



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_BALLINGER PAD**

**P\_BALLINGER 31-18**

**P\_BALLINGER**

**Plan: PLAN #1 1-13-10 RHS**

## **Standard Planning Report**

**13 January, 2010**





Azimuths to True North  
Magnetic North: 9.13°  
  
Magnetic Field  
Strength: 53171.6nT  
Dip Angle: 66.93°  
Date: 1/13/2010  
Model: IGRF2010

#### WELL DETAILS: P\_BALLINGER 31-18

+N/-S	+E/-W	Northing	Ground Level:	4866.00	Longitude	Slot
0.00	0.00	1326731.15	Easting	3156859.26	40° 13' 44.079 N	104° 56' 17.542 W

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3500.00	3547.00	PARKMAN
3930.00	3985.33	SUSSEX
4490.00	4556.17	SHANNON
6952.00	7039.27	NIO A
7220.00	7307.27	CODELL
7626.00	7713.27	JSAND

#### SECTION DETAILS

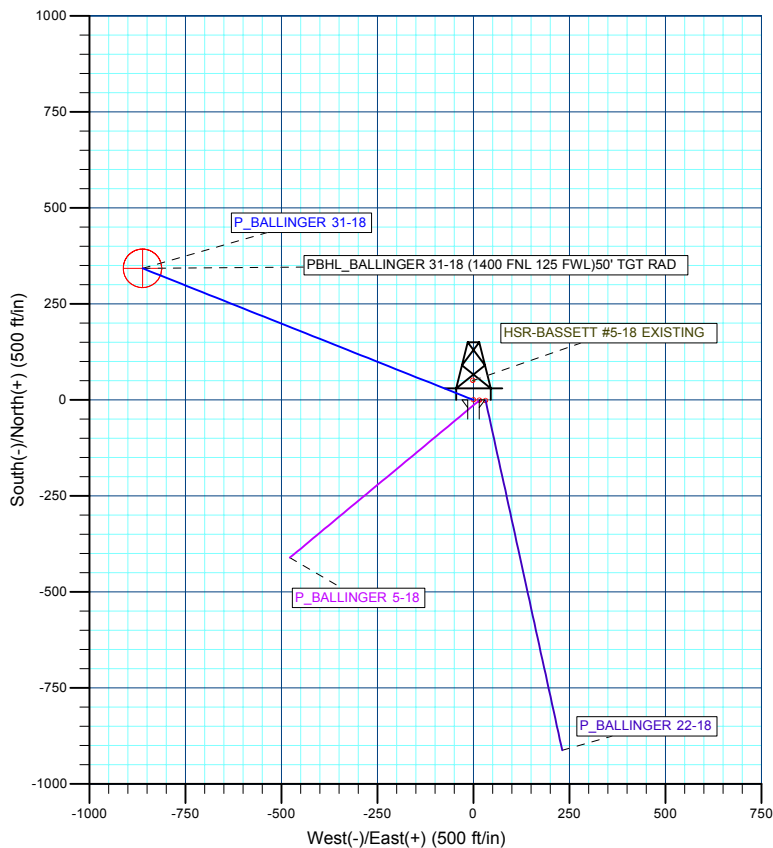
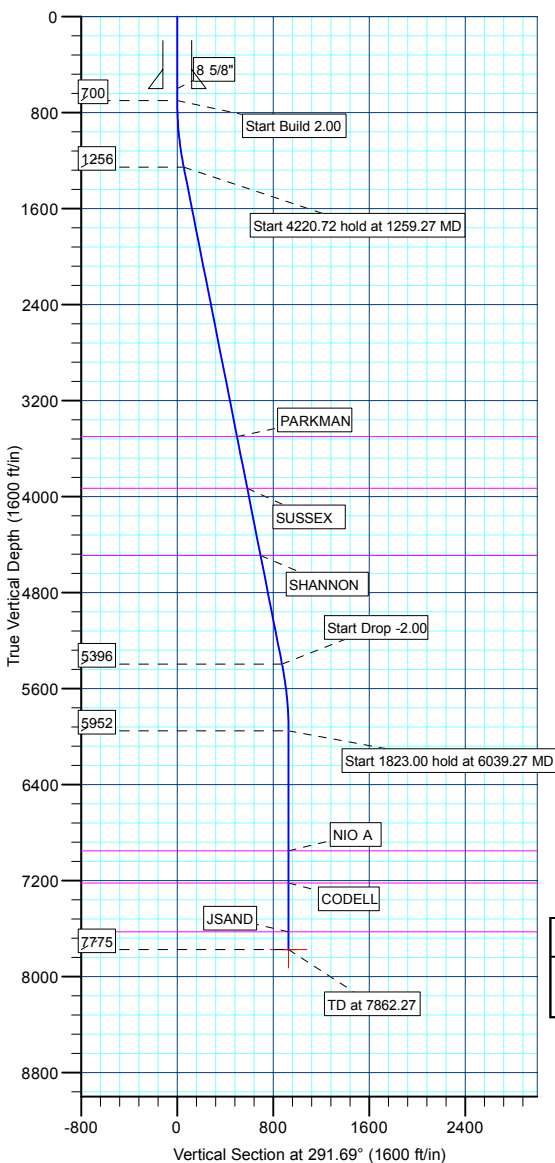
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
1259.27	11.19	291.69	1255.73	20.11	-50.57	2.00	291.69	54.42	
5479.99	11.19	291.69	5396.27	322.71	-811.36	0.00	0.00	873.18	
6039.27	0.00	0.00	5952.00	342.82	-861.92	2.00	180.00	927.60	
7862.27	0.00	0.00	7775.00	342.82	-861.92	0.00	0.00	927.60	PBHL_BALLINGER 31-18 (1400 FNL 125 FWL)50' TGT RAD

#### CASING DETAILS

TVD	MD	Name	Size
600.00	600.00	8 5/8"	8.62



KB ELEV: WELL @ 4881.00ft (Original Well Elev)  
IRD ELEV: 4866.00



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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	7775.00	342.82	-861.92	1327068.50	3155995.1940	40° 13' 47.467 N	104° 56' 28.655 W	Circle (Radius: 50.00)

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_BALLINGER 31-18
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site:</b>	WELD_BALLINGER PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_BALLINGER 31-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_BALLINGER		
<b>Design:</b>	PLAN #1 1-13-10 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_BALLINGER PAD, SECTION 18 T3N R67W											
Site Position:			Northing:			1,326,729.54 ft			Latitude:			40° 13' 44.062 N					
From:			Lat/Long			Easting:			3,156,891.10 ft			Longitude:			104° 56' 17.131 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.36 °		

Well	P_BALLINGER 31-18					
Well Position	+N/-S	1.80 ft	Northing:	1,326,731.15 ft	Latitude:	40° 13' 44.079 N
	+E/-W	-31.83 ft	Easting:	3,156,859.26 ft	Longitude:	104° 56' 17.542 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,866.00 ft

<b>Wellbore</b>	P_BALLINGER				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	1/13/2010	9.13	66.93	53,172

<b>Design</b>	PLAN #1 1-13-10 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	291.69

<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	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,259.27	11.19	291.69	1,255.73	20.11	-50.57	2.00	2.00	0.00	291.69	
5,479.99	11.19	291.69	5,396.27	322.71	-811.36	0.00	0.00	0.00	0.00	
6,039.27	0.00	0.00	5,952.00	342.82	-861.92	2.00	-2.00	0.00	180.00	
7,862.27	0.00	0.00	7,775.00	342.82	-861.92	0.00	0.00	0.00	0.00	PBHL_BALLINGER

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_BALLINGER 31-18
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site:</b>	WELD_BALLINGER PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_BALLINGER 31-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_BALLINGER		
<b>Design:</b>	PLAN #1 1-13-10 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>									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	2.00	291.69	799.98	0.64	-1.62	1.75	2.00	2.00	0.00
900.00	4.00	291.69	899.84	2.58	-6.48	6.98	2.00	2.00	0.00
1,000.00	6.00	291.69	999.45	5.80	-14.58	15.69	2.00	2.00	0.00
1,100.00	8.00	291.69	1,098.70	10.30	-25.91	27.88	2.00	2.00	0.00
1,200.00	10.00	291.69	1,197.47	16.09	-40.44	43.52	2.00	2.00	0.00
<b>Start 4220.72 hold at 1259.27 MD</b>									
1,259.27	11.19	291.69	1,255.73	20.11	-50.57	54.42	2.00	2.00	0.00
1,300.00	11.19	291.69	1,295.68	23.03	-57.91	62.32	0.00	0.00	0.00
1,400.00	11.19	291.69	1,393.78	30.20	-75.93	81.72	0.00	0.00	0.00
1,500.00	11.19	291.69	1,491.88	37.37	-93.96	101.12	0.00	0.00	0.00
1,600.00	11.19	291.69	1,589.98	44.54	-111.98	120.51	0.00	0.00	0.00
1,700.00	11.19	291.69	1,688.08	51.71	-130.01	139.91	0.00	0.00	0.00
1,800.00	11.19	291.69	1,786.18	58.88	-148.03	159.31	0.00	0.00	0.00
1,900.00	11.19	291.69	1,884.28	66.05	-166.06	178.71	0.00	0.00	0.00
2,000.00	11.19	291.69	1,982.38	73.22	-184.08	198.11	0.00	0.00	0.00
2,100.00	11.19	291.69	2,080.48	80.39	-202.11	217.51	0.00	0.00	0.00
2,200.00	11.19	291.69	2,178.58	87.56	-220.13	236.91	0.00	0.00	0.00
2,300.00	11.19	291.69	2,276.68	94.73	-238.16	256.30	0.00	0.00	0.00
2,400.00	11.19	291.69	2,374.79	101.90	-256.18	275.70	0.00	0.00	0.00
2,500.00	11.19	291.69	2,472.89	109.06	-274.21	295.10	0.00	0.00	0.00
2,600.00	11.19	291.69	2,570.99	116.23	-292.23	314.50	0.00	0.00	0.00
2,700.00	11.19	291.69	2,669.09	123.40	-310.26	333.90	0.00	0.00	0.00
2,800.00	11.19	291.69	2,767.19	130.57	-328.28	353.30	0.00	0.00	0.00
2,900.00	11.19	291.69	2,865.29	137.74	-346.31	372.70	0.00	0.00	0.00
3,000.00	11.19	291.69	2,963.39	144.91	-364.33	392.09	0.00	0.00	0.00
3,100.00	11.19	291.69	3,061.49	152.08	-382.36	411.49	0.00	0.00	0.00
3,200.00	11.19	291.69	3,159.59	159.25	-400.38	430.89	0.00	0.00	0.00
3,300.00	11.19	291.69	3,257.69	166.42	-418.41	450.29	0.00	0.00	0.00
3,400.00	11.19	291.69	3,355.79	173.59	-436.43	469.69	0.00	0.00	0.00
3,500.00	11.19	291.69	3,453.89	180.76	-454.46	489.09	0.00	0.00	0.00
<b>PARKMAN</b>									
3,547.00	11.19	291.69	3,500.00	184.13	-462.93	498.21	0.00	0.00	0.00
3,600.00	11.19	291.69	3,551.99	187.93	-472.48	508.49	0.00	0.00	0.00
3,700.00	11.19	291.69	3,650.09	195.10	-490.51	527.88	0.00	0.00	0.00
3,800.00	11.19	291.69	3,748.19	202.27	-508.53	547.28	0.00	0.00	0.00
3,900.00	11.19	291.69	3,846.29	209.44	-526.56	566.68	0.00	0.00	0.00
<b>SUSSEX</b>									
3,985.33	11.19	291.69	3,930.00	215.55	-541.94	583.23	0.00	0.00	0.00
4,000.00	11.19	291.69	3,944.39	216.61	-544.58	586.08	0.00	0.00	0.00
4,100.00	11.19	291.69	4,042.49	223.78	-562.61	605.48	0.00	0.00	0.00
4,200.00	11.19	291.69	4,140.59	230.94	-580.64	624.88	0.00	0.00	0.00
4,300.00	11.19	291.69	4,238.69	238.11	-598.66	644.28	0.00	0.00	0.00
4,400.00	11.19	291.69	4,336.79	245.28	-616.69	663.68	0.00	0.00	0.00
4,500.00	11.19	291.69	4,434.89	252.45	-634.71	683.07	0.00	0.00	0.00
<b>SHANNON</b>									
4,556.17	11.19	291.69	4,490.00	256.48	-644.84	693.97	0.00	0.00	0.00
4,600.00	11.19	291.69	4,532.99	259.62	-652.74	702.47	0.00	0.00	0.00
4,700.00	11.19	291.69	4,631.10	266.79	-670.76	721.87	0.00	0.00	0.00
4,800.00	11.19	291.69	4,729.20	273.96	-688.79	741.27	0.00	0.00	0.00
4,900.00	11.19	291.69	4,827.30	281.13	-706.81	760.67	0.00	0.00	0.00
5,000.00	11.19	291.69	4,925.40	288.30	-724.84	780.07	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well P_BALLINGER 31-18
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site:</b>	WELD_BALLINGER PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_BALLINGER 31-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_BALLINGER		
<b>Design:</b>	PLAN #1 1-13-10 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)
5,100.00	11.19	291.69	5,023.50	295.47	-742.86	799.47	0.00	0.00	0.00
5,200.00	11.19	291.69	5,121.60	302.64	-760.89	818.86	0.00	0.00	0.00
5,300.00	11.19	291.69	5,219.70	309.81	-778.91	838.26	0.00	0.00	0.00
5,400.00	11.19	291.69	5,317.80	316.98	-796.94	857.66	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,479.99	11.19	291.69	5,396.27	322.71	-811.36	873.18	0.00	0.00	0.00
5,500.00	10.79	291.69	5,415.91	324.12	-814.90	876.99	2.00	-2.00	0.00
5,600.00	8.79	291.69	5,514.45	330.40	-830.69	893.99	2.00	-2.00	0.00
5,700.00	6.79	291.69	5,613.53	335.41	-843.28	907.53	2.00	-2.00	0.00
5,800.00	4.79	291.69	5,713.01	339.13	-852.64	917.61	2.00	-2.00	0.00
5,900.00	2.79	291.69	5,812.79	341.57	-858.78	924.21	2.00	-2.00	0.00
6,000.00	0.79	291.69	5,912.73	342.72	-861.67	927.33	2.00	-2.00	0.00
<b>Start 1823.00 hold at 6039.27 MD</b>									
6,039.27	0.00	0.00	5,952.00	342.82	-861.92	927.60	2.00	-2.00	0.00
6,100.00	0.00	0.00	6,012.73	342.82	-861.92	927.60	0.00	0.00	0.00
6,200.00	0.00	0.00	6,112.73	342.82	-861.92	927.60	0.00	0.00	0.00
6,300.00	0.00	0.00	6,212.73	342.82	-861.92	927.60	0.00	0.00	0.00
6,400.00	0.00	0.00	6,312.73	342.82	-861.92	927.60	0.00	0.00	0.00
6,500.00	0.00	0.00	6,412.73	342.82	-861.92	927.60	0.00	0.00	0.00
6,600.00	0.00	0.00	6,512.73	342.82	-861.92	927.60	0.00	0.00	0.00
6,700.00	0.00	0.00	6,612.73	342.82	-861.92	927.60	0.00	0.00	0.00
6,800.00	0.00	0.00	6,712.73	342.82	-861.92	927.60	0.00	0.00	0.00
6,900.00	0.00	0.00	6,812.73	342.82	-861.92	927.60	0.00	0.00	0.00
7,000.00	0.00	0.00	6,912.73	342.82	-861.92	927.60	0.00	0.00	0.00
<b>NIO A</b>									
7,039.27	0.00	0.00	6,952.00	342.82	-861.92	927.60	0.00	0.00	0.00
7,100.00	0.00	0.00	7,012.73	342.82	-861.92	927.60	0.00	0.00	0.00
7,200.00	0.00	0.00	7,112.73	342.82	-861.92	927.60	0.00	0.00	0.00
7,300.00	0.00	0.00	7,212.73	342.82	-861.92	927.60	0.00	0.00	0.00
<b>CODELL</b>									
7,307.27	0.00	0.00	7,220.00	342.82	-861.92	927.60	0.00	0.00	0.00
7,400.00	0.00	0.00	7,312.73	342.82	-861.92	927.60	0.00	0.00	0.00
7,500.00	0.00	0.00	7,412.73	342.82	-861.92	927.60	0.00	0.00	0.00
7,600.00	0.00	0.00	7,512.73	342.82	-861.92	927.60	0.00	0.00	0.00
7,700.00	0.00	0.00	7,612.73	342.82	-861.92	927.60	0.00	0.00	0.00
<b>JSAND</b>									
7,713.27	0.00	0.00	7,626.00	342.82	-861.92	927.60	0.00	0.00	0.00
7,800.00	0.00	0.00	7,712.73	342.82	-861.92	927.60	0.00	0.00	0.00
<b>PBHL_BALLINGER 31-18 (1400 FNL 125 FWL)50' TGT RAD</b>									
7,862.27	0.00	0.00	7,775.00	342.82	-861.92	927.60	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_BALLINGER 3	0.00	0.00	7,775.00	342.82	-861.92	1,327,068.50	3,155,995.19	40° 13' 47.467 N	104° 56' 28.655 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_BALLINGER 31-18
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site:</b>	WELD_BALLINGER PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_BALLINGER 31-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_BALLINGER		
<b>Design:</b>	PLAN #1 1-13-10 RHS		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
600.00	600.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,547.00	3,500.00	PARKMAN				
3,985.33	3,930.00	SUSSEX				
4,556.17	4,490.00	SHANNON				
7,039.27	6,952.00	NIO A				
7,307.27	7,220.00	CODELL				
7,713.27	7,626.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
700.00	700.00	0.00	0.00	Start Build 2.00	
1,259.27	1,255.73	20.11	-50.57	Start 4220.72 hold at 1259.27 MD	
5,479.99	5,396.27	322.71	-811.36	Start Drop -2.00	
6,039.27	5,952.00	342.82	-861.92	Start 1823.00 hold at 6039.27 MD	
7,862.27	7,775.00	342.82	-861.92	TD at 7862.27	



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83  
WELD\_BALLINGER PAD  
P\_BALLINGER 31-18**

**P\_BALLINGER  
PLAN #1 1-13-10 RHS**

## **Anticollision Report**

**13 January, 2010**



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_BALLINGER 31-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_BALLINGER PAD	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_BALLINGER 31-18	<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_BALLINGER	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-13-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PLAN #1 1-13-10 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> 1/13/2010			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	7,862.27	PLAN #1 1-13-10 RHS (P_BALLINGER)	MWD	MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
WELD_BALLINGER PAD						
HSR-BASSETT #5-18 EXISTING - HSR-BASSETT #5-18 EXISTING	1,036.60	1,018.83	46.64	5.68	1.139	Level 2, CC
HSR-BASSETT #5-18 EXISTING - HSR-BASSETT #5-18 EXISTING	1,100.00	1,081.70	47.34	3.72	1.085	Level 2, ES, SF
P_BALLINGER 22-18 - P_BALLINGER 22-18 - PLAN #1	700.00	700.00	31.88	28.99	11.038	CC, ES
P_BALLINGER 22-18 - P_BALLINGER 22-18 - PLAN #1	800.00	799.61	34.08	30.78	10.332	SF
P_BALLINGER 5-18 - P_BALLINGER 5-18 - PLAN #1 1-	700.00	700.00	15.93	13.04	5.516	CC, ES
P_BALLINGER 5-18 - P_BALLINGER 5-18 - PLAN #1 1-	800.00	800.38	16.38	13.07	4.956	SF

<b>Offset Design</b> WELD_BALLINGER PAD - HSR-BASSETT #5-18 EXISTING - HSR-BASSETT #5-18 EXISTING - HSR-BASSETT #5-18 EXISTING - HSR-BASSETT #5-18 EXISTING													<b>Offset Site Error:</b>	0.00 ft
<b>Survey Program:</b> 0-UNKNOWN													<b>Offset Well Error:</b>	0.00 ft
<b>Reference</b>	<b>Offset</b>	<b>Semi Major Axis</b>			<b>Distance</b>									
<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Reference (ft)</b>	<b>Offset (ft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (ft)</b>	<b>Offset Wellbore Centre +E/-W (ft)</b>	<b>Between Centres (ft)</b>	<b>Between Ellipses (ft)</b>	<b>Minimum Separation (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>	
0.00	0.00	0.00	0.00	0.00	0.00	-1.26	50.64	-1.12	53.42					
100.00	100.00	83.00	83.00	0.10	1.66	-1.26	50.64	-1.12	50.65	48.89	1.76	28.850		
200.00	200.00	183.00	183.00	0.32	5.32	-1.26	50.64	-1.12	50.65	45.01	5.64	8.980		
300.00	300.00	283.00	283.00	0.55	9.32	-1.26	50.64	-1.12	50.65	40.78	9.87	5.134		
400.00	400.00	383.00	383.00	0.77	13.32	-1.26	50.64	-1.12	50.65	36.56	14.09	3.595		
500.00	500.00	483.00	483.00	0.99	17.32	-1.26	50.64	-1.12	50.65	32.33	18.31	2.765		
600.00	600.00	583.00	583.00	1.22	21.32	-1.26	50.64	-1.12	50.65	28.11	22.54	2.247		
700.00	700.00	683.00	683.00	1.44	25.32	-1.26	50.64	-1.12	50.65	23.88	26.76	1.892		
800.00	799.98	782.98	782.98	1.66	29.32	68.90	50.64	-1.12	49.99	19.02	30.98	1.614		
900.00	899.84	882.84	882.84	1.88	33.31	74.72	50.64	-1.12	48.36	13.17	35.19	1.374	Level 3	
1,000.00	999.45	982.45	982.45	2.11	37.30	85.05	50.64	-1.12	46.81	7.41	39.41	1.188	Level 2	
1,036.60	1,035.83	1,018.83	1,018.83	2.20	38.75	90.00	50.64	-1.12	46.64	5.68	40.96	1.139	Level 2, CC	
1,100.00	1,098.70	1,081.70	1,081.70	2.37	41.27	99.79	50.64	-1.12	47.34	3.72	43.62	1.085	Level 2, ES, SF	
1,200.00	1,197.47	1,180.47	1,180.47	2.66	45.22	116.65	50.64	-1.12	52.35	4.65	47.70	1.097	Level 2	
1,259.27	1,255.73	1,238.73	1,238.73	2.85	47.55	126.10	50.64	-1.12	58.11	8.11	50.00	1.162	Level 2	
1,300.00	1,295.68	1,278.68	1,278.68	2.99	49.15	131.84	50.64	-1.12	63.14	11.55	51.59	1.224	Level 2	
1,400.00	1,393.78	1,376.78	1,376.78	3.35	53.07	142.50	50.64	-1.12	77.56	22.02	55.53	1.397	Level 3	
1,500.00	1,491.88	1,474.88	1,474.88	3.72	57.00	149.70	50.64	-1.12	93.78	34.27	59.51	1.576		
1,600.00	1,589.98	1,572.98	1,572.98	4.11	60.92	154.74	50.64	-1.12	111.03	47.50	63.53	1.748		
1,700.00	1,688.08	1,671.08	1,671.08	4.50	64.84	158.41	50.64	-1.12	128.89	61.32	67.58	1.907		
1,800.00	1,786.18	1,769.18	1,769.18	4.90	68.77	161.19	50.64	-1.12	147.15	75.51	71.63	2.054		

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_BALLINGER 31-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_BALLINGER PAD	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_BALLINGER 31-18	<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_BALLINGER	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-13-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design WELD_BALLINGER PAD - HSR-BASSETT #5-18 EXISTING - HSR-BASSETT #5-18 EXISTING - HSR-												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												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	
1,900.00	1,884.28	1,867.28	1,867.28	5.31	72.69	163.35	50.64	-1.12	165.66	89.95	75.70	2.188	
2,000.00	1,982.38	1,965.38	1,965.38	5.72	76.62	165.07	50.64	-1.12	184.35	104.57	79.78	2.311	
2,100.00	2,080.48	2,063.48	2,063.48	6.13	80.54	166.48	50.64	-1.12	203.18	119.31	83.87	2.423	
2,200.00	2,178.58	2,161.58	2,161.58	6.55	84.46	167.65	50.64	-1.12	222.11	134.15	87.96	2.525	
2,300.00	2,276.68	2,259.68	2,259.68	6.96	88.39	168.64	50.64	-1.12	241.11	149.06	92.05	2.619	
2,400.00	2,374.79	2,357.79	2,357.79	7.38	92.31	169.48	50.64	-1.12	260.17	164.02	96.14	2.706	
2,500.00	2,472.89	2,455.89	2,455.89	7.80	96.24	170.20	50.64	-1.12	279.27	179.03	100.24	2.786	
2,600.00	2,570.99	2,553.99	2,553.99	8.23	100.16	170.84	50.64	-1.12	298.42	194.07	104.34	2.860	
2,700.00	2,669.09	2,652.09	2,652.09	8.65	104.08	171.39	50.64	-1.12	317.59	209.15	108.44	2.929	
2,800.00	2,767.19	2,750.19	2,750.19	9.07	108.01	171.89	50.64	-1.12	336.79	224.25	112.54	2.993	
2,900.00	2,865.29	2,848.29	2,848.29	9.50	111.93	172.33	50.64	-1.12	356.01	239.37	116.65	3.052	
3,000.00	2,963.39	2,946.39	2,946.39	9.92	115.86	172.72	50.64	-1.12	375.25	254.50	120.75	3.108	
3,100.00	3,061.49	3,044.49	3,044.49	10.35	119.78	173.08	50.64	-1.12	394.51	269.65	124.86	3.160	
3,200.00	3,159.59	3,142.59	3,142.59	10.78	123.70	173.40	50.64	-1.12	413.78	284.82	128.96	3.209	
3,300.00	3,257.69	3,240.69	3,240.69	11.20	127.63	173.70	50.64	-1.12	433.06	299.99	133.07	3.254	
3,400.00	3,355.79	3,338.79	3,338.79	11.63	131.55	173.97	50.64	-1.12	452.35	315.17	137.17	3.298	
3,500.00	3,453.89	3,436.89	3,436.89	12.06	135.48	174.22	50.64	-1.12	471.65	330.37	141.28	3.338	
3,600.00	3,551.99	3,534.99	3,534.99	12.49	139.40	174.44	50.64	-1.12	490.95	345.57	145.39	3.377	
3,700.00	3,650.09	3,633.09	3,633.09	12.92	143.32	174.65	50.64	-1.12	510.27	360.77	149.50	3.413	
3,800.00	3,748.19	3,731.19	3,731.19	13.34	147.25	174.85	50.64	-1.12	529.59	375.98	153.61	3.448	
3,900.00	3,846.29	3,829.29	3,829.29	13.77	151.17	175.03	50.64	-1.12	548.92	391.20	157.71	3.480	
4,000.00	3,944.39	3,927.39	3,927.39	14.20	155.10	175.20	50.64	-1.12	568.25	406.42	161.82	3.512	
4,100.00	4,042.49	4,025.49	4,025.49	14.63	159.02	175.36	50.64	-1.12	587.58	421.65	165.93	3.541	
4,200.00	4,140.59	4,123.59	4,123.59	15.06	162.94	175.51	50.64	-1.12	606.92	436.88	170.04	3.569	
4,300.00	4,238.69	4,221.69	4,221.69	15.49	166.87	175.65	50.64	-1.12	626.26	452.11	174.15	3.596	
4,400.00	4,336.79	4,319.79	4,319.79	15.92	170.79	175.78	50.64	-1.12	645.61	467.35	178.26	3.622	
4,500.00	4,434.89	4,417.89	4,417.89	16.35	174.72	175.90	50.64	-1.12	664.96	482.59	182.37	3.646	
4,600.00	4,532.99	4,515.99	4,515.99	16.78	178.64	176.02	50.64	-1.12	684.31	497.83	186.48	3.670	
4,700.00	4,631.10	4,614.10	4,614.10	17.21	182.56	176.13	50.64	-1.12	703.67	513.07	190.59	3.692	
4,800.00	4,729.20	4,712.20	4,712.20	17.64	186.49	176.23	50.64	-1.12	723.02	528.32	194.70	3.713	
4,900.00	4,827.30	4,810.30	4,810.30	18.07	190.41	176.33	50.64	-1.12	742.38	543.57	198.81	3.734	
5,000.00	4,925.40	4,908.40	4,908.40	18.51	194.34	176.42	50.64	-1.12	761.74	558.82	202.92	3.754	
5,100.00	5,023.50	5,006.50	5,006.50	18.94	198.26	176.51	50.64	-1.12	781.11	574.07	207.04	3.773	
5,200.00	5,121.60	5,104.60	5,104.60	19.37	202.18	176.60	50.64	-1.12	800.47	589.33	211.15	3.791	
5,300.00	5,219.70	5,202.70	5,202.70	19.80	206.11	176.68	50.64	-1.12	819.84	604.58	215.26	3.809	
5,400.00	5,317.80	5,300.80	5,300.80	20.23	210.03	176.75	50.64	-1.12	839.21	619.84	219.37	3.826	
5,479.99	5,396.27	5,379.27	5,379.27	20.57	213.17	176.81	50.64	-1.12	854.70	632.04	222.66	3.839	
5,500.00	5,415.91	5,398.91	5,398.91	20.65	213.96	176.83	50.64	-1.12	858.51	634.75	223.76	3.837	
5,600.00	5,514.45	5,497.45	5,497.45	20.95	217.90	176.91	50.64	-1.12	875.48	646.35	229.13	3.821	
5,700.00	5,613.53	5,596.53	5,596.53	21.21	221.86	176.97	50.64	-1.12	889.00	654.73	234.28	3.795	
5,800.00	5,713.01	5,696.01	5,696.01	21.43	225.84	177.02	50.64	-1.12	899.07	659.89	239.18	3.759	
5,900.00	5,812.79	5,795.79	5,795.79	21.61	229.83	177.04	50.64	-1.12	905.66	661.85	243.81	3.715	
6,000.00	5,912.73	5,895.73	5,895.73	21.75	233.83	177.06	50.64	-1.12	908.77	660.61	248.16	3.662	
6,039.27	5,952.00	5,935.00	5,935.00	21.79	235.40	108.75	50.64	-1.12	909.04	659.25	249.79	3.639	
6,100.00	6,012.73	5,995.73	5,995.73	21.86	237.83	108.75	50.64	-1.12	909.04	656.72	252.33	3.603	
6,200.00	6,112.73	6,095.73	6,095.73	22.00	241.83	108.75	50.64	-1.12	909.04	652.53	256.51	3.544	
6,300.00	6,212.73	6,195.73	6,195.73	22.13	245.83	108.75	50.64	-1.12	909.04	648.34	260.70	3.487	
6,400.00	6,312.73	6,295.73	6,295.73	22.26	249.83	108.75	50.64	-1.12	909.04	644.15	264.89	3.432	
6,500.00	6,412.73	6,395.73	6,395.73	22.40	253.83	108.75	50.64	-1.12	909.04	639.96	269.08	3.378	
6,600.00	6,512.73	6,495.73	6,495.73	22.54	257.83	108.75	50.64	-1.12	909.04	635.77	273.28	3.326	
6,700.00	6,612.73	6,595.73	6,595.73	22.68	261.83	108.75	50.64	-1.12	909.04	631.57	277.47	3.276	
6,800.00	6,712.73	6,695.73	6,695.73	22.82	265.83	108.75	50.64	-1.12	909.04	627.38	281.66	3.227	

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_BALLINGER 31-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_BALLINGER PAD	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_BALLINGER 31-18	<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_BALLINGER	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-13-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

WELD_BALLINGER PAD - HSR-BASSETT #5-18 EXISTING - HSR-BASSETT #5-18 EXISTING - HSR-													Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN													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		
6,900.00	6,812.73	6,795.73	6,795.73	22.96	269.83	108.75	50.64	-1.12	909.04	623.19	285.86	3.180		
7,000.00	6,912.73	6,895.73	6,895.73	23.10	273.83	108.75	50.64	-1.12	909.04	618.99	290.05	3.134		
7,100.00	7,012.73	6,995.73	6,995.73	23.25	277.83	108.75	50.64	-1.12	909.04	614.80	294.25	3.089		
7,200.00	7,112.73	7,095.73	7,095.73	23.39	281.83	108.75	50.64	-1.12	909.04	610.60	298.44	3.046		
7,300.00	7,212.73	7,195.73	7,195.73	23.54	285.83	108.75	50.64	-1.12	909.04	606.40	302.64	3.004		
7,400.00	7,312.73	7,295.73	7,295.73	23.69	289.83	108.75	50.64	-1.12	909.04	602.20	306.84	2.963		
7,500.00	7,412.73	7,395.73	7,395.73	23.84	293.83	108.75	50.64	-1.12	909.04	598.01	311.04	2.923		
7,600.00	7,512.73	7,495.73	7,495.73	23.99	297.83	108.75	50.64	-1.12	909.04	593.81	315.24	2.884		
7,700.00	7,612.73	7,595.73	7,595.73	24.14	301.83	108.75	50.64	-1.12	909.04	589.61	319.44	2.846		
7,800.00	7,712.73	7,695.73	7,695.73	24.29	305.83	108.75	50.64	-1.12	909.04	585.41	323.64	2.809		
7,862.27	7,775.00	7,758.00	7,758.00	24.39	308.32	108.75	50.64	-1.12	909.04	582.79	326.25	2.786		

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_BALLINGER 31-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_BALLINGER PAD	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_BALLINGER 31-18	<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_BALLINGER	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-13-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWMD												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
0.00	0.00	0.00	0.00	0.00	0.00	93.25	-1.80	31.83	31.88				
100.00	100.00	100.00	100.00	0.10	0.10	93.25	-1.80	31.83	31.88	31.69	0.19	166.874	
200.00	200.00	200.00	200.00	0.32	0.32	93.25	-1.80	31.83	31.88	31.24	0.64	49.769	
300.00	300.00	300.00	300.00	0.55	0.55	93.25	-1.80	31.83	31.88	30.79	1.09	29.246	
400.00	400.00	400.00	400.00	0.77	0.77	93.25	-1.80	31.83	31.88	30.34	1.54	20.707	
500.00	500.00	500.00	500.00	0.99	0.99	93.25	-1.80	31.83	31.88	29.89	1.99	16.027	
600.00	600.00	600.00	600.00	1.22	1.22	93.25	-1.80	31.83	31.88	29.44	2.44	13.073	
700.00	700.00	700.00	700.00	1.44	1.44	93.25	-1.80	31.83	31.88	28.99	2.89	11.038 CC, ES	
800.00	799.98	799.61	799.59	1.66	1.64	165.28	-3.50	32.20	34.08	30.78	3.30	10.332 SF	
900.00	899.84	898.65	898.49	1.88	1.82	173.88	-8.53	33.30	41.33	37.65	3.68	11.229	
1,000.00	999.45	996.58	996.05	2.11	2.02	-177.21	-16.79	35.11	54.69	50.62	4.08	13.417	
1,100.00	1,098.70	1,092.88	1,091.65	2.37	2.24	-170.31	-28.08	37.58	74.53	70.04	4.49	16.613	
1,200.00	1,197.47	1,187.06	1,184.72	2.66	2.50	-165.48	-42.15	40.67	100.66	95.75	4.91	20.497	
1,259.27	1,255.73	1,241.71	1,238.49	2.85	2.66	-163.35	-51.69	42.75	119.00	113.83	5.17	23.016	
1,300.00	1,295.68	1,279.22	1,275.29	2.99	2.78	-162.17	-58.78	44.31	132.50	127.14	5.36	24.700	
1,400.00	1,393.78	1,373.28	1,367.51	3.35	3.11	-159.97	-76.83	48.26	166.04	160.18	5.86	28.311	
1,500.00	1,491.88	1,467.33	1,459.74	3.72	3.46	-158.51	-94.88	52.21	199.72	193.34	6.38	31.306	
1,600.00	1,589.98	1,561.39	1,551.96	4.11	3.82	-157.48	-112.93	56.17	233.49	226.58	6.91	33.805	
1,700.00	1,688.08	1,655.44	1,644.18	4.50	4.19	-156.70	-130.98	60.12	267.30	259.86	7.44	35.908	
1,800.00	1,786.18	1,749.50	1,736.41	4.90	4.57	-156.10	-149.02	64.07	301.15	293.16	7.99	37.694	
1,900.00	1,884.28	1,843.56	1,828.63	5.31	4.95	-155.62	-167.07	68.02	335.02	326.48	8.54	39.226	
2,000.00	1,982.38	1,937.61	1,920.85	5.72	5.34	-155.23	-185.12	71.98	368.90	359.81	9.10	40.549	
2,100.00	2,080.48	2,031.67	2,013.08	6.13	5.73	-154.90	-203.17	75.93	402.81	393.15	9.66	41.703	
2,200.00	2,178.58	2,125.72	2,105.30	6.55	6.12	-154.63	-221.22	79.88	436.72	426.49	10.22	42.715	
2,300.00	2,276.68	2,219.78	2,197.52	6.96	6.52	-154.39	-239.27	83.83	470.63	459.84	10.79	43.610	
2,400.00	2,374.79	2,313.84	2,289.75	7.38	6.92	-154.19	-257.31	87.79	504.56	493.19	11.36	44.405	
2,500.00	2,472.89	2,407.89	2,381.97	7.80	7.32	-154.01	-275.36	91.74	538.49	526.55	11.94	45.116	
2,600.00	2,570.99	2,501.95	2,474.19	8.23	7.72	-153.85	-293.41	95.69	572.42	559.91	12.51	45.755	
2,700.00	2,669.09	2,596.00	2,566.42	8.65	8.13	-153.72	-311.46	99.64	606.36	593.27	13.09	46.332	
2,800.00	2,767.19	2,690.06	2,658.64	9.07	8.53	-153.59	-329.51	103.60	640.29	626.63	13.67	46.856	
2,900.00	2,865.29	2,784.12	2,750.86	9.50	8.94	-153.48	-347.55	107.55	674.24	659.99	14.24	47.333	
3,000.00	2,963.39	2,878.17	2,843.09	9.92	9.34	-153.38	-365.60	111.50	708.18	693.35	14.83	47.769	
3,100.00	3,061.49	2,972.23	2,935.31	10.35	9.75	-153.28	-383.65	115.45	742.12	726.72	15.41	48.169	
3,200.00	3,159.59	3,066.28	3,027.53	10.78	10.16	-153.20	-401.70	119.41	776.07	760.08	15.99	48.537	
3,300.00	3,257.69	3,160.34	3,119.76	11.20	10.57	-153.12	-419.75	123.36	810.02	793.45	16.57	48.878	
3,400.00	3,355.79	3,254.39	3,211.98	11.63	10.97	-153.05	-437.80	127.31	843.97	826.81	17.16	49.193	
3,500.00	3,453.89	3,348.45	3,304.20	12.06	11.38	-152.99	-455.84	131.26	877.92	860.18	17.74	49.485	
3,600.00	3,551.99	3,442.51	3,396.43	12.49	11.79	-152.93	-473.89	135.22	911.87	893.54	18.33	49.758	
3,700.00	3,650.09	3,536.56	3,488.65	12.92	12.20	-152.87	-491.94	139.17	945.82	926.91	18.91	50.012	
3,800.00	3,748.19	3,630.62	3,580.87	13.34	12.61	-152.82	-509.99	143.12	979.78	960.28	19.50	50.249	
3,900.00	3,846.29	3,724.67	3,673.10	13.77	13.02	-152.77	-528.04	147.08	1,013.73	993.65	20.08	50.472	
4,000.00	3,944.39	3,818.73	3,765.32	14.20	13.43	-152.72	-546.09	151.03	1,047.68	1,027.01	20.67	50.681	
4,100.00	4,042.49	3,912.79	3,857.54	14.63	13.85	-152.68	-564.13	154.98	1,081.64	1,060.38	21.26	50.878	
4,200.00	4,140.59	4,006.84	3,949.77	15.06	14.26	-152.64	-582.18	158.93	1,115.59	1,093.75	21.85	51.063	
4,300.00	4,238.69	4,100.90	4,041.99	15.49	14.67	-152.60	-600.23	162.89	1,149.55	1,127.11	22.44	51.238	
4,400.00	4,336.79	4,194.95	4,134.21	15.92	15.08	-152.57	-618.28	166.84	1,183.51	1,160.48	23.02	51.403	
4,500.00	4,434.89	4,289.01	4,226.44	16.35	15.49	-152.53	-636.33	170.79	1,217.46	1,193.85	23.61	51.560	
4,600.00	4,532.99	4,383.07	4,318.66	16.78	15.90	-152.50	-654.38	174.74	1,251.42	1,227.22	24.20	51.708	
4,700.00	4,631.10	4,477.12	4,410.88	17.21	16.31	-152.47	-672.42	178.70	1,285.38	1,260.59	24.79	51.849	
4,800.00	4,729.20	4,571.18	4,503.11	17.64	16.73	-152.44	-690.47	182.65	1,319.33	1,293.95	25.38	51.982	
4,900.00	4,827.30	4,665.23	4,595.33	18.07	17.14	-152.42	-708.52	186.60	1,353.29	1,327.32	25.97	52.110	
5,000.00	4,925.40	4,759.29	4,687.55	18.51	17.55	-152.39	-726.57	190.55	1,387.25	1,360.69	26.56	52.231	

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_BALLINGER 31-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_BALLINGER PAD	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_BALLINGER 31-18	<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_BALLINGER	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-13-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design WELD_BALLINGER PAD - P_BALLINGER 22-18 - P_BALLINGER 22-18 - PLAN #1 1-13-10 RHS												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	5,023.50	4,853.35	4,779.78	18.94	17.96	-152.37	-744.62	194.51	1,421.21	1,394.06	27.15	52.347	
5,200.00	5,121.60	4,947.40	4,872.00	19.37	18.38	-152.34	-762.67	198.46	1,455.17	1,427.43	27.74	52.457	
5,300.00	5,219.70	5,041.46	4,964.22	19.80	18.79	-152.32	-780.71	202.41	1,489.13	1,460.80	28.33	52.563	
5,400.00	5,317.80	5,135.51	5,056.45	20.23	19.20	-152.30	-798.76	206.36	1,523.09	1,494.16	28.92	52.664	
5,479.99	5,396.27	5,210.75	5,130.22	20.57	19.53	-152.28	-813.20	209.53	1,550.25	1,520.86	29.39	52.742	
5,500.00	5,415.91	5,229.59	5,148.69	20.65	19.61	-152.34	-816.81	210.32	1,556.99	1,527.45	29.53	52.721	
5,600.00	5,514.45	5,324.34	5,241.60	20.95	20.03	-152.59	-835.00	214.30	1,588.90	1,558.73	30.17	52.664	
5,700.00	5,613.53	5,419.99	5,335.38	21.21	20.45	-152.75	-853.35	218.32	1,617.87	1,587.09	30.77	52.575	
5,800.00	5,713.01	5,591.33	5,504.08	21.43	21.01	-152.74	-882.50	224.70	1,642.17	1,610.71	31.46	52.195	
5,900.00	5,812.79	5,790.84	5,702.32	21.61	21.45	-152.72	-904.06	229.42	1,657.71	1,625.63	32.08	51.679	
6,000.00	5,912.73	5,993.91	5,905.19	21.75	21.76	-152.74	-912.12	231.19	1,664.04	1,631.44	32.60	51.052	
6,039.27	5,952.00	6,040.73	5,952.00	21.79	21.81	138.94	-912.15	231.20	1,664.29	1,631.57	32.73	50.852	
6,100.00	6,012.73	6,101.46	6,012.73	21.86	21.89	138.94	-912.15	231.20	1,664.29	1,631.38	32.92	50.559	
6,200.00	6,112.73	6,201.46	6,112.73	22.00	21.99	138.94	-912.15	231.20	1,664.29	1,631.07	33.23	50.087	
6,300.00	6,212.73	6,301.46	6,212.73	22.13	22.10	138.94	-912.15	231.20	1,664.29	1,630.75	33.54	49.619	
6,400.00	6,312.73	6,401.46	6,312.73	22.26	22.21	138.94	-912.15	231.20	1,664.29	1,630.44	33.86	49.156	
6,500.00	6,412.73	6,501.46	6,412.73	22.40	22.32	138.94	-912.15	231.20	1,664.29	1,630.12	34.18	48.696	
6,600.00	6,512.73	6,601.46	6,512.73	22.54	22.43	138.94	-912.15	231.20	1,664.29	1,629.79	34.50	48.241	
6,700.00	6,612.73	6,701.46	6,612.73	22.68	22.54	138.94	-912.15	231.20	1,664.29	1,629.47	34.82	47.791	
6,800.00	6,712.73	6,801.46	6,712.73	22.82	22.66	138.94	-912.15	231.20	1,664.29	1,629.14	35.15	47.346	
6,900.00	6,812.73	6,901.46	6,812.73	22.96	22.77	138.94	-912.15	231.20	1,664.29	1,628.81	35.48	46.905	
7,000.00	6,912.73	7,001.46	6,912.73	23.10	22.89	138.94	-912.15	231.20	1,664.29	1,628.48	35.82	46.469	
7,100.00	7,012.73	7,101.46	7,012.73	23.25	23.01	138.94	-912.15	231.20	1,664.29	1,628.14	36.15	46.037	
7,200.00	7,112.73	7,201.46	7,112.73	23.39	23.13	138.94	-912.15	231.20	1,664.29	1,627.81	36.49	45.611	
7,300.00	7,212.73	7,301.46	7,212.73	23.54	23.26	138.94	-912.15	231.20	1,664.29	1,627.46	36.83	45.189	
7,400.00	7,312.73	7,401.46	7,312.73	23.69	23.38	138.94	-912.15	231.20	1,664.29	1,627.12	37.17	44.773	
7,500.00	7,412.73	7,501.46	7,412.73	23.84	23.51	138.94	-912.15	231.20	1,664.29	1,626.78	37.52	44.361	
7,600.00	7,512.73	7,601.46	7,512.73	23.99	23.64	138.94	-912.15	231.20	1,664.29	1,626.43	37.86	43.955	
7,700.00	7,612.73	7,701.46	7,612.73	24.14	23.77	138.94	-912.15	231.20	1,664.29	1,626.08	38.21	43.553	
7,800.00	7,712.73	7,801.46	7,712.73	24.29	23.90	138.94	-912.15	231.20	1,664.29	1,625.73	38.56	43.156	
7,839.70	7,752.43	7,841.16	7,752.43	24.35	23.95	138.94	-912.15	231.20	1,664.29	1,625.59	38.70	43.000	
7,862.27	7,775.00	7,858.73	7,770.00	24.39	23.97	138.94	-912.15	231.20	1,664.30	1,625.53	38.78	42.921	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_BALLINGER 31-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_BALLINGER PAD	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_BALLINGER 31-18	<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_BALLINGER	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-13-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design WELD_BALLINGER PAD - P_BALLINGER 5-18 - P_BALLINGER 5-18 - PLAN #1 1-13-10 RHS												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
0.00	0.00	0.00	0.00	0.00	0.00	92.61	-0.72	15.92	15.93				
100.00	100.00	100.00	100.00	0.10	0.10	92.61	-0.72	15.92	15.93	15.74	0.19	83.389	
200.00	200.00	200.00	200.00	0.32	0.32	92.61	-0.72	15.92	15.93	15.29	0.64	24.871	
300.00	300.00	300.00	300.00	0.55	0.55	92.61	-0.72	15.92	15.93	14.84	1.09	14.615	
400.00	400.00	400.00	400.00	0.77	0.77	92.61	-0.72	15.92	15.93	14.39	1.54	10.348	
500.00	500.00	500.00	500.00	0.99	0.99	92.61	-0.72	15.92	15.93	13.94	1.99	8.009	
600.00	600.00	600.00	600.00	1.22	1.22	92.61	-0.72	15.92	15.93	13.49	2.44	6.533	
700.00	700.00	700.00	700.00	1.44	1.44	92.61	-0.72	15.92	15.93	13.04	2.89	5.516 CC, ES	
800.00	799.98	800.38	800.36	1.66	1.65	167.07	-1.85	14.56	16.38	13.07	3.30	4.956 SF	
900.00	899.84	900.57	900.41	1.88	1.84	-177.08	-5.21	10.51	18.70	15.00	3.70	5.055	
1,000.00	999.45	1,000.38	999.83	2.11	2.05	-159.60	-10.77	3.81	24.76	20.63	4.13	6.001	
1,100.00	1,098.70	1,099.64	1,098.36	2.37	2.29	-146.87	-18.43	-5.43	35.29	30.69	4.60	7.677	
1,200.00	1,197.47	1,198.54	1,196.41	2.66	2.56	-141.49	-26.69	-15.39	49.59	44.48	5.11	9.711	
1,259.27	1,255.73	1,256.98	1,254.35	2.85	2.72	-140.53	-31.58	-21.27	59.43	54.01	5.42	10.959	
1,300.00	1,295.68	1,297.09	1,294.11	2.99	2.83	-140.34	-34.93	-25.31	66.52	60.86	5.65	11.770	
1,400.00	1,393.78	1,395.56	1,391.73	3.35	3.12	-140.00	-43.15	-35.22	83.92	77.69	6.23	13.469	
1,500.00	1,491.88	1,494.03	1,489.36	3.72	3.42	-139.78	-51.38	-45.14	101.32	94.49	6.83	14.839	
1,600.00	1,589.98	1,592.51	1,586.99	4.11	3.72	-139.63	-59.60	-55.05	118.73	111.29	7.44	15.960	
1,700.00	1,688.08	1,690.98	1,684.62	4.50	4.03	-139.51	-67.83	-64.97	136.13	128.07	8.06	16.888	
1,800.00	1,786.18	1,789.45	1,782.24	4.90	4.34	-139.42	-76.06	-74.88	153.54	144.85	8.69	17.666	
1,900.00	1,884.28	1,887.93	1,879.87	5.31	4.66	-139.35	-84.28	-84.80	170.94	161.62	9.33	18.327	
2,000.00	1,982.38	1,986.40	1,977.50	5.72	4.98	-139.29	-92.51	-94.71	188.35	178.38	9.97	18.892	
2,100.00	2,080.48	2,084.87	2,075.12	6.13	5.30	-139.25	-100.73	-104.63	205.76	195.14	10.62	19.381	
2,200.00	2,178.58	2,183.35	2,172.75	6.55	5.62	-139.21	-108.96	-114.54	223.16	211.90	11.27	19.807	
2,300.00	2,276.68	2,281.82	2,270.38	6.96	5.94	-139.17	-117.19	-124.46	240.57	228.65	11.92	20.182	
2,400.00	2,374.79	2,380.29	2,368.00	7.38	6.27	-139.14	-125.41	-134.37	257.98	245.40	12.58	20.514	
2,500.00	2,472.89	2,478.77	2,465.63	7.80	6.59	-139.11	-133.64	-144.29	275.39	262.15	13.23	20.809	
2,600.00	2,570.99	2,577.24	2,563.26	8.23	6.92	-139.09	-141.86	-154.20	292.79	278.90	13.89	21.073	
2,700.00	2,669.09	2,675.71	2,660.88	8.65	7.25	-139.07	-150.09	-164.11	310.20	295.64	14.56	21.311	
2,800.00	2,767.19	2,774.19	2,758.51	9.07	7.57	-139.05	-158.32	-174.03	327.61	312.39	15.22	21.527	
2,900.00	2,865.29	2,872.66	2,856.14	9.50	7.90	-139.04	-166.54	-183.94	345.01	329.13	15.88	21.723	
3,000.00	2,963.39	2,971.13	2,953.76	9.92	8.23	-139.02	-174.77	-193.86	362.42	345.87	16.55	21.901	
3,100.00	3,061.49	3,069.61	3,051.39	10.35	8.56	-139.01	-182.99	-203.77	379.83	362.61	17.21	22.065	
3,200.00	3,159.59	3,168.08	3,149.02	10.78	8.89	-139.00	-191.22	-213.69	397.24	379.35	17.88	22.215	
3,300.00	3,257.69	3,266.55	3,246.65	11.20	9.22	-138.98	-199.45	-223.60	414.64	396.09	18.55	22.353	
3,400.00	3,355.79	3,365.02	3,344.27	11.63	9.55	-138.97	-207.67	-233.52	432.05	412.83	19.22	22.481	
3,500.00	3,453.89	3,463.50	3,441.90	12.06	9.88	-138.96	-215.90	-243.43	449.46	429.57	19.89	22.600	
3,600.00	3,551.99	3,561.97	3,539.53	12.49	10.21	-138.95	-224.12	-253.35	466.86	446.31	20.56	22.711	
3,700.00	3,650.09	3,660.44	3,637.15	12.92	10.55	-138.95	-232.35	-263.26	484.27	463.04	21.23	22.814	
3,800.00	3,748.19	3,758.92	3,734.78	13.34	10.88	-138.94	-240.58	-273.18	501.68	479.78	21.90	22.910	
3,900.00	3,846.29	3,857.39	3,832.41	13.77	11.21	-138.93	-248.80	-283.09	519.09	496.52	22.57	23.000	
4,000.00	3,944.39	3,955.86	3,930.03	14.20	11.54	-138.92	-257.03	-293.01	536.49	513.25	23.24	23.084	
4,100.00	4,042.49	4,054.34	4,027.66	14.63	11.87	-138.92	-265.25	-302.92	553.90	529.99	23.91	23.164	
4,200.00	4,140.59	4,152.81	4,125.29	15.06	12.21	-138.91	-273.48	-312.84	571.31	546.72	24.58	23.238	
4,300.00	4,238.69	4,251.28	4,222.91	15.49	12.54	-138.91	-281.71	-322.75	588.72	563.46	25.26	23.309	
4,400.00	4,336.79	4,349.76	4,320.54	15.92	12.87	-138.90	-289.93	-332.67	606.12	580.19	25.93	23.375	
4,500.00	4,434.89	4,448.23	4,418.17	16.35	13.20	-138.90	-298.16	-342.58	623.53	596.93	26.60	23.438	
4,600.00	4,532.99	4,546.70	4,515.80	16.78	13.54	-138.89	-306.38	-352.50	640.94	613.66	27.28	23.498	
4,700.00	4,631.10	4,645.18	4,613.42	17.21	13.87	-138.89	-314.61	-362.41	658.35	630.40	27.95	23.555	
4,800.00	4,729.20	4,743.65	4,711.05	17.64	14.20	-138.88	-322.84	-372.33	675.75	647.13	28.62	23.609	
4,900.00	4,827.30	4,842.12	4,808.68	18.07	14.53	-138.88	-331.06	-382.24	693.16	663.86	29.30	23.660	
5,000.00	4,925.40	4,940.60	4,906.30	18.51	14.87	-138.88	-339.29	-392.16	710.57	680.60	29.97	23.708	

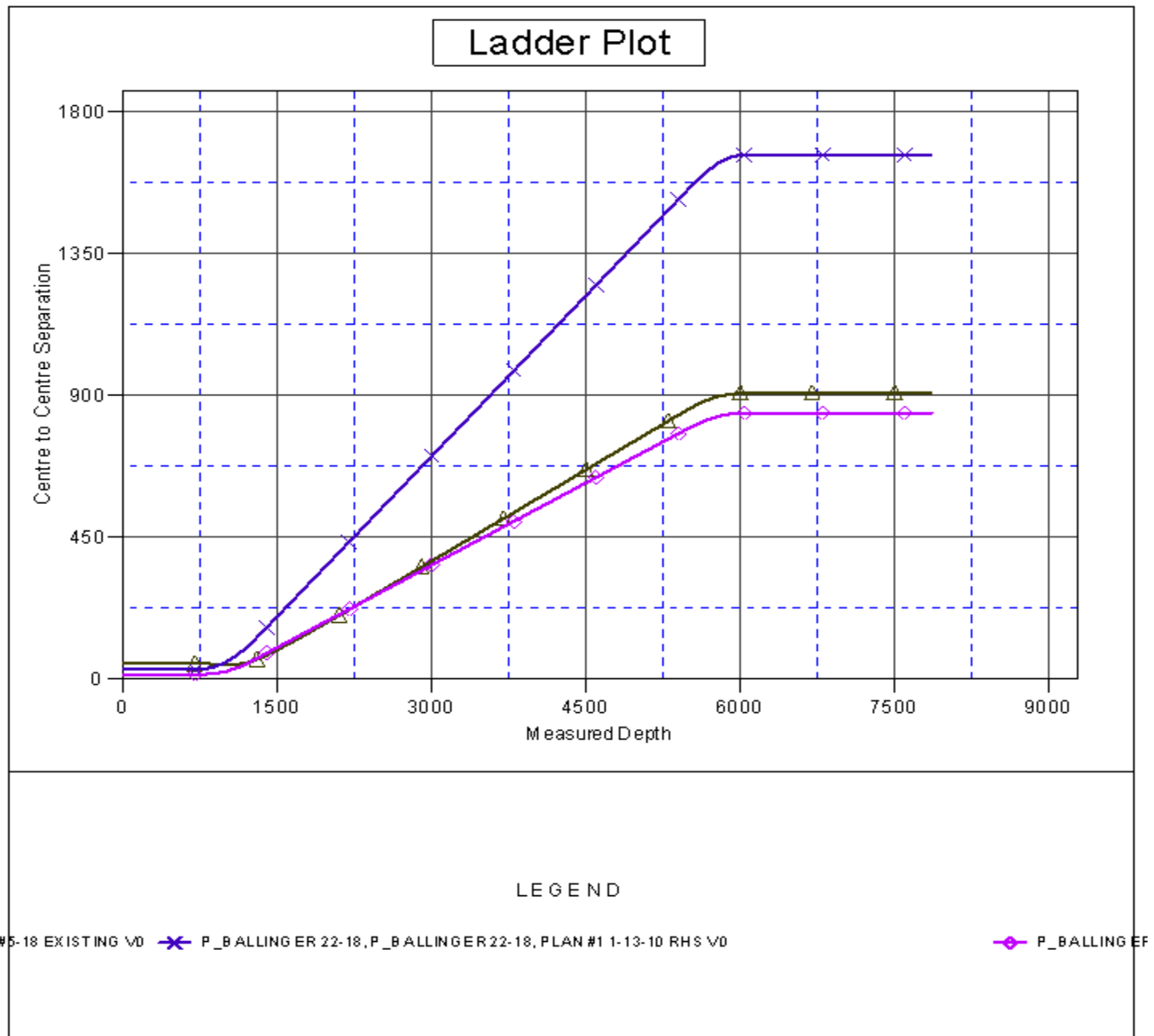
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_BALLINGER 31-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_BALLINGER PAD	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_BALLINGER 31-18	<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_BALLINGER	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-13-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design WELD_BALLINGER PAD - P_BALLINGER 5-18 - P_BALLINGER 5-18 - PLAN #1 1-13-10 RHS												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	5,023.50	5,039.07	5,003.93	18.94	15.20	-138.87	-347.51	-402.07	727.98	697.33	30.65	23.755	
5,200.00	5,121.60	5,137.54	5,101.56	19.37	15.53	-138.87	-355.74	-411.99	745.38	714.06	31.32	23.799	
5,300.00	5,219.70	5,236.02	5,199.18	19.80	15.87	-138.87	-363.97	-421.90	762.79	730.80	31.99	23.842	
5,400.00	5,317.80	5,334.49	5,296.81	20.23	16.20	-138.86	-372.19	-431.81	780.20	747.53	32.67	23.882	
5,479.99	5,396.27	5,413.26	5,374.90	20.57	16.47	-138.86	-378.77	-439.75	794.12	760.91	33.21	23.913	
5,500.00	5,415.91	5,432.97	5,394.45	20.65	16.53	-138.90	-380.42	-441.73	797.55	764.21	33.34	23.918	
5,600.00	5,514.45	5,531.73	5,492.36	20.95	16.87	-138.99	-388.67	-451.67	813.14	779.18	33.97	23.938	
5,700.00	5,613.53	5,632.47	5,592.25	21.21	17.19	-138.89	-397.00	-461.72	826.11	791.55	34.56	23.905	
5,800.00	5,713.01	5,738.52	5,697.73	21.43	17.45	-138.77	-403.98	-470.12	835.92	800.87	35.05	23.850	
5,900.00	5,812.79	5,845.08	5,804.05	21.61	17.65	-138.70	-408.47	-475.54	842.32	806.90	35.43	23.776	
6,000.00	5,912.73	5,951.93	5,910.85	21.75	17.82	-138.69	-410.43	-477.91	845.30	809.56	35.73	23.657	
6,039.27	5,952.00	5,993.08	5,952.00	21.79	17.88	153.00	-410.53	-478.02	845.53	809.70	35.83	23.596	
6,100.00	6,012.73	6,053.82	6,012.73	21.86	17.96	153.00	-410.53	-478.02	845.53	809.52	36.00	23.484	
6,200.00	6,112.73	6,153.82	6,112.73	22.00	18.10	153.00	-410.53	-478.02	845.53	809.23	36.30	23.292	
6,300.00	6,212.73	6,253.82	6,212.73	22.13	18.24	153.00	-410.53	-478.02	845.53	808.93	36.60	23.102	
6,400.00	6,312.73	6,353.82	6,312.73	22.26	18.38	153.00	-410.53	-478.02	845.53	808.63	36.90	22.913	
6,500.00	6,412.73	6,453.82	6,412.73	22.40	18.53	153.00	-410.53	-478.02	845.53	808.32	37.21	22.725	
6,600.00	6,512.73	6,553.82	6,512.73	22.54	18.67	153.00	-410.53	-478.02	845.53	808.01	37.51	22.539	
6,700.00	6,612.73	6,653.82	6,612.73	22.68	18.82	153.00	-410.53	-478.02	845.53	807.70	37.83	22.354	
6,800.00	6,712.73	6,753.82	6,712.73	22.82	18.97	153.00	-410.53	-478.02	845.53	807.39	38.14	22.170	
6,900.00	6,812.73	6,853.82	6,812.73	22.96	19.12	153.00	-410.53	-478.02	845.53	807.07	38.45	21.987	
7,000.00	6,912.73	6,953.82	6,912.73	23.10	19.27	153.00	-410.53	-478.02	845.53	806.75	38.77	21.807	
7,100.00	7,012.73	7,053.82	7,012.73	23.25	19.42	153.00	-410.53	-478.02	845.53	806.43	39.10	21.627	
7,200.00	7,112.73	7,153.82	7,112.73	23.39	19.57	153.00	-410.53	-478.02	845.53	806.11	39.42	21.450	
7,300.00	7,212.73	7,253.82	7,212.73	23.54	19.73	153.00	-410.53	-478.02	845.53	805.78	39.75	21.274	
7,400.00	7,312.73	7,353.82	7,312.73	23.69	19.88	153.00	-410.53	-478.02	845.53	805.45	40.07	21.099	
7,500.00	7,412.73	7,453.82	7,412.73	23.84	20.04	153.00	-410.53	-478.02	845.53	805.12	40.41	20.926	
7,600.00	7,512.73	7,553.82	7,512.73	23.99	20.20	153.00	-410.53	-478.02	845.53	804.79	40.74	20.755	
7,700.00	7,612.73	7,653.82	7,612.73	24.14	20.36	153.00	-410.53	-478.02	845.53	804.45	41.07	20.585	
7,800.00	7,712.73	7,753.82	7,712.73	24.29	20.52	153.00	-410.53	-478.02	845.53	804.12	41.41	20.417	
7,862.27	7,775.00	7,816.08	7,775.00	24.39	20.62	153.00	-410.53	-478.02	845.53	803.91	41.62	20.314	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_BALLINGER 31-18
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<b>Reference Site:</b>	WELD_BALLINGER PAD	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_BALLINGER 31-18	<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_BALLINGER	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-13-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

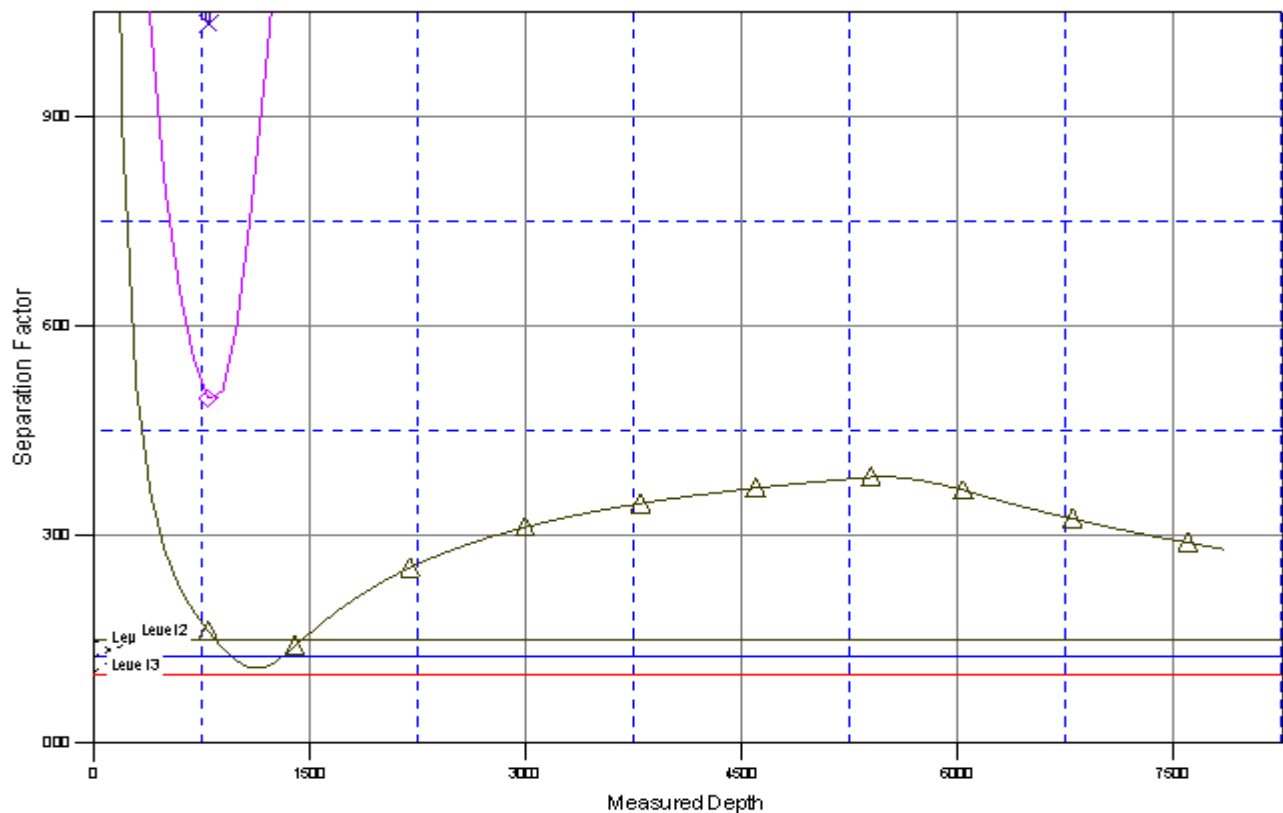
Reference Depths are relative to WELL @ 4881.00ft (Original Well Elev) Coordinates are relative to: P\_BALLINGER 31-18  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.36°



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well P_BALLINGER 31-18
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>TVD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Reference Site:</b>	WELD_BALLINGER PAD	<b>MD Reference:</b>	WELL @ 4881.00ft (Original Well Elev)
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	P_BALLINGER 31-18	<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_BALLINGER	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	PLAN #1 1-13-10 RHS	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4881.00ft (Original Well Elev) Coordinates are relative to: P\_BALLINGER 31-18  
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: 0.36°

## Separation Factor Plot



## LEGEND

#5-18 EXISTING WD \* P\_BALLINGER 22-18, P\_BALLINGER 22-18, PLAN #1 1-13-10 RHS WD P\_BALLINGER 31-18