



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_HIGHWAY 160 17-2 pad**

**P\_HIGHWAY 160 1-2**

**P\_HIGHWAY 160 1-2**

**Plan: PLAN #1 3-17-10 RHS**

## **Standard Planning Report**

**17 March, 2010**





Project: COLORADO NORTHERN ZONE - 83  
Site: WELD\_HIGHWAY 160 17-2 pad  
Well: P\_HIGHWAY 160 1-2  
Wellbore: P\_HIGHWAY 160 1-2  
Section: SECTION 2 T1N R66W  
SHL: 1496 FNL 1579 FEL  
Design: PLAN #1 3-17-10 RHS  
Latitude: 40° 4' 59.714 N  
Longitude: 104° 44' 25.735 W  
GL: 5104.00  
KB: WELL @ 5119.00ft (Original Well Elev)



Weatherford®



Azimuths to True North  
Magnetic North: 8.99°  
Magnetic Field  
Strength: 53096.4snT  
Dip Angle: 66.84°  
Date: 3/17/2010  
Model: IGRF2010

FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	
4246.00	4360.01	PARKMAN	
4736.00	4872.55	SUSSEX	
7216.00	7394.52	NIO A	
7536.00	7714.52	CODELL	
7996.00	8174.52	JSAND	
8176.00	8354.52	DAKOTA	

CASING DETAILS			
TVD	MD	Name	Size
1100.00	1100.00	8 5/8"	8.62

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
2052.77	17.06	57.01	2040.23	68.60	105.68	2.00	57.01	125.99	Start 3488.97 hold at 2052.77 MD
5541.75	17.06	57.01	5375.77	625.74	964.01	0.00	0.00	1149.29	Start Drop -2.00
6394.52	0.00	0.00	6216.00	694.34	1069.69	2.00	180.00	1275.28	Start 2160.00 hold at 6394.52 MD
8554.52	0.00	0.00	8376.00	694.34	1069.69	0.00	0.00	1275.28	TD at 8554.52

#### LEGEND

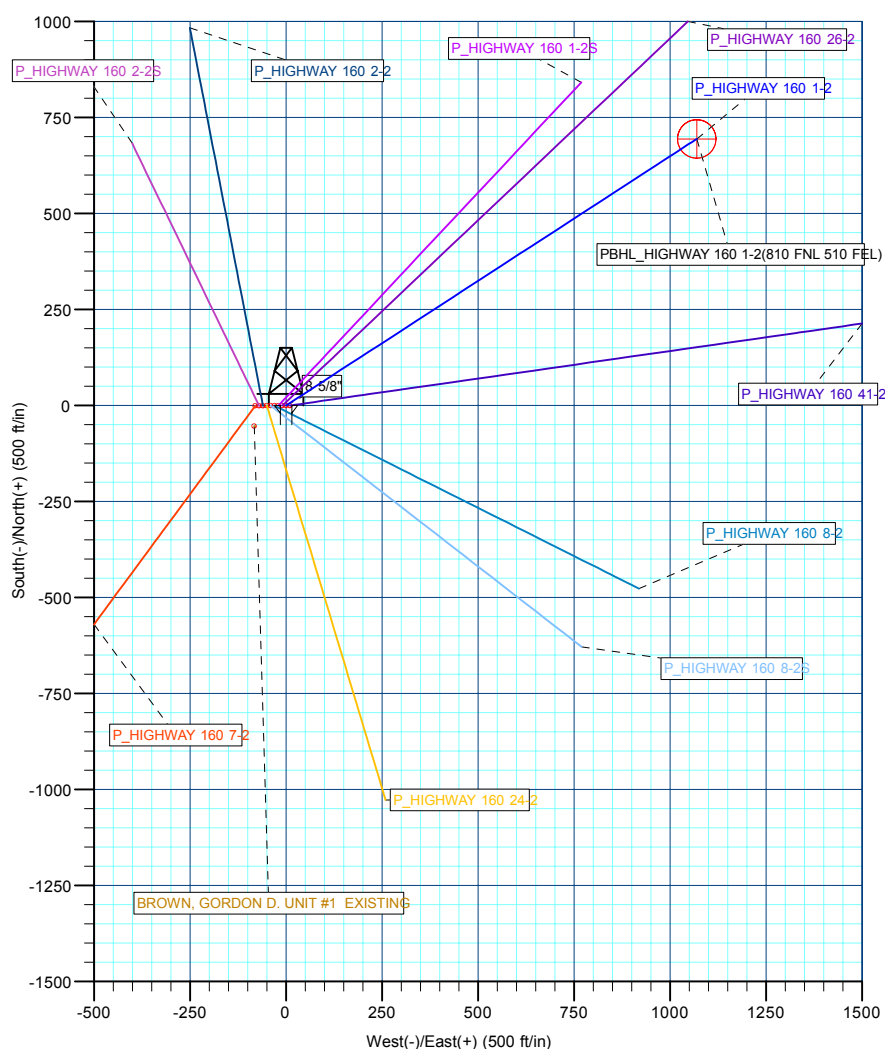
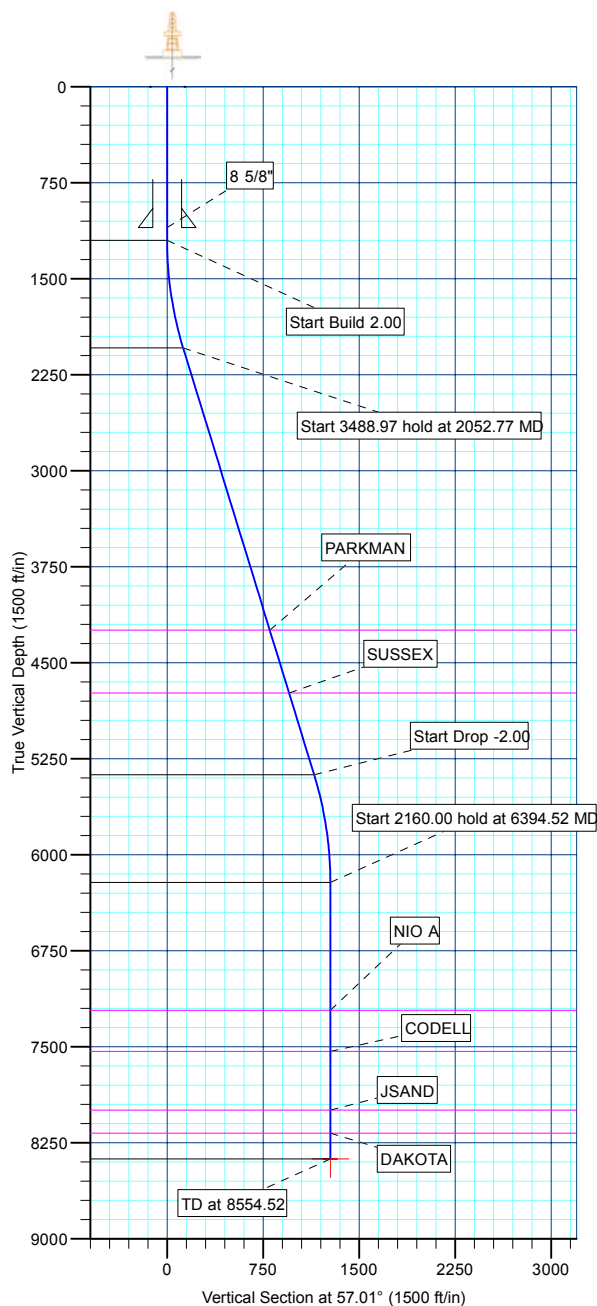
BROWN, GORDON D. UNIT #1 EXISTING, BROWN, GORDON D. UNIT #1 EXISTING, BROWN, GORDON D. UNIT #1 EXISTING V0  
P\_HIGHWAY 160 1-2S, P\_HIGHWAY 160 1-2S, PLAN #1 3-17-10 RHS V0  
P\_HIGHWAY 160 2-2, P\_HIGHWAY 160 2-2, PLAN #1 3-17-10 RHS V0  
P\_HIGHWAY 160 2-2S, P\_HIGHWAY 160 2-2S, PLAN #1 3-17-10 RHS V0  
P\_HIGHWAY 160 24-2, P\_HIGHWAY 160 24-2, PLAN #1 3-17-10 RHS V0  
P\_HIGHWAY 160 26-2, P\_HIGHWAY 160 26-2, PLAN #1 3-17-10 RHS V0  
P\_HIGHWAY 160 41-2, P\_HIGHWAY 160 41-2, PLAN #1 3-17-10 RHS V0  
P\_HIGHWAY 160 7-2, P\_HIGHWAY 160 7-2, PLAN #1 3-17-10 RHS V0  
P\_HIGHWAY 160 8-2, P\_HIGHWAY 160 8-2, PLAN #1 3-17-10 RHS V0  
P\_HIGHWAY 160 8-2S, P\_HIGHWAY 160 8-2S, PLAN #1 3-17-10 RHS V0  
PLAN #1 3-17-10 RHS

#### WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	8376.00	694.34	1069.69	40° 5' 6.576 N	104° 44' 11.972 W	Circle (Radius: 50.00)

#### WELL DETAILS: P\_HIGHWAY 160 1-2

+N/-S	+E/-W	Northing	Ground Level: Easting	5104.00 Latitude	Longitude	Slot
0.00	0.00	1274084.36	3212519.34	40° 4' 59.714 N	104° 44' 25.735 W	



Plan: PLAN #1 3-17-10 RHS (P\_HIGHWAY 160 1-2/P\_HIGHWAY 160 1-2)

Created By: Robert H. Scott Date: 14:25, March 17 2010

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>North Reference:</b>	True
<b>Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_HIGHWAY 160 1-2		
<b>Design:</b>	PLAN #1 3-17-10 RHS		

<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		

Site						WELD_HIGHWAY 160 17-2 pad, SECTION 2 T1N R66W											
Site Position:						Northing:			1,274,084.36 ft			Latitude:			40° 4' 59.714 N		
From:			Lat/Long			Easting:			3,212,519.34 ft			Longitude:			104° 44' 25.735 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.49 °		

Well	P_HIGHWAY 160 1-2					
Well Position	+N/-S	0.00 ft	Northing:	1,274,084.36 ft	Latitude:	40° 4' 59.714 N
	+E/-W	0.00 ft	Easting:	3,212,519.34 ft	Longitude:	104° 44' 25.735 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,104.00 ft

<b>Wellbore</b>	P_HIGHWAY 160 1-2				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	3/17/2010	8.99	66.84	53,096

<b>Design</b>	PLAN #1 3-17-10 RHS			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<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	57.01

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,052.77	17.06	57.01	2,040.23	68.60	105.68	2.00	2.00	0.00	57.01	
5,541.75	17.06	57.01	5,375.77	625.74	964.01	0.00	0.00	0.00	0.00	
6,394.52	0.00	0.00	6,216.00	694.34	1,069.69	2.00	-2.00	0.00	180.00	
8,554.52	0.00	0.00	8,376.00	694.34	1,069.69	0.00	0.00	0.00	0.00	PBHL_HIGHWAY 1

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>North Reference:</b>	True
<b>Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_HIGHWAY 160 1-2		
<b>Design:</b>	PLAN #1 3-17-10 RHS		

Planned 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)
<b>Start Build 2.00</b>									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	2.00	57.01	1,299.98	0.95	1.46	1.75	2.00	2.00	0.00
1,400.00	4.00	57.01	1,399.84	3.80	5.85	6.98	2.00	2.00	0.00
1,500.00	6.00	57.01	1,499.45	8.54	13.16	15.69	2.00	2.00	0.00
1,600.00	8.00	57.01	1,598.70	15.18	23.39	27.88	2.00	2.00	0.00
1,700.00	10.00	57.01	1,697.47	23.70	36.51	43.52	2.00	2.00	0.00
1,800.00	12.00	57.01	1,795.62	34.08	52.51	62.60	2.00	2.00	0.00
1,900.00	14.00	57.01	1,893.06	46.33	71.38	85.10	2.00	2.00	0.00
2,000.00	16.00	57.01	1,989.64	60.42	93.09	110.98	2.00	2.00	0.00
<b>Start 3488.97 hold at 2052.77 MD</b>									
2,052.77	17.06	57.01	2,040.23	68.60	105.68	125.99	2.00	2.00	0.00
2,100.00	17.06	57.01	2,085.38	76.14	117.30	139.84	0.00	0.00	0.00
2,200.00	17.06	57.01	2,180.99	92.11	141.90	169.17	0.00	0.00	0.00
2,300.00	17.06	57.01	2,276.59	108.08	166.50	198.50	0.00	0.00	0.00
2,400.00	17.06	57.01	2,372.19	124.04	191.10	227.83	0.00	0.00	0.00
2,500.00	17.06	57.01	2,467.79	140.01	215.70	257.16	0.00	0.00	0.00
2,600.00	17.06	57.01	2,563.40	155.98	240.30	286.49	0.00	0.00	0.00
2,700.00	17.06	57.01	2,659.00	171.95	264.91	315.82	0.00	0.00	0.00
2,800.00	17.06	57.01	2,754.60	187.92	289.51	345.15	0.00	0.00	0.00
2,900.00	17.06	57.01	2,850.20	203.89	314.11	374.48	0.00	0.00	0.00
3,000.00	17.06	57.01	2,945.80	219.86	338.71	403.81	0.00	0.00	0.00
3,100.00	17.06	57.01	3,041.41	235.83	363.31	433.14	0.00	0.00	0.00
3,200.00	17.06	57.01	3,137.01	251.79	387.91	462.47	0.00	0.00	0.00
3,300.00	17.06	57.01	3,232.61	267.76	412.51	491.80	0.00	0.00	0.00
3,400.00	17.06	57.01	3,328.21	283.73	437.12	521.13	0.00	0.00	0.00
3,500.00	17.06	57.01	3,423.81	299.70	461.72	550.46	0.00	0.00	0.00
3,600.00	17.06	57.01	3,519.42	315.67	486.32	579.79	0.00	0.00	0.00
3,700.00	17.06	57.01	3,615.02	331.64	510.92	609.12	0.00	0.00	0.00
3,800.00	17.06	57.01	3,710.62	347.61	535.52	638.45	0.00	0.00	0.00
3,900.00	17.06	57.01	3,806.22	363.58	560.12	667.77	0.00	0.00	0.00
4,000.00	17.06	57.01	3,901.83	379.54	584.72	697.10	0.00	0.00	0.00
4,100.00	17.06	57.01	3,997.43	395.51	609.32	726.43	0.00	0.00	0.00
4,200.00	17.06	57.01	4,093.03	411.48	633.93	755.76	0.00	0.00	0.00
4,300.00	17.06	57.01	4,188.63	427.45	658.53	785.09	0.00	0.00	0.00
<b>PARKMAN</b>									
4,360.01	17.06	57.01	4,246.00	437.03	673.29	802.69	0.00	0.00	0.00
4,400.00	17.06	57.01	4,284.23	443.42	683.13	814.42	0.00	0.00	0.00
4,500.00	17.06	57.01	4,379.84	459.39	707.73	843.75	0.00	0.00	0.00
4,600.00	17.06	57.01	4,475.44	475.36	732.33	873.08	0.00	0.00	0.00
4,700.00	17.06	57.01	4,571.04	491.33	756.93	902.41	0.00	0.00	0.00
4,800.00	17.06	57.01	4,666.64	507.29	781.53	931.74	0.00	0.00	0.00
<b>SUSSEX</b>									
4,872.55	17.06	57.01	4,736.00	518.88	799.38	953.02	0.00	0.00	0.00
4,900.00	17.06	57.01	4,762.24	523.26	806.14	961.07	0.00	0.00	0.00
5,000.00	17.06	57.01	4,857.85	539.23	830.74	990.40	0.00	0.00	0.00
5,100.00	17.06	57.01	4,953.45	555.20	855.34	1,019.73	0.00	0.00	0.00
5,200.00	17.06	57.01	5,049.05	571.17	879.94	1,049.06	0.00	0.00	0.00
5,300.00	17.06	57.01	5,144.65	587.14	904.54	1,078.39	0.00	0.00	0.00
5,400.00	17.06	57.01	5,240.26	603.11	929.14	1,107.72	0.00	0.00	0.00
5,500.00	17.06	57.01	5,335.86	619.07	953.74	1,137.05	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,541.75	17.06	57.01	5,375.77	625.74	964.01	1,149.29	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>North Reference:</b>	True
<b>Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_HIGHWAY 160 1-2		
<b>Design:</b>	PLAN #1 3-17-10 RHS		

Planned 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)
5,600.00	15.89	57.01	5,431.63	634.73	977.87	1,165.81	2.00	-2.00	0.00
5,700.00	13.89	57.01	5,528.27	648.72	999.42	1,191.51	2.00	-2.00	0.00
5,800.00	11.89	57.01	5,625.74	660.87	1,018.13	1,213.81	2.00	-2.00	0.00
5,900.00	9.89	57.01	5,723.94	671.16	1,033.98	1,232.71	2.00	-2.00	0.00
6,000.00	7.89	57.01	5,822.73	679.57	1,046.94	1,248.16	2.00	-2.00	0.00
6,100.00	5.89	57.01	5,922.00	686.10	1,057.00	1,260.16	2.00	-2.00	0.00
6,200.00	3.89	57.01	6,021.63	690.74	1,064.15	1,268.68	2.00	-2.00	0.00
6,300.00	1.89	57.01	6,121.50	693.49	1,068.38	1,273.72	2.00	-2.00	0.00
<b>Start 2160.00 hold at 6394.52 MD</b>									
6,394.52	0.00	0.00	6,216.00	694.34	1,069.69	1,275.28	2.00	-2.00	-60.32
6,400.00	0.00	0.00	6,221.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
6,500.00	0.00	0.00	6,321.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
6,600.00	0.00	0.00	6,421.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
6,700.00	0.00	0.00	6,521.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
6,800.00	0.00	0.00	6,621.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
6,900.00	0.00	0.00	6,721.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
7,000.00	0.00	0.00	6,821.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
7,100.00	0.00	0.00	6,921.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
7,200.00	0.00	0.00	7,021.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
7,300.00	0.00	0.00	7,121.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
<b>NIO A</b>									
7,394.52	0.00	0.00	7,216.00	694.34	1,069.69	1,275.28	0.00	0.00	0.00
7,400.00	0.00	0.00	7,221.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
7,500.00	0.00	0.00	7,321.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
7,600.00	0.00	0.00	7,421.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
7,700.00	0.00	0.00	7,521.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
<b>CODELL</b>									
7,714.52	0.00	0.00	7,536.00	694.34	1,069.69	1,275.28	0.00	0.00	0.00
7,800.00	0.00	0.00	7,621.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
7,900.00	0.00	0.00	7,721.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
8,000.00	0.00	0.00	7,821.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
8,100.00	0.00	0.00	7,921.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
<b>JSAND</b>									
8,174.52	0.00	0.00	7,996.00	694.34	1,069.69	1,275.28	0.00	0.00	0.00
8,200.00	0.00	0.00	8,021.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
8,300.00	0.00	0.00	8,121.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
<b>DAKOTA</b>									
8,354.52	0.00	0.00	8,176.00	694.34	1,069.69	1,275.28	0.00	0.00	0.00
8,400.00	0.00	0.00	8,221.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
8,500.00	0.00	0.00	8,321.48	694.34	1,069.69	1,275.28	0.00	0.00	0.00
<b>PBHL_HIGHWAY 160 1-2(810 FNL 510 FEL)</b>									
8,554.52	0.00	0.00	8,376.00	694.34	1,069.69	1,275.28	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_HIGHWAY 160	0.00	0.00	8,376.00	694.34	1,069.69	1,274,787.83	3,213,583.04	40° 5' 6.576 N	104° 44' 11.972 W
- plan hits target center									
- Circle (radius 50.00)									

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>North Reference:</b>	True
<b>Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_HIGHWAY 160 1-2		
<b>Design:</b>	PLAN #1 3-17-10 RHS		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,100.00	1,100.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,360.01	4,246.00	PARKMAN				
4,872.55	4,736.00	SUSSEX				
7,394.52	7,216.00	NIO A				
7,714.52	7,536.00	CODELL				
8,174.52	7,996.00	JSAND				
8,354.52	8,176.00	DAKOTA				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,200.00	1,200.00	0.00	0.00	Start Build 2.00	
2,052.77	2,040.23	68.60	105.68	Start 3488.97 hold at 2052.77 MD	
5,541.75	5,375.77	625.74	964.01	Start Drop -2.00	
6,394.52	6,216.00	694.34	1,069.69	Start 2160.00 hold at 6394.52 MD	
8,554.52	8,376.00	694.34	1,069.69	TD at 8554.52	



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83  
WELD\_HIGHWAY 160 17-2 pad  
P\_HIGHWAY 160 1-2**

**P\_HIGHWAY 160 1-2  
PLAN #1 3-17-10 RHS**

## **Anticollision Report**

**17 March, 2010**



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PLAN #1 3-17-10 RHS		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	0.00 to 20,000.00ft	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.00ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 3/17/2010			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	8,554.52	PLAN #1 3-17-10 RHS (P_HIGHWAY 160	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
WELD_HIGHWAY 160 17-2 pad						
BROWN, GORDON D. UNIT #1 EXISTING - BROWN, C	1,200.00	1,185.00	98.83	50.86	2.060	CC
BROWN, GORDON D. UNIT #1 EXISTING - BROWN, C	1,300.00	1,284.98	100.58	48.42	1.928	ES
BROWN, GORDON D. UNIT #1 EXISTING - BROWN, C	1,400.00	1,384.84	105.81	49.54	1.880	SF
P_HIGHWAY 160 1-2S - P_HIGHWAY 160 1-2S - PLAN	1,200.00	1,200.00	19.87	14.73	3.869	CC, ES
P_HIGHWAY 160 1-2S - P_HIGHWAY 160 1-2S - PLAN	1,300.00	1,300.37	20.44	14.86	3.667	SF
P_HIGHWAY 160 2-2 - P_HIGHWAY 160 2-2 - PLAN #1	1,200.00	1,200.00	59.88	54.75	11.660	CC, ES
P_HIGHWAY 160 2-2 - P_HIGHWAY 160 2-2 - PLAN #1	1,300.00	1,299.59	61.67	56.10	11.064	SF
P_HIGHWAY 160 2-2S - P_HIGHWAY 160 2-2S - PLAN	1,200.00	1,200.00	69.96	64.82	13.621	CC, ES
P_HIGHWAY 160 2-2S - P_HIGHWAY 160 2-2S - PLAN	1,300.00	1,299.19	71.98	66.41	12.918	SF
P_HIGHWAY 160 24-2 - P_HIGHWAY 160 24-2 - PLAN	1,200.00	1,200.00	49.81	44.67	9.698	CC, ES
P_HIGHWAY 160 24-2 - P_HIGHWAY 160 24-2 - PLAN	1,300.00	1,300.41	50.85	45.31	9.166	SF
P_HIGHWAY 160 26-2 - P_HIGHWAY 160 26-2 - PLAN	505.35	505.52	6.46	4.45	3.220	CC, ES, SF
P_HIGHWAY 160 41-2 - P_HIGHWAY 160 41-2 - PLAN	1,200.00	1,200.00	10.07	4.94	1.961	CC
P_HIGHWAY 160 41-2 - P_HIGHWAY 160 41-2 - PLAN	1,300.00	1,299.65	10.36	4.79	1.861	ES, SF
P_HIGHWAY 160 7-2 - P_HIGHWAY 160 7-2 - PLAN #1	1,200.00	1,200.00	80.03	74.89	15.582	CC, ES
P_HIGHWAY 160 7-2 - P_HIGHWAY 160 7-2 - PLAN #1	1,300.00	1,298.23	82.57	77.02	14.887	SF
P_HIGHWAY 160 8-2 - P_HIGHWAY 160 8-2 - PLAN #1	1,293.02	1,293.87	29.90	24.38	5.410	CC
P_HIGHWAY 160 8-2 - P_HIGHWAY 160 8-2 - PLAN #1	1,300.00	1,300.91	29.90	24.35	5.381	ES
P_HIGHWAY 160 8-2 - P_HIGHWAY 160 8-2 - PLAN #1	1,400.00	1,401.63	30.40	24.45	5.108	SF
P_HIGHWAY 160 8-2S - P_HIGHWAY 160 8-2S - PLAN	1,200.00	1,200.00	39.74	34.60	7.737	CC, ES
P_HIGHWAY 160 8-2S - P_HIGHWAY 160 8-2S - PLAN	1,400.00	1,401.42	42.08	36.14	7.080	SF

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - BROWN, GORDON D. UNIT #1 EXISTING - BROWN, GORDON D.											
Survey Program: 0-UNKNOWN											
Reference Offset Semi Major Axis Distance											
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)
0.00	0.00	0.00	0.00	0.00	0.00	-123.07	-53.93	-82.82	99.96		
100.00	100.00	85.00	85.00	0.10	1.70	-123.07	-53.93	-82.82	98.83	97.04	1.80
200.00	200.00	185.00	185.00	0.32	5.40	-123.07	-53.93	-82.82	98.83	93.11	5.72
300.00	300.00	285.00	285.00	0.55	9.40	-123.07	-53.93	-82.82	98.83	88.89	9.95
400.00	400.00	385.00	385.00	0.77	13.40	-123.07	-53.93	-82.82	98.83	84.66	14.17
500.00	500.00	485.00	485.00	0.99	17.40	-123.07	-53.93	-82.82	98.83	80.44	18.39
600.00	600.00	585.00	585.00	1.22	21.40	-123.07	-53.93	-82.82	98.83	76.21	22.62
											4.369

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



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
700.00	700.00	685.00	685.00	1.44	25.40	-123.07	-53.93	-82.82	98.83	71.99	26.84	3.682	
800.00	800.00	785.00	785.00	1.67	29.40	-123.07	-53.93	-82.82	98.83	67.76	31.07	3.181	
900.00	900.00	885.00	885.00	1.89	33.40	-123.07	-53.93	-82.82	98.83	63.54	35.29	2.800	
1,000.00	1,000.00	985.00	985.00	2.12	37.40	-123.07	-53.93	-82.82	98.83	59.31	39.52	2.501	
1,100.00	1,100.00	1,085.00	1,085.00	2.34	41.40	-123.07	-53.93	-82.82	98.83	55.09	43.74	2.259	
1,200.00	1,200.00	1,185.00	1,185.00	2.57	45.40	-123.07	-53.93	-82.82	98.83	50.86	47.97	2.060	CC
1,300.00	1,299.98	1,284.98	1,284.98	2.79	49.40	179.92	-53.93	-82.82	100.58	48.42	52.16	1.928	ES
1,400.00	1,399.84	1,384.84	1,384.84	3.00	53.39	179.93	-53.93	-82.82	105.81	49.54	56.27	1.880	SF
1,500.00	1,499.45	1,484.45	1,484.45	3.23	57.38	179.93	-53.93	-82.82	114.53	54.24	60.29	1.900	
1,600.00	1,598.70	1,583.70	1,583.70	3.47	61.35	179.94	-53.93	-82.82	126.71	62.52	64.20	1.974	
1,700.00	1,697.47	1,682.47	1,682.47	3.74	65.30	179.94	-53.93	-82.82	142.36	74.39	67.97	2.094	
1,800.00	1,795.62	1,780.62	1,780.62	4.04	69.22	179.95	-53.93	-82.82	161.44	89.84	71.60	2.255	
1,900.00	1,893.06	1,878.06	1,878.06	4.38	73.12	179.96	-53.93	-82.82	183.93	108.87	75.06	2.450	
2,000.00	1,989.64	1,974.64	1,974.64	4.77	76.99	179.96	-53.93	-82.82	209.81	131.46	78.35	2.678	
2,052.77	2,040.23	2,025.23	2,025.23	5.01	79.01	179.96	-53.93	-82.82	224.82	144.82	80.00	2.810	
2,100.00	2,085.38	2,070.38	2,070.38	5.22	80.82	179.97	-53.93	-82.82	238.67	156.83	81.85	2.916	
2,200.00	2,180.99	2,165.99	2,165.99	5.70	84.64	179.97	-53.93	-82.82	268.00	182.24	85.76	3.125	
2,300.00	2,276.59	2,261.59	2,261.59	6.21	88.46	179.97	-53.93	-82.82	297.33	207.65	89.68	3.315	
2,400.00	2,372.19	2,357.19	2,357.19	6.73	92.29	179.97	-53.93	-82.82	326.66	233.06	93.61	3.490	
2,500.00	2,467.79	2,452.79	2,452.79	7.26	96.11	179.98	-53.93	-82.82	355.99	258.46	97.53	3.650	
2,600.00	2,563.40	2,548.40	2,548.40	7.80	99.94	179.98	-53.93	-82.82	385.32	283.86	101.47	3.798	
2,700.00	2,659.00	2,644.00	2,644.00	8.35	103.76	179.98	-53.93	-82.82	414.65	309.25	105.40	3.934	
2,800.00	2,754.60	2,739.60	2,739.60	8.91	107.58	179.98	-53.93	-82.82	443.98	334.64	109.34	4.061	
2,900.00	2,850.20	2,835.20	2,835.20	9.47	111.41	179.98	-53.93	-82.82	473.31	360.03	113.28	4.178	
3,000.00	2,945.80	2,930.80	2,930.80	10.04	115.23	179.98	-53.93	-82.82	502.64	385.42	117.22	4.288	
3,100.00	3,041.41	3,026.41	3,026.41	10.61	119.06	179.98	-53.93	-82.82	531.97	410.81	121.16	4.391	
3,200.00	3,137.01	3,122.01	3,122.01	11.19	122.88	179.99	-53.93	-82.82	561.30	436.19	125.11	4.487	
3,300.00	3,232.61	3,217.61	3,217.61	11.77	126.70	179.99	-53.93	-82.82	590.63	461.58	129.05	4.577	
3,400.00	3,328.21	3,313.21	3,313.21	12.35	130.53	179.99	-53.93	-82.82	619.96	486.96	133.00	4.661	
3,500.00	3,423.81	3,408.81	3,408.81	12.93	134.35	179.99	-53.93	-82.82	649.29	512.34	136.95	4.741	
3,600.00	3,519.42	3,504.42	3,504.42	13.52	138.18	179.99	-53.93	-82.82	678.62	537.72	140.90	4.816	
3,700.00	3,615.02	3,600.02	3,600.02	14.10	142.00	179.99	-53.93	-82.82	707.95	563.10	144.85	4.888	
3,800.00	3,710.62	3,695.62	3,695.62	14.69	145.82	179.99	-53.93	-82.82	737.28	588.48	148.80	4.955	
3,900.00	3,806.22	3,791.22	3,791.22	15.28	149.65	179.99	-53.93	-82.82	766.61	613.86	152.75	5.019	
4,000.00	3,901.83	3,886.83	3,886.83	15.87	153.47	179.99	-53.93	-82.82	795.94	639.24	156.70	5.079	
4,100.00	3,997.43	3,982.43	3,982.43	16.46	157.30	179.99	-53.93	-82.82	825.27	664.61	160.65	5.137	
4,200.00	4,093.03	4,078.03	4,078.03	17.05	161.12	179.99	-53.93	-82.82	854.60	689.99	164.61	5.192	
4,300.00	4,188.63	4,173.63	4,173.63	17.65	164.95	179.99	-53.93	-82.82	883.93	715.36	168.56	5.244	
4,400.00	4,284.23	4,269.23	4,269.23	18.24	168.77	179.99	-53.93	-82.82	913.26	740.74	172.52	5.294	
4,500.00	4,379.84	4,364.84	4,364.84	18.84	172.59	179.99	-53.93	-82.82	942.59	766.11	176.47	5.341	
4,600.00	4,475.44	4,460.44	4,460.44	19.43	176.42	179.99	-53.93	-82.82	971.91	791.49	180.43	5.387	
4,700.00	4,571.04	4,556.04	4,556.04	20.03	180.24	179.99	-53.93	-82.82	1,001.24	816.86	184.38	5.430	
4,800.00	4,666.64	4,651.64	4,651.64	20.62	184.07	179.99	-53.93	-82.82	1,030.57	842.24	188.34	5.472	
4,900.00	4,762.24	4,747.24	4,747.24	21.22	187.89	179.99	-53.93	-82.82	1,059.90	867.61	192.29	5.512	
5,000.00	4,857.85	4,842.85	4,842.85	21.82	191.71	179.99	-53.93	-82.82	1,089.23	892.98	196.25	5.550	
5,100.00	4,953.45	4,938.45	4,938.45	22.41	195.54	179.99	-53.93	-82.82	1,118.56	918.36	200.21	5.587	
5,200.00	5,049.05	5,034.05	5,034.05	23.01	199.36	179.99	-53.93	-82.82	1,147.89	943.73	204.16	5.622	
5,300.00	5,144.65	5,129.65	5,129.65	23.61	203.19	179.99	-53.93	-82.82	1,177.22	969.10	208.12	5.656	
5,400.00	5,240.26	5,225.26	5,225.26	24.21	207.01	179.99	-53.93	-82.82	1,206.55	994.47	212.08	5.689	
5,500.00	5,335.86	5,320.86	5,320.86	24.81	210.83	179.99	-53.93	-82.82	1,235.88	1,019.84	216.04	5.721	
5,541.75	5,375.77	5,360.77	5,360.77	25.06	212.43	179.99	-53.93	-82.82	1,248.13	1,030.44	217.69	5.734	
5,600.00	5,431.63	5,416.63	5,416.63	25.36	214.67	179.99	-53.93	-82.82	1,264.64	1,043.49	221.16	5.718	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - BROWN, GORDON D. UNIT #1 EXISTING - BROWN, GORDON D.												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-UNKNOWN												<b>Offset Well Error:</b>	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,700.00	5,528.27	5,513.27	5,513.27	25.78	218.53	179.99	-53.93	-82.82	1,290.34	1,063.27	227.07	5.683	
5,800.00	5,625.74	5,610.74	5,610.74	26.16	222.43	179.99	-53.93	-82.82	1,312.65	1,079.84	232.81	5.638	
5,900.00	5,723.94	5,708.94	5,708.94	26.49	226.36	179.99	-53.93	-82.82	1,331.54	1,093.19	238.34	5.587	
6,000.00	5,822.73	5,807.73	5,807.73	26.78	230.31	179.99	-53.93	-82.82	1,346.99	1,103.35	243.65	5.529	
6,100.00	5,922.00	5,907.00	5,907.00	27.03	234.28	179.99	-53.93	-82.82	1,358.99	1,110.30	248.69	5.465	
6,200.00	6,021.63	6,006.63	6,006.63	27.23	238.27	179.99	-53.93	-82.82	1,367.51	1,114.04	253.47	5.395	
6,300.00	6,121.50	6,106.50	6,106.50	27.38	242.26	179.99	-53.93	-82.82	1,372.56	1,114.60	257.95	5.321	
6,394.52	6,216.00	6,201.00	6,201.00	27.49	246.04	-122.99	-53.93	-82.82	1,374.11	1,112.21	261.90	5.247	
6,400.00	6,221.48	6,206.48	6,206.48	27.49	246.26	-122.99	-53.93	-82.82	1,374.11	1,111.98	262.13	5.242	
6,500.00	6,321.48	6,306.48	6,306.48	27.60	250.26	-122.99	-53.93	-82.82	1,374.11	1,107.81	266.31	5.160	
6,600.00	6,421.48	6,406.48	6,406.48	27.71	254.26	-122.99	-53.93	-82.82	1,374.11	1,103.63	270.49	5.080	
6,700.00	6,521.48	6,506.48	6,506.48	27.82	258.26	-122.99	-53.93	-82.82	1,374.11	1,099.45	274.67	5.003	
6,800.00	6,621.48	6,606.48	6,606.48	27.93	262.26	-122.99	-53.93	-82.82	1,374.11	1,095.26	278.85	4.928	
6,900.00	6,721.48	6,706.48	6,706.48	28.05	266.26	-122.99	-53.93	-82.82	1,374.11	1,091.08	283.03	4.855	
7,000.00	6,821.48	6,806.48	6,806.48	28.16	270.26	-122.99	-53.93	-82.82	1,374.11	1,086.90	287.22	4.784	
7,100.00	6,921.48	6,906.48	6,906.48	28.28	274.26	-122.99	-53.93	-82.82	1,374.11	1,082.71	291.40	4.716	
7,200.00	7,021.48	7,006.48	7,006.48	28.39	278.26	-122.99	-53.93	-82.82	1,374.11	1,078.53	295.59	4.649	
7,300.00	7,121.48	7,106.48	7,106.48	28.51	282.26	-122.99	-53.93	-82.82	1,374.11	1,074.34	299.77	4.584	
7,400.00	7,221.48	7,206.48	7,206.48	28.63	286.26	-122.99	-53.93	-82.82	1,374.11	1,070.15	303.96	4.521	
7,500.00	7,321.48	7,306.48	7,306.48	28.75	290.26	-122.99	-53.93	-82.82	1,374.11	1,065.96	308.15	4.459	
7,600.00	7,421.48	7,406.48	7,406.48	28.88	294.26	-122.99	-53.93	-82.82	1,374.11	1,061.78	312.34	4.399	
7,700.00	7,521.48	7,506.48	7,506.48	29.00	298.26	-122.99	-53.93	-82.82	1,374.11	1,057.59	316.53	4.341	
7,800.00	7,621.48	7,606.48	7,606.48	29.12	302.26	-122.99	-53.93	-82.82	1,374.11	1,053.39	320.72	4.284	
7,900.00	7,721.48	7,706.48	7,706.48	29.25	306.26	-122.99	-53.93	-82.82	1,374.11	1,049.20	324.91	4.229	
8,000.00	7,821.48	7,806.48	7,806.48	29.38	310.26	-122.99	-53.93	-82.82	1,374.11	1,045.01	329.10	4.175	
8,100.00	7,921.48	7,906.48	7,906.48	29.50	314.26	-122.99	-53.93	-82.82	1,374.11	1,040.82	333.30	4.123	
8,200.00	8,021.48	8,006.48	8,006.48	29.63	318.26	-122.99	-53.93	-82.82	1,374.11	1,036.62	337.49	4.072	
8,300.00	8,121.48	8,106.48	8,106.48	29.76	322.26	-122.99	-53.93	-82.82	1,374.11	1,032.43	341.69	4.022	
8,331.29	8,152.77	8,137.77	8,137.77	29.81	323.51	-122.99	-53.93	-82.82	1,374.11	1,031.12	343.00	4.006	
8,400.00	8,221.48	8,155.00	8,155.00	29.90	324.20	-122.99	-53.93	-82.82	1,375.08	1,031.26	343.82	3.999	
8,500.00	8,321.48	8,155.00	8,155.00	30.03	324.20	-122.99	-53.93	-82.82	1,382.44	1,038.42	344.02	4.019	
8,554.52	8,376.00	8,155.00	8,155.00	30.10	324.20	-122.99	-53.93	-82.82	1,389.47	1,045.35	344.12	4.038	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 1-2S - P_HIGHWAY 160 1-2S - PLAN #1 3-17-10 f													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-91.09	-0.38	-19.87	19.87					
100.00	100.00	100.00	100.00	0.10	0.10	-91.09	-0.38	-19.87	19.87	19.68	0.19	104.005		
200.00	200.00	200.00	200.00	0.32	0.32	-91.09	-0.38	-19.87	19.87	19.23	0.64	31.019		
300.00	300.00	300.00	300.00	0.55	0.55	-91.09	-0.38	-19.87	19.87	18.78	1.09	18.228		
400.00	400.00	400.00	400.00	0.77	0.77	-91.09	-0.38	-19.87	19.87	18.33	1.54	12.906		
500.00	500.00	500.00	500.00	0.99	0.99	-91.09	-0.38	-19.87	19.87	17.88	1.99	9.989		
600.00	600.00	600.00	600.00	1.22	1.22	-91.09	-0.38	-19.87	19.87	17.43	2.44	8.148		
700.00	700.00	700.00	700.00	1.44	1.44	-91.09	-0.38	-19.87	19.87	16.98	2.89	6.880		
800.00	800.00	800.00	800.00	1.67	1.67	-91.09	-0.38	-19.87	19.87	16.53	3.34	5.953		
900.00	900.00	900.00	900.00	1.89	1.89	-91.09	-0.38	-19.87	19.87	16.08	3.79	5.247		
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-91.09	-0.38	-19.87	19.87	15.63	4.24	4.690		
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-91.09	-0.38	-19.87	19.87	15.18	4.69	4.240		
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-91.09	-0.38	-19.87	19.87	14.73	5.14	3.869 CC, ES		
1,300.00	1,299.98	1,300.37	1,300.35	2.79	2.79	-148.04	0.59	-18.97	20.44	14.86	5.57	3.667 SF		
1,400.00	1,399.84	1,400.74	1,400.65	3.00	3.01	-147.88	3.47	-16.26	22.13	16.14	6.00	3.691		
1,500.00	1,499.45	1,501.13	1,500.81	3.23	3.23	-147.66	8.28	-11.75	24.96	18.54	6.42	3.887		
1,600.00	1,598.70	1,601.53	1,600.80	3.47	3.47	-147.41	15.01	-5.45	28.91	22.06	6.85	4.221		
1,700.00	1,697.47	1,701.97	1,700.53	3.74	3.71	-147.17	23.66	2.66	33.99	26.70	7.29	4.663		
1,800.00	1,795.62	1,802.45	1,799.95	4.04	3.98	-146.96	34.22	12.55	40.19	32.44	7.75	5.187		
1,900.00	1,893.06	1,902.97	1,899.01	4.38	4.27	-146.76	46.69	24.24	47.51	39.28	8.23	5.770		
2,000.00	1,989.64	2,003.54	1,997.63	4.77	4.59	-146.58	61.07	37.72	55.95	47.19	8.75	6.391		
2,052.77	2,040.23	2,056.64	2,049.48	5.01	4.77	-146.50	69.42	45.54	60.85	51.80	9.05	6.725		
2,100.00	2,085.38	2,104.20	2,095.78	5.22	4.94	-146.28	77.35	52.98	65.17	55.83	9.34	6.975		
2,200.00	2,180.99	2,205.10	2,193.55	5.70	5.34	-144.78	95.56	70.04	73.03	62.99	10.03	7.278		
2,300.00	2,276.59	2,306.15	2,290.75	6.21	5.78	-142.09	115.67	88.89	79.25	68.42	10.83	7.318		
2,400.00	2,372.19	2,407.19	2,387.19	6.73	6.27	-138.33	137.66	109.50	84.08	72.32	11.76	7.150		
2,500.00	2,467.79	2,508.09	2,482.67	7.26	6.80	-133.53	161.46	131.80	87.87	75.02	12.85	6.839		
2,600.00	2,563.40	2,608.00	2,576.55	7.80	7.38	-128.08	186.39	155.17	91.36	77.27	14.08	6.487		
2,700.00	2,659.00	2,707.57	2,670.08	8.35	7.97	-123.02	211.32	178.53	95.57	80.19	15.38	6.214		
2,800.00	2,754.60	2,807.13	2,763.60	8.91	8.57	-118.42	236.24	201.89	100.47	83.76	16.71	6.013		
2,900.00	2,850.20	2,906.70	2,857.13	9.47	9.19	-114.27	261.17	225.25	105.95	87.90	18.05	5.871		
3,000.00	2,945.80	3,006.27	2,950.66	10.04	9.81	-110.54	286.10	248.61	111.93	92.56	19.38	5.776		
3,100.00	3,041.41	3,105.84	3,044.18	10.61	10.45	-107.20	311.02	271.97	118.35	97.64	20.70	5.717		
3,200.00	3,137.01	3,205.41	3,137.71	11.19	11.08	-104.21	335.95	295.33	125.12	103.11	22.01	5.685		
3,300.00	3,232.61	3,304.98	3,231.23	11.77	11.73	-101.54	360.87	318.69	132.19	108.89	23.30	5.674		
3,400.00	3,328.21	3,404.55	3,324.76	12.35	12.38	-99.14	385.80	342.05	139.53	114.96	24.57	5.679		
3,500.00	3,423.81	3,504.12	3,418.28	12.93	13.03	-96.98	410.72	365.41	147.08	121.25	25.83	5.695		
3,600.00	3,519.42	3,603.68	3,511.81	13.52	13.69	-95.03	435.65	388.76	154.82	127.75	27.07	5.720		
3,700.00	3,615.02	3,703.25	3,605.33	14.10	14.35	-93.28	460.57	412.12	162.72	134.43	28.29	5.751		
3,800.00	3,710.62	3,802.82	3,698.86	14.69	15.01	-91.68	485.50	435.48	170.76	141.25	29.51	5.787		
3,900.00	3,806.22	3,902.39	3,792.38	15.28	15.67	-90.23	510.42	458.84	178.92	148.21	30.71	5.825		
4,000.00	3,901.83	4,001.96	3,885.91	15.87	16.34	-88.91	535.35	482.20	187.19	155.28	31.91	5.866		
4,100.00	3,997.43	4,101.53	3,979.43	16.46	17.01	-87.70	560.27	505.56	195.54	162.44	33.10	5.908		
4,200.00	4,093.03	4,201.10	4,072.96	17.05	17.67	-86.59	585.20	528.92	203.98	169.70	34.28	5.951		
4,300.00	4,188.63	4,300.67	4,166.48	17.65	18.34	-85.56	610.12	552.28	212.48	177.03	35.45	5.993		
4,400.00	4,284.23	4,400.23	4,260.01	18.24	19.02	-84.62	635.05	575.64	221.05	184.43	36.62	6.036		
4,500.00	4,379.84	4,499.80	4,353.53	18.84	19.69	-83.74	659.98	599.00	229.67	191.89	37.79	6.078		
4,600.00	4,475.44	4,599.37	4,447.06	19.43	20.36	-82.93	684.90	622.36	238.34	199.40	38.95	6.120		
4,700.00	4,571.04	4,698.94	4,540.59	20.03	21.04	-82.18	709.83	645.72	247.06	206.96	40.10	6.161		
4,800.00	4,666.64	4,798.51	4,634.11	20.62	21.71	-81.48	734.75	669.08	255.82	214.56	41.26	6.201		
4,900.00	4,762.24	4,898.08	4,727.64	21.22	22.39	-80.82	759.68	692.44	264.61	222.20	42.41	6.240		
5,000.00	4,857.85	4,997.65	4,821.16	21.82	23.06	-80.21	784.60	715.80	273.43	229.88	43.55	6.278		

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 1-2S - P_HIGHWAY 160 1-2S - PLAN #1 3-17-10 f												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.00	4,953.45	5,097.21	4,914.69	22.41	23.74	-79.64	809.53	739.16	282.28	237.58	44.70	6.315	
5,200.00	5,049.05	5,196.78	5,008.21	23.01	24.42	-79.10	834.45	762.52	291.16	245.32	45.84	6.351	
5,300.00	5,144.65	5,226.37	5,036.00	23.61	24.62	-78.94	841.86	769.46	308.12	261.52	46.60	6.612	
5,400.00	5,240.26	5,226.37	5,036.00	24.21	24.62	-78.94	841.86	769.46	352.45	305.26	47.19	7.469	
5,500.00	5,335.86	5,226.37	5,036.00	24.81	24.62	-78.94	841.86	769.46	416.54	368.76	47.78	8.718	
5,541.75	5,375.77	5,226.37	5,036.00	25.06	24.62	-78.94	841.86	769.46	447.22	399.19	48.03	9.312	
5,600.00	5,431.63	5,226.37	5,036.00	25.36	24.62	-80.39	841.86	769.46	492.81	444.26	48.55	10.151	
5,700.00	5,528.27	5,226.37	5,036.00	25.78	24.62	-83.45	841.86	769.46	576.64	527.27	49.37	11.680	
5,800.00	5,625.74	5,226.37	5,036.00	26.16	24.62	-87.24	841.86	769.46	665.13	614.99	50.14	13.266	
5,900.00	5,723.94	5,226.37	5,036.00	26.49	24.62	-91.77	841.86	769.46	756.55	705.79	50.76	14.905	
6,000.00	5,822.73	5,226.37	5,036.00	26.78	24.62	-96.95	841.86	769.46	849.87	798.74	51.13	16.623	
6,100.00	5,922.00	5,226.37	5,036.00	27.03	24.62	-102.68	841.86	769.46	944.43	893.29	51.13	18.470	
6,200.00	6,021.63	5,226.37	5,036.00	27.23	24.62	-108.78	841.86	769.46	1,039.79	989.08	50.71	20.506	
6,300.00	6,121.50	5,226.37	5,036.00	27.38	24.62	-115.02	841.86	769.46	1,135.64	1,085.81	49.83	22.791	
6,394.52	6,216.00	5,226.37	5,036.00	27.49	24.62	-63.83	841.86	769.46	1,226.50	1,177.88	48.62	25.224	
6,400.00	6,221.48	5,226.37	5,036.00	27.49	24.62	-63.83	841.86	769.46	1,231.78	1,183.15	48.63	25.330	
6,500.00	6,321.48	5,226.37	5,036.00	27.60	24.62	-63.83	841.86	769.46	1,328.30	1,279.55	48.74	27.250	
6,600.00	6,421.48	5,226.37	5,036.00	27.71	24.62	-63.83	841.86	769.46	1,425.30	1,376.43	48.86	29.170	
6,700.00	6,521.48	5,226.37	5,036.00	27.82	24.62	-63.83	841.86	769.46	1,522.68	1,473.70	48.98	31.088	
6,800.00	6,621.48	5,226.37	5,036.00	27.93	24.62	-63.83	841.86	769.46	1,620.39	1,571.29	49.10	33.002	
6,900.00	6,721.48	5,226.37	5,036.00	28.05	24.62	-63.83	841.86	769.46	1,718.36	1,669.14	49.22	34.911	
7,000.00	6,821.48	5,226.37	5,036.00	28.16	24.62	-63.83	841.86	769.46	1,816.55	1,767.21	49.34	36.815	
7,100.00	6,921.48	5,226.37	5,036.00	28.28	24.62	-63.83	841.86	769.46	1,914.93	1,865.46	49.47	38.711	
7,200.00	7,021.48	5,226.37	5,036.00	28.39	24.62	-63.83	841.86	769.46	2,013.47	1,963.87	49.59	40.600	
7,300.00	7,121.48	5,226.37	5,036.00	28.51	24.62	-63.83	841.86	769.46	2,112.14	2,062.42	49.72	42.482	
7,400.00	7,221.48	5,226.37	5,036.00	28.63	24.62	-63.83	841.86	769.46	2,210.94	2,161.09	49.85	44.355	
7,500.00	7,321.48	5,226.37	5,036.00	28.75	24.62	-63.83	841.86	769.46	2,309.84	2,259.86	49.98	46.219	
7,600.00	7,421.48	5,226.37	5,036.00	28.88	24.62	-63.83	841.86	769.46	2,408.82	2,358.72	50.11	48.074	
7,700.00	7,521.48	5,226.37	5,036.00	29.00	24.62	-63.83	841.86	769.46	2,507.89	2,457.66	50.24	49.920	
7,800.00	7,621.48	5,226.37	5,036.00	29.12	24.62	-63.83	841.86	769.46	2,607.03	2,556.66	50.37	51.756	
7,900.00	7,721.48	5,226.37	5,036.00	29.25	24.62	-63.83	841.86	769.46	2,706.24	2,655.73	50.51	53.583	
8,000.00	7,821.48	5,226.37	5,036.00	29.38	24.62	-63.83	841.86	769.46	2,805.50	2,754.86	50.64	55.400	
8,100.00	7,921.48	5,226.37	5,036.00	29.50	24.62	-63.83	841.86	769.46	2,904.81	2,854.03	50.78	57.206	
8,200.00	8,021.48	5,226.37	5,036.00	29.63	24.62	-63.83	841.86	769.46	3,004.17	2,953.25	50.92	59.003	
8,300.00	8,121.48	5,226.37	5,036.00	29.76	24.62	-63.83	841.86	769.46	3,103.56	3,052.51	51.05	60.789	
8,400.00	8,221.48	5,226.37	5,036.00	29.90	24.62	-63.83	841.86	769.46	3,203.00	3,151.81	51.19	62.565	
8,500.00	8,321.48	5,226.37	5,036.00	30.03	24.62	-63.83	841.86	769.46	3,302.47	3,251.13	51.34	64.330	
8,554.52	8,376.00	5,226.37	5,036.00	30.10	24.62	-63.83	841.86	769.46	3,356.71	3,305.30	51.41	65.288	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 2-2 - P_HIGHWAY 160 2-2 - PLAN #1 3-17-10 RH:												<b>Offset Site Error:</b>	0.00 ft
<b>Survey Program:</b> 0-MWMD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.71	-0.74	-59.88	59.88				
100.00	100.00	100.00	100.00	0.10	0.10	-90.71	-0.74	-59.88	59.88	59.69	0.19	313.447	
200.00	200.00	200.00	200.00	0.32	0.32	-90.71	-0.74	-59.88	59.88	59.24	0.64	93.484	
300.00	300.00	300.00	300.00	0.55	0.55	-90.71	-0.74	-59.88	59.88	58.79	1.09	54.934	
400.00	400.00	400.00	400.00	0.77	0.77	-90.71	-0.74	-59.88	59.88	58.34	1.54	38.895	
500.00	500.00	500.00	500.00	0.99	0.99	-90.71	-0.74	-59.88	59.88	57.90	1.99	30.105	
600.00	600.00	600.00	600.00	1.22	1.22	-90.71	-0.74	-59.88	59.88	57.45	2.44	24.556	
700.00	700.00	700.00	700.00	1.44	1.44	-90.71	-0.74	-59.88	59.88	57.00	2.89	20.734	
800.00	800.00	800.00	800.00	1.67	1.67	-90.71	-0.74	-59.88	59.88	56.55	3.34	17.941	
900.00	900.00	900.00	900.00	1.89	1.89	-90.71	-0.74	-59.88	59.88	56.10	3.79	15.812	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.71	-0.74	-59.88	59.88	55.65	4.24	14.134	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.71	-0.74	-59.88	59.88	55.20	4.69	12.778	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.71	-0.74	-59.88	59.88	54.75	5.14	11.660 CC, ES	
1,300.00	1,299.98	1,299.59	1,299.57	2.79	2.79	-146.98	0.96	-60.21	61.67	56.10	5.57	11.064 SF	
1,400.00	1,399.84	1,398.96	1,398.80	3.00	3.01	-145.00	6.04	-61.19	67.09	61.09	6.00	11.179	
1,500.00	1,499.45	1,497.88	1,497.34	3.23	3.24	-142.31	14.45	-62.82	76.24	69.81	6.43	11.853	
1,600.00	1,598.70	1,596.13	1,594.87	3.47	3.48	-139.47	26.10	-65.07	89.21	82.34	6.88	12.975	
1,700.00	1,697.47	1,693.51	1,691.08	3.74	3.73	-136.81	40.89	-67.94	106.04	98.70	7.35	14.437	
1,800.00	1,795.62	1,789.83	1,785.67	4.04	4.01	-134.48	58.66	-71.38	126.69	118.84	7.85	16.135	
1,900.00	1,893.06	1,885.62	1,879.15	4.38	4.33	-132.56	79.22	-75.35	151.02	142.61	8.41	17.962	
2,000.00	1,989.64	1,981.92	1,972.96	4.77	4.67	-131.67	100.52	-79.47	177.94	168.93	9.01	19.744	
2,052.77	2,040.23	2,032.47	2,022.22	5.01	4.86	-131.56	111.70	-81.64	193.05	183.71	9.35	20.653	
2,100.00	2,085.38	2,077.64	2,066.22	5.22	5.03	-131.76	121.68	-83.57	206.86	197.18	9.67	21.388	
2,200.00	2,180.99	2,173.26	2,159.39	5.70	5.40	-132.09	142.83	-87.66	236.09	225.71	10.38	22.740	
2,300.00	2,276.59	2,268.88	2,252.56	6.21	5.78	-132.36	163.98	-91.75	265.33	254.21	11.12	23.863	
2,400.00	2,372.19	2,364.51	2,345.73	6.73	6.17	-132.57	185.12	-95.85	294.57	282.69	11.88	24.802	
2,500.00	2,467.79	2,460.13	2,438.89	7.26	6.57	-132.74	206.27	-99.94	323.81	311.16	12.65	25.594	
2,600.00	2,563.40	2,555.76	2,532.06	7.80	6.98	-132.88	227.41	-104.03	353.06	339.62	13.44	26.266	
2,700.00	2,659.00	2,651.38	2,625.23	8.35	7.39	-133.00	248.56	-108.12	382.31	368.06	14.24	26.842	
2,800.00	2,754.60	2,747.01	2,718.39	8.91	7.81	-133.11	269.70	-112.21	411.56	396.50	15.05	27.338	
2,900.00	2,850.20	2,842.63	2,811.56	9.47	8.23	-133.20	290.85	-116.31	440.81	424.93	15.87	27.768	
3,000.00	2,945.80	2,938.25	2,904.73	10.04	8.65	-133.28	312.00	-120.40	470.06	453.36	16.70	28.145	
3,100.00	3,041.41	3,033.88	2,997.89	10.61	9.08	-133.35	333.14	-124.49	499.31	481.78	17.53	28.475	
3,200.00	3,137.01	3,129.50	3,091.06	11.19	9.51	-133.41	354.29	-128.58	528.57	510.19	18.37	28.768	
3,300.00	3,232.61	3,225.13	3,184.23	11.77	9.94	-133.47	375.43	-132.67	557.82	538.60	19.22	29.028	
3,400.00	3,328.21	3,320.75	3,277.39	12.35	10.37	-133.52	396.58	-136.77	587.07	567.01	20.06	29.260	
3,500.00	3,423.81	3,416.37	3,370.56	12.93	10.81	-133.56	417.72	-140.86	616.33	595.41	20.91	29.469	
3,600.00	3,519.42	3,512.00	3,463.73	13.52	11.24	-133.60	438.87	-144.95	645.58	623.82	21.77	29.657	
3,700.00	3,615.02	3,607.62	3,556.90	14.10	11.68	-133.64	460.02	-149.04	674.84	652.21	22.63	29.827	
3,800.00	3,710.62	3,703.25	3,650.06	14.69	12.12	-133.68	481.16	-153.13	704.10	680.61	23.48	29.982	
3,900.00	3,806.22	3,798.87	3,743.23	15.28	12.56	-133.71	502.31	-157.23	733.35	709.01	24.35	30.123	
4,000.00	3,901.83	3,894.49	3,836.40	15.87	13.00	-133.74	523.45	-161.32	762.61	737.40	25.21	30.251	
4,100.00	3,997.43	3,990.12	3,929.56	16.46	13.44	-133.76	544.60	-165.41	791.86	765.79	26.07	30.370	
4,200.00	4,093.03	4,085.74	4,022.73	17.05	13.88	-133.79	565.74	-169.50	821.12	794.18	26.94	30.479	
4,300.00	4,188.63	4,181.37	4,115.90	17.65	14.33	-133.81	586.89	-173.59	850.38	822.57	27.81	30.579	
4,400.00	4,284.23	4,276.99	4,209.06	18.24	14.77	-133.83	608.04	-177.69	879.63	850.95	28.68	30.672	
4,500.00	4,379.84	4,372.61	4,302.23	18.84	15.21	-133.85	629.18	-181.78	908.89	879.34	29.55	30.759	
4,600.00	4,475.44	4,468.24	4,395.40	19.43	15.66	-133.87	650.33	-185.87	938.14	907.72	30.42	30.839	
4,700.00	4,571.04	4,563.86	4,488.56	20.03	16.10	-133.89	671.47	-189.96	967.40	936.11	31.29	30.914	
4,800.00	4,666.64	4,659.49	4,581.73	20.62	16.55	-133.91	692.62	-194.05	996.66	964.49	32.17	30.984	
4,900.00	4,762.24	4,755.11	4,674.90	21.22	16.99	-133.93	713.76	-198.15	1,025.92	992.87	33.04	31.049	
5,000.00	4,857.85	4,850.73	4,768.07	21.82	17.44	-133.94	734.91	-202.24	1,055.17	1,021.26	33.92	31.111	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.00	4,953.45	4,946.36	4,861.23	22.41	17.89	-133.95	756.06	-206.33	1,084.43	1,049.64	34.79	31.168	
5,200.00	5,049.05	5,041.98	4,954.40	23.01	18.33	-133.97	777.20	-210.42	1,113.69	1,078.02	35.67	31.222	
5,300.00	5,144.65	5,137.61	5,047.57	23.61	18.78	-133.98	798.35	-214.51	1,142.94	1,106.40	36.55	31.273	
5,400.00	5,240.26	5,233.23	5,140.73	24.21	19.23	-133.99	819.49	-218.61	1,172.20	1,134.78	37.42	31.321	
5,500.00	5,335.86	5,328.85	5,233.90	24.81	19.68	-134.01	840.64	-222.70	1,201.46	1,163.15	38.30	31.367	
5,541.75	5,375.77	5,368.77	5,272.79	25.06	19.86	-134.01	849.47	-224.41	1,213.67	1,175.00	38.67	31.385	
5,600.00	5,431.63	5,424.60	5,327.18	25.36	20.12	-134.25	861.81	-226.80	1,230.32	1,191.11	39.21	31.380	
5,700.00	5,528.27	5,520.92	5,421.03	25.78	20.58	-134.52	883.11	-230.92	1,257.05	1,216.98	40.07	31.373	
5,800.00	5,625.74	5,617.78	5,515.40	26.16	21.03	-134.65	904.53	-235.06	1,281.42	1,240.52	40.90	31.330	
5,900.00	5,723.94	5,728.96	5,623.96	26.49	21.48	-134.64	928.07	-239.62	1,303.09	1,261.39	41.70	31.247	
6,000.00	5,822.73	5,848.50	5,741.59	26.78	21.86	-134.60	948.94	-243.66	1,320.90	1,278.51	42.39	31.160	
6,100.00	5,922.00	5,969.45	5,861.40	27.03	22.18	-134.59	965.12	-246.79	1,334.69	1,291.71	42.98	31.054	
6,200.00	6,021.63	6,091.44	5,982.84	27.23	22.46	-134.59	976.41	-248.97	1,344.40	1,300.94	43.46	30.932	
6,300.00	6,121.50	6,214.10	6,105.33	27.38	22.66	-134.61	982.63	-250.18	1,349.99	1,306.15	43.83	30.798	
6,394.52	6,216.00	6,324.79	6,216.00	27.49	22.80	-77.63	983.92	-250.42	1,351.50	1,307.42	44.08	30.658	
6,400.00	6,221.48	6,330.27	6,221.48	27.49	22.81	-77.63	983.92	-250.42	1,351.50	1,307.41	44.10	30.649	
6,500.00	6,321.48	6,430.27	6,321.48	27.60	22.93	-77.63	983.92	-250.42	1,351.50	1,307.15	44.35	30.473	
6,600.00	6,421.48	6,530.27	6,421.48	27.71	23.06	-77.63	983.92	-250.42	1,351.50	1,306.89	44.61	30.294	
6,700.00	6,521.48	6,630.27	6,521.48	27.82	23.19	-77.63	983.92	-250.42	1,351.50	1,306.62	44.88	30.114	
6,800.00	6,621.48	6,730.27	6,621.48	27.93	23.33	-77.63	983.92	-250.42	1,351.50	1,306.36	45.15	29.935	
6,900.00	6,721.48	6,830.27	6,721.48	28.05	23.46	-77.63	983.92	-250.42	1,351.50	1,306.08	45.42	29.755	
7,000.00	6,821.48	6,930.27	6,821.48	28.16	23.59	-77.63	983.92	-250.42	1,351.50	1,305.81	45.70	29.577	
7,100.00	6,921.48	7,030.27	6,921.48	28.28	23.73	-77.63	983.92	-250.42	1,351.50	1,305.53	45.97	29.398	
7,200.00	7,021.48	7,130.27	7,021.48	28.39	23.87	-77.63	983.92	-250.42	1,351.50	1,305.25	46.25	29.220	
7,300.00	7,121.48	7,230.27	7,121.48	28.51	24.01	-77.63	983.92	-250.42	1,351.50	1,304.97	46.54	29.042	
7,400.00	7,221.48	7,330.27	7,221.48	28.63	24.15	-77.63	983.92	-250.42	1,351.50	1,304.68	46.82	28.865	
7,500.00	7,321.48	7,430.27	7,321.48	28.75	24.29	-77.63	983.92	-250.42	1,351.50	1,304.40	47.11	28.689	
7,600.00	7,421.48	7,530.27	7,421.48	28.88	24.43	-77.63	983.92	-250.42	1,351.50	1,304.10	47.40	28.513	
7,700.00	7,521.48	7,630.27	7,521.48	29.00	24.58	-77.63	983.92	-250.42	1,351.50	1,303.81	47.69	28.338	
7,800.00	7,621.48	7,730.27	7,621.48	29.12	24.72	-77.63	983.92	-250.42	1,351.50	1,303.52	47.99	28.164	
7,900.00	7,721.48	7,830.27	7,721.48	29.25	24.87	-77.63	983.92	-250.42	1,351.50	1,303.22	48.29	27.990	
8,000.00	7,821.48	7,930.27	7,821.48	29.38	25.02	-77.63	983.92	-250.42	1,351.50	1,302.92	48.59	27.817	
8,100.00	7,921.48	8,030.27	7,921.48	29.50	25.17	-77.63	983.92	-250.42	1,351.50	1,302.62	48.89	27.645	
8,200.00	8,021.48	8,130.27	8,021.48	29.63	25.32	-77.63	983.92	-250.42	1,351.50	1,302.31	49.19	27.474	
8,261.02	8,082.50	8,191.29	8,082.50	29.71	25.41	-77.63	983.92	-250.42	1,351.50	1,302.12	49.38	27.370	
8,300.00	8,121.48	8,215.79	8,107.00	29.76	25.45	-77.63	983.92	-250.42	1,351.58	1,302.11	49.48	27.318	
8,400.00	8,221.48	8,215.79	8,107.00	29.90	25.45	-77.63	983.92	-250.42	1,356.34	1,306.72	49.63	27.330	
8,500.00	8,321.48	8,215.79	8,107.00	30.03	25.45	-77.63	983.92	-250.42	1,368.42	1,318.64	49.78	27.489	
8,554.52	8,376.00	8,215.79	8,107.00	30.10	25.45	-77.63	983.92	-250.42	1,378.01	1,328.15	49.86	27.636	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 2-2S - P_HIGHWAY 160 2-2S - PLAN #1 3-17-10 f												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-90.61	-0.74	-69.95	69.96				
100.00	100.00	100.00	100.00	0.10	0.10	-90.61	-0.74	-69.95	69.96	69.77	0.19	366.168	
200.00	200.00	200.00	200.00	0.32	0.32	-90.61	-0.74	-69.95	69.96	69.32	0.64	109.208	
300.00	300.00	300.00	300.00	0.55	0.55	-90.61	-0.74	-69.95	69.96	68.87	1.09	64.174	
400.00	400.00	400.00	400.00	0.77	0.77	-90.61	-0.74	-69.95	69.96	68.42	1.54	45.437	
500.00	500.00	500.00	500.00	0.99	0.99	-90.61	-0.74	-69.95	69.96	67.97	1.99	35.169	
600.00	600.00	600.00	600.00	1.22	1.22	-90.61	-0.74	-69.95	69.96	67.52	2.44	28.686	
700.00	700.00	700.00	700.00	1.44	1.44	-90.61	-0.74	-69.95	69.96	67.07	2.89	24.221	
800.00	800.00	800.00	800.00	1.67	1.67	-90.61	-0.74	-69.95	69.96	66.62	3.34	20.959	
900.00	900.00	900.00	900.00	1.89	1.89	-90.61	-0.74	-69.95	69.96	66.17	3.79	18.471	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.61	-0.74	-69.95	69.96	65.72	4.24	16.512	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.61	-0.74	-69.95	69.96	65.27	4.69	14.928	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.61	-0.74	-69.95	69.96	64.82	5.14	13.621 CC, ES	
1,300.00	1,299.98	1,299.19	1,299.18	2.79	2.79	-147.41	0.42	-70.51	71.98	66.41	5.57	12.918 SF	
1,400.00	1,399.84	1,398.16	1,398.07	3.00	3.01	-146.84	3.89	-72.19	78.06	72.07	6.00	13.018	
1,500.00	1,499.45	1,496.69	1,496.39	3.23	3.23	-146.05	9.63	-74.97	88.19	81.77	6.42	13.737	
1,600.00	1,598.70	1,594.57	1,593.86	3.47	3.46	-145.18	17.59	-78.82	102.34	95.50	6.85	14.947	
1,700.00	1,697.47	1,691.58	1,690.23	3.74	3.70	-144.34	27.70	-83.70	120.49	113.21	7.29	16.539	
1,800.00	1,795.62	1,787.54	1,785.23	4.04	3.95	-143.56	39.86	-89.59	142.59	134.85	7.74	18.420	
1,900.00	1,893.06	1,882.25	1,878.63	4.38	4.22	-142.85	53.97	-96.41	168.58	160.35	8.22	20.502	
2,000.00	1,989.64	1,975.53	1,970.21	4.77	4.51	-142.21	69.89	-104.11	198.38	189.64	8.74	22.708	
2,052.77	2,040.23	2,024.13	2,017.75	5.01	4.67	-141.88	78.99	-108.51	215.61	206.59	9.02	23.904	
2,100.00	2,085.38	2,068.09	2,060.65	5.22	4.82	-141.78	87.60	-112.67	231.58	222.27	9.31	24.876	
2,200.00	2,180.99	2,162.18	2,152.47	5.70	5.17	-141.57	106.11	-121.62	265.43	255.48	9.95	26.681	
2,300.00	2,276.59	2,256.27	2,244.29	6.21	5.52	-141.42	124.63	-130.57	299.28	288.67	10.61	28.204	
2,400.00	2,372.19	2,350.36	2,336.11	6.73	5.89	-141.29	143.14	-139.52	333.14	321.84	11.30	29.493	
2,500.00	2,467.79	2,444.46	2,427.93	7.26	6.26	-141.19	161.65	-148.48	366.99	355.00	12.00	30.591	
2,600.00	2,563.40	2,538.55	2,519.74	7.80	6.64	-141.10	180.17	-157.43	400.85	388.14	12.71	31.532	
2,700.00	2,659.00	2,632.64	2,611.56	8.35	7.03	-141.03	198.68	-166.38	434.71	421.27	13.44	32.344	
2,800.00	2,754.60	2,726.73	2,703.38	8.91	7.43	-140.97	217.19	-175.33	468.57	454.39	14.18	33.048	
2,900.00	2,850.20	2,820.83	2,795.20	9.47	7.83	-140.92	235.70	-184.28	502.42	487.50	14.93	33.663	
3,000.00	2,945.80	2,914.92	2,887.02	10.04	8.23	-140.87	254.22	-193.23	536.28	520.60	15.68	34.203	
3,100.00	3,041.41	3,009.01	2,978.83	10.61	8.64	-140.83	272.73	-202.19	570.14	553.70	16.44	34.679	
3,200.00	3,137.01	3,103.10	3,070.65	11.19	9.05	-140.79	291.24	-211.14	604.00	586.80	17.21	35.102	
3,300.00	3,232.61	3,197.20	3,162.47	11.77	9.46	-140.76	309.75	-220.09	637.86	619.88	17.98	35.479	
3,400.00	3,328.21	3,291.29	3,254.29	12.35	9.87	-140.73	328.27	-229.04	671.72	652.97	18.75	35.817	
3,500.00	3,423.81	3,385.38	3,346.11	12.93	10.29	-140.71	346.78	-237.99	705.58	686.05	19.53	36.121	
3,600.00	3,519.42	3,479.48	3,437.93	13.52	10.71	-140.68	365.29	-246.94	739.44	719.13	20.32	36.396	
3,700.00	3,615.02	3,573.57	3,529.74	14.10	11.13	-140.66	383.80	-255.89	773.30	752.20	21.10	36.645	
3,800.00	3,710.62	3,667.66	3,621.56	14.69	11.55	-140.64	402.32	-264.85	807.16	785.27	21.89	36.872	
3,900.00	3,806.22	3,761.75	3,713.38	15.28	11.97	-140.62	420.83	-273.80	841.02	818.34	22.68	37.079	
4,000.00	3,901.83	3,855.85	3,805.20	15.87	12.40	-140.60	439.34	-282.75	874.88	851.41	23.48	37.269	
4,100.00	3,997.43	3,949.94	3,897.02	16.46	12.82	-140.59	457.85	-291.70	908.74	884.47	24.27	37.443	
4,200.00	4,093.03	4,044.03	3,988.83	17.05	13.25	-140.57	476.37	-300.65	942.60	917.54	25.07	37.604	
4,300.00	4,188.63	4,138.12	4,080.65	17.65	13.67	-140.56	494.88	-309.60	976.46	950.60	25.86	37.752	
4,400.00	4,284.23	4,232.22	4,172.47	18.24	14.10	-140.55	513.39	-318.55	1,010.33	983.66	26.66	37.890	
4,500.00	4,379.84	4,326.31	4,264.29	18.84	14.53	-140.54	531.90	-327.51	1,044.19	1,016.72	27.47	38.018	
4,600.00	4,475.44	4,420.40	4,356.11	19.43	14.95	-140.53	550.42	-336.46	1,078.05	1,049.78	28.27	38.137	
4,700.00	4,571.04	4,514.49	4,447.92	20.03	15.38	-140.51	568.93	-345.41	1,111.91	1,082.84	29.07	38.248	
4,800.00	4,666.64	4,608.59	4,539.74	20.62	15.81	-140.51	587.44	-354.36	1,145.77	1,115.89	29.88	38.351	
4,900.00	4,762.24	4,702.68	4,631.56	21.22	16.24	-140.50	605.95	-363.31	1,179.63	1,148.95	30.68	38.448	
5,000.00	4,857.85	4,796.77	4,723.38	21.82	16.67	-140.49	624.47	-372.26	1,213.49	1,182.00	31.49	38.539	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,953.45	4,890.86	4,815.20	22.41	17.10	-140.48	642.98	-381.22	1,247.35	1,215.06	32.29	38.625	
5,200.00	5,049.05	4,984.96	4,907.02	23.01	17.54	-140.47	661.49	-390.17	1,281.21	1,248.11	33.10	38.705	
5,300.00	5,144.65	5,079.05	4,998.83	23.61	17.97	-140.46	680.00	-399.12	1,315.07	1,281.16	33.91	38.781	
5,400.00	5,240.26	5,092.54	5,012.00	24.21	18.03	-140.46	682.66	-400.40	1,351.34	1,316.94	34.40	39.279	
5,500.00	5,335.86	5,092.54	5,012.00	24.81	18.03	-140.46	682.66	-400.40	1,393.79	1,358.94	34.84	40.000	
5,541.75	5,375.77	5,092.54	5,012.00	25.06	18.03	-140.46	682.66	-400.40	1,413.22	1,378.19	35.03	40.345	
5,600.00	5,431.63	5,092.54	5,012.00	25.36	18.03	-140.87	682.66	-400.40	1,441.53	1,406.23	35.30	40.835	
5,700.00	5,528.27	5,092.54	5,012.00	25.78	18.03	-141.61	682.66	-400.40	1,492.38	1,456.69	35.69	41.816	
5,800.00	5,625.74	5,092.54	5,012.00	26.16	18.03	-142.39	682.66	-400.40	1,545.77	1,509.75	36.02	42.915	
5,900.00	5,723.94	5,092.54	5,012.00	26.49	18.03	-143.20	682.66	-400.40	1,601.39	1,565.09	36.29	44.125	
6,000.00	5,822.73	5,092.54	5,012.00	26.78	18.03	-144.03	682.66	-400.40	1,658.94	1,622.44	36.51	45.442	
6,100.00	5,922.00	5,092.54	5,012.00	27.03	18.03	-144.89	682.66	-400.40	1,718.18	1,681.52	36.66	46.864	
6,200.00	6,021.63	5,092.54	5,012.00	27.23	18.03	-145.76	682.66	-400.40	1,778.86	1,742.10	36.76	48.389	
6,300.00	6,121.50	5,092.54	5,012.00	27.38	18.03	-146.64	682.66	-400.40	1,840.77	1,803.97	36.80	50.016	
6,394.52	6,216.00	5,092.54	5,012.00	27.49	18.03	-90.46	682.66	-400.40	1,900.24	1,863.45	36.79	51.649	
6,400.00	6,221.48	5,092.54	5,012.00	27.49	18.03	-90.46	682.66	-400.40	1,903.72	1,866.92	36.80	51.733	
6,500.00	6,321.48	5,092.54	5,012.00	27.60	18.03	-90.46	682.66	-400.40	1,968.77	1,931.83	36.94	53.295	
6,600.00	6,421.48	5,092.54	5,012.00	27.71	18.03	-90.46	682.66	-400.40	2,036.65	1,999.57	37.08	54.920	
6,700.00	6,521.48	5,092.54	5,012.00	27.82	18.03	-90.46	682.66	-400.40	2,107.10	2,069.87	37.23	56.598	
6,800.00	6,621.48	5,092.54	5,012.00	27.93	18.03	-90.46	682.66	-400.40	2,179.85	2,142.48	37.38	58.323	
6,900.00	6,721.48	5,092.54	5,012.00	28.05	18.03	-90.46	682.66	-400.40	2,254.69	2,217.17	37.52	60.088	
7,000.00	6,821.48	5,092.54	5,012.00	28.16	18.03	-90.46	682.66	-400.40	2,331.43	2,293.75	37.67	61.887	
7,100.00	6,921.48	5,092.54	5,012.00	28.28	18.03	-90.46	682.66	-400.40	2,409.86	2,372.04	37.82	63.715	
7,200.00	7,021.48	5,092.54	5,012.00	28.39	18.03	-90.46	682.66	-400.40	2,489.85	2,451.87	37.97	65.566	
7,300.00	7,121.48	5,092.54	5,012.00	28.51	18.03	-90.46	682.66	-400.40	2,571.23	2,533.10	38.13	67.437	
7,400.00	7,221.48	5,092.54	5,012.00	28.63	18.03	-90.46	682.66	-400.40	2,653.89	2,615.61	38.28	69.325	
7,500.00	7,321.48	5,092.54	5,012.00	28.75	18.03	-90.46	682.66	-400.40	2,737.70	2,699.27	38.44	71.224	
7,600.00	7,421.48	5,092.54	5,012.00	28.88	18.03	-90.46	682.66	-400.40	2,822.57	2,783.98	38.59	73.134	
7,700.00	7,521.48	5,092.54	5,012.00	29.00	18.03	-90.46	682.66	-400.40	2,908.41	2,869.65	38.75	75.050	
7,800.00	7,621.48	5,092.54	5,012.00	29.12	18.03	-90.46	682.66	-400.40	2,995.12	2,956.20	38.91	76.972	
7,900.00	7,721.48	5,092.54	5,012.00	29.25	18.03	-90.46	682.66	-400.40	3,082.63	3,043.56	39.07	78.896	
8,000.00	7,821.48	5,092.54	5,012.00	29.38	18.03	-90.46	682.66	-400.40	3,170.89	3,131.65	39.23	80.820	
8,100.00	7,921.48	5,092.54	5,012.00	29.50	18.03	-90.46	682.66	-400.40	3,259.82	3,220.42	39.40	82.744	
8,200.00	8,021.48	5,092.54	5,012.00	29.63	18.03	-90.46	682.66	-400.40	3,349.37	3,309.81	39.56	84.666	
8,300.00	8,121.48	5,092.54	5,012.00	29.76	18.03	-90.46	682.66	-400.40	3,439.51	3,399.78	39.72	86.583	
8,400.00	8,221.48	5,092.54	5,012.00	29.90	18.03	-90.46	682.66	-400.40	3,530.17	3,490.28	39.89	88.497	
8,500.00	8,321.48	5,092.54	5,012.00	30.03	18.03	-90.46	682.66	-400.40	3,621.33	3,581.27	40.06	90.404	
8,554.52	8,376.00	5,092.54	5,012.00	30.10	18.03	-90.46	682.66	-400.40	3,671.21	3,631.07	40.15	91.441	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-90.43	-0.38	-49.81	49.81				
100.00	100.00	100.00	100.00	0.10	0.10	-90.43	-0.38	-49.81	49.81	49.62	0.19	260.705	
200.00	200.00	200.00	200.00	0.32	0.32	-90.43	-0.38	-49.81	49.81	49.17	0.64	77.754	
300.00	300.00	300.00	300.00	0.55	0.55	-90.43	-0.38	-49.81	49.81	48.72	1.09	45.691	
400.00	400.00	400.00	400.00	0.77	0.77	-90.43	-0.38	-49.81	49.81	48.27	1.54	32.350	
500.00	500.00	500.00	500.00	0.99	0.99	-90.43	-0.38	-49.81	49.81	47.82	1.99	25.039	
600.00	600.00	600.00	600.00	1.22	1.22	-90.43	-0.38	-49.81	49.81	47.37	2.44	20.424	
700.00	700.00	700.00	700.00	1.44	1.44	-90.43	-0.38	-49.81	49.81	46.92	2.89	17.245	
800.00	800.00	800.00	800.00	1.67	1.67	-90.43	-0.38	-49.81	49.81	46.47	3.34	14.923	
900.00	900.00	900.00	900.00	1.89	1.89	-90.43	-0.38	-49.81	49.81	46.02	3.79	13.151	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.43	-0.38	-49.81	49.81	45.57	4.24	11.756	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.43	-0.38	-49.81	49.81	45.12	4.69	10.628	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.43	-0.38	-49.81	49.81	44.67	5.14	9.698 CC, ES	
1,300.00	1,299.98	1,300.41	1,300.39	2.79	2.77	-150.40	-2.06	-49.30	50.85	45.31	5.55	9.166 SF	
1,400.00	1,399.84	1,400.35	1,400.19	3.00	2.94	-158.44	-7.08	-47.79	54.73	48.81	5.93	9.235	
1,500.00	1,499.45	1,499.37	1,498.82	3.23	3.13	-169.17	-15.34	-45.30	63.16	56.85	6.31	10.007	
1,600.00	1,598.70	1,597.01	1,595.74	3.47	3.33	-179.68	-26.68	-41.89	77.60	70.89	6.71	11.569	
1,700.00	1,697.47	1,692.86	1,690.44	3.74	3.56	171.70	-40.87	-37.61	98.55	91.43	7.12	13.842	
1,800.00	1,795.62	1,786.56	1,782.47	4.04	3.82	165.19	-57.67	-32.55	125.81	118.26	7.55	16.659	
1,900.00	1,893.06	1,877.76	1,871.46	4.38	4.12	160.38	-76.79	-26.80	158.95	150.94	8.01	19.851	
2,000.00	1,989.64	1,969.27	1,960.30	4.77	4.45	156.92	-97.77	-20.48	196.93	188.44	8.49	23.190	
2,052.77	2,040.23	2,017.37	2,007.00	5.01	4.63	155.66	-108.82	-17.15	218.33	209.57	8.76	24.933	
2,100.00	2,085.38	2,060.28	2,048.65	5.22	4.80	154.91	-118.67	-14.19	237.88	228.85	9.03	26.339	
2,200.00	2,180.99	2,151.12	2,136.84	5.70	5.17	153.66	-139.54	-7.90	279.37	269.74	9.63	29.011	
2,300.00	2,276.59	2,241.97	2,225.03	6.21	5.56	152.74	-160.41	-1.62	320.95	310.70	10.25	31.317	
2,400.00	2,372.19	2,332.81	2,313.22	6.73	5.96	152.03	-181.28	4.67	362.57	351.69	10.88	33.312	
2,500.00	2,467.79	2,423.65	2,401.41	7.26	6.36	151.47	-202.15	10.95	404.23	392.70	11.53	35.047	
2,600.00	2,563.40	2,514.50	2,489.61	7.80	6.78	151.01	-223.02	17.23	445.92	433.73	12.20	36.562	
2,700.00	2,659.00	2,605.34	2,577.80	8.35	7.20	150.63	-243.89	23.52	487.63	474.76	12.87	37.892	
2,800.00	2,754.60	2,696.18	2,665.99	8.91	7.63	150.31	-264.76	29.80	529.35	515.80	13.55	39.065	
2,900.00	2,850.20	2,787.03	2,754.18	9.47	8.06	150.03	-285.63	36.08	571.09	556.85	14.24	40.105	
3,000.00	2,945.80	2,877.87	2,842.37	10.04	8.49	149.80	-306.49	42.37	612.83	597.90	14.94	41.032	
3,100.00	3,041.41	2,968.71	2,930.56	10.61	8.93	149.59	-327.36	48.65	654.58	638.95	15.64	41.862	
3,200.00	3,137.01	3,059.56	3,018.75	11.19	9.37	149.41	-348.23	54.94	696.34	680.00	16.34	42.608	
3,300.00	3,232.61	3,150.40	3,106.94	11.77	9.82	149.25	-369.10	61.22	738.10	721.05	17.05	43.282	
3,400.00	3,328.21	3,241.24	3,195.13	12.35	10.26	149.10	-389.97	67.50	779.87	762.10	17.77	43.893	
3,500.00	3,423.81	3,332.09	3,283.32	12.93	10.71	148.97	-410.84	73.79	821.64	803.16	18.49	44.448	
3,600.00	3,519.42	3,422.93	3,371.51	13.52	11.16	148.86	-431.71	80.07	863.42	844.21	19.21	44.955	
3,700.00	3,615.02	3,513.77	3,459.70	14.10	11.61	148.75	-452.58	86.36	905.19	885.26	19.93	45.420	
3,800.00	3,710.62	3,604.62	3,547.89	14.69	12.06	148.65	-473.45	92.64	946.97	926.32	20.66	45.847	
3,900.00	3,806.22	3,695.46	3,636.08	15.28	12.51	148.57	-494.32	98.92	988.75	967.37	21.38	46.240	
4,000.00	3,901.83	3,786.30	3,724.27	15.87	12.97	148.48	-515.18	105.21	1,030.53	1,008.42	22.11	46.603	
4,100.00	3,997.43	3,877.15	3,812.46	16.46	13.42	148.41	-536.05	111.49	1,072.32	1,049.47	22.84	46.940	
4,200.00	4,093.03	3,967.99	3,900.65	17.05	13.88	148.34	-556.92	117.77	1,114.10	1,090.53	23.58	47.252	
4,300.00	4,188.63	4,058.83	3,988.84	17.65	14.34	148.28	-577.79	124.06	1,155.89	1,131.58	24.31	47.543	
4,400.00	4,284.23	4,149.68	4,077.03	18.24	14.79	148.22	-598.66	130.34	1,197.68	1,172.63	25.05	47.815	
4,500.00	4,379.84	4,240.52	4,165.22	18.84	15.25	148.16	-619.53	136.63	1,239.47	1,213.68	25.79	48.068	
4,600.00	4,475.44	4,331.36	4,253.41	19.43	15.71	148.11	-640.40	142.91	1,281.26	1,254.73	26.52	48.306	
4,700.00	4,571.04	4,422.21	4,341.60	20.03	16.17	148.06	-661.27	149.19	1,323.05	1,295.79	27.26	48.529	
4,800.00	4,666.64	4,513.05	4,429.79	20.62	16.63	148.01	-682.14	155.48	1,364.84	1,336.84	28.00	48.739	
4,900.00	4,762.24	4,603.89	4,517.98	21.22	17.09	147.97	-703.00	161.76	1,406.63	1,377.89	28.74	48.936	
5,000.00	4,857.85	4,694.74	4,606.17	21.82	17.55	147.93	-723.87	168.05	1,448.43	1,418.94	29.49	49.122	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 24-2 - P_HIGHWAY 160 24-2 - PLAN #1 3-17-10 F												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,953.45	4,785.58	4,694.36	22.41	18.01	147.89	-744.74	174.33	1,490.22	1,459.99	30.23	49.298	
5,200.00	5,049.05	4,876.42	4,782.55	23.01	18.47	147.86	-765.61	180.61	1,532.01	1,501.04	30.97	49.464	
5,300.00	5,144.65	4,967.27	4,870.74	23.61	18.93	147.82	-786.48	186.90	1,573.81	1,542.09	31.72	49.622	
5,400.00	5,240.26	5,058.11	4,958.93	24.21	19.39	147.79	-807.35	193.18	1,615.60	1,583.14	32.46	49.771	
5,500.00	5,335.86	5,148.95	5,047.12	24.81	19.85	147.76	-828.22	199.46	1,657.40	1,624.19	33.21	49.913	
5,541.75	5,375.77	5,186.88	5,083.94	25.06	20.05	147.74	-836.93	202.09	1,674.84	1,641.33	33.52	49.970	
5,600.00	5,431.63	5,240.00	5,135.51	25.36	20.32	147.99	-849.13	205.76	1,698.74	1,664.71	34.02	49.930	
5,700.00	5,528.27	5,332.09	5,224.91	25.78	20.79	148.34	-870.29	212.13	1,737.60	1,702.78	34.82	49.898	
5,800.00	5,625.74	5,425.22	5,315.32	26.16	21.26	148.59	-891.68	218.58	1,773.72	1,738.13	35.59	49.837	
5,900.00	5,723.94	5,519.28	5,406.64	26.49	21.74	148.74	-913.29	225.08	1,807.06	1,770.74	36.32	49.751	
6,000.00	5,822.73	5,614.15	5,498.74	26.78	22.22	148.81	-935.09	231.64	1,837.61	1,800.59	37.01	49.647	
6,100.00	5,922.00	5,749.59	5,630.50	27.03	22.80	148.68	-965.08	240.68	1,864.88	1,827.13	37.75	49.395	
6,200.00	6,021.63	5,938.81	5,816.62	27.23	23.38	148.44	-997.57	250.46	1,885.34	1,846.86	38.48	48.990	
6,300.00	6,121.50	6,133.07	6,009.58	27.38	23.83	148.28	-1,018.60	256.79	1,898.02	1,858.94	39.08	48.571	
6,394.52	6,216.00	6,319.23	6,195.51	27.49	24.12	-154.79	-1,026.97	259.31	1,902.64	1,863.14	39.50	48.170	
6,400.00	6,221.48	6,330.06	6,206.34	27.49	24.13	-154.79	-1,027.10	259.35	1,902.69	1,863.17	39.52	48.143	
6,500.00	6,321.48	6,445.20	6,321.48	27.60	24.26	-154.80	-1,027.26	259.40	1,902.75	1,862.93	39.83	47.777	
6,600.00	6,421.48	6,545.20	6,421.48	27.71	24.36	-154.80	-1,027.26	259.40	1,902.75	1,862.65	40.11	47.444	
6,700.00	6,521.48	6,645.20	6,521.48	27.82	24.47	-154.80	-1,027.26	259.40	1,902.75	1,862.37	40.39	47.112	
6,800.00	6,621.48	6,745.20	6,621.48	27.93	24.57	-154.80	-1,027.26	259.40	1,902.75	1,862.08	40.67	46.781	
6,900.00	6,721.48	6,845.20	6,721.48	28.05	24.68	-154.80	-1,027.26	259.40	1,902.75	1,861.79	40.96	46.451	
7,000.00	6,821.48	6,945.20	6,821.48	28.16	24.79	-154.80	-1,027.26	259.40	1,902.75	1,861.50	41.25	46.123	
7,100.00	6,921.48	7,045.20	6,921.48	28.28	24.90	-154.80	-1,027.26	259.40	1,902.75	1,861.21	41.55	45.797	
7,200.00	7,021.48	7,145.20	7,021.48	28.39	25.02	-154.80	-1,027.26	259.40	1,902.75	1,860.91	41.85	45.471	
7,300.00	7,121.48	7,245.20	7,121.48	28.51	25.13	-154.80	-1,027.26	259.40	1,902.75	1,860.61	42.14	45.148	
7,400.00	7,221.48	7,345.20	7,221.48	28.63	25.25	-154.80	-1,027.26	259.40	1,902.75	1,860.31	42.45	44.826	
7,500.00	7,321.48	7,445.20	7,321.48	28.75	25.36	-154.80	-1,027.26	259.40	1,902.75	1,860.00	42.75	44.507	
7,600.00	7,421.48	7,545.20	7,421.48	28.88	25.48	-154.80	-1,027.26	259.40	1,902.75	1,859.70	43.06	44.189	
7,700.00	7,521.48	7,645.20	7,521.48	29.00	25.60	-154.80	-1,027.26	259.40	1,902.75	1,859.39	43.37	43.873	
7,800.00	7,621.48	7,745.20	7,621.48	29.12	25.72	-154.80	-1,027.26	259.40	1,902.75	1,859.07	43.68	43.559	
7,900.00	7,721.48	7,845.20	7,721.48	29.25	25.85	-154.80	-1,027.26	259.40	1,902.75	1,858.76	44.00	43.248	
8,000.00	7,821.48	7,945.20	7,821.48	29.38	25.97	-154.80	-1,027.26	259.40	1,902.75	1,858.44	44.31	42.938	
8,100.00	7,921.48	8,045.20	7,921.48	29.50	26.10	-154.80	-1,027.26	259.40	1,902.75	1,858.12	44.63	42.631	
8,200.00	8,021.48	8,145.20	8,021.48	29.63	26.22	-154.80	-1,027.26	259.40	1,902.75	1,857.80	44.95	42.326	
8,300.00	8,121.48	8,245.20	8,121.48	29.76	26.35	-154.80	-1,027.26	259.40	1,902.75	1,857.48	45.28	42.023	
8,400.00	8,221.48	8,275.72	8,152.00	29.90	26.39	-154.80	-1,027.26	259.40	1,904.02	1,858.53	45.50	41.851	
8,500.00	8,321.48	8,275.72	8,152.00	30.03	26.39	-154.80	-1,027.26	259.40	1,910.29	1,864.62	45.67	41.832	
8,554.52	8,376.00	8,275.72	8,152.00	30.10	26.39	-154.80	-1,027.26	259.40	1,915.89	1,870.14	45.76	41.869	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 26-2 - P_HIGHWAY 160 26-2 - PLAN #1 3-17-10 F												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-92.20	-0.38	-9.79	9.80				
100.00	100.00	100.00	100.00	0.10	0.10	-92.20	-0.38	-9.79	9.80	9.61	0.19	51.299	
200.00	200.00	200.00	200.00	0.32	0.32	-92.20	-0.38	-9.79	9.80	9.16	0.64	15.300	
300.00	300.00	300.00	300.00	0.55	0.55	-92.20	-0.38	-9.79	9.80	8.71	1.09	8.990	
400.00	400.00	400.22	400.20	0.77	0.77	-84.45	0.83	-8.52	8.56	7.03	1.54	5.574	
500.00	500.00	500.19	500.03	0.99	0.99	-46.79	4.43	-4.72	6.47	4.49	1.98	3.266	
505.35	505.35	505.52	505.35	1.01	1.01	-43.45	4.69	-4.44	6.46	4.45	2.01	3.220 CC, ES, SF	
600.00	600.00	599.68	599.13	1.22	1.24	8.62	10.39	1.58	10.55	8.09	2.46	4.289	
700.00	700.00	698.44	697.16	1.44	1.51	28.89	18.65	10.29	21.49	18.53	2.96	7.261	
800.00	800.00	796.27	793.79	1.67	1.82	36.24	29.11	21.33	36.62	33.14	3.49	10.508	
900.00	900.00	892.93	888.71	1.89	2.17	39.70	41.67	34.59	55.32	51.28	4.04	13.678	
1,000.00	1,000.00	988.25	981.65	2.12	2.56	41.62	56.21	49.94	77.39	72.75	4.64	16.673	
1,100.00	1,100.00	1,082.04	1,072.36	2.34	3.01	42.81	72.58	67.22	102.71	97.43	5.28	19.461	
1,200.00	1,200.00	1,174.14	1,160.64	2.57	3.49	43.59	90.63	86.28	131.18	125.22	5.95	22.037	
1,300.00	1,299.98	1,264.93	1,246.79	2.79	4.03	-12.87	110.33	107.07	161.08	155.41	5.67	28.417	
1,400.00	1,399.84	1,354.91	1,331.23	3.00	4.61	-12.64	131.69	129.63	190.74	184.60	6.15	31.027	
1,500.00	1,499.45	1,444.10	1,413.93	3.23	5.23	-12.61	154.66	153.87	220.14	213.50	6.64	33.174	
1,600.00	1,598.70	1,533.43	1,495.68	3.47	5.90	-12.70	179.41	180.00	249.22	242.09	7.14	34.928	
1,700.00	1,697.47	1,629.70	1,583.33	3.74	6.66	-12.92	206.81	208.92	276.20	268.53	7.67	35.997	
1,800.00	1,795.62	1,726.82	1,671.74	4.04	7.44	-13.24	234.45	238.10	299.89	291.67	8.22	36.465	
1,900.00	1,893.06	1,824.68	1,760.82	4.38	8.22	-13.67	262.29	267.50	320.29	311.50	8.79	36.432	
2,000.00	1,989.64	1,923.14	1,850.46	4.77	9.02	-14.20	290.31	297.08	337.40	328.02	9.38	35.980	
2,052.77	2,040.23	1,975.30	1,897.95	5.01	9.44	-14.52	305.16	312.75	345.09	335.39	9.69	35.596	
2,100.00	2,085.38	2,022.04	1,940.50	5.22	9.82	-14.84	318.46	326.79	351.57	341.57	10.00	35.160	
2,200.00	2,180.99	2,121.01	2,030.60	5.70	10.63	-15.49	346.63	356.52	365.32	354.67	10.66	34.285	
2,300.00	2,276.59	2,219.98	2,120.69	6.21	11.44	-16.09	374.79	386.26	379.12	367.80	11.33	33.469	
2,400.00	2,372.19	2,318.95	2,210.79	6.73	12.25	-16.65	402.96	415.99	392.96	380.95	12.01	32.710	
2,500.00	2,467.79	2,417.91	2,300.88	7.26	13.06	-17.17	431.12	445.72	406.83	394.12	12.71	32.003	
2,600.00	2,563.40	2,516.88	2,390.98	7.80	13.87	-17.66	459.28	475.45	420.73	407.31	13.42	31.346	
2,700.00	2,659.00	2,615.85	2,481.08	8.35	14.69	-18.11	487.45	505.19	434.66	420.52	14.14	30.734	
2,800.00	2,754.60	2,714.82	2,571.17	8.91	15.50	-18.54	515.61	534.92	448.62	433.74	14.87	30.164	
2,900.00	2,850.20	2,813.79	2,661.27	9.47	16.32	-18.94	543.78	564.65	462.59	446.98	15.61	29.632	
3,000.00	2,945.80	2,912.75	2,751.37	10.04	17.13	-19.32	571.94	594.38	476.59	460.23	16.36	29.135	
3,100.00	3,041.41	3,011.72	2,841.46	10.61	17.95	-19.68	600.11	624.12	490.61	473.50	17.11	28.670	
3,200.00	3,137.01	3,110.69	2,931.56	11.19	18.77	-20.01	628.27	653.85	504.64	486.77	17.87	28.235	
3,300.00	3,232.61	3,209.66	3,021.66	11.77	19.58	-20.33	656.44	683.58	518.70	500.06	18.64	27.827	
3,400.00	3,328.21	3,308.62	3,111.75	12.35	20.40	-20.63	684.60	713.31	532.76	513.35	19.41	27.445	
3,500.00	3,423.81	3,407.59	3,201.85	12.93	21.22	-20.92	712.77	743.04	546.84	526.65	20.19	27.085	
3,600.00	3,519.42	3,506.56	3,291.95	13.52	22.04	-21.19	740.93	772.78	560.94	539.96	20.97	26.746	
3,700.00	3,615.02	3,605.53	3,382.04	14.10	22.86	-21.45	769.09	802.51	575.04	553.28	21.76	26.426	
3,800.00	3,710.62	3,704.50	3,472.14	14.69	23.67	-21.70	797.26	832.24	589.16	566.61	22.55	26.125	
3,900.00	3,806.22	3,803.46	3,562.23	15.28	24.49	-21.93	825.42	861.97	603.28	579.94	23.35	25.840	
4,000.00	3,901.83	3,902.43	3,652.33	15.87	25.31	-22.15	853.59	891.71	617.42	593.27	24.15	25.571	
4,100.00	3,997.43	4,001.40	3,742.43	16.46	26.13	-22.37	881.75	921.44	631.56	606.61	24.95	25.316	
4,200.00	4,093.03	4,100.37	3,832.52	17.05	26.95	-22.57	909.92	951.17	645.71	619.96	25.75	25.073	
4,300.00	4,188.63	4,199.34	3,922.62	17.65	27.77	-22.77	938.08	980.90	659.87	633.31	26.56	24.844	
4,400.00	4,284.23	4,298.30	4,012.72	18.24	28.59	-22.96	966.25	1,010.64	674.04	646.67	27.37	24.625	
4,500.00	4,379.84	4,397.27	4,102.81	18.84	29.41	-23.13	994.41	1,040.37	688.22	660.03	28.19	24.417	
4,600.00	4,475.44	4,496.24	4,192.91	19.43	30.23	-23.31	1,022.58	1,070.10	702.40	673.39	29.00	24.219	
4,700.00	4,571.04	4,595.21	4,283.01	20.03	31.05	-23.47	1,050.74	1,099.83	716.58	686.76	29.82	24.030	
4,800.00	4,666.64	4,694.17	4,373.10	20.62	31.87	-23.63	1,078.91	1,129.56	730.77	700.13	30.64	23.850	
4,900.00	4,762.24	4,793.14	4,463.20	21.22	32.69	-23.79	1,107.07	1,159.30	744.97	713.51	31.46	23.678	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 26-2 - P_HIGHWAY 160 26-2 - PLAN #1 3-17-10 F												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.00	4,857.85	4,892.11	4,553.30	21.82	33.51	-23.93	1,135.23	1,189.03	759.17	726.89	32.29	23.513	
5,100.00	4,953.45	4,991.08	4,643.39	22.41	34.33	-24.07	1,163.40	1,218.76	773.38	740.27	33.11	23.356	
5,200.00	5,049.05	5,090.05	4,733.49	23.01	35.15	-24.21	1,191.56	1,248.49	787.59	753.65	33.94	23.205	
5,300.00	5,144.65	5,189.01	4,823.58	23.61	35.97	-24.34	1,219.73	1,278.23	801.81	767.04	34.77	23.060	
5,400.00	5,240.26	5,287.98	4,913.68	24.21	36.79	-24.47	1,247.89	1,307.96	816.03	780.43	35.60	22.921	
5,500.00	5,335.86	5,386.95	5,003.78	24.81	37.61	-24.59	1,276.06	1,337.69	830.25	793.82	36.43	22.788	
5,541.75	5,375.77	5,437.27	5,049.66	25.06	37.99	-24.66	1,290.27	1,352.69	836.07	799.25	36.81	22.711	
5,600.00	5,431.63	5,517.87	5,123.85	25.36	38.55	-24.83	1,311.92	1,375.55	843.48	806.15	37.33	22.593	
5,700.00	5,528.27	5,657.03	5,253.93	25.78	39.33	-25.09	1,345.91	1,411.43	855.03	816.94	38.09	22.450	
5,800.00	5,625.74	5,797.11	5,387.13	26.16	40.04	-25.32	1,375.69	1,442.87	865.04	826.30	38.75	22.325	
5,900.00	5,723.94	5,938.00	5,523.08	26.49	40.65	-25.51	1,401.09	1,469.68	873.49	834.18	39.31	22.223	
6,000.00	5,822.73	6,079.55	5,661.33	26.78	41.17	-25.66	1,421.95	1,491.71	880.34	840.57	39.77	22.137	
6,100.00	5,922.00	6,221.64	5,801.44	27.03	41.58	-25.78	1,438.14	1,508.80	885.56	845.44	40.12	22.071	
6,200.00	6,021.63	6,364.12	5,942.93	27.23	41.90	-25.87	1,449.56	1,520.86	889.15	848.77	40.38	22.022	
6,300.00	6,121.50	6,506.85	6,085.33	27.38	42.13	-25.93	1,456.14	1,527.80	891.07	850.55	40.53	21.988	
6,394.52	6,216.00	6,637.56	6,216.00	27.49	42.25	31.06	1,457.89	1,529.64	891.38	850.82	40.57	21.974	
6,400.00	6,221.48	6,643.04	6,221.48	27.49	42.25	31.06	1,457.89	1,529.64	891.38	850.80	40.58	21.966	
6,500.00	6,321.48	6,743.04	6,321.48	27.60	42.32	31.06	1,457.89	1,529.64	891.38	850.53	40.86	21.817	
6,600.00	6,421.48	6,843.04	6,421.48	27.71	42.39	31.06	1,457.89	1,529.64	891.38	850.24	41.14	21.666	
6,700.00	6,521.48	6,943.04	6,521.48	27.82	42.46	31.06	1,457.89	1,529.64	891.38	849.95	41.43	21.515	
6,800.00	6,621.48	7,043.04	6,621.48	27.93	42.53	31.06	1,457.89	1,529.64	891.38	849.66	41.72	21.364	
6,900.00	6,721.48	7,143.04	6,721.48	28.05	42.60	31.06	1,457.89	1,529.64	891.38	849.37	42.02	21.215	
7,000.00	6,821.48	7,243.04	6,821.48	28.16	42.67	31.06	1,457.89	1,529.64	891.38	849.07	42.31	21.066	
7,100.00	6,921.48	7,343.04	6,921.48	28.28	42.75	31.06	1,457.89	1,529.64	891.38	848.77	42.61	20.918	
7,200.00	7,021.48	7,443.04	7,021.48	28.39	42.82	31.06	1,457.89	1,529.64	891.38	848.47	42.92	20.770	
7,300.00	7,121.48	7,543.04	7,121.48	28.51	42.90	31.06	1,457.89	1,529.64	891.38	848.16	43.22	20.624	
7,400.00	7,221.48	7,643.04	7,221.48	28.63	42.98	31.06	1,457.89	1,529.64	891.38	847.86	43.53	20.478	
7,500.00	7,321.48	7,743.04	7,321.48	28.75	43.05	31.06	1,457.89	1,529.64	891.38	847.55	43.84	20.334	
7,600.00	7,421.48	7,843.04	7,421.48	28.88	43.13	31.06	1,457.89	1,529.64	891.38	847.23	44.15	20.190	
7,700.00	7,521.48	7,943.04	7,521.48	29.00	43.21	31.06	1,457.89	1,529.64	891.38	846.92	44.46	20.047	
7,800.00	7,621.48	8,043.04	7,621.48	29.12	43.30	31.06	1,457.89	1,529.64	891.38	846.60	44.78	19.905	
7,900.00	7,721.48	8,143.04	7,721.48	29.25	43.38	31.06	1,457.89	1,529.64	891.38	846.28	45.10	19.765	
8,000.00	7,821.48	8,243.04	7,821.48	29.38	43.46	31.06	1,457.89	1,529.64	891.38	845.96	45.42	19.625	
8,100.00	7,921.48	8,343.04	7,921.48	29.50	43.55	31.06	1,457.89	1,529.64	891.38	845.64	45.74	19.486	
8,200.00	8,021.48	8,443.04	8,021.48	29.63	43.63	31.06	1,457.89	1,529.64	891.38	845.31	46.07	19.349	
8,266.50	8,087.99	8,509.55	8,087.99	29.72	43.69	31.06	1,457.89	1,529.64	891.38	845.10	46.29	19.258	
8,300.00	8,121.48	8,542.56	8,121.00	29.76	43.72	31.06	1,457.89	1,529.64	891.38	844.99	46.40	19.212	
8,400.00	8,221.48	8,542.56	8,121.00	29.90	43.72	31.06	1,457.89	1,529.64	897.03	850.46	46.57	19.261	
8,500.00	8,321.48	8,542.56	8,121.00	30.03	43.72	31.06	1,457.89	1,529.64	913.65	866.90	46.75	19.544	
8,554.52	8,376.00	8,542.56	8,121.00	30.10	43.72	31.06	1,457.89	1,529.64	927.14	880.29	46.85	19.791	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 41-2 - P_HIGHWAY 160 41-2 - PLAN #1 3-17-10 F												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	90.07	-0.01	10.07	10.07				
100.00	100.00	100.00	100.00	0.10	0.10	90.07	-0.01	10.07	10.07	9.88	0.19	52.725	
200.00	200.00	200.00	200.00	0.32	0.32	90.07	-0.01	10.07	10.07	9.43	0.64	15.725	
300.00	300.00	300.00	300.00	0.55	0.55	90.07	-0.01	10.07	10.07	8.98	1.09	9.241	
400.00	400.00	400.00	400.00	0.77	0.77	90.07	-0.01	10.07	10.07	8.53	1.54	6.543	
500.00	500.00	500.00	500.00	0.99	0.99	90.07	-0.01	10.07	10.07	8.08	1.99	5.064	
600.00	600.00	600.00	600.00	1.22	1.22	90.07	-0.01	10.07	10.07	7.63	2.44	4.131	
700.00	700.00	700.00	700.00	1.44	1.44	90.07	-0.01	10.07	10.07	7.19	2.89	3.488	
800.00	800.00	800.00	800.00	1.67	1.67	90.07	-0.01	10.07	10.07	6.74	3.34	3.018	
900.00	900.00	900.00	900.00	1.89	1.89	90.07	-0.01	10.07	10.07	6.29	3.79	2.660	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	90.07	-0.01	10.07	10.07	5.84	4.24	2.378	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	90.07	-0.01	10.07	10.07	5.39	4.69	2.149	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	90.07	-0.01	10.07	10.07	4.94	5.14	1.961 CC	
1,300.00	1,299.98	1,299.65	1,299.63	2.79	2.78	36.93	0.23	11.79	10.36	4.79	5.56	1.861 ES, SF	
1,400.00	1,399.84	1,399.26	1,399.10	3.00	2.99	47.19	0.97	16.93	11.46	5.48	5.98	1.917	
1,500.00	1,499.45	1,498.81	1,498.27	3.23	3.21	59.93	2.20	25.49	13.91	7.51	6.40	2.172	
1,600.00	1,598.70	1,598.26	1,596.98	3.47	3.44	71.17	3.91	37.43	18.09	11.22	6.87	2.633	
1,700.00	1,697.47	1,697.58	1,695.08	3.74	3.71	79.45	6.11	52.74	24.05	16.66	7.39	3.254	
1,800.00	1,795.62	1,796.74	1,792.44	4.04	4.01	85.17	8.78	71.37	31.72	23.74	7.98	3.975	
1,900.00	1,893.06	1,895.71	1,888.89	4.38	4.35	89.08	11.92	93.28	41.00	32.35	8.66	4.737	
2,000.00	1,989.64	1,994.46	1,984.32	4.77	4.74	91.78	15.53	118.42	51.83	42.40	9.43	5.497	
2,052.77	2,040.23	2,046.48	2,034.21	5.01	4.98	92.87	17.61	132.97	58.14	48.25	9.88	5.882	
2,100.00	2,085.38	2,092.98	2,078.59	5.22	5.19	93.47	19.59	146.73	64.11	53.81	10.31	6.220	
2,200.00	2,180.99	2,191.20	2,171.54	5.70	5.71	92.67	24.09	178.12	77.64	66.38	11.26	6.897	
2,300.00	2,276.59	2,289.24	2,263.22	6.21	6.29	90.22	29.02	212.49	92.43	80.18	12.25	7.543	
2,400.00	2,372.19	2,387.98	2,355.23	6.73	6.91	87.97	34.11	247.98	107.76	94.47	13.29	8.109	
2,500.00	2,467.79	2,486.72	2,447.23	7.26	7.56	86.28	39.20	283.47	123.20	108.86	14.35	8.588	
2,600.00	2,563.40	2,585.47	2,539.24	7.80	8.23	84.97	44.29	318.95	138.73	123.30	15.42	8.995	
2,700.00	2,659.00	2,684.21	2,631.24	8.35	8.90	83.92	49.37	354.44	154.31	137.80	16.52	9.343	
2,800.00	2,754.60	2,782.95	2,723.25	8.91	9.59	83.07	54.46	389.93	169.93	152.31	17.62	9.644	
2,900.00	2,850.20	2,881.70	2,815.25	9.47	10.29	82.36	59.55	425.42	185.59	166.85	18.74	9.905	
3,000.00	2,945.80	2,980.44	2,907.26	10.04	10.99	81.76	64.64	460.90	201.27	181.41	19.86	10.134	
3,100.00	3,041.41	3,079.18	2,999.26	10.61	11.70	81.24	69.73	496.39	216.96	195.97	20.99	10.335	
3,200.00	3,137.01	3,177.93	3,091.27	11.19	12.42	80.80	74.82	531.88	232.67	210.54	22.13	10.513	
3,300.00	3,232.61	3,276.67	3,183.27	11.77	13.13	80.41	79.91	567.36	248.40	225.12	23.28	10.672	
3,400.00	3,328.21	3,375.41	3,275.28	12.35	13.85	80.07	85.00	602.85	264.13	239.71	24.42	10.814	
3,500.00	3,423.81	3,474.16	3,367.28	12.93	14.58	79.77	90.09	638.34	279.87	254.29	25.58	10.942	
3,600.00	3,519.42	3,572.90	3,459.29	13.52	15.30	79.49	95.18	673.83	295.62	268.89	26.73	11.058	
3,700.00	3,615.02	3,671.64	3,551.29	14.10	16.03	79.25	100.27	709.31	311.37	283.48	27.89	11.163	
3,800.00	3,710.62	3,770.38	3,643.30	14.69	16.76	79.03	105.36	744.80	327.13	298.08	29.06	11.259	
3,900.00	3,806.22	3,869.13	3,735.31	15.28	17.49	78.83	110.45	780.29	342.89	312.67	30.22	11.347	
4,000.00	3,901.83	3,967.87	3,827.31	15.87	18.22	78.65	115.54	815.78	358.66	327.27	31.39	11.427	
4,100.00	3,997.43	4,066.61	3,919.32	16.46	18.96	78.48	120.63	851.26	374.43	341.88	32.56	11.501	
4,200.00	4,093.03	4,165.36	4,011.32	17.05	19.69	78.33	125.71	886.75	390.20	356.48	33.73	11.570	
4,300.00	4,188.63	4,264.10	4,103.33	17.65	20.43	78.19	130.80	922.24	405.98	371.08	34.90	11.633	
4,400.00	4,284.23	4,362.84	4,195.33	18.24	21.17	78.05	135.89	957.72	421.76	385.69	36.07	11.692	
4,500.00	4,379.84	4,461.59	4,287.34	18.84	21.90	77.93	140.98	993.21	437.54	400.29	37.25	11.747	
4,600.00	4,475.44	4,560.33	4,379.34	19.43	22.64	77.82	146.07	1,028.70	453.32	414.90	38.42	11.799	
4,700.00	4,571.04	4,659.07	4,471.35	20.03	23.38	77.71	151.16	1,064.19	469.10	429.50	39.60	11.847	
4,800.00	4,666.64	4,757.82	4,563.35	20.62	24.12	77.62	156.25	1,099.67	484.88	444.11	40.78	11.891	
4,900.00	4,762.24	4,856.56	4,655.36	21.22	24.86	77.52	161.34	1,135.16	500.67	458.72	41.95	11.934	
5,000.00	4,857.85	4,955.30	4,747.36	21.82	25.60	77.44	166.43	1,170.65	516.46	473.32	43.13	11.973	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 41-2 - P_HIGHWAY 160 41-2 - PLAN #1 3-17-10 F												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.00	4,953.45	5,054.04	4,839.37	22.41	26.34	77.35	171.52	1,206.14	532.24	487.93	44.31	12.011	
5,200.00	5,049.05	5,152.79	4,931.37	23.01	27.08	77.28	176.61	1,241.62	548.03	502.54	45.49	12.046	
5,300.00	5,144.65	5,251.53	5,023.38	23.61	27.83	77.21	181.70	1,277.11	563.82	517.15	46.68	12.079	
5,400.00	5,240.26	5,350.27	5,115.38	24.21	28.57	77.14	186.79	1,312.60	579.61	531.76	47.86	12.111	
5,500.00	5,335.86	5,453.78	5,211.92	24.81	29.31	77.09	192.09	1,349.56	595.27	546.22	49.05	12.137	
5,541.75	5,375.77	5,500.93	5,256.21	25.06	29.61	77.14	194.38	1,365.55	601.33	551.77	49.56	12.132	
5,600.00	5,431.63	5,566.90	5,318.61	25.36	29.96	77.40	197.42	1,386.72	609.24	559.02	50.23	12.130	
5,700.00	5,528.27	5,680.56	5,427.24	25.78	30.52	77.79	202.17	1,419.84	621.59	570.36	51.22	12.135	
5,800.00	5,625.74	5,794.70	5,537.56	26.16	31.02	78.13	206.32	1,448.77	632.33	580.22	52.12	12.133	
5,900.00	5,723.94	5,909.27	5,649.38	26.49	31.45	78.40	209.85	1,473.42	641.46	588.56	52.90	12.127	
6,000.00	5,822.73	6,024.18	5,762.45	26.78	31.81	78.63	212.76	1,493.68	648.94	595.37	53.57	12.115	
6,100.00	5,922.00	6,139.38	5,876.54	27.03	32.11	78.80	215.02	1,509.46	654.75	600.63	54.12	12.097	
6,200.00	6,021.63	6,254.80	5,991.38	27.23	32.35	78.92	216.63	1,520.71	658.89	604.32	54.58	12.073	
6,300.00	6,121.50	6,370.36	6,106.74	27.38	32.53	78.99	217.59	1,527.38	661.34	606.42	54.92	12.042	
6,394.52	6,216.00	6,479.65	6,216.00	27.49	32.64	136.02	217.88	1,529.44	662.10	606.95	55.14	12.007	
6,400.00	6,221.48	6,485.13	6,221.48	27.49	32.65	136.02	217.88	1,529.44	662.10	606.94	55.16	12.004	
6,500.00	6,321.48	6,585.13	6,321.48	27.60	32.74	136.02	217.88	1,529.44	662.10	606.73	55.36	11.959	
6,600.00	6,421.48	6,685.13	6,421.48	27.71	32.83	136.02	217.88	1,529.44	662.10	606.52	55.58	11.913	
6,700.00	6,521.48	6,785.13	6,521.48	27.82	32.93	136.02	217.88	1,529.44	662.10	606.31	55.79	11.867	
6,800.00	6,621.48	6,885.13	6,621.48	27.93	33.02	136.02	217.88	1,529.44	662.10	606.09	56.01	11.821	
6,900.00	6,721.48	6,985.13	6,721.48	28.05	33.12	136.02	217.88	1,529.44	662.10	605.87	56.23	11.774	
7,000.00	6,821.48	7,085.13	6,821.48	28.16	33.22	136.02	217.88	1,529.44	662.10	605.64	56.46	11.728	
7,100.00	6,921.48	7,185.13	6,921.48	28.28	33.31	136.02	217.88	1,529.44	662.10	605.42	56.68	11.681	
7,200.00	7,021.48	7,285.13	7,021.48	28.39	33.41	136.02	217.88	1,529.44	662.10	605.19	56.91	11.634	
7,300.00	7,121.48	7,385.13	7,121.48	28.51	33.52	136.02	217.88	1,529.44	662.10	604.95	57.14	11.586	
7,400.00	7,221.48	7,485.13	7,221.48	28.63	33.62	136.02	217.88	1,529.44	662.10	604.72	57.38	11.539	
7,500.00	7,321.48	7,585.13	7,321.48	28.75	33.72	136.02	217.88	1,529.44	662.10	604.48	57.62	11.492	
7,600.00	7,421.48	7,685.13	7,421.48	28.88	33.83	136.02	217.88	1,529.44	662.10	604.24	57.86	11.444	
7,700.00	7,521.48	7,785.13	7,521.48	29.00	33.93	136.02	217.88	1,529.44	662.10	604.00	58.10	11.396	
7,800.00	7,621.48	7,885.13	7,621.48	29.12	34.04	136.02	217.88	1,529.44	662.10	603.76	58.34	11.349	
7,900.00	7,721.48	7,985.13	7,721.48	29.25	34.15	136.02	217.88	1,529.44	662.10	603.51	58.59	11.301	
8,000.00	7,821.48	8,085.13	7,821.48	29.38	34.26	136.02	217.88	1,529.44	662.10	603.26	58.84	11.253	
8,100.00	7,921.48	8,185.13	7,921.48	29.50	34.37	136.02	217.88	1,529.44	662.10	603.01	59.09	11.205	
8,200.00	8,021.48	8,285.13	8,021.48	29.63	34.48	136.02	217.88	1,529.44	662.10	602.76	59.34	11.157	
8,300.00	8,121.48	8,385.13	8,121.48	29.76	34.59	136.02	217.88	1,529.44	662.10	602.50	59.60	11.109	
8,400.00	8,221.48	8,394.65	8,131.00	29.90	34.60	136.02	217.88	1,529.44	668.25	608.51	59.74	11.185	
8,500.00	8,321.48	8,394.65	8,131.00	30.03	34.60	136.02	217.88	1,529.44	688.95	629.08	59.88	11.506	
8,554.52	8,376.00	8,394.65	8,131.00	30.10	34.60	136.02	217.88	1,529.44	705.97	646.02	59.95	11.776	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-90.53	-0.75	-80.03	80.03				
100.00	100.00	100.00	100.00	0.10	0.10	-90.53	-0.75	-80.03	80.03	79.84	0.19	418.891	
200.00	200.00	200.00	200.00	0.32	0.32	-90.53	-0.75	-80.03	80.03	79.39	0.64	124.933	
300.00	300.00	300.00	300.00	0.55	0.55	-90.53	-0.75	-80.03	80.03	78.94	1.09	73.414	
400.00	400.00	400.00	400.00	0.77	0.77	-90.53	-0.75	-80.03	80.03	78.49	1.54	51.979	
500.00	500.00	500.00	500.00	0.99	0.99	-90.53	-0.75	-80.03	80.03	78.04	1.99	40.233	
600.00	600.00	600.00	600.00	1.22	1.22	-90.53	-0.75	-80.03	80.03	77.59	2.44	32.816	
700.00	700.00	700.00	700.00	1.44	1.44	-90.53	-0.75	-80.03	80.03	77.14	2.89	27.709	
800.00	800.00	800.00	800.00	1.67	1.67	-90.53	-0.75	-80.03	80.03	76.69	3.34	23.977	
900.00	900.00	900.00	900.00	1.89	1.89	-90.53	-0.75	-80.03	80.03	76.24	3.79	21.131	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.53	-0.75	-80.03	80.03	75.79	4.24	18.889	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.53	-0.75	-80.03	80.03	75.34	4.69	17.077	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.53	-0.75	-80.03	80.03	74.89	5.14	15.582 CC, ES	
1,300.00	1,299.98	1,298.23	1,298.22	2.79	2.76	-149.09	-2.10	-81.03	82.57	77.02	5.55	14.887 SF	
1,400.00	1,399.84	1,395.79	1,395.64	3.00	2.94	-153.18	-6.13	-84.00	90.49	84.57	5.92	15.276	
1,500.00	1,499.45	1,492.01	1,491.51	3.23	3.13	-158.51	-12.71	-88.86	104.51	98.21	6.30	16.587	
1,600.00	1,598.70	1,586.28	1,585.11	3.47	3.33	-163.85	-21.67	-95.47	125.17	118.50	6.67	18.754	
1,700.00	1,697.47	1,678.01	1,675.80	3.74	3.55	-168.50	-32.76	-103.65	152.65	145.60	7.04	21.675	
1,800.00	1,795.62	1,770.82	1,767.23	4.04	3.80	-172.29	-45.58	-113.11	185.96	178.55	7.41	25.093	
1,900.00	1,893.06	1,863.17	1,858.20	4.38	4.06	-175.04	-58.37	-122.55	223.12	215.35	7.78	28.696	
2,000.00	1,989.64	1,954.15	1,947.82	4.77	4.34	-177.06	-70.97	-131.85	263.84	255.70	8.13	32.432	
2,052.77	2,040.23	2,001.56	1,994.52	5.01	4.49	-177.91	-77.54	-136.70	286.69	278.37	8.32	34.452	
2,100.00	2,085.38	2,043.81	2,036.14	5.22	4.63	-178.58	-83.40	-141.01	307.57	299.04	8.53	36.061	
2,200.00	2,180.99	2,133.25	2,124.25	5.70	4.92	-179.74	-95.79	-150.16	351.88	342.91	8.97	39.213	
2,300.00	2,276.59	2,222.70	2,212.36	6.21	5.23	179.35	-108.18	-159.30	396.28	386.85	9.43	42.036	
2,400.00	2,372.19	2,312.15	2,300.47	6.73	5.54	178.63	-120.57	-168.45	440.75	430.86	9.89	44.572	
2,500.00	2,467.79	2,401.60	2,388.58	7.26	5.85	178.04	-132.97	-177.59	485.25	474.90	10.36	46.856	
2,600.00	2,563.40	2,491.04	2,476.69	7.80	6.17	177.55	-145.36	-186.74	529.80	518.97	10.83	48.917	
2,700.00	2,659.00	2,580.49	2,564.81	8.35	6.50	177.14	-157.75	-195.88	574.37	563.06	11.31	50.785	
2,800.00	2,754.60	2,669.94	2,652.92	8.91	6.83	176.78	-170.14	-205.02	618.96	607.16	11.79	52.484	
2,900.00	2,850.20	2,759.38	2,741.03	9.47	7.16	176.48	-182.53	-214.17	663.56	651.28	12.28	54.033	
3,000.00	2,945.80	2,848.83	2,829.14	10.04	7.49	176.21	-194.93	-223.31	708.19	695.41	12.77	55.450	
3,100.00	3,041.41	2,938.28	2,917.25	10.61	7.83	175.97	-207.32	-232.46	752.82	739.55	13.27	56.750	
3,200.00	3,137.01	3,027.72	3,005.36	11.19	8.17	175.76	-219.71	-241.60	797.46	783.69	13.76	57.945	
3,300.00	3,232.61	3,117.17	3,093.47	11.77	8.51	175.57	-232.10	-250.75	842.11	827.84	14.26	59.048	
3,400.00	3,328.21	3,206.62	3,181.58	12.35	8.85	175.40	-244.50	-259.89	886.76	872.00	14.76	60.068	
3,500.00	3,423.81	3,296.06	3,269.69	12.93	9.19	175.25	-256.89	-269.04	931.42	916.15	15.27	61.013	
3,600.00	3,519.42	3,385.51	3,357.81	13.52	9.54	175.11	-269.28	-278.18	976.09	960.31	15.77	61.890	
3,700.00	3,615.02	3,474.96	3,445.92	14.10	9.88	174.99	-281.67	-287.32	1,020.75	1,004.48	16.28	62.707	
3,800.00	3,710.62	3,564.41	3,534.03	14.69	10.23	174.87	-294.07	-296.47	1,065.43	1,048.64	16.79	63.469	
3,900.00	3,806.22	3,653.85	3,622.14	15.28	10.57	174.76	-306.46	-305.61	1,110.10	1,092.81	17.30	64.182	
4,000.00	3,901.83	3,743.30	3,710.25	15.87	10.92	174.66	-318.85	-314.76	1,154.78	1,136.98	17.81	64.850	
4,100.00	3,997.43	3,832.75	3,798.36	16.46	11.27	174.57	-331.24	-323.90	1,199.46	1,181.14	18.32	65.476	
4,200.00	4,093.03	3,922.19	3,886.47	17.05	11.62	174.49	-343.64	-333.05	1,244.15	1,225.32	18.83	66.065	
4,300.00	4,188.63	4,011.64	3,974.58	17.65	11.97	174.41	-356.03	-342.19	1,288.83	1,269.49	19.35	66.619	
4,400.00	4,284.23	4,101.09	4,062.69	18.24	12.32	174.34	-368.42	-351.34	1,333.52	1,313.66	19.86	67.142	
4,500.00	4,379.84	4,190.53	4,150.80	18.84	12.67	174.27	-380.81	-360.48	1,378.21	1,357.83	20.38	67.636	
4,600.00	4,475.44	4,279.98	4,238.92	19.43	13.02	174.20	-393.21	-369.62	1,422.90	1,402.01	20.89	68.103	
4,700.00	4,571.04	4,369.43	4,327.03	20.03	13.38	174.14	-405.60	-378.77	1,467.59	1,446.18	21.41	68.545	
4,800.00	4,666.64	4,458.87	4,415.14	20.62	13.73	174.09	-417.99	-387.91	1,512.29	1,490.36	21.93	68.965	
4,900.00	4,762.24	4,548.32	4,503.25	21.22	14.08	174.03	-430.38	-397.06	1,556.98	1,534.53	22.45	69.363	
5,000.00	4,857.85	4,637.77	4,591.36	21.82	14.43	173.98	-442.77	-406.20	1,601.68	1,578.71	22.97	69.741	

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 7-2 - P_HIGHWAY 160 7-2 - PLAN #1 3-17-10 RH:												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.00	4,953.45	4,727.22	4,679.47	22.41	14.79	173.93	-455.17	-415.35	1,646.37	1,622.89	23.49	70.102	
5,200.00	5,049.05	4,816.66	4,767.58	23.01	15.14	173.89	-467.56	-424.49	1,691.07	1,667.06	24.01	70.445	
5,300.00	5,144.65	4,906.11	4,855.69	23.61	15.49	173.84	-479.95	-433.63	1,735.77	1,711.24	24.53	70.773	
5,400.00	5,240.26	4,995.56	4,943.80	24.21	15.85	173.80	-492.34	-442.78	1,780.47	1,755.42	25.05	71.085	
5,500.00	5,335.86	5,085.00	5,031.92	24.81	16.20	173.77	-504.74	-451.92	1,825.17	1,799.60	25.57	71.384	
5,541.75	5,375.77	5,122.34	5,068.70	25.06	16.35	173.75	-509.91	-455.74	1,843.83	1,818.04	25.79	71.505	
5,600.00	5,431.63	5,174.71	5,120.28	25.36	16.56	173.79	-517.17	-461.09	1,869.34	1,843.16	26.18	71.396	
5,700.00	5,528.27	5,265.76	5,209.97	25.78	16.92	173.84	-529.78	-470.40	1,910.65	1,883.83	26.82	71.253	
5,800.00	5,625.74	5,358.18	5,301.02	26.16	17.29	173.87	-542.58	-479.85	1,948.77	1,921.36	27.41	71.087	
5,900.00	5,723.94	5,451.87	5,393.30	26.49	17.66	173.88	-555.56	-489.43	1,983.67	1,955.69	27.98	70.902	
6,000.00	5,822.73	5,546.69	5,486.71	26.78	18.04	173.87	-568.70	-499.12	2,015.29	1,986.79	28.50	70.701	
6,100.00	5,922.00	5,642.55	5,581.14	27.03	18.42	173.85	-581.98	-508.92	2,043.61	2,014.62	28.99	70.488	
6,200.00	6,021.63	5,739.32	5,676.46	27.23	18.80	173.81	-595.39	-518.82	2,068.59	2,039.15	29.44	70.264	
6,300.00	6,121.50	5,838.18	5,774.67	27.38	19.42	173.68	-618.49	-535.86	2,089.52	2,059.50	30.03	69.590	
6,394.52	6,216.00	6,243.07	6,176.80	27.49	20.05	-129.44	-638.15	-550.37	2,098.01	2,067.26	30.75	68.224	
6,400.00	6,221.48	6,261.99	6,195.71	27.49	20.08	-129.44	-638.39	-550.55	2,098.09	2,067.30	30.80	68.129	
6,500.00	6,321.48	6,387.76	6,321.48	27.60	20.24	-129.44	-638.57	-550.68	2,098.16	2,066.96	31.19	67.263	
6,600.00	6,421.48	6,487.76	6,421.48	27.71	20.37	-129.44	-638.57	-550.68	2,098.16	2,066.61	31.54	66.516	
6,700.00	6,521.48	6,587.76	6,521.48	27.82	20.50	-129.44	-638.57	-550.68	2,098.16	2,066.26	31.90	65.780	
6,800.00	6,621.48	6,687.76	6,621.48	27.93	20.63	-129.44	-638.57	-550.68	2,098.16	2,065.91	32.25	65.056	
6,900.00	6,721.48	6,787.76	6,721.48	28.05	20.76	-129.44	-638.57	-550.68	2,098.16	2,065.55	32.61	64.343	
7,000.00	6,821.48	6,887.76	6,821.48	28.16	20.90	-129.44	-638.57	-550.68	2,098.16	2,065.19	32.97	63.641	
7,100.00	6,921.48	6,987.76	6,921.48	28.28	21.03	-129.44	-638.57	-550.68	2,098.16	2,064.83	33.33	62.949	
7,200.00	7,021.48	7,087.76	7,021.48	28.39	21.17	-129.44	-638.57	-550.68	2,098.16	2,064.46	33.69	62.269	
7,300.00	7,121.48	7,187.76	7,121.48	28.51	21.31	-129.44	-638.57	-550.68	2,098.16	2,064.10	34.06	61.600	
7,400.00	7,221.48	7,287.76	7,221.48	28.63	21.45	-129.44	-638.57	-550.68	2,098.16	2,063.73	34.43	60.941	
7,500.00	7,321.48	7,387.76	7,321.48	28.75	21.59	-129.44	-638.57	-550.68	2,098.16	2,063.36	34.80	60.293	
7,600.00	7,421.48	7,487.76	7,421.48	28.88	21.73	-129.44	-638.57	-550.68	2,098.16	2,062.99	35.17	59.656	
7,700.00	7,521.48	7,587.76	7,521.48	29.00	21.87	-129.44	-638.57	-550.68	2,098.16	2,062.61	35.54	59.029	
7,800.00	7,621.48	7,687.76	7,621.48	29.12	22.02	-129.44	-638.57	-550.68	2,098.16	2,062.24	35.92	58.412	
7,900.00	7,721.48	7,787.76	7,721.48	29.25	22.17	-129.44	-638.57	-550.68	2,098.16	2,061.86	36.30	57.805	
8,000.00	7,821.48	7,887.76	7,821.48	29.38	22.31	-129.44	-638.57	-550.68	2,098.16	2,061.48	36.68	57.208	
8,100.00	7,921.48	7,987.76	7,921.48	29.50	22.46	-129.44	-638.57	-550.68	2,098.16	2,061.10	37.06	56.621	
8,200.00	8,021.48	8,087.76	8,021.48	29.63	22.61	-129.44	-638.57	-550.68	2,098.16	2,060.72	37.44	56.043	
8,300.00	8,121.48	8,187.76	8,121.48	29.76	22.77	-129.44	-638.57	-550.68	2,098.16	2,060.34	37.82	55.475	
8,400.00	8,221.48	8,213.27	8,147.00	29.90	22.80	-129.44	-638.57	-550.68	2,099.48	2,061.42	38.06	55.157	
8,500.00	8,321.48	8,213.27	8,147.00	30.03	22.80	-129.44	-638.57	-550.68	2,105.40	2,067.14	38.26	55.031	
8,554.52	8,376.00	8,213.27	8,147.00	30.10	22.80	-129.44	-638.57	-550.68	2,110.62	2,072.25	38.36	55.015	



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 8-2 - P_HIGHWAY 160 8-2 - PLAN #1 3-17-10 RH:										Offset Site Error:		0.00 ft
Survey Program: 0-MWD												Offset Well Error:		0.00 ft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-90.72	-0.38	-29.94	29.94					
100.00	100.00	100.00	100.00	0.10	0.10	-90.72	-0.38	-29.94	29.94	29.75	0.19	156.724		
200.00	200.00	200.00	200.00	0.32	0.32	-90.72	-0.38	-29.94	29.94	29.30	0.64	46.742		
300.00	300.00	300.00	300.00	0.55	0.55	-90.72	-0.38	-29.94	29.94	28.85	1.09	27.467		
400.00	400.00	400.00	400.00	0.77	0.77	-90.72	-0.38	-29.94	29.94	28.40	1.54	19.447		
500.00	500.00	500.00	500.00	0.99	0.99	-90.72	-0.38	-29.94	29.94	27.95	1.99	15.053		
600.00	600.00	600.00	600.00	1.22	1.22	-90.72	-0.38	-29.94	29.94	27.50	2.44	12.278		
700.00	700.00	700.00	700.00	1.44	1.44	-90.72	-0.38	-29.94	29.94	27.05	2.89	10.367		
800.00	800.00	800.00	800.00	1.67	1.67	-90.72	-0.38	-29.94	29.94	26.60	3.34	8.971		
900.00	900.00	900.00	900.00	1.89	1.89	-90.72	-0.38	-29.94	29.94	26.15	3.79	7.906		
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.72	-0.38	-29.94	29.94	25.71	4.24	7.067		
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.72	-0.38	-29.94	29.94	25.26	4.69	6.389		
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.72	-0.38	-29.94	29.94	24.81	5.14	5.830		
1,293.02	1,293.00	1,293.87	1,293.85	2.77	2.76	-150.65	-1.07	-28.57	29.90	24.38	5.53	5.410 CC		
1,300.00	1,299.98	1,300.91	1,300.89	2.79	2.77	-151.10	-1.17	-28.35	29.90	24.35	5.56	5.381 ES		
1,400.00	1,399.84	1,401.63	1,401.46	3.00	2.97	-161.06	-3.56	-23.60	30.40	24.45	5.95	5.108 SF		
1,500.00	1,499.45	1,501.98	1,501.42	3.23	3.18	-176.07	-7.51	-15.73	33.11	26.76	6.35	5.211		
1,600.00	1,598.70	1,601.79	1,600.47	3.47	3.41	167.96	-12.99	-4.80	39.89	33.10	6.78	5.879		
1,700.00	1,697.47	1,700.88	1,698.33	3.74	3.66	154.84	-19.97	9.10	51.56	44.29	7.27	7.096		
1,800.00	1,795.62	1,799.09	1,794.74	4.04	3.95	145.43	-28.37	25.84	67.92	60.11	7.81	8.699		
1,900.00	1,893.06	1,896.31	1,889.48	4.38	4.29	138.91	-38.14	45.31	88.47	80.06	8.42	10.513		
2,000.00	1,989.64	1,993.24	1,983.62	4.77	4.66	135.25	-48.49	65.93	112.41	103.32	9.08	12.376		
2,052.77	2,040.23	2,044.18	2,033.10	5.01	4.86	134.28	-53.93	76.77	126.09	116.64	9.45	13.339		
2,100.00	2,085.38	2,089.70	2,077.31	5.22	5.05	133.85	-58.79	86.46	138.64	128.83	9.81	14.136		
2,200.00	2,180.99	2,186.08	2,170.92	5.70	5.46	133.16	-69.08	106.96	165.23	154.65	10.59	15.606		
2,300.00	2,276.59	2,282.47	2,264.53	6.21	5.88	132.67	-79.37	127.47	191.84	180.45	11.40	16.833		
2,400.00	2,372.19	2,378.85	2,358.15	6.73	6.31	132.29	-89.66	147.98	218.46	206.23	12.23	17.864		
2,500.00	2,467.79	2,475.23	2,451.76	7.26	6.76	132.00	-99.95	168.48	245.09	232.01	13.08	18.738		
2,600.00	2,563.40	2,571.62	2,545.37	7.80	7.21	131.76	-110.24	188.99	271.72	257.78	13.95	19.483		
2,700.00	2,659.00	2,668.00	2,638.98	8.35	7.66	131.57	-120.53	209.50	298.36	283.53	14.83	20.124		
2,800.00	2,754.60	2,764.38	2,732.60	8.91	8.12	131.40	-130.82	230.00	324.99	309.28	15.72	20.680		
2,900.00	2,850.20	2,860.77	2,826.21	9.47	8.59	131.27	-141.11	250.51	351.63	335.02	16.61	21.165		
3,000.00	2,945.80	2,957.15	2,919.82	10.04	9.05	131.15	-151.41	271.02	378.28	360.76	17.52	21.591		
3,100.00	3,041.41	3,053.53	3,013.43	10.61	9.52	131.04	-161.70	291.52	404.92	386.49	18.43	21.967		
3,200.00	3,137.01	3,149.92	3,107.04	11.19	10.00	130.95	-171.99	312.03	431.56	412.21	19.35	22.301		
3,300.00	3,232.61	3,246.30	3,200.66	11.77	10.47	130.87	-182.28	332.54	458.21	437.93	20.27	22.600		
3,400.00	3,328.21	3,342.68	3,294.27	12.35	10.95	130.80	-192.57	353.04	484.85	463.65	21.20	22.869		
3,500.00	3,423.81	3,439.06	3,387.88	12.93	11.43	130.74	-202.86	373.55	511.50	489.37	22.13	23.111		
3,600.00	3,519.42	3,535.45	3,481.49	13.52	11.91	130.68	-213.15	394.06	538.14	515.08	23.07	23.330		
3,700.00	3,615.02	3,631.83	3,575.11	14.10	12.40	130.63	-223.44	414.56	564.79	540.79	24.00	23.530		
3,800.00	3,710.62	3,728.21	3,668.72	14.69	12.88	130.58	-233.73	435.07	591.44	566.50	24.94	23.712		
3,900.00	3,806.22	3,824.60	3,762.33	15.28	13.36	130.54	-244.02	455.58	618.09	592.20	25.88	23.879		
4,000.00	3,901.83	3,920.98	3,855.94	15.87	13.85	130.50	-254.31	476.08	644.73	617.91	26.83	24.032		
4,100.00	3,997.43	4,017.36	3,949.56	16.46	14.34	130.47	-264.60	496.59	671.38	643.61	27.77	24.174		
4,200.00	4,093.03	4,113.75	4,043.17	17.05	14.82	130.43	-274.89	517.10	698.03	669.31	28.72	24.304		
4,300.00	4,188.63	4,210.13	4,136.78	17.65	15.31	130.40	-285.19	537.60	724.68	695.01	29.67	24.426		
4,400.00	4,284.23	4,306.51	4,230.39	18.24	15.80	130.37	-295.48	558.11	751.33	720.71	30.62	24.538		
4,500.00	4,379.84	4,402.90	4,324.01	18.84	16.29	130.34	-305.77	578.62	777.98	746.41	31.57	24.643		
4,600.00	4,475.44	4,499.28	4,417.62	19.43	16.78	130.32	-316.06	599.12	804.63	772.10	32.52	24.741		
4,700.00	4,571.04	4,595.66	4,511.23	20.03	17.27	130.30	-326.35	619.63	831.28	797.80	33.48	24.833		
4,800.00	4,666.64	4,692.05	4,604.84	20.62	17.76	130.27	-336.64	640.14	857.92	823.50	34.43	24.919		
4,900.00	4,762.24	4,788.43	4,698.46	21.22	18.25	130.25	-346.93	660.64	884.57	849.19	35.38	24.999		

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

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,000.00	4,857.85	4,884.81	4,792.07	21.82	18.74	130.23	-357.22	681.15	911.22	874.88	36.34	25.075	
5,100.00	4,953.45	4,981.20	4,885.68	22.41	19.23	130.21	-367.51	701.66	937.87	900.58	37.30	25.147	
5,200.00	5,049.05	5,077.58	4,979.29	23.01	19.72	130.20	-377.80	722.16	964.52	926.27	38.25	25.214	
5,300.00	5,144.65	5,173.96	5,072.91	23.61	20.22	130.18	-388.09	742.67	991.17	951.96	39.21	25.278	
5,400.00	5,240.26	5,270.34	5,166.52	24.21	20.71	130.17	-398.38	763.18	1,017.82	977.65	40.17	25.338	
5,500.00	5,335.86	5,366.73	5,260.13	24.81	21.20	130.15	-408.67	783.68	1,044.47	1,003.34	41.13	25.395	
5,541.75	5,375.77	5,406.96	5,299.21	25.06	21.41	130.14	-412.97	792.24	1,055.60	1,014.07	41.53	25.418	
5,600.00	5,431.63	5,463.21	5,353.84	25.36	21.70	130.35	-418.98	804.21	1,070.75	1,028.65	42.10	25.433	
5,700.00	5,528.27	5,560.16	5,448.00	25.78	22.19	130.56	-429.33	824.84	1,095.04	1,052.04	43.01	25.463	
5,800.00	5,625.74	5,657.52	5,542.56	26.16	22.69	130.61	-439.72	845.55	1,117.14	1,073.26	43.88	25.458	
5,900.00	5,723.94	5,769.08	5,651.39	26.49	23.12	130.52	-450.71	867.45	1,136.48	1,091.81	44.66	25.445	
6,000.00	5,822.73	5,882.13	5,762.57	26.78	23.48	130.46	-459.90	885.76	1,152.38	1,107.05	45.33	25.422	
6,100.00	5,922.00	5,996.24	5,875.51	27.03	23.78	130.40	-467.17	900.25	1,164.80	1,118.91	45.90	25.378	
6,200.00	6,021.63	6,111.16	5,989.82	27.23	24.04	130.35	-472.45	910.76	1,173.69	1,127.33	46.36	25.317	
6,300.00	6,121.50	6,226.63	6,105.05	27.38	24.23	130.32	-475.68	917.20	1,179.01	1,132.30	46.72	25.238	
6,394.52	6,216.00	6,336.03	6,214.42	27.49	24.38	-172.69	-476.81	919.46	1,180.75	1,133.78	46.96	25.143	
6,400.00	6,221.48	6,342.38	6,220.77	27.49	24.38	-172.69	-476.82	919.48	1,180.75	1,133.78	46.98	25.136	
6,500.00	6,321.48	6,443.09	6,321.48	27.60	24.50	-172.69	-476.82	919.48	1,180.75	1,133.53	47.22	25.005	
6,600.00	6,421.48	6,543.09	6,421.48	27.71	24.61	-172.69	-476.82	919.48	1,180.75	1,133.28	47.47	24.874	
6,700.00	6,521.48	6,643.09	6,521.48	27.82	24.73	-172.69	-476.82	919.48	1,180.75	1,133.03	47.72	24.743	
6,800.00	6,621.48	6,743.09	6,621.48	27.93	24.85	-172.69	-476.82	919.48	1,180.75	1,132.78	47.98	24.611	
6,900.00	6,721.48	6,843.09	6,721.48	28.05	24.97	-172.69	-476.82	919.48	1,180.75	1,132.52	48.23	24.480	
7,000.00	6,821.48	6,943.09	6,821.48	28.16	25.09	-172.69	-476.82	919.48	1,180.75	1,132.26	48.49	24.348	
7,100.00	6,921.48	7,043.09	6,921.48	28.28	25.21	-172.69	-476.82	919.48	1,180.75	1,131.99	48.76	24.217	
7,200.00	7,021.48	7,143.09	7,021.48	28.39	25.34	-172.69	-476.82	919.48	1,180.75	1,131.73	49.02	24.085	
7,300.00	7,121.48	7,243.09	7,121.48	28.51	25.46	-172.69	-476.82	919.48	1,180.75	1,131.46	49.29	23.954	
7,400.00	7,221.48	7,343.09	7,221.48	28.63	25.59	-172.69	-476.82	919.48	1,180.75	1,131.19	49.56	23.823	
7,500.00	7,321.48	7,443.09	7,321.48	28.75	25.72	-172.69	-476.82	919.48	1,180.75	1,130.91	49.84	23.692	
7,600.00	7,421.48	7,543.09	7,421.48	28.88	25.85	-172.69	-476.82	919.48	1,180.75	1,130.64	50.11	23.561	
7,700.00	7,521.48	7,643.09	7,521.48	29.00	25.98	-172.69	-476.82	919.48	1,180.75	1,130.36	50.39	23.431	
7,800.00	7,621.48	7,743.09	7,621.48	29.12	26.11	-172.69	-476.82	919.48	1,180.75	1,130.08	50.67	23.301	
7,900.00	7,721.48	7,843.09	7,721.48	29.25	26.25	-172.69	-476.82	919.48	1,180.75	1,129.79	50.96	23.171	
8,000.00	7,821.48	7,943.09	7,821.48	29.38	26.38	-172.69	-476.82	919.48	1,180.75	1,129.51	51.24	23.042	
8,100.00	7,921.48	8,043.09	7,921.48	29.50	26.52	-172.69	-476.82	919.48	1,180.75	1,129.22	51.53	22.913	
8,200.00	8,021.48	8,143.09	8,021.48	29.63	26.65	-172.69	-476.82	919.48	1,180.75	1,128.93	51.82	22.784	
8,300.00	8,121.48	8,243.09	8,121.48	29.76	26.79	-172.69	-476.82	919.48	1,180.75	1,128.64	52.12	22.656	
8,400.00	8,221.48	8,262.61	8,141.00	29.90	26.82	-172.69	-476.82	919.48	1,183.49	1,131.20	52.29	22.631	
8,500.00	8,321.48	8,262.61	8,141.00	30.03	26.82	-172.69	-476.82	919.48	1,194.47	1,142.02	52.45	22.775	
8,554.52	8,376.00	8,262.61	8,141.00	30.10	26.82	-172.69	-476.82	919.48	1,203.91	1,151.38	52.53	22.919	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 8-2S - P_HIGHWAY 160 8-2S - PLAN #1 3-17-10 f												<b>Offset Site Error:</b>	0.00 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-90.54	-0.38	-39.73	39.74				
100.00	100.00	100.00	100.00	0.10	0.10	-90.54	-0.38	-39.73	39.74	39.54	0.19	207.981	
200.00	200.00	200.00	200.00	0.32	0.32	-90.54	-0.38	-39.73	39.74	39.09	0.64	62.030	
300.00	300.00	300.00	300.00	0.55	0.55	-90.54	-0.38	-39.73	39.74	38.64	1.09	36.450	
400.00	400.00	400.00	400.00	0.77	0.77	-90.54	-0.38	-39.73	39.74	38.20	1.54	25.808	
500.00	500.00	500.00	500.00	0.99	0.99	-90.54	-0.38	-39.73	39.74	37.75	1.99	19.976	
600.00	600.00	600.00	600.00	1.22	1.22	-90.54	-0.38	-39.73	39.74	37.30	2.44	16.293	
700.00	700.00	700.00	700.00	1.44	1.44	-90.54	-0.38	-39.73	39.74	36.85	2.89	13.758	
800.00	800.00	800.00	800.00	1.67	1.67	-90.54	-0.38	-39.73	39.74	36.40	3.34	11.905	
900.00	900.00	900.00	900.00	1.89	1.89	-90.54	-0.38	-39.73	39.74	35.95	3.79	10.492	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-90.54	-0.38	-39.73	39.74	35.50	4.24	9.378	
1,100.00	1,100.00	1,100.00	1,100.00	2.34	2.34	-90.54	-0.38	-39.73	39.74	35.05	4.69	8.479	
1,200.00	1,200.00	1,200.00	1,200.00	2.57	2.57	-90.54	-0.38	-39.73	39.74	34.60	5.14	7.737 CC, ES	
1,300.00	1,299.98	1,300.79	1,300.78	2.79	2.77	-150.07	-1.19	-38.68	40.21	34.66	5.55	7.240	
1,400.00	1,399.84	1,401.42	1,401.32	3.00	2.96	-157.19	-3.63	-35.54	42.08	36.14	5.94	7.080 SF	
1,500.00	1,499.45	1,501.70	1,501.39	3.23	3.16	-167.45	-7.68	-30.32	46.45	40.12	6.34	7.331	
1,600.00	1,598.70	1,601.47	1,600.73	3.47	3.37	-178.51	-13.30	-23.08	54.53	47.79	6.74	8.092	
1,700.00	1,697.47	1,700.58	1,699.14	3.74	3.60	171.66	-20.45	-13.85	66.99	59.83	7.16	9.350	
1,800.00	1,795.62	1,798.85	1,796.40	4.04	3.85	163.84	-29.09	-2.71	83.91	76.29	7.62	11.007	
1,900.00	1,893.06	1,896.15	1,892.30	4.38	4.12	157.92	-39.15	10.26	105.09	96.96	8.12	12.935	
2,000.00	1,989.64	1,992.33	1,986.66	4.77	4.43	153.47	-50.56	24.97	130.25	121.58	8.68	15.014	
2,052.77	2,040.23	2,042.58	2,035.77	5.01	4.61	151.57	-57.10	33.40	145.06	136.07	8.99	16.135	
2,100.00	2,085.38	2,087.33	2,079.37	5.22	4.77	150.15	-63.26	41.34	158.86	149.55	9.31	17.065	
2,200.00	2,180.99	2,181.61	2,170.84	5.70	5.14	147.31	-77.25	59.39	188.66	178.63	10.03	18.805	
2,300.00	2,276.59	2,275.17	2,261.03	6.21	5.56	144.64	-92.50	79.05	219.36	208.55	10.82	20.283	
2,400.00	2,372.19	2,367.99	2,349.88	6.73	6.01	142.10	-108.97	100.28	251.08	239.43	11.65	21.554	
2,500.00	2,467.79	2,462.10	2,439.65	7.26	6.50	139.90	-126.25	122.56	283.48	270.95	12.53	22.621	
2,600.00	2,563.40	2,556.20	2,529.43	7.80	7.01	138.15	-143.53	144.84	316.19	302.75	13.43	23.539	
2,700.00	2,659.00	2,650.30	2,619.21	8.35	7.53	136.73	-160.81	167.13	349.11	334.76	14.35	24.330	
2,800.00	2,754.60	2,744.40	2,708.98	8.91	8.06	135.55	-178.10	189.41	382.19	366.91	15.28	25.015	
2,900.00	2,850.20	2,838.50	2,798.76	9.47	8.60	134.56	-195.38	211.70	415.39	399.17	16.22	25.612	
3,000.00	2,945.80	2,932.60	2,888.53	10.04	9.15	133.71	-212.66	233.98	448.69	431.52	17.17	26.136	
3,100.00	3,041.41	3,026.70	2,978.31	10.61	9.70	132.98	-229.95	256.26	482.06	463.94	18.12	26.598	
3,200.00	3,137.01	3,120.80	3,068.09	11.19	10.26	132.35	-247.23	278.55	515.49	496.41	19.09	27.008	
3,300.00	3,232.61	3,214.90	3,157.86	11.77	10.82	131.79	-264.51	300.83	548.98	528.92	20.06	27.373	
3,400.00	3,328.21	3,309.00	3,247.64	12.35	11.39	131.30	-281.79	323.12	582.50	561.47	21.03	27.701	
3,500.00	3,423.81	3,403.11	3,337.41	12.93	11.96	130.86	-299.08	345.40	616.06	594.05	22.01	27.996	
3,600.00	3,519.42	3,497.21	3,427.19	13.52	12.53	130.46	-316.36	367.69	649.65	626.66	22.99	28.262	
3,700.00	3,615.02	3,591.31	3,516.97	14.10	13.10	130.10	-333.64	389.97	683.26	659.29	23.97	28.504	
3,800.00	3,710.62	3,685.41	3,606.74	14.69	13.68	129.78	-350.93	412.25	716.89	691.94	24.96	28.725	
3,900.00	3,806.22	3,779.51	3,696.52	15.28	14.26	129.49	-368.21	434.54	750.54	724.60	25.95	28.927	
4,000.00	3,901.83	3,873.61	3,786.29	15.87	14.84	129.22	-385.49	456.82	784.21	757.27	26.94	29.112	
4,100.00	3,997.43	3,967.71	3,876.07	16.46	15.42	128.97	-402.78	479.11	817.89	789.96	27.93	29.283	
4,200.00	4,093.03	4,061.81	3,965.85	17.05	16.00	128.75	-420.06	501.39	851.59	822.66	28.93	29.440	
4,300.00	4,188.63	4,155.91	4,055.62	17.65	16.58	128.54	-437.34	523.67	885.29	855.37	29.92	29.586	
4,400.00	4,284.23	4,250.01	4,145.40	18.24	17.17	128.34	-454.62	545.96	919.01	888.09	30.92	29.721	
4,500.00	4,379.84	4,344.12	4,235.17	18.84	17.75	128.16	-471.91	568.24	952.73	920.81	31.92	29.847	
4,600.00	4,475.44	4,438.22	4,324.95	19.43	18.34	127.99	-489.19	590.53	986.46	953.54	32.92	29.965	
4,700.00	4,571.04	4,532.32	4,414.73	20.03	18.93	127.84	-506.47	612.81	1,020.20	986.28	33.92	30.074	
4,800.00	4,666.64	4,626.42	4,504.50	20.62	19.51	127.69	-523.76	635.09	1,053.94	1,019.02	34.93	30.177	
4,900.00	4,762.24	4,720.52	4,594.28	21.22	20.10	127.55	-541.04	657.38	1,087.70	1,051.77	35.93	30.274	
5,000.00	4,857.85	4,814.62	4,684.05	21.82	20.69	127.42	-558.32	679.66	1,121.45	1,084.52	36.93	30.364	

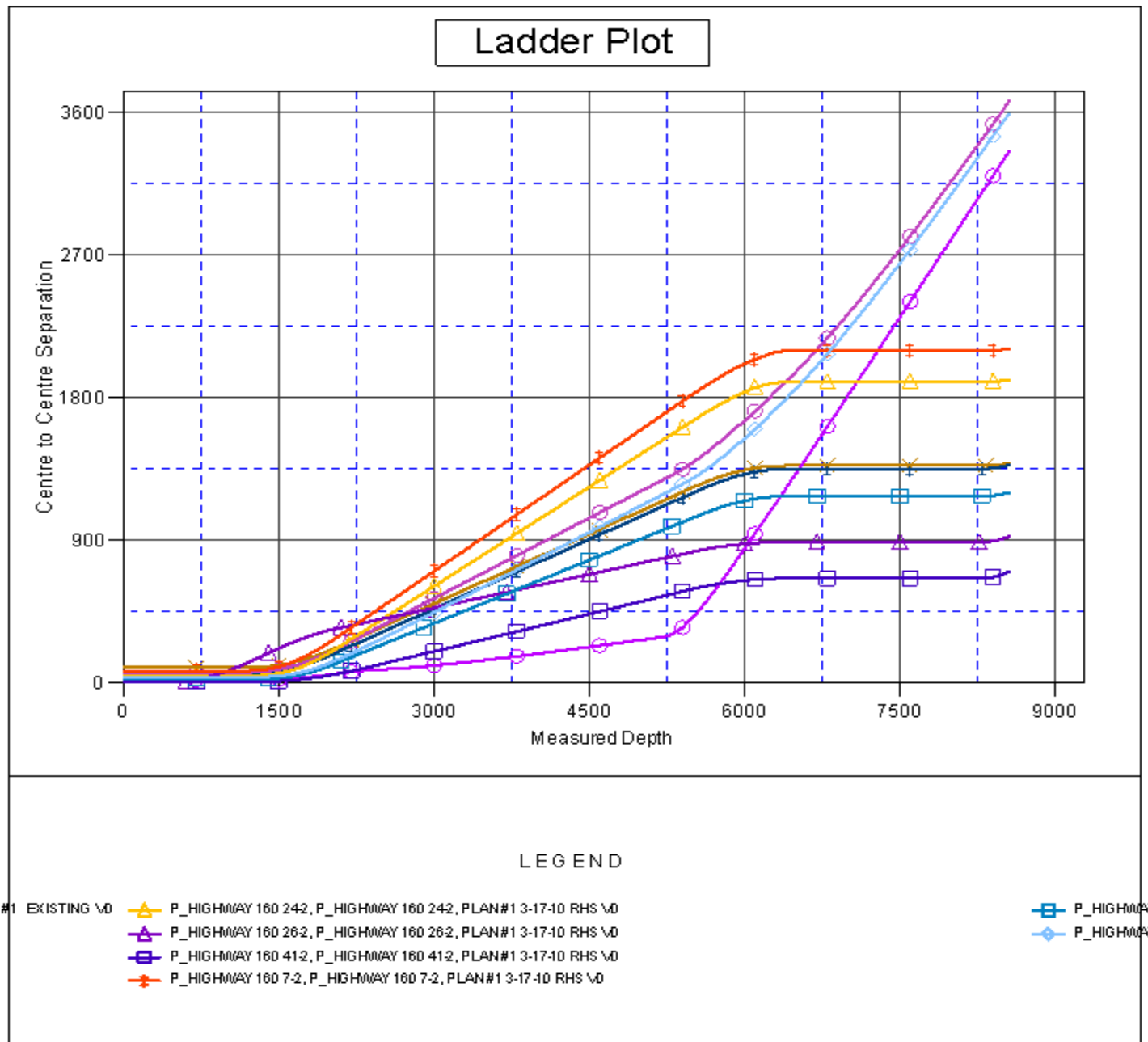
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design WELD_HIGHWAY 160 17-2 pad - P_HIGHWAY 160 8-2S - P_HIGHWAY 160 8-2S - PLAN #1 3-17-10 f												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.00	4,953.45	4,908.72	4,773.83	22.41	21.28	127.30	-575.61	701.95	1,155.21	1,117.27	37.94	30.450	
5,200.00	5,049.05	5,002.82	4,863.61	23.01	21.87	127.18	-592.89	724.23	1,188.98	1,150.03	38.94	30.530	
5,300.00	5,144.65	5,096.92	4,953.38	23.61	22.46	127.07	-610.17	746.51	1,222.75	1,182.79	39.95	30.606	
5,400.00	5,240.26	5,191.03	5,043.16	24.21	23.05	126.97	-627.45	768.80	1,256.52	1,215.56	40.96	30.678	
5,500.00	5,335.86	5,194.00	5,046.00	24.81	23.07	126.97	-628.00	769.50	1,293.51	1,252.02	41.49	31.178	
5,541.75	5,375.77	5,194.00	5,046.00	25.06	23.07	126.97	-628.00	769.50	1,310.90	1,269.19	41.70	31.434	
5,600.00	5,431.63	5,194.00	5,046.00	25.36	23.07	127.43	-628.00	769.50	1,336.65	1,294.62	42.03	31.801	
5,700.00	5,528.27	5,194.00	5,046.00	25.78	23.07	128.28	-628.00	769.50	1,384.01	1,341.52	42.49	32.571	
5,800.00	5,625.74	5,194.00	5,046.00	26.16	23.07	129.20	-628.00	769.50	1,434.96	1,392.07	42.89	33.454	
5,900.00	5,723.94	5,194.00	5,046.00	26.49	23.07	130.19	-628.00	769.50	1,489.08	1,445.85	43.23	34.443	
6,000.00	5,822.73	5,194.00	5,046.00	26.78	23.07	131.24	-628.00	769.50	1,545.97	1,502.46	43.51	35.531	
6,100.00	5,922.00	5,194.00	5,046.00	27.03	23.07	132.34	-628.00	769.50	1,605.27	1,561.55	43.72	36.715	
6,200.00	6,021.63	5,194.00	5,046.00	27.23	23.07	133.48	-628.00	769.50	1,666.66	1,622.80	43.87	37.993	
6,300.00	6,121.50	5,194.00	5,046.00	27.38	23.07	134.65	-628.00	769.50	1,729.85	1,685.90	43.95	39.363	
6,394.52	6,216.00	5,194.00	5,046.00	27.49	23.07	-167.21	-628.00	769.50	1,790.98	1,747.02	43.96	40.744	
6,400.00	6,221.48	5,194.00	5,046.00	27.49	23.07	-167.21	-628.00	769.50	1,794.56	1,750.60	43.96	40.819	
6,500.00	6,321.48	5,194.00	5,046.00	27.60	23.07	-167.21	-628.00	769.50	1,861.60	1,817.50	44.10	42.217	
6,600.00	6,421.48	5,194.00	5,046.00	27.71	23.07	-167.21	-628.00	769.50	1,931.49	1,887.26	44.23	43.670	
6,700.00	6,521.48	5,194.00	5,046.00	27.82	23.07	-167.21	-628.00	769.50	2,003.93	1,959.57	44.36	45.169	
6,800.00	6,621.48	5,194.00	5,046.00	27.93	23.07	-167.21	-628.00	769.50	2,078.66	2,034.16	44.50	46.710	
6,900.00	6,721.48	5,194.00	5,046.00	28.05	23.07	-167.21	-628.00	769.50	2,155.44	2,110.80	44.64	48.286	
7,000.00	6,821.48	5,194.00	5,046.00	28.16	23.07	-167.21	-628.00	769.50	2,234.06	2,189.28	44.78	49.892	
7,100.00	6,921.48	5,194.00	5,046.00	28.28	23.07	-167.21	-628.00	769.50	2,314.33	2,269.41	44.92	51.522	
7,200.00	7,021.48	5,194.00	5,046.00	28.39	23.07	-167.21	-628.00	769.50	2,396.09	2,351.03	45.06	53.175	
7,300.00	7,121.48	5,194.00	5,046.00	28.51	23.07	-167.21	-628.00	769.50	2,479.18	2,433.97	45.20	54.844	
7,400.00	7,221.48	5,194.00	5,046.00	28.63	23.07	-167.21	-628.00	769.50	2,563.48	2,518.13	45.35	56.529	
7,500.00	7,321.48	5,194.00	5,046.00	28.75	23.07	-167.21	-628.00	769.50	2,648.87	2,603.38	45.49	58.225	
7,600.00	7,421.48	5,194.00	5,046.00	28.88	23.07	-167.21	-628.00	769.50	2,735.25	2,689.61	45.64	59.930	
7,700.00	7,521.48	5,194.00	5,046.00	29.00	23.07	-167.21	-628.00	769.50	2,822.54	2,776.75	45.79	61.642	
7,800.00	7,621.48	5,194.00	5,046.00	29.12	23.07	-167.21	-628.00	769.50	2,910.64	2,864.70	45.94	63.360	
7,900.00	7,721.48	5,194.00	5,046.00	29.25	23.07	-167.21	-628.00	769.50	2,999.48	2,953.40	46.09	65.081	
8,000.00	7,821.48	5,194.00	5,046.00	29.38	23.07	-167.21	-628.00	769.50	3,089.01	3,042.77	46.24	66.804	
8,100.00	7,921.48	5,194.00	5,046.00	29.50	23.07	-167.21	-628.00	769.50	3,179.17	3,132.77	46.39	68.528	
8,200.00	8,021.48	5,194.00	5,046.00	29.63	23.07	-167.21	-628.00	769.50	3,269.89	3,223.35	46.55	70.250	
8,300.00	8,121.48	5,194.00	5,046.00	29.76	23.07	-167.21	-628.00	769.50	3,361.14	3,314.44	46.70	71.972	
8,400.00	8,221.48	5,194.00	5,046.00	29.90	23.07	-167.21	-628.00	769.50	3,452.88	3,406.02	46.86	73.690	
8,500.00	8,321.48	5,194.00	5,046.00	30.03	23.07	-167.21	-628.00	769.50	3,545.07	3,498.05	47.01	75.405	
8,554.52	8,376.00	5,194.00	5,046.00	30.10	23.07	-167.21	-628.00	769.50	3,595.50	3,548.40	47.10	76.338	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 5119.00ft (Original Well Elev) Coordinates are relative to: P\_HIGHWAY 160 1-2  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.49°



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_HIGHWAY 160 1-2
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_HIGHWAY 160 17-2 pad	<b>MD Reference:</b>	WELL @ 5119.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_HIGHWAY 160 1-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	P_HIGHWAY 160 1-2	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 3-17-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 5119.00ft (Original Well Elev) Coordinates are relative to: P\_HIGHWAY 160 1-2  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.49°

