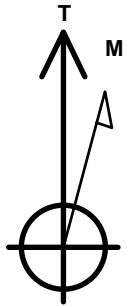


# Ward Petroleum

Well Name: **Ritchey 26-1-22HC**  
 Surface Location: Ritchey Pad Sec.26-T1N-R66W  
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
 Ground Elevation: 5155.0  
 +N/-S +E/-W Northing Easting Longitude Slot  
 0.0 0.0 1253950.16 3209571.21 40.028053 -104.751625  
 RKB - 13' WELL @ 5168.0ft (RKB - 13')

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 548'FNL & 630'FWL, Sec.26	1.0	0.0	0.0	Point
BHL 460'FSL & 610'FWL, Sec.26	7800.0	-4286.6	-26.3	Point
LPL 460'FNL & 610'FWL, Sec.26	7800.0	87.8	-19.3	Point



Azimuths to True North  
 Magnetic North: 8.07°

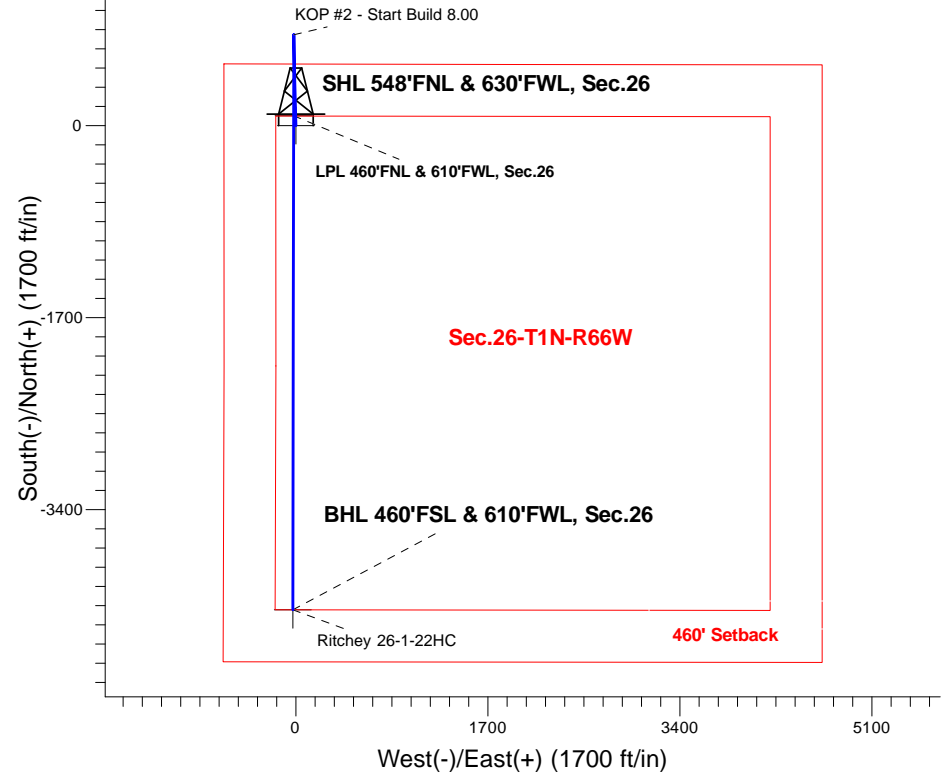
Magnetic Field  
 Strength: 52342.2snT  
 Dip Angle: 66.56°  
 Date: 1/31/2017  
 Model: IGRF2010

Ritchey Pad Sec.26-T1N-R66W  
 Ritchey 26-1-22HC  
 Plan #2 (1-31-17)  
 12:26, January 31 2017

## ANNOTATIONS

TVD	MD	Annotation
1600.0	1600.0	KOP - Start Build 1.50
5387.1	5463.9	Start Drop -2.00
7083.8	7165.3	KOP #2 - Start Build 8.00
7800.0	8291.3	Start 4374.4 hold at 8291.3 MD
7800.0	12665.7	TD at 12665.7

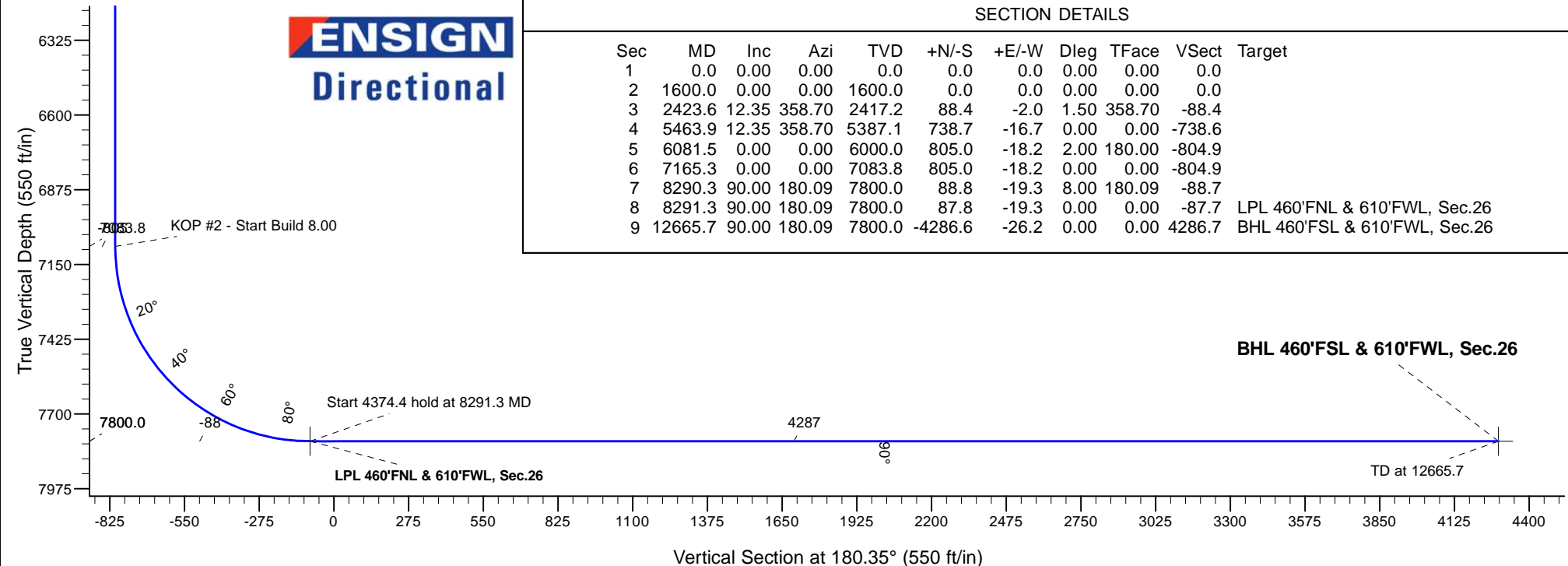
South(-)/North(+) (1700 ft/in)



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1600.0	0.00	0.00	1600.0	0.0	0.0	0.00	0.00	0.0	
3	2423.6	12.35	358.70	2417.2	88.4	-2.0	1.50	358.70	-88.4	
4	5463.9	12.35	358.70	5387.1	738.7	-16.7	0.00	0.00	-738.6	
5	6081.5	0.00	0.00	6000.0	805.0	-18.2	2.00	180.00	-804.9	
6	7165.3	0.00	0.00	7083.8	805.0	-18.2	0.00	0.00	-804.9	
7	8290.3	90.00	180.09	7800.0	88.8	-19.3	8.00	180.09	-88.7	
8	8291.3	90.00	180.09	7800.0	87.8	-19.3	0.00	0.00	-87.7	LPL 460'FNL & 610'FWL, Sec.26
9	12665.7	90.00	180.09	7800.0	-4286.6	-26.2	0.00	0.00	4286.7	BHL 460'FSL & 610'FWL, Sec.26

**ENSIGN**  
 Directional





## **Ward Petroleum**

**SEC.26-T1N-R66W**

**Ritchey Pad Sec.26-T1N-R66W**

**Ritchey 26-1-22HC**

**Wellbore #1**

**Plan: Plan #2 (1-31-17)**

## **Standard Planning Report**

**31 January, 2017**

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Ritchey 26-1-22HC
<b>Company:</b>	Ward Petroleum	<b>TVD Reference:</b>	WELL @ 5168.0ft (RKB - 13')
<b>Project:</b>	SEC.26-T1N-R66W	<b>MD Reference:</b>	WELL @ 5168.0ft (RKB - 13')
<b>Site:</b>	Ritchey Pad Sec.26-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ritchey 26-1-22HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (1-31-17)		

<b>Project</b>	SEC.26-T1N-R66W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	Ritchey Pad Sec.26-T1N-R66W				
Site Position:		Northing:	1,253,950.17 usft	Latitude:	40.028053
From:	Lat/Long	Easting:	3,209,571.21 usft	Longitude:	-104.751625
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.48

Well	Ritchey 26-1-22HC					
Well Position	+N/-S	0.0 ft	Northing:	1,253,950.16 usft	Latitude:	40.028053
	+E/-W	0.0 ft	Easting:	3,209,571.21 usft	Longitude:	-104.751625
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	5,155.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	1/31/2017	8.07	66.56	52,342

<b>Design</b>	Plan #2 (1-31-17)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	180.35

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,423.6	12.35	358.70	2,417.2	88.4	-2.0	1.50	1.50	0.00	358.70	
5,463.9	12.35	358.70	5,387.1	738.7	-16.7	0.00	0.00	0.00	0.00	
6,081.5	0.00	0.00	6,000.0	805.0	-18.2	2.00	-2.00	0.00	180.00	
7,165.3	0.00	0.00	7,083.8	805.0	-18.2	0.00	0.00	0.00	0.00	
8,290.3	90.00	180.09	7,800.0	88.8	-19.3	8.00	8.00	0.00	180.09	
8,291.3	90.00	180.09	7,800.0	87.8	-19.3	0.00	0.00	0.00	0.00	LPL 460'FNL & 610'F
12,665.7	90.00	180.09	7,800.0	-4,286.6	-26.2	0.00	0.00	0.00	0.00	BHL 460'FSL & 610'F

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Ritchey 26-1-22HC
<b>Company:</b>	Ward Petroleum	<b>TVD Reference:</b>	WELL @ 5168.0ft (RKB - 13')
<b>Project:</b>	SEC.26-T1N-R66W	<b>MD Reference:</b>	WELL @ 5168.0ft (RKB - 13')
<b>Site:</b>	Ritchey Pad Sec.26-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ritchey 26-1-22HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (1-31-17)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SHL 548'FNL &amp; 630'FWL, Sec.26</b>									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP - Start Build 1.50</b>									
1,700.0	1.50	358.70	1,700.0	1.3	0.0	-1.3	1.50	1.50	0.00
1,800.0	3.00	358.70	1,799.9	5.2	-0.1	-5.2	1.50	1.50	0.00
1,900.0	4.50	358.70	1,899.7	11.8	-0.3	-11.8	1.50	1.50	0.00
2,000.0	6.00	358.70	1,999.3	20.9	-0.5	-20.9	1.50	1.50	0.00
2,100.0	7.50	358.70	2,098.6	32.7	-0.7	-32.7	1.50	1.50	0.00
2,200.0	9.00	358.70	2,197.5	47.0	-1.1	-47.0	1.50	1.50	0.00
2,300.0	10.50	358.70	2,296.1	63.9	-1.4	-63.9	1.50	1.50	0.00
2,400.0	12.00	358.70	2,394.2	83.4	-1.9	-83.4	1.50	1.50	0.00
2,423.6	12.35	358.70	2,417.2	88.4	-2.0	-88.4	1.50	1.50	0.00
2,500.0	12.35	358.70	2,491.9	104.8	-2.4	-104.7	0.00	0.00	0.00
2,600.0	12.35	358.70	2,589.5	126.2	-2.9	-126.1	0.00	0.00	0.00
2,700.0	12.35	358.70	2,687.2	147.5	-3.3	-147.5	0.00	0.00	0.00
2,800.0	12.35	358.70	2,784.9	168.9	-3.8	-168.9	0.00	0.00	0.00
2,900.0	12.35	358.70	2,882.6	190.3	-4.3	-190.3	0.00	0.00	0.00
3,000.0	12.35	358.70	2,980.3	211.7	-4.8	-211.7	0.00	0.00	0.00
3,100.0	12.35	358.70	3,078.0	233.1	-5.3	-233.1	0.00	0.00	0.00
3,200.0	12.35	358.70	3,175.7	254.5	-5.8	-254.4	0.00	0.00	0.00
3,300.0	12.35	358.70	3,273.3	275.9	-6.2	-275.8	0.00	0.00	0.00
3,400.0	12.35	358.70	3,371.0	297.3	-6.7	-297.2	0.00	0.00	0.00
3,500.0	12.35	358.70	3,468.7	318.6	-7.2	-318.6	0.00	0.00	0.00
3,600.0	12.35	358.70	3,566.4	340.0	-7.7	-340.0	0.00	0.00	0.00
3,700.0	12.35	358.70	3,664.1	361.4	-8.2	-361.4	0.00	0.00	0.00
3,800.0	12.35	358.70	3,761.8	382.8	-8.7	-382.8	0.00	0.00	0.00
3,900.0	12.35	358.70	3,859.5	404.2	-9.1	-404.1	0.00	0.00	0.00
4,000.0	12.35	358.70	3,957.1	425.6	-9.6	-425.5	0.00	0.00	0.00
4,100.0	12.35	358.70	4,054.8	447.0	-10.1	-446.9	0.00	0.00	0.00
4,200.0	12.35	358.70	4,152.5	468.4	-10.6	-468.3	0.00	0.00	0.00
4,300.0	12.35	358.70	4,250.2	489.8	-11.1	-489.7	0.00	0.00	0.00
4,400.0	12.35	358.70	4,347.9	511.1	-11.6	-511.1	0.00	0.00	0.00
4,500.0	12.35	358.70	4,445.6	532.5	-12.0	-532.4	0.00	0.00	0.00
4,600.0	12.35	358.70	4,543.2	553.9	-12.5	-553.8	0.00	0.00	0.00
4,700.0	12.35	358.70	4,640.9	575.3	-13.0	-575.2	0.00	0.00	0.00
4,800.0	12.35	358.70	4,738.6	596.7	-13.5	-596.6	0.00	0.00	0.00
4,900.0	12.35	358.70	4,836.3	618.1	-14.0	-618.0	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Ritchey 26-1-22HC
<b>Company:</b>	Ward Petroleum	<b>TVD Reference:</b>	WELL @ 5168.0ft (RKB - 13')
<b>Project:</b>	SEC.26-T1N-R66W	<b>MD Reference:</b>	WELL @ 5168.0ft (RKB - 13')
<b>Site:</b>	Ritchey Pad Sec.26-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ritchey 26-1-22HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (1-31-17)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,000.0	12.35	358.70	4,934.0	639.5	-14.5	-639.4	0.00	0.00	0.00
5,100.0	12.35	358.70	5,031.7	660.9	-14.9	-660.8	0.00	0.00	0.00
5,200.0	12.35	358.70	5,129.4	682.3	-15.4	-682.1	0.00	0.00	0.00
5,300.0	12.35	358.70	5,227.0	703.6	-15.9	-703.5	0.00	0.00	0.00
5,400.0	12.35	358.70	5,324.7	725.0	-16.4	-724.9	0.00	0.00	0.00
5,463.9	12.35	358.70	5,387.1	738.7	-16.7	-738.6	0.00	0.00	0.00
Start Drop -2.00									
5,500.0	11.63	358.70	5,422.5	746.2	-16.9	-746.1	2.00	-2.00	0.00
5,600.0	9.63	358.70	5,520.7	764.6	-17.3	-764.5	2.00	-2.00	0.00
5,700.0	7.63	358.70	5,619.6	779.6	-17.6	-779.5	2.00	-2.00	0.00
5,800.0	5.63	358.70	5,718.9	791.2	-17.9	-791.1	2.00	-2.00	0.00
5,900.0	3.63	358.70	5,818.6	799.3	-18.1	-799.1	2.00	-2.00	0.00
6,000.0	1.63	358.70	5,918.5	803.8	-18.2	-803.7	2.00	-2.00	0.00
6,081.5	0.00	0.00	6,000.0	805.0	-18.2	-804.9	2.00	-2.00	0.00
6,100.0	0.00	0.00	6,018.5	805.0	-18.2	-804.9	0.00	0.00	0.00
6,200.0	0.00	0.00	6,118.5	805.0	-18.2	-804.9	0.00	0.00	0.00
6,300.0	0.00	0.00	6,218.5	805.0	-18.2	-804.9	0.00	0.00	0.00
6,400.0	0.00	0.00	6,318.5	805.0	-18.2	-804.9	0.00	0.00	0.00
6,500.0	0.00	0.00	6,418.5	805.0	-18.2	-804.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,518.5	805.0	-18.2	-804.9	0.00	0.00	0.00
6,700.0	0.00	0.00	6,618.5	805.0	-18.2	-804.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,718.5	805.0	-18.2	-804.9	0.00	0.00	0.00
6,900.0	0.00	0.00	6,818.5	805.0	-18.2	-804.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,918.5	805.0	-18.2	-804.9	0.00	0.00	0.00
7,100.0	0.00	0.00	7,018.5	805.0	-18.2	-804.9	0.00	0.00	0.00
7,165.3	0.00	0.00	7,083.8	805.0	-18.2	-804.9	0.00	0.00	0.00
KOP #2 - Start Build 8.00									
7,200.0	2.77	180.09	7,118.5	804.2	-18.2	-804.0	7.99	7.99	0.00
7,300.0	10.77	180.09	7,217.7	792.4	-18.2	-792.3	8.00	8.00	0.00
7,400.0	18.77	180.09	7,314.3	766.9	-18.3	-766.8	8.00	8.00	0.00
7,500.0	26.77	180.09	7,406.4	728.2	-18.3	-728.1	8.00	8.00	0.00
7,600.0	34.77	180.09	7,492.3	677.1	-18.4	-677.0	8.00	8.00	0.00
7,700.0	42.77	180.09	7,570.2	614.5	-18.5	-614.4	8.00	8.00	0.00
7,800.0	50.77	180.09	7,638.6	541.7	-18.6	-541.6	8.00	8.00	0.00
7,900.0	58.77	180.09	7,696.2	460.1	-18.7	-460.0	8.00	8.00	0.00
8,000.0	66.77	180.09	7,742.0	371.3	-18.9	-371.1	8.00	8.00	0.00
8,100.0	74.77	180.09	7,774.9	276.9	-19.0	-276.8	8.00	8.00	0.00
8,200.0	82.77	180.09	7,794.3	178.9	-19.2	-178.8	8.00	8.00	0.00
8,290.3	90.00	180.09	7,800.0	88.8	-19.3	-88.7	8.00	8.00	0.00
8,291.3	90.00	180.09	7,800.0	87.8	-19.3	-87.7	0.00	0.00	0.00
Start 4374.4 hold at 8291.3 MD - LPL 460°FNL & 610°FNL, Sec.26									
8,300.0	90.00	180.09	7,800.0	79.1	-19.3	-79.0	0.00	0.00	0.00
8,400.0	90.00	180.09	7,800.0	-20.9	-19.5	21.0	0.00	0.00	0.00
8,500.0	90.00	180.09	7,800.0	-120.9	-19.7	121.0	0.00	0.00	0.00
8,600.0	90.00	180.09	7,800.0	-220.9	-19.8	221.0	0.00	0.00	0.00
8,700.0	90.00	180.09	7,800.0	-320.9	-20.0	321.0	0.00	0.00	0.00
8,800.0	90.00	180.09	7,800.0	-420.9	-20.1	421.0	0.00	0.00	0.00
8,900.0	90.00	180.09	7,800.0	-520.9	-20.3	521.0	0.00	0.00	0.00
9,000.0	90.00	180.09	7,800.0	-620.9	-20.4	621.0	0.00	0.00	0.00
9,100.0	90.00	180.09	7,800.0	-720.9	-20.6	721.0	0.00	0.00	0.00
9,200.0	90.00	180.09	7,800.0	-820.9	-20.7	821.0	0.00	0.00	0.00
9,300.0	90.00	180.09	7,800.0	-920.9	-20.9	921.0	0.00	0.00	0.00
9,400.0	90.00	180.09	7,800.0	-1,020.9	-21.1	1,021.0	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Ritchey 26-1-22HC
<b>Company:</b>	Ward Petroleum	<b>TVD Reference:</b>	WELL @ 5168.0ft (RKB - 13')
<b>Project:</b>	SEC.26-T1N-R66W	<b>MD Reference:</b>	WELL @ 5168.0ft (RKB - 13')
<b>Site:</b>	Ritchey Pad Sec.26-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ritchey 26-1-22HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (1-31-17)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,500.0	90.00	180.09	7,800.0	-1,120.9	-21.2	1,121.0	0.00	0.00	0.00	
9,600.0	90.00	180.09	7,800.0	-1,220.9	-21.4	1,221.0	0.00	0.00	0.00	
9,700.0	90.00	180.09	7,800.0	-1,320.9	-21.5	1,321.0	0.00	0.00	0.00	
9,800.0	90.00	180.09	7,800.0	-1,420.9	-21.7	1,421.0	0.00	0.00	0.00	
9,900.0	90.00	180.09	7,800.0	-1,520.9	-21.8	1,521.0	0.00	0.00	0.00	
10,000.0	90.00	180.09	7,800.0	-1,620.9	-22.0	1,621.0	0.00	0.00	0.00	
10,100.0	90.00	180.09	7,800.0	-1,720.9	-22.2	1,721.0	0.00	0.00	0.00	
10,200.0	90.00	180.09	7,800.0	-1,820.9	-22.3	1,821.0	0.00	0.00	0.00	
10,300.0	90.00	180.09	7,800.0	-1,920.9	-22.5	1,921.0	0.00	0.00	0.00	
10,400.0	90.00	180.09	7,800.0	-2,020.9	-22.6	2,021.0	0.00	0.00	0.00	
10,500.0	90.00	180.09	7,800.0	-2,120.9	-22.8	2,121.0	0.00	0.00	0.00	
10,600.0	90.00	180.09	7,800.0	-2,220.9	-22.9	2,221.0	0.00	0.00	0.00	
10,700.0	90.00	180.09	7,800.0	-2,320.9	-23.1	2,321.0	0.00	0.00	0.00	
10,800.0	90.00	180.09	7,800.0	-2,420.9	-23.3	2,421.0	0.00	0.00	0.00	
10,900.0	90.00	180.09	7,800.0	-2,520.9	-23.4	2,521.0	0.00	0.00	0.00	
11,000.0	90.00	180.09	7,800.0	-2,620.9	-23.6	2,621.0	0.00	0.00	0.00	
11,100.0	90.00	180.09	7,800.0	-2,720.9	-23.7	2,721.0	0.00	0.00	0.00	
11,200.0	90.00	180.09	7,800.0	-2,820.9	-23.9	2,821.0	0.00	0.00	0.00	
11,300.0	90.00	180.09	7,800.0	-2,920.9	-24.0	2,921.0	0.00	0.00	0.00	
11,400.0	90.00	180.09	7,800.0	-3,020.9	-24.2	3,020.9	0.00	0.00	0.00	
11,500.0	90.00	180.09	7,800.0	-3,120.9	-24.3	3,120.9	0.00	0.00	0.00	
11,600.0	90.00	180.09	7,800.0	-3,220.9	-24.5	3,220.9	0.00	0.00	0.00	
11,700.0	90.00	180.09	7,800.0	-3,320.9	-24.7	3,320.9	0.00	0.00	0.00	
11,800.0	90.00	180.09	7,800.0	-3,420.9	-24.8	3,420.9	0.00	0.00	0.00	
11,900.0	90.00	180.09	7,800.0	-3,520.9	-25.0	3,520.9	0.00	0.00	0.00	
12,000.0	90.00	180.09	7,800.0	-3,620.9	-25.1	3,620.9	0.00	0.00	0.00	
12,100.0	90.00	180.09	7,800.0	-3,720.9	-25.3	3,720.9	0.00	0.00	0.00	
12,200.0	90.00	180.09	7,800.0	-3,820.9	-25.4	3,820.9	0.00	0.00	0.00	
12,300.0	90.00	180.09	7,800.0	-3,920.9	-25.6	3,920.9	0.00	0.00	0.00	
12,400.0	90.00	180.09	7,800.0	-4,020.9	-25.8	4,020.9	0.00	0.00	0.00	
12,500.0	90.00	180.09	7,800.0	-4,120.9	-25.9	4,120.9	0.00	0.00	0.00	
12,600.0	90.00	180.09	7,800.0	-4,220.9	-26.1	4,220.9	0.00	0.00	0.00	
12,665.7	90.00	180.09	7,800.0	-4,286.6	-26.2	4,286.6	0.00	0.00	0.00	
TD at 12665.7 - BHL 460'FSL & 610'FWL, Sec.26										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude		Longitude
SHL 548'FNL & 630'FWL - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,253,950.17	3,209,571.21	40.028053		-104.751625
LPL 460'FNL & 610'FWL - plan hits target center - Point	0.00	0.00	7,800.0	87.8	-19.3	1,254,037.79	3,209,551.15	40.028294		-104.751694
BHL 460'FSL & 610'FWL - plan misses target center by 0.2ft at 12665.7ft MD (7800.0 TVD, -4286.6 N, -26.2 E) - Point	0.00	0.00	7,800.0	-4,286.6	-26.3	1,249,663.68	3,209,581.06	40.016286		-104.751719

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Ritchey 26-1-22HC
<b>Company:</b>	Ward Petroleum	<b>TVD Reference:</b>	WELL @ 5168.0ft (RKB - 13')
<b>Project:</b>	SEC.26-T1N-R66W	<b>MD Reference:</b>	WELL @ 5168.0ft (RKB - 13')
<b>Site:</b>	Ritchey Pad Sec.26-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ritchey 26-1-22HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (1-31-17)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,600.0	1,600.0	0.0	0.0	KOP - Start Build 1.50
5,463.9	5,387.1	88.4	-2.0	Start Drop -2.00
7,165.3	7,083.8	738.7	-16.7	KOP #2 - Start Build 8.00
8,291.3	7,800.0	805.0	-18.2	Start 4374.4 hold at 8291.3 MD
12,665.7	7,800.0	805.0	-18.2	TD at 12665.7