



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_MILLER 1-30 PAD

P_MILLER 40-30

P_MILLER 40-30

Plan: PLAN #1 1-13-10 RHS

Standard Planning Report

14 January, 2010





P. MILLER 40-30
COLORADO NORTHERN ZONE - 83
SECTION 30 T3N R66W
703 FNL 633 FEL
LAT: 40° 12' 3.701 N
LONG: 104° 48' 46.364 W

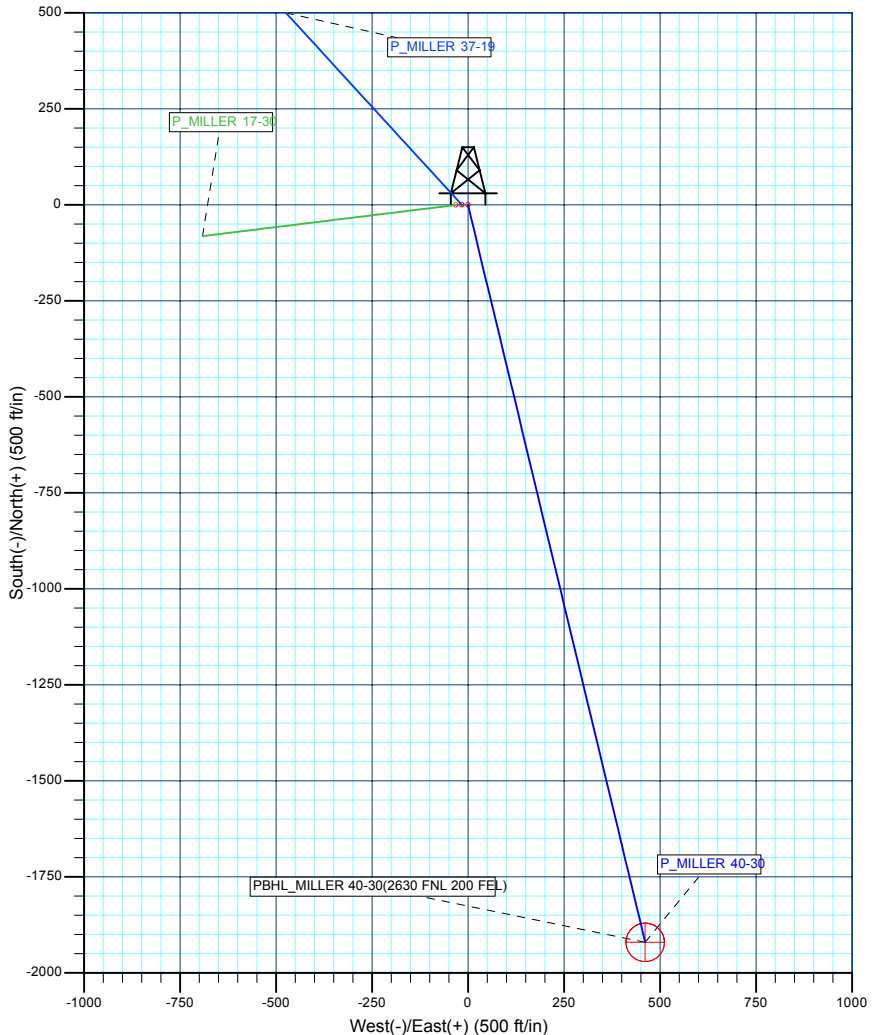
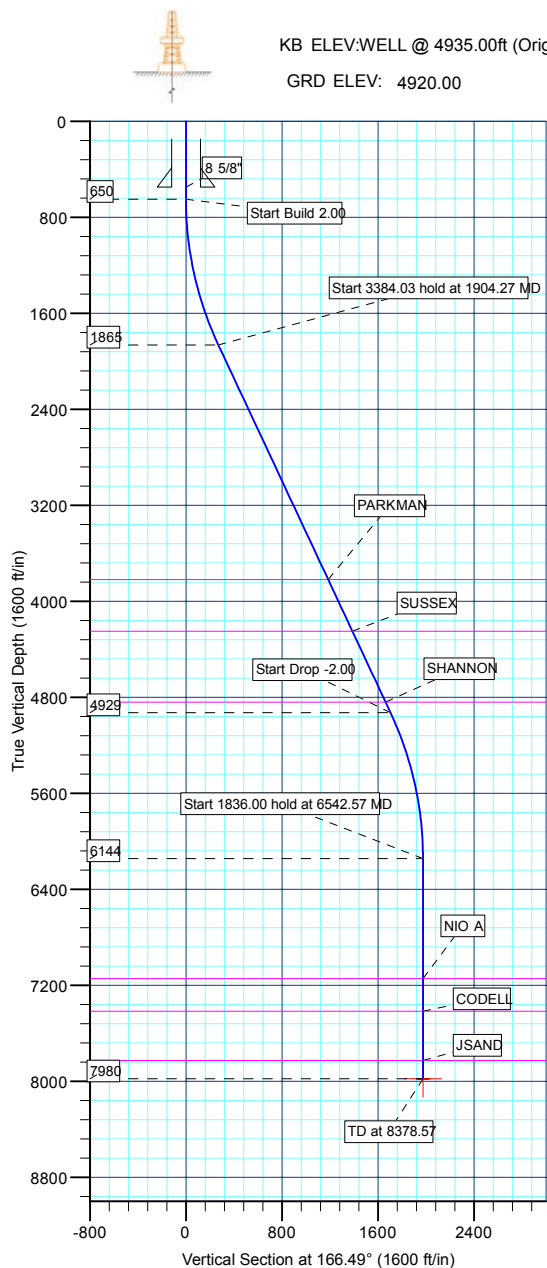


WELL DETAILS: P_MILLER 40-30					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1316820.55	3191930.05	40° 12' 3.701 N	104° 48' 46.364 W

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3820.00	4063.34	PARKMAN
4250.00	4538.12	SUSSEX
4840.00	5189.57	SHANNON
7144.00	7542.57	NIO A
7417.00	7815.57	CODELL
7828.00	8226.57	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	
650.00	0.00	0.00	650.00	0.00	0.00	0.00	0.00	0.00	
1904.27	25.09	166.49	1864.58	-262.74	63.13	2.00	166.49	270.22	
5288.30	25.09	166.49	4929.42	-1657.75	398.35	0.00	0.00	1704.94	
6542.57	0.00	0.00	6144.00	-1920.49	461.49	2.00	180.00	1975.16	
8378.57	0.00	0.00	7980.00	-1920.49	461.49	0.00	0.00	1975.16	PBHL_MILLER 40-30(2630 FNL 200 FEL)

CASING DETAILS			
TVD	MD	Name	Size
550.00	550.00	8 5/8"	8.62



WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	7980.00	-1920.49	461.49	1314903.70	3192406.40	40° 11' 44.722 N	104° 48' 40.417 W	Circle (Radius: 50.00)	

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MILLER 40-30
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site:	WELD_MILLER 1-30 PAD	North Reference:	True
Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MILLER 40-30		
Design:	PLAN #1 1-13-10 RHS		

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	WELD_MILLER 1-30 PAD, SECTION 30 T3N R66W				
Site Position:		Northing:	1,316,819.95ft	Latitude:	40° 12' 3.697 N
From:	Lat/Long	Easting:	3,191,898.21ft	Longitude:	104° 48' 46.775 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	0.44 °

Well	P_MILLER 40-30,					
Well Position	+N/-S	0.35 ft	Northing:	1,316,820.55 ft	Latitude:	40° 12' 3.701 N
	+E/-W	31.84 ft	Easting:	3,191,930.05 ft	Longitude:	104° 48' 46.364 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,920.00 ft

Wellbore	P_MILLER 40-30				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/14/2010	9.06	66.93	53,170

Design	PLAN #1 1-13-10 RHS			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	166.49

Plan Sections										
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	
650.00	0.00	0.00	650.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,904.27	25.09	166.49	1,864.58	-262.74	63.13	2.00	2.00	0.00	166.49	
5,288.30	25.09	166.49	4,929.42	-1,657.75	398.35	0.00	0.00	0.00	0.00	
6,542.57	0.00	0.00	6,144.00	-1,920.49	461.49	2.00	-2.00	0.00	180.00	
8,378.57	0.00	0.00	7,980.00	-1,920.49	461.49	0.00	0.00	0.00	0.00	PBHL_MILLER 40-

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MILLER 40-30
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site:	WELD_MILLER 1-30 PAD	North Reference:	True
Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MILLER 40-30		
Design:	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)
Start Build 2.00									
650.00	0.00	0.00	650.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	1.00	166.49	700.00	-0.42	0.10	0.44	2.00	2.00	0.00
800.00	3.00	166.49	799.93	-3.82	0.92	3.93	2.00	2.00	0.00
900.00	5.00	166.49	899.68	-10.60	2.55	10.90	2.00	2.00	0.00
1,000.00	7.00	166.49	999.13	-20.76	4.99	21.35	2.00	2.00	0.00
1,100.00	9.00	166.49	1,098.15	-34.29	8.24	35.27	2.00	2.00	0.00
1,200.00	11.00	166.49	1,196.63	-51.18	12.30	52.63	2.00	2.00	0.00
1,300.00	13.00	166.49	1,294.44	-71.39	17.16	73.42	2.00	2.00	0.00
1,400.00	15.00	166.49	1,391.46	-94.91	22.81	97.62	2.00	2.00	0.00
1,500.00	17.00	166.49	1,487.58	-121.71	29.25	125.18	2.00	2.00	0.00
1,600.00	19.00	166.49	1,582.68	-151.76	36.47	156.08	2.00	2.00	0.00
1,700.00	21.00	166.49	1,676.65	-185.01	44.46	190.28	2.00	2.00	0.00
1,800.00	23.00	166.49	1,769.36	-221.43	53.21	227.74	2.00	2.00	0.00
1,900.00	25.00	166.49	1,860.71	-260.98	62.71	268.41	2.00	2.00	0.00
Start 3384.03 hold at 1904.27 MD									
1,904.27	25.09	166.49	1,864.58	-262.74	63.13	270.22	2.00	2.00	0.00
2,000.00	25.09	166.49	1,951.28	-302.20	72.62	310.80	0.00	0.00	0.00
2,100.00	25.09	166.49	2,041.85	-343.42	82.52	353.20	0.00	0.00	0.00
2,200.00	25.09	166.49	2,132.42	-384.65	92.43	395.60	0.00	0.00	0.00
2,300.00	25.09	166.49	2,222.98	-425.87	102.34	437.99	0.00	0.00	0.00
2,400.00	25.09	166.49	2,313.55	-467.09	112.24	480.39	0.00	0.00	0.00
2,500.00	25.09	166.49	2,404.12	-508.32	122.15	522.79	0.00	0.00	0.00
2,600.00	25.09	166.49	2,494.69	-549.54	132.05	565.18	0.00	0.00	0.00
2,700.00	25.09	166.49	2,585.25	-590.76	141.96	607.58	0.00	0.00	0.00
2,800.00	25.09	166.49	2,675.82	-631.99	151.86	649.98	0.00	0.00	0.00
2,900.00	25.09	166.49	2,766.39	-673.21	161.77	692.37	0.00	0.00	0.00
3,000.00	25.09	166.49	2,856.96	-714.43	171.68	734.77	0.00	0.00	0.00
3,100.00	25.09	166.49	2,947.53	-755.66	181.58	777.17	0.00	0.00	0.00
3,200.00	25.09	166.49	3,038.09	-796.88	191.49	819.57	0.00	0.00	0.00
3,300.00	25.09	166.49	3,128.66	-838.10	201.39	861.96	0.00	0.00	0.00
3,400.00	25.09	166.49	3,219.23	-879.33	211.30	904.36	0.00	0.00	0.00
3,500.00	25.09	166.49	3,309.80	-920.55	221.21	946.76	0.00	0.00	0.00
3,600.00	25.09	166.49	3,400.36	-961.77	231.11	989.15	0.00	0.00	0.00
3,700.00	25.09	166.49	3,490.93	-1,003.00	241.02	1,031.55	0.00	0.00	0.00
3,800.00	25.09	166.49	3,581.50	-1,044.22	250.92	1,073.95	0.00	0.00	0.00
3,900.00	25.09	166.49	3,672.07	-1,085.45	260.83	1,116.34	0.00	0.00	0.00
4,000.00	25.09	166.49	3,762.63	-1,126.67	270.73	1,158.74	0.00	0.00	0.00
PARKMAN									
4,063.34	25.09	166.49	3,820.00	-1,152.78	277.01	1,185.59	0.00	0.00	0.00
4,100.00	25.09	166.49	3,853.20	-1,167.89	280.64	1,201.14	0.00	0.00	0.00
4,200.00	25.09	166.49	3,943.77	-1,209.12	290.55	1,243.53	0.00	0.00	0.00
4,300.00	25.09	166.49	4,034.34	-1,250.34	300.45	1,285.93	0.00	0.00	0.00
4,400.00	25.09	166.49	4,124.91	-1,291.56	310.36	1,328.33	0.00	0.00	0.00
4,500.00	25.09	166.49	4,215.47	-1,332.79	320.26	1,370.72	0.00	0.00	0.00
SUSSEX									
4,538.12	25.09	166.49	4,250.00	-1,348.50	324.04	1,386.89	0.00	0.00	0.00
4,600.00	25.09	166.49	4,306.04	-1,374.01	330.17	1,413.12	0.00	0.00	0.00
4,700.00	25.09	166.49	4,396.61	-1,415.23	340.08	1,455.52	0.00	0.00	0.00
4,800.00	25.09	166.49	4,487.18	-1,456.46	349.98	1,497.92	0.00	0.00	0.00
4,900.00	25.09	166.49	4,577.74	-1,497.68	359.89	1,540.31	0.00	0.00	0.00
5,000.00	25.09	166.49	4,668.31	-1,538.90	369.79	1,582.71	0.00	0.00	0.00
5,100.00	25.09	166.49	4,758.88	-1,580.13	379.70	1,625.11	0.00	0.00	0.00

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site:	WELD_MILLER 1-30 PAD	North Reference:	True
Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MILLER 40-30		
Design:	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)
SHANNON									
5,189.57	25.09	166.49	4,840.00	-1,617.05	388.57	1,663.08	0.00	0.00	0.00
5,200.00	25.09	166.49	4,849.45	-1,621.35	389.60	1,667.50	0.00	0.00	0.00
Start Drop -2.00									
5,288.30	25.09	166.49	4,929.42	-1,657.75	398.35	1,704.94	0.00	0.00	0.00
5,300.00	24.85	166.49	4,940.02	-1,662.55	399.51	1,709.88	2.00	-2.00	0.00
5,400.00	22.85	166.49	5,031.48	-1,701.87	408.95	1,750.31	2.00	-2.00	0.00
5,500.00	20.85	166.49	5,124.29	-1,738.06	417.65	1,787.53	2.00	-2.00	0.00
5,600.00	18.85	166.49	5,218.34	-1,771.07	425.58	1,821.49	2.00	-2.00	0.00
5,700.00	16.85	166.49	5,313.52	-1,800.88	432.74	1,852.14	2.00	-2.00	0.00
5,800.00	14.85	166.49	5,409.72	-1,827.43	439.13	1,879.45	2.00	-2.00	0.00
5,900.00	12.85	166.49	5,506.80	-1,850.71	444.72	1,903.39	2.00	-2.00	0.00
6,000.00	10.85	166.49	5,604.67	-1,870.68	449.52	1,923.93	2.00	-2.00	0.00
6,100.00	8.85	166.49	5,703.19	-1,887.31	453.51	1,941.04	2.00	-2.00	0.00
6,200.00	6.85	166.49	5,802.24	-1,900.60	456.71	1,954.70	2.00	-2.00	0.00
6,300.00	4.85	166.49	5,901.72	-1,910.51	459.09	1,964.89	2.00	-2.00	0.00
6,400.00	2.85	166.49	6,001.49	-1,917.04	460.66	1,971.61	2.00	-2.00	0.00
6,500.00	0.85	166.49	6,101.43	-1,920.18	461.41	1,974.84	2.00	-2.00	0.00
Start 1836.00 hold at 6542.57 MD									
6,542.57	0.00	0.00	6,144.00	-1,920.49	461.49	1,975.16	2.00	-2.00	0.00
6,600.00	0.00	0.00	6,201.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
6,700.00	0.00	0.00	6,301.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
6,800.00	0.00	0.00	6,401.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
6,900.00	0.00	0.00	6,501.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
7,000.00	0.00	0.00	6,601.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
7,100.00	0.00	0.00	6,701.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
7,200.00	0.00	0.00	6,801.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
7,300.00	0.00	0.00	6,901.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
7,400.00	0.00	0.00	7,001.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
7,500.00	0.00	0.00	7,101.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
NIO A									
7,542.57	0.00	0.00	7,144.00	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
7,600.00	0.00	0.00	7,201.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
7,700.00	0.00	0.00	7,301.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
7,800.00	0.00	0.00	7,401.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
CODELL									
7,815.57	0.00	0.00	7,417.00	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
7,900.00	0.00	0.00	7,501.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
8,000.00	0.00	0.00	7,601.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
8,100.00	0.00	0.00	7,701.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
8,200.00	0.00	0.00	7,801.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
JSAND									
8,226.57	0.00	0.00	7,828.00	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
8,300.00	0.00	0.00	7,901.43	-1,920.49	461.49	1,975.16	0.00	0.00	0.00
PBHL_MILLER 40-30(2630 FNL 200 FEL)									
8,378.57	0.00	0.00	7,980.00	-1,920.49	461.49	1,975.16	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MILLER 40-30
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site:	WELD_MILLER 1-30 PAD	North Reference:	True
Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MILLER 40-30		
Design:	PLAN #1 1-13-10 RHS		

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
PBHL_MILLER 40-30	0.00	0.00	7,980.00	-1,920.49	461.49	1,314,903.70	3,192,406.40	40° 11' 44.722 N	104° 48' 40.417 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
550.00	550.00	8 5/8"	8.62	11.00

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,063.34	3,820.00	PARKMAN			
4,538.12	4,250.00	SUSSEX			
5,189.57	4,840.00	SHANNON			
7,542.57	7,144.00	NIO A			
7,815.57	7,417.00	CODELL			
8,226.57	7,828.00	JSAND			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
650.00	650.00	0.00	0.00	Start Build 2.00
1,904.27	1,864.58	-262.74	63.13	Start 3384.03 hold at 1904.27 MD
5,288.30	4,929.42	-1,657.75	398.35	Start Drop -2.00
6,542.57	6,144.00	-1,920.49	461.49	Start 1836.00 hold at 6542.57 MD
8,378.57	7,980.00	-1,920.49	461.49	TD at 8378.57



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_MILLER 1-30 PAD
P_MILLER 40-30**

**P_MILLER 40-30
PLAN #1 1-13-10 RHS**

Anticollision Report

14 January, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MILLER 40-30
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Reference Site:	WELD_MILLER 1-30 PAD	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MILLER 40-30	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-13-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 1-13-10 RHS		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	0.00 to 20,000.00ft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	1/14/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,378.57	PLAN #1 1-13-10 RHS (P_MILLER 40-30)	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
Offset Well - Wellbore - Design						
WELD_MILLER 1-30 PAD						
P_MILLER 17-30 - P_MILLER 17-30 - PLAN #1 1-13-10	650.00	650.00	31.85	29.18	11.956	CC, ES
P_MILLER 17-30 - P_MILLER 17-30 - PLAN #1 1-13-10	700.00	699.45	32.37	29.51	11.301	SF
P_MILLER 37-19 - P_MILLER 37-19 - PLAN #1 1-13-10	650.00	650.00	15.92	13.26	5.978	CC, ES
P_MILLER 37-19 - P_MILLER 37-19 - PLAN #1 1-13-10	700.00	699.80	16.33	13.46	5.689	SF

Offset Design	WELD_MILLER 1-30 PAD - P_MILLER 17-30 - P_MILLER 17-30 - 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						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	-90.63	-0.35	-31.84	31.85				
100.00	100.00	100.00	100.00	0.10	0.10	-90.63	-0.35	-31.84	31.85	31.65	0.19	166.685	
200.00	200.00	200.00	200.00	0.32	0.32	-90.63	-0.35	-31.84	31.85	31.20	0.64	49.713	
300.00	300.00	300.00	300.00	0.55	0.55	-90.63	-0.35	-31.84	31.85	30.76	1.09	29.213	
400.00	400.00	400.00	400.00	0.77	0.77	-90.63	-0.35	-31.84	31.85	30.31	1.54	20.684	
500.00	500.00	500.00	500.00	0.99	0.99	-90.63	-0.35	-31.84	31.85	29.86	1.99	16.009	
600.00	600.00	600.00	600.00	1.22	1.22	-90.63	-0.35	-31.84	31.85	29.41	2.44	13.058	
650.00	650.00	650.00	650.00	1.33	1.33	-90.63	-0.35	-31.84	31.85	29.18	2.66	11.956	CC, ES
700.00	700.00	699.45	699.44	1.43	1.44	103.53	-0.40	-32.27	32.37	29.51	2.86	11.301	SF
800.00	799.93	798.14	798.07	1.61	1.63	108.03	-0.82	-35.64	36.73	33.49	3.24	11.349	
900.00	899.68	896.24	895.94	1.80	1.85	114.34	-1.64	-42.34	45.93	42.30	3.63	12.650	
1,000.00	999.13	993.37	992.55	2.03	2.08	120.03	-2.85	-52.24	60.33	56.28	4.05	14.894	
1,100.00	1,098.15	1,090.86	1,089.24	2.29	2.34	124.68	-4.37	-64.58	79.23	74.72	4.51	17.579	
1,200.00	1,196.63	1,188.27	1,185.84	2.59	2.61	128.95	-5.89	-77.02	100.72	95.72	5.00	20.152	
1,300.00	1,294.44	1,284.96	1,281.73	2.95	2.89	132.78	-7.41	-89.37	124.91	119.40	5.52	22.638	
1,400.00	1,391.46	1,380.82	1,376.79	3.37	3.18	136.16	-8.91	-101.62	151.96	145.90	6.06	25.070	
1,500.00	1,487.58	1,475.74	1,470.92	3.85	3.47	139.12	-10.40	-113.74	181.97	175.35	6.62	27.471	
1,600.00	1,582.68	1,569.60	1,564.00	4.39	3.76	141.71	-11.87	-125.73	215.00	207.80	7.20	29.858	
1,700.00	1,676.65	1,662.28	1,655.91	5.01	4.05	143.96	-13.32	-137.57	251.08	243.29	7.79	32.240	
1,800.00	1,769.36	1,753.68	1,746.55	5.69	4.34	145.92	-14.75	-149.25	290.22	281.83	8.38	34.622	
1,904.27	1,864.58	1,847.49	1,839.58	6.47	4.64	147.70	-16.22	-161.23	334.27	325.26	9.01	37.108	
2,000.00	1,951.28	1,932.87	1,924.25	7.22	4.92	149.49	-17.56	-172.13	376.37	366.73	9.64	39.048	
2,100.00	2,041.85	2,022.07	2,012.71	8.02	5.20	150.98	-18.96	-183.53	420.61	410.31	10.30	40.835	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MILLER 40-30
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Reference Site:	WELD_MILLER 1-30 PAD	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MILLER 40-30	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-13-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												WELD_MILLER 1-30 PAD - P_MILLER 17-30 - P_MILLER 17-30 - 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					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
2,200.00	2,132.42	2,111.26	2,101.16	8.83	5.49	152.19	-20.36	-194.92	465.03	454.07	10.96	42.415		
2,300.00	2,222.98	2,200.46	2,189.61	9.65	5.78	153.19	-21.75	-206.32	509.60	497.97	11.63	43.819		
2,400.00	2,313.55	2,289.65	2,278.07	10.47	6.07	154.03	-23.15	-217.71	554.27	541.97	12.30	45.074		
2,500.00	2,404.12	2,378.85	2,366.52	11.29	6.36	154.75	-24.55	-229.10	599.02	586.05	12.97	46.203		
2,600.00	2,494.69	2,468.04	2,454.97	12.12	6.66	155.36	-25.95	-240.50	643.83	630.20	13.63	47.222		
2,700.00	2,585.25	2,557.24	2,543.43	12.95	6.95	155.90	-27.34	-251.89	688.70	674.40	14.30	48.148		
2,800.00	2,675.82	2,646.43	2,631.88	13.79	7.24	156.37	-28.74	-263.28	733.61	718.64	14.97	48.992		
2,900.00	2,766.39	2,735.63	2,720.33	14.62	7.53	156.79	-30.14	-274.68	778.56	762.91	15.64	49.766		
3,000.00	2,856.96	2,824.82	2,808.79	15.46	7.83	157.16	-31.54	-286.07	823.53	807.21	16.32	50.460		
3,100.00	2,947.53	2,914.02	2,897.24	16.30	8.12	157.49	-32.93	-297.46	868.53	851.53	17.00	51.082		
3,200.00	3,038.09	3,003.21	2,985.69	17.14	8.42	157.79	-34.33	-308.86	913.55	895.86	17.69	51.653		
3,300.00	3,128.66	3,092.41	3,074.15	17.98	8.71	158.06	-35.73	-320.25	958.59	940.22	18.37	52.181		
3,400.00	3,219.23	3,181.60	3,162.60	18.82	9.00	158.31	-37.13	-331.65	1,003.64	984.59	19.06	52.669		
3,500.00	3,309.80	3,270.80	3,251.05	19.66	9.30	158.54	-38.52	-343.04	1,048.71	1,028.97	19.74	53.123		
3,600.00	3,400.36	3,359.99	3,339.51	20.50	9.59	158.74	-39.92	-354.43	1,093.79	1,073.36	20.43	53.545		
3,700.00	3,490.93	3,449.19	3,427.96	21.35	9.89	158.94	-41.32	-365.83	1,138.88	1,117.77	21.11	53.938		
3,800.00	3,581.50	3,538.38	3,516.41	22.19	10.18	159.11	-42.72	-377.22	1,183.98	1,162.18	21.80	54.306		
3,900.00	3,672.07	3,627.58	3,604.87	23.03	10.48	159.28	-44.11	-388.61	1,229.09	1,206.60	22.49	54.651		
4,000.00	3,762.63	3,716.77	3,693.32	23.88	10.78	159.43	-45.51	-400.01	1,274.20	1,251.03	23.18	54.975		
4,100.00	3,853.20	3,805.97	3,781.77	24.72	11.07	159.57	-46.91	-411.40	1,319.33	1,295.46	23.87	55.279		
4,200.00	3,943.77	3,895.16	3,870.23	25.57	11.37	159.70	-48.31	-422.79	1,364.46	1,339.90	24.56	55.566		
4,300.00	4,034.34	3,984.36	3,958.68	26.41	11.66	159.83	-49.71	-434.19	1,409.59	1,384.34	25.24	55.837		
4,400.00	4,124.91	4,073.55	4,047.13	27.26	11.96	159.94	-51.10	-445.58	1,454.73	1,428.79	25.93	56.092		
4,500.00	4,215.47	4,162.75	4,135.59	28.10	12.26	160.05	-52.50	-456.98	1,499.87	1,473.25	26.62	56.334		
4,600.00	4,306.04	4,251.94	4,224.04	28.95	12.55	160.15	-53.90	-468.37	1,545.02	1,517.70	27.31	56.564		
4,700.00	4,396.61	4,341.14	4,312.49	29.80	12.85	160.25	-55.30	-479.76	1,590.17	1,562.16	28.00	56.782		
4,800.00	4,487.18	4,430.33	4,400.95	30.64	13.14	160.34	-56.69	-491.16	1,635.32	1,606.63	28.70	56.989		
4,900.00	4,577.74	4,519.53	4,489.40	31.49	13.44	160.43	-58.09	-502.55	1,680.48	1,651.10	29.39	57.186		
5,000.00	4,668.31	4,608.72	4,577.85	32.34	13.74	160.51	-59.49	-513.94	1,725.64	1,695.56	30.08	57.374		
5,100.00	4,758.88	4,697.92	4,666.31	33.18	14.03	160.59	-60.89	-525.34	1,770.81	1,740.04	30.77	57.553		
5,200.00	4,849.45	4,787.11	4,754.76	34.03	14.33	160.67	-62.28	-536.73	1,815.97	1,784.51	31.46	57.724		
5,288.30	4,929.42	4,865.87	4,832.86	34.78	14.59	160.73	-63.52	-546.79	1,855.85	1,823.78	32.07	57.868		
5,300.00	4,940.02	4,876.32	4,843.22	34.86	14.63	160.77	-63.68	-548.13	1,861.12	1,828.95	32.16	57.863		
5,400.00	5,031.48	4,966.42	4,932.58	35.45	14.93	161.13	-65.09	-559.64	1,904.46	1,871.54	32.92	57.848		
5,500.00	5,124.29	5,057.92	5,023.31	36.00	15.23	161.42	-66.53	-571.32	1,944.81	1,911.15	33.66	57.780		
5,600.00	5,218.34	5,150.69	5,115.32	36.52	15.54	161.64	-67.98	-583.17	1,982.10	1,947.73	34.37	57.667		
5,700.00	5,313.52	5,244.63	5,208.48	36.99	15.85	161.81	-69.45	-595.17	2,016.30	1,981.25	35.06	57.518		
5,800.00	5,409.72	5,339.63	5,302.68	37.42	16.17	161.92	-70.94	-607.31	2,047.38	2,011.67	35.71	57.337		
5,900.00	5,506.80	5,435.56	5,397.81	37.80	16.49	161.98	-72.44	-619.56	2,075.28	2,038.96	36.33	57.130		
6,000.00	5,604.67	5,532.31	5,493.76	38.14	16.81	161.99	-73.96	-631.92	2,100.00	2,063.09	36.91	56.900		
6,100.00	5,703.19	5,629.76	5,590.40	38.43	17.14	161.95	-75.49	-644.37	2,121.51	2,084.06	37.45	56.650		
6,200.00	5,802.24	5,727.79	5,687.62	38.68	17.46	161.87	-77.02	-656.89	2,139.78	2,101.83	37.95	56.382		
6,300.00	5,901.72	5,833.73	5,792.68	38.88	17.80	161.72	-78.67	-670.33	2,154.78	2,116.36	38.43	56.077		
6,400.00	6,001.49	5,979.16	5,937.44	39.03	18.14	161.53	-80.36	-684.08	2,165.16	2,126.31	38.85	55.726		
6,500.00	6,101.43	6,126.02	6,084.14	39.13	18.39	161.44	-81.15	-690.56	2,170.11	2,130.99	39.12	55.476		
6,542.57	6,144.00	6,185.89	6,144.00	39.16	18.47	-32.07	-81.21	-691.06	2,170.55	2,131.36	39.19	55.379		
6,600.00	6,201.43	6,243.32	6,201.43	39.20	18.56	-32.07	-81.21	-691.06	2,170.55	2,131.20	39.35	55.160		
6,700.00	6,301.43	6,343.32	6,301.43	39.26	18.71	-32.07	-81.21	-691.06	2,170.55	2,130.94	39.62	54.791		
6,800.00	6,401.43	6,443.32	6,401.43	39.33	18.86	-32.07	-81.21	-691.06	2,170.55	2,130.67	39.88	54.423		
6,900.00	6,501.43	6,543.32	6,501.43	39.39	19.01	-32.07	-81.21	-691.06	2,170.55	2,130.40	40.15	54.055		
7,000.00	6,601.43	6,643.32	6,601.43	39.45	19.17	-32.07	-81.21	-691.06	2,170.55	2,130.12	40.43	53.688		
7,100.00	6,701.43	6,743.32	6,701.43	39.52	19.33	-32.07	-81.21	-691.06	2,170.55	2,129.84	40.71	53.323		

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MILLER 40-30
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Reference Site:	WELD_MILLER 1-30 PAD	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MILLER 40-30	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-13-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												WELD_MILLER 1-30 PAD - P_MILLER 17-30 - P_MILLER 17-30 - 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					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
							+N/-S (ft)	+E/-W (ft)						
7,200.00	6,801.43	6,843.32	6,801.43	39.58	19.48	-32.07	-81.21	-691.06	2,170.55	2,129.56	40.99	52.958		
7,300.00	6,901.43	6,943.32	6,901.43	39.65	19.64	-32.07	-81.21	-691.06	2,170.55	2,129.28	41.27	52.594		
7,400.00	7,001.43	7,043.32	7,001.43	39.72	19.80	-32.07	-81.21	-691.06	2,170.55	2,128.99	41.56	52.232		
7,500.00	7,101.43	7,143.32	7,101.43	39.79	19.96	-32.07	-81.21	-691.06	2,170.55	2,128.71	41.84	51.872		
7,600.00	7,201.43	7,243.32	7,201.43	39.86	20.13	-32.07	-81.21	-691.06	2,170.55	2,128.41	42.14	51.512		
7,700.00	7,301.43	7,343.32	7,301.43	39.93	20.29	-32.07	-81.21	-691.06	2,170.55	2,128.12	42.43	51.155		
7,800.00	7,401.43	7,443.32	7,401.43	40.01	20.46	-32.07	-81.21	-691.06	2,170.55	2,127.82	42.73	50.799		
7,900.00	7,501.43	7,543.32	7,501.43	40.08	20.62	-32.07	-81.21	-691.06	2,170.55	2,127.52	43.03	50.446		
7,951.39	7,552.82	7,594.70	7,552.82	40.12	20.71	-32.07	-81.21	-691.06	2,170.55	2,127.37	43.18	50.265		
8,000.00	7,601.43	7,611.89	7,570.00	40.16	20.74	-32.07	-81.21	-691.06	2,170.78	2,127.50	43.28	50.161		
8,100.00	7,701.43	7,611.89	7,570.00	40.23	20.74	-32.07	-81.21	-691.06	2,174.53	2,131.12	43.41	50.094		
8,200.00	7,801.43	7,611.89	7,570.00	40.31	20.74	-32.07	-81.21	-691.06	2,182.85	2,139.31	43.54	50.130		
8,300.00	7,901.43	7,611.89	7,570.00	40.39	20.74	-32.07	-81.21	-691.06	2,195.71	2,152.03	43.68	50.269		
8,378.57	7,980.00	7,611.89	7,570.00	40.45	20.74	-32.07	-81.21	-691.06	2,208.93	2,165.15	43.79	50.447		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MILLER 40-30
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Reference Site:	WELD_MILLER 1-30 PAD	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MILLER 40-30	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-13-10 RHS	Offset TVD Reference:	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	-90.00	0.00	-15.92	15.92						
100.00	100.00	100.00	100.00	0.10	0.10	-90.00	0.00	-15.92	15.92	15.73	0.19	83.337			
200.00	200.00	200.00	200.00	0.32	0.32	-90.00	0.00	-15.92	15.92	15.28	0.64	24.855			
300.00	300.00	300.00	300.00	0.55	0.55	-90.00	0.00	-15.92	15.92	14.83	1.09	14.606			
400.00	400.00	400.00	400.00	0.77	0.77	-90.00	0.00	-15.92	15.92	14.38	1.54	10.341			
500.00	500.00	500.00	500.00	0.99	0.99	-90.00	0.00	-15.92	15.92	13.93	1.99	8.004			
600.00	600.00	600.00	600.00	1.22	1.22	-90.00	0.00	-15.92	15.92	13.48	2.44	6.529			
650.00	650.00	650.00	650.00	1.33	1.33	-90.00	0.00	-15.92	15.92	13.26	2.66	5.978	CC, ES		
700.00	700.00	699.80	699.80	1.43	1.44	106.11	0.32	-16.21	16.33	13.46	2.87	5.689	SF		
800.00	799.93	799.06	798.99	1.61	1.66	122.30	2.86	-18.54	20.59	17.33	3.26	6.311			
900.00	899.68	897.31	897.00	1.80	1.89	138.85	7.87	-23.13	31.74	28.08	3.66	8.663			
1,000.00	999.13	993.92	993.09	2.03	2.12	148.80	15.20	-29.85	50.44	46.37	4.07	12.398			
1,100.00	1,098.15	1,088.28	1,086.58	2.29	2.38	154.22	24.68	-38.52	76.15	71.67	4.48	17.014			
1,200.00	1,196.63	1,179.87	1,176.86	2.59	2.66	157.28	36.03	-48.93	108.37	103.49	4.89	22.185			
1,300.00	1,294.44	1,268.22	1,263.43	2.95	2.97	159.10	49.00	-60.80	146.74	141.44	5.30	27.702			
1,400.00	1,391.46	1,354.64	1,347.59	3.37	3.30	160.25	63.49	-74.07	190.79	185.08	5.71	33.392			
1,500.00	1,487.58	1,442.44	1,432.95	3.85	3.67	161.14	78.64	-87.95	238.46	232.31	6.14	38.808			
1,600.00	1,582.68	1,528.58	1,516.69	4.39	4.04	161.84	93.51	-101.57	289.08	282.50	6.58	43.936			
1,700.00	1,676.65	1,612.93	1,598.70	5.01	4.41	162.42	108.07	-114.90	342.59	335.57	7.02	48.811			
1,800.00	1,769.36	1,695.39	1,678.88	5.69	4.79	162.89	122.30	-127.94	398.95	391.49	7.46	53.465			
1,904.27	1,864.58	1,779.27	1,760.42	6.47	5.17	163.29	136.78	-141.20	460.67	452.74	7.93	58.108			
2,000.00	1,951.28	1,855.25	1,834.29	7.22	5.53	163.96	149.90	-153.21	518.73	510.28	8.45	61.408			
2,100.00	2,041.85	1,934.62	1,911.46	8.02	5.90	164.51	163.60	-165.76	579.41	570.41	9.00	64.394			
2,200.00	2,132.42	2,013.99	1,988.62	8.83	6.27	164.96	177.30	-178.31	640.12	630.57	9.56	66.991			
2,300.00	2,222.98	2,093.36	2,065.79	9.65	6.65	165.34	191.00	-190.86	700.86	690.74	10.12	69.265			
2,400.00	2,313.55	2,172.73	2,142.95	10.47	7.03	165.65	204.70	-203.41	761.60	750.92	10.69	71.268			
2,500.00	2,404.12	2,252.10	2,220.12	11.29	7.41	165.91	218.40	-215.95	822.36	811.11	11.26	73.045			
2,600.00	2,494.69	2,331.47	2,297.28	12.12	7.80	166.14	232.10	-228.50	883.13	871.30	11.83	74.632			
2,700.00	2,585.25	2,410.84	2,374.45	12.95	8.18	166.34	245.80	-241.05	943.91	931.50	12.41	76.055			
2,800.00	2,675.82	2,490.21	2,451.61	13.79	8.56	166.52	259.50	-253.60	1,004.70	991.71	12.99	77.338			
2,900.00	2,766.39	2,569.58	2,528.78	14.62	8.95	166.68	273.20	-266.15	1,065.49	1,051.91	13.57	78.498			
3,000.00	2,856.96	2,648.95	2,605.94	15.46	9.34	166.82	286.90	-278.69	1,126.28	1,112.12	14.16	79.554			
3,100.00	2,947.53	2,728.32	2,683.11	16.30	9.72	166.94	300.60	-291.24	1,187.08	1,172.33	14.74	80.518			
3,200.00	3,038.09	2,807.69	2,760.27	17.14	10.11	167.05	314.30	-303.79	1,247.88	1,232.55	15.33	81.402			
3,300.00	3,128.66	2,887.06	2,837.44	17.98	10.50	167.16	328.00	-316.34	1,308.68	1,292.76	15.92	82.213			
3,400.00	3,219.23	2,966.43	2,914.60	18.82	10.89	167.25	341.70	-328.89	1,369.49	1,352.98	16.51	82.961			
3,500.00	3,309.80	3,045.80	2,991.77	19.66	11.28	167.34	355.40	-341.43	1,430.30	1,413.20	17.10	83.653			
3,600.00	3,400.36	3,125.17	3,068.93	20.50	11.67	167.41	369.10	-353.98	1,491.11	1,473.42	17.69	84.295			
3,700.00	3,490.93	3,204.54	3,146.10	21.35	12.05	167.49	382.80	-366.53	1,551.92	1,533.64	18.28	84.892			
3,800.00	3,581.50	3,283.91	3,223.27	22.19	12.44	167.55	396.50	-379.08	1,612.73	1,593.86	18.87	85.448			
3,900.00	3,672.07	3,363.28	3,300.43	23.03	12.84	167.61	410.20	-391.63	1,673.55	1,654.08	19.47	85.967			
4,000.00	3,762.63	3,442.65	3,377.60	23.88	13.23	167.67	423.90	-404.17	1,734.36	1,714.30	20.06	86.453			
4,100.00	3,853.20	3,522.02	3,454.76	24.72	13.62	167.73	437.60	-416.72	1,795.18	1,774.52	20.66	86.909			
4,200.00	3,943.77	3,601.39	3,531.93	25.57	14.01	167.78	451.30	-429.27	1,856.00	1,834.75	21.25	87.338			
4,300.00	4,034.34	3,680.76	3,609.09	26.41	14.40	167.82	465.00	-441.82	1,916.82	1,894.97	21.85	87.741			
4,400.00	4,124.91	3,760.13	3,686.26	27.26	14.79	167.87	478.70	-454.37	1,977.63	1,955.19	22.44	88.121			
4,500.00	4,215.47	3,839.50	3,763.42	28.10	15.18	167.91	492.40	-466.91	2,038.45	2,015.42	23.04	88.480			
4,600.00	4,306.04	3,918.87	3,840.59	28.95	15.57	167.95	506.10	-479.46	2,099.27	2,075.64	23.64	88.820			
4,700.00	4,396.61	3,998.24	3,917.75	29.80	15.97	167.98	519.80	-492.01	2,160.10	2,135.86	24.23	89.142			
4,800.00	4,487.18	4,077.61	3,994.92	30.64	16.36	168.02	533.50	-504.56	2,220.92	2,196.09	24.83	89.447			
4,900.00	4,577.74	4,156.98	4,072.08	31.49	16.75	168.05	547.20	-517.11	2,281.74	2,256.31	25.43	89.736			
5,000.00	4,668.31	4,236.35	4,149.25	32.34	17.14	168.08	560.90	-529.65	2,342.56	2,316.54	26.02	90.012			

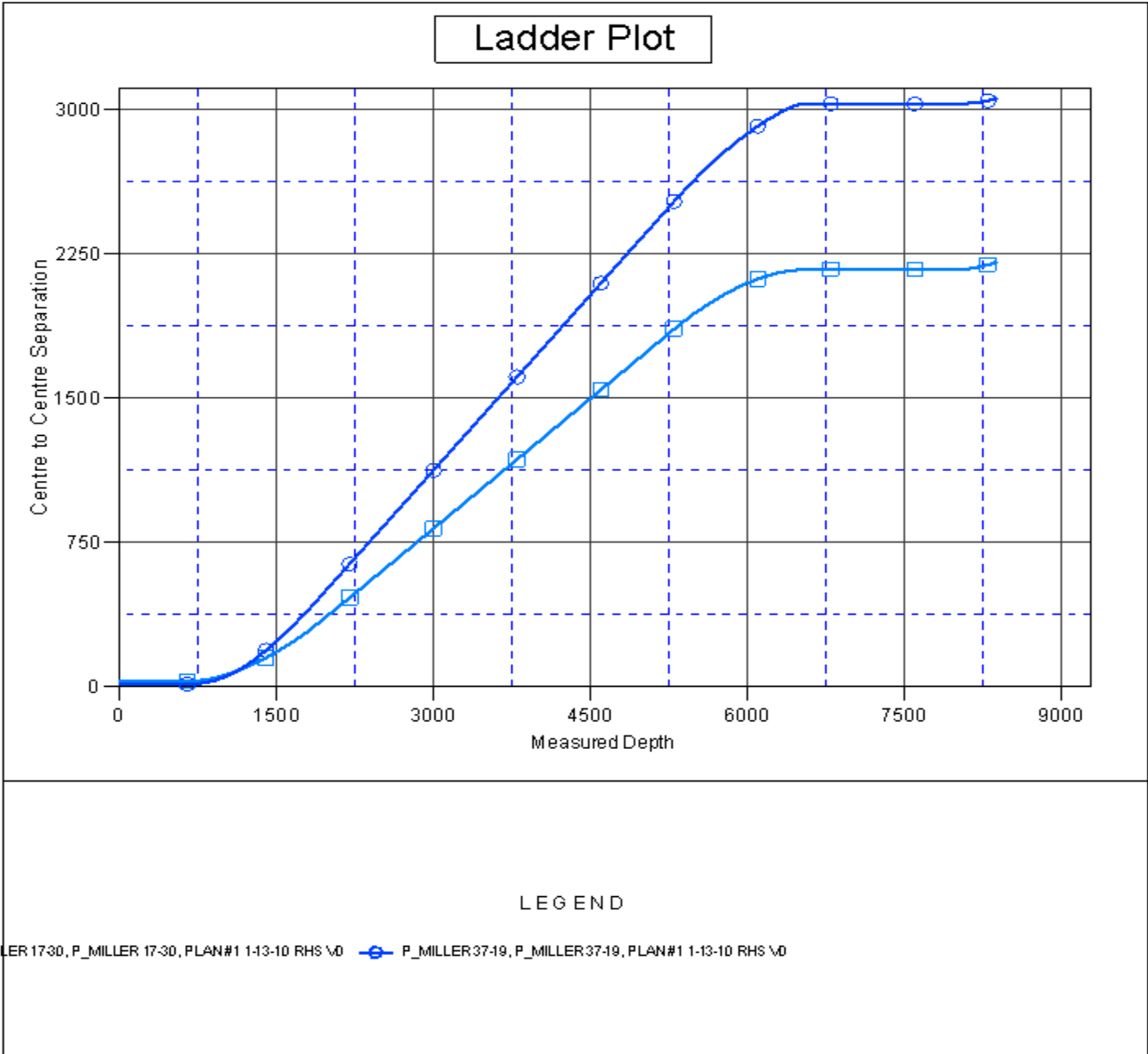
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MILLER 40-30
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Reference Site:	WELD_MILLER 1-30 PAD	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MILLER 40-30	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-13-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												WELD_MILLER 1-30 PAD - P_MILLER 37-19 - P_MILLER 37-19 - 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					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
5,100.00	4,758.88	4,315.72	4,226.41	33.18	17.54	168.11	574.60	-542.20	2,403.39	2,376.76	26.62	90.275		
5,200.00	4,849.45	4,395.09	4,303.58	34.03	17.93	168.14	588.30	-554.75	2,464.21	2,436.99	27.22	90.525		
5,288.30	4,929.42	4,465.18	4,371.71	34.78	18.27	168.17	600.40	-565.83	2,517.92	2,490.17	27.75	90.736		
5,300.00	4,940.02	4,474.48	4,380.76	34.86	18.32	168.20	602.00	-567.30	2,525.01	2,497.17	27.84	90.683		
5,400.00	5,031.48	4,555.11	4,459.15	35.45	18.72	168.51	615.92	-580.05	2,584.15	2,555.53	28.61	90.311		
5,500.00	5,124.29	4,637.72	4,539.47	36.00	19.13	168.78	630.18	-593.11	2,640.49	2,611.13	29.36	89.943		
5,600.00	5,218.34	4,722.21	4,621.61	36.52	19.55	169.00	644.76	-606.47	2,693.97	2,663.90	30.07	89.585		
5,700.00	5,313.52	4,808.47	4,705.47	36.99	19.97	169.18	659.65	-620.10	2,744.53	2,713.77	30.75	89.243		
5,800.00	5,409.72	4,896.40	4,790.96	37.42	20.41	169.33	674.83	-634.00	2,792.09	2,760.70	31.40	88.922		
5,900.00	5,506.80	4,985.88	4,877.96	37.80	20.85	169.45	690.28	-648.15	2,836.62	2,804.61	32.01	88.623		
6,000.00	5,604.67	5,076.82	4,966.37	38.14	21.30	169.54	705.97	-662.53	2,878.05	2,845.48	32.58	88.349		
6,100.00	5,703.19	5,169.10	5,056.09	38.43	21.76	169.60	721.90	-677.12	2,916.35	2,883.24	33.10	88.102		
6,200.00	5,802.24	5,262.61	5,147.00	38.68	22.22	169.64	738.04	-691.90	2,951.45	2,917.87	33.58	87.883		
6,300.00	5,901.72	5,357.24	5,238.99	38.88	22.69	169.65	754.37	-706.86	2,983.33	2,949.31	34.02	87.694		
6,400.00	6,001.49	5,452.86	5,331.96	39.03	23.17	169.63	770.88	-721.98	3,011.94	2,977.53	34.41	87.534		
6,500.00	6,101.43	6,230.71	6,101.43	39.13	25.24	169.18	842.61	-787.68	3,032.04	2,995.98	36.05	84.096		
6,542.57	6,144.00	6,273.28	6,144.00	39.16	25.28	-24.33	842.61	-787.68	3,032.35	2,996.22	36.13	83.929		
6,600.00	6,201.43	6,330.71	6,201.43	39.20	25.34	-24.33	842.61	-787.68	3,032.35	2,996.05	36.30	83.536		
6,700.00	6,301.43	6,430.71	6,301.43	39.26	25.46	-24.33	842.61	-787.68	3,032.35	2,995.75	36.60	82.858		
6,800.00	6,401.43	6,530.71	6,401.43	39.33	25.58	-24.33	842.61	-787.68	3,032.35	2,995.45	36.90	82.184		
6,900.00	6,501.43	6,630.71	6,501.43	39.39	25.70	-24.33	842.61	-787.68	3,032.35	2,995.15	37.20	81.515		
7,000.00	6,601.43	6,730.71	6,601.43	39.45	25.82	-24.33	842.61	-787.68	3,032.35	2,994.84	37.51	80.850		
7,100.00	6,701.43	6,830.71	6,701.43	39.52	25.94	-24.33	842.61	-787.68	3,032.35	2,994.53	37.81	80.191		
7,200.00	6,801.43	6,930.71	6,801.43	39.58	26.07	-24.33	842.61	-787.68	3,032.35	2,994.22	38.13	79.536		
7,300.00	6,901.43	7,030.71	6,901.43	39.65	26.19	-24.33	842.61	-787.68	3,032.35	2,993.91	38.44	78.886		
7,400.00	7,001.43	7,130.71	7,001.43	39.72	26.32	-24.33	842.61	-787.68	3,032.35	2,993.59	38.76	78.242		
7,500.00	7,101.43	7,230.71	7,101.43	39.79	26.45	-24.33	842.61	-787.68	3,032.35	2,993.27	39.07	77.603		
7,600.00	7,201.43	7,330.71	7,201.43	39.86	26.58	-24.33	842.61	-787.68	3,032.35	2,992.95	39.40	76.970		
7,700.00	7,301.43	7,430.71	7,301.43	39.93	26.71	-24.33	842.61	-787.68	3,032.35	2,992.63	39.72	76.343		
7,800.00	7,401.43	7,530.71	7,401.43	40.01	26.84	-24.33	842.61	-787.68	3,032.35	2,992.30	40.05	75.721		
7,900.00	7,501.43	7,630.71	7,501.43	40.08	26.97	-24.33	842.61	-787.68	3,032.35	2,991.97	40.38	75.105		
7,957.58	7,559.00	7,688.28	7,559.00	40.13	27.05	-24.33	842.61	-787.68	3,032.35	2,991.78	40.57	74.752		
8,000.00	7,601.43	7,709.28	7,580.00	40.16	27.08	-24.33	842.61	-787.68	3,032.42	2,991.76	40.67	74.570		
8,100.00	7,701.43	7,709.28	7,580.00	40.23	27.08	-24.33	842.61	-787.68	3,034.78	2,993.97	40.81	74.362		
8,200.00	7,801.43	7,709.28	7,580.00	40.31	27.08	-24.33	842.61	-787.68	3,040.42	2,999.47	40.96	74.234		
8,300.00	7,901.43	7,709.28	7,580.00	40.39	27.08	-24.33	842.61	-787.68	3,049.34	3,008.23	41.11	74.184		
8,378.57	7,980.00	7,709.28	7,580.00	40.45	27.08	-24.33	842.61	-787.68	3,058.62	3,017.40	41.22	74.198		

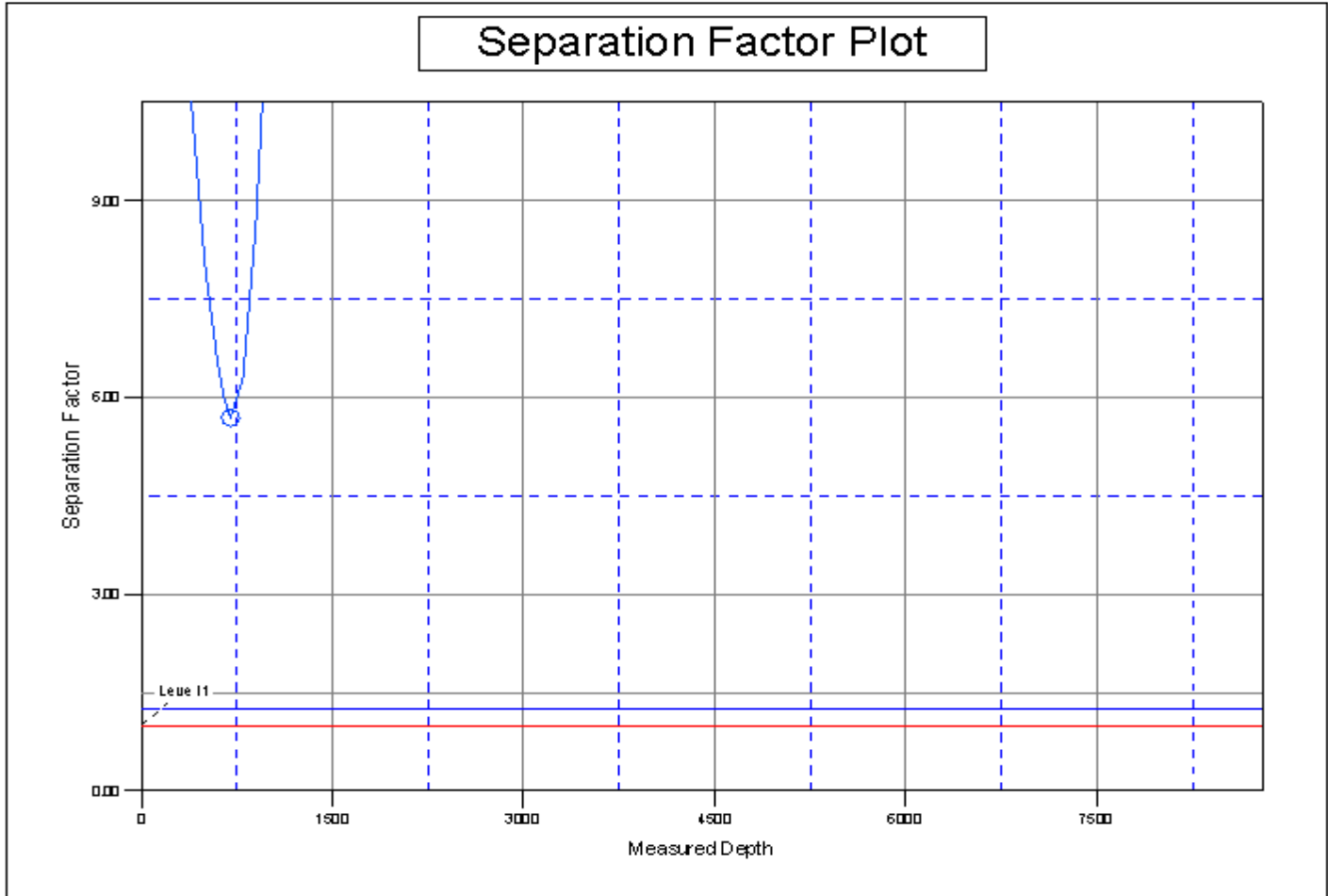
Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MILLER 40-30
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Reference Site:	WELD_MILLER 1-30 PAD	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MILLER 40-30	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-13-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4935.00ft (Original Well Elev) Coordinates are relative to: P_MILLER 40-30
 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: 0.44°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MILLER 40-30
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4935.00ft (Original Well Elev)
Reference Site:	WELD_MILLER 1-30 PAD	MD Reference:	WELL @ 4935.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MILLER 40-30	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MILLER 40-30	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-13-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4935.00ft (Original Well Elev) Coordinates are relative to: P_MILLER 40-30
 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: 0.44°



LEGEND

MILLER 17-30, P_MILLER 17-30, PLAN#1 1-13-10 RHS \0 P_MILLER37-19, P_MILLER37-19, PLAN#1 1-13-10 RHS \0