

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-68W-22 McKinstry 8-22HZ Pad

McKinstry 25N-21HZ

Plan C

Plan: Permit Rev-3

Sperry Drilling Services

Proposal Report

15 December, 2014

Well Coordinates: 14,604,696.47 N, 1,645,614.61 E (40° 12' 50.75" N, 104° 58' 52.97" W)

Ground Level: 4,984.00 usft

Local Coordinate Origin:	Centered on Well McKinstry 25N-21HZ
Viewing Datum:	RKB = 17' @ 5001.00usft (D Rig)
TVDs to System:	N
North Reference:	True
Unit System:	Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

HALLIBURTON

Project: WELD-NAD83-UTMFT13N
 Site: 3N-68W-22 McKinstry 8-22HZ Pad
 Well: McKinstry 25N-21HZ
 Wellbore: Plan C
 Design: Permit Rev-3

US ROCKIES WATTENBERG PLANNING

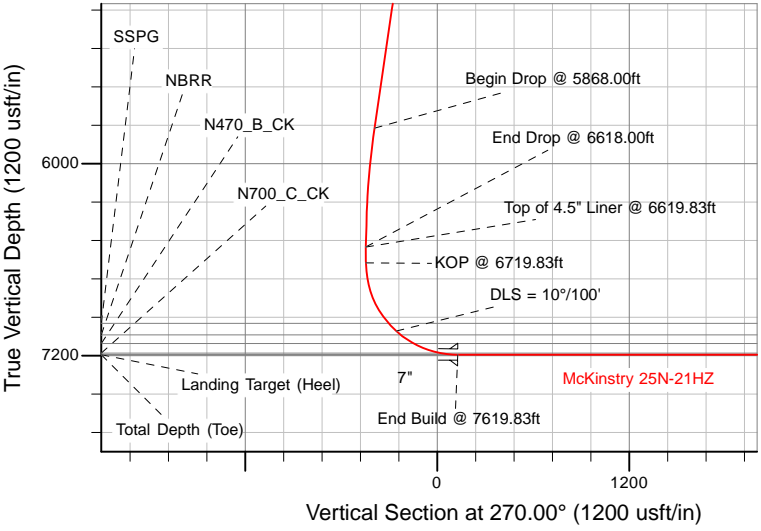
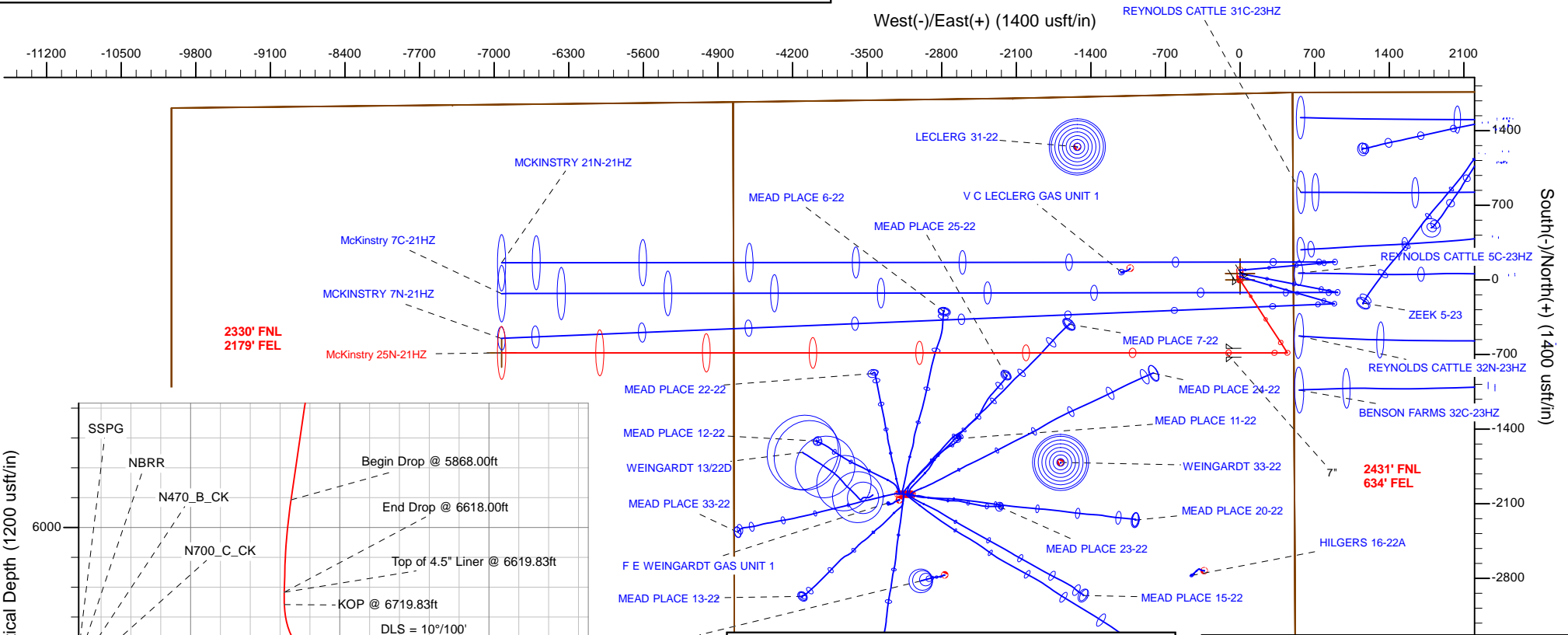


SECTION DETAILS

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	2720.00	0.00	0.00	2720.00	0.00	0.00	0.00	0.00	0.00	
3	3470.00	15.00	147.00	3461.46	-81.87	-53.17	2.00	147.00	-53.17	
4	5868.00	15.00	147.00	5777.75	-602.39	391.19	0.00	0.00	-391.19	
5	6618.00	0.00	0.00	6519.21	-684.25	444.36	2.00	-180.00	-444.36	
6	6719.83	0.00	0.00	6621.04	-684.25	444.36	0.00	0.00	-444.36	
7	7619.83	90.00	270.00	7194.00	-684.26	-128.60	10.00	270.00	128.60	
8	14421.12	90.00	270.00	7194.00	-684.37	-6929.89	0.00	0.00	6929.89	McKinstry 25N-21HZ_Bhl

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
3N-R68W-Sec. 21_Section Lines	0.00	60.09	-0.28	40.214261	-104.981382	Polygon
3N-R68W-Sec. 22_Section Lines	0.00	60.09	-0.28	40.214261	-104.981382	Polygon
3N-R68W-Sec. 23_Section Lines	0.00	60.09	-0.28	40.214261	-104.981382	Polygon
McKinstry 25N-21HZ_SHL	0.00	0.00	0.00	40.214096	-104.981381	
McKinstry 25N-21HZ_Bhl	7194.00	-684.37	-6929.89	40.212214	-105.006203	



TVD	MD	Description
6521.04	6619.83	Top of 4.5" Liner @ 6619.83ft
6621.04	6719.83	KOP @ 6719.83ft
7194.00	7619.83	End Build @ 7619.83ft
7194.00	14421.12	TD Well @ 14421.12ft

WELL DETAILS: McKinstry 25N-21HZ	
Ground Level:	4984.00
RKB = 17' @ 5001.00usft (D Rig)	
Plan: Permit Rev-3 (McKinstry 25N-21HZ/Plan C)	
Created By: Clint Eshelman	Date: 12/15/2014
Reviewed:	Date:



Plan Report for McKinstry 25N-21HZ - Permit Rev-3

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
3N-R68W-Sec. 22_Section Lines - 3N-R68W-Sec. 23_Section Lines - 3N-R68W-Sec. 21_Section Lines - McKinstry 25N-21HZ_SHL										
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
712.00	0.00	0.00	712.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base										
762.00	0.00	0.00	762.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
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
1,300.00	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
2,720.00	0.00	0.00	2,720.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 2720.00ft										
2,800.00	1.60	147.00	2,799.99	-0.94	0.61	-0.61	2.00	2.00	0.00	147.00
2,900.00	3.60	147.00	2,899.88	-4.74	3.08	-3.08	2.00	2.00	0.00	0.00
3,000.00	5.60	147.00	2,999.55	-11.47	7.45	-7.45	2.00	2.00	0.00	0.00
3,100.00	7.60	147.00	3,098.89	-21.11	13.71	-13.71	2.00	2.00	0.00	0.00
3,200.00	9.60	147.00	3,197.76	-33.65	21.85	-21.85	2.00	2.00	0.00	0.00
3,300.00	11.60	147.00	3,296.05	-49.07	31.87	-31.87	2.00	2.00	0.00	0.00
3,400.00	13.60	147.00	3,393.63	-67.37	43.75	-43.75	2.00	2.00	0.00	0.00
3,470.00	15.00	147.00	3,461.46	-81.87	53.17	-53.17	2.00	2.00	0.00	0.00
End Nudge @ 3470.00ft										
3,500.00	15.00	147.00	3,490.44	-88.38	57.39	-57.39	0.00	0.00	0.00	0.00
3,600.00	15.00	147.00	3,587.03	-110.09	71.49	-71.49	0.00	0.00	0.00	0.00
3,700.00	15.00	147.00	3,683.62	-131.79	85.59	-85.59	0.00	0.00	0.00	0.00
3,800.00	15.00	147.00	3,780.22	-153.50	99.68	-99.68	0.00	0.00	0.00	0.00
3,900.00	15.00	147.00	3,876.81	-175.20	113.78	-113.78	0.00	0.00	0.00	0.00
3,977.84	15.00	147.00	3,952.00	-192.10	124.75	-124.75	0.00	0.00	0.00	0.00
Parkman										
4,000.00	15.00	147.00	3,973.40	-196.91	127.88	-127.88	0.00	0.00	0.00	0.00
4,100.00	15.00	147.00	4,070.00	-218.62	141.97	-141.97	0.00	0.00	0.00	0.00
4,200.00	15.00	147.00	4,166.59	-240.32	156.07	-156.07	0.00	0.00	0.00	0.00
4,300.00	15.00	147.00	4,263.18	-262.03	170.16	-170.16	0.00	0.00	0.00	0.00
4,400.00	15.00	147.00	4,359.77	-283.74	184.26	-184.26	0.00	0.00	0.00	0.00
4,500.00	15.00	147.00	4,456.37	-305.44	198.36	-198.36	0.00	0.00	0.00	0.00
4,525.50	15.00	147.00	4,481.00	-310.98	201.95	-201.95	0.00	0.00	0.00	0.00

Plan Report for McKinstry 25N-21HZ - Permit Rev-3

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 (°)
Sussex										
4,600.00	15.00	147.00	4,552.96	-327.15	212.45	-212.45	0.00	0.00	0.00	0.00
4,700.00	15.00	147.00	4,649.55	-348.86	226.55	-226.55	0.00	0.00	0.00	0.00
4,800.00	15.00	147.00	4,746.14	-370.56	240.65	-240.65	0.00	0.00	0.00	0.00
4,900.00	15.00	147.00	4,842.74	-392.27	254.74	-254.74	0.00	0.00	0.00	0.00
5,000.00	15.00	147.00	4,939.33	-413.97	268.84	-268.84	0.00	0.00	0.00	0.00
5,100.00	15.00	147.00	5,035.92	-435.68	282.93	-282.93	0.00	0.00	0.00	0.00
5,200.00	15.00	147.00	5,132.51	-457.39	297.03	-297.03	0.00	0.00	0.00	0.00
5,300.00	15.00	147.00	5,229.11	-479.09	311.13	-311.13	0.00	0.00	0.00	0.00
5,400.00	15.00	147.00	5,325.70	-500.80	325.22	-325.22	0.00	0.00	0.00	0.00
5,500.00	15.00	147.00	5,422.29	-522.51	339.32	-339.32	0.00	0.00	0.00	0.00
5,600.00	15.00	147.00	5,518.88	-544.21	353.42	-353.42	0.00	0.00	0.00	0.00
5,700.00	15.00	147.00	5,615.48	-565.92	367.51	-367.51	0.00	0.00	0.00	0.00
5,800.00	15.00	147.00	5,712.07	-587.63	381.61	-381.61	0.00	0.00	0.00	0.00
5,868.00	15.00	147.00	5,777.75	-602.39	391.19	-391.19	0.00	0.00	0.00	0.00
Begin Drop @ 5868.00ft										
5,900.00	14.36	147.00	5,808.71	-609.19	395.61	-395.61	2.00	-2.00	0.00	-180.00
6,000.00	12.36	147.00	5,906.00	-628.57	408.20	-408.20	2.00	-2.00	0.00	-180.00
6,100.00	10.36	147.00	6,004.03	-645.08	418.92	-418.92	2.00	-2.00	0.00	-180.00
6,200.00	8.36	147.00	6,102.70	-658.72	427.78	-427.78	2.00	-2.00	0.00	-180.00
6,300.00	6.36	147.00	6,201.87	-669.47	434.76	-434.76	2.00	-2.00	0.00	-180.00
6,400.00	4.36	147.00	6,301.42	-677.30	439.84	-439.84	2.00	-2.00	0.00	-180.00
6,500.00	2.36	147.00	6,401.25	-682.22	443.04	-443.04	2.00	-2.00	0.00	-180.00
6,600.00	0.36	147.00	6,501.21	-684.21	444.33	-444.33	2.00	-2.00	0.00	-180.00
6,618.00	0.00	0.00	6,519.21	-684.25	444.36	-444.36	2.00	-2.00	0.00	-180.00
End Drop @ 6618.00ft										
6,619.83	0.00	0.00	6,521.04	-684.25	444.36	-444.36	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6619.83ft										
6,700.00	0.00	0.00	6,601.21	-684.25	444.36	-444.36	0.00	0.00	0.00	0.00
6,719.83	0.00	0.00	6,621.04	-684.25	444.36	-444.36	0.00	0.00	0.00	0.00
KOP @ 6719.83ft										
6,800.00	8.02	270.00	6,700.95	-684.25	438.76	-438.76	10.00	10.00	-112.26	-90.00
6,900.00	18.02	270.00	6,798.26	-684.25	416.26	-416.26	10.00	10.00	0.00	0.00
7,000.00	28.02	270.00	6,890.18	-684.25	377.21	-377.21	10.00	10.00	0.00	0.00
7,100.00	38.02	270.00	6,973.93	-684.26	322.79	-322.79	10.00	10.00	0.00	0.00
7,131.24	41.14	270.00	6,998.00	-684.26	302.89	-302.89	10.00	10.00	0.00	0.00
SSPG										
7,200.00	48.02	270.00	7,046.95	-684.26	254.66	-254.66	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,237.33	51.75	270.00	7,071.00	-684.26	226.11	-226.11	10.00	10.00	0.00	0.00
NBRR										
7,300.00	58.02	270.00	7,107.03	-684.26	174.88	-174.88	10.00	10.00	0.00	0.00
7,333.64	61.38	270.00	7,124.00	-684.26	145.84	-145.84	10.00	10.00	0.00	0.00
N470_B_CK										
7,400.00	68.02	270.00	7,152.34	-684.26	85.88	-85.88	10.00	10.00	0.00	0.00
7,500.00	78.02	270.00	7,181.52	-684.26	-9.64	9.64	10.00	10.00	0.00	0.00
7,512.62	79.28	270.00	7,184.00	-684.26	-22.01	22.01	10.00	10.00	0.00	0.00
N700_C_CK										
7,600.00	88.02	270.00	7,193.66	-684.26	-108.77	108.77	10.00	10.00	0.00	0.00
7,619.83	90.00	270.00	7,194.00	-684.26	-128.60	128.60	10.00	10.00	0.00	0.00
End Build @ 7619.83ft - Landing Target (Heel) - 7"										
7,700.00	90.00	270.00	7,194.00	-684.26	-208.77	208.77	0.00	0.00	0.00	0.00
7,800.00	90.00	270.00	7,194.00	-684.27	-308.77	308.77	0.00	0.00	0.00	0.00
7,900.00	90.00	270.00	7,194.00	-684.27	-408.77	408.77	0.00	0.00	0.00	0.00
8,000.00	90.00	270.00	7,194.00	-684.27	-508.77	508.77	0.00	0.00	0.00	0.00
8,100.00	90.00	270.00	7,194.00	-684.27	-608.77	608.77	0.00	0.00	0.00	0.00
8,200.00	90.00	270.00	7,194.00	-684.27	-708.77	708.77	0.00	0.00	0.00	0.00
8,300.00	90.00	270.00	7,194.00	-684.27	-808.77	808.77	0.00	0.00	0.00	0.00

Plan Report for McKinstry 25N-21HZ - Permit Rev-3

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 (°)
8,400.00	90.00	270.00	7,194.00	-684.27	-908.77	908.77	0.00	0.00	0.00	0.00
8,500.00	90.00	270.00	7,194.00	-684.28	-1,008.77	1,008.77	0.00	0.00	0.00	0.00
8,600.00	90.00	270.00	7,194.00	-684.28	-1,108.77	1,108.77	0.00	0.00	0.00	0.00
8,700.00	90.00	270.00	7,194.00	-684.28	-1,208.77	1,208.77	0.00	0.00	0.00	0.00
8,800.00	90.00	270.00	7,194.00	-684.28	-1,308.77	1,308.77	0.00	0.00	0.00	0.00
8,900.00	90.00	270.00	7,194.00	-684.28	-1,408.77	1,408.77	0.00	0.00	0.00	0.00
9,000.00	90.00	270.00	7,194.00	-684.28	-1,508.77	1,508.77	0.00	0.00	0.00	0.00
9,100.00	90.00	270.00	7,194.00	-684.29	-1,608.77	1,608.77	0.00	0.00	0.00	0.00
9,200.00	90.00	270.00	7,194.00	-684.29	-1,708.77	1,708.77	0.00	0.00	0.00	0.00
9,300.00	90.00	270.00	7,194.00	-684.29	-1,808.77	1,808.77	0.00	0.00	0.00	0.00
9,400.00	90.00	270.00	7,194.00	-684.29	-1,908.77	1,908.77	0.00	0.00	0.00	0.00
9,500.00	90.00	270.00	7,194.00	-684.29	-2,008.77	2,008.77	0.00	0.00	0.00	0.00
9,600.00	90.00	270.00	7,194.00	-684.29	-2,108.77	2,108.77	0.00	0.00	0.00	0.00
9,700.00	90.00	270.00	7,194.00	-684.30	-2,208.77	2,208.77	0.00	0.00	0.00	0.00
9,800.00	90.00	270.00	7,194.00	-684.30	-2,308.77	2,308.77	0.00	0.00	0.00	0.00
9,900.00	90.00	270.00	7,194.00	-684.30	-2,408.77	2,408.77	0.00	0.00	0.00	0.00
10,000.00	90.00	270.00	7,194.00	-684.30	-2,508.77	2,508.77	0.00	0.00	0.00	0.00
10,100.00	90.00	270.00	7,194.00	-684.30	-2,608.77	2,608.77	0.00	0.00	0.00	0.00
10,200.00	90.00	270.00	7,194.00	-684.30	-2,708.77	2,708.77	0.00	0.00	0.00	0.00
10,300.00	90.00	270.00	7,194.00	-684.30	-2,808.77	2,808.77	0.00	0.00	0.00	0.00
10,400.00	90.00	270.00	7,194.00	-684.31	-2,908.77	2,908.77	0.00	0.00	0.00	0.00
10,500.00	90.00	270.00	7,194.00	-684.31	-3,008.77	3,008.77	0.00	0.00	0.00	0.00
10,600.00	90.00	270.00	7,194.00	-684.31	-3,108.77	3,108.77	0.00	0.00	0.00	0.00
10,700.00	90.00	270.00	7,194.00	-684.31	-3,208.77	3,208.77	0.00	0.00	0.00	0.00
10,800.00	90.00	270.00	7,194.00	-684.31	-3,308.77	3,308.77	0.00	0.00	0.00	0.00
10,900.00	90.00	270.00	7,194.00	-684.31	-3,408.77	3,408.77	0.00	0.00	0.00	0.00
11,000.00	90.00	270.00	7,194.00	-684.32	-3,508.77	3,508.77	0.00	0.00	0.00	0.00
11,100.00	90.00	270.00	7,194.00	-684.32	-3,608.77	3,608.77	0.00	0.00	0.00	0.00
11,200.00	90.00	270.00	7,194.00	-684.32	-3,708.77	3,708.77	0.00	0.00	0.00	0.00
11,300.00	90.00	270.00	7,194.00	-684.32	-3,808.77	3,808.77	0.00	0.00	0.00	0.00
11,400.00	90.00	270.00	7,194.00	-684.32	-3,908.77	3,908.77	0.00	0.00	0.00	0.00
11,500.00	90.00	270.00	7,194.00	-684.32	-4,008.77	4,008.77	0.00	0.00	0.00	0.00
11,600.00	90.00	270.00	7,194.00	-684.33	-4,108.77	4,108.77	0.00	0.00	0.00	0.00
11,700.00	90.00	270.00	7,194.00	-684.33	-4,208.77	4,208.77	0.00	0.00	0.00	0.00
11,800.00	90.00	270.00	7,194.00	-684.33	-4,308.77	4,308.77	0.00	0.00	0.00	0.00
11,900.00	90.00	270.00	7,194.00	-684.33	-4,408.77	4,408.77	0.00	0.00	0.00	0.00
12,000.00	90.00	270.00	7,194.00	-684.33	-4,508.77	4,508.77	0.00	0.00	0.00	0.00
12,100.00	90.00	270.00	7,194.00	-684.33	-4,608.77	4,608.77	0.00	0.00	0.00	0.00
12,200.00	90.00	270.00	7,194.00	-684.33	-4,708.77	4,708.77	0.00	0.00	0.00	0.00
12,300.00	90.00	270.00	7,194.00	-684.34	-4,808.77	4,808.77	0.00	0.00	0.00	0.00
12,400.00	90.00	270.00	7,194.00	-684.34	-4,908.77	4,908.77	0.00	0.00	0.00	0.00
12,500.00	90.00	270.00	7,194.00	-684.34	-5,008.77	5,008.77	0.00	0.00	0.00	0.00
12,600.00	90.00	270.00	7,194.00	-684.34	-5,108.77	5,108.77	0.00	0.00	0.00	0.00
12,700.00	90.00	270.00	7,194.00	-684.34	-5,208.77	5,208.77	0.00	0.00	0.00	0.00
12,800.00	90.00	270.00	7,194.00	-684.34	-5,308.77	5,308.77	0.00	0.00	0.00	0.00
12,900.00	90.00	270.00	7,194.00	-684.35	-5,408.77	5,408.77	0.00	0.00	0.00	0.00
13,000.00	90.00	270.00	7,194.00	-684.35	-5,508.77	5,508.77	0.00	0.00	0.00	0.00
13,100.00	90.00	270.00	7,194.00	-684.35	-5,608.77	5,608.77	0.00	0.00	0.00	0.00
13,200.00	90.00	270.00	7,194.00	-684.35	-5,708.77	5,708.77	0.00	0.00	0.00	0.00
13,300.00	90.00	270.00	7,194.00	-684.35	-5,808.77	5,808.77	0.00	0.00	0.00	0.00
13,400.00	90.00	270.00	7,194.00	-684.35	-5,908.77	5,908.77	0.00	0.00	0.00	0.00
13,500.00	90.00	270.00	7,194.00	-684.36	-6,008.77	6,008.77	0.00	0.00	0.00	0.00
13,600.00	90.00	270.00	7,194.00	-684.36	-6,108.77	6,108.77	0.00	0.00	0.00	0.00
13,700.00	90.00	270.00	7,194.00	-684.36	-6,208.77	6,208.77	0.00	0.00	0.00	0.00
13,800.00	90.00	270.00	7,194.00	-684.36	-6,308.77	6,308.77	0.00	0.00	0.00	0.00
13,900.00	90.00	270.00	7,194.00	-684.36	-6,408.77	6,408.77	0.00	0.00	0.00	0.00
14,000.00	90.00	270.00	7,194.00	-684.36	-6,508.77	6,508.77	0.00	0.00	0.00	0.00
14,100.00	90.00	270.00	7,194.00	-684.36	-6,608.77	6,608.77	0.00	0.00	0.00	0.00
14,200.00	90.00	270.00	7,194.00	-684.37	-6,708.77	6,708.77	0.00	0.00	0.00	0.00
14,300.00	90.00	270.00	7,194.00	-684.37	-6,808.77	6,808.77	0.00	0.00	0.00	0.00



Plan Report for McKinstry 25N-21HZ - Permit Rev-3

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 (°)
14,400.00	90.00	270.00	7,194.00	-684.37	-6,908.77	6,908.77	0.00	0.00	0.00	0.00
14,421.12	90.00	270.00	7,194.00	-684.37	-6,929.89	6,929.89	0.00	0.00	0.00	0.00
TD Well @ 14421.12ft - Total Depth (Toe) - McKinstry 25N-21HZ_Bhl										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
2,720.00	2,720.00	0.00	0.00	Begin Nudge @ 2720.00ft
3,470.00	3,461.46	-81.87	53.17	End Nudge @ 3470.00ft
5,868.00	5,777.75	-602.39	391.19	Begin Drop @ 5868.00ft
6,618.00	6,519.21	-684.25	444.36	End Drop @ 6618.00ft
6,619.83	6,521.04	-684.25	444.36	Top of 4.5" Liner @ 6619.83ft
6,719.83	6,621.04	-684.25	444.36	KOP @ 6719.83ft
7,200.00	7,046.95	-684.26	254.66	DLS = 10°/100'
7,619.83	7,194.00	-684.26	-128.60	End Build @ 7619.83ft
14,421.12	7,194.00	-684.37	-6,929.89	TD Well @ 14421.12ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	+E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	270.00	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,619.83	Permit Rev-3	MWD+IFR1
7,619.83	14,421.12	Permit Rev-3	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
762.00	762.00	9 5/8"	9-5/8	13-1/2
7,619.83	7,194.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
712.00	712.00	Fox Hills Base		0.00	
3,977.84	3,952.00	Parkman		0.00	
4,525.50	4,481.00	Sussex		0.00	
7,131.24	6,998.00	SSPG		0.00	
7,237.33	7,071.00	NBRR		0.00	
7,333.64	7,124.00	N470_B_CK		0.00	
7,512.62	7,184.00	N700_C_CK		0.00	
7,619.83	7,194.00	Landing Target (Heel)		0.00	
14,421.12	7,194.00	Total Depth (Toe)		0.00	

Plan Report for McKinstry 25N-21HZ - Permit Rev-3

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
3N-R68W-Sec. 22_Section Lines	0.00	60.09	-0.28	Polygon
McKinstry 25N-21HZ_Bhl	7,194.00	-684.37	-6,929.89	Point
3N-R68W-Sec. 23_Section Lines	0.00	60.09	-0.28	Polygon
3N-R68W-Sec. 21_Section Lines	0.00	60.09	-0.28	Polygon
McKinstry 25N-21HZ_SHL	0.00	0.00	0.00	Point

**North Reference Sheet for 3N-68W-22 McKinstry 8-22HZ Pad - McKinstry
25N-21HZ - Plan C**

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' @ 5001.00usft (D Rig). Northing and Easting are relative to McKinstry 25N-21HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.00°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960003

Grid Coordinates of Well: 14,604,696.47 usft N, 1,645,614.61 usft E

Geographical Coordinates of Well: 40° 12' 50.75" N, 104° 58' 52.97" W

Grid Convergence at Surface is: 0.01°

Based upon Minimum Curvature type calculations, at a Measured Depth of 14,421.12usft
the Bottom Hole Displacement is 6,963.60usft in the Direction of 264.36° (True).

Magnetic Convergence at surface is: -8.48° (11 December 2014, , IGRF2010)

