



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

LARIMER_MIRACLE 25-12 PAD

P_MIRACLE 11-12

P_MIRACLE 11-12

Plan: PLAN #1 3-23-10 RHS

Standard Planning Report

24 March, 2010

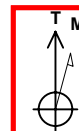




Project: COLORADO NORTHERN ZONE - 83
Site: LARIMER MIRACLE 25-12 PAD
Well: P_MIRACLE 11-12
Wellbore: P_MIRACLE 11-12
Section: SECTION 12 T5N R68W
SHL: 2484 FSL 2681 FEL
Design: PLAN #1 3-23-10 RHS
Latitude: 40° 24' 50.072 N
Longitude: 104° 57' 14.648 W
GL: 4963.00
KB: WELL @ 4978.00ft (Original Well Elev)



Weatherford®



Azimuths to True North
Magnetic North: 9.13°
Magnetic Field
Strength: 53246.6snT
Dip Angle: 67.07°
Date: 3/23/2010
Model: IGRF2010

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3474.00	3518.87	PARKMAN
4104.00	4160.87	SUSSEX
4554.00	4619.45	SHANNON
6894.00	6977.94	NIO A
7184.00	7267.94	CODELL
7644.00	7727.94	JSAND

CASING DETAILS

TVD	MD	Name	Size
650.00	650.00	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	
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1304.92	11.10	236.73	1301.45	-29.39	-44.80	2.00	236.73	53.58	Start 4118.11 hold at 1304.92 MD
5423.03	11.10	236.73	5342.55	-464.22	-707.60	0.00	0.00	846.28	Start Drop -2.00
5977.94	0.00	0.00	5894.00	-493.61	-752.40	2.00	180.00	899.86	Start 1900.00 hold at 5977.94 MD
7877.94	0.00	0.00	7794.00	-493.61	-752.40	0.00	0.00	899.86	TD at 7877.94

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

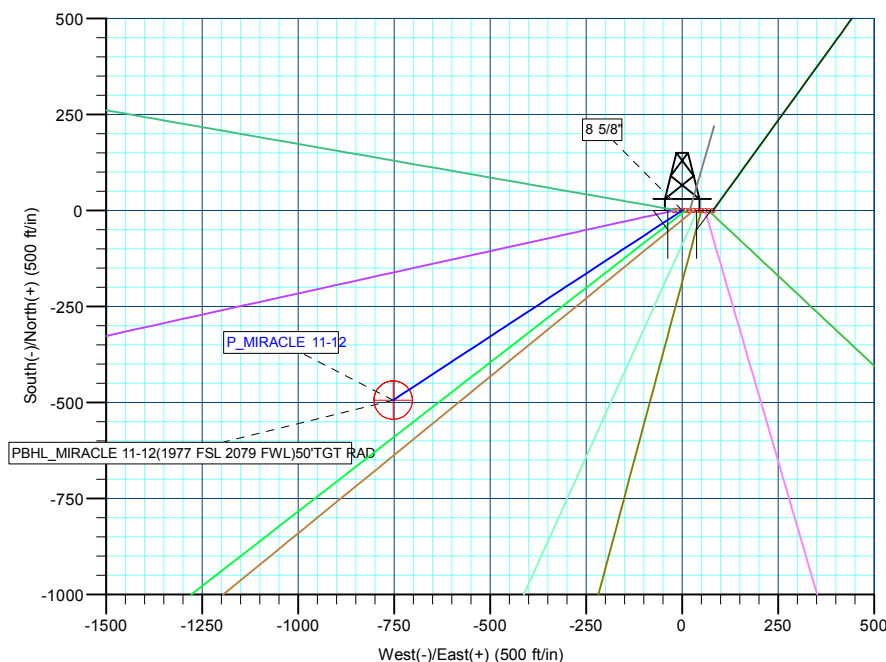
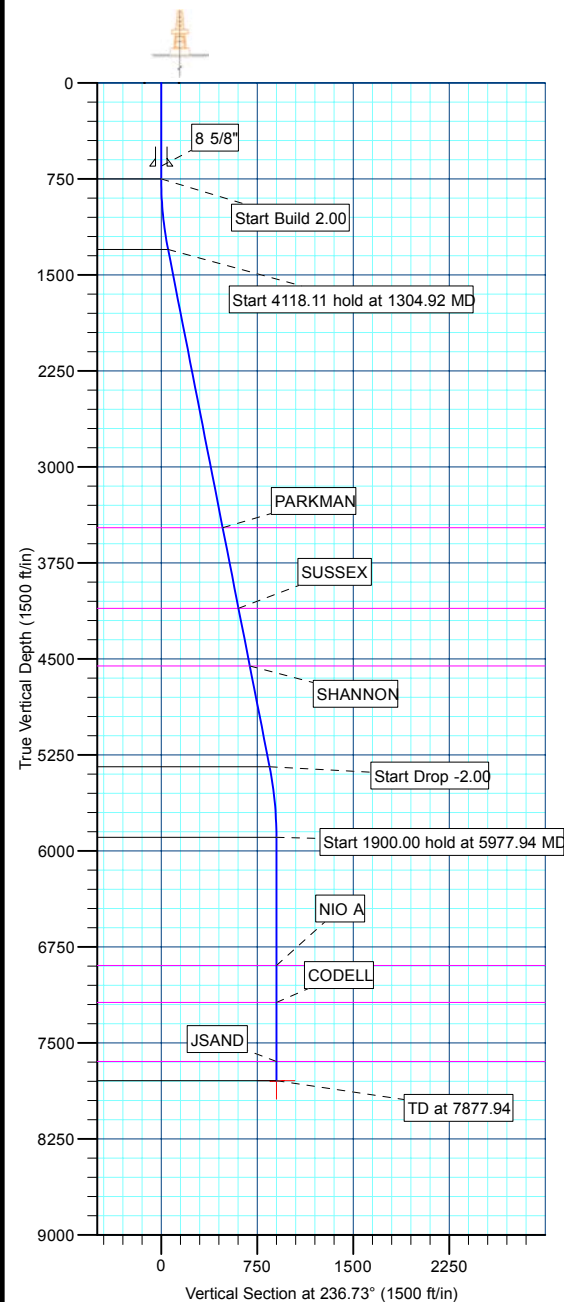
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	7794.00	-493.61	-752.40	40° 24' 45.194 N	104° 57' 24.376 W	Circle (Radius: 50.00)

WELL DETAILS: P_MIRACLE 11-12

+N/-S	+E/-W	Northing	Ground Level: Easting	4963.00 Latitude	Longitude	Slot
0.00	0.00	1394095.34	3152015.28	40° 24' 50.072 N	104° 57' 14.648 W	

LEGEND

P_MIRACLE 10-12, P_MIRACLE 10-12, PLAN #1 3-23-10 RHS V0
P_MIRACLE 12-12, P_MIRACLE 12-12, PLAN #1 3-23-10 RHS V0
P_MIRACLE 13-12, P_MIRACLE 13-12, PLAN #1 3-23-10 RHS V0
P_MIRACLE 14-12, P_MIRACLE 14-12, PLAN #1 3-23-10 RHS V0
P_MIRACLE 15-12, P_MIRACLE 15-12, PLAN #1 3-23-10 RHS V0
P_MIRACLE 19-12, P_MIRACLE 19-12, PLAN #1 3-23-10 RHS V0
P_MIRACLE 22-12, P_MIRACLE 22-12, PLAN #1 3-23-10 RHS V0
P_MIRACLE 23-12, P_MIRACLE 23-12, PLAN #1 3-23-10 RHS V0
P_MIRACLE 25-12, P_MIRACLE 25-12, PLAN #1 3-23-10 RHS V0
P_MIRACLE 7-12, P_MIRACLE 7-12, PLAN #1 3-23-10 RHS V0
PLAN #1 3-23-10 RHS



Plan: PLAN #1 3-23-10 RHS (P_MIRACLE 11-12/P_MIRACLE 11-12)

Created By: Robert H. Scott Date: 9:13, March 24 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 25-12 PAD	North Reference:	True
Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 11-12		
Design:	PLAN #1 3-23-10 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						LARIMER_MIRACLE 25-12 PAD, SECTION 12 T5N R68W					
Site Position:		Northing:		1,394,095.11 ft		Latitude:		40° 24' 50.065 N			
From:		Lat/Long		Easting:		3,152,094.92 ft		Longitude:		104° 57' 13.619 W	
Position Uncertainty:		0.00 ft		Slot Radius:		in		Grid Convergence:		0.35 °	

Well	P_MIRACLE 11-12					
Well Position	+N/-S	0.72 ft	Northing:	1,394,095.34 ft	Latitude:	40° 24' 50.072 N
	+E/-W	-79.64 ft	Easting:	3,152,015.28 ft	Longitude:	104° 57' 14.648 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,963.00 ft

Wellbore	P_MIRACLE 11-12				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/23/2010	9.13	67.07	53,247

Design	PLAN #1 3-23-10 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	236.73

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	
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,304.92	11.10	236.73	1,301.45	-29.39	-44.80	2.00	2.00	0.00	236.73	
5,423.03	11.10	236.73	5,342.55	-464.22	-707.60	0.00	0.00	0.00	0.00	
5,977.94	0.00	0.00	5,894.00	-493.61	-752.40	2.00	-2.00	0.00	180.00	
7,877.94	0.00	0.00	7,794.00	-493.61	-752.40	0.00	0.00	0.00	0.00	PBHL_MIRACLE 1

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 25-12 PAD	North Reference:	True
Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 11-12		
Design:	PLAN #1 3-23-10 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									
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	1.00	236.73	800.00	-0.24	-0.36	0.44	2.00	2.00	0.00
900.00	3.00	236.73	899.93	-2.15	-3.28	3.93	2.00	2.00	0.00
1,000.00	5.00	236.73	999.68	-5.98	-9.11	10.90	2.00	2.00	0.00
1,100.00	7.00	236.73	1,099.13	-11.71	-17.85	21.35	2.00	2.00	0.00
1,200.00	9.00	236.73	1,198.15	-19.35	-29.49	35.27	2.00	2.00	0.00
1,300.00	11.00	236.73	1,296.63	-28.87	-44.01	52.63	2.00	2.00	0.00
Start 4118.11 hold at 1304.92 MD									
1,304.92	11.10	236.73	1,301.45	-29.39	-44.80	53.58	2.00	2.00	0.00
1,400.00	11.10	236.73	1,394.76	-39.43	-60.10	71.88	0.00	0.00	0.00
1,500.00	11.10	236.73	1,492.89	-49.99	-76.20	91.13	0.00	0.00	0.00
1,600.00	11.10	236.73	1,591.02	-60.55	-92.29	110.38	0.00	0.00	0.00
1,700.00	11.10	236.73	1,689.15	-71.11	-108.38	129.63	0.00	0.00	0.00
1,800.00	11.10	236.73	1,787.28	-81.66	-124.48	148.88	0.00	0.00	0.00
1,900.00	11.10	236.73	1,885.41	-92.22	-140.57	168.13	0.00	0.00	0.00
2,000.00	11.10	236.73	1,983.54	-102.78	-156.67	187.38	0.00	0.00	0.00
2,100.00	11.10	236.73	2,081.67	-113.34	-172.76	206.62	0.00	0.00	0.00
2,200.00	11.10	236.73	2,179.80	-123.90	-188.86	225.87	0.00	0.00	0.00
2,300.00	11.10	236.73	2,277.93	-134.46	-204.95	245.12	0.00	0.00	0.00
2,400.00	11.10	236.73	2,376.06	-145.02	-221.05	264.37	0.00	0.00	0.00
2,500.00	11.10	236.73	2,474.19	-155.58	-237.14	283.62	0.00	0.00	0.00
2,600.00	11.10	236.73	2,572.32	-166.14	-253.24	302.87	0.00	0.00	0.00
2,700.00	11.10	236.73	2,670.45	-176.69	-269.33	322.12	0.00	0.00	0.00
2,800.00	11.10	236.73	2,768.58	-187.25	-285.43	341.37	0.00	0.00	0.00
2,900.00	11.10	236.73	2,866.71	-197.81	-301.52	360.62	0.00	0.00	0.00
3,000.00	11.10	236.73	2,964.84	-208.37	-317.62	379.87	0.00	0.00	0.00
3,100.00	11.10	236.73	3,062.97	-218.93	-333.71	399.12	0.00	0.00	0.00
3,200.00	11.10	236.73	3,161.10	-229.49	-349.81	418.37	0.00	0.00	0.00
3,300.00	11.10	236.73	3,259.23	-240.05	-365.90	437.62	0.00	0.00	0.00
3,400.00	11.10	236.73	3,357.35	-250.61	-382.00	456.87	0.00	0.00	0.00
3,500.00	11.10	236.73	3,455.48	-261.17	-398.09	476.11	0.00	0.00	0.00
PARKMAN									
3,518.87	11.10	236.73	3,474.00	-263.16	-401.13	479.75	0.00	0.00	0.00
3,600.00	11.10	236.73	3,553.61	-271.72	-414.19	495.36	0.00	0.00	0.00
3,700.00	11.10	236.73	3,651.74	-282.28	-430.28	514.61	0.00	0.00	0.00
3,800.00	11.10	236.73	3,749.87	-292.84	-446.38	533.86	0.00	0.00	0.00
3,900.00	11.10	236.73	3,848.00	-303.40	-462.47	553.11	0.00	0.00	0.00
4,000.00	11.10	236.73	3,946.13	-313.96	-478.57	572.36	0.00	0.00	0.00
4,100.00	11.10	236.73	4,044.26	-324.52	-494.66	591.61	0.00	0.00	0.00
SUSSEX									
4,160.87	11.10	236.73	4,104.00	-330.95	-504.46	603.33	0.00	0.00	0.00
4,200.00	11.10	236.73	4,142.39	-335.08	-510.76	610.86	0.00	0.00	0.00
4,300.00	11.10	236.73	4,240.52	-345.64	-526.85	630.11	0.00	0.00	0.00
4,400.00	11.10	236.73	4,338.65	-356.20	-542.95	649.36	0.00	0.00	0.00
4,500.00	11.10	236.73	4,436.78	-366.75	-559.04	668.61	0.00	0.00	0.00
4,600.00	11.10	236.73	4,534.91	-377.31	-575.14	687.86	0.00	0.00	0.00
SHANNON									
4,619.45	11.10	236.73	4,554.00	-379.37	-578.27	691.60	0.00	0.00	0.00
4,700.00	11.10	236.73	4,633.04	-387.87	-591.23	707.11	0.00	0.00	0.00
4,800.00	11.10	236.73	4,731.17	-398.43	-607.33	726.36	0.00	0.00	0.00
4,900.00	11.10	236.73	4,829.30	-408.99	-623.42	745.60	0.00	0.00	0.00
5,000.00	11.10	236.73	4,927.43	-419.55	-639.51	764.85	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 25-12 PAD	North Reference:	True
Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 11-12		
Design:	PLAN #1 3-23-10 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	11.10	236.73	5,025.56	-430.11	-655.61	784.10	0.00	0.00	0.00
5,200.00	11.10	236.73	5,123.69	-440.67	-671.70	803.35	0.00	0.00	0.00
5,300.00	11.10	236.73	5,221.82	-451.23	-687.80	822.60	0.00	0.00	0.00
5,400.00	11.10	236.73	5,319.95	-461.79	-703.89	841.85	0.00	0.00	0.00
Start Drop -2.00									
5,423.03	11.10	236.73	5,342.55	-464.22	-707.60	846.28	0.00	0.00	0.00
5,500.00	9.56	236.73	5,418.27	-471.79	-719.14	860.08	2.00	-2.00	0.00
5,600.00	7.56	236.73	5,517.15	-479.95	-731.58	874.97	2.00	-2.00	0.00
5,700.00	5.56	236.73	5,616.49	-486.21	-741.13	886.39	2.00	-2.00	0.00
5,800.00	3.56	236.73	5,716.17	-490.57	-747.78	894.34	2.00	-2.00	0.00
5,900.00	1.56	236.73	5,816.07	-493.02	-751.51	898.80	2.00	-2.00	0.00
Start 1900.00 hold at 5977.94 MD									
5,977.94	0.00	0.00	5,894.00	-493.61	-752.40	899.86	2.00	-2.00	158.15
6,000.00	0.00	0.00	5,916.06	-493.61	-752.40	899.86	0.00	0.00	0.00
6,100.00	0.00	0.00	6,016.06	-493.61	-752.40	899.86	0.00	0.00	0.00
6,200.00	0.00	0.00	6,116.06	-493.61	-752.40	899.86	0.00	0.00	0.00
6,300.00	0.00	0.00	6,216.06	-493.61	-752.40	899.86	0.00	0.00	0.00
6,400.00	0.00	0.00	6,316.06	-493.61	-752.40	899.86	0.00	0.00	0.00
6,500.00	0.00	0.00	6,416.06	-493.61	-752.40	899.86	0.00	0.00	0.00
6,600.00	0.00	0.00	6,516.06	-493.61	-752.40	899.86	0.00	0.00	0.00
6,700.00	0.00	0.00	6,616.06	-493.61	-752.40	899.86	0.00	0.00	0.00
6,800.00	0.00	0.00	6,716.06	-493.61	-752.40	899.86	0.00	0.00	0.00
6,900.00	0.00	0.00	6,816.06	-493.61	-752.40	899.86	0.00	0.00	0.00
NIO A									
6,977.94	0.00	0.00	6,894.00	-493.61	-752.40	899.86	0.00	0.00	0.00
7,000.00	0.00	0.00	6,916.06	-493.61	-752.40	899.86	0.00	0.00	0.00
7,100.00	0.00	0.00	7,016.06	-493.61	-752.40	899.86	0.00	0.00	0.00
7,200.00	0.00	0.00	7,116.06	-493.61	-752.40	899.86	0.00	0.00	0.00
CODELL									
7,267.94	0.00	0.00	7,184.00	-493.61	-752.40	899.86	0.00	0.00	0.00
7,300.00	0.00	0.00	7,216.06	-493.61	-752.40	899.86	0.00	0.00	0.00
7,400.00	0.00	0.00	7,316.06	-493.61	-752.40	899.86	0.00	0.00	0.00
7,500.00	0.00	0.00	7,416.06	-493.61	-752.40	899.86	0.00	0.00	0.00
7,600.00	0.00	0.00	7,516.06	-493.61	-752.40	899.86	0.00	0.00	0.00
7,700.00	0.00	0.00	7,616.06	-493.61	-752.40	899.86	0.00	0.00	0.00
JSAND									
7,727.94	0.00	0.00	7,644.00	-493.61	-752.40	899.86	0.00	0.00	0.00
7,800.00	0.00	0.00	7,716.06	-493.61	-752.40	899.86	0.00	0.00	0.00
PBHL_MIRACLE 11-12(1977 FSL 2079 FWL)50'TGT RAD									
7,877.94	0.00	0.00	7,794.00	-493.61	-752.40	899.86	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_MIRACLE 11-1	0.00	0.00	7,794.00	-493.61	-752.40	1,393,597.11	3,151,265.94	40° 24' 45.194 N	104° 57' 24.376 W
- plan hits target center									
- Circle (radius 50.00)									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site:	LARIMER_MIRACLE 25-12 PAD	North Reference:	True
Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 11-12		
Design:	PLAN #1 3-23-10 RHS		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
650.00	650.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,518.87	3,474.00	PARKMAN				
4,160.87	4,104.00	SUSSEX				
4,619.45	4,554.00	SHANNON				
6,977.94	6,894.00	NIO A				
7,267.94	7,184.00	CODELL				
7,727.94	7,644.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
750.00	750.00	0.00	0.00	Start Build 2.00	
1,304.92	1,301.45	-29.39	-44.80	Start 4118.11 hold at 1304.92 MD	
5,423.03	5,342.55	-464.22	-707.60	Start Drop -2.00	
5,977.94	5,894.00	-493.61	-752.40	Start 1900.00 hold at 5977.94 MD	
7,877.94	7,794.00	-493.61	-752.40	TD at 7877.94	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
LARIMER_MIRACLE 25-12 PAD
P_MIRACLE 11-12**

**P_MIRACLE 11-12
PLAN #1 3-23-10 RHS**

Anticollision Report

24 March, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 3-23-10 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 3/23/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	7,877.94	PLAN #1 3-23-10 RHS (P_MIRACLE 11-1	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
LARIMER_MIRACLE 25-12 PAD						
P_MIRACLE 10-12 - P_MIRACLE 10-12 - PLAN #1 3-23	750.00	750.00	69.62	66.50	22.363	CC, ES
P_MIRACLE 10-12 - P_MIRACLE 10-12 - PLAN #1 3-23	900.00	897.12	75.72	72.04	20.602	SF
P_MIRACLE 12-12 - P_MIRACLE 12-12 - PLAN #1 3-23	300.00	300.00	20.05	18.96	18.394	CC, ES
P_MIRACLE 12-12 - P_MIRACLE 12-12 - PLAN #1 3-23	500.00	498.33	26.84	24.88	13.704	SF
P_MIRACLE 13-12 - P_MIRACLE 13-12 - PLAN #1 3-23	612.92	613.89	18.84	16.37	7.633	CC, ES
P_MIRACLE 13-12 - P_MIRACLE 13-12 - PLAN #1 3-23	700.00	700.00	22.52	19.55	7.579	SF
P_MIRACLE 14-12 - P_MIRACLE 14-12 - PLAN #1 3-23	602.99	603.56	36.44	34.05	15.259	CC, ES
P_MIRACLE 14-12 - P_MIRACLE 14-12 - PLAN #1 3-23	750.00	748.83	41.21	38.08	13.145	SF
P_MIRACLE 15-12 - P_MIRACLE 15-12 - PLAN #1 3-23	300.00	300.00	59.87	58.78	54.920	CC, ES
P_MIRACLE 15-12 - P_MIRACLE 15-12 - PLAN #1 3-23	750.00	743.74	77.46	74.32	24.683	SF
P_MIRACLE 19-12 - P_MIRACLE 19-12 - PLAN #1 3-23	750.00	750.00	9.75	6.64	3.133	CC
P_MIRACLE 19-12 - P_MIRACLE 19-12 - PLAN #1 3-23	1,500.00	1,501.67	12.96	5.80	1.811	ES, SF
P_MIRACLE 22-12 - P_MIRACLE 22-12 - PLAN #1 3-23	750.00	750.00	10.03	6.92	3.222	CC
P_MIRACLE 22-12 - P_MIRACLE 22-12 - PLAN #1 3-23	800.00	799.83	10.11	6.79	3.045	ES
P_MIRACLE 22-12 - P_MIRACLE 22-12 - PLAN #1 3-23	900.00	899.43	11.06	7.35	2.983	SF
P_MIRACLE 23-12 - P_MIRACLE 23-12 - PLAN #1 3-23	750.00	750.00	49.84	46.73	16.012	CC, ES
P_MIRACLE 23-12 - P_MIRACLE 23-12 - PLAN #1 3-23	1,000.00	1,000.86	56.34	52.29	13.886	SF
P_MIRACLE 25-12 - P_MIRACLE 25-12 - PLAN #1 3-23	750.00	750.00	19.77	16.66	6.351	CC, ES
P_MIRACLE 25-12 - P_MIRACLE 25-12 - PLAN #1 3-23	800.00	799.89	20.27	16.94	6.094	SF
P_MIRACLE 7-12 - P_MIRACLE 7-12 - PLAN #1 3-23-1C	750.00	750.00	79.64	76.53	25.583	CC, ES
P_MIRACLE 7-12 - P_MIRACLE 7-12 - PLAN #1 3-23-1C	900.00	897.24	85.30	81.58	22.926	SF

Offset Design										LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 10-12 - P_MIRACLE 10-12 - PLAN #1 3-23-10 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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
0.00	0.00	0.00	0.00	0.00	0.00	90.61	-0.74	69.61	69.62								
100.00	100.00	100.00	100.00	0.10	0.10	90.61	-0.74	69.61	69.62	69.43	0.19	364.391					
200.00	200.00	200.00	200.00	0.32	0.32	90.61	-0.74	69.61	69.62	68.98	0.64	108.678					
300.00	300.00	300.00	300.00	0.55	0.55	90.61	-0.74	69.61	69.62	68.53	1.09	63.862					
400.00	400.00	400.00	400.00	0.77	0.77	90.61	-0.74	69.61	69.62	68.08	1.54	45.216					
500.00	500.00	500.00	500.00	0.99	0.99	90.61	-0.74	69.61	69.62	67.63	1.99	34.998					
600.00	600.00	600.00	600.00	1.22	1.22	90.61	-0.74	69.61	69.62	67.18	2.44	28.547					

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

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Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
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Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	
700.00	700.00	700.00	700.00	1.44	1.44	90.61	-0.74	69.61	69.62	66.73	2.89	24.104	
750.00	750.00	750.00	750.00	1.56	1.56	90.61	-0.74	69.61	69.62	66.50	3.11	22.363 CC, ES	
800.00	800.00	799.11	799.11	1.66	1.66	-146.08	-1.02	69.92	70.30	66.98	3.31	21.223	
900.00	899.93	897.12	897.05	1.85	1.84	-145.75	-3.32	72.37	75.72	72.04	3.68	20.602 SF	
1,000.00	999.68	994.48	994.18	2.05	2.03	-145.20	-7.86	77.22	86.53	82.48	4.05	21.340	
1,100.00	1,099.13	1,090.78	1,089.98	2.28	2.25	-144.56	-14.58	84.39	102.69	98.24	4.46	23.045	
1,200.00	1,198.15	1,185.63	1,183.95	2.54	2.49	-143.93	-23.33	93.74	124.11	119.22	4.89	25.398	
1,304.92	1,301.45	1,286.22	1,283.28	2.86	2.78	-143.58	-34.21	105.35	151.32	145.95	5.38	28.149	
1,400.00	1,394.76	1,377.66	1,373.55	3.19	3.06	-143.90	-44.14	115.96	177.40	171.53	5.87	30.228	
1,500.00	1,492.89	1,473.82	1,468.49	3.55	3.37	-144.14	-54.59	127.12	204.82	198.41	6.41	31.967	
1,600.00	1,591.02	1,569.98	1,563.43	3.93	3.69	-144.33	-65.04	138.27	232.25	225.29	6.96	33.361	
1,700.00	1,689.15	1,666.14	1,658.37	4.32	4.02	-144.48	-75.49	149.43	259.68	252.15	7.53	34.493	
1,800.00	1,787.28	1,762.31	1,753.31	4.72	4.36	-144.60	-85.94	160.59	287.11	279.01	8.11	35.424	
1,900.00	1,885.41	1,858.47	1,848.25	5.13	4.70	-144.70	-96.39	171.74	314.55	305.86	8.69	36.200	
2,000.00	1,983.54	1,954.63	1,943.19	5.54	5.04	-144.78	-106.84	182.90	341.98	332.70	9.28	36.855	
2,100.00	2,081.67	2,050.79	2,038.13	5.95	5.39	-144.85	-117.29	194.05	369.41	359.54	9.87	37.413	
2,200.00	2,179.80	2,146.95	2,133.07	6.37	5.74	-144.91	-127.74	205.21	396.85	386.38	10.47	37.894	
2,300.00	2,277.93	2,243.12	2,228.01	6.79	6.09	-144.97	-138.18	216.37	424.28	413.21	11.07	38.312	
2,400.00	2,376.06	2,339.28	2,322.95	7.21	6.45	-145.01	-148.63	227.52	451.72	440.04	11.68	38.679	
2,500.00	2,474.19	2,435.44	2,417.89	7.63	6.80	-145.05	-159.08	238.68	479.15	466.87	12.28	39.003	
2,600.00	2,572.32	2,531.60	2,512.83	8.06	7.16	-145.09	-169.53	249.84	506.59	493.70	12.89	39.292	
2,700.00	2,670.45	2,627.77	2,607.77	8.48	7.52	-145.12	-179.98	260.99	534.03	520.52	13.50	39.550	
2,800.00	2,768.58	2,723.93	2,702.71	8.91	7.87	-145.15	-190.43	272.15	561.46	547.35	14.11	39.784	
2,900.00	2,866.71	2,820.09	2,797.65	9.34	8.23	-145.18	-200.88	283.30	588.90	574.17	14.72	39.995	
3,000.00	2,964.84	2,916.25	2,892.59	9.77	8.59	-145.20	-211.33	294.46	616.33	601.00	15.34	40.188	
3,100.00	3,062.97	3,012.41	2,987.53	10.20	8.95	-145.23	-221.78	305.62	643.77	627.82	15.95	40.365	
3,200.00	3,161.10	3,108.58	3,082.46	10.63	9.32	-145.25	-232.23	316.77	671.21	654.65	16.56	40.527	
3,300.00	3,259.23	3,204.74	3,177.40	11.06	9.68	-145.27	-242.67	327.93	698.64	681.47	17.18	40.678	
3,400.00	3,357.35	3,300.90	3,272.34	11.49	10.04	-145.28	-253.12	339.09	726.08	708.29	17.79	40.817	
3,500.00	3,455.48	3,397.06	3,367.28	11.93	10.40	-145.30	-263.57	350.24	753.52	735.12	18.40	40.948	
3,600.00	3,553.61	3,493.23	3,462.22	12.36	10.76	-145.32	-274.02	361.40	780.95	761.94	19.02	41.069	
3,700.00	3,651.74	3,589.39	3,557.16	12.79	11.13	-145.33	-284.47	372.55	808.39	788.76	19.63	41.182	
3,800.00	3,749.87	3,685.55	3,652.10	13.22	11.49	-145.34	-294.92	383.71	835.83	815.58	20.25	41.271	
3,900.00	3,848.00	3,781.71	3,747.04	13.66	11.86	-145.35	-305.37	394.87	863.27	842.39	20.87	41.354	
4,000.00	3,946.13	3,877.88	3,841.98	14.09	12.22	-145.37	-315.82	406.02	890.70	869.20	21.50	41.431	
4,100.00	4,044.26	3,974.04	3,936.92	14.53	12.58	-145.38	-326.27	417.18	918.14	896.02	22.12	41.504	
4,200.00	4,142.39	4,070.20	4,031.86	14.96	12.95	-145.39	-336.71	428.34	945.58	922.83	22.75	41.571	
4,300.00	4,240.52	4,166.36	4,126.80	15.39	13.31	-145.40	-347.16	439.49	973.01	949.64	23.37	41.634	
4,400.00	4,338.65	4,262.52	4,221.74	15.83	13.68	-145.41	-357.61	450.65	1,000.45	976.45	24.00	41.693	
4,500.00	4,436.78	4,358.69	4,316.68	16.26	14.04	-145.42	-368.06	461.80	1,027.89	1,003.27	24.62	41.749	
4,600.00	4,534.91	4,454.85	4,411.62	16.70	14.41	-145.42	-378.51	472.96	1,055.32	1,030.08	25.25	41.802	
4,700.00	4,633.04	4,551.01	4,506.56	17.13	14.77	-145.43	-388.96	484.12	1,082.76	1,056.89	25.87	41.851	
4,800.00	4,731.17	4,647.17	4,601.50	17.57	15.14	-145.44	-399.41	495.27	1,110.20	1,083.70	26.50	41.898	
4,900.00	4,829.30	4,743.34	4,696.44	18.01	15.50	-145.45	-409.86	506.43	1,137.64	1,110.51	27.12	41.942	
5,000.00	4,927.43	4,839.50	4,791.38	18.44	15.87	-145.45	-420.31	517.59	1,165.07	1,137.32	27.75	41.984	
5,100.00	5,025.56	4,935.66	4,886.32	18.88	16.24	-145.46	-430.75	528.74	1,192.51	1,164.13	28.38	42.024	
5,200.00	5,123.69	5,031.82	4,981.26	19.31	16.60	-145.47	-441.20	539.90	1,219.95	1,190.94	29.00	42.062	
5,300.00	5,221.82	5,127.99	5,076.20	19.75	16.97	-145.47	-451.65	551.05	1,247.38	1,217.75	29.63	42.098	
5,400.00	5,319.95	5,224.15	5,171.14	20.18	17.33	-145.48	-462.10	562.21	1,274.82	1,244.56	30.26	42.132	
5,423.03	5,342.55	5,246.29	5,193.00	20.28	17.42	-145.48	-464.51	564.78	1,281.14	1,250.74	30.40	42.140	
5,500.00	5,418.27	5,320.54	5,266.30	20.56	17.70	-145.49	-472.57	573.39	1,301.44	1,270.51	30.92	42.085	
5,600.00	5,517.15	5,417.60	5,362.13	20.83	18.07	-145.46	-483.12	584.65	1,325.34	1,293.81	31.53	42.032	

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

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Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 10-12 - P_MIRACLE 10-12 - PLAN #1 3-23-10 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
5,700.00	5,616.49	5,520.05	5,463.28	21.05	18.45	-145.91	-494.23	596.52	1,346.42	1,314.31	32.11	41.928	
5,800.00	5,716.17	5,671.65	5,613.62	21.24	18.86	-145.82	-507.49	610.68	1,362.43	1,329.73	32.69	41.673	
5,900.00	5,816.07	5,825.62	5,767.13	21.40	19.15	-145.76	-515.38	619.10	1,371.66	1,338.51	33.15	41.377	
5,977.94	5,894.00	5,946.46	5,887.93	21.50	19.33	91.00	-517.62	621.48	1,374.10	1,340.64	33.46	41.067	
6,000.00	5,916.06	5,974.59	5,916.06	21.52	19.37	91.00	-517.65	621.52	1,374.13	1,340.59	33.54	40.974	
6,100.00	6,016.06	6,074.59	6,016.06	21.64	19.50	91.00	-517.65	621.52	1,374.13	1,340.30	33.83	40.624	
6,200.00	6,116.06	6,174.59	6,116.06	21.76	19.63	91.00	-517.65	621.52	1,374.13	1,340.01	34.11	40.281	
6,300.00	6,216.06	6,274.59	6,216.06	21.88	19.76	91.00	-517.65	621.52	1,374.13	1,339.72	34.41	39.939	
6,400.00	6,316.06	6,374.59	6,316.06	22.00	19.89	91.00	-517.65	621.52	1,374.13	1,339.43	34.70	39.598	
6,500.00	6,416.06	6,474.59	6,416.06	22.12	20.03	91.00	-517.65	621.52	1,374.13	1,339.13	35.00	39.260	
6,600.00	6,516.06	6,574.59	6,516.06	22.25	20.16	91.00	-517.65	621.52	1,374.13	1,338.83	35.30	38.925	
6,700.00	6,616.06	6,674.59	6,616.06	22.37	20.30	91.00	-517.65	621.52	1,374.13	1,338.52	35.61	38.591	
6,800.00	6,716.06	6,774.59	6,716.06	22.50	20.44	91.00	-517.65	621.52	1,374.13	1,338.21	35.92	38.260	
6,900.00	6,816.06	6,874.59	6,816.06	22.63	20.58	91.00	-517.65	621.52	1,374.13	1,337.90	36.23	37.931	
7,000.00	6,916.06	6,974.59	6,916.06	22.76	20.72	91.00	-517.65	621.52	1,374.13	1,337.59	36.54	37.605	
7,100.00	7,016.06	7,074.59	7,016.06	22.89	20.86	91.00	-517.65	621.52	1,374.13	1,337.27	36.86	37.282	
7,200.00	7,116.06	7,174.59	7,116.06	23.03	21.00	91.00	-517.65	621.52	1,374.13	1,336.95	37.18	36.962	
7,300.00	7,216.06	7,274.59	7,216.06	23.16	21.15	91.00	-517.65	621.52	1,374.13	1,336.63	37.50	36.644	
7,400.00	7,316.06	7,374.59	7,316.06	23.30	21.30	91.00	-517.65	621.52	1,374.13	1,336.30	37.82	36.329	
7,500.00	7,416.06	7,474.59	7,416.06	23.44	21.45	91.00	-517.65	621.52	1,374.13	1,335.98	38.15	36.018	
7,600.00	7,516.06	7,574.59	7,516.06	23.58	21.59	91.00	-517.65	621.52	1,374.13	1,335.65	38.48	35.709	
7,700.00	7,616.06	7,674.59	7,616.06	23.72	21.75	91.00	-517.65	621.52	1,374.13	1,335.31	38.81	35.403	
7,800.00	7,716.06	7,774.59	7,716.06	23.86	21.90	91.00	-517.65	621.52	1,374.13	1,334.98	39.15	35.101	
7,877.94	7,794.00	7,852.54	7,794.00	23.97	22.02	91.00	-517.65	621.52	1,374.13	1,334.72	39.41	34.867	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	-88.97	0.36	-20.05	20.05				
100.00	100.00	100.00	100.00	0.10	0.10	-88.97	0.36	-20.05	20.05	19.86	0.19	104.956	
200.00	200.00	200.00	200.00	0.32	0.32	-88.97	0.36	-20.05	20.05	19.41	0.64	31.303	
300.00	300.00	300.00	300.00	0.55	0.55	-88.97	0.36	-20.05	20.05	18.96	1.09	18.394 CC, ES	
400.00	400.00	399.28	399.26	0.77	0.75	-90.03	-0.01	-21.73	21.74	20.22	1.52	14.266	
500.00	500.00	498.33	498.17	0.99	0.97	-92.39	-1.12	-26.75	26.84	24.88	1.96	13.704 SF	
600.00	600.00	596.90	596.37	1.22	1.21	-94.81	-2.95	-35.06	35.37	32.96	2.41	14.654	
700.00	700.00	694.78	693.53	1.44	1.48	-96.72	-5.49	-46.57	47.34	44.44	2.90	16.341	
750.00	750.00	743.38	741.62	1.56	1.63	-97.47	-7.02	-53.49	54.59	51.44	3.15	17.305	
800.00	800.00	791.80	789.39	1.66	1.79	25.26	-8.71	-61.17	62.30	59.04	3.27	19.071	
900.00	899.93	888.23	884.10	1.85	2.15	25.16	-12.60	-78.81	77.88	74.19	3.68	21.135	
1,000.00	999.68	984.11	977.63	2.05	2.57	25.77	-17.15	-99.43	93.64	89.52	4.12	22.727	
1,100.00	1,099.13	1,079.44	1,069.86	2.28	3.03	26.79	-22.34	-122.95	109.62	105.04	4.58	23.947	
1,200.00	1,198.15	1,174.21	1,160.70	2.54	3.56	28.04	-28.15	-149.29	125.83	120.77	5.06	24.852	
1,304.92	1,301.45	1,273.03	1,254.43	2.86	4.17	29.49	-34.90	-179.87	143.13	137.52	5.61	25.499	
1,400.00	1,394.76	1,361.83	1,337.69	3.19	4.78	30.77	-41.55	-210.02	160.43	154.27	6.16	26.046	
1,500.00	1,492.89	1,454.10	1,423.14	3.55	5.47	31.65	-49.05	-244.01	181.73	174.97	6.76	26.886	
1,600.00	1,591.02	1,547.42	1,508.46	3.93	6.22	32.19	-57.18	-280.89	205.90	198.52	7.38	27.882	
1,700.00	1,689.15	1,644.29	1,596.80	4.32	7.03	32.60	-65.75	-319.71	230.68	222.64	8.04	28.683	
1,800.00	1,787.28	1,741.16	1,685.14	4.72	7.84	32.93	-74.31	-358.53	255.47	246.76	8.71	29.319	
1,900.00	1,885.41	1,838.03	1,773.47	5.13	8.66	33.20	-82.87	-397.35	280.27	270.87	9.40	29.831	
2,000.00	1,983.54	1,934.89	1,861.81	5.54	9.49	33.43	-91.44	-436.17	305.07	294.98	10.09	30.249	
2,100.00	2,081.67	2,031.76	1,950.15	5.95	10.31	33.62	-100.00	-474.99	329.87	319.09	10.78	30.590	
2,200.00	2,179.80	2,128.63	2,038.48	6.37	11.14	33.79	-108.56	-513.81	354.68	343.19	11.49	30.875	
2,300.00	2,277.93	2,225.50	2,126.82	6.79	11.98	33.93	-117.13	-552.63	379.49	367.29	12.20	31.117	
2,400.00	2,376.06	2,322.37	2,215.16	7.21	12.81	34.06	-125.69	-591.45	404.30	391.39	12.91	31.324	
2,500.00	2,474.19	2,419.24	2,303.50	7.63	13.65	34.17	-134.26	-630.27	429.11	415.49	13.62	31.503	
2,600.00	2,572.32	2,516.11	2,391.83	8.06	14.48	34.27	-142.82	-669.09	453.92	439.59	14.34	31.659	
2,700.00	2,670.45	2,612.98	2,480.17	8.48	15.32	34.36	-151.38	-707.91	478.74	463.68	15.06	31.793	
2,800.00	2,768.58	2,709.85	2,568.51	8.91	16.16	34.44	-159.95	-746.73	503.56	487.78	15.78	31.910	
2,900.00	2,866.71	2,806.72	2,656.84	9.34	17.00	34.51	-168.51	-785.55	528.37	511.87	16.51	32.013	
3,000.00	2,964.84	2,903.59	2,745.18	9.77	17.84	34.58	-177.07	-824.36	553.19	535.96	17.23	32.104	
3,100.00	3,062.97	3,000.46	2,833.52	10.20	18.68	34.64	-185.64	-863.18	578.01	560.05	17.96	32.185	
3,200.00	3,161.10	3,097.33	2,921.85	10.63	19.52	34.70	-194.20	-902.00	602.83	584.14	18.69	32.258	
3,300.00	3,259.23	3,194.20	3,010.19	11.06	20.36	34.75	-202.76	-940.82	627.65	608.23	19.42	32.324	
3,400.00	3,357.35	3,291.07	3,098.53	11.49	21.20	34.79	-211.33	-979.64	652.47	632.32	20.15	32.383	
3,500.00	3,455.48	3,387.94	3,186.86	11.93	22.04	34.84	-219.89	-1,018.46	677.29	656.41	20.88	32.437	
3,600.00	3,553.61	3,484.81	3,275.20	12.36	22.88	34.88	-228.46	-1,057.28	702.11	680.50	21.61	32.485	
3,700.00	3,651.74	3,581.68	3,363.54	12.79	23.72	34.92	-237.02	-1,096.10	726.93	704.59	22.35	32.530	
3,800.00	3,749.87	3,678.55	3,451.87	13.22	24.56	34.95	-245.58	-1,134.92	751.75	728.67	23.08	32.571	
3,900.00	3,848.00	3,775.41	3,540.21	13.66	25.41	34.99	-254.15	-1,173.74	776.57	752.76	23.82	32.608	
4,000.00	3,946.13	3,872.28	3,628.55	14.09	26.25	35.02	-262.71	-1,212.56	801.40	776.85	24.55	32.643	
4,100.00	4,044.26	3,969.15	3,716.88	14.53	27.09	35.05	-271.27	-1,251.38	826.22	800.93	25.29	32.675	
4,200.00	4,142.39	4,066.02	3,805.22	14.96	27.93	35.07	-279.84	-1,290.20	851.04	825.02	26.02	32.704	
4,300.00	4,240.52	4,162.89	3,893.56	15.39	28.78	35.10	-288.40	-1,329.02	875.86	849.10	26.76	32.732	
4,400.00	4,338.65	4,259.76	3,981.89	15.83	29.62	35.13	-296.97	-1,367.84	900.69	873.19	27.50	32.757	
4,500.00	4,436.78	4,356.63	4,070.23	16.26	30.46	35.15	-305.53	-1,406.66	925.51	897.28	28.23	32.781	
4,600.00	4,534.91	4,453.50	4,158.57	16.70	31.31	35.17	-314.09	-1,445.48	950.33	921.36	28.97	32.803	
4,700.00	4,633.04	4,550.37	4,246.90	17.13	32.15	35.19	-322.66	-1,484.30	975.16	945.45	29.71	32.823	
4,800.00	4,731.17	4,647.24	4,335.24	17.57	32.99	35.21	-331.22	-1,523.12	999.98	969.53	30.45	32.843	
4,900.00	4,829.30	4,744.11	4,423.58	18.01	33.84	35.23	-339.78	-1,561.94	1,024.80	993.62	31.19	32.861	
5,000.00	4,927.43	4,840.98	4,511.92	18.44	34.68	35.25	-348.35	-1,600.76	1,049.63	1,017.70	31.92	32.878	

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_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 12-12 - P_MIRACLE 12-12 - PLAN #1 3-23-10 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	5,025.56	4,937.85	4,600.25	18.88	35.52	35.27	-356.91	-1,639.58	1,074.45	1,041.79	32.66	32.894	
5,200.00	5,123.69	5,034.72	4,688.59	19.31	36.37	35.28	-365.48	-1,678.40	1,099.27	1,065.87	33.40	32.909	
5,300.00	5,221.82	5,131.59	4,776.93	19.75	37.21	35.30	-374.04	-1,717.22	1,124.10	1,089.95	34.14	32.924	
5,400.00	5,319.95	5,228.46	4,865.26	20.18	38.05	35.31	-382.60	-1,756.04	1,148.92	1,114.04	34.88	32.937	
5,423.03	5,342.55	5,250.76	4,885.60	20.28	38.25	35.32	-384.57	-1,764.98	1,154.64	1,119.58	35.05	32.940	
5,500.00	5,418.27	5,325.11	4,953.40	20.56	38.89	35.54	-391.15	-1,794.77	1,174.56	1,138.99	35.57	33.019	
5,600.00	5,517.15	5,420.99	5,040.84	20.83	39.73	35.77	-399.62	-1,833.19	1,202.86	1,166.71	36.15	33.276	
5,700.00	5,616.49	5,515.96	5,127.44	21.05	40.56	35.94	-408.02	-1,871.25	1,233.88	1,197.22	36.66	33.658	
5,800.00	5,716.17	5,614.68	5,242.47	21.24	41.52	35.97	-418.94	-1,920.77	1,267.06	1,229.91	37.15	34.107	
5,900.00	5,816.07	5,808.84	5,398.43	21.40	42.53	35.82	-431.89	-1,979.45	1,298.46	1,260.88	37.58	34.554	
5,977.94	5,894.00	5,942.41	5,525.41	21.50	43.21	-87.61	-440.81	-2,019.89	1,321.06	1,283.22	37.84	34.910	
6,000.00	5,916.06	5,980.76	5,562.21	21.52	43.40	-87.74	-443.14	-2,030.43	1,327.08	1,289.15	37.92	34.995	
6,100.00	6,016.06	6,158.17	5,734.18	21.64	44.12	-88.22	-452.50	-2,072.89	1,350.87	1,312.58	38.28	35.285	
6,200.00	6,116.06	6,340.55	5,913.42	21.76	44.70	-88.57	-459.72	-2,105.61	1,368.72	1,330.06	38.66	35.404	
6,300.00	6,216.06	6,526.57	6,098.07	21.88	45.11	-88.79	-464.54	-2,127.45	1,380.41	1,341.38	39.03	35.365	
6,400.00	6,316.06	6,714.75	6,285.92	22.00	45.35	-88.89	-466.77	-2,137.59	1,385.78	1,346.38	39.40	35.174	
6,500.00	6,416.06	6,844.89	6,416.06	22.12	45.44	-88.90	-466.93	-2,138.29	1,386.15	1,346.45	39.70	34.917	
6,600.00	6,516.06	6,944.89	6,516.06	22.25	45.51	-88.90	-466.93	-2,138.29	1,386.15	1,346.18	39.97	34.682	
6,700.00	6,616.06	7,044.89	6,616.06	22.37	45.58	-88.90	-466.93	-2,138.29	1,386.15	1,345.91	40.24	34.449	
6,800.00	6,716.06	7,144.89	6,716.06	22.50	45.64	-88.90	-466.93	-2,138.29	1,386.15	1,345.63	40.51	34.215	
6,900.00	6,816.06	7,244.89	6,816.06	22.63	45.71	-88.90	-466.93	-2,138.29	1,386.15	1,345.36	40.79	33.983	
7,000.00	6,916.06	7,344.89	6,916.06	22.76	45.78	-88.90	-466.93	-2,138.29	1,386.15	1,345.08	41.07	33.751	
7,100.00	7,016.06	7,444.89	7,016.06	22.89	45.85	-88.90	-466.93	-2,138.29	1,386.15	1,344.79	41.35	33.519	
7,200.00	7,116.06	7,544.89	7,116.06	23.03	45.92	-88.90	-466.93	-2,138.29	1,386.15	1,344.51	41.64	33.289	
7,300.00	7,216.06	7,644.89	7,216.06	23.16	46.00	-88.90	-466.93	-2,138.29	1,386.15	1,344.22	41.93	33.059	
7,400.00	7,316.06	7,744.89	7,316.06	23.30	46.07	-88.90	-466.93	-2,138.29	1,386.15	1,343.93	42.22	32.831	
7,500.00	7,416.06	7,844.89	7,416.06	23.44	46.14	-88.90	-466.93	-2,138.29	1,386.15	1,343.63	42.52	32.604	
7,600.00	7,516.06	7,944.89	7,516.06	23.58	46.22	-88.90	-466.93	-2,138.29	1,386.15	1,343.33	42.81	32.377	
7,700.00	7,616.06	8,044.89	7,616.06	23.72	46.29	-88.90	-466.93	-2,138.29	1,386.15	1,343.03	43.11	32.152	
7,800.00	7,716.06	8,144.89	7,716.06	23.86	46.37	-88.90	-466.93	-2,138.29	1,386.15	1,342.73	43.41	31.928	
7,850.18	7,766.24	8,195.07	7,766.24	23.93	46.41	-88.90	-466.93	-2,138.29	1,386.15	1,342.58	43.57	31.816	
7,877.94	7,794.00	8,217.83	7,789.00	23.97	46.43	-88.90	-466.93	-2,138.29	1,386.16	1,342.51	43.64	31.760	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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						
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	90.00	0.00	29.79	29.79				
100.00	100.00	100.00	100.00	0.10	0.10	90.00	0.00	29.79	29.79	29.60	0.19	155.951	
200.00	200.00	200.00	200.00	0.32	0.32	90.00	0.00	29.79	29.79	29.15	0.64	46.512	
300.00	300.00	300.40	300.40	0.55	0.53	90.55	-0.28	29.45	29.46	28.38	1.08	27.272	
400.00	400.00	401.08	401.01	0.77	0.74	95.39	-2.52	26.71	26.85	25.34	1.50	17.859	
500.00	500.00	501.38	501.06	0.99	0.97	108.16	-6.97	21.26	22.39	20.46	1.94	11.547	
600.00	600.00	601.07	600.20	1.22	1.23	135.93	-13.59	13.15	18.91	16.51	2.40	7.878	
612.92	612.92	613.89	612.92	1.25	1.27	140.77	-14.60	11.92	18.84	16.37	2.47	7.633 CC, ES	
700.00	700.00	700.00	698.15	1.44	1.54	173.68	-22.30	2.47	22.52	19.55	2.97	7.579 SF	
750.00	750.00	748.95	746.44	1.56	1.71	-172.15	-27.41	-3.78	27.90	24.61	3.28	8.496	
800.00	800.00	797.77	794.44	1.66	1.89	-39.21	-33.02	-10.65	34.80	31.44	3.36	10.353	
900.00	899.93	894.99	889.55	1.85	2.29	-28.70	-45.72	-26.21	50.32	46.54	3.77	13.335	
1,000.00	999.68	991.64	983.39	2.05	2.75	-23.52	-60.37	-44.16	66.72	62.51	4.21	15.842	
1,100.00	1,099.13	1,087.75	1,075.86	2.28	3.26	-20.62	-76.91	-64.42	83.43	78.76	4.67	17.858	
1,200.00	1,198.15	1,183.31	1,166.89	2.54	3.83	-18.89	-95.29	-86.94	100.23	95.07	5.15	19.450	
1,304.92	1,301.45	1,283.02	1,260.78	2.86	4.48	-17.78	-116.51	-112.93	117.84	112.16	5.68	20.740	
1,400.00	1,394.76	1,372.61	1,344.10	3.19	5.13	-17.06	-137.32	-138.43	135.22	129.03	6.19	21.838	
1,500.00	1,492.89	1,465.63	1,429.48	3.55	5.86	-16.28	-160.67	-167.02	156.59	149.85	6.74	23.239	
1,600.00	1,591.02	1,557.25	1,512.35	3.93	6.63	-15.52	-185.36	-197.27	181.08	173.78	7.29	24.830	
1,700.00	1,689.15	1,647.31	1,592.56	4.32	7.44	-14.81	-211.26	-229.00	208.61	200.76	7.85	26.565	
1,800.00	1,787.28	1,735.69	1,669.98	4.72	8.28	-14.17	-238.20	-262.01	239.12	230.70	8.42	28.413	
1,900.00	1,885.41	1,828.89	1,750.69	5.13	9.22	-13.58	-267.68	-298.12	271.58	262.57	9.01	30.149	
2,000.00	1,983.54	1,923.43	1,832.53	5.54	10.17	-13.11	-297.61	-334.77	304.11	294.49	9.61	31.643	
2,100.00	2,081.67	2,017.96	1,914.37	5.95	11.13	-12.72	-327.53	-371.43	336.65	326.43	10.22	32.944	
2,200.00	2,179.80	2,112.50	1,996.21	6.37	12.09	-12.41	-357.45	-408.09	369.20	358.37	10.83	34.086	
2,300.00	2,277.93	2,207.03	2,078.05	6.79	13.06	-12.15	-387.38	-444.74	401.76	390.32	11.45	35.095	
2,400.00	2,376.06	2,301.57	2,159.89	7.21	14.02	-11.92	-417.30	-481.40	434.33	422.27	12.07	35.992	
2,500.00	2,474.19	2,396.10	2,241.73	7.63	14.99	-11.73	-447.22	-518.05	466.91	454.22	12.69	36.794	
2,600.00	2,572.32	2,490.64	2,323.57	8.06	15.96	-11.57	-477.15	-554.71	499.48	486.17	13.31	37.514	
2,700.00	2,670.45	2,585.17	2,405.41	8.48	16.93	-11.42	-507.07	-591.37	532.07	518.12	13.94	38.165	
2,800.00	2,768.58	2,679.71	2,487.25	8.91	17.91	-11.29	-536.99	-628.08	564.65	550.08	14.57	38.756	
2,900.00	2,866.71	2,774.24	2,569.09	9.34	18.88	-11.17	-566.91	-664.68	597.24	582.04	15.20	39.294	
3,000.00	2,964.84	2,868.78	2,650.94	9.77	19.85	-11.07	-596.84	-701.33	629.82	613.99	15.83	39.786	
3,100.00	3,062.97	2,963.31	2,732.78	10.20	20.83	-10.98	-626.76	-737.99	662.41	645.95	16.46	40.238	
3,200.00	3,161.10	3,057.85	2,814.62	10.63	21.80	-10.89	-656.68	-774.65	695.01	677.91	17.10	40.654	
3,300.00	3,259.23	3,152.38	2,896.46	11.06	22.78	-10.81	-686.61	-811.30	727.60	709.87	17.73	41.038	
3,400.00	3,357.35	3,246.92	2,978.30	11.49	23.76	-10.74	-716.53	-847.96	760.19	741.83	18.36	41.394	
3,500.00	3,455.48	3,341.45	3,060.14	11.93	24.73	-10.68	-746.45	-884.61	792.79	773.79	19.00	41.725	
3,600.00	3,553.61	3,435.99	3,141.98	12.36	25.71	-10.62	-776.38	-921.27	825.38	805.74	19.64	42.032	
3,700.00	3,651.74	3,530.52	3,223.82	12.79	26.69	-10.56	-806.30	-957.93	857.98	837.70	20.27	42.320	
3,800.00	3,749.87	3,625.06	3,305.66	13.22	27.66	-10.51	-836.22	-994.58	890.57	869.66	20.91	42.588	
3,900.00	3,848.00	3,719.60	3,387.50	13.66	28.64	-10.47	-866.15	-1,031.24	923.17	901.62	21.55	42.840	
4,000.00	3,946.13	3,814.13	3,469.34	14.09	29.62	-10.42	-896.07	-1,067.89	955.77	933.58	22.19	43.077	
4,100.00	4,044.26	3,908.67	3,551.18	14.53	30.60	-10.38	-925.99	-1,104.55	988.37	965.54	22.83	43.299	
4,200.00	4,142.39	4,003.20	3,633.02	14.96	31.57	-10.34	-955.92	-1,141.21	1,020.97	997.50	23.47	43.509	
4,300.00	4,240.52	4,097.74	3,714.86	15.39	32.55	-10.31	-985.84	-1,177.86	1,053.57	1,029.46	24.11	43.707	
4,400.00	4,338.65	4,192.27	3,796.70	15.83	33.53	-10.27	-1,015.76	-1,214.52	1,086.16	1,061.42	24.75	43.894	
4,500.00	4,436.78	4,286.81	3,878.54	16.26	34.51	-10.24	-1,045.69	-1,251.18	1,118.76	1,093.38	25.39	44.071	
4,600.00	4,534.91	4,381.34	3,960.38	16.70	35.49	-10.21	-1,075.61	-1,287.83	1,151.36	1,125.34	26.03	44.239	
4,700.00	4,633.04	4,475.88	4,042.22	17.13	36.47	-10.18	-1,105.53	-1,324.49	1,183.97	1,157.30	26.67	44.398	
4,800.00	4,731.17	4,570.41	4,124.06	17.57	37.44	-10.15	-1,135.46	-1,361.14	1,216.57	1,189.26	27.31	44.550	
4,900.00	4,829.30	4,664.95	4,205.90	18.01	38.42	-10.13	-1,165.38	-1,397.80	1,249.17	1,221.22	27.95	44.695	

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_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 13-12 - P_MIRACLE 13-12 - PLAN #1 3-23-10 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
5,000.00	4,927.43	4,759.48	4,287.74	18.44	39.40	-10.10	-1,195.30	-1,434.46	1,281.77	1,253.18	28.59	44.832	
5,100.00	5,025.56	4,854.02	4,369.58	18.88	40.38	-10.08	-1,225.23	-1,471.11	1,314.37	1,285.14	29.23	44.963	
5,200.00	5,123.69	4,948.55	4,451.42	19.31	41.36	-10.06	-1,255.15	-1,507.77	1,346.97	1,317.10	29.87	45.089	
5,300.00	5,221.82	5,043.09	4,533.26	19.75	42.34	-10.04	-1,285.07	-1,544.42	1,379.57	1,349.06	30.52	45.209	
5,400.00	5,319.95	5,137.62	4,615.10	20.18	43.32	-10.02	-1,315.00	-1,581.08	1,412.17	1,381.02	31.16	45.323	
5,423.03	5,342.55	5,159.39	4,633.95	20.28	43.54	-10.01	-1,321.89	-1,589.52	1,419.68	1,388.38	31.31	45.349	
5,500.00	5,418.27	5,231.82	4,696.65	20.56	44.29	-10.09	-1,344.81	-1,617.60	1,445.74	1,414.08	31.65	45.673	
5,600.00	5,517.15	5,324.83	4,777.17	20.83	45.26	-10.18	-1,374.25	-1,653.67	1,482.43	1,450.40	32.03	46.278	
5,700.00	5,616.49	5,416.52	4,856.54	21.05	46.21	-10.26	-1,403.27	-1,689.22	1,522.30	1,489.95	32.35	47.057	
5,800.00	5,716.17	5,506.77	4,934.67	21.24	47.14	-10.33	-1,431.84	-1,724.21	1,565.30	1,532.69	32.60	48.009	
5,900.00	5,816.07	5,595.47	5,011.46	21.40	48.06	-10.41	-1,459.92	-1,758.61	1,611.37	1,578.58	32.80	49.134	
5,977.94	5,894.00	5,663.46	5,070.33	21.50	48.77	-133.73	-1,481.44	-1,784.97	1,649.38	1,616.48	32.91	50.121	
6,000.00	5,916.06	5,682.56	5,086.86	21.52	48.96	-133.70	-1,487.48	-1,792.38	1,660.40	1,627.39	33.01	50.297	
6,100.00	6,016.06	5,769.13	5,161.81	21.64	49.86	-133.57	-1,514.89	-1,825.95	1,710.34	1,676.86	33.48	51.088	
6,200.00	6,116.06	5,855.70	5,236.75	21.76	50.76	-133.45	-1,542.29	-1,859.51	1,760.29	1,726.34	33.95	51.853	
6,300.00	6,216.06	6,083.14	5,437.82	21.88	52.50	-133.17	-1,609.43	-1,941.77	1,807.02	1,772.18	34.84	51.866	
6,400.00	6,316.06	6,336.32	5,670.74	22.00	54.08	-132.95	-1,672.05	-2,018.47	1,846.11	1,810.35	35.76	51.628	
6,500.00	6,416.06	6,607.36	5,928.72	22.12	55.43	-132.78	-1,724.40	-2,082.60	1,876.64	1,840.00	36.64	51.212	
6,600.00	6,516.06	6,892.91	6,207.68	22.25	56.43	-132.66	-1,762.61	-2,129.41	1,897.80	1,860.35	37.45	50.678	
6,700.00	6,616.06	7,188.13	6,500.93	22.37	57.02	-132.60	-1,783.47	-2,154.96	1,908.97	1,870.85	38.12	50.074	
6,800.00	6,716.06	7,403.36	6,716.06	22.50	57.19	-132.59	-1,786.78	-2,159.01	1,910.72	1,872.15	38.57	49.536	
6,900.00	6,816.06	7,503.36	6,816.06	22.63	57.24	-132.59	-1,786.78	-2,159.01	1,910.72	1,871.85	38.87	49.160	
7,000.00	6,916.06	7,603.36	6,916.06	22.76	57.29	-132.59	-1,786.78	-2,159.01	1,910.72	1,871.55	39.16	48.787	
7,100.00	7,016.06	7,703.36	7,016.06	22.89	57.34	-132.59	-1,786.78	-2,159.01	1,910.72	1,871.25	39.47	48.415	
7,200.00	7,116.06	7,803.36	7,116.06	23.03	57.39	-132.59	-1,786.78	-2,159.01	1,910.72	1,870.95	39.77	48.046	
7,300.00	7,216.06	7,903.36	7,216.06	23.16	57.45	-132.59	-1,786.78	-2,159.01	1,910.72	1,870.65	40.07	47.680	
7,400.00	7,316.06	8,003.36	7,316.06	23.30	57.50	-132.59	-1,786.78	-2,159.01	1,910.72	1,870.34	40.38	47.317	
7,500.00	7,416.06	8,103.36	7,416.06	23.44	57.55	-132.59	-1,786.78	-2,159.01	1,910.72	1,870.03	40.69	46.956	
7,600.00	7,516.06	8,203.36	7,516.06	23.58	57.61	-132.59	-1,786.78	-2,159.01	1,910.72	1,869.71	41.00	46.598	
7,700.00	7,616.06	8,303.36	7,616.06	23.72	57.66	-132.59	-1,786.78	-2,159.01	1,910.72	1,869.40	41.32	46.242	
7,800.00	7,716.06	8,403.36	7,716.06	23.86	57.72	-132.59	-1,786.78	-2,159.01	1,910.72	1,869.08	41.64	45.890	
7,842.99	7,759.05	8,446.36	7,759.05	23.92	57.74	-132.59	-1,786.78	-2,159.01	1,910.72	1,868.95	41.77	45.739	
7,877.94	7,794.00	8,461.31	7,774.00	23.97	57.75	-132.59	-1,786.78	-2,159.01	1,910.82	1,868.96	41.86	45.648	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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						
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	90.53	-0.37	39.82	39.82				
100.00	100.00	100.00	100.00	0.10	0.10	90.53	-0.37	39.82	39.82	39.63	0.19	208.429	
200.00	200.00	200.00	200.00	0.32	0.32	90.53	-0.37	39.82	39.82	39.18	0.64	62.163	
300.00	300.00	300.00	300.00	0.55	0.55	90.53	-0.37	39.82	39.82	38.73	1.09	36.529	
400.00	400.00	400.52	400.50	0.77	0.75	92.89	-1.98	39.09	39.15	37.63	1.52	25.822	
500.00	500.00	500.80	500.63	0.99	0.95	100.40	-6.78	36.92	37.54	35.61	1.93	19.412	
600.00	600.00	600.58	600.03	1.22	1.18	113.84	-14.72	33.33	36.44	34.06	2.37	15.350	
602.99	602.99	603.56	602.99	1.23	1.19	114.33	-15.01	33.20	36.44	34.05	2.39	15.259 CC, ES	
700.00	700.00	699.64	698.35	1.44	1.45	132.22	-25.73	28.35	38.32	35.46	2.86	13.404	
750.00	750.00	748.83	747.00	1.56	1.61	141.89	-32.34	25.37	41.21	38.08	3.13	13.145 SF	
800.00	800.00	797.81	795.31	1.66	1.77	-86.24	-39.68	22.05	45.61	42.24	3.36	13.559	
900.00	899.93	895.30	891.02	1.85	2.13	-74.35	-56.53	14.43	57.87	54.06	3.81	15.192	
1,000.00	999.68	992.12	985.41	2.05	2.55	-67.68	-76.18	5.55	73.12	68.84	4.28	17.078	
1,100.00	1,099.13	1,088.24	1,078.33	2.28	3.02	-64.10	-98.56	-4.57	90.28	85.49	4.79	18.832	
1,200.00	1,198.15	1,183.63	1,169.68	2.54	3.54	-62.30	-123.56	-15.87	108.89	103.53	5.36	20.317	
1,304.92	1,301.45	1,282.88	1,263.71	2.86	4.14	-61.53	-152.50	-28.96	129.74	123.72	6.02	21.546	
1,400.00	1,394.76	1,371.90	1,347.07	3.19	4.73	-61.27	-180.98	-41.83	150.48	143.80	6.68	22.535	
1,500.00	1,492.89	1,464.28	1,432.49	3.55	5.40	-60.57	-213.00	-56.31	174.97	167.59	7.38	23.700	
1,600.00	1,591.02	1,558.66	1,518.81	3.93	6.12	-59.68	-247.78	-72.03	201.70	193.59	8.11	24.876	
1,700.00	1,689.15	1,654.92	1,606.75	4.32	6.87	-58.95	-283.45	-88.15	228.66	219.81	8.86	25.822	
1,800.00	1,787.28	1,751.18	1,694.70	4.72	7.63	-58.38	-319.11	-104.28	255.65	246.04	9.61	26.598	
1,900.00	1,885.41	1,847.44	1,782.65	5.13	8.39	-57.92	-354.77	-120.40	282.66	272.29	10.38	27.243	
2,000.00	1,983.54	1,943.70	1,870.59	5.54	9.15	-57.54	-390.43	-136.52	309.68	298.54	11.15	27.786	
2,100.00	2,081.67	2,039.96	1,958.54	5.95	9.92	-57.22	-426.09	-152.64	336.72	324.80	11.92	28.249	
2,200.00	2,179.80	2,136.22	2,046.48	6.37	10.69	-56.94	-461.75	-168.76	363.76	351.06	12.70	28.647	
2,300.00	2,277.93	2,232.49	2,134.43	6.79	11.46	-56.71	-497.41	-184.88	390.81	377.33	13.48	28.993	
2,400.00	2,376.06	2,328.75	2,222.38	7.21	12.23	-56.50	-533.08	-201.01	417.86	403.60	14.26	29.296	
2,500.00	2,474.19	2,425.01	2,310.32	7.63	13.00	-56.32	-568.74	-217.13	444.92	429.87	15.05	29.563	
2,600.00	2,572.32	2,521.27	2,398.27	8.06	13.78	-56.16	-604.40	-233.25	471.98	456.15	15.84	29.801	
2,700.00	2,670.45	2,617.53	2,486.21	8.48	14.55	-56.02	-640.06	-249.37	499.05	482.42	16.63	30.013	
2,800.00	2,768.58	2,713.79	2,574.16	8.91	15.32	-55.89	-675.72	-265.49	526.12	508.70	17.42	30.204	
2,900.00	2,866.71	2,810.05	2,662.10	9.34	16.10	-55.78	-711.38	-281.61	553.19	534.97	18.21	30.376	
3,000.00	2,964.84	2,906.31	2,750.05	9.77	16.88	-55.67	-747.05	-297.74	580.26	561.25	19.00	30.532	
3,100.00	3,062.97	3,002.57	2,838.00	10.20	17.65	-55.58	-782.71	-313.86	607.33	587.53	19.80	30.674	
3,200.00	3,161.10	3,098.83	2,925.94	10.63	18.43	-55.49	-818.37	-329.98	634.40	613.81	20.59	30.804	
3,300.00	3,259.23	3,195.09	3,013.89	11.06	19.20	-55.41	-854.03	-346.10	661.48	640.09	21.39	30.924	
3,400.00	3,357.35	3,291.35	3,101.83	11.49	19.98	-55.34	-889.69	-362.22	688.56	666.37	22.19	31.034	
3,500.00	3,455.48	3,387.62	3,189.78	11.93	20.76	-55.27	-925.35	-378.34	715.64	692.65	22.98	31.136	
3,600.00	3,553.61	3,483.88	3,277.73	12.36	21.54	-55.21	-961.02	-394.47	742.71	718.93	23.78	31.230	
3,700.00	3,651.74	3,580.14	3,365.67	12.79	22.31	-55.15	-996.68	-410.59	769.79	745.21	24.58	31.317	
3,800.00	3,749.87	3,676.40	3,453.62	13.22	23.09	-55.10	-1,032.34	-426.71	796.87	771.50	25.38	31.399	
3,900.00	3,848.00	3,772.66	3,541.56	13.66	23.87	-55.04	-1,068.00	-442.83	823.96	797.78	26.18	31.475	
4,000.00	3,946.13	3,868.92	3,629.51	14.09	24.65	-55.00	-1,103.66	-458.95	851.04	824.06	26.98	31.546	
4,100.00	4,044.26	3,965.18	3,717.46	14.53	25.43	-54.95	-1,139.32	-475.08	878.12	850.34	27.78	31.613	
4,200.00	4,142.39	4,061.44	3,805.40	14.96	26.21	-54.91	-1,174.98	-491.20	905.20	876.62	28.58	31.675	
4,300.00	4,240.52	4,157.70	3,893.35	15.39	26.98	-54.87	-1,210.65	-507.32	932.28	902.91	29.38	31.734	
4,400.00	4,338.65	4,253.96	3,981.29	15.83	27.76	-54.83	-1,246.31	-523.44	959.37	929.19	30.18	31.790	
4,500.00	4,436.78	4,350.22	4,069.24	16.26	28.54	-54.80	-1,281.97	-539.56	986.45	955.47	30.98	31.843	
4,600.00	4,534.91	4,446.48	4,157.19	16.70	29.32	-54.76	-1,317.63	-555.68	1,013.53	981.75	31.78	31.892	
4,700.00	4,633.04	4,542.75	4,245.13	17.13	30.10	-54.73	-1,353.29	-571.81	1,040.62	1,008.04	32.58	31.939	
4,800.00	4,731.17	4,639.01	4,333.08	17.57	30.88	-54.70	-1,388.95	-587.93	1,067.70	1,034.32	33.38	31.984	
4,900.00	4,829.30	4,735.27	4,421.02	18.01	31.66	-54.67	-1,424.62	-604.05	1,094.79	1,060.60	34.18	32.026	

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_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	
5,000.00	4,927.43	4,831.53	4,508.97	18.44	32.44	-54.65	-1,460.28	-620.17	1,121.87	1,086.89	34.99	32.066	
5,100.00	5,025.56	4,927.79	4,596.92	18.88	33.21	-54.62	-1,495.94	-636.29	1,148.96	1,113.17	35.79	32.105	
5,200.00	5,123.69	5,024.05	4,684.86	19.31	33.99	-54.60	-1,531.60	-652.41	1,176.04	1,139.45	36.59	32.141	
5,300.00	5,221.82	5,120.31	4,772.81	19.75	34.77	-54.57	-1,567.26	-668.54	1,203.13	1,165.74	37.39	32.176	
5,400.00	5,319.95	5,245.39	4,887.46	20.18	35.63	-54.56	-1,612.82	-689.13	1,229.70	1,191.42	38.27	32.129	
5,423.03	5,342.55	5,282.31	4,921.65	20.28	35.83	-54.57	-1,625.51	-694.87	1,235.28	1,196.78	38.50	32.087	
5,500.00	5,418.27	5,407.02	5,038.42	20.56	36.47	-54.91	-1,665.38	-712.89	1,252.59	1,213.36	39.23	31.931	
5,600.00	5,517.15	5,571.65	5,195.28	20.83	37.21	-55.25	-1,710.85	-733.45	1,272.29	1,232.27	40.03	31.787	
5,700.00	5,616.49	5,738.92	5,357.33	21.05	37.85	-55.49	-1,748.57	-750.50	1,288.72	1,248.02	40.70	31.666	
5,800.00	5,716.17	5,908.43	5,523.72	21.24	38.38	-55.63	-1,777.93	-763.77	1,301.76	1,260.52	41.24	31.567	
5,900.00	5,816.07	6,079.71	5,693.49	21.40	38.78	-55.68	-1,798.44	-773.05	1,311.34	1,269.71	41.63	31.497	
5,977.94	5,894.00	6,214.12	5,827.47	21.50	38.99	-178.91	-1,808.05	-777.39	1,316.36	1,274.51	41.85	31.455	
6,000.00	5,916.06	6,252.27	5,865.58	21.52	39.04	-178.88	-1,809.73	-778.15	1,317.34	1,275.43	41.91	31.430	
6,100.00	6,016.06	6,402.79	6,016.06	21.64	39.17	-178.84	-1,812.00	-779.17	1,318.66	1,276.46	42.20	31.245	
6,200.00	6,116.06	6,502.79	6,116.06	21.76	39.23	-178.84	-1,812.00	-779.17	1,318.66	1,276.22	42.44	31.070	
6,300.00	6,216.06	6,602.79	6,216.06	21.88	39.29	-178.84	-1,812.00	-779.17	1,318.66	1,275.98	42.68	30.895	
6,400.00	6,316.06	6,702.79	6,316.06	22.00	39.35	-178.84	-1,812.00	-779.17	1,318.66	1,275.74	42.93	30.719	
6,500.00	6,416.06	6,802.79	6,416.06	22.12	39.41	-178.84	-1,812.00	-779.17	1,318.66	1,275.49	43.17	30.544	
6,600.00	6,516.06	6,902.79	6,516.06	22.25	39.47	-178.84	-1,812.00	-779.17	1,318.66	1,275.24	43.42	30.368	
6,700.00	6,616.06	7,002.79	6,616.06	22.37	39.54	-178.84	-1,812.00	-779.17	1,318.66	1,274.98	43.68	30.191	
6,800.00	6,716.06	7,102.79	6,716.06	22.50	39.60	-178.84	-1,812.00	-779.17	1,318.66	1,274.73	43.93	30.015	
6,900.00	6,816.06	7,202.79	6,816.06	22.63	39.67	-178.84	-1,812.00	-779.17	1,318.66	1,274.47	44.19	29.839	
7,000.00	6,916.06	7,302.79	6,916.06	22.76	39.73	-178.84	-1,812.00	-779.17	1,318.66	1,274.21	44.46	29.662	
7,100.00	7,016.06	7,402.79	7,016.06	22.89	39.80	-178.84	-1,812.00	-779.17	1,318.66	1,273.94	44.72	29.486	
7,200.00	7,116.06	7,502.79	7,116.06	23.03	39.87	-178.84	-1,812.00	-779.17	1,318.66	1,273.67	44.99	29.310	
7,300.00	7,216.06	7,602.79	7,216.06	23.16	39.94	-178.84	-1,812.00	-779.17	1,318.66	1,273.40	45.26	29.135	
7,400.00	7,316.06	7,702.79	7,316.06	23.30	40.01	-178.84	-1,812.00	-779.17	1,318.66	1,273.13	45.54	28.959	
7,500.00	7,416.06	7,802.79	7,416.06	23.44	40.09	-178.84	-1,812.00	-779.17	1,318.66	1,272.85	45.81	28.784	
7,600.00	7,516.06	7,902.79	7,516.06	23.58	40.16	-178.84	-1,812.00	-779.17	1,318.66	1,272.57	46.09	28.609	
7,700.00	7,616.06	8,002.79	7,616.06	23.72	40.24	-178.84	-1,812.00	-779.17	1,318.66	1,272.29	46.37	28.435	
7,800.00	7,716.06	8,102.79	7,716.06	23.86	40.31	-178.84	-1,812.00	-779.17	1,318.66	1,272.00	46.66	28.262	
7,848.57	7,764.63	8,151.36	7,764.63	23.93	40.35	-178.84	-1,812.00	-779.17	1,318.66	1,271.86	46.80	28.178	
7,877.94	7,794.00	8,171.73	7,785.00	23.97	40.37	-178.84	-1,812.00	-779.17	1,318.69	1,271.82	46.87	28.135	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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						
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	90.35	-0.37	59.87	59.87				
100.00	100.00	100.00	100.00	0.10	0.10	90.35	-0.37	59.87	59.87	59.68	0.19	313.364	
200.00	200.00	200.00	200.00	0.32	0.32	90.35	-0.37	59.87	59.87	59.23	0.64	93.460	
300.00	300.00	300.00	300.00	0.55	0.55	90.35	-0.37	59.87	59.87	58.78	1.09	54.920 CC, ES	
400.00	400.00	399.37	399.35	0.77	0.74	91.92	-2.02	60.35	60.39	58.87	1.51	39.899	
500.00	500.00	498.49	498.33	0.99	0.94	96.43	-6.97	61.79	62.21	60.27	1.93	32.176	
600.00	600.00	597.15	596.61	1.22	1.17	103.28	-15.15	64.18	66.03	63.65	2.38	27.715	
700.00	700.00	695.10	693.85	1.44	1.44	111.42	-26.48	67.49	72.76	69.89	2.87	25.339	
750.00	750.00	743.74	741.97	1.56	1.59	115.60	-33.29	69.48	77.46	74.32	3.14	24.683 SF	
800.00	800.00	792.15	789.73	1.66	1.75	-117.21	-40.85	71.69	83.34	80.02	3.32	25.123	
900.00	899.93	888.20	884.07	1.85	2.10	-111.28	-58.13	76.73	98.93	95.16	3.77	26.268	
1,000.00	999.68	983.05	976.60	2.05	2.51	-107.51	-78.16	82.58	118.96	114.72	4.24	28.032	
1,100.00	1,099.13	1,076.51	1,067.04	2.28	2.96	-105.30	-100.77	89.18	142.89	138.13	4.76	30.003	
1,200.00	1,198.15	1,168.40	1,155.16	2.54	3.46	-104.08	-125.75	96.47	170.40	165.06	5.34	31.939	
1,304.92	1,301.45	1,262.95	1,244.92	2.86	4.03	-103.46	-154.27	104.80	202.90	196.90	6.01	33.787	
1,400.00	1,394.76	1,346.99	1,323.84	3.19	4.58	-103.54	-181.99	112.89	235.11	228.43	6.68	35.187	
1,500.00	1,492.89	1,433.71	1,404.35	3.55	5.19	-103.28	-212.91	121.92	271.35	263.93	7.42	36.576	
1,600.00	1,591.02	1,522.60	1,485.98	3.93	5.86	-102.83	-246.68	131.78	309.65	301.46	8.19	37.796	
1,700.00	1,689.15	1,614.83	1,570.56	4.32	6.58	-102.43	-281.99	142.09	348.24	339.25	9.00	38.700	
1,800.00	1,787.28	1,707.06	1,655.13	4.72	7.30	-102.12	-317.31	152.40	386.85	377.03	9.82	39.408	
1,900.00	1,885.41	1,799.29	1,739.71	5.13	8.02	-101.86	-352.62	162.71	425.46	414.82	10.64	39.974	
2,000.00	1,983.54	1,891.52	1,824.28	5.54	8.75	-101.64	-387.93	173.02	464.08	452.60	11.48	40.434	
2,100.00	2,081.67	1,983.75	1,908.86	5.95	9.48	-101.46	-423.25	183.33	502.70	490.39	12.32	40.815	
2,200.00	2,179.80	2,075.98	1,993.43	6.37	10.21	-101.30	-458.56	193.64	541.33	528.17	13.16	41.136	
2,300.00	2,277.93	2,168.21	2,078.00	6.79	10.94	-101.16	-493.88	203.95	579.96	565.95	14.01	41.408	
2,400.00	2,376.06	2,260.44	2,162.58	7.21	11.68	-101.04	-529.19	214.26	618.59	603.74	14.85	41.643	
2,500.00	2,474.19	2,352.66	2,247.15	7.63	12.41	-100.94	-564.50	224.57	657.23	641.52	15.71	41.847	
2,600.00	2,572.32	2,444.89	2,331.73	8.06	13.15	-100.84	-599.82	234.88	695.86	679.30	16.56	42.027	
2,700.00	2,670.45	2,537.12	2,416.30	8.48	13.89	-100.76	-635.13	245.19	734.50	717.09	17.41	42.186	
2,800.00	2,768.58	2,629.35	2,500.88	8.91	14.62	-100.68	-670.45	255.50	773.14	754.87	18.27	42.328	
2,900.00	2,866.71	2,721.58	2,585.45	9.34	15.36	-100.62	-705.76	265.81	811.78	792.66	19.12	42.456	
3,000.00	2,964.84	2,813.81	2,670.03	9.77	16.10	-100.55	-741.07	276.12	850.42	830.44	19.98	42.572	
3,100.00	3,062.97	2,906.04	2,754.60	10.20	16.84	-100.50	-776.39	286.43	889.06	868.23	20.83	42.678	
3,200.00	3,161.10	2,998.27	2,839.17	10.63	17.58	-100.45	-811.70	296.74	927.70	906.01	21.69	42.775	
3,300.00	3,259.23	3,090.50	2,923.75	11.06	18.32	-100.40	-847.02	307.05	966.34	943.80	22.54	42.865	
3,400.00	3,357.35	3,182.73	3,008.32	11.49	19.06	-100.35	-882.33	317.36	1,004.99	981.59	23.40	42.949	
3,500.00	3,455.48	3,274.96	3,092.90	11.93	19.80	-100.31	-917.65	327.67	1,043.63	1,019.37	24.26	43.026	
3,600.00	3,553.61	3,367.19	3,177.47	12.36	20.54	-100.27	-952.96	337.98	1,082.27	1,057.16	25.11	43.099	
3,700.00	3,651.74	3,459.41	3,262.05	12.79	21.28	-100.24	-988.27	348.29	1,120.92	1,094.95	25.97	43.167	
3,800.00	3,749.87	3,551.64	3,346.62	13.22	22.02	-100.21	-1,023.59	358.60	1,159.56	1,132.74	26.82	43.232	
3,900.00	3,848.00	3,643.87	3,431.20	13.66	22.77	-100.18	-1,058.90	368.91	1,198.21	1,170.53	27.68	43.293	
4,000.00	3,946.13	3,736.10	3,515.77	14.09	23.51	-100.15	-1,094.22	379.22	1,236.85	1,208.32	28.53	43.351	
4,100.00	4,044.26	3,828.33	3,600.35	14.53	24.25	-100.12	-1,129.53	389.53	1,275.50	1,246.11	29.39	43.406	
4,200.00	4,142.39	3,920.56	3,684.92	14.96	24.99	-100.09	-1,164.84	399.84	1,314.15	1,283.91	30.24	43.459	
4,300.00	4,240.52	4,012.79	3,769.49	15.39	25.73	-100.07	-1,200.16	410.15	1,352.79	1,321.70	31.09	43.509	
4,400.00	4,338.65	4,105.02	3,854.07	15.83	26.47	-100.05	-1,235.47	420.46	1,391.44	1,359.49	31.94	43.558	
4,500.00	4,436.78	4,197.25	3,938.64	16.26	27.22	-100.03	-1,270.79	430.77	1,430.08	1,397.29	32.80	43.605	
4,600.00	4,534.91	4,289.48	4,023.22	16.70	27.96	-100.01	-1,306.10	441.08	1,468.73	1,435.08	33.65	43.650	
4,700.00	4,633.04	4,381.71	4,107.79	17.13	28.70	-99.99	-1,341.41	451.39	1,507.38	1,472.88	34.50	43.694	
4,800.00	4,731.17	4,473.94	4,192.37	17.57	29.44	-99.97	-1,376.73	461.70	1,546.02	1,510.67	35.35	43.736	
4,900.00	4,829.30	4,566.16	4,276.94	18.01	30.18	-99.95	-1,412.04	472.01	1,584.67	1,548.47	36.20	43.777	
5,000.00	4,927.43	4,658.39	4,361.52	18.44	30.93	-99.93	-1,447.36	482.32	1,623.32	1,586.27	37.05	43.817	

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_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 15-12 - P_MIRACLE 15-12 - PLAN #1 3-23-10 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	5,025.56	4,750.62	4,446.09	18.88	31.67	-99.92	-1,482.67	492.63	1,661.97	1,624.07	37.90	43.856	
5,200.00	5,123.69	4,842.85	4,530.66	19.31	32.41	-99.90	-1,517.98	502.94	1,700.61	1,661.87	38.74	43.894	
5,300.00	5,221.82	4,935.08	4,615.24	19.75	33.15	-99.89	-1,553.30	513.25	1,739.26	1,699.67	39.59	43.931	
5,400.00	5,319.95	5,027.31	4,699.81	20.18	33.90	-99.87	-1,588.61	523.56	1,777.91	1,737.47	40.44	43.967	
5,423.03	5,342.55	5,048.55	4,719.29	20.28	34.07	-99.87	-1,596.74	525.93	1,786.81	1,746.17	40.63	43.975	
5,500.00	5,418.27	5,176.79	4,837.61	20.56	34.87	-100.42	-1,644.20	539.79	1,815.66	1,774.09	41.58	43.670	
5,600.00	5,517.15	5,391.91	5,040.60	20.83	35.94	-100.98	-1,712.42	559.71	1,847.57	1,804.86	42.71	43.257	
5,700.00	5,616.49	5,616.32	5,257.41	21.05	36.84	-101.39	-1,767.79	575.87	1,872.40	1,828.71	43.69	42.857	
5,800.00	5,716.17	5,848.03	5,485.30	21.24	37.53	-101.67	-1,807.69	587.52	1,889.74	1,845.26	44.49	42.480	
5,900.00	5,816.07	6,084.59	5,720.64	21.40	37.99	-101.83	-1,830.06	594.05	1,899.29	1,854.20	45.09	42.121	
5,977.94	5,894.00	6,258.04	5,894.00	21.50	38.16	134.86	-1,834.59	595.37	1,901.24	1,855.81	45.43	41.851	
6,000.00	5,916.06	6,280.10	5,916.06	21.52	38.17	134.86	-1,834.59	595.37	1,901.24	1,855.77	45.48	41.806	
6,100.00	6,016.06	6,380.10	6,016.06	21.64	38.23	134.86	-1,834.59	595.37	1,901.24	1,855.56	45.69	41.614	
6,200.00	6,116.06	6,480.10	6,116.06	21.76	38.29	134.86	-1,834.59	595.37	1,901.24	1,855.34	45.90	41.423	
6,300.00	6,216.06	6,580.10	6,216.06	21.88	38.35	134.86	-1,834.59	595.37	1,901.24	1,855.13	46.11	41.231	
6,400.00	6,316.06	6,680.10	6,316.06	22.00	38.41	134.86	-1,834.59	595.37	1,901.24	1,854.91	46.33	41.037	
6,500.00	6,416.06	6,780.10	6,416.06	22.12	38.48	134.86	-1,834.59	595.37	1,901.24	1,854.69	46.55	40.842	
6,600.00	6,516.06	6,880.10	6,516.06	22.25	38.54	134.86	-1,834.59	595.37	1,901.24	1,854.47	46.78	40.646	
6,700.00	6,616.06	6,980.10	6,616.06	22.37	38.61	134.86	-1,834.59	595.37	1,901.24	1,854.24	47.00	40.450	
6,800.00	6,716.06	7,080.10	6,716.06	22.50	38.67	134.86	-1,834.59	595.37	1,901.24	1,854.01	47.23	40.252	
6,900.00	6,816.06	7,180.10	6,816.06	22.63	38.74	134.86	-1,834.59	595.37	1,901.24	1,853.78	47.47	40.054	
7,000.00	6,916.06	7,280.10	6,916.06	22.76	38.81	134.86	-1,834.59	595.37	1,901.24	1,853.54	47.70	39.855	
7,100.00	7,016.06	7,380.10	7,016.06	22.89	38.88	134.86	-1,834.59	595.37	1,901.24	1,853.30	47.94	39.656	
7,200.00	7,116.06	7,480.10	7,116.06	23.03	38.95	134.86	-1,834.59	595.37	1,901.24	1,853.06	48.19	39.456	
7,300.00	7,216.06	7,580.10	7,216.06	23.16	39.03	134.86	-1,834.59	595.37	1,901.24	1,852.81	48.43	39.256	
7,400.00	7,316.06	7,680.10	7,316.06	23.30	39.10	134.86	-1,834.59	595.37	1,901.24	1,852.56	48.68	39.056	
7,500.00	7,416.06	7,780.10	7,416.06	23.44	39.17	134.86	-1,834.59	595.37	1,901.24	1,852.31	48.93	38.855	
7,600.00	7,516.06	7,880.10	7,516.06	23.58	39.25	134.86	-1,834.59	595.37	1,901.24	1,852.06	49.19	38.654	
7,700.00	7,616.06	7,980.10	7,616.06	23.72	39.33	134.86	-1,834.59	595.37	1,901.24	1,851.80	49.44	38.453	
7,800.00	7,716.06	8,080.10	7,716.06	23.86	39.41	134.86	-1,834.59	595.37	1,901.24	1,851.54	49.70	38.252	
7,848.57	7,764.63	8,128.67	7,764.63	23.93	39.45	134.86	-1,834.59	595.37	1,901.24	1,851.41	49.83	38.155	
7,877.94	7,794.00	8,149.04	7,785.00	23.97	39.46	134.86	-1,834.59	595.37	1,901.26	1,851.37	49.90	38.104	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	87.86	0.36	9.75	9.75				
100.00	100.00	100.00	100.00	0.10	0.10	87.86	0.36	9.75	9.75	9.56	0.19	51.047	
200.00	200.00	200.00	200.00	0.32	0.32	87.86	0.36	9.75	9.75	9.11	0.64	15.225	
300.00	300.00	300.00	300.00	0.55	0.55	87.86	0.36	9.75	9.75	8.66	1.09	8.946	
400.00	400.00	400.00	400.00	0.77	0.77	87.86	0.36	9.75	9.75	8.21	1.54	6.334	
500.00	500.00	500.00	500.00	0.99	0.99	87.86	0.36	9.75	9.75	7.76	1.99	4.903	
600.00	600.00	600.00	600.00	1.22	1.22	87.86	0.36	9.75	9.75	7.31	2.44	3.999	
700.00	700.00	700.00	700.00	1.44	1.44	87.86	0.36	9.75	9.75	6.86	2.89	3.377	
750.00	750.00	750.00	750.00	1.56	1.56	87.86	0.36	9.75	9.75	6.64	3.11	3.133 CC	
800.00	800.00	800.14	800.14	1.66	1.66	-148.70	0.10	9.40	9.77	6.46	3.31	2.948	
900.00	899.93	900.42	900.35	1.85	1.85	-147.32	-2.06	6.63	9.92	6.24	3.68	2.693	
1,000.00	999.68	1,000.69	1,000.37	2.05	2.05	-144.70	-6.36	1.09	10.23	6.16	4.07	2.513	
1,100.00	1,099.13	1,100.96	1,100.08	2.28	2.28	-141.07	-12.80	-7.21	10.74	6.25	4.49	2.391	
1,200.00	1,198.15	1,201.22	1,199.36	2.54	2.54	-136.75	-21.38	-18.26	11.47	6.51	4.96	2.312	
1,304.92	1,301.45	1,306.41	1,302.92	2.86	2.86	-131.88	-32.67	-32.80	12.52	6.98	5.54	2.260	
1,400.00	1,394.76	1,401.70	1,396.09	3.19	3.20	-121.88	-44.90	-48.55	12.85	6.62	6.22	2.064	
1,454.94	1,448.67	1,456.67	1,449.53	3.39	3.43	-110.42	-52.82	-58.75	12.74	6.00	6.73	1.892	
1,500.00	1,492.89	1,501.67	1,493.08	3.55	3.61	-97.73	-59.77	-67.70	12.96	5.80	7.16	1.811 ES, SF	
1,600.00	1,591.02	1,601.17	1,588.70	3.93	4.09	-65.90	-76.62	-89.40	16.49	8.72	7.78	2.121	
1,700.00	1,689.15	1,700.00	1,682.68	4.32	4.63	-43.30	-95.36	-113.53	25.62	17.63	7.99	3.208	
1,800.00	1,787.28	1,797.78	1,774.58	4.72	5.23	-30.97	-115.84	-139.92	39.60	31.34	8.26	4.795	
1,900.00	1,885.41	1,894.47	1,864.27	5.13	5.90	-24.02	-137.98	-168.43	57.59	48.95	8.64	6.667	
2,000.00	1,983.54	1,990.33	1,951.97	5.54	6.61	-19.76	-161.71	-198.99	79.12	70.03	9.09	8.706	
2,100.00	2,081.67	2,087.62	2,040.57	5.95	7.38	-17.15	-186.37	-230.74	101.90	92.31	9.59	10.623	
2,200.00	2,179.80	2,184.91	2,129.17	6.37	8.16	-15.49	-211.02	-262.49	124.80	114.68	10.12	12.327	
2,300.00	2,277.93	2,282.20	2,217.76	6.79	8.94	-14.35	-235.67	-294.24	147.77	137.10	10.67	13.844	
2,400.00	2,376.06	2,379.49	2,306.36	7.21	9.74	-13.52	-260.32	-325.99	170.78	159.55	11.24	15.201	
2,500.00	2,474.19	2,476.78	2,394.96	7.63	10.54	-12.88	-284.98	-357.75	193.82	182.02	11.80	16.419	
2,600.00	2,572.32	2,574.07	2,483.56	8.06	11.34	-12.38	-309.63	-389.50	216.88	204.50	12.38	17.517	
2,700.00	2,670.45	2,671.36	2,572.15	8.48	12.15	-11.97	-334.28	-421.25	239.94	226.98	12.96	18.512	
2,800.00	2,768.58	2,768.65	2,660.75	8.91	12.96	-11.64	-358.94	-453.00	263.02	249.48	13.55	19.415	
2,900.00	2,866.71	2,865.94	2,749.35	9.34	13.78	-11.36	-383.59	-484.75	286.11	271.97	14.14	20.240	
3,000.00	2,964.84	2,963.23	2,837.95	9.77	14.60	-11.12	-408.24	-516.50	309.20	294.47	14.73	20.995	
3,100.00	3,062.97	3,060.52	2,926.54	10.20	15.41	-10.92	-432.90	-548.25	332.29	316.97	15.32	21.688	
3,200.00	3,161.10	3,157.81	3,015.14	10.63	16.23	-10.74	-457.55	-580.00	355.39	339.47	15.92	22.327	
3,300.00	3,259.23	3,255.10	3,103.74	11.06	17.05	-10.58	-482.20	-611.75	378.49	361.98	16.52	22.917	
3,400.00	3,357.35	3,352.39	3,192.34	11.49	17.88	-10.44	-506.86	-643.50	401.60	384.48	17.12	23.464	
3,500.00	3,455.48	3,449.68	3,280.93	11.93	18.70	-10.32	-531.51	-675.25	424.70	406.98	17.72	23.972	
3,600.00	3,553.61	3,546.97	3,369.53	12.36	19.52	-10.21	-556.16	-707.00	447.81	429.49	18.32	24.445	
3,700.00	3,651.74	3,644.27	3,458.13	12.79	20.35	-10.11	-580.82	-738.75	470.92	451.99	18.92	24.886	
3,800.00	3,749.87	3,741.56	3,546.73	13.22	21.17	-10.02	-605.47	-770.50	494.03	474.50	19.53	25.299	
3,900.00	3,848.00	3,838.85	3,635.32	13.66	22.00	-9.93	-630.12	-802.25	517.14	497.00	20.13	25.686	
4,000.00	3,946.13	3,936.14	3,723.92	14.09	22.83	-9.86	-654.77	-834.00	540.25	519.51	20.74	26.050	
4,100.00	4,044.26	4,033.43	3,812.52	14.53	23.65	-9.79	-679.43	-865.76	563.36	542.02	21.35	26.391	
4,200.00	4,142.39	4,130.72	3,901.12	14.96	24.48	-9.73	-704.08	-897.51	586.48	564.52	21.95	26.714	
4,300.00	4,240.52	4,228.01	3,989.71	15.39	25.31	-9.67	-728.73	-929.26	609.59	587.03	22.56	27.018	
4,400.00	4,338.65	4,325.30	4,078.31	15.83	26.13	-9.61	-753.39	-961.01	632.70	609.53	23.17	27.305	
4,500.00	4,436.78	4,422.59	4,166.91	16.26	26.96	-9.56	-778.04	-992.76	655.82	632.04	23.78	27.577	
4,600.00	4,534.91	4,519.88	4,255.51	16.70	27.79	-9.51	-802.69	-1,024.51	678.93	654.54	24.39	27.835	
4,700.00	4,633.04	4,617.17	4,344.10	17.13	28.62	-9.47	-827.35	-1,056.26	702.05	677.05	25.00	28.080	
4,800.00	4,731.17	4,714.46	4,432.70	17.57	29.45	-9.43	-852.00	-1,088.01	725.17	699.55	25.61	28.312	
4,900.00	4,829.30	4,811.75	4,521.30	18.01	30.28	-9.39	-876.65	-1,119.76	748.28	722.06	26.22	28.534	

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_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 19-12 - P_MIRACLE 19-12 - PLAN #1 3-23-10 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
5,000.00	4,927.43	4,909.04	4,609.89	18.44	31.11	-9.35	-901.31	-1,151.51	771.40	744.56	26.84	28.745	
5,100.00	5,025.56	5,006.33	4,698.49	18.88	31.94	-9.32	-925.96	-1,183.26	794.52	767.07	27.45	28.946	
5,200.00	5,123.69	5,103.62	4,787.09	19.31	32.77	-9.29	-950.61	-1,215.01	817.64	789.58	28.06	29.138	
5,300.00	5,221.82	5,200.91	4,875.69	19.75	33.60	-9.25	-975.26	-1,246.76	840.75	812.08	28.67	29.322	
5,400.00	5,319.95	5,328.32	4,992.42	20.18	34.52	-9.23	-1,006.56	-1,287.07	862.65	833.28	29.37	29.373	
5,423.03	5,342.55	5,360.65	5,022.38	20.28	34.71	-9.23	-1,014.01	-1,296.67	867.06	837.52	29.53	29.359	
5,500.00	5,418.27	5,469.43	5,124.15	20.56	35.31	-9.26	-1,037.56	-1,326.99	880.95	850.97	29.98	29.385	
5,600.00	5,517.15	5,612.18	5,259.79	20.83	36.03	-9.30	-1,064.82	-1,362.10	897.70	867.22	30.48	29.457	
5,700.00	5,616.49	5,756.45	5,398.95	21.05	36.64	-9.31	-1,088.13	-1,392.13	912.92	882.03	30.89	29.554	
5,800.00	5,716.17	5,902.13	5,541.23	21.24	37.17	-9.31	-1,107.28	-1,416.79	926.56	895.33	31.23	29.673	
5,900.00	5,816.07	6,049.08	5,686.17	21.40	37.59	-9.29	-1,122.08	-1,435.85	938.57	907.09	31.47	29.820	
5,977.94	5,894.00	6,164.42	5,800.68	21.50	37.85	-132.53	-1,130.49	-1,446.68	946.76	915.14	31.62	29.942	
6,000.00	5,916.06	6,197.18	5,833.30	21.52	37.92	-132.52	-1,132.37	-1,449.09	948.81	917.10	31.72	29.915	
6,100.00	6,016.06	6,346.43	5,982.25	21.64	38.13	-132.47	-1,138.00	-1,456.35	954.95	922.82	32.13	29.726	
6,200.00	6,116.06	6,480.26	6,116.06	21.76	38.24	-132.46	-1,139.11	-1,457.77	956.15	923.66	32.49	29.428	
6,300.00	6,216.06	6,580.26	6,216.06	21.88	38.31	-132.46	-1,139.11	-1,457.77	956.15	923.35	32.81	29.146	
6,400.00	6,316.06	6,680.26	6,316.06	22.00	38.38	-132.46	-1,139.11	-1,457.77	956.15	923.03	33.12	28.867	
6,500.00	6,416.06	6,780.26	6,416.06	22.12	38.45	-132.46	-1,139.11	-1,457.77	956.15	922.71	33.44	28.591	
6,600.00	6,516.06	6,880.26	6,516.06	22.25	38.52	-132.46	-1,139.11	-1,457.77	956.15	922.39	33.76	28.318	
6,700.00	6,616.06	6,980.26	6,616.06	22.37	38.60	-132.46	-1,139.11	-1,457.77	956.15	922.06	34.09	28.048	
6,800.00	6,716.06	7,080.26	6,716.06	22.50	38.67	-132.46	-1,139.11	-1,457.77	956.15	921.73	34.42	27.780	
6,900.00	6,816.06	7,180.26	6,816.06	22.63	38.75	-132.46	-1,139.11	-1,457.77	956.15	921.40	34.75	27.516	
7,000.00	6,916.06	7,280.26	6,916.06	22.76	38.82	-132.46	-1,139.11	-1,457.77	956.15	921.07	35.08	27.254	
7,100.00	7,016.06	7,380.26	7,016.06	22.89	38.90	-132.46	-1,139.11	-1,457.77	956.15	920.73	35.42	26.996	
7,200.00	7,116.06	7,480.26	7,116.06	23.03	38.98	-132.46	-1,139.11	-1,457.77	956.15	920.39	35.76	26.740	
7,300.00	7,216.06	7,580.26	7,216.06	23.16	39.06	-132.46	-1,139.11	-1,457.77	956.15	920.05	36.10	26.488	
7,400.00	7,316.06	7,680.26	7,316.06	23.30	39.14	-132.46	-1,139.11	-1,457.77	956.15	919.71	36.44	26.238	
7,500.00	7,416.06	7,780.26	7,416.06	23.44	39.22	-132.46	-1,139.11	-1,457.77	956.15	919.37	36.79	25.992	
7,600.00	7,516.06	7,880.26	7,516.06	23.58	39.31	-132.46	-1,139.11	-1,457.77	956.15	919.02	37.13	25.749	
7,700.00	7,616.06	7,980.26	7,616.06	23.72	39.39	-132.46	-1,139.11	-1,457.77	956.15	918.67	37.48	25.509	
7,800.00	7,716.06	8,080.26	7,716.06	23.86	39.48	-132.46	-1,139.11	-1,457.77	956.15	918.32	37.83	25.272	
7,848.14	7,764.20	8,128.40	7,764.20	23.93	39.52	-132.46	-1,139.11	-1,457.77	956.15	918.15	38.00	25.159	
7,877.94	7,794.00	8,148.20	7,784.00	23.97	39.53	-132.46	-1,139.11	-1,457.77	956.20	918.11	38.09	25.101	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	-87.94	0.36	-10.02	10.03				
100.00	100.00	100.00	100.00	0.10	0.10	-87.94	0.36	-10.02	10.03	9.84	0.19	52.503	
200.00	200.00	200.00	200.00	0.32	0.32	-87.94	0.36	-10.02	10.03	9.39	0.64	15.659	
300.00	300.00	300.00	300.00	0.55	0.55	-87.94	0.36	-10.02	10.03	8.94	1.09	9.202	
400.00	400.00	400.00	400.00	0.77	0.77	-87.94	0.36	-10.02	10.03	8.49	1.54	6.515	
500.00	500.00	500.00	500.00	0.99	0.99	-87.94	0.36	-10.02	10.03	8.04	1.99	5.043	
600.00	600.00	600.00	600.00	1.22	1.22	-87.94	0.36	-10.02	10.03	7.59	2.44	4.113	
700.00	700.00	700.00	700.00	1.44	1.44	-87.94	0.36	-10.02	10.03	7.14	2.89	3.473	
750.00	750.00	750.00	750.00	1.56	1.56	-87.94	0.36	-10.02	10.03	6.92	3.11	3.222 CC	
800.00	800.00	799.83	799.82	1.66	1.66	37.08	0.43	-10.45	10.11	6.79	3.32	3.045 ES	
900.00	899.93	899.43	899.36	1.85	1.87	49.94	1.03	-13.86	11.06	7.35	3.71	2.983 SF	
1,000.00	999.68	998.88	998.57	2.05	2.09	68.35	2.22	-20.67	14.21	10.09	4.12	3.446	
1,100.00	1,099.13	1,098.09	1,097.24	2.28	2.33	83.12	4.00	-30.83	20.47	15.88	4.58	4.465	
1,200.00	1,198.15	1,196.97	1,195.16	2.54	2.59	92.37	6.36	-44.30	29.82	24.72	5.10	5.846	
1,304.92	1,301.45	1,300.00	1,296.63	2.86	2.91	98.11	9.44	-61.87	42.69	36.97	5.72	7.467	
1,400.00	1,394.76	1,393.42	1,388.02	3.19	3.25	100.03	12.77	-80.90	56.59	50.24	6.35	8.918	
1,500.00	1,492.89	1,490.86	1,482.63	3.55	3.65	99.02	16.79	-103.86	73.00	65.94	7.06	10.344	
1,600.00	1,591.02	1,587.54	1,575.66	3.93	4.10	96.64	21.32	-129.76	91.34	83.52	7.82	11.684	
1,700.00	1,689.15	1,683.24	1,666.82	4.32	4.62	93.72	26.34	-158.43	111.80	103.18	8.61	12.980	
1,800.00	1,787.28	1,778.51	1,756.60	4.72	5.19	90.68	31.83	-189.84	134.52	125.09	9.43	14.268	
1,900.00	1,885.41	1,875.50	1,847.69	5.13	5.81	88.24	37.57	-222.63	158.12	147.86	10.27	15.403	
2,000.00	1,983.54	1,972.48	1,938.79	5.54	6.45	86.43	43.31	-255.42	181.93	170.82	11.11	16.377	
2,100.00	2,081.67	2,069.47	2,029.88	5.95	7.09	85.04	49.05	-288.21	205.87	193.91	11.96	17.217	
2,200.00	2,179.80	2,166.46	2,120.97	6.37	7.75	83.94	54.79	-321.00	229.90	217.09	12.81	17.947	
2,300.00	2,277.93	2,263.44	2,212.07	6.79	8.42	83.05	60.53	-353.79	253.99	240.32	13.67	18.584	
2,400.00	2,376.06	2,360.43	2,303.16	7.21	9.09	82.31	66.27	-386.58	278.13	263.60	14.53	19.145	
2,500.00	2,474.19	2,457.41	2,394.25	7.63	9.76	81.69	72.01	-419.37	302.31	286.92	15.39	19.641	
2,600.00	2,572.32	2,554.40	2,485.35	8.06	10.44	81.16	77.75	-452.16	326.52	310.26	16.26	20.084	
2,700.00	2,670.45	2,651.38	2,576.44	8.48	11.13	80.71	83.49	-484.95	350.75	333.62	17.13	20.481	
2,800.00	2,768.58	2,748.37	2,667.53	8.91	11.81	80.31	89.23	-517.74	374.99	357.00	17.99	20.839	
2,900.00	2,866.71	2,845.35	2,758.63	9.34	12.50	79.96	94.97	-550.53	399.26	380.39	18.87	21.163	
3,000.00	2,964.84	2,942.34	2,849.72	9.77	13.18	79.65	100.71	-583.32	423.53	403.79	19.74	21.458	
3,100.00	3,062.97	3,039.32	2,940.82	10.20	13.87	79.38	106.45	-616.11	447.81	427.20	20.61	21.728	
3,200.00	3,161.10	3,136.31	3,031.91	10.63	14.56	79.13	112.19	-648.90	472.11	450.62	21.48	21.975	
3,300.00	3,259.23	3,233.29	3,123.00	11.06	15.26	78.91	117.93	-681.69	496.41	474.05	22.36	22.203	
3,400.00	3,357.35	3,330.28	3,214.10	11.49	15.95	78.71	123.66	-714.48	520.72	497.48	23.23	22.413	
3,500.00	3,455.48	3,427.26	3,305.19	11.93	16.64	78.52	129.40	-747.27	545.03	520.92	24.11	22.608	
3,600.00	3,553.61	3,524.25	3,396.28	12.36	17.34	78.36	135.14	-780.06	569.35	544.36	24.98	22.790	
3,700.00	3,651.74	3,621.23	3,487.38	12.79	18.03	78.20	140.88	-812.85	593.67	567.81	25.86	22.959	
3,800.00	3,749.87	3,718.22	3,578.47	13.22	18.73	78.06	146.62	-845.64	617.99	591.26	26.73	23.117	
3,900.00	3,848.00	3,815.20	3,669.56	13.66	19.42	77.93	152.36	-878.43	642.32	614.71	27.61	23.265	
4,000.00	3,946.13	3,912.19	3,760.66	14.09	20.12	77.81	158.10	-911.22	666.65	638.17	28.48	23.404	
4,100.00	4,044.26	4,009.18	3,851.75	14.53	20.81	77.69	163.84	-944.00	690.99	661.63	29.36	23.535	
4,200.00	4,142.39	4,106.16	3,942.84	14.96	21.51	77.59	169.58	-976.79	715.33	685.09	30.23	23.659	
4,300.00	4,240.52	4,203.15	4,033.94	15.39	22.21	77.49	175.32	-1,009.58	739.66	708.56	31.11	23.776	
4,400.00	4,338.65	4,300.13	4,125.03	15.83	22.91	77.40	181.06	-1,042.37	764.01	732.02	31.98	23.887	
4,500.00	4,436.78	4,397.12	4,216.13	16.26	23.60	77.31	186.80	-1,075.16	788.35	755.49	32.86	23.992	
4,600.00	4,534.91	4,494.10	4,307.22	16.70	24.30	77.23	192.54	-1,107.95	812.69	778.96	33.73	24.091	
4,700.00	4,633.04	4,591.09	4,398.31	17.13	25.00	77.15	198.28	-1,140.74	837.04	802.43	34.61	24.186	
4,800.00	4,731.17	4,688.07	4,489.41	17.57	25.70	77.08	204.02	-1,173.53	861.39	825.90	35.48	24.277	
4,900.00	4,829.30	4,785.06	4,580.50	18.01	26.40	77.01	209.76	-1,206.32	885.73	849.38	36.36	24.363	
5,000.00	4,927.43	4,882.04	4,671.59	18.44	27.10	76.95	215.49	-1,239.11	910.08	872.85	37.23	24.446	

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_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 22-12 - P_MIRACLE 22-12 - PLAN #1 3-23-10 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	5,025.56	4,979.03	4,762.69	18.88	27.80	76.88	221.23	-1,271.90	934.43	896.33	38.10	24.525	
5,200.00	5,123.69	5,076.01	4,853.78	19.31	28.50	76.83	226.97	-1,304.69	958.78	919.81	38.97	24.601	
5,300.00	5,221.82	5,182.66	4,954.02	19.75	29.23	76.77	233.25	-1,340.56	983.02	943.14	39.87	24.653	
5,400.00	5,319.95	5,319.18	5,083.82	20.18	29.94	76.86	240.53	-1,382.16	1,004.51	963.69	40.82	24.609	
5,423.03	5,342.55	5,350.91	5,114.28	20.28	30.09	76.91	242.07	-1,390.95	1,008.92	967.88	41.04	24.587	
5,500.00	5,418.27	5,457.68	5,217.42	20.56	30.55	77.35	246.82	-1,418.09	1,022.38	980.64	41.74	24.492	
5,600.00	5,517.15	5,597.76	5,354.18	20.83	31.07	77.81	252.04	-1,447.92	1,037.07	994.57	42.50	24.400	
5,700.00	5,616.49	5,739.14	5,493.53	21.05	31.49	78.15	256.14	-1,471.31	1,048.51	1,005.38	43.13	24.308	
5,800.00	5,716.17	5,881.50	5,634.87	21.24	31.82	78.38	259.06	-1,488.00	1,056.64	1,013.00	43.64	24.210	
5,900.00	5,816.07	6,024.53	5,777.54	21.40	32.06	78.50	260.77	-1,497.78	1,061.42	1,017.39	44.03	24.109	
5,977.94	5,894.00	6,136.26	5,889.23	21.50	32.18	-44.74	261.25	-1,500.53	1,062.79	1,018.55	44.25	24.019	
6,000.00	5,916.06	6,163.09	5,916.06	21.52	32.20	-44.74	261.26	-1,500.57	1,062.82	1,018.52	44.30	23.990	
6,100.00	6,016.06	6,263.09	6,016.06	21.64	32.28	-44.74	261.26	-1,500.57	1,062.82	1,018.29	44.53	23.866	
6,200.00	6,116.06	6,363.09	6,116.06	21.76	32.37	-44.74	261.26	-1,500.57	1,062.82	1,018.05	44.77	23.740	
6,300.00	6,216.06	6,463.09	6,216.06	21.88	32.46	-44.74	261.26	-1,500.57	1,062.82	1,017.81	45.01	23.614	
6,400.00	6,316.06	6,563.09	6,316.06	22.00	32.56	-44.74	261.26	-1,500.57	1,062.82	1,017.57	45.25	23.488	
6,500.00	6,416.06	6,663.09	6,416.06	22.12	32.65	-44.74	261.26	-1,500.57	1,062.82	1,017.32	45.50	23.361	
6,600.00	6,516.06	6,763.09	6,516.06	22.25	32.74	-44.74	261.26	-1,500.57	1,062.82	1,017.08	45.74	23.234	
6,700.00	6,616.06	6,863.09	6,616.06	22.37	32.84	-44.74	261.26	-1,500.57	1,062.82	1,016.82	46.00	23.107	
6,800.00	6,716.06	6,963.09	6,716.06	22.50	32.94	-44.74	261.26	-1,500.57	1,062.82	1,016.57	46.25	22.979	
6,900.00	6,816.06	7,063.09	6,816.06	22.63	33.04	-44.74	261.26	-1,500.57	1,062.82	1,016.31	46.51	22.852	
7,000.00	6,916.06	7,163.09	6,916.06	22.76	33.14	-44.74	261.26	-1,500.57	1,062.82	1,016.05	46.77	22.725	
7,100.00	7,016.06	7,263.09	7,016.06	22.89	33.24	-44.74	261.26	-1,500.57	1,062.82	1,015.79	47.03	22.598	
7,200.00	7,116.06	7,363.09	7,116.06	23.03	33.34	-44.74	261.26	-1,500.57	1,062.82	1,015.52	47.30	22.470	
7,300.00	7,216.06	7,463.09	7,216.06	23.16	33.44	-44.74	261.26	-1,500.57	1,062.82	1,015.25	47.57	22.343	
7,400.00	7,316.06	7,563.09	7,316.06	23.30	33.55	-44.74	261.26	-1,500.57	1,062.82	1,014.98	47.84	22.216	
7,500.00	7,416.06	7,663.09	7,416.06	23.44	33.65	-44.74	261.26	-1,500.57	1,062.82	1,014.71	48.11	22.090	
7,600.00	7,516.06	7,763.09	7,516.06	23.58	33.76	-44.74	261.26	-1,500.57	1,062.82	1,014.43	48.39	21.963	
7,700.00	7,616.06	7,863.09	7,616.06	23.72	33.87	-44.74	261.26	-1,500.57	1,062.82	1,014.15	48.67	21.837	
7,800.00	7,716.06	7,963.09	7,716.06	23.86	33.98	-44.74	261.26	-1,500.57	1,062.82	1,013.87	48.95	21.711	
7,877.94	7,794.00	8,041.03	7,794.00	23.97	34.06	-44.74	261.26	-1,500.57	1,062.82	1,013.65	49.17	21.614	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	90.42	-0.36	49.84	49.84				
100.00	100.00	100.00	100.00	0.10	0.10	90.42	-0.36	49.84	49.84	49.65	0.19	260.896	
200.00	200.00	200.00	200.00	0.32	0.32	90.42	-0.36	49.84	49.84	49.20	0.64	77.811	
300.00	300.00	300.00	300.00	0.55	0.55	90.42	-0.36	49.84	49.84	48.75	1.09	45.724	
400.00	400.00	400.00	400.00	0.77	0.77	90.42	-0.36	49.84	49.84	48.30	1.54	32.374	
500.00	500.00	500.00	500.00	0.99	0.99	90.42	-0.36	49.84	49.84	47.86	1.99	25.058	
600.00	600.00	600.00	600.00	1.22	1.22	90.42	-0.36	49.84	49.84	47.41	2.44	20.439	
700.00	700.00	700.00	700.00	1.44	1.44	90.42	-0.36	49.84	49.84	46.96	2.89	17.258	
750.00	750.00	750.00	750.00	1.56	1.56	90.42	-0.36	49.84	49.84	46.73	3.11	16.012 CC, ES	
800.00	800.00	800.22	800.22	1.66	1.66	-146.10	-0.79	49.73	50.10	46.79	3.31	15.125	
900.00	899.93	900.61	900.54	1.85	1.83	-144.48	-4.19	48.82	52.14	48.47	3.67	14.199	
1,000.00	999.68	1,000.86	1,000.54	2.05	2.02	-141.60	-10.97	47.00	56.34	52.29	4.06	13.886 SF	
1,100.00	1,099.13	1,100.87	1,100.00	2.28	2.24	-138.00	-21.09	44.29	62.85	58.37	4.48	14.024	
1,200.00	1,198.15	1,200.57	1,198.71	2.54	2.49	-134.23	-34.52	40.69	71.80	66.84	4.96	14.463	
1,304.92	1,301.45	1,304.72	1,301.26	2.86	2.80	-130.49	-52.08	35.98	83.90	78.34	5.56	15.099	
1,400.00	1,394.76	1,398.69	1,393.16	3.19	3.12	-126.93	-71.00	30.91	96.34	90.15	6.19	15.568	
1,500.00	1,492.89	1,496.98	1,488.55	3.55	3.52	-122.37	-93.90	24.77	110.18	103.25	6.94	15.887	
1,600.00	1,591.02	1,595.15	1,583.13	3.93	3.97	-117.62	-119.26	17.97	125.16	117.42	7.75	16.154	
1,700.00	1,689.15	1,693.51	1,677.85	4.32	4.44	-113.81	-144.89	11.10	140.88	132.29	8.59	16.408	
1,800.00	1,787.28	1,791.88	1,772.58	4.72	4.93	-110.77	-170.51	4.23	157.08	147.65	9.44	16.647	
1,900.00	1,885.41	1,890.25	1,867.30	5.13	5.43	-108.30	-196.14	-2.65	173.64	163.35	10.29	16.869	
2,000.00	1,983.54	1,988.62	1,962.02	5.54	5.94	-106.26	-221.76	-9.52	190.46	179.30	11.15	17.074	
2,100.00	2,081.67	2,086.99	2,056.75	5.95	6.46	-104.55	-247.39	-16.39	207.47	195.45	12.02	17.262	
2,200.00	2,179.80	2,185.36	2,151.47	6.37	6.99	-103.10	-273.01	-23.26	224.64	211.75	12.88	17.434	
2,300.00	2,277.93	2,283.72	2,246.19	6.79	7.51	-101.86	-298.63	-30.13	241.92	228.17	13.75	17.592	
2,400.00	2,376.06	2,382.09	2,340.92	7.21	8.04	-100.78	-324.26	-37.00	259.30	244.68	14.62	17.737	
2,500.00	2,474.19	2,480.46	2,435.64	7.63	8.58	-99.84	-349.88	-43.87	276.76	261.27	15.49	17.870	
2,600.00	2,572.32	2,578.83	2,530.36	8.06	9.11	-99.01	-375.51	-50.74	294.29	277.93	16.36	17.993	
2,700.00	2,670.45	2,677.20	2,625.09	8.48	9.65	-98.27	-401.13	-57.61	311.86	294.64	17.22	18.106	
2,800.00	2,768.58	2,775.57	2,719.81	8.91	10.19	-97.62	-426.76	-64.48	329.48	311.39	18.09	18.211	
2,900.00	2,866.71	2,873.93	2,814.54	9.34	10.73	-97.03	-452.38	-71.35	347.14	328.18	18.96	18.308	
3,000.00	2,964.84	2,972.30	2,909.26	9.77	11.28	-96.49	-478.00	-78.22	364.83	345.01	19.83	18.399	
3,100.00	3,062.97	3,070.67	3,003.98	10.20	11.82	-96.01	-503.63	-85.09	382.55	361.86	20.70	18.483	
3,200.00	3,161.10	3,169.04	3,098.71	10.63	12.36	-95.56	-529.25	-91.96	400.30	378.73	21.57	18.562	
3,300.00	3,259.23	3,267.41	3,193.43	11.06	12.91	-95.16	-554.88	-98.83	418.06	395.63	22.43	18.636	
3,400.00	3,357.35	3,365.78	3,288.15	11.49	13.45	-94.79	-580.50	-105.70	435.85	412.55	23.30	18.705	
3,500.00	3,455.48	3,464.14	3,382.88	11.93	14.00	-94.45	-606.12	-112.57	453.65	429.48	24.17	18.771	
3,600.00	3,553.61	3,562.51	3,477.60	12.36	14.55	-94.13	-631.75	-119.44	471.46	446.43	25.03	18.832	
3,700.00	3,651.74	3,660.88	3,572.32	12.79	15.09	-93.84	-657.37	-126.31	489.29	463.39	25.90	18.890	
3,800.00	3,749.87	3,759.25	3,667.05	13.22	15.64	-93.56	-683.00	-133.18	507.13	480.36	26.77	18.946	
3,900.00	3,848.00	3,857.62	3,761.77	13.66	16.19	-93.31	-708.62	-140.05	524.97	497.34	27.63	18.998	
4,000.00	3,946.13	3,955.99	3,856.49	14.09	16.74	-93.07	-734.25	-146.92	542.83	514.33	28.50	19.047	
4,100.00	4,044.26	4,054.35	3,951.22	14.53	17.29	-92.85	-759.87	-153.79	560.70	531.34	29.36	19.095	
4,200.00	4,142.39	4,152.72	4,045.94	14.96	17.84	-92.64	-785.49	-160.66	578.57	548.35	30.23	19.140	
4,300.00	4,240.52	4,251.09	4,140.66	15.39	18.38	-92.45	-811.12	-167.53	596.46	565.36	31.09	19.182	
4,400.00	4,338.65	4,349.46	4,235.39	15.83	18.93	-92.26	-836.74	-174.40	614.34	582.39	31.96	19.223	
4,500.00	4,436.78	4,447.83	4,330.11	16.26	19.48	-92.09	-862.37	-181.27	632.24	599.41	32.82	19.261	
4,600.00	4,534.91	4,546.20	4,424.83	16.70	20.03	-91.92	-887.99	-188.14	650.14	616.44	33.70	19.295	
4,700.00	4,633.04	4,644.56	4,519.56	17.13	20.58	-91.77	-913.62	-195.01	668.04	633.47	34.57	19.326	
4,800.00	4,731.17	4,742.93	4,614.28	17.57	21.13	-91.62	-939.24	-201.88	685.95	650.51	35.44	19.356	
4,900.00	4,829.30	4,841.30	4,709.00	18.01	21.68	-91.48	-964.86	-208.75	703.86	667.55	36.31	19.385	
5,000.00	4,927.43	4,939.67	4,803.73	18.44	22.23	-91.35	-990.49	-215.62	721.78	684.60	37.18	19.413	

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_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.00	5,025.56	5,038.04	4,898.45	18.88	22.78	-91.22	-1,016.11	-222.49	739.70	701.65	38.05	19.439	
5,200.00	5,123.69	5,136.41	4,993.18	19.31	23.34	-91.10	-1,041.74	-229.36	757.62	718.70	38.92	19.464	
5,300.00	5,221.82	5,234.77	5,087.90	19.75	23.89	-90.98	-1,067.36	-236.23	775.55	735.75	39.80	19.488	
5,400.00	5,319.95	5,346.65	5,195.89	20.18	24.39	-90.91	-1,095.56	-243.79	792.95	752.30	40.65	19.507	
5,423.03	5,342.55	5,374.30	5,222.74	20.28	24.50	-90.93	-1,101.95	-245.50	796.62	755.78	40.84	19.505	
5,500.00	5,418.27	5,467.08	5,313.27	20.56	24.81	-91.24	-1,121.57	-250.76	807.85	766.41	41.45	19.492	
5,600.00	5,517.15	5,588.39	5,432.53	20.83	25.17	-91.56	-1,142.93	-256.49	820.01	777.92	42.09	19.481	
5,700.00	5,616.49	5,710.39	5,553.31	21.05	25.48	-91.80	-1,159.47	-260.92	829.38	786.73	42.65	19.447	
5,800.00	5,716.17	5,832.91	5,675.24	21.24	25.72	-91.96	-1,171.07	-264.03	835.92	792.81	43.10	19.394	
5,900.00	5,816.07	5,955.78	5,797.91	21.40	25.91	-92.05	-1,177.63	-265.79	839.61	796.15	43.46	19.320	
5,977.94	5,894.00	6,051.66	5,893.77	21.50	26.02	144.66	-1,179.22	-266.22	840.50	796.81	43.69	19.239	
6,000.00	5,916.06	6,073.95	5,916.06	21.52	26.04	144.66	-1,179.22	-266.22	840.50	796.76	43.74	19.217	
6,100.00	6,016.06	6,173.95	6,016.06	21.64	26.13	144.66	-1,179.22	-266.22	840.50	796.54	43.96	19.119	
6,200.00	6,116.06	6,273.95	6,116.06	21.76	26.22	144.66	-1,179.22	-266.22	840.50	796.31	44.19	19.022	
6,300.00	6,216.06	6,373.95	6,216.06	21.88	26.31	144.66	-1,179.22	-266.22	840.50	796.09	44.41	18.924	
6,400.00	6,316.06	6,473.95	6,316.06	22.00	26.40	144.66	-1,179.22	-266.22	840.50	795.85	44.65	18.826	
6,500.00	6,416.06	6,573.95	6,416.06	22.12	26.50	144.66	-1,179.22	-266.22	840.50	795.62	44.88	18.728	
6,600.00	6,516.06	6,673.95	6,516.06	22.25	26.59	144.66	-1,179.22	-266.22	840.50	795.38	45.12	18.629	
6,700.00	6,616.06	6,773.95	6,616.06	22.37	26.69	144.66	-1,179.22	-266.22	840.50	795.14	45.36	18.530	
6,800.00	6,716.06	6,873.95	6,716.06	22.50	26.78	144.66	-1,179.22	-266.22	840.50	794.90	45.60	18.431	
6,900.00	6,816.06	6,973.95	6,816.06	22.63	26.88	144.66	-1,179.22	-266.22	840.50	794.65	45.85	18.332	
7,000.00	6,916.06	7,073.95	6,916.06	22.76	26.98	144.66	-1,179.22	-266.22	840.50	794.40	46.10	18.232	
7,100.00	7,016.06	7,173.95	7,016.06	22.89	27.09	144.66	-1,179.22	-266.22	840.50	794.15	46.35	18.133	
7,200.00	7,116.06	7,273.95	7,116.06	23.03	27.19	144.66	-1,179.22	-266.22	840.50	793.89	46.61	18.033	
7,300.00	7,216.06	7,373.95	7,216.06	23.16	27.30	144.66	-1,179.22	-266.22	840.50	793.63	46.87	17.934	
7,400.00	7,316.06	7,473.95	7,316.06	23.30	27.40	144.66	-1,179.22	-266.22	840.50	793.37	47.13	17.834	
7,500.00	7,416.06	7,573.95	7,416.06	23.44	27.51	144.66	-1,179.22	-266.22	840.50	793.11	47.39	17.734	
7,600.00	7,516.06	7,673.95	7,516.06	23.58	27.62	144.66	-1,179.22	-266.22	840.50	792.84	47.66	17.635	
7,700.00	7,616.06	7,773.95	7,616.06	23.72	27.73	144.66	-1,179.22	-266.22	840.50	792.57	47.93	17.535	
7,800.00	7,716.06	7,873.95	7,716.06	23.86	27.84	144.66	-1,179.22	-266.22	840.50	792.30	48.20	17.436	
7,877.94	7,794.00	7,951.89	7,794.00	23.97	27.93	144.66	-1,179.22	-266.22	840.50	792.08	48.42	17.359	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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						
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	90.01	0.00	19.77	19.77				
100.00	100.00	100.00	100.00	0.10	0.10	90.01	0.00	19.77	19.77	19.58	0.19	103.481	
200.00	200.00	200.00	200.00	0.32	0.32	90.01	0.00	19.77	19.77	19.13	0.64	30.863	
300.00	300.00	300.00	300.00	0.55	0.55	90.01	0.00	19.77	19.77	18.68	1.09	18.136	
400.00	400.00	400.00	400.00	0.77	0.77	90.01	0.00	19.77	19.77	18.23	1.54	12.841	
500.00	500.00	500.00	500.00	0.99	0.99	90.01	0.00	19.77	19.77	17.78	1.99	9.939	
600.00	600.00	600.00	600.00	1.22	1.22	90.01	0.00	19.77	19.77	17.33	2.44	8.107	
700.00	700.00	700.00	700.00	1.44	1.44	90.01	0.00	19.77	19.77	16.88	2.89	6.845	
750.00	750.00	750.00	750.00	1.56	1.56	90.01	0.00	19.77	19.77	16.66	3.11	6.351 CC, ES	
800.00	800.00	799.89	799.89	1.66	1.67	-148.57	0.41	19.89	20.27	16.94	3.33	6.094 SF	
900.00	899.93	899.44	899.37	1.85	1.89	-160.28	3.68	20.83	24.82	21.09	3.73	6.655	
1,000.00	999.68	998.84	998.68	2.05	2.11	-170.83	8.02	22.09	34.21	30.07	4.14	8.269	
1,100.00	1,099.13	1,097.83	1,097.56	2.28	2.34	-176.98	12.34	23.34	47.72	43.18	4.55	10.495	
1,200.00	1,198.15	1,196.27	1,195.90	2.54	2.57	179.62	16.63	24.58	64.98	60.03	4.96	13.111	
1,304.92	1,301.45	1,298.83	1,298.35	2.86	2.80	177.66	21.11	25.87	86.91	81.52	5.39	16.137	
1,400.00	1,394.76	1,391.41	1,390.84	3.19	3.02	176.64	25.15	27.04	108.53	102.72	5.81	18.685	
1,500.00	1,492.89	1,488.77	1,488.10	3.55	3.24	175.93	29.40	28.27	131.29	125.03	6.26	20.976	
1,600.00	1,591.02	1,586.14	1,585.37	3.93	3.47	175.43	33.65	29.49	154.06	147.35	6.71	22.945	
1,700.00	1,689.15	1,683.50	1,682.63	4.32	3.70	175.06	37.89	30.72	176.85	169.67	7.17	24.651	
1,800.00	1,787.28	1,780.87	1,779.89	4.72	3.93	174.77	42.14	31.95	199.63	192.00	7.64	26.141	
1,900.00	1,885.41	1,878.23	1,877.16	5.13	4.15	174.54	46.39	33.18	222.42	214.32	8.10	27.452	
2,000.00	1,983.54	1,975.60	1,974.42	5.54	4.38	174.36	50.64	34.41	245.22	236.65	8.57	28.614	
2,100.00	2,081.67	2,072.96	2,071.69	5.95	4.61	174.20	54.89	35.63	268.01	258.97	9.04	29.649	
2,200.00	2,179.80	2,170.33	2,168.95	6.37	4.84	174.08	59.14	36.86	290.81	281.30	9.51	30.578	
2,300.00	2,277.93	2,267.69	2,266.22	6.79	5.07	173.96	63.39	38.09	313.61	303.63	9.98	31.415	
2,400.00	2,376.06	2,365.06	2,363.48	7.21	5.30	173.87	67.64	39.32	336.41	325.95	10.46	32.172	
2,500.00	2,474.19	2,462.42	2,460.74	7.63	5.53	173.78	71.89	40.55	359.21	348.28	10.93	32.861	
2,600.00	2,572.32	2,559.79	2,558.01	8.06	5.76	173.71	76.14	41.77	382.01	370.61	11.41	33.491	
2,700.00	2,670.45	2,657.15	2,655.27	8.48	5.99	173.65	80.39	43.00	404.81	392.93	11.88	34.068	
2,800.00	2,768.58	2,754.52	2,752.54	8.91	6.22	173.59	84.63	44.23	427.62	415.26	12.36	34.598	
2,900.00	2,866.71	2,851.88	2,849.80	9.34	6.45	173.53	88.88	45.46	450.42	437.58	12.84	35.088	
3,000.00	2,964.84	2,949.25	2,947.06	9.77	6.68	173.49	93.13	46.69	473.22	459.91	13.31	35.541	
3,100.00	3,062.97	3,046.61	3,044.33	10.20	6.91	173.44	97.38	47.91	496.02	482.23	13.79	35.961	
3,200.00	3,161.10	3,143.98	3,141.59	10.63	7.14	173.40	101.63	49.14	518.83	504.55	14.27	36.352	
3,300.00	3,259.23	3,241.34	3,238.86	11.06	7.37	173.37	105.88	50.37	541.63	526.88	14.75	36.717	
3,400.00	3,357.35	3,338.70	3,336.12	11.49	7.60	173.34	110.13	51.60	564.43	549.20	15.23	37.059	
3,500.00	3,455.48	3,436.07	3,433.39	11.93	7.83	173.31	114.38	52.83	587.24	571.53	15.71	37.378	
3,600.00	3,553.61	3,533.43	3,530.65	12.36	8.06	173.28	118.63	54.05	610.04	593.85	16.19	37.678	
3,700.00	3,651.74	3,630.80	3,627.91	12.79	8.29	173.25	122.88	55.28	632.85	616.17	16.67	37.961	
3,800.00	3,749.87	3,728.16	3,725.18	13.22	8.52	173.23	127.13	56.51	655.65	638.50	17.15	38.226	
3,900.00	3,848.00	3,825.53	3,822.44	13.66	8.75	173.20	131.37	57.74	678.45	660.82	17.63	38.477	
4,000.00	3,946.13	3,922.89	3,919.71	14.09	8.98	173.18	135.62	58.96	701.26	683.15	18.11	38.715	
4,100.00	4,044.26	4,020.26	4,016.97	14.53	9.21	173.16	139.87	60.19	724.06	705.47	18.59	38.939	
4,200.00	4,142.39	4,117.62	4,114.24	14.96	9.45	173.14	144.12	61.42	746.87	727.79	19.08	39.152	
4,300.00	4,240.52	4,214.99	4,211.50	15.39	9.68	173.13	148.37	62.65	769.67	750.12	19.56	39.354	
4,400.00	4,338.65	4,312.35	4,308.76	15.83	9.91	173.11	152.62	63.88	792.48	772.44	20.04	39.546	
4,500.00	4,436.78	4,409.72	4,406.03	16.26	10.14	173.09	156.87	65.10	815.28	794.76	20.52	39.729	
4,600.00	4,534.91	4,507.08	4,503.29	16.70	10.37	173.08	161.12	66.33	838.09	817.08	21.00	39.903	
4,700.00	4,633.04	4,604.45	4,600.56	17.13	10.60	173.06	165.37	67.56	860.89	839.41	21.48	40.070	
4,800.00	4,731.17	4,701.81	4,697.82	17.57	10.83	173.05	169.62	68.79	883.70	861.73	21.97	40.228	
4,900.00	4,829.30	4,799.18	4,795.09	18.01	11.06	173.04	173.87	70.02	906.50	884.05	22.45	40.380	
5,000.00	4,927.43	4,896.54	4,892.35	18.44	11.29	173.03	178.12	71.24	929.31	906.38	22.93	40.525	

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_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 25-12 - P_MIRACLE 25-12 - PLAN #1 3-23-10 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	5,025.56	4,993.91	4,989.61	18.88	11.52	173.02	182.36	72.47	952.11	928.70	23.41	40.665	
5,200.00	5,123.69	5,091.27	5,086.88	19.31	11.75	173.00	186.61	73.70	974.92	951.02	23.90	40.798	
5,300.00	5,221.82	5,188.63	5,184.14	19.75	11.98	172.99	190.86	74.93	997.72	973.34	24.38	40.926	
5,400.00	5,319.95	5,286.00	5,281.41	20.18	12.22	172.98	195.11	76.16	1,020.53	995.67	24.86	41.049	
5,423.03	5,342.55	5,308.42	5,303.80	20.28	12.27	172.98	196.09	76.44	1,025.78	1,000.81	24.97	41.076	
5,500.00	5,418.27	5,383.59	5,378.90	20.56	12.45	173.01	199.37	77.39	1,042.33	1,016.94	25.39	41.047	
5,600.00	5,517.15	5,481.86	5,477.06	20.83	12.68	173.02	203.66	78.63	1,060.83	1,034.94	25.89	40.974	
5,700.00	5,616.49	5,580.70	5,575.80	21.05	12.91	172.99	207.97	79.87	1,075.92	1,049.57	26.35	40.831	
5,800.00	5,716.17	5,680.00	5,675.00	21.24	13.15	172.94	212.31	81.12	1,087.57	1,060.80	26.77	40.620	
5,900.00	5,816.07	5,779.64	5,774.54	21.40	13.39	172.86	216.65	82.38	1,095.78	1,068.63	27.16	40.347	
5,977.94	5,894.00	5,892.09	5,886.94	21.50	13.59	49.52	219.60	83.23	1,098.63	1,071.17	27.46	40.010	
6,000.00	5,916.06	5,921.21	5,916.06	21.52	13.64	49.52	219.68	83.26	1,098.68	1,071.13	27.55	39.881	
6,100.00	6,016.06	6,021.21	6,016.06	21.64	13.83	49.52	219.68	83.26	1,098.68	1,070.76	27.92	39.351	
6,200.00	6,116.06	6,121.21	6,116.06	21.76	14.05	49.52	219.68	83.26	1,098.68	1,070.37	28.31	38.804	
6,300.00	6,216.06	6,221.21	6,216.06	21.88	14.26	49.52	219.68	83.26	1,098.68	1,069.97	28.71	38.271	
6,400.00	6,316.06	6,321.21	6,316.06	22.00	14.47	49.52	219.68	83.26	1,098.68	1,069.58	29.10	37.750	
6,500.00	6,416.06	6,421.21	6,416.06	22.12	14.69	49.52	219.68	83.26	1,098.68	1,069.18	29.50	37.241	
6,600.00	6,516.06	6,521.21	6,516.06	22.25	14.90	49.52	219.68	83.26	1,098.68	1,068.78	29.90	36.744	
6,700.00	6,616.06	6,621.21	6,616.06	22.37	15.12	49.52	219.68	83.26	1,098.68	1,068.38	30.30	36.259	
6,800.00	6,716.06	6,721.21	6,716.06	22.50	15.33	49.52	219.68	83.26	1,098.68	1,067.98	30.70	35.785	
6,900.00	6,816.06	6,821.21	6,816.06	22.63	15.55	49.52	219.68	83.26	1,098.68	1,067.58	31.11	35.321	
7,000.00	6,916.06	6,921.21	6,916.06	22.76	15.76	49.52	219.68	83.26	1,098.68	1,067.17	31.51	34.868	
7,100.00	7,016.06	7,021.21	7,016.06	22.89	15.98	49.52	219.68	83.26	1,098.68	1,066.77	31.91	34.426	
7,200.00	7,116.06	7,121.21	7,116.06	23.03	16.19	49.52	219.68	83.26	1,098.68	1,066.36	32.32	33.993	
7,300.00	7,216.06	7,221.21	7,216.06	23.16	16.41	49.52	219.68	83.26	1,098.68	1,065.95	32.73	33.570	
7,400.00	7,316.06	7,321.21	7,316.06	23.30	16.63	49.52	219.68	83.26	1,098.68	1,065.54	33.14	33.156	
7,500.00	7,416.06	7,421.21	7,416.06	23.44	16.84	49.52	219.68	83.26	1,098.68	1,065.14	33.55	32.751	
7,600.00	7,516.06	7,521.21	7,516.06	23.58	17.06	49.52	219.68	83.26	1,098.68	1,064.72	33.96	32.356	
7,700.00	7,616.06	7,621.21	7,616.06	23.72	17.28	49.52	219.68	83.26	1,098.68	1,064.31	34.37	31.968	
7,800.00	7,716.06	7,721.21	7,716.06	23.86	17.50	49.52	219.68	83.26	1,098.68	1,063.90	34.78	31.589	
7,877.94	7,794.00	7,799.15	7,794.00	23.97	17.66	49.52	219.68	83.26	1,098.68	1,063.58	35.10	31.300	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 7-12 - P_MIRACLE 7-12 - PLAN #1 3-23-10 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	90.52	-0.72	79.64	79.64				
100.00	100.00	100.00	100.00	0.10	0.10	90.52	-0.72	79.64	79.64	79.45	0.19	416.857	
200.00	200.00	200.00	200.00	0.32	0.32	90.52	-0.72	79.64	79.64	79.00	0.64	124.326	
300.00	300.00	300.00	300.00	0.55	0.55	90.52	-0.72	79.64	79.64	78.55	1.09	73.057	
400.00	400.00	400.00	400.00	0.77	0.77	90.52	-0.72	79.64	79.64	78.10	1.54	51.727	
500.00	500.00	500.00	500.00	0.99	0.99	90.52	-0.72	79.64	79.64	77.65	1.99	40.037	
600.00	600.00	600.00	600.00	1.22	1.22	90.52	-0.72	79.64	79.64	77.20	2.44	32.657	
700.00	700.00	700.00	700.00	1.44	1.44	90.52	-0.72	79.64	79.64	76.75	2.89	27.574	
750.00	750.00	750.00	750.00	1.56	1.56	90.52	-0.72	79.64	79.64	76.53	3.11	25.583 CC, ES	
800.00	800.00	799.19	799.19	1.66	1.67	-146.63	-0.37	79.89	80.25	76.93	3.32	24.152	
900.00	899.93	897.24	897.18	1.85	1.88	-149.68	2.35	81.86	85.30	81.58	3.72	22.926 SF	
1,000.00	999.68	994.28	993.98	2.05	2.10	-154.74	7.72	85.74	96.01	91.88	4.12	23.284	
1,100.00	1,099.13	1,089.66	1,088.87	2.28	2.33	-160.41	15.58	91.43	113.10	108.58	4.53	24.980	
1,200.00	1,198.15	1,182.79	1,181.15	2.54	2.58	-165.65	25.72	98.76	137.00	132.07	4.93	27.785	
1,304.92	1,301.45	1,277.50	1,274.52	2.86	2.85	-170.21	38.52	108.02	169.38	164.04	5.35	31.673	
1,400.00	1,394.76	1,361.61	1,356.98	3.19	3.13	-173.58	51.95	117.74	203.48	197.73	5.76	35.352	
1,500.00	1,492.89	1,453.88	1,447.25	3.55	3.46	-176.32	67.45	128.95	240.75	234.54	6.21	38.798	
1,600.00	1,591.02	1,546.15	1,537.51	3.93	3.81	-178.33	82.95	140.16	278.37	271.71	6.66	41.796	
1,700.00	1,689.15	1,638.42	1,627.78	4.32	4.16	-179.86	98.44	151.37	316.21	309.09	7.12	44.404	
1,800.00	1,787.28	1,730.69	1,718.05	4.72	4.53	178.94	113.94	162.59	354.20	346.62	7.59	46.683	
1,900.00	1,885.41	1,822.96	1,808.31	5.13	4.90	177.96	129.43	173.80	392.31	384.25	8.06	48.685	
2,000.00	1,983.54	1,915.23	1,898.58	5.54	5.28	177.16	144.93	185.01	430.49	421.96	8.53	50.453	
2,100.00	2,081.67	2,007.50	1,988.84	5.95	5.67	176.49	160.43	196.22	468.73	459.72	9.01	52.023	
2,200.00	2,179.80	2,099.77	2,079.11	6.37	6.05	175.92	175.92	207.43	507.02	497.53	9.49	53.425	
2,300.00	2,277.93	2,192.04	2,169.38	6.79	6.45	175.43	191.42	218.64	545.35	535.38	9.97	54.681	
2,400.00	2,376.06	2,284.31	2,259.64	7.21	6.84	175.01	206.91	229.85	583.71	573.25	10.46	55.814	
2,500.00	2,474.19	2,376.58	2,349.91	7.63	7.23	174.63	222.41	241.06	622.09	611.15	10.94	56.839	
2,600.00	2,572.32	2,468.85	2,440.17	8.06	7.63	174.30	237.90	252.27	660.49	649.06	11.43	57.771	
2,700.00	2,670.45	2,561.12	2,530.44	8.48	8.03	174.01	253.40	263.48	698.91	686.99	11.92	58.622	
2,800.00	2,768.58	2,653.39	2,620.70	8.91	8.43	173.75	268.90	274.69	737.34	724.93	12.41	59.401	
2,900.00	2,866.71	2,745.66	2,710.97	9.34	8.83	173.51	284.39	285.90	775.79	762.88	12.90	60.116	
3,000.00	2,964.84	2,837.93	2,801.24	9.77	9.23	173.29	299.89	297.11	814.24	800.84	13.40	60.776	
3,100.00	3,062.97	2,930.20	2,891.50	10.20	9.63	173.10	315.38	308.32	852.70	838.81	13.89	61.386	
3,200.00	3,161.10	3,022.47	2,981.77	10.63	10.04	172.92	330.88	319.53	891.17	876.79	14.39	61.951	
3,300.00	3,259.23	3,114.74	3,072.03	11.06	10.44	172.76	346.38	330.75	929.65	914.77	14.88	62.476	
3,400.00	3,357.35	3,207.01	3,162.30	11.49	10.85	172.61	361.87	341.96	968.14	952.76	15.38	62.965	
3,500.00	3,455.48	3,299.28	3,252.56	11.93	11.25	172.47	377.37	353.17	1,006.62	990.75	15.87	63.421	
3,600.00	3,553.61	3,391.55	3,342.83	12.36	11.66	172.34	392.86	364.38	1,045.12	1,028.75	16.37	63.848	
3,700.00	3,651.74	3,483.82	3,433.10	12.79	12.06	172.22	408.36	375.59	1,083.62	1,066.75	16.87	64.249	
3,800.00	3,749.87	3,576.09	3,523.36	13.22	12.47	172.11	423.86	386.80	1,122.12	1,104.75	17.36	64.625	
3,900.00	3,848.00	3,668.36	3,613.63	13.66	12.87	172.00	439.35	398.01	1,160.62	1,142.76	17.86	64.979	
4,000.00	3,946.13	3,760.63	3,703.89	14.09	13.28	171.90	454.85	409.22	1,199.13	1,180.77	18.36	65.312	
4,100.00	4,044.26	3,852.90	3,794.16	14.53	13.69	171.81	470.34	420.43	1,237.64	1,218.78	18.86	65.627	
4,200.00	4,142.39	3,945.17	3,884.42	14.96	14.10	171.73	485.84	431.64	1,276.15	1,256.80	19.36	65.925	
4,300.00	4,240.52	4,037.44	3,974.69	15.39	14.50	171.65	501.34	442.85	1,314.67	1,294.81	19.86	66.207	
4,400.00	4,338.65	4,129.71	4,064.96	15.83	14.91	171.57	516.83	454.06	1,353.19	1,332.83	20.36	66.474	
4,500.00	4,436.78	4,221.98	4,155.22	16.26	15.32	171.50	532.33	465.27	1,391.71	1,370.85	20.86	66.728	
4,600.00	4,534.91	4,314.24	4,245.49	16.70	15.73	171.43	547.82	476.48	1,430.23	1,408.87	21.36	66.969	
4,700.00	4,633.04	4,406.51	4,335.75	17.13	16.14	171.37	563.32	487.70	1,468.75	1,446.89	21.86	67.199	
4,800.00	4,731.17	4,498.78	4,426.02	17.57	16.55	171.30	578.81	498.91	1,507.27	1,484.92	22.36	67.417	
4,900.00	4,829.30	4,591.05	4,516.29	18.01	16.95	171.25	594.31	510.12	1,545.80	1,522.94	22.86	67.626	
5,000.00	4,927.43	4,683.32	4,606.55	18.44	17.36	171.19	609.81	521.33	1,584.33	1,560.97	23.36	67.826	

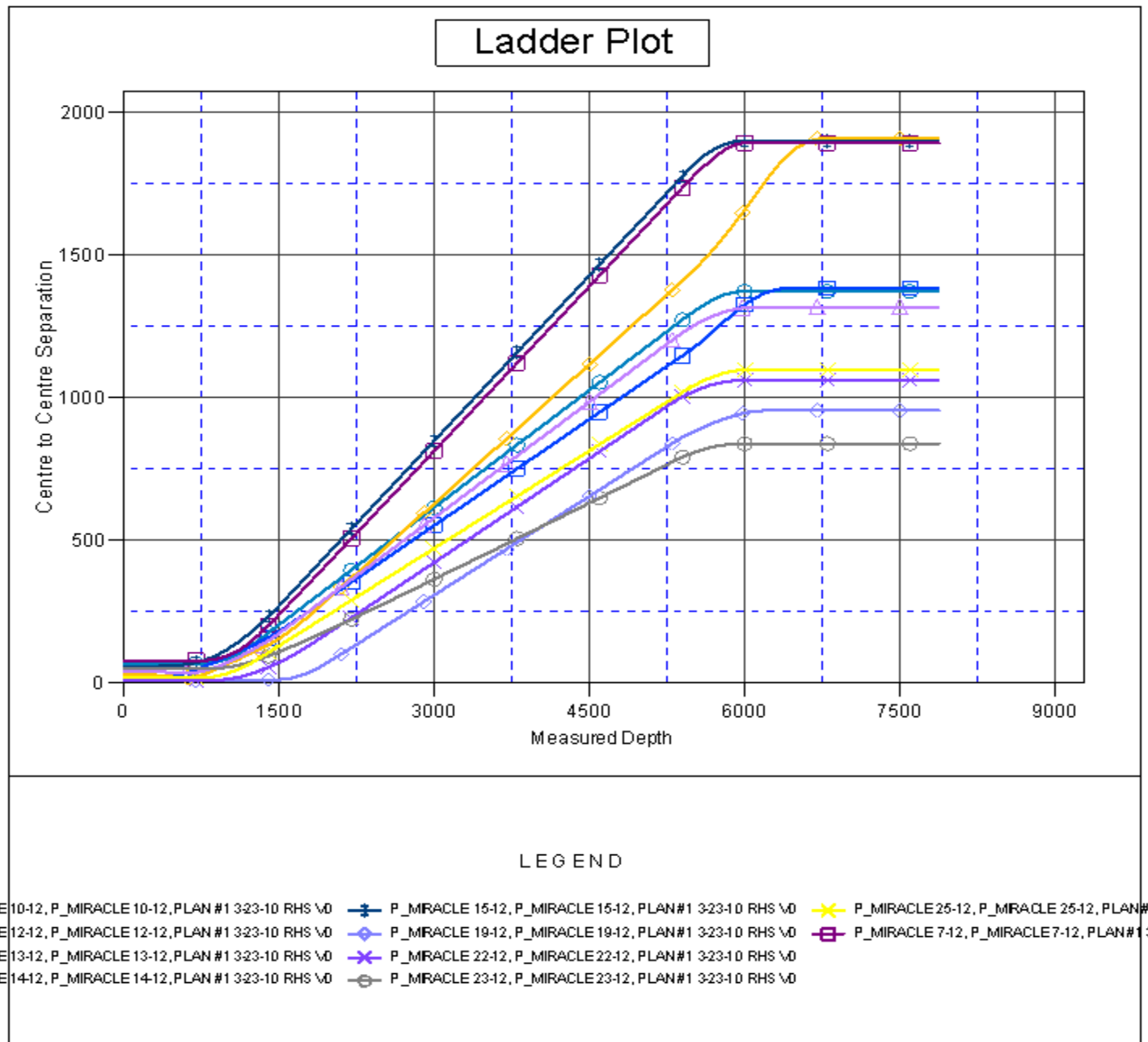
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 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	
5,100.00	5,025.56	4,775.59	4,696.82	18.88	17.77	171.14	625.30	532.54	1,622.86	1,599.00	23.86	68.016	
5,200.00	5,123.69	4,867.86	4,787.08	19.31	18.18	171.09	640.80	543.75	1,661.38	1,637.02	24.36	68.198	
5,300.00	5,221.82	4,960.13	4,877.35	19.75	18.59	171.04	656.29	554.96	1,699.92	1,675.05	24.86	68.373	
5,400.00	5,319.95	5,052.40	4,967.61	20.18	19.00	170.99	671.79	566.17	1,738.45	1,713.08	25.36	68.540	
5,423.03	5,342.55	5,073.65	4,988.40	20.28	19.09	170.98	675.36	568.75	1,747.32	1,721.84	25.48	68.578	
5,500.00	5,418.27	5,145.06	5,058.25	20.56	19.41	171.04	687.35	577.43	1,776.03	1,750.07	25.97	68.396	
5,600.00	5,517.15	5,238.91	5,150.07	20.83	19.83	171.09	703.11	588.83	1,810.49	1,783.94	26.55	68.187	
5,700.00	5,616.49	5,333.88	5,242.97	21.05	20.25	171.11	719.06	600.37	1,841.69	1,814.59	27.10	67.951	
5,800.00	5,716.17	5,458.20	5,364.67	21.24	20.77	171.08	739.67	615.28	1,869.48	1,841.80	27.68	67.533	
5,900.00	5,816.07	5,732.68	5,636.15	21.40	21.55	170.94	771.88	638.58	1,888.04	1,859.57	28.46	66.329	
5,977.94	5,894.00	5,952.45	5,855.48	21.50	21.94	47.62	782.40	646.19	1,893.60	1,864.60	29.00	65.306	
6,000.00	5,916.06	6,013.03	5,916.06	21.52	22.02	47.62	782.90	646.55	1,893.81	1,864.68	29.13	65.010	
6,100.00	6,016.06	6,113.03	6,016.06	21.64	22.14	47.62	782.90	646.55	1,893.81	1,864.33	29.48	64.248	
6,200.00	6,116.06	6,213.03	6,116.06	21.76	22.26	47.62	782.90	646.55	1,893.81	1,863.97	29.84	63.470	
6,300.00	6,216.06	6,313.03	6,216.06	21.88	22.39	47.62	782.90	646.55	1,893.81	1,863.61	30.20	62.706	
6,400.00	6,316.06	6,413.03	6,316.06	22.00	22.52	47.62	782.90	646.55	1,893.81	1,863.24	30.57	61.955	
6,500.00	6,416.06	6,513.03	6,416.06	22.12	22.66	47.62	782.90	646.55	1,893.81	1,862.87	30.94	61.217	
6,600.00	6,516.06	6,613.03	6,516.06	22.25	22.79	47.62	782.90	646.55	1,893.81	1,862.50	31.31	60.493	
6,700.00	6,616.06	6,713.03	6,616.06	22.37	22.93	47.62	782.90	646.55	1,893.81	1,862.13	31.68	59.782	
6,800.00	6,716.06	6,813.03	6,716.06	22.50	23.06	47.62	782.90	646.55	1,893.81	1,861.76	32.05	59.084	
6,900.00	6,816.06	6,913.03	6,816.06	22.63	23.20	47.62	782.90	646.55	1,893.81	1,861.38	32.43	58.398	
7,000.00	6,916.06	7,013.03	6,916.06	22.76	23.34	47.62	782.90	646.55	1,893.81	1,861.00	32.81	57.725	
7,100.00	7,016.06	7,113.03	7,016.06	22.89	23.48	47.62	782.90	646.55	1,893.81	1,860.62	33.19	57.064	
7,200.00	7,116.06	7,213.03	7,116.06	23.03	23.62	47.62	782.90	646.55	1,893.81	1,860.24	33.57	56.415	
7,300.00	7,216.06	7,313.03	7,216.06	23.16	23.77	47.62	782.90	646.55	1,893.81	1,859.86	33.95	55.778	
7,400.00	7,316.06	7,413.03	7,316.06	23.30	23.91	47.62	782.90	646.55	1,893.81	1,859.47	34.34	55.153	
7,500.00	7,416.06	7,513.03	7,416.06	23.44	24.06	47.62	782.90	646.55	1,893.81	1,859.09	34.72	54.539	
7,600.00	7,516.06	7,613.03	7,516.06	23.58	24.21	47.62	782.90	646.55	1,893.81	1,858.70	35.11	53.936	
7,700.00	7,616.06	7,713.03	7,616.06	23.72	24.35	47.62	782.90	646.55	1,893.81	1,858.31	35.50	53.345	
7,800.00	7,716.06	7,813.03	7,716.06	23.86	24.50	47.62	782.90	646.55	1,893.81	1,857.92	35.89	52.764	
7,877.94	7,794.00	7,890.98	7,794.00	23.97	24.62	47.62	782.90	646.55	1,893.81	1,857.61	36.20	52.318	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4978.00ft (Original Well Elev) Coordinates are relative to: P_MIRACLE 11-12
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W °
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.35°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 11-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4978.00ft (Original Well Elev)
Reference Site:	LARIMER_MIRACLE 25-12 PAD	MD Reference:	WELL @ 4978.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_MIRACLE 11-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 11-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 3-23-10 RHS	Offset TVD Reference:	Offset Datum

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