

Unit Petroleum

Reno County, Kansas [NAD 83]

Section 29 T25S-R10W

Haw Ranch 32 #1H

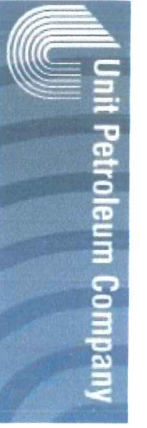
OH

Design: OH

Standard Survey Report

17 March, 2014





Unit Petroleum
 Project: Reno County, Kansas [NAD 83]
 Site: Section 29 T2SS-R10W
 Well: Haw Ranch 32 #1H
 Wellbore: OH
 Design: Design #3
 Lat: 37° 50' 22.262 N
 Long: 98° 26' 37.161 W
 Pad GL: 1766.00
 KB: 14' KB @ 1780.00ustf (UDI 331)



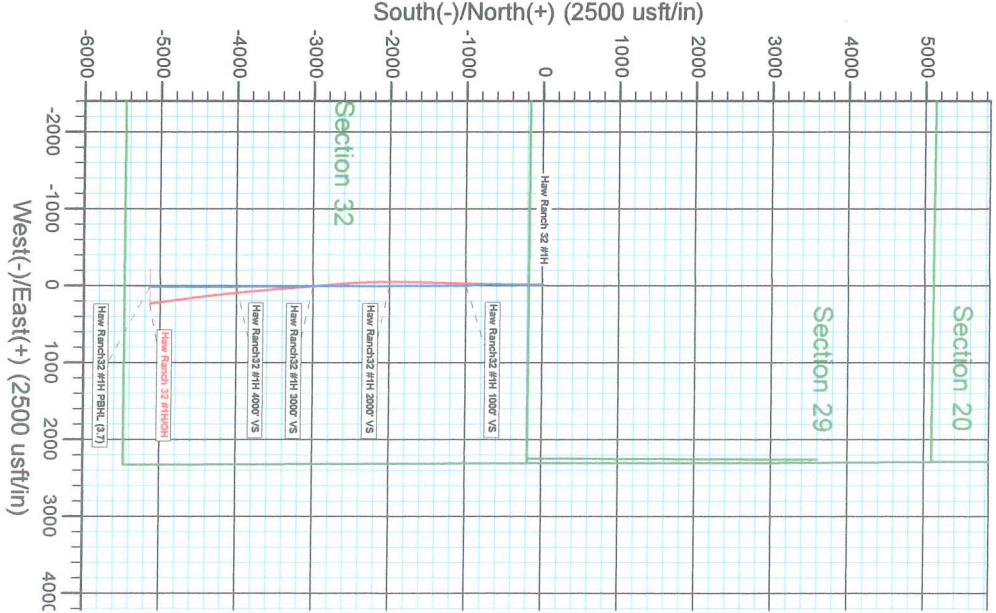
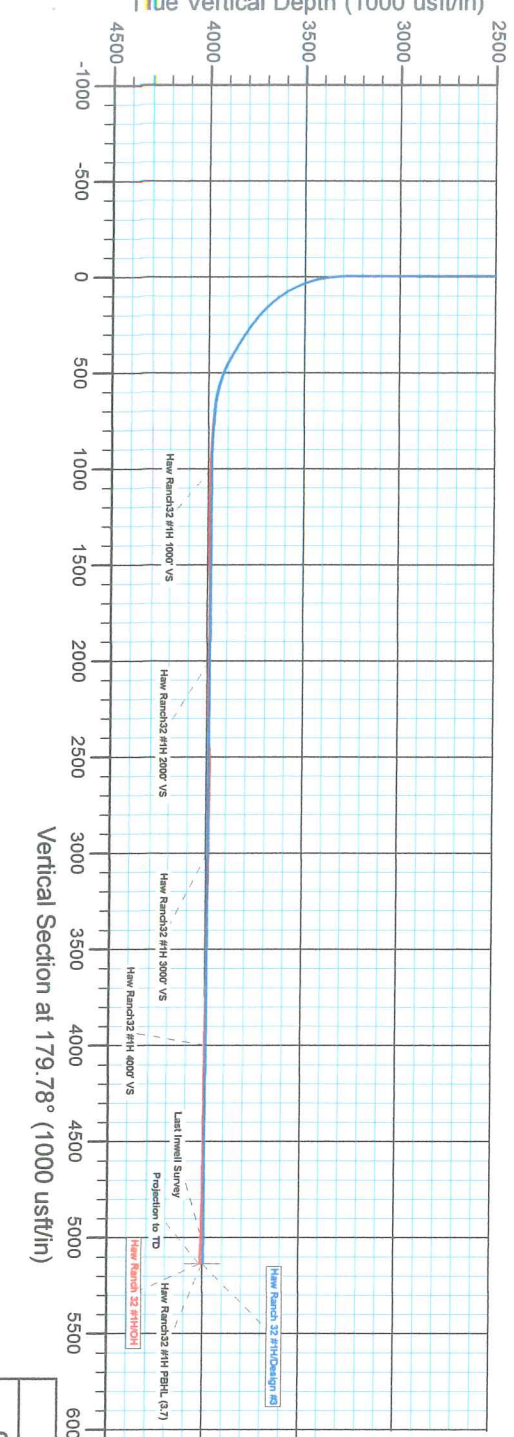
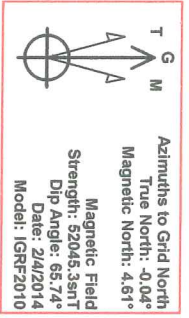
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Diep	TFace	Vsect	
4324.00	82.20	181.30	3957.66	-654.58	-15.78	0.00	0.00	664.51	
4320.00	85.96	181.30	3972.01	-710.34	-16.82	10.35	0.00	710.27	
4320.00	87.03	171.46	3979.91	-850.09	-7.35	6.53	-89.86	860.05	
4265.34	87.03	171.46	3960.25	-866.51	-6.39	0.00	0.00	866.48	
4690.39	88.77	178.78	3994.00	-939.99	3.83	6.53	0.00	1000.00	
7861.02	88.80	178.78	3996.00	-3999.97	15.31	0.00	0.00	4000.00	
7951.34	89.80	178.78	3996.00	-4000.89	15.31	0.00	0.00	4000.92	
8797.48	89.80	178.78	4000.00	-5136.42	19.66	0.00	0.00	5136.46	

WELL DETAILS: Haw Ranch 32 #1H			
+N/-S	+E/-W	Ground Level:	Slot
0.00	0.00	1733339.00	
		132804.00	
		1766.00	
		Latitude	98° 26' 37.161 W
		Longitude	37° 50' 22.262 N

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

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Nothing	Easting	Latitude	Longitude		
Haw Ranch32 #1H 1000' VS	3984.00	-999.99	3.83	172899.07	132807.83	37° 50' 12.376 N	98° 26' 37.120 W		
Haw Ranch32 #1H 2000' VS	3988.00	-1999.99	7.65	172799.21	132811.65	37° 50' 2.490 N	98° 26' 37.080 W		
Haw Ranch32 #1H 3000' VS	3992.00	-2999.98	11.48	172699.41	132815.34	37° 49' 32.604 N	98° 26' 37.040 W		
Haw Ranch32 #1H 4000' VS	3996.00	-3999.97	15.31	172599.28	132819.34	37° 49' 42.718 N	98° 26' 37.000 W		
Haw Ranch32 #1H PBHL (3.7)	4000.00	-5136.42	19.66	1734282.50	1328923.56	37° 49' 31.483 N	98° 26' 36.954 W		

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



Vertical Section at 179.78° (1000 ustf/in)
 Plan: Design #3 (Haw Ranch 32 #1H/OH)
 Created By: Derek Stephens
 Date: 8:10, March 17 2014

Company:	Unit Petroleum	Local Co-ordinate Reference:	Well Haw Ranch 32 #1H
Project:	Reno County, Kansas [NAD 83]	TVD Reference:	14' KB @ 1780.00usft (UDI 331)
Site:	Section 29 T25S-R10W	MD Reference:	14' KB @ 1780.00usft (UDI 331)
Well:	Haw Ranch 32 #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Reno County, Kansas [NAD 83]		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Kansas Southern Zone		Using geodetic scale factor

Site	Section 29 T25S-R10W				
Site Position:		Northing:	1,739,399.00 usft	Latitude:	37° 50' 22.262 N
From:	Map	Easting:	1,328,604.00 usft	Longitude:	98° 26' 37.161 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.03 °

Well	Haw Ranch 32 #1H					
Well Position	+N/-S	0.00 usft	Northing:	1,739,399.00 usft	Latitude:	37° 50' 22.262 N
	+E/-W	0.00 usft	Easting:	1,328,604.00 usft	Longitude:	98° 26' 37.161 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	1,766.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/4/2014	4.65	65.74	52,045

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	179.78	

Survey Program	Date 3/17/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
75.25	3,232.00	Gyro (OH)	CB-GYRO-MS	Camera based gyro multishot
3,232.00	8,813.00	Survey #1 (OH)	MWD	MWD - Standard

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75.25	1.27	291.08	75.24	0.30	-0.78	-0.30	1.69	1.69	0.00	
170.00	0.37	301.63	169.98	0.84	-2.02	-0.85	0.96	-0.95	11.13	
264.75	0.34	314.13	264.73	1.19	-2.48	-1.20	0.09	-0.03	13.19	
359.50	1.40	291.94	359.47	1.82	-3.76	-1.84	1.15	1.12	-23.42	
454.25	1.28	270.13	454.19	2.26	-5.89	-2.28	0.55	-0.13	-23.02	
549.00	0.77	95.15	548.94	2.20	-6.31	-2.23	2.16	-0.54	-184.68	
643.75	0.85	7.70	643.68	2.84	-5.58	-2.86	1.18	0.08	-92.30	
738.50	0.90	327.59	738.42	4.17	-5.89	-4.19	0.64	0.05	-42.33	
833.25	0.74	356.07	833.16	5.41	-6.33	-5.43	0.46	-0.17	30.06	

Company:	Unit Petroleum	Local Co-ordinate Reference:	Well Haw Ranch 32 #1H
Project:	Reno County, Kansas [NAD 83]	TVD Reference:	14' KB @ 1780.00usft (UDI 331)
Site:	Section 29 T25S-R10W	MD Reference:	14' KB @ 1780.00usft (UDI 331)
Well:	Haw Ranch 32 #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
928.00	0.72	252.95	927.91	5.84	-6.94	-5.87	1.21	-0.02	-108.83
1,022.75	0.55	188.46	1,022.65	5.22	-7.58	-5.25	0.73	-0.18	-68.06
1,117.50	0.39	199.92	1,117.40	4.46	-7.75	-4.49	0.20	-0.17	12.09
1,212.25	0.20	120.16	1,212.15	4.08	-7.72	-4.11	0.43	-0.20	-84.18
1,307.00	0.26	106.59	1,306.90	3.93	-7.37	-3.96	0.09	0.06	-14.32
1,401.75	0.20	172.99	1,401.65	3.71	-7.15	-3.73	0.27	-0.06	70.08
1,496.50	0.15	282.07	1,496.40	3.57	-7.25	-3.60	0.30	-0.05	115.12
1,591.25	0.22	337.67	1,591.15	3.76	-7.44	-3.79	0.19	0.07	58.68
1,686.00	0.06	217.25	1,685.90	3.89	-7.54	-3.92	0.27	-0.17	-127.09
1,780.75	0.15	266.79	1,780.65	3.85	-7.69	-3.88	0.13	0.09	52.28
1,875.50	0.18	301.72	1,875.40	3.92	-7.94	-3.95	0.11	0.03	36.87
1,970.25	0.24	328.30	1,970.15	4.16	-8.17	-4.20	0.12	0.06	28.05
2,065.00	0.29	297.08	2,064.89	4.44	-8.49	-4.47	0.16	0.05	-32.95
2,159.75	0.38	257.47	2,159.64	4.48	-9.01	-4.52	0.26	0.09	-41.80
2,254.50	0.16	172.07	2,254.39	4.28	-9.30	-4.32	0.42	-0.23	-90.13
2,349.25	0.34	146.67	2,349.14	3.92	-9.12	-3.95	0.22	0.19	-26.81
2,444.00	0.38	172.61	2,443.89	3.37	-8.93	-3.41	0.18	0.04	27.38
2,538.75	0.52	280.83	2,538.64	3.14	-9.31	-3.18	0.77	0.15	114.22
2,633.50	0.45	161.23	2,633.39	2.87	-9.61	-2.91	0.89	-0.07	-126.23
2,728.25	0.35	355.36	2,728.13	2.81	-9.52	-2.84	0.84	-0.11	-175.06
2,823.00	0.42	284.10	2,822.88	3.18	-9.88	-3.22	0.48	0.07	-75.21
2,917.75	0.20	339.69	2,917.63	3.42	-10.27	-3.46	0.37	-0.23	58.67
3,012.50	0.28	247.42	3,012.38	3.48	-10.54	-3.52	0.37	0.08	-97.38
3,107.25	0.20	175.23	3,107.13	3.23	-10.74	-3.27	0.31	-0.08	-76.19
3,202.00	0.23	121.06	3,201.88	2.97	-10.57	-3.01	0.21	0.03	-57.17
3,232.00	0.32	130.26	3,231.88	2.88	-10.45	-2.92	0.33	0.30	30.67
3,260.00	0.50	136.40	3,259.88	2.74	-10.31	-2.78	0.66	0.64	21.93
3,291.00	0.90	161.20	3,290.88	2.42	-10.14	-2.45	1.59	1.29	80.00
3,323.00	3.20	175.40	3,322.85	1.29	-9.98	-1.33	7.31	7.19	44.38
3,355.00	5.80	175.10	3,354.75	-1.21	-9.77	1.18	8.13	8.13	-0.94
3,387.00	8.70	176.90	3,386.49	-5.24	-9.50	5.21	9.09	9.06	5.63
3,418.00	11.60	178.90	3,417.01	-10.70	-9.32	10.67	9.42	9.35	6.45
3,450.00	14.30	180.50	3,448.19	-17.87	-9.29	17.84	8.51	8.44	5.00
3,481.00	16.80	181.10	3,478.05	-26.18	-9.41	26.14	8.08	8.06	1.94
3,513.00	19.90	181.40	3,508.42	-36.25	-9.63	36.21	9.69	9.69	0.94
3,545.00	23.30	180.60	3,538.17	-48.03	-9.83	47.99	10.66	10.63	-2.50
3,577.00	27.00	179.50	3,567.13	-61.62	-9.83	61.59	11.65	11.56	-3.44
3,609.00	30.90	178.50	3,595.13	-77.11	-9.56	77.07	12.28	12.19	-3.13
3,641.00	34.30	178.90	3,622.08	-94.34	-9.17	94.31	10.65	10.63	1.25
3,673.00	37.60	179.60	3,647.98	-113.12	-8.93	113.09	10.39	10.31	2.19
3,704.00	40.50	180.60	3,672.06	-132.65	-8.97	132.62	9.57	9.35	3.23
3,736.00	43.20	181.00	3,695.89	-154.00	-9.27	153.96	8.48	8.44	1.25
3,768.00	46.10	180.70	3,718.65	-176.48	-9.60	176.44	9.09	9.06	-0.94

Company:	Unit Petroleum	Local Co-ordinate Reference:	Well Haw Ranch 32 #1H
Project:	Reno County, Kansas [NAD 83]	TVD Reference:	14' KB @ 1780.00usft (UDI 331)
Site:	Section 29 T25S-R10W	MD Reference:	14' KB @ 1780.00usft (UDI 331)
Well:	Haw Ranch 32 #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
3,799.00	49.00	180.60	3,739.57	-199.35	-9.86	199.31	9.36	9.35	-0.32
3,831.00	51.40	180.60	3,760.06	-223.93	-10.11	223.89	7.50	7.50	0.00
3,863.00	53.00	180.60	3,779.67	-249.21	-10.38	249.17	5.00	5.00	0.00
3,895.00	56.50	180.70	3,798.13	-275.34	-10.68	275.30	10.94	10.94	0.31
3,926.00	57.80	180.50	3,814.95	-301.38	-10.95	301.34	4.23	4.19	-0.65
3,958.00	58.10	180.60	3,831.93	-328.50	-11.21	328.46	0.97	0.94	0.31
3,990.00	58.30	180.40	3,848.79	-355.70	-11.45	355.65	0.82	0.63	-0.63
4,021.00	58.70	180.10	3,864.99	-382.13	-11.56	382.08	1.53	1.29	-0.97
4,052.00	59.30	180.10	3,880.96	-408.70	-11.61	408.66	1.94	1.94	0.00
4,084.00	61.80	180.80	3,896.69	-436.56	-11.83	436.52	8.04	7.81	2.19
4,116.00	65.20	181.20	3,910.96	-465.19	-12.33	465.14	10.68	10.63	1.25
4,148.00	68.70	181.30	3,923.49	-494.63	-12.97	494.57	10.94	10.94	0.31
4,179.00	71.70	181.00	3,933.99	-523.79	-13.56	523.73	9.72	9.68	-0.97
4,210.00	73.40	180.70	3,943.29	-553.35	-13.99	553.30	5.56	5.48	-0.97
4,242.00	75.30	180.50	3,951.92	-584.17	-14.32	584.11	5.97	5.94	-0.63
4,273.00	78.20	181.10	3,959.02	-614.33	-14.74	614.27	9.54	9.35	1.94
4,305.00	80.80	181.20	3,964.85	-645.79	-15.37	645.73	8.13	8.13	0.31
4,324.00	82.20	181.30	3,967.66	-664.58	-15.78	664.51	7.39	7.37	0.53
4,417.00	85.50	181.20	3,977.62	-757.01	-17.80	756.93	3.55	3.55	-0.11
4,479.00	86.20	181.10	3,982.11	-818.83	-19.04	818.75	1.14	1.13	-0.16
4,542.00	87.10	181.10	3,985.79	-881.71	-20.25	881.63	1.43	1.43	0.00
4,604.00	87.80	181.10	3,988.55	-943.64	-21.43	943.55	1.13	1.13	0.00
4,659.68	87.98	181.01	3,990.60	-999.27	-22.46	999.18	0.36	0.32	-0.16
Haw Ranch32 #1H 1000' VS									
4,666.00	88.00	181.00	3,990.82	-1,005.58	-22.57	1,005.49	0.36	0.32	-0.16
4,728.00	88.80	181.30	3,992.55	-1,067.55	-23.81	1,067.45	1.38	1.29	0.48
4,789.00	89.10	181.40	3,993.67	-1,128.52	-25.25	1,128.42	0.52	0.49	0.16
4,851.00	89.30	181.40	3,994.54	-1,190.50	-26.77	1,190.38	0.32	0.32	0.00
4,913.00	89.60	181.80	3,995.13	-1,252.47	-28.50	1,252.35	0.81	0.48	0.65
4,975.00	90.00	181.60	3,995.35	-1,314.44	-30.34	1,314.31	0.72	0.65	-0.32
5,037.00	90.00	181.40	3,995.35	-1,376.42	-31.96	1,376.29	0.32	0.00	-0.32
5,099.00	91.20	181.70	3,994.70	-1,438.39	-33.64	1,438.25	2.00	1.94	0.48
5,161.00	91.30	181.70	3,993.35	-1,500.35	-35.47	1,500.20	0.16	0.16	0.00
5,223.00	91.30	181.60	3,991.94	-1,562.31	-37.26	1,562.15	0.16	0.00	-0.16
5,284.00	91.00	181.20	3,990.72	-1,623.28	-38.75	1,623.12	0.82	-0.49	-0.66
5,346.00	90.50	180.80	3,989.91	-1,685.26	-39.83	1,685.10	1.03	-0.81	-0.65
5,408.00	89.80	180.20	3,989.74	-1,747.26	-40.37	1,747.09	1.49	-1.13	-0.97
5,470.00	89.40	180.00	3,990.18	-1,809.26	-40.48	1,809.09	0.72	-0.65	-0.32
5,532.00	89.70	179.90	3,990.66	-1,871.26	-40.43	1,871.09	0.51	0.48	-0.16
5,594.00	89.40	179.90	3,991.15	-1,933.25	-40.32	1,933.08	0.48	-0.48	0.00
5,655.00	88.90	180.00	3,992.05	-1,994.25	-40.27	1,994.08	0.84	-0.82	0.16
5,660.67	88.83	179.99	3,992.17	-1,999.92	-40.26	1,999.75	1.30	-1.29	-0.16
Haw Ranch32 #1H 2000' VS									
5,717.00	88.10	179.90	3,993.68	-2,056.22	-40.21	2,056.06	1.30	-1.29	-0.16

Company:	Unit Petroleum	Local Co-ordinate Reference:	Well Haw Ranch 32 #1H
Project:	Reno County, Kansas [NAD 83]	TVD Reference:	14' KB @ 1780.00usft (UDI 331)
Site:	Section 29 T25S-R10W	MD Reference:	14' KB @ 1780.00usft (UDI 331)
Well:	Haw Ranch 32 #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
5,778.00	88.80	179.90	3,995.33	-2,117.20	-40.10	2,117.03	1.15	1.15	0.00
5,840.00	90.20	180.50	3,995.87	-2,179.20	-40.32	2,179.03	2.46	2.26	0.97
5,902.00	91.30	179.60	3,995.06	-2,241.19	-40.38	2,241.02	2.29	1.77	-1.45
5,963.00	92.00	177.80	3,993.30	-2,302.15	-38.99	2,301.98	3.16	1.15	-2.95
6,025.00	92.70	177.60	3,990.76	-2,364.04	-36.51	2,363.89	1.17	1.13	-0.32
6,087.00	92.10	177.10	3,988.16	-2,425.92	-33.64	2,425.78	1.26	-0.97	-0.81
6,149.00	91.10	176.40	3,986.43	-2,487.80	-30.13	2,487.66	1.97	-1.61	-1.13
6,211.00	90.60	176.30	3,985.51	-2,549.67	-26.18	2,549.55	0.82	-0.81	-0.16
6,273.00	89.40	175.30	3,985.51	-2,611.50	-21.64	2,611.39	2.52	-1.94	-1.61
6,334.00	89.10	174.60	3,986.31	-2,672.25	-16.27	2,672.17	1.25	-0.49	-1.15
6,396.00	88.80	174.70	3,987.45	-2,733.97	-10.49	2,733.91	0.51	-0.48	0.16
6,458.00	88.80	175.00	3,988.74	-2,795.71	-4.93	2,795.67	0.48	0.00	0.48
6,520.00	88.90	175.30	3,989.99	-2,857.48	0.31	2,857.46	0.51	0.16	0.48
6,581.00	89.40	175.40	3,990.89	-2,918.27	5.26	2,918.27	0.84	0.82	0.16
6,643.00	89.80	175.70	3,991.33	-2,980.08	10.07	2,980.10	0.81	0.65	0.48
6,662.95	89.96	175.76	3,991.37	-2,999.97	11.55	2,999.99	0.87	0.81	0.32
Haw Ranch32 #1H 3000' VS									
6,705.00	90.30	175.90	3,991.27	-3,041.91	14.61	3,041.95	0.87	0.81	0.32
6,767.00	90.80	176.00	3,990.68	-3,103.75	18.99	3,103.80	0.82	0.81	0.16
6,828.00	89.10	175.50	3,990.73	-3,164.58	23.51	3,164.65	2.90	-2.79	-0.82
6,890.00	88.70	175.60	3,991.92	-3,226.39	28.32	3,226.47	0.67	-0.65	0.16
6,952.00	88.70	175.30	3,993.33	-3,288.17	33.23	3,288.28	0.48	0.00	-0.48
7,013.00	88.80	174.70	3,994.66	-3,348.93	38.55	3,349.05	1.00	0.16	-0.98
7,075.00	89.20	175.00	3,995.74	-3,410.67	44.11	3,410.81	0.81	0.65	0.48
7,137.00	90.20	174.90	3,996.06	-3,472.43	49.57	3,472.59	1.62	1.61	-0.16
7,199.00	90.30	174.90	3,995.79	-3,534.18	55.08	3,534.36	0.16	0.16	0.00
7,260.00	89.70	175.10	3,995.79	-3,594.95	60.40	3,595.15	1.04	-0.98	0.33
7,321.00	89.20	174.90	3,996.38	-3,655.71	65.72	3,655.94	0.88	-0.82	-0.33
7,383.00	88.40	175.10	3,997.68	-3,717.46	71.12	3,717.71	1.33	-1.29	0.32
7,445.00	88.90	175.10	3,999.14	-3,779.22	76.41	3,779.48	0.81	0.81	0.00
7,506.00	89.30	175.20	4,000.10	-3,839.99	81.57	3,840.28	0.68	0.66	0.16
7,568.00	89.40	174.60	4,000.80	-3,901.74	87.08	3,902.05	0.98	0.16	-0.97
7,630.00	89.90	174.40	4,001.18	-3,963.46	93.02	3,963.78	0.87	0.81	-0.32
7,658.60	89.81	174.31	4,001.25	-3,991.91	95.84	3,992.25	0.46	-0.33	-0.33
Haw Ranch32 #1H 4000' VS									
7,691.00	89.70	174.20	4,001.39	-4,024.15	99.08	4,024.50	0.46	-0.33	-0.33
7,753.00	89.40	174.00	4,001.88	-4,085.82	105.45	4,086.20	0.58	-0.48	-0.32
7,815.00	89.20	173.30	4,002.64	-4,147.44	112.31	4,147.84	1.17	-0.32	-1.13
7,877.00	89.20	172.80	4,003.50	-4,208.98	119.81	4,209.40	0.81	0.00	-0.81
7,938.00	89.20	172.90	4,004.35	-4,269.50	127.40	4,269.95	0.16	0.00	0.16
8,000.00	89.90	173.50	4,004.84	-4,331.06	134.74	4,331.54	1.49	1.13	0.97
8,062.00	90.20	173.80	4,004.79	-4,392.68	141.60	4,393.19	0.68	0.48	0.48
8,123.00	89.90	173.70	4,004.73	-4,453.31	148.24	4,453.85	0.52	-0.49	-0.16



Company:	Unit Petroleum	Local Co-ordinate Reference:	Well Haw Ranch 32 #1H
Project:	Reno County, Kansas [NAD 83]	TVD Reference:	14' KB @ 1780.00usft (UDI 331)
Site:	Section 29 T25S-R10W	MD Reference:	14' KB @ 1780.00usft (UDI 331)
Well:	Haw Ranch 32 #1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

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)
8,185.00	89.80	173.30	4,004.90	-4,514.91	155.26	4,515.48	0.67	-0.16	-0.65
8,247.00	90.00	173.40	4,005.00	-4,576.50	162.44	4,577.09	0.36	0.32	0.16
8,308.00	90.10	172.90	4,004.95	-4,637.06	169.72	4,637.68	0.84	0.16	-0.82
8,370.00	89.20	172.70	4,005.33	-4,698.57	177.49	4,699.22	1.49	-1.45	-0.32
8,432.00	89.10	172.00	4,006.25	-4,760.01	185.74	4,760.69	1.14	-0.16	-1.13
8,493.00	88.30	171.60	4,007.63	-4,820.37	194.44	4,821.08	1.47	-1.31	-0.66
8,555.00	88.40	172.10	4,009.42	-4,881.72	203.22	4,882.46	0.82	0.16	0.81
8,616.00	88.80	172.20	4,010.91	-4,942.13	211.55	4,942.90	0.68	0.66	0.16
8,661.00	88.80	172.50	4,011.85	-4,986.72	217.54	4,987.52	0.67	0.00	0.67
Last Inwell Survey									
8,783.32	88.80	172.50	4,014.41	-5,107.96	233.50	5,108.82	0.00	0.00	0.00
Haw Ranch32 #1H PBHL (3.7)									
8,813.00	88.80	172.50	4,015.03	-5,137.39	237.38	5,138.26	0.00	0.00	0.00
Projection to TD									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,661.00	4,011.85	-4,986.72	217.54	Last Inwell Survey
8,813.00	4,015.03	-5,137.39	237.38	Projection to TD

Checked By: _____ Approved By: _____ Date: _____