

# **Hilcorp Energy Company**

**Farmington, NM**

**San Juan Basin**

**Southern Ute 701H**

**Pilot Hole**

**WP3**

## **Anticollision Report**

**05 April, 2023**

# Halliburton

## Anticollision Report

<b>Company:</b>	Hilcorp Energy Company	<b>Local Co-ordinate Reference:</b>	Well Southern Ute 701H
<b>Project:</b>	Farmington, NM	<b>TVD Reference:</b>	RKB to MSL= 6310ft @ 6310.0usft
<b>Reference Site:</b>	San Juan Basin	<b>MD Reference:</b>	RKB to MSL= 6310ft @ 6310.0usft
<b>Site Error:</b>	5.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Southern Ute 701H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	1.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Pilot Hole	<b>Database:</b>	EDM 5000.17 Single User Db
<b>Reference Design:</b>	WP3	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	WP3		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD + Stations Interval 25.0usft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum centre distance of 3,000.0usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Through Borehole Radius

<b>Survey Tool Program</b>	<b>Date</b>	4/5/2023		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	4,712.7	WP3 (Pilot Hole)	3_MWD+HRGM	B001Mb: HRGM declination correction only

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (usft)</b>	<b>Offset Measured Depth (usft)</b>	<b>Distance Between Centres (usft)</b>	<b>Distance Between Ellipses (usft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
San Juan Basin						
SOUTHERN UTE 009 - ST00 - ST00	4,713.2	3,079.2	2,939.7	737.4	1.335	Collision RiskProcedures Re
SOUTHERN UTE 701 - ST00 - ST00	4,713.2	3,086.1	2,915.9	2,751.0	17.680	CC, ES, SF
UTE 001X - ST00 - ST00	4,713.2	3,386.2	789.8	-1,633.4	0.326	Collision RiskProcedures Re

<b>Offset Design:</b>	San Juan Basin - SOUTHERN UTE 009 - ST00 - ST00										<b>Offset Site Error:</b>	5.0 usft
<b>Survey Program:</b>	8030-3_Blind										<b>Offset Well Error:</b>	1.0 usft
<b>Reference</b>	<b>Offset</b>	<b>Semi Major Axis</b>	<b>Highside</b>	<b>Offset Wellbore Centre</b>	<b>Rule Assigned:</b>	<b>Distance</b>	<b>Minimum</b>	<b>Separation</b>	<b>Warning</b>			
<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Reference</b>	<b>Offset</b>	<b>Centres (usft)</b>	<b>Ellipses (usft)</b>	<b>Separation (usft)</b>	<b>Factor</b>			
4,625.0	2,963.1	3,042.1	3,042.1	55.1	2,129.4	70.15	1,340.7	5,196.1	2,991.1	816.7	2,174.42	1.376 Collision RiskProcedures Req'd
4,650.0	2,973.6	3,052.6	3,052.6	55.5	2,136.8	70.36	1,340.7	5,196.1	2,976.4	794.1	2,182.31	1.364 Collision RiskProcedures Req'd
4,675.0	2,984.1	3,063.1	3,063.1	56.0	2,144.2	70.58	1,340.7	5,196.1	2,961.8	771.6	2,190.20	1.352 Collision RiskProcedures Req'd
4,700.0	2,994.6	3,073.6	3,073.6	56.4	2,151.6	70.79	1,340.7	5,196.1	2,947.3	749.2	2,198.10	1.341 Collision RiskProcedures Req'd
4,712.7	3,000.0	3,079.0	3,079.0	56.6	2,155.3	70.90	1,340.7	5,196.1	2,939.9	737.8	2,202.12	1.335 Collision RiskProcedures Req'd
4,713.2	3,000.2	3,079.2	3,079.2	56.6	2,155.4	70.90	1,340.7	5,196.1	2,939.7	737.4	2,202.27	1.335 Collision RiskProcedures Req'd, CC, E

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<b>Site Error:</b>	5.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Southern Ute 701H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	1.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Pilot Hole	<b>Database:</b>	EDM 5000.17 Single User Db
<b>Reference Design:</b>	WP3	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design:</b> San Juan Basin - SOUTHERN UTE 701 - ST00 - ST00													<b>Offset Site Error:</b> 5.0 usft
<b>Survey Program:</b> 247-3_Unknown													<b>Offset Well Error:</b> 1.0 usft
<b>Reference</b>		<b>Offset</b>		<b>Semi Major Axis</b>		<b>Highside Toolface (")</b>	<b>Offset Wellbore Centre</b>		<b>Distance</b>		<b>Minimum Separation (usft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Reference (usft)</b>	<b>Offset (usft)</b>		<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Between Centres (usft)</b>	<b>Between Ellipses (usft)</b>			
4,575.0	2,942.0	3,027.1	3,027.0	54.2	115.8	69.65	1,353.3	5,174.4	2,997.4	2,837.7	159.69	18.771	
4,600.0	2,952.5	3,037.8	3,037.7	54.7	116.3	69.87	1,353.4	5,174.4	2,982.4	2,821.8	160.63	18.568	
4,625.0	2,963.1	3,048.4	3,048.3	55.1	116.7	70.08	1,353.5	5,174.4	2,967.6	2,806.0	161.57	18.367	
4,650.0	2,973.6	3,059.1	3,059.0	55.5	117.1	70.30	1,353.6	5,174.4	2,952.8	2,790.3	162.52	18.169	
4,675.0	2,984.1	3,069.8	3,069.7	56.0	117.6	70.52	1,353.7	5,174.4	2,938.1	2,774.6	163.47	17.974	
4,700.0	2,994.6	3,080.4	3,080.3	56.4	118.0	70.74	1,353.8	5,174.4	2,923.5	2,759.1	164.42	17.781	
4,712.7	3,000.0	3,085.8	3,085.7	56.6	118.2	70.85	1,353.8	5,174.4	2,916.2	2,751.3	164.91	17.683	
4,713.2	3,000.2	3,086.1	3,086.0	56.6	118.2	70.85	1,353.8	5,174.4	2,915.9	2,751.0	164.93	17.680	CC, ES, SF

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<b>Reference Well:</b>	Southern Ute 701H	<b>Survey Calculation Method:</b>	Minimum Curvature
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<b>Reference Wellbore</b>	Pilot Hole	<b>Database:</b>	EDM 5000.17 Single User Db
<b>Reference Design:</b>	WP3	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design:</b> San Juan Basin - UTE 001X - ST00 - ST00													<b>Offset Site Error:</b> 5.0 usft
<b>Survey Program:</b> 7920-3_Blind							<b>Rule Assigned:</b>						<b>Offset Well Error:</b> 1.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,625.0	1,561.8	1,947.8	1,947.8	7.2	1,360.9	18.49	1,425.7	2,938.8	2,987.3	1,618.2	1,369.14	2.182	
1,650.0	1,581.6	1,967.6	1,967.6	7.4	1,374.7	18.82	1,425.7	2,938.8	2,972.5	1,589.5	1,383.06	2.149	
1,675.0	1,601.1	1,987.1	1,987.1	7.6	1,388.4	19.17	1,425.7	2,938.8	2,957.4	1,560.7	1,396.79	2.117	
1,700.0	1,620.4	2,006.4	2,006.4	7.8	1,401.8	19.53	1,425.7	2,938.8	2,942.0	1,531.7	1,410.33	2.086	
1,725.0	1,639.3	2,025.3	2,025.3	8.1	1,415.0	19.91	1,425.7	2,938.8	2,926.3	1,502.6	1,423.67	2.055	
1,750.0	1,658.0	2,044.0	2,044.0	8.3	1,428.1	20.31	1,425.7	2,938.8	2,910.2	1,473.4	1,436.81	2.025	
1,775.0	1,676.3	2,062.3	2,062.3	8.6	1,440.9	20.73	1,425.7	2,938.8	2,893.9	1,444.1	1,449.74	1.996	Collision RiskProcedures Req'd
1,800.0	1,694.4	2,080.4	2,080.4	8.8	1,453.5	21.18	1,425.7	2,938.8	2,877.2	1,414.7	1,462.46	1.967	Collision RiskProcedures Req'd
1,825.0	1,712.1	2,098.1	2,098.1	9.1	1,465.9	21.64	1,425.7	2,938.8	2,860.2	1,385.3	1,474.97	1.939	Collision RiskProcedures Req'd
1,850.0	1,729.6	2,115.6	2,115.6	9.4	1,478.1	22.13	1,425.7	2,938.8	2,843.0	1,355.7	1,487.26	1.912	Collision RiskProcedures Req'd
1,875.0	1,746.7	2,132.7	2,132.7	9.7	1,490.1	22.64	1,425.7	2,938.8	2,825.5	1,326.1	1,499.33	1.884	Collision RiskProcedures Req'd
1,900.0	1,763.5	2,149.5	2,149.5	9.9	1,501.8	23.19	1,425.7	2,938.8	2,807.6	1,296.5	1,511.16	1.858	Collision RiskProcedures Req'd
1,925.0	1,779.9	2,165.9	2,165.9	10.2	1,513.3	23.75	1,425.7	2,938.8	2,789.5	1,266.8	1,522.78	1.832	Collision RiskProcedures Req'd
1,950.0	1,796.1	2,182.1	2,182.1	10.5	1,524.6	24.35	1,425.7	2,938.8	2,771.2	1,237.0	1,534.16	1.806	Collision RiskProcedures Req'd
1,975.0	1,811.9	2,197.9	2,197.9	10.9	1,535.6	24.98	1,425.7	2,938.8	2,752.6	1,207.3	1,545.30	1.781	Collision RiskProcedures Req'd
2,000.0	1,827.3	2,213.3	2,213.3	11.2	1,546.4	25.65	1,425.7	2,938.8	2,733.7	1,177.5	1,556.19	1.757	Collision RiskProcedures Req'd
2,025.0	1,842.4	2,228.4	2,228.4	11.5	1,556.9	26.34	1,425.7	2,938.8	2,714.6	1,147.7	1,566.86	1.733	Collision RiskProcedures Req'd
2,050.0	1,857.1	2,243.1	2,243.1	11.8	1,567.2	27.08	1,425.7	2,938.8	2,695.2	1,118.0	1,577.27	1.709	Collision RiskProcedures Req'd
2,075.0	1,871.5	2,257.5	2,257.5	12.2	1,577.3	27.85	1,425.7	2,938.8	2,675.6	1,088.2	1,587.43	1.686	Collision RiskProcedures Req'd
2,100.0	1,885.5	2,271.5	2,271.5	12.5	1,587.1	28.67	1,425.7	2,938.8	2,655.8	1,058.5	1,597.34	1.663	Collision RiskProcedures Req'd
2,125.0	1,899.2	2,285.2	2,285.2	12.9	1,596.6	29.53	1,425.7	2,938.8	2,635.8	1,028.8	1,606.99	1.640	Collision RiskProcedures Req'd
2,150.0	1,912.5	2,298.5	2,298.5	13.2	1,605.9	30.44	1,425.7	2,938.8	2,615.5	999.1	1,616.39	1.618	Collision RiskProcedures Req'd
2,175.0	1,925.4	2,311.4	2,311.4	13.6	1,614.9	31.40	1,425.7	2,938.8	2,595.1	969.5	1,625.52	1.596	Collision RiskProcedures Req'd
2,200.0	1,937.9	2,323.9	2,323.9	13.9	1,623.6	32.41	1,425.7	2,938.8	2,574.4	940.0	1,634.39	1.575	Collision RiskProcedures Req'd
2,225.0	1,950.0	2,336.0	2,336.0	14.3	1,632.1	33.47	1,425.7	2,938.8	2,553.6	910.6	1,643.00	1.554	Collision RiskProcedures Req'd
2,250.0	1,961.8	2,347.8	2,347.8	14.7	1,640.3	34.59	1,425.7	2,938.8	2,532.5	881.2	1,651.33	1.534	Collision RiskProcedures Req'd
2,275.0	1,973.1	2,359.1	2,359.1	15.1	1,648.3	35.78	1,425.7	2,938.8	2,511.3	851.9	1,659.40	1.513	Collision RiskProcedures Req'd
2,300.0	1,984.1	2,370.1	2,370.1	15.5	1,655.9	37.03	1,425.7	2,938.8	2,489.9	822.8	1,667.18	1.494	Collision RiskProcedures Req'd
2,315.0	1,990.5	2,376.5	2,376.5	15.7	1,660.4	37.81	1,425.7	2,938.8	2,477.0	805.3	1,671.73	1.482	Collision RiskProcedures Req'd
2,325.0	1,994.7	2,380.7	2,380.7	15.9	1,663.3	37.92	1,425.7	2,938.8	2,468.4	793.7	1,674.72	1.474	Collision RiskProcedures Req'd
2,350.0	2,005.2	2,391.2	2,391.2	16.3	1,670.7	38.19	1,425.7	2,938.8	2,446.9	764.7	1,682.21	1.455	Collision RiskProcedures Req'd
2,375.0	2,015.7	2,401.7	2,401.7	16.7	1,678.0	38.46	1,425.7	2,938.8	2,425.4	735.7	1,689.70	1.435	Collision RiskProcedures Req'd
2,400.0	2,026.3	2,412.3	2,412.3	17.1	1,685.4	38.74	1,425.7	2,938.8	2,403.9	706.7	1,697.19	1.416	Collision RiskProcedures Req'd
2,425.0	2,036.8	2,422.8	2,422.8	17.5	1,692.7	39.02	1,425.7	2,938.8	2,382.4	677.7	1,704.68	1.398	Collision RiskProcedures Req'd
2,450.0	2,047.3	2,433.3	2,433.3	17.9	1,700.1	39.30	1,425.7	2,938.8	2,360.9	648.8	1,712.18	1.379	Collision RiskProcedures Req'd
2,475.0	2,057.8	2,443.8	2,443.8	18.3	1,707.4	39.59	1,425.7	2,938.8	2,339.5	619.8	1,719.68	1.360	Collision RiskProcedures Req'd
2,500.0	2,068.4	2,454.4	2,454.4	18.7	1,714.8	39.88	1,425.7	2,938.8	2,318.1	590.9	1,727.19	1.342	Collision RiskProcedures Req'd
2,525.0	2,078.9	2,464.9	2,464.9	19.1	1,722.2	40.17	1,425.7	2,938.8	2,296.7	562.0	1,734.70	1.324	Collision RiskProcedures Req'd
2,550.0	2,089.4	2,475.4	2,475.4	19.5	1,729.5	40.47	1,425.7	2,938.8	2,275.4	533.2	1,742.21	1.306	Collision RiskProcedures Req'd
2,575.0	2,099.9	2,485.9	2,485.9	19.9	1,736.9	40.77	1,425.7	2,938.8	2,254.1	504.3	1,749.73	1.288	Collision RiskProcedures Req'd
2,600.0	2,110.5	2,496.5	2,496.5	20.4	1,744.2	41.08	1,425.7	2,938.8	2,232.8	475.5	1,757.25	1.271	Collision RiskProcedures Req'd
2,625.0	2,121.0	2,507.0	2,507.0	20.8	1,751.6	41.38	1,425.7	2,938.8	2,211.5	446.7	1,764.78	1.253	Collision RiskProcedures Req'd
2,650.0	2,131.5	2,517.5	2,517.5	21.2	1,758.9	41.70	1,425.7	2,938.8	2,190.2	417.9	1,772.31	1.236	Collision RiskProcedures Req'd
2,675.0	2,142.0	2,528.0	2,528.0	21.6	1,766.3	42.01	1,425.7	2,938.8	2,169.0	389.2	1,779.84	1.219	Collision RiskProcedures Req'd
2,700.0	2,152.6	2,538.6	2,538.6	22.0	1,773.6	42.33	1,425.7	2,938.8	2,147.8	360.4	1,787.38	1.202	Collision RiskProcedures Req'd
2,725.0	2,163.1	2,549.1	2,549.1	22.4	1,781.0	42.66	1,425.7	2,938.8	2,126.7	331.7	1,794.93	1.185	Collision RiskProcedures Req'd
2,750.0	2,173.6	2,559.6	2,559.6	22.9	1,788.3	42.99	1,425.7	2,938.8	2,105.5	303.1	1,802.48	1.168	Collision RiskProcedures Req'd
2,775.0	2,184.2	2,570.2	2,570.2	23.3	1,795.7	43.32	1,425.7	2,938.8	2,084.5	274.4	1,810.03	1.152	Collision RiskProcedures Req'd
2,800.0	2,194.7	2,580.7	2,580.7	23.7	1,803.1	43.66	1,425.7	2,938.8	2,063.4	245.8	1,817.58	1.135	Collision RiskProcedures Req'd
2,825.0	2,205.2	2,591.2	2,591.2	24.1	1,810.4	44.00	1,425.7	2,938.8	2,042.4	217.2	1,825.15	1.119	Collision RiskProcedures Req'd
2,850.0	2,215.7	2,601.7	2,601.7	24.5	1,817.8	44.34	1,425.7	2,938.8	2,021.4	188.7	1,832.72	1.103	Collision RiskProcedures Req'd
2,875.0	2,226.3	2,612.3	2,612.3	25.0	1,825.1	44.69	1,425.7	2,938.8	2,000.4	160.1	1,840.29	1.087	Collision RiskProcedures Req'd

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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<b>Reference Site:</b>	San Juan Basin	<b>MD Reference:</b>	RKB to MSL= 6310ft @ 6310.0usft
<b>Site Error:</b>	5.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Southern Ute 701H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	1.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Pilot Hole	<b>Database:</b>	EDM 5000.17 Single User Db
<b>Reference Design:</b>	WP3	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design:</b> San Juan Basin - UTE 001X - ST00 - ST00												<b>Offset Site Error:</b>	5.0 usft
<b>Survey Program:</b> 7920-3_Blind												<b>Offset Well Error:</b>	1.0 usft
<b>Reference</b>		<b>Offset</b>		<b>Semi Major Axis</b>		<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre</b>		<b>Distance</b>		<b>Minimum Separation (usft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Reference (usft)</b>	<b>Offset (usft)</b>		<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Between Centres (usft)</b>	<b>Between Ellipses (usft)</b>			
2,900.0	2,236.8	2,622.8	2,622.8	25.4	1,832.5	45.05	1,425.7	2,938.8	1,979.5	131.6	1,847.87	1.071	Collision RiskProcedures Req'd
2,925.0	2,247.3	2,633.3	2,633.3	25.8	1,839.8	45.40	1,425.7	2,938.8	1,958.6	103.2	1,855.45	1.056	Collision RiskProcedures Req'd
2,950.0	2,257.8	2,643.8	2,643.8	26.2	1,847.2	45.77	1,425.7	2,938.8	1,937.8	74.8	1,863.04	1.040	Collision RiskProcedures Req'd
2,975.0	2,268.4	2,654.4	2,654.4	26.7	1,854.5	46.14	1,425.7	2,938.8	1,917.0	46.4	1,870.64	1.025	Collision RiskProcedures Req'd
3,000.0	2,278.9	2,664.9	2,664.9	27.1	1,861.9	46.51	1,425.7	2,938.8	1,896.3	18.0	1,878.24	1.010	Collision RiskProcedures Req'd
3,025.0	2,289.4	2,675.4	2,675.4	27.5	1,869.2	46.88	1,425.7	2,938.8	1,875.6	-10.3	1,885.85	0.995	Collision RiskProcedures Req'd
3,050.0	2,299.9	2,685.9	2,685.9	27.9	1,876.6	47.26	1,425.7	2,938.8	1,854.9	-38.6	1,893.46	0.980	Collision RiskProcedures Req'd
3,075.0	2,310.5	2,696.5	2,696.5	28.4	1,883.9	47.65	1,425.7	2,938.8	1,834.3	-66.8	1,901.08	0.965	Collision RiskProcedures Req'd
3,100.0	2,321.0	2,707.0	2,707.0	28.8	1,891.3	48.04	1,425.7	2,938.8	1,813.7	-95.0	1,908.71	0.950	Collision RiskProcedures Req'd
3,125.0	2,331.5	2,717.5	2,717.5	29.2	1,898.7	48.44	1,425.7	2,938.8	1,793.2	-123.1	1,916.34	0.936	Collision RiskProcedures Req'd
3,150.0	2,342.0	2,728.0	2,728.0	29.6	1,906.0	48.84	1,425.7	2,938.8	1,772.8	-151.2	1,923.98	0.921	Collision RiskProcedures Req'd
3,175.0	2,352.6	2,738.6	2,738.6	30.1	1,913.4	49.24	1,425.7	2,938.8	1,752.4	-179.3	1,931.63	0.907	Collision RiskProcedures Req'd
3,200.0	2,363.1	2,749.1	2,749.1	30.5	1,920.7	49.65	1,425.7	2,938.8	1,732.0	-207.3	1,939.29	0.893	Collision RiskProcedures Req'd
3,225.0	2,373.6	2,759.6	2,759.6	30.9	1,928.1	50.07	1,425.7	2,938.8	1,711.7	-235.2	1,946.95	0.879	Collision RiskProcedures Req'd
3,250.0	2,384.1	2,770.1	2,770.1	31.3	1,935.4	50.49	1,425.7	2,938.8	1,691.5	-263.1	1,954.62	0.865	Collision RiskProcedures Req'd
3,275.0	2,394.7	2,780.7	2,780.7	31.8	1,942.8	50.92	1,425.7	2,938.8	1,671.3	-291.0	1,962.30	0.852	Collision RiskProcedures Req'd
3,300.0	2,405.2	2,791.2	2,791.2	32.2	1,950.1	51.35	1,425.7	2,938.8	1,651.2	-318.7	1,969.99	0.838	Collision RiskProcedures Req'd
3,325.0	2,415.7	2,801.7	2,801.7	32.6	1,957.5	51.78	1,425.7	2,938.8	1,631.2	-346.5	1,977.68	0.825	Collision RiskProcedures Req'd
3,350.0	2,426.2	2,812.2	2,812.2	33.1	1,964.8	52.23	1,425.7	2,938.8	1,611.2	-374.1	1,985.39	0.812	Collision RiskProcedures Req'd
3,375.0	2,436.8	2,822.8	2,822.8	33.5	1,972.2	52.67	1,425.7	2,938.8	1,591.4	-401.7	1,993.10	0.798	Collision RiskProcedures Req'd
3,400.0	2,447.3	2,833.3	2,833.3	33.9	1,979.6	53.13	1,425.7	2,938.8	1,571.5	-429.3	2,000.82	0.785	Collision RiskProcedures Req'd
3,425.0	2,457.8	2,843.8	2,843.8	34.3	1,986.9	53.58	1,425.7	2,938.8	1,551.8	-456.7	2,008.56	0.773	Collision RiskProcedures Req'd
3,450.0	2,468.4	2,854.4	2,854.4	34.8	1,994.3	54.05	1,425.7	2,938.8	1,532.2	-484.1	2,016.30	0.760	Collision RiskProcedures Req'd
3,475.0	2,478.9	2,864.9	2,864.9	35.2	2,001.6	54.51	1,425.7	2,938.8	1,512.6	-511.5	2,024.05	0.747	Collision RiskProcedures Req'd
3,500.0	2,489.4	2,875.4	2,875.4	35.6	2,009.0	54.99	1,425.7	2,938.8	1,493.1	-538.7	2,031.81	0.735	Collision RiskProcedures Req'd
3,525.0	2,499.9	2,885.9	2,885.9	36.1	2,016.3	55.47	1,425.7	2,938.8	1,473.7	-565.9	2,039.59	0.723	Collision RiskProcedures Req'd
3,550.0	2,510.5	2,896.5	2,896.5	36.5	2,023.7	55.95	1,425.7	2,938.8	1,454.4	-592.9	2,047.37	0.710	Collision RiskProcedures Req'd
3,575.0	2,521.0	2,907.0	2,907.0	36.9	2,031.0	56.45	1,425.7	2,938.8	1,435.2	-619.9	2,055.17	0.698	Collision RiskProcedures Req'd
3,600.0	2,531.5	2,917.5	2,917.5	37.4	2,038.4	56.94	1,425.7	2,938.8	1,416.1	-646.8	2,062.97	0.686	Collision RiskProcedures Req'd
3,625.0	2,542.0	2,928.0	2,928.0	37.8	2,045.7	57.44	1,425.7	2,938.8	1,397.2	-673.6	2,070.79	0.675	Collision RiskProcedures Req'd
3,650.0	2,552.6	2,938.6	2,938.6	38.2	2,053.1	57.95	1,425.7	2,938.8	1,378.3	-700.3	2,078.62	0.663	Collision RiskProcedures Req'd
3,675.0	2,563.1	2,949.1	2,949.1	38.6	2,060.4	58.47	1,425.7	2,938.8	1,359.5	-726.9	2,086.47	0.652	Collision RiskProcedures Req'd
3,700.0	2,573.6	2,959.6	2,959.6	39.1	2,067.8	58.99	1,425.7	2,938.8	1,340.9	-753.4	2,094.32	0.640	Collision RiskProcedures Req'd
3,725.0	2,584.1	2,970.1	2,970.1	39.5	2,075.2	59.51	1,425.7	2,938.8	1,322.4	-779.8	2,102.19	0.629	Collision RiskProcedures Req'd
3,750.0	2,594.7	2,980.7	2,980.7	39.9	2,082.5	60.04	1,425.7	2,938.8	1,304.0	-806.1	2,110.07	0.618	Collision RiskProcedures Req'd
3,775.0	2,605.2	2,991.2	2,991.2	40.4	2,089.9	60.58	1,425.7	2,938.8	1,285.8	-832.2	2,117.97	0.607	Collision RiskProcedures Req'd
3,800.0	2,615.7	3,001.7	3,001.7	40.8	2,097.2	61.12	1,425.7	2,938.8	1,267.7	-858.2	2,125.88	0.596	Collision RiskProcedures Req'd
3,825.0	2,626.2	3,012.2	3,012.2	41.2	2,104.6	61.67	1,425.7	2,938.8	1,249.7	-884.1	2,133.81	0.586	Collision RiskProcedures Req'd
3,850.0	2,636.8	3,022.8	3,022.8	41.7	2,111.9	62.22	1,425.7	2,938.8	1,231.9	-909.8	2,141.75	0.575	Collision RiskProcedures Req'd
3,875.0	2,647.3	3,033.3	3,033.3	42.1	2,119.3	62.78	1,425.7	2,938.8	1,214.3	-935.4	2,149.70	0.565	Collision RiskProcedures Req'd
3,900.0	2,657.8	3,043.8	3,043.8	42.5	2,126.6	63.35	1,425.7	2,938.8	1,196.8	-960.8	2,157.67	0.555	Collision RiskProcedures Req'd
3,925.0	2,668.3	3,054.3	3,054.3	43.0	2,134.0	63.92	1,425.7	2,938.8	1,179.5	-986.1	2,165.66	0.545	Collision RiskProcedures Req'd
3,950.0	2,678.9	3,064.9	3,064.9	43.4	2,141.3	64.50	1,425.7	2,938.8	1,162.4	-1,011.2	2,173.66	0.535	Collision RiskProcedures Req'd
3,975.0	2,689.4	3,075.4	3,075.4	43.8	2,148.7	65.08	1,425.7	2,938.8	1,145.5	-1,036.1	2,181.67	0.525	Collision RiskProcedures Req'd
4,000.0	2,699.9	3,085.9	3,085.9	44.3	2,156.1	65.67	1,425.7	2,938.8	1,128.8	-1,060.9	2,189.71	0.516	Collision RiskProcedures Req'd
4,025.0	2,710.4	3,096.4	3,096.4	44.7	2,163.4	66.26	1,425.7	2,938.8	1,112.4	-1,085.4	2,197.76	0.506	Collision RiskProcedures Req'd
4,050.0	2,721.0	3,107.0	3,107.0	45.1	2,170.8	66.86	1,425.7	2,938.8	1,096.1	-1,109.7	2,205.82	0.497	Collision RiskProcedures Req'd
4,075.0	2,731.5	3,117.5	3,117.5	45.6	2,178.1	67.46	1,425.7	2,938.8	1,080.0	-1,133.9	2,213.90	0.488	Collision RiskProcedures Req'd
4,100.0	2,742.0	3,128.0	3,128.0	46.0	2,185.5	68.07	1,425.7	2,938.8	1,064.3	-1,157.7	2,222.00	0.479	Collision RiskProcedures Req'd
4,125.0	2,752.6	3,138.6	3,138.6	46.4	2,192.8	68.69	1,425.7	2,938.8	1,048.7	-1,181.4	2,230.11	0.470	Collision RiskProcedures Req'd
4,150.0	2,763.1	3,149.1	3,149.1	46.9	2,200.2	69.31	1,425.7	2,938.8	1,033.4	-1,204.8	2,238.24	0.462	Collision RiskProcedures Req'd
4,175.0	2,773.6	3,159.6	3,159.6	47.3	2,207.5	69.93	1,425.7	2,938.8	1,018.4	-1,228.0	2,246.38	0.453	Collision RiskProcedures Req'd

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Halliburton

## Anticollision Report

<b>Company:</b>	Hilcorp Energy Company	<b>Local Co-ordinate Reference:</b>	Well Southern Ute 701H
<b>Project:</b>	Farmington, NM	<b>TVD Reference:</b>	RKB to MSL= 6310ft @ 6310.0usft
<b>Reference Site:</b>	San Juan Basin	<b>MD Reference:</b>	RKB to MSL= 6310ft @ 6310.0usft
<b>Site Error:</b>	5.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Southern Ute 701H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	1.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Pilot Hole	<b>Database:</b>	EDM 5000.17 Single User Db
<b>Reference Design:</b>	WP3	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design:</b> San Juan Basin - UTE 001X - ST00 - ST00												<b>Offset Site Error:</b>	5.0 usft
<b>Survey Program:</b> 7920-3_Blind												<b>Offset Well Error:</b>	1.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,200.0	2,784.1	3,170.1	3,170.1	47.7	2,214.9	70.56	1,425.7	2,938.8	1,003.7	-1,250.8	2,254.54	0.445	Collision RiskProcedures Req'd
4,225.0	2,794.7	3,180.7	3,180.7	48.1	2,222.2	71.19	1,425.7	2,938.8	989.3	-1,273.4	2,262.72	0.437	Collision RiskProcedures Req'd
4,250.0	2,805.2	3,191.2	3,191.2	48.6	2,229.6	71.83	1,425.7	2,938.8	975.2	-1,295.7	2,270.90	0.429	Collision RiskProcedures Req'd
4,275.0	2,815.7	3,201.7	3,201.7	49.0	2,237.0	72.48	1,425.7	2,938.8	961.4	-1,317.7	2,279.10	0.422	Collision RiskProcedures Req'd
4,300.0	2,826.2	3,212.2	3,212.2	49.4	2,244.3	73.13	1,425.7	2,938.8	948.0	-1,339.3	2,287.31	0.414	Collision RiskProcedures Req'd
4,325.0	2,836.8	3,222.8	3,222.8	49.9	2,251.7	73.78	1,425.7	2,938.8	934.9	-1,360.6	2,295.54	0.407	Collision RiskProcedures Req'd
4,350.0	2,847.3	3,233.3	3,233.3	50.3	2,259.0	74.44	1,425.7	2,938.8	922.2	-1,381.6	2,303.77	0.400	Collision RiskProcedures Req'd
4,375.0	2,857.8	3,243.8	3,243.8	50.7	2,266.4	75.10	1,425.7	2,938.8	909.9	-1,402.1	2,312.01	0.394	Collision RiskProcedures Req'd
4,400.0	2,868.3	3,254.3	3,254.3	51.2	2,273.7	75.77	1,425.7	2,938.8	898.0	-1,422.3	2,320.26	0.387	Collision RiskProcedures Req'd
4,425.0	2,878.9	3,264.9	3,264.9	51.6	2,281.1	76.44	1,425.7	2,938.8	886.5	-1,442.0	2,328.52	0.381	Collision RiskProcedures Req'd
4,450.0	2,889.4	3,275.4	3,275.4	52.0	2,288.4	77.11	1,425.7	2,938.8	875.5	-1,461.3	2,336.77	0.375	Collision RiskProcedures Req'd
4,475.0	2,899.9	3,285.9	3,285.9	52.5	2,295.8	77.79	1,425.7	2,938.8	864.9	-1,480.2	2,345.03	0.369	Collision RiskProcedures Req'd
4,500.0	2,910.4	3,296.4	3,296.4	52.9	2,303.1	78.47	1,425.7	2,938.8	854.7	-1,498.6	2,353.29	0.363	Collision RiskProcedures Req'd
4,525.0	2,921.0	3,307.0	3,307.0	53.3	2,310.5	79.15	1,425.7	2,938.8	845.1	-1,516.5	2,361.54	0.358	Collision RiskProcedures Req'd
4,550.0	2,931.5	3,317.5	3,317.5	53.8	2,317.8	79.84	1,425.7	2,938.8	836.0	-1,533.8	2,369.79	0.353	Collision RiskProcedures Req'd
4,575.0	2,942.0	3,328.0	3,328.0	54.2	2,325.2	80.53	1,425.7	2,938.8	827.3	-1,550.7	2,378.03	0.348	Collision RiskProcedures Req'd
4,600.0	2,952.5	3,338.5	3,338.5	54.7	2,332.6	81.23	1,425.7	2,938.8	819.3	-1,567.0	2,386.25	0.343	Collision RiskProcedures Req'd
4,625.0	2,963.1	3,349.1	3,349.1	55.1	2,339.9	81.92	1,425.7	2,938.8	811.7	-1,582.7	2,394.46	0.339	Collision RiskProcedures Req'd
4,650.0	2,973.6	3,359.6	3,359.6	55.5	2,347.3	82.62	1,425.7	2,938.8	804.8	-1,597.9	2,402.65	0.335	Collision RiskProcedures Req'd
4,675.0	2,984.1	3,370.1	3,370.1	56.0	2,354.6	83.32	1,425.7	2,938.8	798.4	-1,612.4	2,410.82	0.331	Collision RiskProcedures Req'd
4,700.0	2,994.6	3,380.6	3,380.6	56.4	2,362.0	84.02	1,425.7	2,938.8	792.6	-1,626.3	2,418.97	0.328	Collision RiskProcedures Req'd
4,712.7	3,000.0	3,386.0	3,386.0	56.6	2,365.7	84.38	1,425.7	2,938.8	789.9	-1,633.2	2,423.10	0.326	Collision RiskProcedures Req'd
4,713.2	3,000.2	3,386.2	3,386.2	56.6	2,365.9	84.39	1,425.7	2,938.8	789.8	-1,633.4	2,423.25	0.326	Collision RiskProcedures Req'd, CC, E

# Halliburton

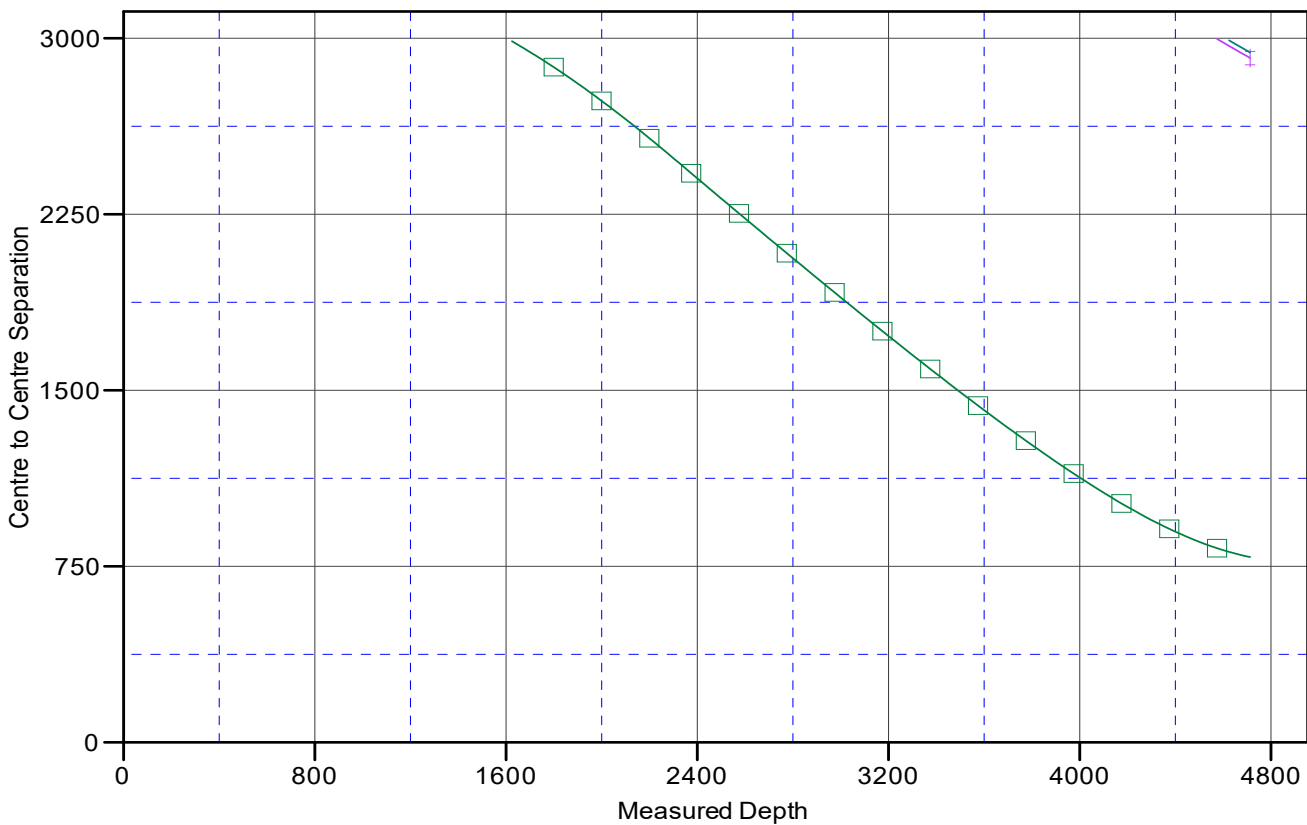
## Anticollision Report

<b>Company:</b>	Hilcorp Energy Company	<b>Local Co-ordinate Reference:</b>	Well Southern Ute 701H
<b>Project:</b>	Farmington, NM	<b>TVD Reference:</b>	RKB to MSL= 6310ft @ 6310.0usft
<b>Reference Site:</b>	San Juan Basin	<b>MD Reference:</b>	RKB to MSL= 6310ft @ 6310.0usft
<b>Site Error:</b>	5.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Southern Ute 701H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	1.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Pilot Hole	<b>Database:</b>	EDM 5000.17 Single User Db
<b>Reference Design:</b>	WP3	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to RKB to MSL= 6310ft @ 6310.0usft  
Offset Depths are relative to Offset Datum  
Central Meridian is -107.833

Coordinates are relative to: Southern Ute 701H  
Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30  
Grid Convergence at Surface is: 0.15°

### Ladder Plot



#### LEGEND

■ UTE 001X, ST 00, ST00 V0    
■ SOUTHERN UTE 009, ST 00, ST00 V0    
■ SOUTHERN UTE 701, ST 00, ST00 V0

# Halliburton

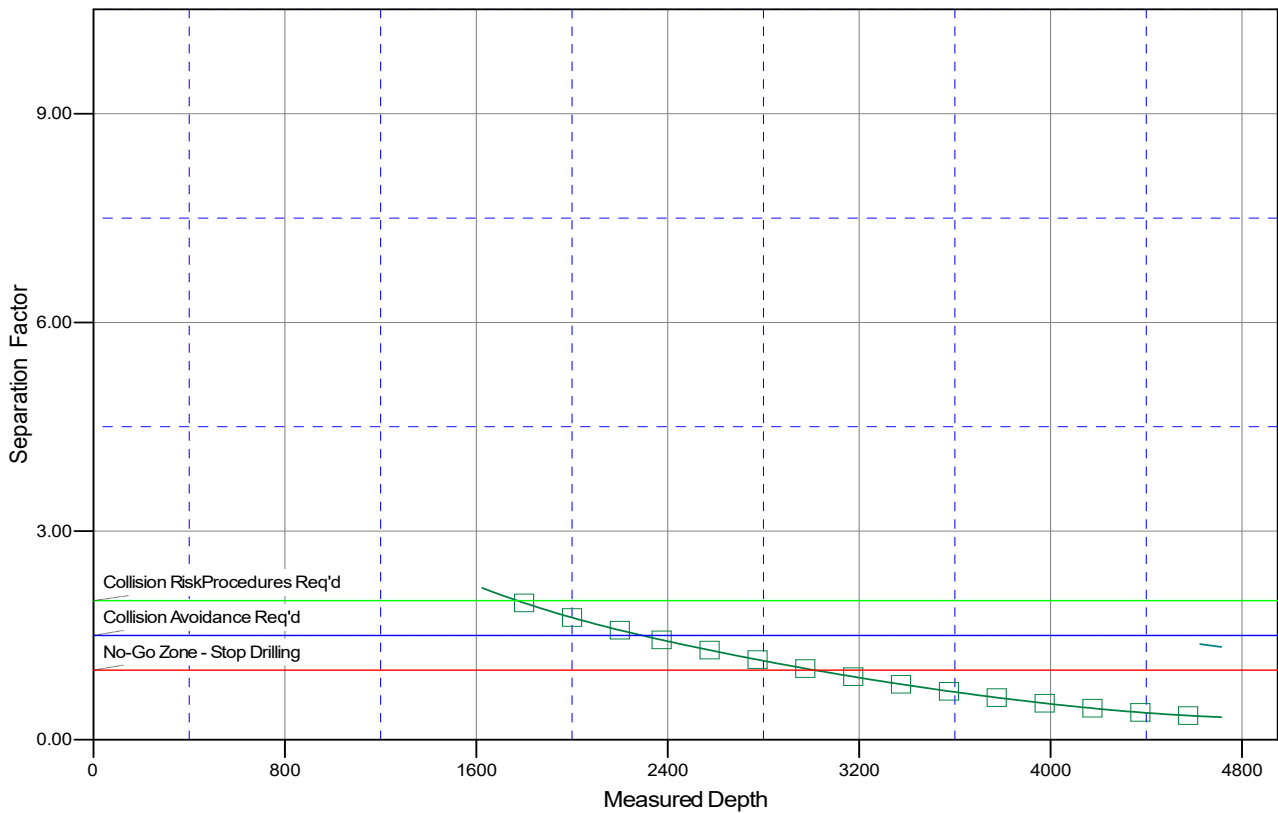
## Anticollision Report

<b>Company:</b>	Hilcorp Energy Company	<b>Local Co-ordinate Reference:</b>	Well Southern Ute 701H
<b>Project:</b>	Farmington, NM	<b>TVD Reference:</b>	RKB to MSL= 6310ft @ 6310.0usft
<b>Reference Site:</b>	San Juan Basin	<b>MD Reference:</b>	RKB to MSL= 6310ft @ 6310.0usft
<b>Site Error:</b>	5.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Southern Ute 701H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	1.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Pilot Hole	<b>Database:</b>	EDM 5000.17 Single User Db
<b>Reference Design:</b>	WP3	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to RKB to MSL= 6310ft @ 6310.0usft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -107.833

Coordinates are relative to: Southern Ute 701H  
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30  
 Grid Convergence at Surface is: 0.15°

### Separation Factor Plot



#### LEGEND

■ UTE 001X, ST 00, ST 00 V0    
 ■ SOUTHERN UTE 009, ST 00, ST 00 V0    
 ■ SOUTHERN UTE 701, ST 00, ST 00 V0