

# **Unit Petroleum**

**Reno County, Kansas [NAD 83]**

**Section 18 T24S-R9W**

**Happy Hollow 7 #2H**

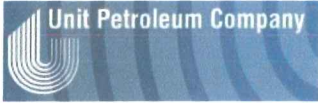
**OH**

**Design: OH**

## **Standard Survey Report**

**17 September, 2014**





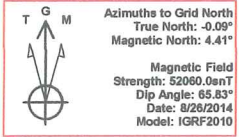
Unit Petroleum  
 Project: Reno County, Kansas [NAD 83]  
 Site: Section 18 T24S-R9W  
 Well: Happy Hollow 7 #2H  
 Wellbore: OH  
 Design: Design #2  
 Lat: 37° 58' 8.929 N  
 Long: 98° 20' 45.716 W  
 Pad GL: 1690.00  
 KB: 14' KB @ 1704.00ustf (UDI 331)



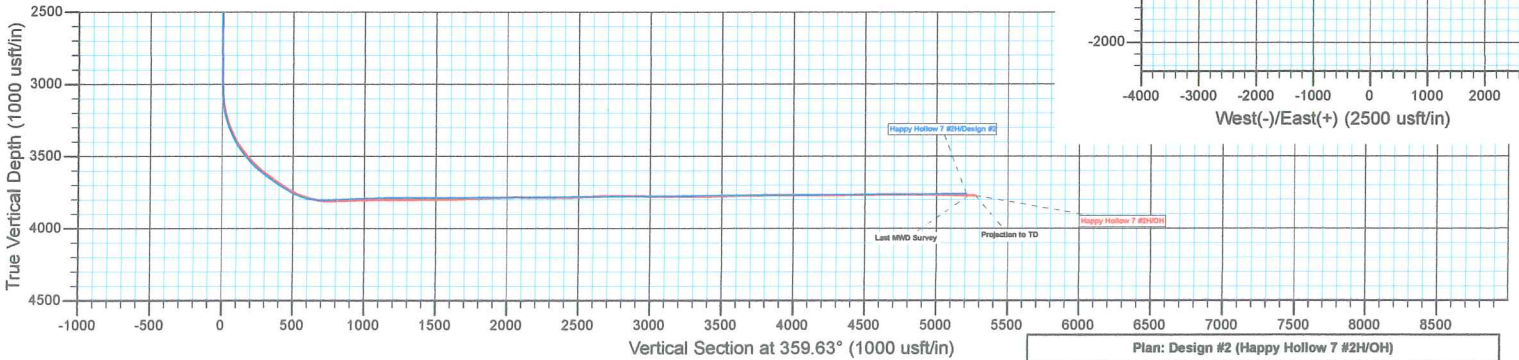
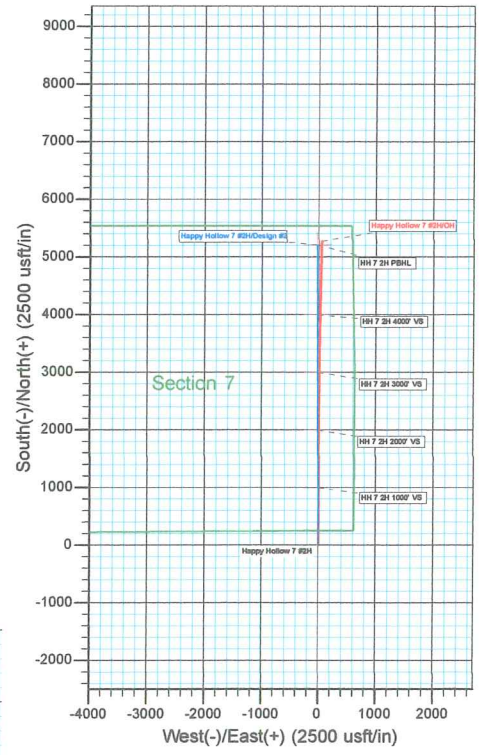
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3044.20	0.00	0.00	3044.20	0.00	0.00	0.00	0.00	0.00	
3744.20	56.00	359.63	3637.95	315.70	-2.04	8.00	359.63	315.70	
3894.20	56.00	359.63	3721.83	440.05	-2.84	0.00	0.00	440.06	
4198.59	92.53	359.62	3803.00	728.09	-4.73	12.00	-0.02	728.10	
4470.75	92.53	359.62	3791.00	999.96	-6.53	0.00	0.00	1000.00	
4544.31	90.32	359.63	3789.17	1073.51	-7.01	3.00	179.86	1073.53	
5468.08	90.32	359.63	3784.02	1997.25	-13.04	0.00	0.00	1997.29	
5470.79	90.40	359.63	3784.00	1999.96	-13.05	3.00	-0.14	2000.00	
6470.82	90.40	359.63	3777.00	2999.94	-19.58	0.00	0.00	3000.00	
6476.61	90.57	359.63	3776.95	3005.73	-19.82	3.00	0.00	3005.79	
7461.18	90.57	359.63	3767.07	3990.23	-26.04	0.00	0.00	3990.31	
7470.67	90.28	359.63	3767.00	3999.91	-26.11	3.00	180.00	4000.00	
8680.32	90.28	359.63	3761.00	5209.33	-34.00	0.00	0.00	5209.44	

WELL DETAILS: Happy Hollow 7 #2H						
+N/-S	+E/-W	Northing	Ground Level: Easting	1690.00 Latitude	1890.00 Longitude	Slot
0.00	0.00	1786633.00	1356717.00	37° 58' 8.929 N	98° 20' 45.716 W	

PROJECT DETAILS: Reno County, Kansas [NAD 83]  
 Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Kansas Southern Zone  
 System Datum: Mean Sea Level



NOTE: All Lease lines and Hard lines are estimates only and are subject to the customers' approval.



Plan: Design #2 (Happy Hollow 7 #2H/OH)  
 Created By: Derek Stephens Date: 8:02, September 17 2014

Survey Report



<b>Company:</b>	Unit Petroleum	<b>Local Co-ordinate Reference:</b>	Well Happy Hollow 7 #2H
<b>Project:</b>	Reno County, Kansas [NAD 83]	<b>TVD Reference:</b>	14' KB @ 1704.00usft (UDI 331)
<b>Site:</b>	Section 18 T24S-R9W	<b>MD Reference:</b>	14' KB @ 1704.00usft (UDI 331)
<b>Well:</b>	Happy Hollow 7 #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

<b>Project</b>	Reno County, Kansas [NAD 83]		
<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>	Kansas Southern Zone		Using geodetic scale factor

<b>Site</b>	Section 18 T24S-R9W				
<b>Site Position:</b>		<b>Northing:</b>	1,786,633.00 usft	<b>Latitude:</b>	37° 58' 8.929 N
<b>From:</b>	Map	<b>Easting:</b>	1,356,717.00 usft	<b>Longitude:</b>	98° 20' 45.716 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.09 °

<b>Well</b>	Happy Hollow 7 #2H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,786,633.00 usft	<b>Latitude:</b>	37° 58' 8.929 N
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	1,356,717.00 usft	<b>Longitude:</b>	98° 20' 45.716 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,690.00 usft

<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>
	IGRF2010	8/26/2014	4.51	65.83	52,060

<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) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	359.63	

<b>Survey Program</b>	<b>Date</b>	9/17/2014			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
72.67	2,922.87	Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot	
2,977.00	8,734.00	MWD (OH)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
72.67	0.58	341.53	72.67	0.35	-0.12	0.35	0.80	0.80	0.00	
166.62	0.62	359.70	166.61	1.31	-0.27	1.31	0.21	0.04	19.34	
260.57	0.72	352.27	260.56	2.40	-0.35	2.40	0.14	0.11	-7.91	
354.52	0.48	333.67	354.50	3.34	-0.61	3.34	0.33	-0.26	-19.80	
448.47	0.24	302.77	448.45	3.80	-0.95	3.80	0.32	-0.26	-32.89	
542.42	0.43	290.38	542.40	4.03	-1.44	4.04	0.22	0.20	-13.19	
636.37	0.29	268.89	636.35	4.15	-2.01	4.16	0.20	-0.15	-22.87	
730.32	0.18	246.68	730.30	4.08	-2.38	4.10	0.15	-0.12	-23.64	
824.27	0.19	227.44	824.25	3.92	-2.63	3.94	0.07	0.01	-20.48	



<b>Company:</b>	Unit Petroleum	<b>Local Co-ordinate Reference:</b>	Well Happy Hollow 7 #2H
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<b>Site:</b>	Section 18 T24S-R9W	<b>MD Reference:</b>	14' KB @ 1704.00usft (UDI 331)
<b>Well:</b>	Happy Hollow 7 #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
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)	
918.22	0.31	172.04	918.19	3.56	-2.71	3.58	0.27	0.13	-58.97	
1,012.17	0.23	187.67	1,012.14	3.12	-2.70	3.14	0.11	-0.09	16.64	
1,106.12	0.23	245.18	1,106.09	2.86	-2.90	2.88	0.24	0.00	61.21	
1,200.07	0.12	244.98	1,200.04	2.74	-3.16	2.76	0.12	-0.12	-0.21	
1,294.02	0.65	227.79	1,293.99	2.34	-3.64	2.36	0.57	0.56	-18.30	
1,387.97	0.51	209.74	1,387.94	1.62	-4.25	1.64	0.24	-0.15	-19.21	
1,481.92	0.12	138.65	1,481.88	1.18	-4.39	1.21	0.52	-0.42	-75.67	
1,575.87	0.14	115.77	1,575.83	1.06	-4.22	1.08	0.06	0.02	-24.35	
1,669.82	0.47	74.67	1,669.78	1.11	-3.74	1.13	0.40	0.35	-43.75	
1,763.77	0.54	37.16	1,763.73	1.56	-3.11	1.58	0.35	0.07	-39.93	
1,857.72	0.15	10.88	1,857.68	2.04	-2.81	2.05	0.44	-0.42	-27.97	
1,951.67	0.51	354.24	1,951.63	2.57	-2.83	2.59	0.39	0.38	-17.71	
2,045.62	0.02	341.22	2,045.57	3.00	-2.88	3.02	0.52	-0.52	-13.86	
2,139.57	0.15	257.49	2,139.52	2.99	-3.01	3.01	0.16	0.14	-89.12	
2,233.52	0.21	217.45	2,233.47	2.83	-3.23	2.85	0.14	0.06	-42.62	
2,327.47	0.23	220.61	2,327.42	2.55	-3.46	2.57	0.02	0.02	3.36	
2,421.42	0.18	193.98	2,421.37	2.26	-3.62	2.29	0.11	-0.05	-28.34	
2,515.37	0.16	229.30	2,515.32	2.03	-3.75	2.06	0.11	-0.02	37.59	
2,609.32	0.28	193.35	2,609.27	1.73	-3.90	1.75	0.19	0.13	-38.27	
2,703.27	0.24	184.56	2,703.22	1.31	-3.97	1.33	0.06	-0.04	-9.36	
2,797.22	0.31	168.92	2,797.17	0.86	-3.94	0.89	0.11	0.07	-16.65	
2,891.17	0.28	209.34	2,891.12	0.41	-4.00	0.44	0.22	-0.03	43.02	
2,922.87	0.27	199.82	2,922.82	0.27	-4.07	0.30	0.15	-0.03	-30.03	
2,977.00	0.10	300.80	2,976.95	0.18	-4.15	0.20	0.56	-0.31	186.55	
3,009.00	0.30	355.70	3,008.95	0.27	-4.18	0.30	0.80	0.63	171.56	
3,040.00	1.60	0.90	3,039.94	0.79	-4.18	0.82	4.20	4.19	16.77	
3,072.00	3.80	357.60	3,071.91	2.30	-4.22	2.32	6.89	6.88	-10.31	
3,104.00	6.50	0.30	3,103.77	5.17	-4.25	5.19	8.47	8.44	8.44	
3,136.00	9.00	3.30	3,135.48	9.48	-4.10	9.50	7.91	7.81	9.38	
3,167.00	11.10	1.30	3,166.00	14.88	-3.89	14.91	6.87	6.77	-6.45	
3,199.00	13.10	359.30	3,197.29	21.59	-3.87	21.61	6.38	6.25	-6.25	
3,230.00	15.30	358.80	3,227.34	29.19	-3.99	29.22	7.11	7.10	-1.61	
3,262.00	17.70	358.80	3,258.02	38.28	-4.18	38.30	7.50	7.50	0.00	
3,294.00	20.10	359.40	3,288.29	48.64	-4.34	48.67	7.52	7.50	1.88	
3,326.00	22.90	0.00	3,318.06	60.37	-4.40	60.39	8.78	8.75	1.88	
3,357.00	26.00	0.40	3,346.28	73.20	-4.35	73.22	10.01	10.00	1.29	
3,389.00	29.00	0.80	3,374.66	87.97	-4.20	87.99	9.39	9.38	1.25	
3,421.00	31.70	1.00	3,402.27	104.13	-3.94	104.16	8.44	8.44	0.63	
3,453.00	34.30	0.80	3,429.11	121.56	-3.67	121.58	8.13	8.13	-0.63	
3,484.00	36.60	0.60	3,454.36	139.54	-3.45	139.56	7.43	7.42	-0.65	
3,516.00	38.90	0.20	3,479.66	159.13	-3.32	159.14	7.23	7.19	-1.25	
3,547.00	41.30	0.60	3,503.37	179.09	-3.17	179.11	7.79	7.74	1.29	
3,579.00	43.50	0.60	3,527.00	200.67	-2.95	200.68	6.88	6.88	0.00	



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<b>Site:</b>	Section 18 T24S-R9W	<b>MD Reference:</b>	14' KB @ 1704.00usft (UDI 331)
<b>Well:</b>	Happy Hollow 7 #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
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)	
3,611.00	45.80	0.40	3,549.76	223.15	-2.75	223.17	7.20	7.19	-0.63	
3,643.00	48.30	0.40	3,571.56	246.57	-2.59	246.58	7.81	7.81	0.00	
3,675.00	50.50	0.40	3,592.39	270.87	-2.42	270.88	6.88	6.88	0.00	
3,706.00	52.80	0.70	3,611.62	295.18	-2.19	295.18	7.46	7.42	0.97	
3,744.00	54.90	1.50	3,634.04	325.85	-1.59	325.86	5.78	5.53	2.11	
3,770.00	55.10	1.10	3,648.95	347.14	-1.11	347.14	1.48	0.77	-1.54	
3,802.00	55.40	1.30	3,667.19	373.43	-0.56	373.43	1.07	0.94	0.63	
3,833.00	55.70	0.60	3,684.73	398.99	-0.14	398.98	2.10	0.97	-2.26	
3,865.00	56.10	0.60	3,702.67	425.49	0.14	425.48	1.25	1.25	0.00	
3,895.00	57.40	0.30	3,719.11	450.57	0.34	450.56	4.41	4.33	-1.00	
3,930.00	60.40	359.80	3,737.19	480.54	0.36	480.53	8.66	8.57	-1.43	
3,961.00	63.60	359.80	3,751.74	507.91	0.27	507.90	10.32	10.32	0.00	
3,993.00	67.00	0.30	3,765.11	536.98	0.29	536.96	10.72	10.63	1.56	
4,024.00	70.50	0.70	3,776.35	565.86	0.55	565.85	11.35	11.29	1.29	
4,056.00	73.30	1.00	3,786.29	596.27	1.00	596.25	8.80	8.75	0.94	
4,087.00	76.70	1.10	3,794.31	626.21	1.55	626.18	10.97	10.97	0.32	
4,125.00	80.50	0.90	3,801.82	663.44	2.20	663.42	10.01	10.00	-0.53	
4,206.00	87.50	0.40	3,810.28	743.95	3.11	743.91	8.66	8.64	-0.62	
4,238.00	91.40	359.90	3,810.59	775.94	3.19	775.90	12.29	12.19	-1.56	
4,269.00	93.30	359.90	3,809.32	806.91	3.14	806.87	6.13	6.13	0.00	
4,332.00	93.50	0.80	3,805.58	869.80	3.52	869.76	1.46	0.32	1.43	
4,392.00	91.90	0.70	3,802.75	929.72	4.31	929.68	2.67	-2.67	-0.17	
4,454.00	90.70	0.40	3,801.35	991.70	4.90	991.65	2.00	-1.94	-0.48	
4,462.34	90.63	0.32	3,801.25	1,000.04	4.95	999.99	1.26	-0.81	-0.97	
<b>HH 7 2H 1000' VS</b>										
4,516.00	90.20	359.80	3,800.86	1,053.70	5.01	1,053.65	1.26	-0.81	-0.97	
4,578.00	90.60	359.90	3,800.43	1,115.70	4.85	1,115.64	0.67	0.65	0.16	
4,640.00	90.40	359.80	3,799.89	1,177.70	4.68	1,177.64	0.36	-0.32	-0.16	
4,702.00	90.40	359.80	3,799.45	1,239.69	4.47	1,239.64	0.00	0.00	0.00	
4,765.00	90.10	359.90	3,799.18	1,302.69	4.30	1,302.64	0.50	-0.48	0.16	
4,827.00	89.80	359.70	3,799.23	1,364.69	4.09	1,364.64	0.58	-0.48	-0.32	
4,889.00	89.90	359.00	3,799.40	1,426.69	3.38	1,426.64	1.14	0.16	-1.13	
4,952.00	90.90	359.80	3,798.96	1,489.68	2.72	1,489.63	2.03	1.59	1.27	
5,013.00	90.80	359.40	3,798.05	1,550.67	2.30	1,550.63	0.68	-0.16	-0.66	
5,075.00	90.80	359.90	3,797.19	1,612.67	1.92	1,612.62	0.81	0.00	0.81	
5,137.00	92.10	0.70	3,795.62	1,674.64	2.24	1,674.59	2.46	2.10	1.29	
5,198.00	92.30	0.80	3,793.27	1,735.59	3.04	1,735.54	0.37	0.33	0.16	
5,260.00	92.50	0.50	3,790.68	1,797.54	3.74	1,797.47	0.58	0.32	-0.48	
5,322.00	92.30	0.60	3,788.08	1,859.48	4.34	1,859.41	0.36	-0.32	0.16	
5,383.00	91.40	0.70	3,786.11	1,920.44	5.03	1,920.37	1.48	-1.48	0.16	
5,443.00	92.00	0.70	3,784.33	1,980.41	5.76	1,980.33	1.00	1.00	0.00	
5,462.39	91.31	0.57	3,783.77	1,999.79	5.98	1,999.71	3.61	-3.55	-0.65	
<b>HH 7 2H 2000' VS</b>										
5,505.00	89.80	0.30	3,783.36	2,042.40	6.30	2,042.31	3.61	-3.55	-0.65	



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<b>Site:</b>	Section 18 T24S-R9W	<b>MD Reference:</b>	14' KB @ 1704.00usft (UDI 331)
<b>Well:</b>	Happy Hollow 7 #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
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)	
5,566.00	88.80	359.80	3,784.10	2,103.39	6.36	2,103.30	1.83	-1.64	-0.82	
5,628.00	88.30	359.80	3,785.67	2,165.37	6.14	2,165.28	0.81	-0.81	0.00	
5,689.00	89.80	0.20	3,786.68	2,226.36	6.14	2,226.27	2.54	2.46	0.66	
5,751.00	90.30	0.00	3,786.63	2,288.36	6.25	2,288.27	0.87	0.81	-0.32	
5,812.00	90.30	0.20	3,786.31	2,349.36	6.36	2,349.27	0.33	0.00	0.33	
5,874.00	91.50	0.00	3,785.34	2,411.35	6.46	2,411.26	1.96	1.94	-0.32	
5,935.00	91.50	359.90	3,783.74	2,472.33	6.41	2,472.23	0.16	0.00	-0.16	
5,997.00	91.90	0.30	3,781.90	2,534.30	6.52	2,534.21	0.91	0.65	0.65	
6,058.00	92.20	359.80	3,779.72	2,595.26	6.57	2,595.16	0.96	0.49	-0.82	
6,120.00	91.90	0.00	3,777.50	2,657.22	6.46	2,657.12	0.58	-0.48	0.32	
6,180.00	91.10	0.20	3,775.93	2,717.20	6.57	2,717.10	1.37	-1.33	0.33	
6,242.00	89.40	0.10	3,775.66	2,779.20	6.73	2,779.10	2.75	-2.74	-0.16	
6,303.00	89.00	0.10	3,776.51	2,840.19	6.84	2,840.09	0.66	-0.66	0.00	
6,365.00	89.30	0.40	3,777.43	2,902.18	7.11	2,902.08	0.68	0.48	0.48	
6,427.00	89.70	0.40	3,777.97	2,964.18	7.54	2,964.07	0.65	0.65	0.00	
6,462.61	89.70	0.29	3,778.16	2,999.79	7.75	2,999.67	0.32	0.00	-0.32	
<b>HH 7 2H 3000' VS</b>										
6,489.00	89.70	0.20	3,778.30	3,026.18	7.87	3,026.06	0.32	0.00	-0.32	
6,553.00	89.90	0.80	3,778.52	3,090.18	8.42	3,090.05	0.99	0.31	0.94	
6,617.00	90.00	0.50	3,778.58	3,154.17	9.15	3,154.04	0.49	0.16	-0.47	
6,680.00	90.20	0.40	3,778.47	3,217.17	9.64	3,217.04	0.35	0.32	-0.16	
6,744.00	89.70	0.60	3,778.52	3,281.17	10.20	3,281.03	0.84	-0.78	0.31	
6,808.00	90.20	0.90	3,778.58	3,345.16	11.04	3,345.02	0.91	0.78	0.47	
6,872.00	90.70	1.00	3,778.08	3,409.15	12.10	3,409.00	0.80	0.78	0.16	
6,936.00	91.50	1.10	3,776.85	3,473.13	13.27	3,472.97	1.26	1.25	0.16	
6,999.00	91.60	0.60	3,775.14	3,536.10	14.21	3,535.93	0.81	0.16	-0.79	
7,062.00	91.30	0.40	3,773.55	3,599.07	14.76	3,598.90	0.57	-0.48	-0.32	
7,125.00	91.20	0.60	3,772.17	3,662.06	15.31	3,661.88	0.35	-0.16	0.32	
7,189.00	90.70	0.40	3,771.11	3,726.05	15.87	3,725.86	0.84	-0.78	-0.31	
7,252.00	90.20	0.50	3,770.62	3,789.04	16.36	3,788.85	0.81	-0.79	0.16	
7,315.00	89.80	0.60	3,770.62	3,852.04	16.97	3,851.85	0.65	-0.63	0.16	
7,379.00	89.60	1.30	3,770.95	3,916.03	18.03	3,915.83	1.14	-0.31	1.09	
7,442.00	90.40	1.30	3,770.95	3,979.01	19.46	3,978.80	1.27	1.27	0.00	
7,462.02	90.46	1.21	3,770.80	3,999.02	19.89	3,998.81	0.56	0.31	-0.47	
<b>HH 7 2H 4000' VS</b>										
7,506.00	90.60	1.00	3,770.40	4,043.00	20.74	4,042.77	0.56	0.31	-0.47	
7,570.00	89.80	0.70	3,770.17	4,106.99	21.69	4,106.76	1.33	-1.25	-0.47	
7,633.00	89.40	1.10	3,770.61	4,169.98	22.68	4,169.74	0.90	-0.63	0.63	
7,697.00	89.90	1.20	3,771.00	4,233.96	23.96	4,233.72	0.80	0.78	0.16	
7,761.00	90.60	0.90	3,770.72	4,297.95	25.14	4,297.70	1.19	1.09	-0.47	
7,824.00	91.00	0.80	3,769.84	4,360.94	26.07	4,360.68	0.65	0.63	-0.16	
7,886.00	91.10	0.30	3,768.71	4,422.93	26.67	4,422.66	0.82	0.16	-0.81	
7,950.00	90.80	0.10	3,767.65	4,486.92	26.89	4,486.64	0.56	-0.47	-0.31	



<b>Company:</b>	Unit Petroleum	<b>Local Co-ordinate Reference:</b>	Well Happy Hollow 7 #2H
<b>Project:</b>	Reno County, Kansas [NAD 83]	<b>TVD Reference:</b>	14' KB @ 1704.00usft (UDI 331)
<b>Site:</b>	Section 18 T24S-R9W	<b>MD Reference:</b>	14' KB @ 1704.00usft (UDI 331)
<b>Well:</b>	Happy Hollow 7 #2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Single User Db

Survey										
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)	
8,013.00	90.90	0.40	3,766.71	4,549.91	27.16	4,549.63	0.50	0.16	0.48	
8,078.00	91.20	0.20	3,765.52	4,614.90	27.50	4,614.62	0.55	0.46	-0.31	
8,141.00	90.60	0.20	3,764.53	4,677.89	27.72	4,677.61	0.95	-0.95	0.00	
8,203.00	90.50	0.90	3,763.94	4,739.88	28.32	4,739.60	1.14	-0.16	1.13	
8,266.00	89.80	1.10	3,763.77	4,802.87	29.42	4,802.58	1.16	-1.11	0.32	
8,329.00	89.50	1.30	3,764.16	4,865.86	30.74	4,865.55	0.57	-0.48	0.32	
8,393.00	89.30	1.40	3,764.83	4,929.84	32.25	4,929.52	0.35	-0.31	0.16	
8,457.00	88.80	1.80	3,765.89	4,993.80	34.03	4,993.47	1.00	-0.78	0.63	
8,521.00	88.20	2.00	3,767.56	5,057.74	36.15	5,057.40	0.99	-0.94	0.31	
8,584.00	88.60	1.90	3,769.32	5,120.68	38.30	5,120.32	0.65	0.63	-0.16	
8,647.00	89.10	1.30	3,770.59	5,183.64	40.06	5,183.27	1.24	0.79	-0.95	
8,670.33	89.16	1.74	3,770.94	5,206.97	40.68	5,206.59	1.92	0.24	1.90	
<b>HH 7 2H PBHL</b>										
8,689.00	89.20	2.10	3,771.21	5,225.62	41.30	5,225.24	1.92	0.24	1.90	
<b>Last MWD Survey</b>										
8,734.00	89.20	2.10	3,771.84	5,270.59	42.95	5,270.19	0.00	0.00	0.00	
<b>Projection to TD</b>										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
8,689.00	3,771.21	5,225.62	41.30	Last MWD Survey	
8,734.00	3,771.84	5,270.59	42.95	Projection to TD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_