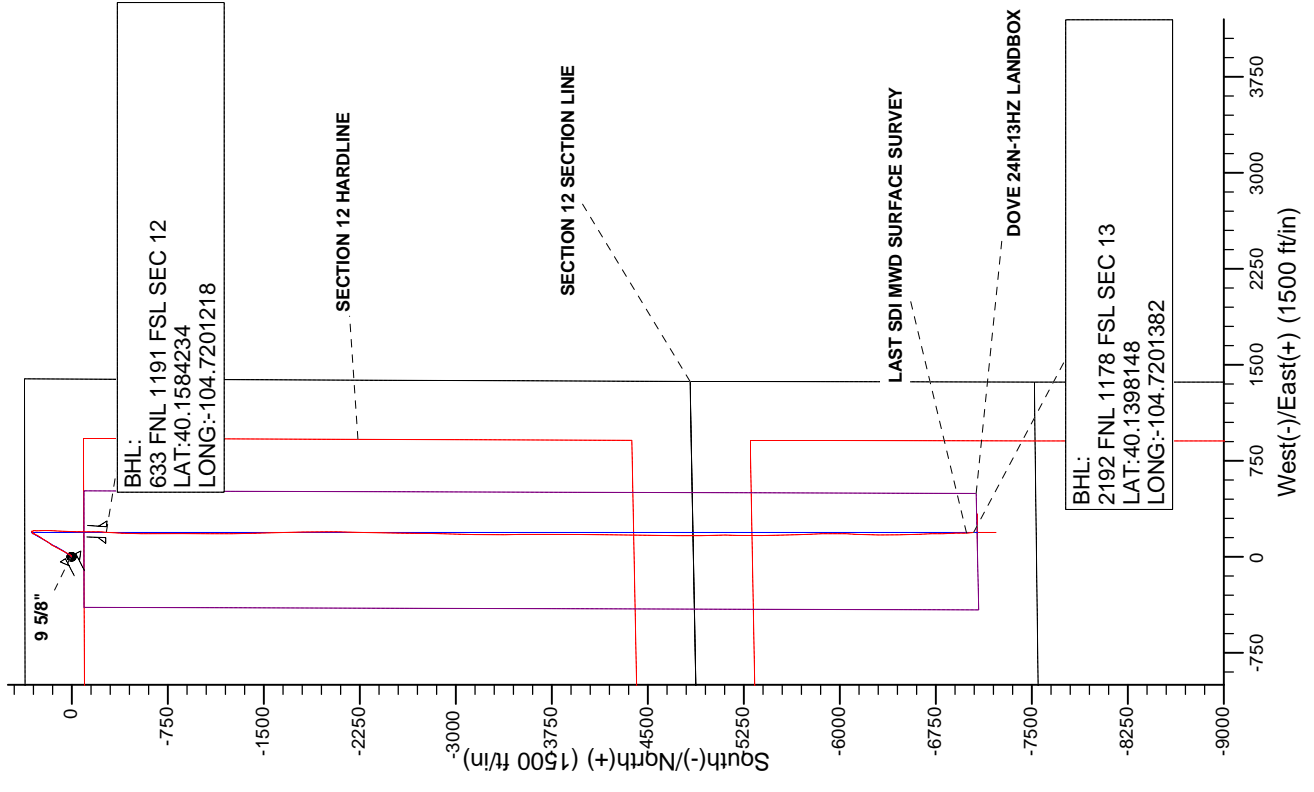
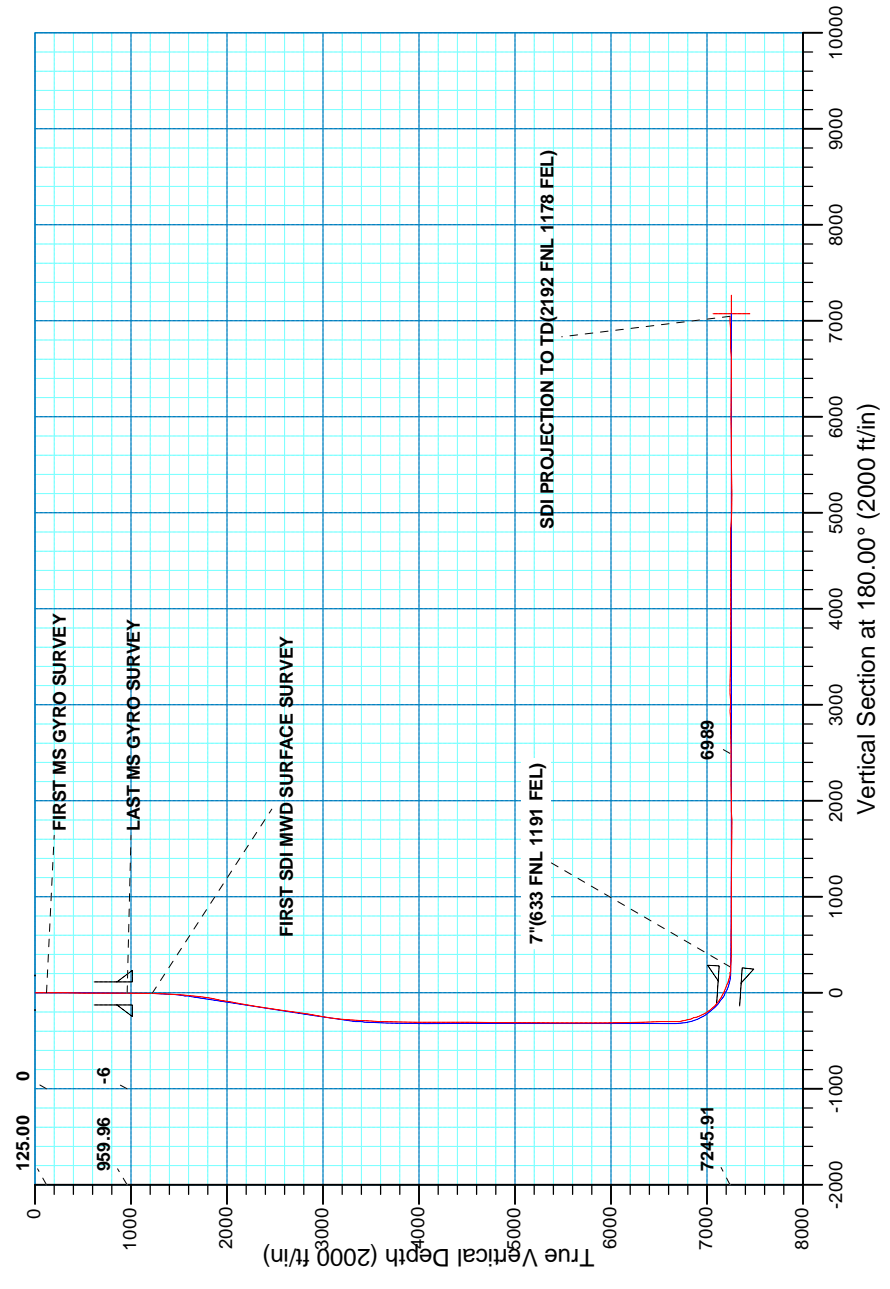


WELL DETAILS: DOVE 24N-13HZ			
GL 4970 & KB 25' @ 4995.00ft (HP 311)			
+N/-S	+E/-W	Northing	Longitude
0.00	0.00	1301782.73	-104.7208080
Eastings	Latitudes		
3217781.17	40.1591619		





**Scientific Drilling**

## **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**DOVE 27-12 PAD**

**DOVE 24N-13HZ**

**OH**

**Design: OH**

## **Standard Survey Report**

**16 July, 2013**

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DOVE 24N-13HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4970' & KB 25' @ 4995.00ft (HP 311)
<b>Site:</b>	DOVE 27-12 PAD	<b>MD Reference:</b>	GL 4970' & KB 25' @ 4995.00ft (HP 311)
<b>Well:</b>	DOVE 24N-13HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	DOVE 27-12 PAD, SECTION 12 T2N R66W				
<b>Site Position:</b>	<b>Northing:</b>	1,301,783.37 usft	<b>Latitude:</b>	40.1591630	
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,217,811.07 usft	<b>Longitude:</b>	-104.7207010
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.50 °

<b>Well</b>	DOVE 24N-13HZ, 365' FNL 1386' FEL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	1,301,782.73 usft	<b>Latitude:</b>	40.1591620
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	3,217,781.17 usft	<b>Longitude:</b>	-104.7208080
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	4,970.00 ft	

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2013	2013/04/17	8.60	66.79	52,751

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	180.00	

<b>Survey Program</b>	<b>Date</b>	2013/07/16			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
25.00	960.00	Survey #1 MS GYRO (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
1,224.00	14,380.00	Survey #2 SDI MWD (OH)	SDI_MWD+CRUST_1.0	SDI MWD + Crustal anomaly, Version 1.0	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	
125.00	0.22	55.81	125.00	0.11	0.16	-0.11	0.22	0.22	0.00	
<b>FIRST MS GYRO SURVEY</b>										
225.00	0.49	322.72	225.00	0.56	0.06	-0.56	0.55	0.27	-93.09	
325.00	0.05	199.67	325.00	0.86	-0.22	-0.86	0.52	-0.44	-123.05	
425.00	0.31	61.79	425.00	0.94	0.01	-0.94	0.35	0.26	-137.88	
525.00	0.54	47.69	524.99	1.39	0.60	-1.39	0.25	0.23	-14.10	
625.00	0.76	39.11	624.99	2.22	1.36	-2.22	0.24	0.22	-8.58	
725.00	0.81	33.26	724.98	3.32	2.17	-3.32	0.09	0.05	-5.85	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DOVE 24N-13HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4970' & KB 25' @ 4995.00ft (HP 311)
<b>Site:</b>	DOVE 27-12 PAD	<b>MD Reference:</b>	GL 4970' & KB 25' @ 4995.00ft (HP 311)
<b>Well:</b>	DOVE 24N-13HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey										
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)	
825.00	0.51	15.40	824.97	4.34	2.67	-4.34	0.36	-0.30	-17.86	
925.00	0.98	51.77	924.96	5.30	3.46	-5.30	0.64	0.47	36.37	
960.00	0.84	59.19	959.96	5.62	3.92	-5.62	0.52	-0.40	21.20	
<b>LAST MS GYRO SURVEY</b>										
1,018.00	0.92	63.02	1,017.95	6.05	4.70	-6.05	0.17	0.13	6.61	
<b>9 5/8"</b>										
1,224.00	1.21	72.51	1,223.92	7.45	8.24	-7.45	0.17	0.14	4.61	
<b>FIRST SDI MWD SURFACE SURVEY</b>										
1,315.00	2.46	47.29	1,314.87	9.06	10.59	-9.06	1.60	1.37	-27.71	
1,406.00	3.45	34.69	1,405.75	12.64	13.59	-12.64	1.29	1.09	-13.85	
1,497.00	4.72	29.62	1,496.52	18.14	16.99	-18.14	1.45	1.40	-5.57	
1,588.00	5.94	30.86	1,587.12	25.44	21.26	-25.44	1.35	1.34	1.36	
1,679.00	8.08	28.86	1,677.43	35.09	26.76	-35.09	2.37	2.35	-2.20	
1,770.00	9.43	30.67	1,767.37	47.10	33.65	-47.10	1.51	1.48	1.99	
1,861.00	10.77	29.46	1,856.96	60.92	41.64	-60.92	1.49	1.47	-1.33	
1,951.00	11.30	25.53	1,945.30	76.19	49.57	-76.19	1.02	0.59	-4.37	
2,043.00	12.01	30.21	2,035.40	92.60	58.27	-92.60	1.28	0.77	5.09	
2,134.00	11.33	24.42	2,124.52	108.92	66.73	-108.92	1.49	-0.75	-6.36	
2,225.00	11.28	25.89	2,213.76	125.07	74.32	-125.07	0.32	-0.05	1.62	
2,317.00	11.28	29.50	2,303.98	140.99	82.68	-140.99	0.77	0.00	3.92	
2,407.00	10.94	42.95	2,392.31	154.91	92.83	-154.91	2.90	-0.38	14.94	
2,497.00	11.37	33.10	2,480.62	168.59	103.50	-168.59	2.17	0.48	-10.94	
2,588.00	10.02	31.71	2,570.04	182.84	112.56	-182.84	1.51	-1.48	-1.53	
2,679.00	9.66	29.31	2,659.70	196.23	120.45	-196.23	0.60	-0.40	-2.64	
2,769.00	9.89	30.73	2,748.39	209.46	128.10	-209.46	0.37	0.26	1.58	
2,864.00	9.77	33.39	2,842.00	223.21	136.71	-223.21	0.49	-0.13	2.80	
3,053.00	10.61	31.58	3,028.01	251.42	154.64	-251.42	0.48	0.44	-0.96	
3,147.00	9.01	27.44	3,120.64	265.32	162.57	-265.32	1.86	-1.70	-4.40	
3,242.00	6.56	27.66	3,214.75	276.73	168.52	-276.73	2.58	-2.58	0.23	
3,336.00	4.73	35.09	3,308.30	284.66	173.24	-284.66	2.09	-1.95	7.90	
3,431.00	3.86	19.71	3,403.03	290.88	176.57	-290.88	1.51	-0.92	-16.19	
3,525.00	3.02	33.24	3,496.86	295.93	178.99	-295.93	1.24	-0.89	14.39	
3,620.00	2.03	46.38	3,591.77	299.18	181.58	-299.18	1.20	-1.04	13.83	
3,809.00	1.09	5.74	3,780.70	303.28	184.18	-303.28	0.74	-0.50	-21.50	
3,998.00	0.14	299.40	3,969.69	305.18	184.16	-305.18	0.55	-0.50	-35.10	
4,187.00	0.77	237.65	4,158.68	304.62	182.89	-304.62	0.38	0.33	-32.67	
4,376.00	0.36	16.50	4,347.68	304.51	181.98	-304.51	0.56	-0.22	73.47	
4,565.00	0.62	150.40	4,536.68	304.19	182.66	-304.19	0.48	0.14	70.85	
4,660.00	1.15	51.05	4,631.67	304.34	183.65	-304.34	1.47	0.56	-104.58	
4,754.00	1.73	27.01	4,725.64	306.19	185.03	-306.19	0.88	0.62	-25.57	
4,943.00	1.27	51.89	4,914.58	310.03	187.98	-310.03	0.42	-0.24	13.16	
5,132.00	1.38	86.81	5,103.53	311.45	191.90	-311.45	0.42	0.06	18.48	
5,227.00	1.11	70.11	5,198.51	311.83	193.90	-311.83	0.47	-0.28	-17.58	
5,416.00	1.13	96.32	5,387.47	312.24	197.48	-312.24	0.27	0.01	13.87	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DOVE 24N-13HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4970' & KB 25' @ 4995.00ft (HP 311)
<b>Site:</b>	DOVE 27-12 PAD	<b>MD Reference:</b>	GL 4970' & KB 25' @ 4995.00ft (HP 311)
<b>Well:</b>	DOVE 24N-13HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey										
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)	
5,605.00	0.10	31.70	5,576.46	312.18	199.42	-312.18	0.58	-0.54	-34.19	
5,794.00	0.82	150.29	5,765.45	311.14	200.17	-311.14	0.46	0.38	62.75	
5,983.00	0.65	307.99	5,954.45	310.63	200.00	-310.63	0.76	-0.09	83.44	
6,172.00	1.08	209.81	6,143.43	309.74	198.27	-309.74	0.71	0.23	-51.95	
6,361.00	0.69	218.42	6,332.41	307.31	196.68	-307.31	0.22	-0.21	4.56	
6,550.00	2.75	131.83	6,521.33	303.39	199.35	-303.39	1.48	1.09	-45.81	
6,642.00	2.21	138.87	6,613.24	300.58	202.16	-300.58	0.67	-0.59	7.65	
6,680.00	1.69	152.63	6,651.22	299.53	202.90	-299.53	1.83	-1.37	36.21	
6,711.00	3.03	163.77	6,682.20	298.34	203.34	-298.34	4.55	4.32	35.94	
6,742.00	4.63	180.67	6,713.13	296.30	203.55	-296.30	6.26	5.16	54.52	
6,774.00	8.89	182.42	6,744.90	292.54	203.43	-292.54	13.33	13.31	5.47	
6,805.00	12.60	187.80	6,775.35	286.79	202.87	-286.79	12.38	11.97	17.35	
6,836.00	15.34	182.86	6,805.43	279.35	202.21	-279.35	9.63	8.84	-15.94	
6,868.00	16.73	180.01	6,836.18	270.51	202.00	-270.51	4.99	4.34	-8.91	
6,899.00	17.18	178.58	6,865.84	261.47	202.11	-261.47	1.98	1.45	-4.61	
6,931.00	19.42	175.72	6,896.22	251.44	202.62	-251.44	7.54	7.00	-8.94	
6,962.00	22.79	176.56	6,925.13	240.31	203.37	-240.31	10.91	10.87	2.71	
6,994.00	27.47	177.13	6,954.10	226.74	204.11	-226.74	14.64	14.63	1.78	
7,025.00	30.30	178.72	6,981.24	211.78	204.64	-211.78	9.46	9.13	5.13	
7,056.00	33.53	179.07	7,007.55	195.40	204.96	-195.40	10.44	10.42	1.13	
7,088.00	36.19	179.70	7,033.80	177.11	205.15	-177.11	8.39	8.31	1.97	
7,119.00	40.31	181.38	7,058.14	157.92	204.96	-157.92	13.71	13.29	5.42	
7,151.00	45.20	183.65	7,081.64	136.23	203.98	-136.23	16.02	15.28	7.09	
7,182.00	49.59	184.32	7,102.62	113.47	202.39	-113.47	14.25	14.16	2.16	
7,213.00	53.87	183.61	7,121.81	89.20	200.71	-89.20	13.92	13.81	-2.29	
7,245.00	56.55	183.64	7,140.07	62.98	199.05	-62.98	8.38	8.38	0.09	
7,276.00	60.27	182.24	7,156.30	36.61	197.71	-36.61	12.60	12.00	-4.52	
7,308.00	62.90	181.14	7,171.53	8.48	196.88	-8.48	8.76	8.22	-3.44	
7,339.00	64.98	180.66	7,185.15	-19.36	196.44	19.36	6.85	6.71	-1.55	
7,370.00	66.34	179.64	7,197.93	-47.61	196.37	47.61	5.31	4.39	-3.29	
7,401.00	68.79	180.33	7,209.76	-76.26	196.38	76.26	8.17	7.90	2.23	
7,433.00	71.86	179.48	7,220.53	-106.39	196.43	106.39	9.91	9.59	-2.66	
7,464.00	74.56	180.53	7,229.48	-136.06	196.42	136.06	9.29	8.71	3.39	
7,496.00	77.86	181.12	7,237.11	-167.13	195.98	167.13	10.47	10.31	1.84	
7,527.00	80.71	181.87	7,242.87	-197.58	195.18	197.58	9.50	9.19	2.42	
7,557.00	84.04	182.82	7,246.85	-227.28	193.96	227.28	11.54	11.10	3.17	
7,599.00	85.64	183.12	7,250.63	-269.05	191.80	269.05	3.86	3.80	0.71	
<b>7"(633 FNL 1191 FEL)</b>										
7,676.00	88.56	183.66	7,254.53	-345.81	187.25	345.81	3.86	3.80	0.70	
7,767.00	89.73	182.32	7,255.89	-436.67	182.50	436.67	1.95	1.29	-1.47	
7,858.00	90.50	180.33	7,255.71	-527.64	180.40	527.64	2.34	0.85	-2.19	
7,949.00	89.30	178.76	7,255.86	-618.64	181.12	618.64	2.17	-1.32	-1.73	
8,040.00	90.33	180.43	7,256.16	-709.63	181.77	709.63	2.16	1.13	1.84	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DOVE 24N-13HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4970' & KB 25' @ 4995.00ft (HP 311)
<b>Site:</b>	DOVE 27-12 PAD	<b>MD Reference:</b>	GL 4970' & KB 25' @ 4995.00ft (HP 311)
<b>Well:</b>	DOVE 24N-13HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey										
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)	
8,131.00	91.17	180.96	7,254.97	-800.61	180.66	800.61	1.09	0.92	0.58	
8,221.00	89.77	180.15	7,254.23	-890.60	179.79	890.60	1.80	-1.56	-0.90	
8,312.00	90.44	179.83	7,254.06	-981.60	179.81	981.60	0.82	0.74	-0.35	
8,404.00	89.56	179.66	7,254.06	-1,073.60	180.22	1,073.60	0.97	-0.96	-0.18	
8,495.00	89.53	179.18	7,254.78	-1,164.59	181.14	1,164.59	0.53	-0.03	-0.53	
8,585.00	89.76	179.92	7,255.34	-1,254.59	181.84	1,254.59	0.86	0.26	0.82	
8,677.00	89.46	178.85	7,255.97	-1,346.58	182.83	1,346.58	1.21	-0.33	-1.16	
8,768.00	89.10	178.68	7,257.11	-1,437.55	184.79	1,437.55	0.44	-0.40	-0.19	
8,858.00	88.66	178.34	7,258.87	-1,527.50	187.13	1,527.50	0.62	-0.49	-0.38	
8,949.00	90.40	178.66	7,259.62	-1,618.47	189.51	1,618.47	1.94	1.91	0.35	
9,040.00	90.20	178.42	7,259.14	-1,709.43	191.83	1,709.43	0.34	-0.22	-0.26	
9,130.00	90.94	180.36	7,258.25	-1,799.42	192.79	1,799.42	2.31	0.82	2.16	
9,225.00	91.04	179.02	7,256.60	-1,894.40	193.30	1,894.40	1.41	0.11	-1.41	
9,319.00	91.11	179.23	7,254.84	-1,988.37	194.74	1,988.37	0.24	0.07	0.22	
9,414.00	90.74	181.28	7,253.31	-2,083.36	194.32	2,083.36	2.19	-0.39	2.16	
9,508.00	91.34	181.21	7,251.60	-2,177.32	192.28	2,177.32	0.64	0.64	-0.07	
9,603.00	90.27	181.44	7,250.27	-2,272.28	190.08	2,272.28	1.15	-1.13	0.24	
9,697.00	91.14	181.00	7,249.11	-2,366.25	188.08	2,366.25	1.04	0.93	-0.47	
9,792.00	88.62	180.50	7,249.31	-2,461.24	186.83	2,461.24	2.70	-2.65	-0.53	
9,886.00	90.17	180.81	7,250.30	-2,555.22	185.76	2,555.22	1.68	1.65	0.33	
9,981.00	90.34	180.59	7,249.88	-2,650.21	184.60	2,650.21	0.29	0.18	-0.23	
10,075.00	91.01	180.77	7,248.77	-2,744.20	183.48	2,744.20	0.74	0.71	0.19	
10,170.00	91.34	180.15	7,246.82	-2,839.18	182.72	2,839.18	0.74	0.35	-0.65	
10,264.00	89.80	181.27	7,245.89	-2,933.16	181.56	2,933.16	2.03	-1.64	1.19	
10,359.00	90.03	182.08	7,246.03	-3,028.12	178.78	3,028.12	0.89	0.24	0.85	
10,453.00	90.87	181.99	7,245.29	-3,122.06	175.44	3,122.06	0.90	0.89	-0.10	
10,548.00	89.30	181.24	7,245.15	-3,217.01	172.76	3,217.01	1.83	-1.65	-0.79	
10,642.00	90.64	180.80	7,245.20	-3,311.00	171.09	3,311.00	1.50	1.43	-0.47	
10,737.00	88.46	179.72	7,245.94	-3,405.99	170.66	3,405.99	2.56	-2.29	-1.14	
10,831.00	88.76	179.12	7,248.22	-3,499.95	171.61	3,499.95	0.71	0.32	-0.64	
10,926.00	89.19	179.46	7,249.92	-3,594.93	172.79	3,594.93	0.58	0.45	0.36	
11,020.00	89.66	179.49	7,250.87	-3,688.92	173.65	3,688.92	0.50	0.50	0.03	
11,115.00	90.87	179.99	7,250.43	-3,783.92	174.08	3,783.92	1.38	1.27	0.53	
11,209.00	90.84	180.31	7,249.03	-3,877.91	173.83	3,877.91	0.34	-0.03	0.34	
11,304.00	90.37	181.10	7,248.02	-3,972.89	172.67	3,972.89	0.97	-0.49	0.83	
11,398.00	89.36	180.44	7,248.24	-4,066.88	171.40	4,066.88	1.28	-1.07	-0.70	
11,493.00	89.29	181.08	7,249.36	-4,161.87	170.14	4,161.87	0.68	-0.07	0.67	
11,587.00	90.34	180.59	7,249.67	-4,255.85	168.77	4,255.85	1.23	1.12	-0.52	
11,682.00	90.54	180.40	7,248.94	-4,350.85	167.95	4,350.85	0.29	0.21	-0.20	
11,776.00	91.07	180.00	7,247.62	-4,444.84	167.62	4,444.84	0.71	0.56	-0.43	
11,871.00	88.55	180.34	7,247.93	-4,539.83	167.34	4,539.83	2.68	-2.65	0.36	
11,965.00	89.23	181.21	7,249.75	-4,633.80	166.07	4,633.80	1.17	0.72	0.93	
12,060.00	90.57	181.30	7,249.92	-4,728.78	163.99	4,728.78	1.41	1.41	0.09	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well DOVE 24N-13HZ
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	GL 4970' & KB 25' @ 4995.00ft (HP 311)
<b>Site:</b>	DOVE 27-12 PAD	<b>MD Reference:</b>	GL 4970' & KB 25' @ 4995.00ft (HP 311)
<b>Well:</b>	DOVE 24N-13HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM5000-RobertS-Local

Survey										
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)	
12,154.00	87.88	181.51	7,251.19	-4,822.73	161.69	4,822.73	2.87	-2.86	0.22	
12,249.00	87.95	178.41	7,254.65	-4,917.66	161.75	4,917.66	3.26	0.07	-3.26	
12,344.00	88.56	178.25	7,257.54	-5,012.57	164.52	5,012.57	0.66	0.64	-0.17	
12,438.00	90.27	178.69	7,258.50	-5,106.53	167.03	5,106.53	1.88	1.82	0.47	
12,533.00	89.66	180.90	7,258.56	-5,201.52	167.37	5,201.52	2.41	-0.64	2.33	
12,627.00	91.01	180.31	7,258.01	-5,295.51	166.38	5,295.51	1.57	1.44	-0.63	
12,722.00	89.56	179.45	7,257.53	-5,390.51	166.57	5,390.51	1.77	-1.53	-0.91	
12,817.00	92.04	178.28	7,256.21	-5,485.47	168.46	5,485.47	2.89	2.61	-1.23	
12,911.00	91.71	179.12	7,253.13	-5,579.40	170.59	5,579.40	0.96	-0.35	0.89	
13,006.00	88.62	178.92	7,252.86	-5,674.37	172.21	5,674.37	3.26	-3.25	-0.21	
13,100.00	89.90	177.94	7,254.07	-5,768.32	174.79	5,768.32	1.71	1.36	-1.04	
13,195.00	90.24	179.69	7,253.96	-5,863.30	176.75	5,863.30	1.88	0.36	1.84	
13,290.00	90.94	179.83	7,252.98	-5,958.29	177.15	5,958.29	0.75	0.74	0.15	
13,384.00	89.46	180.01	7,252.65	-6,052.29	177.28	6,052.29	1.59	-1.57	0.19	
13,479.00	90.47	181.65	7,252.71	-6,147.27	175.90	6,147.27	2.03	1.06	1.73	
13,573.00	90.10	182.36	7,252.24	-6,241.22	172.62	6,241.22	0.85	-0.39	0.76	
13,668.00	89.70	181.25	7,252.41	-6,336.17	169.62	6,336.17	1.24	-0.42	-1.17	
13,762.00	90.00	178.15	7,252.65	-6,430.15	170.12	6,430.15	3.31	0.32	-3.30	
13,856.00	90.10	177.67	7,252.57	-6,524.09	173.54	6,524.09	0.52	0.11	-0.51	
13,950.00	90.30	177.38	7,252.24	-6,618.00	177.60	6,618.00	0.37	0.21	-0.31	
14,045.00	90.84	178.95	7,251.30	-6,712.95	180.65	6,712.95	1.75	0.57	1.65	
14,139.00	90.71	178.56	7,250.03	-6,806.91	182.69	6,806.91	0.44	-0.14	-0.41	
14,233.00	91.95	178.96	7,247.84	-6,900.86	184.72	6,900.86	1.39	1.32	0.43	
14,321.00	90.57	179.04	7,245.91	-6,988.83	186.26	6,988.83	1.57	-1.57	0.09	
<b>LAST SDI MWD SURFACE SURVEY</b>										
14,380.00	90.57	179.04	7,245.32	-7,047.82	187.24	7,047.82	0.00	0.00	0.00	
<b>SDI PROJECTION TO TD(2192 FNL 1178 FEL)</b>										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
1,018.00	1,017.95	9 5/8"	9.625	12.250		
7,599.00	7,250.63	7"(633 FNL 1191 FEL)	7.000	7.500		

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
125.00	125.00	0.11	0.16	FIRST MS GYRO SURVEY	
960.00	959.96	5.62	3.92	LAST MS GYRO SURVEY	
1,224.00	1,223.92	7.45	8.24	FIRST SDI MWD SURFACE SURVEY	
14,321.00	7,245.91	-6,988.83	186.26	LAST SDI MWD SURFACE SURVEY	
14,380.00	7,245.32	-7,047.82	187.24	SDI PROJECTION TO TD(2192 FNL 1178 FEL)	