

Plan Report for Sater 25C-5HZ - Plan A 0 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 (°)
4,700.00	4.61	170.93	4,688.83	-276.80	44.17	-276.45	0.00	0.00	0.00	0.00
4,800.00	4.61	170.93	4,788.51	-284.74	45.44	-284.38	0.00	0.00	0.00	0.00
4,900.00	4.61	170.93	4,888.19	-292.68	46.70	-292.31	0.00	0.00	0.00	0.00
5,000.00	4.61	170.93	4,987.86	-300.62	47.97	-300.25	0.00	0.00	0.00	0.00
5,100.00	4.61	170.93	5,087.54	-308.57	49.24	-308.18	0.00	0.00	0.00	0.00
5,200.00	4.61	170.93	5,187.21	-316.51	50.51	-316.11	0.00	0.00	0.00	0.00
5,300.00	4.61	170.93	5,286.89	-324.45	51.77	-324.05	0.00	0.00	0.00	0.00
5,400.00	4.61	170.93	5,386.57	-332.40	53.04	-331.98	0.00	0.00	0.00	0.00
5,500.00	4.61	170.93	5,486.24	-340.34	54.31	-339.91	0.00	0.00	0.00	0.00
5,600.00	4.61	170.93	5,585.92	-348.28	55.58	-347.85	0.00	0.00	0.00	0.00
5,700.00	4.61	170.93	5,685.59	-356.23	56.84	-355.78	0.00	0.00	0.00	0.00
5,800.00	4.61	170.93	5,785.27	-364.17	58.11	-363.71	0.00	0.00	0.00	0.00
5,900.00	4.61	170.93	5,884.95	-372.11	59.38	-371.65	0.00	0.00	0.00	0.00
6,000.00	4.61	170.93	5,984.62	-380.06	60.65	-379.58	0.00	0.00	0.00	0.00
6,100.00	4.61	170.93	6,084.30	-388.00	61.91	-387.51	0.00	0.00	0.00	0.00
6,200.00	4.61	170.93	6,183.97	-395.94	63.18	-395.45	0.00	0.00	0.00	0.00
6,300.00	4.61	170.93	6,283.65	-403.89	64.45	-403.38	0.00	0.00	0.00	0.00
6,400.00	4.61	170.93	6,383.33	-411.83	65.72	-411.31	0.00	0.00	0.00	0.00
6,500.00	4.61	170.93	6,483.00	-419.77	66.99	-419.24	0.00	0.00	0.00	0.00
6,600.00	4.61	170.93	6,582.68	-427.71	68.25	-427.18	0.00	0.00	0.00	0.00
6,700.00	4.61	170.93	6,682.35	-435.66	69.52	-435.11	0.00	0.00	0.00	0.00
6,737.74	4.61	170.93	6,719.97	-438.66	70.00	-438.10	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6737.74ft										
6,800.00	4.61	170.93	6,782.03	-443.60	70.79	-443.04	0.00	0.00	0.00	0.00
6,837.74	4.61	170.93	6,819.65	-446.60	71.27	-446.04	0.00	0.00	0.00	0.00
KOP @ 6837.74ft										
6,900.00	1.84	24.96	6,881.85	-448.17	72.08	-447.60	10.00	-4.45	-234.46	-170.46
7,000.00	11.70	4.14	6,981.04	-436.57	73.50	-435.99	10.00	9.86	-20.82	-24.52
7,100.00	21.69	2.37	7,076.70	-407.92	75.00	-407.33	10.00	9.99	-1.77	-3.77
7,107.88	22.48	2.30	7,084.00	-404.96	75.12	-404.37	10.00	9.99	-0.94	-2.07
Sharon Springs										
7,200.00	31.68	1.69	7,165.94	-363.09	76.54	-362.49	10.00	10.00	-0.66	-2.00
DLS = 10/100'										
7,204.79	32.16	1.66	7,170.00	-360.56	76.61	-359.96	10.00	10.00	-0.48	-1.46
Niobrara A										
7,232.38	34.92	1.54	7,193.00	-345.32	77.04	-344.72	10.00	10.00	-0.44	-1.44
Niobrara B										
7,300.00	41.68	1.31	7,246.03	-303.45	78.07	-302.84	10.00	10.00	-0.35	-1.34
7,348.72	46.55	1.17	7,281.00	-269.55	78.80	-268.94	10.00	10.00	-0.28	-1.15
Niobrara C										
7,400.00	51.68	1.05	7,314.55	-230.80	79.56	-230.19	10.00	10.00	-0.23	-1.05
7,500.00	61.68	0.86	7,369.41	-147.36	80.94	-146.73	10.00	10.00	-0.19	-0.97
7,600.00	71.68	0.70	7,408.95	-55.66	82.18	-55.02	10.00	10.00	-0.16	-0.87
7,606.62	72.34	0.69	7,411.00	-49.36	82.26	-48.72	10.00	10.00	-0.15	-0.81
Fort Hays										
7,700.00	81.68	0.56	7,431.97	41.52	83.25	42.16	10.00	10.00	-0.14	-0.80
7,707.45	82.42	0.55	7,433.00	48.90	83.32	49.54	10.00	10.00	-0.14	-0.77
Codell										
7,785.77	90.25	0.44	7,438.00	127.00	84.00	127.64	10.00	10.00	-0.13	-0.77
End Build @ 7785.77ft - Landing Target (Heel) - 7" - Sater 25C-5HZ_CP										
7,800.00	90.25	0.44	7,437.94	141.23	84.11	141.87	0.00	0.00	0.00	-0.76
7,900.00	90.25	0.44	7,437.50	241.22	84.89	241.87	0.00	0.00	0.00	0.00
8,000.00	90.25	0.44	7,437.05	341.22	85.66	341.87	0.00	0.00	0.00	0.00
8,100.00	90.25	0.44	7,436.61	441.21	86.44	441.87	0.00	0.00	0.00	0.00
8,200.00	90.25	0.44	7,436.17	541.21	87.21	541.86	0.00	0.00	0.00	0.00
8,300.00	90.25	0.44	7,435.73	641.21	87.99	641.86	0.00	0.00	0.00	0.00
8,400.00	90.25	0.44	7,435.29	741.20	88.77	741.86	0.00	0.00	0.00	0.00
8,500.00	90.25	0.44	7,434.85	841.20	89.54	841.86	0.00	0.00	0.00	0.00

Plan Report for Sater 25C-5HZ - Plan A 0 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 (°)
8,600.00	90.25	0.44	7,434.41	941.19	90.32	941.86	0.00	0.00	0.00	0.00
8,700.00	90.25	0.44	7,433.97	1,041.19	91.09	1,041.86	0.00	0.00	0.00	0.00
8,800.00	90.25	0.44	7,433.52	1,141.19	91.87	1,141.86	0.00	0.00	0.00	0.00
8,900.00	90.25	0.44	7,433.08	1,241.18	92.65	1,241.86	0.00	0.00	0.00	0.00
9,000.00	90.25	0.44	7,432.64	1,341.18	93.42	1,341.86	0.00	0.00	0.00	0.00
9,100.00	90.25	0.44	7,432.20	1,441.17	94.20	1,441.86	0.00	0.00	0.00	0.00
9,200.00	90.25	0.44	7,431.76	1,541.17	94.98	1,541.85	0.00	0.00	0.00	0.00
9,300.00	90.25	0.44	7,431.32	1,641.17	95.75	1,641.85	0.00	0.00	0.00	0.00
9,400.00	90.25	0.44	7,430.88	1,741.16	96.53	1,741.85	0.00	0.00	0.00	0.00
9,500.00	90.25	0.44	7,430.44	1,841.16	97.30	1,841.85	0.00	0.00	0.00	0.00
9,600.00	90.25	0.44	7,429.99	1,941.16	98.08	1,941.85	0.00	0.00	0.00	0.00
9,700.00	90.25	0.44	7,429.55	2,041.15	98.86	2,041.85	0.00	0.00	0.00	0.00
9,800.00	90.25	0.44	7,429.11	2,141.15	99.63	2,141.85	0.00	0.00	0.00	0.00
9,900.00	90.25	0.44	7,428.67	2,241.14	100.41	2,241.85	0.00	0.00	0.00	0.00
10,000.00	90.25	0.44	7,428.23	2,341.14	101.18	2,341.85	0.00	0.00	0.00	0.00
10,100.00	90.25	0.44	7,427.79	2,441.14	101.96	2,441.85	0.00	0.00	0.00	0.00
10,200.00	90.25	0.44	7,427.35	2,541.13	102.74	2,541.85	0.00	0.00	0.00	0.00
10,300.00	90.25	0.44	7,426.90	2,641.13	103.51	2,641.84	0.00	0.00	0.00	0.00
10,400.00	90.25	0.44	7,426.46	2,741.12	104.29	2,741.84	0.00	0.00	0.00	0.00
10,500.00	90.25	0.44	7,426.02	2,841.12	105.06	2,841.84	0.00	0.00	0.00	0.00
10,600.00	90.25	0.44	7,425.58	2,941.12	105.84	2,941.84	0.00	0.00	0.00	0.00
10,700.00	90.25	0.44	7,425.14	3,041.11	106.62	3,041.84	0.00	0.00	0.00	0.00
10,800.00	90.25	0.44	7,424.70	3,141.11	107.39	3,141.84	0.00	0.00	0.00	0.00
10,900.00	90.25	0.44	7,424.26	3,241.10	108.17	3,241.84	0.00	0.00	0.00	0.00
11,000.00	90.25	0.44	7,423.82	3,341.10	108.94	3,341.84	0.00	0.00	0.00	0.00
11,100.00	90.25	0.44	7,423.37	3,441.10	109.72	3,441.84	0.00	0.00	0.00	0.00
11,200.00	90.25	0.44	7,422.93	3,541.09	110.50	3,541.84	0.00	0.00	0.00	0.00
11,300.00	90.25	0.44	7,422.49	3,641.09	111.27	3,641.83	0.00	0.00	0.00	0.00
11,400.00	90.25	0.44	7,422.05	3,741.08	112.05	3,741.83	0.00	0.00	0.00	0.00
11,500.00	90.25	0.44	7,421.61	3,841.08	112.82	3,841.83	0.00	0.00	0.00	0.00
11,600.00	90.25	0.44	7,421.17	3,941.08	113.60	3,941.83	0.00	0.00	0.00	0.00
11,700.00	90.25	0.44	7,420.73	4,041.07	114.38	4,041.83	0.00	0.00	0.00	0.00
11,800.00	90.25	0.44	7,420.29	4,141.07	115.15	4,141.83	0.00	0.00	0.00	0.00
11,900.00	90.25	0.44	7,419.84	4,241.06	115.93	4,241.83	0.00	0.00	0.00	0.00
12,000.00	90.25	0.44	7,419.40	4,341.06	116.71	4,341.83	0.00	0.00	0.00	0.00
12,100.00	90.25	0.44	7,418.96	4,441.06	117.48	4,441.83	0.00	0.00	0.00	0.00
12,200.00	90.25	0.44	7,418.52	4,541.05	118.26	4,541.83	0.00	0.00	0.00	0.00
12,300.00	90.25	0.44	7,418.08	4,641.05	119.03	4,641.82	0.00	0.00	0.00	0.00
12,400.00	90.25	0.44	7,417.64	4,741.04	119.81	4,741.82	0.00	0.00	0.00	0.00
12,500.00	90.25	0.44	7,417.20	4,841.04	120.59	4,841.82	0.00	0.00	0.00	0.00
12,600.00	90.25	0.44	7,416.76	4,941.04	121.36	4,941.82	0.00	0.00	0.00	0.00
12,700.00	90.25	0.44	7,416.31	5,041.03	122.14	5,041.82	0.00	0.00	0.00	0.00
12,771.14	90.25	0.44	7,416.00	5,112.17	122.69	5,112.96	0.00	0.00	0.00	0.00

TD Well @ 12771.14ft - Total Depth (Toe) - Sater 25C-5HZ_BHL

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,100.00	1,100.00	0.00	0.00	Begin Nudge @ 1100.00ft
1,330.68	1,330.43	-9.17	1.46	End Nudge @ 1330.68ft
6,737.74	6,719.97	-438.66	70.00	Top of 4.5" Liner @ 6737.74ft
6,837.74	6,819.65	-446.60	71.27	KOP @ 6837.74ft
7,200.00	7,165.94	-363.09	76.54	DLS = 10/100'
7,785.77	7,438.00	127.00	84.00	End Build @ 7785.77ft
12,771.14	7,416.00	5,112.17	122.69	TD Well @ 12771.14ft

Plan Report for Sater 25C-5HZ - Plan A 0 Permit

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	0.44	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,771.14	Plan A 0 Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
925.00	925.00	9 5/8"	9-5/8	9-5/8
7,785.77	7,438.00	7"	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
875.00	875.00	Fox Hills Base		0.00	
3,851.42	3,843.00	Parkman		0.00	
4,298.87	4,289.00	Sussex		0.00	
7,107.88	7,084.00	Sharon Springs		0.00	
7,204.79	7,170.00	Niobrara A		0.00	
7,232.38	7,193.00	Niobrara B		0.00	
7,348.72	7,281.00	Niobrara C		0.00	
7,606.62	7,411.00	Fort Hays		0.00	
7,707.45	7,433.00	Codell		0.00	
7,785.77	7,438.00	Landing Target (Heel)		0.00	
12,771.14	7,416.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Sater 25C-5HZ_BHL	7,416.00	5,112.17	122.69	Point
Sater_SEC	0.00	4,947.27	-188.70	Polygon
Sater 25C-5HZ_CP	7,438.00	127.00	84.00	Point
Sater 25C-5HZ_LD	0.00	4,947.27	-188.70	Polygon
Sater 25C-5HZ_SHL	0.00	0.00	0.00	Point

North Reference Sheet for Sec. 8-T2N-R67W - Sater 25C-5HZ - Plan A 0

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' @ 4930.00ft (Drilling Rig). Northing and Easting are relative to Sater 25C-5HZ

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: 0.99995827

Grid Coordinates of Well: 1,299,461.85 ft N, 3,164,003.71 ft E

Geographical Coordinates of Well: 40° 09' 14.14" N, 104° 54' 47.75" W

Grid Convergence at Surface is: 0.38°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,771.14ft
the Bottom Hole Displacement is 5,113.64ft in the Direction of 1.37° (True).

Magnetic Convergence at surface is: -8.30° (28 June 2013, , BGGM2013)

