



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

LARIMER_MIRACLE 25-12 PAD

P_MIRACLE 14-12

P_MIRACLE 14-12

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 14-12
Wellbore: P_MIRACLE 14-12
Section: SECTION 12 T5N R68W
SHL: 2484 FSL 2641 FEL
Design: PLAN #1 3-23-10 RHS
Latitude: 40° 24' 50.069 N
Longitude: 104° 57' 14.134 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
3465.00	3688.86	PARKMAN
4095.00	4378.42	SUSSEX
4545.00	4870.97	SHANNON
6885.00	7271.73	NIO A
7175.00	7561.73	CODELL
7635.00	8021.73	JSAND

CASING DETAILS

TVD	MD	Name	Size
650.00	650.88	8 5/8"	8.62

SECTION DETAILS

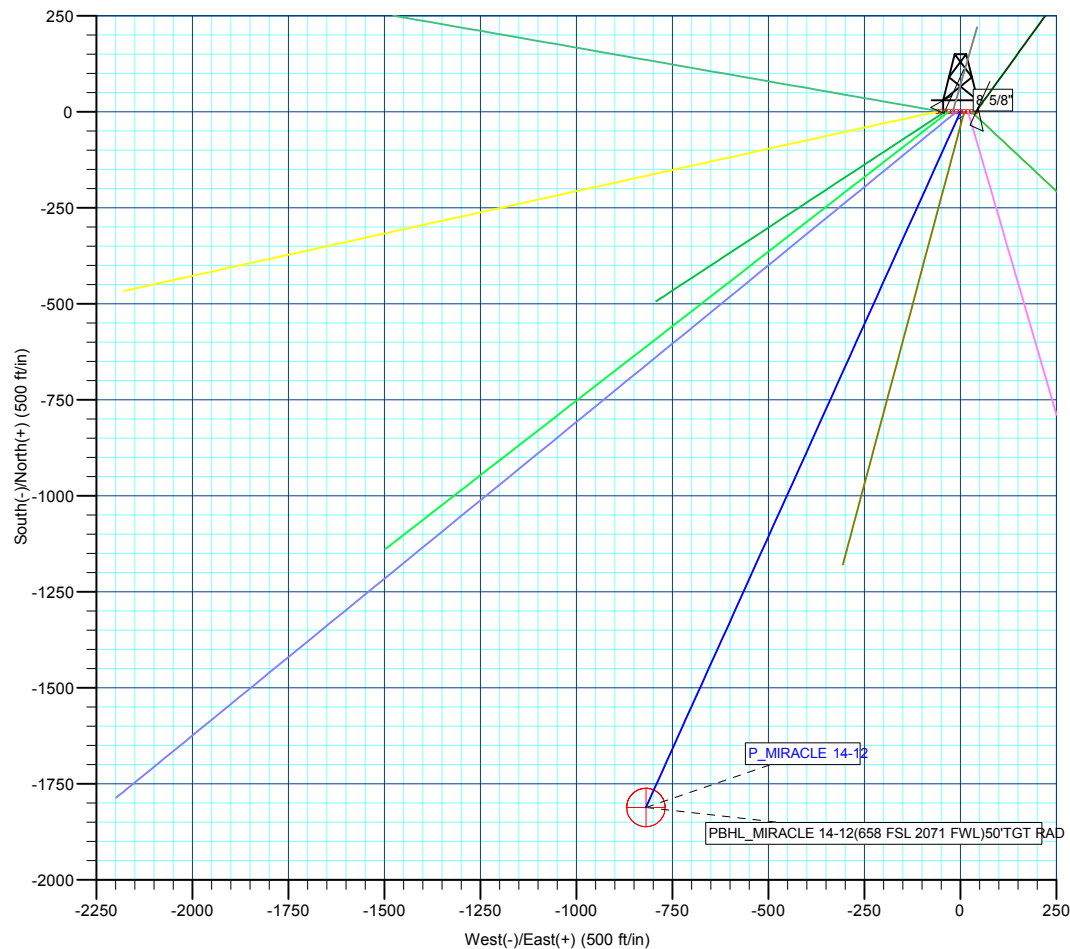
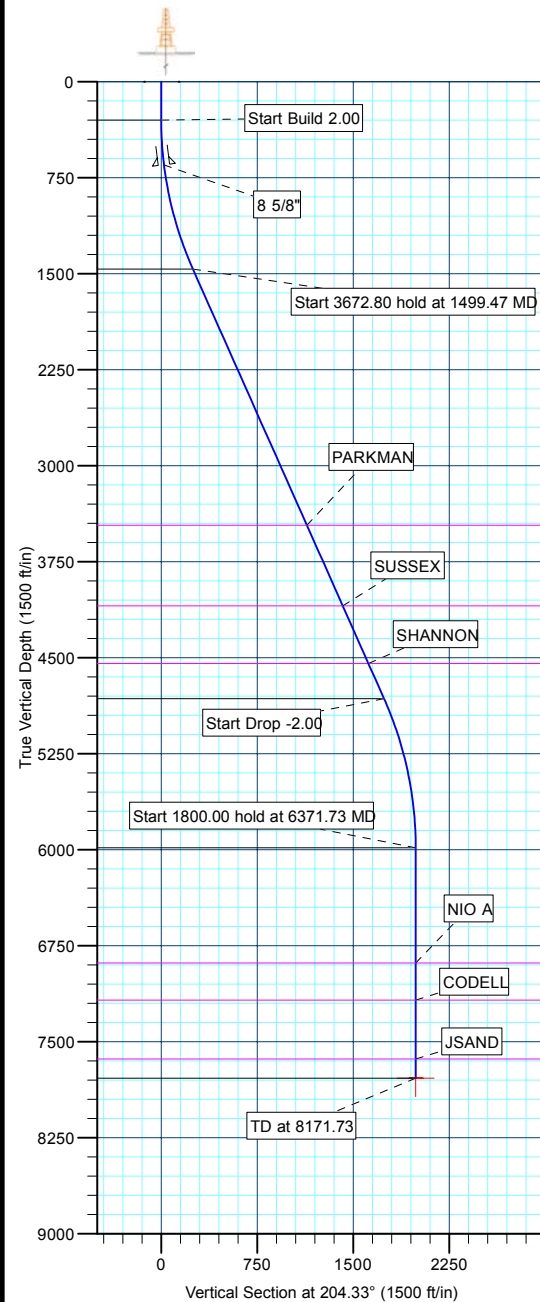
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1499.47	23.99	204.33	1464.73	-225.49	-101.94	2.00	204.33	247.46	Start 3672.80 hold at 1499.47 MD
5172.26	23.99	204.33	4820.27	-1586.14	-717.06	0.00	0.00	1740.69	Start Drop -2.00
6371.73	0.00	0.00	5985.00	-1811.63	-818.99	2.00	180.00	1988.15	Start 1800.00 hold at 6371.73 MD
8171.73	0.00	0.00	7785.00	-1811.63	-818.99	0.00	0.00	1988.15	TD at 8171.73

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

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	7785.00	-1811.63	-818.99	40° 24' 32.166 N	104° 57' 24.721 W	Circle (Radius: 50.00)

WELL DETAILS: P_MIRACLE 14-12

+N/-S	+E/-W	Northing	Ground Level: Easting	4963.00 Latitude	Longitude	Slot
0.00	0.00	1394095.22	3152055.10	40° 24' 50.069 N	104° 57' 14.134 W	



LEGEND

- P_MIRACLE 10-12, P_MIRACLE 10-12, PLAN #1 3-23-10 RHS V0
- P_MIRACLE 11-12, P_MIRACLE 11-12, 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 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 14-12/P_MIRACLE 14-12)

Created By: Robert H. Scott Date: 9:39, March 24 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 14-12		
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 14-12					
Well Position	+N/-S	0.35 ft	Northing:	1,394,095.22 ft	Latitude:	40° 24' 50.069 N
	+E/-W	-39.82 ft	Easting:	3,152,055.10 ft	Longitude:	104° 57' 14.134 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,963.00 ft

Wellbore	P_MIRACLE 14-12				
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	204.33

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,499.47	23.99	204.33	1,464.73	-225.49	-101.94	2.00	2.00	0.00	204.33	
5,172.26	23.99	204.33	4,820.27	-1,586.14	-717.06	0.00	0.00	0.00	0.00	
6,371.73	0.00	0.00	5,985.00	-1,811.63	-818.99	2.00	-2.00	0.00	180.00	
8,171.73	0.00	0.00	7,785.00	-1,811.63	-818.99	0.00	0.00	0.00	0.00	PBHL_MIRACLE 14-

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 14-12		
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									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	204.33	399.98	-1.59	-0.72	1.75	2.00	2.00	0.00
500.00	4.00	204.33	499.84	-6.36	-2.87	6.98	2.00	2.00	0.00
600.00	6.00	204.33	599.45	-14.30	-6.46	15.69	2.00	2.00	0.00
8 5/8"									
650.88	7.02	204.33	650.00	-19.56	-8.84	21.46	2.00	2.00	0.00
700.00	8.00	204.33	698.70	-25.40	-11.48	27.88	2.00	2.00	0.00
800.00	10.00	204.33	797.47	-39.66	-17.93	43.52	2.00	2.00	0.00
900.00	12.00	204.33	895.62	-57.04	-25.79	62.60	2.00	2.00	0.00
1,000.00	14.00	204.33	993.06	-77.54	-35.05	85.10	2.00	2.00	0.00
1,100.00	16.00	204.33	1,089.64	-101.12	-45.72	110.98	2.00	2.00	0.00
1,200.00	18.00	204.33	1,185.27	-127.76	-57.76	140.21	2.00	2.00	0.00
1,300.00	20.00	204.33	1,279.82	-157.43	-71.17	172.77	2.00	2.00	0.00
1,400.00	22.00	204.33	1,373.17	-190.08	-85.93	208.60	2.00	2.00	0.00
Start 3672.80 hold at 1499.47 MD									
1,499.47	23.99	204.33	1,464.73	-225.49	-101.94	247.46	2.00	2.00	0.00
1,500.00	23.99	204.33	1,465.21	-225.68	-102.03	247.67	0.00	0.00	0.00
1,600.00	23.99	204.33	1,556.58	-262.73	-118.77	288.33	0.00	0.00	0.00
1,700.00	23.99	204.33	1,647.94	-299.78	-135.52	328.99	0.00	0.00	0.00
1,800.00	23.99	204.33	1,739.30	-336.82	-152.27	369.64	0.00	0.00	0.00
1,900.00	23.99	204.33	1,830.66	-373.87	-169.02	410.30	0.00	0.00	0.00
2,000.00	23.99	204.33	1,922.03	-410.92	-185.77	450.96	0.00	0.00	0.00
2,100.00	23.99	204.33	2,013.39	-447.96	-202.51	491.61	0.00	0.00	0.00
2,200.00	23.99	204.33	2,104.75	-485.01	-219.26	532.27	0.00	0.00	0.00
2,300.00	23.99	204.33	2,196.11	-522.06	-236.01	572.93	0.00	0.00	0.00
2,400.00	23.99	204.33	2,287.47	-559.11	-252.76	613.58	0.00	0.00	0.00
2,500.00	23.99	204.33	2,378.84	-596.15	-269.51	654.24	0.00	0.00	0.00
2,600.00	23.99	204.33	2,470.20	-633.20	-286.25	694.90	0.00	0.00	0.00
2,700.00	23.99	204.33	2,561.56	-670.25	-303.00	735.55	0.00	0.00	0.00
2,800.00	23.99	204.33	2,652.92	-707.29	-319.75	776.21	0.00	0.00	0.00
2,900.00	23.99	204.33	2,744.28	-744.34	-336.50	816.87	0.00	0.00	0.00
3,000.00	23.99	204.33	2,835.65	-781.39	-353.25	857.52	0.00	0.00	0.00
3,100.00	23.99	204.33	2,927.01	-818.43	-369.99	898.18	0.00	0.00	0.00
3,200.00	23.99	204.33	3,018.37	-855.48	-386.74	938.84	0.00	0.00	0.00
3,300.00	23.99	204.33	3,109.73	-892.53	-403.49	979.49	0.00	0.00	0.00
3,400.00	23.99	204.33	3,201.10	-929.57	-420.24	1,020.15	0.00	0.00	0.00
3,500.00	23.99	204.33	3,292.46	-966.62	-436.99	1,060.81	0.00	0.00	0.00
3,600.00	23.99	204.33	3,383.82	-1,003.67	-453.73	1,101.46	0.00	0.00	0.00
PARKMAN									
3,688.86	23.99	204.33	3,465.00	-1,036.59	-468.62	1,137.59	0.00	0.00	0.00
3,700.00	23.99	204.33	3,475.18	-1,040.71	-470.48	1,142.12	0.00	0.00	0.00
3,800.00	23.99	204.33	3,566.54	-1,077.76	-487.23	1,182.78	0.00	0.00	0.00
3,900.00	23.99	204.33	3,657.91	-1,114.81	-503.98	1,223.43	0.00	0.00	0.00
4,000.00	23.99	204.33	3,749.27	-1,151.85	-520.73	1,264.09	0.00	0.00	0.00
4,100.00	23.99	204.33	3,840.63	-1,188.90	-537.47	1,304.75	0.00	0.00	0.00
4,200.00	23.99	204.33	3,931.99	-1,225.95	-554.22	1,345.40	0.00	0.00	0.00
4,300.00	23.99	204.33	4,023.35	-1,262.99	-570.97	1,386.06	0.00	0.00	0.00
SUSSEX									
4,378.42	23.99	204.33	4,095.00	-1,292.05	-584.10	1,417.94	0.00	0.00	0.00
4,400.00	23.99	204.33	4,114.72	-1,300.04	-587.72	1,426.72	0.00	0.00	0.00
4,500.00	23.99	204.33	4,206.08	-1,337.09	-604.47	1,467.37	0.00	0.00	0.00
4,600.00	23.99	204.33	4,297.44	-1,374.14	-621.21	1,508.03	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 14-12		
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)
4,700.00	23.99	204.33	4,388.80	-1,411.18	-637.96	1,548.69	0.00	0.00	0.00
4,800.00	23.99	204.33	4,480.16	-1,448.23	-654.71	1,589.34	0.00	0.00	0.00
SHANNON									
4,870.97	23.99	204.33	4,545.00	-1,474.52	-666.59	1,618.20	0.00	0.00	0.00
4,900.00	23.99	204.33	4,571.53	-1,485.28	-671.46	1,630.00	0.00	0.00	0.00
5,000.00	23.99	204.33	4,662.89	-1,522.32	-688.21	1,670.66	0.00	0.00	0.00
5,100.00	23.99	204.33	4,754.25	-1,559.37	-704.95	1,711.31	0.00	0.00	0.00
Start Drop -2.00									
5,172.26	23.99	204.33	4,820.27	-1,586.14	-717.06	1,740.69	0.00	0.00	0.00
5,200.00	23.43	204.33	4,845.67	-1,596.30	-721.65	1,751.85	2.00	-2.00	0.00
5,300.00	21.43	204.33	4,938.09	-1,631.08	-737.37	1,790.01	2.00	-2.00	0.00
5,400.00	19.43	204.33	5,031.80	-1,662.89	-751.75	1,824.92	2.00	-2.00	0.00
5,500.00	17.43	204.33	5,126.66	-1,691.70	-764.78	1,856.54	2.00	-2.00	0.00
5,600.00	15.43	204.33	5,222.57	-1,717.48	-776.43	1,884.83	2.00	-2.00	0.00
5,700.00	13.43	204.33	5,319.41	-1,740.19	-786.70	1,909.76	2.00	-2.00	0.00
5,800.00	11.43	204.33	5,417.06	-1,759.81	-795.57	1,931.29	2.00	-2.00	0.00
5,900.00	9.43	204.33	5,515.40	-1,776.32	-803.03	1,949.40	2.00	-2.00	0.00
6,000.00	7.43	204.33	5,614.31	-1,789.68	-809.07	1,964.07	2.00	-2.00	0.00
6,100.00	5.43	204.33	5,713.68	-1,799.89	-813.69	1,975.27	2.00	-2.00	0.00
6,200.00	3.43	204.33	5,813.37	-1,806.94	-816.87	1,983.00	2.00	-2.00	0.00
6,300.00	1.43	204.33	5,913.28	-1,810.81	-818.62	1,987.25	2.00	-2.00	0.00
Start 1800.00 hold at 6371.73 MD									
6,371.73	0.00	0.00	5,985.00	-1,811.63	-818.99	1,988.15	2.00	-2.00	0.00
6,400.00	0.00	0.00	6,013.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
6,500.00	0.00	0.00	6,113.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
6,600.00	0.00	0.00	6,213.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
6,700.00	0.00	0.00	6,313.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
6,800.00	0.00	0.00	6,413.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
6,900.00	0.00	0.00	6,513.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
7,000.00	0.00	0.00	6,613.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
7,100.00	0.00	0.00	6,713.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
7,200.00	0.00	0.00	6,813.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
NIO A									
7,271.73	0.00	0.00	6,885.00	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
7,300.00	0.00	0.00	6,913.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
7,400.00	0.00	0.00	7,013.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
7,500.00	0.00	0.00	7,113.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
CODELL									
7,561.73	0.00	0.00	7,175.00	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
7,600.00	0.00	0.00	7,213.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
7,700.00	0.00	0.00	7,313.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
7,800.00	0.00	0.00	7,413.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
7,900.00	0.00	0.00	7,513.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
8,000.00	0.00	0.00	7,613.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
JSAND									
8,021.73	0.00	0.00	7,635.00	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
8,100.00	0.00	0.00	7,713.27	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00
PBHL_MIRACLE 14-12(658 FSL 2071 FWL)50'TGT RAD									
8,171.73	0.00	0.00	7,785.00	-1,811.63	-818.99	1,988.15	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_MIRACLE 14-12		
Design:	PLAN #1 3-23-10 RHS		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
PBHL_MIRACLE 14-1	0.00	0.00	7,785.00	-1,811.63	-818.99	1,392,278.58	3,151,247.28	40° 24' 32.166 N	104° 57' 24.721 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth	Vertical Depth			Casing Diameter	Hole Diameter
(ft)	(ft)		Name	(in)	(in)
650.88	650.00	8 5/8"		8.62	11.00

Formations						
Measured Depth	Vertical Depth				Dip	Dip Direction
(ft)	(ft)		Name	Lithology	(°)	(°)
3,688.86	3,465.00		PARKMAN			
4,378.42	4,095.00		SUSSEX			
4,870.97	4,545.00		SHANNON			
7,271.73	6,885.00		NIO A			
7,561.73	7,175.00		CODELL			
8,021.73	7,635.00		JSAND			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
1,499.47	1,464.73	-225.49	-101.94	Start 3672.80 hold at 1499.47 MD	
5,172.26	4,820.27	-1,586.14	-717.06	Start Drop -2.00	
6,371.73	5,985.00	-1,811.63	-818.99	Start 1800.00 hold at 6371.73 MD	
8,171.73	7,785.00	-1,811.63	-818.99	TD at 8171.73	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
LARIMER_MIRACLE 25-12 PAD
P_MIRACLE 14-12**

**P_MIRACLE 14-12
PLAN #1 3-23-10 RHS**

Anticollision Report

24 March, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	8,171.73	PLAN #1 3-23-10 RHS (P_MIRACLE 14-1	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
Offset Well - Wellbore - Design						
LARIMER_MIRACLE 25-12 PAD						
P_MIRACLE 10-12 - P_MIRACLE 10-12 - PLAN #1 3-23	300.00	300.00	29.80	28.71	27.334	CC, ES
P_MIRACLE 10-12 - P_MIRACLE 10-12 - PLAN #1 3-23	600.00	599.45	38.84	36.47	16.366	SF
P_MIRACLE 11-12 - P_MIRACLE 11-12 - PLAN #1 3-23	603.55	602.98	36.44	34.02	15.096	CC, ES
P_MIRACLE 11-12 - P_MIRACLE 11-12 - PLAN #1 3-23	700.00	698.70	38.30	35.42	13.282	SF
P_MIRACLE 12-12 - P_MIRACLE 12-12 - PLAN #1 3-23	300.00	300.00	59.87	58.78	54.923	CC, ES
P_MIRACLE 12-12 - P_MIRACLE 12-12 - PLAN #1 3-23	8,171.73	8,213.83	1,912.17	1,831.75	23.777	SF
P_MIRACLE 13-12 - P_MIRACLE 13-12 - PLAN #1 3-23	234.09	234.09	10.03	9.24	12.636	CC, ES
P_MIRACLE 13-12 - P_MIRACLE 13-12 - PLAN #1 3-23	500.00	499.10	15.57	13.68	8.231	SF
P_MIRACLE 15-12 - P_MIRACLE 15-12 - PLAN #1 3-23	300.00	300.00	20.05	18.96	18.391	CC, ES
P_MIRACLE 15-12 - P_MIRACLE 15-12 - PLAN #1 3-23	600.00	599.02	30.91	28.56	13.189	SF
P_MIRACLE 19-12 - P_MIRACLE 19-12 - PLAN #1 3-23	559.23	558.88	27.70	25.50	12.540	CC, ES
P_MIRACLE 19-12 - P_MIRACLE 19-12 - PLAN #1 3-23	700.00	698.70	32.07	29.21	11.185	SF
P_MIRACLE 22-12 - P_MIRACLE 22-12 - PLAN #1 3-23	637.59	636.81	45.72	43.14	17.704	CC, ES
P_MIRACLE 22-12 - P_MIRACLE 22-12 - PLAN #1 3-23	800.00	796.83	51.76	48.38	15.276	SF
P_MIRACLE 23-12 - P_MIRACLE 23-12 - PLAN #1 3-23	300.00	300.00	10.02	8.93	9.196	CC, ES
P_MIRACLE 23-12 - P_MIRACLE 23-12 - PLAN #1 3-23	400.00	399.98	10.86	9.35	7.171	SF
P_MIRACLE 25-12 - P_MIRACLE 25-12 - PLAN #1 3-23	513.12	512.92	18.42	16.42	9.215	CC, ES
P_MIRACLE 25-12 - P_MIRACLE 25-12 - PLAN #1 3-23	600.00	599.45	19.99	17.60	8.362	SF
P_MIRACLE 7-12 - P_MIRACLE 7-12 - PLAN #1 3-23-1C	300.00	300.00	39.82	38.73	36.529	CC, ES
P_MIRACLE 7-12 - P_MIRACLE 7-12 - PLAN #1 3-23-1C	700.00	698.70	57.10	54.27	20.184	SF

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
0.00	0.00	0.00	0.00	0.00	0.00	90.71	-0.37	29.79	29.80				
100.00	100.00	100.00	100.00	0.10	0.10	90.71	-0.37	29.79	29.80	29.61	0.19	155.962	
200.00	200.00	200.00	200.00	0.32	0.32	90.71	-0.37	29.79	29.80	29.16	0.64	46.515	
300.00	300.00	300.00	300.00	0.55	0.55	90.71	-0.37	29.79	29.80	28.71	1.09	27.334	CC, ES
400.00	399.98	399.98	399.98	0.75	0.77	-116.61	-0.37	29.79	30.54	29.02	1.51	20.161	
500.00	499.84	499.84	499.84	0.94	0.99	-124.65	-0.37	29.79	33.21	31.28	1.93	17.167	
600.00	599.45	599.45	599.45	1.18	1.22	-135.19	-0.37	29.79	38.84	36.47	2.37	16.366	SF
700.00	698.70	698.70	698.70	1.45	1.44	-145.30	-0.37	29.79	48.28	45.46	2.82	17.125	

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 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	
800.00	797.47	797.33	797.33	1.77	1.65	-153.07	-0.64	30.08	61.87	58.61	3.25	19.013	
900.00	895.62	895.41	895.34	2.15	1.83	-156.75	-2.89	32.49	79.55	75.88	3.67	21.671	
1,000.00	993.06	992.93	992.64	2.58	2.03	-157.81	-7.41	37.31	100.77	96.65	4.12	24.462	
1,100.00	1,089.64	1,089.68	1,088.89	3.07	2.25	-157.47	-14.12	44.48	125.32	120.71	4.61	27.170	
1,200.00	1,185.27	1,185.44	1,183.76	3.63	2.49	-156.41	-22.95	53.90	153.16	147.99	5.17	29.643	
1,300.00	1,279.82	1,280.37	1,277.50	4.24	2.76	-155.30	-33.21	64.85	184.23	178.45	5.78	31.876	
1,400.00	1,373.17	1,374.37	1,370.31	4.92	3.05	-154.79	-43.42	75.76	218.32	211.89	6.42	33.986	
1,499.47	1,464.73	1,466.76	1,461.52	5.66	3.35	-154.65	-53.46	86.48	255.15	248.07	7.08	36.017	
1,600.00	1,556.58	1,559.53	1,553.12	6.44	3.66	-154.96	-63.54	97.24	293.86	286.05	7.81	37.628	
1,700.00	1,647.94	1,651.82	1,644.23	7.22	3.97	-155.20	-73.57	107.95	332.36	323.82	8.54	38.903	
1,800.00	1,739.30	1,744.10	1,735.34	8.01	4.30	-155.39	-83.59	118.65	370.87	361.58	9.29	39.938	
1,900.00	1,830.66	1,836.38	1,826.44	8.80	4.62	-155.54	-93.62	129.36	409.37	399.34	10.04	40.792	
2,000.00	1,922.03	1,928.67	1,917.55	9.60	4.95	-155.66	-103.65	140.07	447.89	437.09	10.79	41.506	
2,100.00	2,013.39	2,020.95	2,008.66	10.40	5.28	-155.77	-113.68	150.77	486.40	474.85	11.55	42.113	
2,200.00	2,104.75	2,113.23	2,099.77	11.20	5.62	-155.86	-123.70	161.48	524.91	512.60	12.31	42.633	
2,300.00	2,196.11	2,205.51	2,190.88	12.00	5.95	-155.94	-133.73	172.19	563.43	550.35	13.08	43.085	
2,400.00	2,287.47	2,297.80	2,281.99	12.80	6.29	-156.01	-143.76	182.89	601.94	588.10	13.84	43.480	
2,500.00	2,378.84	2,390.08	2,373.10	13.60	6.63	-156.07	-153.79	193.60	640.46	625.85	14.61	43.830	
2,600.00	2,470.20	2,482.36	2,464.21	14.41	6.98	-156.12	-163.81	204.30	678.97	663.59	15.38	44.141	
2,700.00	2,561.56	2,574.65	2,555.32	15.21	7.32	-156.17	-173.84	215.01	717.49	701.34	16.15	44.421	
2,800.00	2,652.92	2,666.93	2,646.43	16.02	7.66	-156.21	-183.87	225.72	756.01	739.09	16.92	44.673	
2,900.00	2,744.28	2,759.21	2,737.54	16.82	8.01	-156.25	-193.90	236.42	794.53	776.83	17.69	44.903	
3,000.00	2,835.65	2,851.50	2,828.65	17.63	8.35	-156.28	-203.92	247.13	833.04	814.58	18.47	45.112	
3,100.00	2,927.01	2,943.78	2,919.76	18.44	8.70	-156.32	-213.95	257.84	871.56	852.32	19.24	45.305	
3,200.00	3,018.37	3,036.06	3,010.87	19.24	9.04	-156.35	-223.98	268.54	910.08	890.07	20.01	45.483	
3,300.00	3,109.73	3,128.34	3,101.98	20.05	9.39	-156.37	-234.00	279.25	948.60	927.82	20.78	45.645	
3,400.00	3,201.10	3,220.63	3,193.09	20.86	9.74	-156.40	-244.03	289.95	987.12	965.55	21.56	45.777	
3,500.00	3,292.46	3,312.91	3,284.20	21.67	10.08	-156.42	-254.06	300.66	1,025.64	1,003.29	22.35	45.899	
3,600.00	3,383.82	3,405.19	3,375.31	22.47	10.43	-156.44	-264.09	311.37	1,064.16	1,041.03	23.13	46.012	
3,700.00	3,475.18	3,497.48	3,466.42	23.28	10.78	-156.46	-274.11	322.07	1,102.68	1,078.76	23.91	46.116	
3,800.00	3,566.54	3,589.76	3,557.53	24.09	11.13	-156.48	-284.14	332.78	1,141.19	1,116.50	24.69	46.212	
3,900.00	3,657.91	3,682.04	3,648.64	24.90	11.48	-156.50	-294.17	343.48	1,179.71	1,154.24	25.48	46.302	
4,000.00	3,749.27	3,774.33	3,739.75	25.71	11.83	-156.51	-304.20	354.19	1,218.23	1,191.97	26.26	46.386	
4,100.00	3,840.63	3,866.61	3,830.86	26.52	12.18	-156.53	-314.22	364.90	1,256.75	1,229.71	27.05	46.465	
4,200.00	3,931.99	3,958.89	3,921.97	27.33	12.53	-156.54	-324.25	375.60	1,295.27	1,267.44	27.83	46.538	
4,300.00	4,023.35	4,051.17	4,013.08	28.13	12.88	-156.56	-334.28	386.31	1,333.79	1,305.17	28.62	46.607	
4,400.00	4,114.72	4,143.46	4,104.19	28.94	13.23	-156.57	-344.31	397.02	1,372.31	1,342.91	29.40	46.672	
4,500.00	4,206.08	4,235.74	4,195.30	29.75	13.58	-156.58	-354.33	407.72	1,410.83	1,380.64	30.19	46.733	
4,600.00	4,297.44	4,328.02	4,286.41	30.56	13.93	-156.59	-364.36	418.43	1,449.35	1,418.38	30.98	46.791	
4,700.00	4,388.80	4,420.31	4,377.52	31.37	14.28	-156.60	-374.39	429.13	1,487.87	1,456.11	31.76	46.845	
4,800.00	4,480.16	4,512.59	4,468.63	32.18	14.63	-156.61	-384.42	439.84	1,526.39	1,493.84	32.55	46.897	
4,900.00	4,571.53	4,604.87	4,559.74	32.99	14.98	-156.62	-394.44	450.55	1,564.91	1,531.58	33.33	46.946	
5,000.00	4,662.89	4,697.16	4,650.85	33.80	15.33	-156.63	-404.47	461.25	1,603.43	1,569.31	34.12	46.992	
5,100.00	4,754.25	4,789.44	4,741.96	34.61	15.68	-156.64	-414.50	471.96	1,641.95	1,607.04	34.91	47.037	
5,172.26	4,820.27	4,856.13	4,807.80	35.19	15.93	-156.65	-421.74	479.70	1,669.79	1,634.31	35.48	47.067	
5,200.00	4,845.67	4,881.77	4,833.11	35.38	16.03	-156.74	-424.53	482.67	1,680.36	1,644.65	35.71	47.052	
5,300.00	4,938.09	4,974.98	4,925.13	35.93	16.38	-157.01	-434.66	493.48	1,716.56	1,680.05	36.51	47.016	
5,400.00	5,031.80	5,069.27	5,018.23	36.43	16.74	-157.21	-444.90	504.42	1,749.76	1,712.46	37.29	46.919	
5,500.00	5,126.66	5,164.55	5,112.30	36.90	17.11	-157.33	-455.26	515.48	1,779.90	1,741.85	38.06	46.771	
5,600.00	5,222.57	5,260.69	5,207.22	37.33	17.47	-157.39	-465.70	526.63	1,806.97	1,768.18	38.79	46.578	
5,700.00	5,319.41	5,357.57	5,302.87	37.72	17.84	-157.38	-476.23	537.87	1,830.95	1,791.44	39.51	46.344	
5,800.00	5,417.06	5,455.09	5,399.14	38.06	18.21	-157.31	-486.83	549.18	1,851.80	1,811.61	40.19	46.075	

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 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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
5,900.00	5,515.40	5,555.20	5,498.04	38.36	18.56	-157.18	-497.42	560.50	1,869.51	1,828.70	40.82	45.803	
6,000.00	5,614.31	5,658.48	5,600.52	38.61	18.83	-157.08	-506.19	569.86	1,883.88	1,842.57	41.30	45.610	
6,100.00	5,713.68	5,762.59	5,704.22	38.82	19.04	-157.02	-512.47	576.56	1,894.82	1,853.16	41.66	45.478	
6,200.00	5,813.37	5,867.27	5,808.75	38.98	19.22	-157.01	-516.18	580.52	1,902.31	1,860.40	41.92	45.384	
6,300.00	5,913.28	5,971.81	5,913.28	39.09	19.37	-157.05	-517.28	581.70	1,906.34	1,864.27	42.07	45.314	
6,371.73	5,985.00	6,043.54	5,985.00	39.15	19.46	47.26	-517.28	581.70	1,907.16	1,865.02	42.14	45.258	
6,400.00	6,013.27	6,071.81	6,013.27	39.17	19.50	47.26	-517.28	581.70	1,907.16	1,864.96	42.21	45.186	
6,500.00	6,113.27	6,171.81	6,113.27	39.23	19.63	47.26	-517.28	581.70	1,907.16	1,864.73	42.43	44.945	
6,600.00	6,213.27	6,271.81	6,213.27	39.29	19.76	47.26	-517.28	581.70	1,907.16	1,864.50	42.66	44.702	
6,700.00	6,313.27	6,371.81	6,313.27	39.35	19.89	47.26	-517.28	581.70	1,907.16	1,864.27	42.90	44.458	
6,800.00	6,413.27	6,471.81	6,413.27	39.41	20.02	47.26	-517.28	581.70	1,907.16	1,864.03	43.14	44.213	
6,900.00	6,513.27	6,571.81	6,513.27	39.47	20.16	47.26	-517.28	581.70	1,907.16	1,863.79	43.38	43.968	
7,000.00	6,613.27	6,671.81	6,613.27	39.53	20.29	47.26	-517.28	581.70	1,907.16	1,863.54	43.62	43.722	
7,100.00	6,713.27	6,771.81	6,713.27	39.60	20.43	47.26	-517.28	581.70	1,907.16	1,863.30	43.87	43.476	
7,200.00	6,813.27	6,871.81	6,813.27	39.66	20.57	47.26	-517.28	581.70	1,907.16	1,863.05	44.12	43.229	
7,300.00	6,913.27	6,971.81	6,913.27	39.73	20.71	47.26	-517.28	581.70	1,907.16	1,862.79	44.37	42.982	
7,400.00	7,013.27	7,071.81	7,013.27	39.80	20.86	47.26	-517.28	581.70	1,907.16	1,862.54	44.63	42.735	
7,500.00	7,113.27	7,171.81	7,113.27	39.87	21.00	47.26	-517.28	581.70	1,907.16	1,862.28	44.89	42.488	
7,600.00	7,213.27	7,271.81	7,213.27	39.94	21.15	47.26	-517.28	581.70	1,907.16	1,862.01	45.15	42.241	
7,700.00	7,313.27	7,371.81	7,313.27	40.01	21.29	47.26	-517.28	581.70	1,907.16	1,861.75	45.41	41.994	
7,800.00	7,413.27	7,471.81	7,413.27	40.09	21.44	47.26	-517.28	581.70	1,907.16	1,861.48	45.68	41.748	
7,900.00	7,513.27	7,571.81	7,513.27	40.16	21.59	47.26	-517.28	581.70	1,907.16	1,861.21	45.95	41.501	
8,000.00	7,613.27	7,671.81	7,613.27	40.23	21.74	47.26	-517.28	581.70	1,907.16	1,860.94	46.23	41.256	
8,100.00	7,713.27	7,771.81	7,713.27	40.31	21.89	47.26	-517.28	581.70	1,907.16	1,860.66	46.50	41.010	
8,171.73	7,785.00	7,843.54	7,785.00	40.37	22.00	47.26	-517.28	581.70	1,907.16	1,860.46	46.70	40.835	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	-89.47	0.37	-39.82	39.82				
100.00	100.00	100.00	100.00	0.10	0.10	-89.47	0.37	-39.82	39.82	39.63	0.19	208.429	
200.00	200.00	200.00	200.00	0.32	0.32	-89.47	0.37	-39.82	39.82	39.18	0.64	62.163	
300.00	300.00	300.00	300.00	0.55	0.55	-89.47	0.37	-39.82	39.82	38.73	1.09	36.529	
400.00	399.98	399.98	399.98	0.75	0.77	68.55	0.37	-39.82	39.15	37.63	1.51	25.845	
500.00	499.84	499.84	499.84	0.94	0.99	76.03	0.37	-39.82	37.55	35.61	1.94	19.376	
600.00	599.45	599.45	599.45	1.18	1.22	89.42	0.37	-39.82	36.44	34.04	2.40	15.207	
603.55	602.98	602.98	602.98	1.19	1.23	90.00	0.37	-39.82	36.44	34.02	2.41	15.096 CC, ES	
700.00	698.70	698.70	698.70	1.45	1.44	107.80	0.37	-39.82	38.30	35.42	2.88	13.282 SF	
800.00	797.47	797.52	797.52	1.77	1.65	126.10	0.15	-40.15	45.59	42.24	3.35	13.591	
900.00	895.62	896.51	896.44	2.15	1.84	137.93	-1.69	-42.95	57.96	54.17	3.79	15.288	
1,000.00	993.06	995.78	995.48	2.58	2.04	144.47	-5.41	-48.63	73.44	69.18	4.25	17.265	
1,100.00	1,089.64	1,095.30	1,094.47	3.07	2.27	147.85	-11.03	-57.20	90.95	86.19	4.76	19.116	
1,200.00	1,185.27	1,195.01	1,193.22	3.63	2.53	149.39	-18.55	-68.66	110.04	104.72	5.32	20.692	
1,300.00	1,279.82	1,294.86	1,291.58	4.24	2.83	149.83	-27.97	-83.01	130.53	124.58	5.95	21.939	
1,400.00	1,373.17	1,392.51	1,387.41	4.92	3.16	150.04	-38.27	-98.71	153.01	146.38	6.63	23.078	
1,499.47	1,464.73	1,488.67	1,481.77	5.66	3.51	150.68	-48.42	-114.19	178.30	170.98	7.32	24.347	
1,600.00	1,556.58	1,585.44	1,576.73	6.44	3.88	151.59	-58.64	-129.77	205.38	197.31	8.07	25.448	
1,700.00	1,647.94	1,681.71	1,671.19	7.22	4.25	152.29	-68.80	-145.26	232.34	223.52	8.83	26.325	
1,800.00	1,739.30	1,777.97	1,765.66	8.01	4.63	152.85	-78.97	-160.75	259.34	249.75	9.59	27.041	
1,900.00	1,830.66	1,874.23	1,860.12	8.80	5.02	153.30	-89.13	-176.25	286.35	275.99	10.36	27.634	
2,000.00	1,922.03	1,970.49	1,954.58	9.60	5.41	153.67	-99.30	-191.74	313.37	302.23	11.14	28.132	
2,100.00	2,013.39	2,066.75	2,049.04	10.40	5.81	153.99	-109.46	-207.23	340.41	328.49	11.92	28.555	
2,200.00	2,104.75	2,163.01	2,143.50	11.20	6.21	154.25	-119.63	-222.72	367.45	354.74	12.71	28.918	
2,300.00	2,196.11	2,259.27	2,237.96	12.00	6.62	154.48	-129.79	-238.22	394.50	381.01	13.49	29.233	
2,400.00	2,287.47	2,355.53	2,332.42	12.80	7.02	154.68	-139.95	-253.71	421.56	407.27	14.29	29.509	
2,500.00	2,378.84	2,451.79	2,426.88	13.60	7.43	154.86	-150.12	-269.20	448.61	433.54	15.08	29.751	
2,600.00	2,470.20	2,548.05	2,521.34	14.41	7.84	155.02	-160.28	-284.70	475.68	459.80	15.87	29.967	
2,700.00	2,561.56	2,644.31	2,615.80	15.21	8.25	155.16	-170.45	-300.19	502.74	486.07	16.67	30.159	
2,800.00	2,652.92	2,740.57	2,710.26	16.02	8.66	155.28	-180.61	-315.68	529.81	512.34	17.47	30.331	
2,900.00	2,744.28	2,836.83	2,804.72	16.82	9.07	155.40	-190.77	-331.18	556.88	538.61	18.27	30.487	
3,000.00	2,835.65	2,933.10	2,899.18	17.63	9.48	155.50	-200.94	-346.67	583.95	564.89	19.07	30.628	
3,100.00	2,927.01	3,029.36	2,993.64	18.44	9.90	155.59	-211.10	-362.16	611.03	591.16	19.87	30.756	
3,200.00	3,018.37	3,125.62	3,088.10	19.24	10.31	155.68	-221.27	-377.65	638.10	617.43	20.67	30.874	
3,300.00	3,109.73	3,221.88	3,182.56	20.05	10.72	155.76	-231.43	-393.15	665.18	643.71	21.47	30.981	
3,400.00	3,201.10	3,318.14	3,277.02	20.86	11.14	155.83	-241.59	-408.64	692.25	669.98	22.27	31.080	
3,500.00	3,292.46	3,414.40	3,371.49	21.67	11.56	155.90	-251.76	-424.13	719.33	696.25	23.08	31.172	
3,600.00	3,383.82	3,510.66	3,465.95	22.47	11.97	155.96	-261.92	-439.63	746.41	722.53	23.88	31.257	
3,700.00	3,475.18	3,606.92	3,560.41	23.28	12.39	156.02	-272.09	-455.12	773.49	748.81	24.68	31.335	
3,800.00	3,566.54	3,703.18	3,654.87	24.09	12.80	156.07	-282.25	-470.61	800.57	775.08	25.49	31.409	
3,900.00	3,657.91	3,799.44	3,749.33	24.90	13.22	156.12	-292.42	-486.11	827.65	801.36	26.29	31.477	
4,000.00	3,749.27	3,895.70	3,843.79	25.71	13.64	156.17	-302.58	-501.60	854.73	827.63	27.10	31.541	
4,100.00	3,840.63	3,991.96	3,938.25	26.52	14.06	156.22	-312.74	-517.09	881.81	853.91	27.90	31.601	
4,200.00	3,931.99	4,088.23	4,032.71	27.33	14.47	156.26	-322.91	-532.59	908.90	880.19	28.71	31.657	
4,300.00	4,023.35	4,184.49	4,127.17	28.13	14.89	156.30	-333.07	-548.08	935.98	906.46	29.52	31.710	
4,400.00	4,114.72	4,280.75	4,221.63	28.94	15.31	156.33	-343.24	-563.57	963.06	932.74	30.32	31.760	
4,500.00	4,206.08	4,377.01	4,316.09	29.75	15.73	156.37	-353.40	-579.06	990.15	959.02	31.13	31.807	
4,600.00	4,297.44	4,473.27	4,410.55	30.56	16.15	156.40	-363.56	-594.56	1,017.23	985.29	31.94	31.852	
4,700.00	4,388.80	4,569.53	4,505.01	31.37	16.57	156.43	-373.73	-610.05	1,044.32	1,011.57	32.74	31.894	
4,800.00	4,480.16	4,665.79	4,599.47	32.18	16.99	156.46	-383.89	-625.54	1,071.40	1,037.85	33.55	31.934	
4,900.00	4,571.53	4,762.05	4,693.93	32.99	17.40	156.49	-394.06	-641.04	1,098.48	1,064.13	34.36	31.972	
5,000.00	4,662.89	4,858.31	4,788.39	33.80	17.82	156.52	-404.22	-656.53	1,125.57	1,090.40	35.17	32.008	

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 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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 11-12 - P_MIRACLE 11-12 - 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	4,754.25	4,954.57	4,882.85	34.61	18.24	156.54	-414.38	-672.02	1,152.66	1,116.68	35.97	32.042	
5,172.26	4,820.27	5,024.13	4,951.12	35.19	18.55	156.56	-421.73	-683.22	1,172.23	1,135.67	36.56	32.066	
5,200.00	4,845.67	5,050.87	4,977.35	35.38	18.66	156.63	-424.55	-687.52	1,179.62	1,142.83	36.79	32.065	
5,300.00	4,938.09	5,147.77	5,072.44	35.93	19.08	156.80	-434.78	-703.12	1,204.30	1,166.71	37.59	32.042	
5,400.00	5,031.80	5,245.39	5,168.23	36.43	19.51	156.88	-445.09	-718.83	1,225.86	1,187.48	38.38	31.942	
5,500.00	5,126.66	5,343.62	5,264.62	36.90	19.94	156.87	-455.46	-734.64	1,244.28	1,205.12	39.16	31.773	
5,600.00	5,222.57	5,438.45	5,357.69	37.33	20.34	156.79	-465.45	-749.87	1,259.58	1,219.67	39.91	31.562	
5,700.00	5,319.41	5,517.50	5,435.54	37.72	20.61	156.73	-472.98	-761.34	1,272.77	1,232.29	40.48	31.438	
5,800.00	5,417.06	5,600.00	5,517.15	38.06	20.83	156.69	-479.58	-771.40	1,284.37	1,243.40	40.97	31.352	
5,900.00	5,515.40	5,675.90	5,592.52	38.36	21.00	156.68	-484.51	-778.92	1,294.33	1,252.99	41.34	31.308	
6,000.00	5,614.31	5,755.21	5,671.49	38.61	21.16	156.69	-488.49	-784.98	1,302.67	1,261.02	41.65	31.278	
6,100.00	5,713.68	5,834.55	5,750.66	38.82	21.30	156.71	-491.27	-789.22	1,309.38	1,267.50	41.87	31.271	
6,200.00	5,813.37	5,913.90	5,829.96	38.98	21.41	156.75	-492.84	-791.62	1,314.44	1,272.43	42.02	31.285	
6,300.00	5,913.28	5,997.22	5,913.28	39.09	21.52	156.82	-493.24	-792.22	1,317.84	1,275.75	42.09	31.313	
6,371.73	5,985.00	6,068.94	5,985.00	39.15	21.60	1.16	-493.24	-792.22	1,318.66	1,276.53	42.13	31.300	
6,400.00	6,013.27	6,097.21	6,013.27	39.17	21.64	1.16	-493.24	-792.22	1,318.66	1,276.46	42.20	31.249	
6,500.00	6,113.27	6,197.21	6,113.27	39.23	21.75	1.16	-493.24	-792.22	1,318.66	1,276.23	42.43	31.075	
6,600.00	6,213.27	6,297.21	6,213.27	39.29	21.87	1.16	-493.24	-792.22	1,318.66	1,275.99	42.68	30.900	
6,700.00	6,313.27	6,397.21	6,313.27	39.35	22.00	1.16	-493.24	-792.22	1,318.66	1,275.74	42.92	30.724	
6,800.00	6,413.27	6,497.21	6,413.27	39.41	22.12	1.16	-493.24	-792.22	1,318.66	1,275.50	43.17	30.549	
6,900.00	6,513.27	6,597.21	6,513.27	39.47	22.24	1.16	-493.24	-792.22	1,318.66	1,275.25	43.42	30.372	
7,000.00	6,613.27	6,697.21	6,613.27	39.53	22.37	1.16	-493.24	-792.22	1,318.66	1,274.99	43.67	30.196	
7,100.00	6,713.27	6,797.21	6,713.27	39.60	22.50	1.16	-493.24	-792.22	1,318.66	1,274.74	43.93	30.020	
7,200.00	6,813.27	6,897.21	6,813.27	39.66	22.63	1.16	-493.24	-792.22	1,318.66	1,274.48	44.19	29.844	
7,300.00	6,913.27	6,997.21	6,913.27	39.73	22.76	1.16	-493.24	-792.22	1,318.66	1,274.21	44.45	29.667	
7,400.00	7,013.27	7,097.21	7,013.27	39.80	22.89	1.16	-493.24	-792.22	1,318.66	1,273.95	44.71	29.491	
7,500.00	7,113.27	7,197.21	7,113.27	39.87	23.02	1.16	-493.24	-792.22	1,318.66	1,273.68	44.98	29.315	
7,600.00	7,213.27	7,297.21	7,213.27	39.94	23.16	1.16	-493.24	-792.22	1,318.66	1,273.41	45.25	29.139	
7,700.00	7,313.27	7,397.21	7,313.27	40.01	23.30	1.16	-493.24	-792.22	1,318.66	1,273.13	45.53	28.964	
7,800.00	7,413.27	7,497.21	7,413.27	40.09	23.43	1.16	-493.24	-792.22	1,318.66	1,272.86	45.80	28.789	
7,900.00	7,513.27	7,597.21	7,513.27	40.16	23.57	1.16	-493.24	-792.22	1,318.66	1,272.58	46.08	28.614	
8,000.00	7,613.27	7,697.21	7,613.27	40.23	23.71	1.16	-493.24	-792.22	1,318.66	1,272.30	46.37	28.440	
8,100.00	7,713.27	7,797.21	7,713.27	40.31	23.86	1.16	-493.24	-792.22	1,318.66	1,272.01	46.65	28.267	
8,171.73	7,785.00	7,868.94	7,785.00	40.37	23.96	1.16	-493.24	-792.22	1,318.66	1,271.81	46.86	28.142	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	-89.30	0.73	-59.87	59.87				
100.00	100.00	100.00	100.00	0.10	0.10	-89.30	0.73	-59.87	59.87	59.68	0.19	313.382	
200.00	200.00	200.00	200.00	0.32	0.32	-89.30	0.73	-59.87	59.87	59.23	0.64	93.465	
300.00	300.00	300.00	300.00	0.55	0.55	-89.30	0.73	-59.87	59.87	58.78	1.09	54.923 CC, ES	
400.00	399.98	397.98	397.96	0.75	0.75	67.47	0.37	-61.50	60.85	59.35	1.50	40.700	
500.00	499.84	495.83	495.67	0.94	0.96	70.55	-0.71	-66.40	63.91	62.02	1.89	33.733	
600.00	599.45	593.40	592.88	1.18	1.20	75.03	-2.50	-74.53	69.39	67.05	2.34	29.650	
700.00	698.70	690.55	689.35	1.45	1.47	80.16	-5.00	-85.82	77.66	74.81	2.84	27.295	
800.00	797.47	787.18	784.83	1.77	1.78	85.24	-8.17	-100.22	89.01	85.59	3.43	25.979	
900.00	895.62	883.13	879.11	2.15	2.13	89.83	-12.01	-117.62	103.61	99.51	4.10	25.276	
1,000.00	993.06	978.31	971.99	2.58	2.54	93.74	-16.49	-137.92	121.46	116.59	4.87	24.938	
1,100.00	1,089.64	1,072.60	1,063.26	3.07	3.00	96.93	-21.58	-160.99	142.52	136.77	5.74	24.812	
1,200.00	1,185.27	1,165.89	1,152.76	3.63	3.51	99.49	-27.25	-186.68	166.68	159.96	6.72	24.807	
1,300.00	1,279.82	1,258.10	1,240.33	4.24	4.07	101.50	-33.46	-214.87	193.84	186.05	7.79	24.870	
1,400.00	1,373.17	1,349.13	1,325.84	4.92	4.69	103.05	-40.19	-245.37	223.89	214.93	8.97	24.970	
1,499.47	1,464.73	1,438.45	1,408.72	5.66	5.35	104.24	-47.36	-277.87	256.55	246.32	10.22	25.091	
1,600.00	1,556.58	1,528.57	1,491.28	6.44	6.06	105.56	-55.15	-313.16	291.79	280.20	11.59	25.176	
1,700.00	1,647.94	1,621.87	1,576.36	7.22	6.84	106.48	-63.40	-350.55	327.47	314.46	13.01	25.169	
1,800.00	1,739.30	1,715.17	1,661.45	8.01	7.62	107.22	-71.64	-387.94	363.21	348.76	14.45	25.142	
1,900.00	1,830.66	1,808.48	1,746.53	8.80	8.41	107.83	-79.89	-425.33	398.99	383.10	15.89	25.108	
2,000.00	1,922.03	1,901.78	1,831.61	9.60	9.20	108.34	-88.14	-462.72	434.81	417.47	17.34	25.070	
2,100.00	2,013.39	1,995.08	1,916.69	10.40	10.00	108.77	-96.39	-500.10	470.65	451.85	18.80	25.032	
2,200.00	2,104.75	2,088.38	2,001.78	11.20	10.80	109.14	-104.64	-537.49	506.52	486.25	20.26	24.996	
2,300.00	2,196.11	2,181.68	2,086.86	12.00	11.60	109.46	-112.89	-574.88	542.40	520.67	21.73	24.962	
2,400.00	2,287.47	2,274.98	2,171.94	12.80	12.40	109.74	-121.13	-612.27	578.29	555.09	23.20	24.930	
2,500.00	2,378.84	2,368.28	2,257.03	13.60	13.21	109.99	-129.38	-649.66	614.19	589.53	24.67	24.901	
2,600.00	2,470.20	2,461.58	2,342.11	14.41	14.01	110.21	-137.63	-687.05	650.10	623.97	26.14	24.874	
2,700.00	2,561.56	2,554.89	2,427.19	15.21	14.82	110.41	-145.88	-724.44	686.02	658.42	27.61	24.849	
2,800.00	2,652.92	2,648.19	2,512.27	16.02	15.62	110.59	-154.13	-761.83	721.95	692.87	29.08	24.827	
2,900.00	2,744.28	2,741.49	2,597.36	16.82	16.43	110.75	-162.37	-799.22	757.88	727.33	30.55	24.806	
3,000.00	2,835.65	2,834.79	2,682.44	17.63	17.24	110.90	-170.62	-836.61	793.82	761.79	32.02	24.788	
3,100.00	2,927.01	2,928.09	2,767.52	18.44	18.05	111.03	-178.87	-874.00	829.76	796.26	33.50	24.771	
3,200.00	3,018.37	3,021.39	2,852.61	19.24	18.86	111.16	-187.12	-911.39	865.70	830.73	34.97	24.755	
3,300.00	3,109.73	3,114.69	2,937.69	20.05	19.67	111.27	-195.37	-948.78	901.65	865.21	36.44	24.741	
3,400.00	3,201.10	3,208.00	3,022.77	20.86	20.48	111.37	-203.62	-986.17	937.60	899.68	37.92	24.728	
3,500.00	3,292.46	3,301.30	3,107.85	21.67	21.29	111.47	-211.86	-1,023.56	973.55	934.16	39.39	24.716	
3,600.00	3,383.82	3,394.60	3,192.94	22.47	22.10	111.56	-220.11	-1,060.95	1,009.51	968.65	40.86	24.705	
3,700.00	3,475.18	3,487.90	3,278.02	23.28	22.91	111.64	-228.36	-1,098.34	1,045.47	1,003.13	42.33	24.696	
3,800.00	3,566.54	3,581.20	3,363.10	24.09	23.72	111.72	-236.61	-1,135.73	1,081.42	1,037.62	43.81	24.687	
3,900.00	3,657.91	3,674.50	3,448.19	24.90	24.53	111.80	-244.86	-1,173.12	1,117.38	1,072.11	45.28	24.679	
4,000.00	3,749.27	3,767.80	3,533.27	25.71	25.34	111.86	-253.11	-1,210.51	1,153.35	1,106.60	46.75	24.672	
4,100.00	3,840.63	3,861.10	3,618.35	26.52	26.15	111.93	-261.35	-1,247.90	1,189.31	1,141.09	48.22	24.665	
4,200.00	3,931.99	3,954.41	3,703.44	27.33	26.96	111.99	-269.60	-1,285.29	1,225.27	1,175.59	49.69	24.659	
4,300.00	4,023.35	4,047.71	3,788.52	28.13	27.78	112.05	-277.85	-1,322.68	1,261.24	1,210.08	51.16	24.654	
4,400.00	4,114.72	4,141.01	3,873.60	28.94	28.59	112.10	-286.10	-1,360.07	1,297.21	1,244.58	52.63	24.649	
4,500.00	4,206.08	4,234.31	3,958.68	29.75	29.40	112.15	-294.35	-1,397.46	1,333.17	1,279.08	54.09	24.645	
4,600.00	4,297.44	4,327.61	4,043.77	30.56	30.21	112.20	-302.60	-1,434.85	1,369.14	1,313.58	55.56	24.642	
4,700.00	4,388.80	4,420.91	4,128.85	31.37	31.02	112.25	-310.84	-1,472.24	1,405.11	1,348.08	57.03	24.638	
4,800.00	4,480.16	4,514.21	4,213.93	32.18	31.83	112.29	-319.09	-1,509.63	1,441.08	1,382.59	58.50	24.636	
4,900.00	4,571.53	4,607.51	4,299.02	32.99	32.65	112.33	-327.34	-1,547.02	1,477.05	1,417.09	59.96	24.633	
5,000.00	4,662.89	4,700.82	4,384.10	33.80	33.46	112.37	-335.59	-1,584.41	1,513.02	1,451.60	61.43	24.631	
5,100.00	4,754.25	4,794.12	4,469.18	34.61	34.27	112.41	-343.84	-1,621.80	1,549.00	1,486.10	62.89	24.630	

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 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	
5,172.26	4,820.27	4,861.54	4,530.67	35.19	34.86	112.44	-349.80	-1,648.82	1,574.99	1,511.04	63.95	24.629	
5,200.00	4,845.67	4,887.44	4,554.28	35.38	35.08	112.64	-352.09	-1,659.20	1,584.92	1,520.54	64.38	24.618	
5,300.00	4,938.09	4,981.10	4,639.69	35.93	35.90	113.26	-360.37	-1,696.73	1,619.91	1,554.11	65.80	24.618	
5,400.00	5,031.80	5,075.12	4,725.43	36.43	36.72	113.75	-368.68	-1,734.41	1,653.62	1,586.43	67.19	24.611	
5,500.00	5,126.66	5,169.40	4,811.40	36.90	37.54	114.09	-377.01	-1,772.19	1,686.02	1,617.48	68.54	24.600	
5,600.00	5,222.57	5,263.81	4,897.50	37.33	38.36	114.30	-385.36	-1,810.02	1,717.13	1,647.29	69.84	24.587	
5,700.00	5,319.41	5,358.24	4,983.61	37.72	39.18	114.40	-393.71	-1,847.87	1,746.96	1,675.87	71.09	24.575	
5,800.00	5,417.06	5,452.57	5,069.64	38.06	40.00	114.38	-402.05	-1,885.67	1,775.54	1,703.26	72.28	24.565	
5,900.00	5,515.40	5,546.70	5,155.48	38.36	40.82	114.26	-410.37	-1,923.39	1,802.93	1,729.53	73.41	24.561	
6,000.00	5,614.31	5,674.47	5,272.78	38.61	41.73	113.82	-421.27	-1,972.80	1,828.51	1,753.99	74.53	24.535	
6,100.00	5,713.68	5,815.10	5,404.34	38.82	42.56	113.29	-431.97	-2,021.30	1,850.74	1,775.24	75.49	24.515	
6,200.00	5,813.37	5,959.24	5,541.54	38.98	43.29	112.76	-441.48	-2,064.40	1,869.41	1,793.12	76.29	24.503	
6,300.00	5,913.28	6,106.58	5,683.90	39.09	43.93	112.20	-449.65	-2,101.44	1,884.41	1,807.47	76.93	24.494	
6,371.73	5,985.00	6,214.04	5,788.86	39.15	44.32	-43.88	-454.60	-2,123.91	1,892.83	1,815.54	77.29	24.491	
6,400.00	6,013.27	6,256.79	5,830.84	39.17	44.46	-44.09	-456.34	-2,131.78	1,895.65	1,818.26	77.39	24.494	
6,500.00	6,113.27	6,409.76	5,981.95	39.23	44.88	-44.70	-461.44	-2,154.92	1,903.93	1,826.20	77.72	24.496	
6,600.00	6,213.27	6,564.88	6,136.24	39.29	45.17	-45.10	-464.84	-2,170.31	1,909.40	1,831.42	77.98	24.486	
6,700.00	6,313.27	6,721.26	6,292.43	39.35	45.36	-45.28	-466.43	-2,177.54	1,911.97	1,833.79	78.18	24.455	
6,800.00	6,413.27	6,842.10	6,413.27	39.41	45.44	-45.30	-466.56	-2,178.11	1,912.17	1,833.84	78.33	24.411	
6,900.00	6,513.27	6,942.10	6,513.27	39.47	45.51	-45.30	-466.56	-2,178.11	1,912.17	1,833.70	78.47	24.368	
7,000.00	6,613.27	7,042.10	6,613.27	39.53	45.57	-45.30	-466.56	-2,178.11	1,912.17	1,833.56	78.61	24.325	
7,100.00	6,713.27	7,142.10	6,713.27	39.60	45.64	-45.30	-466.56	-2,178.11	1,912.17	1,833.42	78.75	24.281	
7,200.00	6,813.27	7,242.10	6,813.27	39.66	45.71	-45.30	-466.56	-2,178.11	1,912.17	1,833.27	78.90	24.236	
7,300.00	6,913.27	7,342.10	6,913.27	39.73	45.78	-45.30	-466.56	-2,178.11	1,912.17	1,833.13	79.04	24.191	
7,400.00	7,013.27	7,442.10	7,013.27	39.80	45.85	-45.30	-466.56	-2,178.11	1,912.17	1,832.98	79.19	24.146	
7,500.00	7,113.27	7,542.10	7,113.27	39.87	45.92	-45.30	-466.56	-2,178.11	1,912.17	1,832.83	79.34	24.100	
7,600.00	7,213.27	7,642.10	7,213.27	39.94	45.99	-45.30	-466.56	-2,178.11	1,912.17	1,832.67	79.50	24.053	
7,700.00	7,313.27	7,742.10	7,313.27	40.01	46.07	-45.30	-466.56	-2,178.11	1,912.17	1,832.52	79.65	24.006	
7,800.00	7,413.27	7,842.10	7,413.27	40.09	46.14	-45.30	-466.56	-2,178.11	1,912.17	1,832.36	79.81	23.958	
7,900.00	7,513.27	7,942.10	7,513.27	40.16	46.22	-45.30	-466.56	-2,178.11	1,912.17	1,832.20	79.97	23.910	
8,000.00	7,613.27	8,042.10	7,613.27	40.23	46.29	-45.30	-466.56	-2,178.11	1,912.17	1,832.03	80.14	23.862	
8,100.00	7,713.27	8,142.10	7,713.27	40.31	46.37	-45.30	-466.56	-2,178.11	1,912.17	1,831.87	80.30	23.813	
8,171.73	7,785.00	8,213.83	7,785.00	40.37	46.43	-45.30	-466.56	-2,178.11	1,912.17	1,831.75	80.42	23.777 SF	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	-87.90	0.37	-10.02	10.03				
100.00	100.00	100.00	100.00	0.10	0.10	-87.90	0.37	-10.02	10.03	9.84	0.19	52.505	
200.00	200.00	200.00	200.00	0.32	0.32	-87.90	0.37	-10.02	10.03	9.39	0.64	15.659	
234.09	234.09	234.09	234.09	0.40	0.40	-87.90	0.37	-10.02	10.03	9.24	0.79	12.636 CC, ES	
300.00	300.00	299.86	299.86	0.55	0.53	-89.48	0.09	-10.36	10.36	9.28	1.08	9.605	
400.00	399.98	399.53	399.46	0.75	0.73	63.25	-2.10	-13.05	12.35	10.87	1.48	8.368	
500.00	499.84	499.10	498.78	0.94	0.96	65.05	-6.48	-18.41	15.57	13.68	1.89	8.231 SF	
600.00	599.45	598.52	597.66	1.18	1.23	68.94	-13.02	-26.43	20.08	17.72	2.36	8.494	
700.00	698.70	697.77	695.95	1.45	1.53	73.21	-21.72	-37.08	26.00	23.09	2.91	8.923	
800.00	797.47	796.80	793.49	1.77	1.89	77.09	-32.53	-50.33	33.41	29.85	3.56	9.384	
900.00	895.62	895.59	890.14	2.15	2.29	80.36	-45.44	-66.14	42.34	38.03	4.32	9.810	
1,000.00	993.06	994.10	985.76	2.58	2.76	83.04	-60.40	-84.47	52.81	47.62	5.19	10.175	
1,100.00	1,089.64	1,092.31	1,080.22	3.07	3.29	85.20	-77.37	-105.26	64.79	58.61	6.19	10.476	
1,200.00	1,185.27	1,190.17	1,173.39	3.63	3.87	86.95	-96.32	-128.47	78.29	70.99	7.30	10.720	
1,300.00	1,279.82	1,287.68	1,265.14	4.24	4.52	88.36	-117.18	-154.02	93.27	84.73	8.54	10.916	
1,400.00	1,373.17	1,384.80	1,355.35	4.92	5.22	89.51	-139.91	-181.87	109.72	99.81	9.91	11.075	
1,499.47	1,464.73	1,480.99	1,443.46	5.66	5.98	90.43	-164.32	-211.77	127.50	116.12	11.38	11.202	
1,600.00	1,556.58	1,577.81	1,530.78	6.44	6.81	90.89	-190.76	-244.16	146.86	133.90	12.96	11.332	
1,700.00	1,647.94	1,673.56	1,615.70	7.22	7.69	90.20	-218.74	-278.43	167.42	152.86	14.56	11.500	
1,800.00	1,739.30	1,769.04	1,698.88	8.01	8.62	88.78	-248.37	-314.73	189.34	173.17	16.17	11.709	
1,900.00	1,830.66	1,866.35	1,783.12	8.80	9.59	87.35	-279.17	-352.46	211.85	194.04	17.81	11.895	
2,000.00	1,922.03	1,963.67	1,867.37	9.60	10.58	86.20	-309.97	-390.20	234.45	215.00	19.45	12.055	
2,100.00	2,013.39	2,060.98	1,951.62	10.40	11.57	85.25	-340.78	-427.93	257.13	236.05	21.09	12.194	
2,200.00	2,104.75	2,158.30	2,035.86	11.20	12.56	84.46	-371.58	-465.66	279.87	257.14	22.72	12.316	
2,300.00	2,196.11	2,255.61	2,120.11	12.00	13.55	83.78	-402.38	-503.40	302.65	278.28	24.36	12.423	
2,400.00	2,287.47	2,352.92	2,204.35	12.80	14.55	83.20	-433.19	-541.13	325.46	299.46	26.00	12.519	
2,500.00	2,378.84	2,450.24	2,288.60	13.60	15.55	82.70	-463.99	-578.86	348.30	320.66	27.63	12.604	
2,600.00	2,470.20	2,547.55	2,372.84	14.41	16.55	82.26	-494.79	-616.60	371.16	341.89	29.27	12.680	
2,700.00	2,561.56	2,644.86	2,457.09	15.21	17.55	81.87	-525.59	-654.33	394.04	363.14	30.91	12.749	
2,800.00	2,652.92	2,742.18	2,541.34	16.02	18.55	81.52	-556.40	-692.06	416.94	384.40	32.54	12.812	
2,900.00	2,744.28	2,839.49	2,625.58	16.82	19.55	81.21	-587.20	-729.80	439.85	405.67	34.18	12.869	
3,000.00	2,835.65	2,936.81	2,709.83	17.63	20.56	80.92	-618.00	-767.53	462.77	426.96	35.81	12.922	
3,100.00	2,927.01	3,034.12	2,794.07	18.44	21.56	80.67	-648.81	-805.26	485.70	448.25	37.45	12.970	
3,200.00	3,018.37	3,131.43	2,878.32	19.24	22.56	80.44	-679.61	-843.00	508.64	469.56	39.08	13.015	
3,300.00	3,109.73	3,228.75	2,962.56	20.05	23.57	80.23	-710.41	-880.73	531.59	490.87	40.72	13.056	
3,400.00	3,201.10	3,326.06	3,046.81	20.86	24.57	80.03	-741.21	-918.46	554.54	512.19	42.35	13.094	
3,500.00	3,292.46	3,423.37	3,131.06	21.67	25.58	79.85	-772.02	-956.20	577.50	533.51	43.98	13.130	
3,600.00	3,383.82	3,520.69	3,215.30	22.47	26.58	79.69	-802.82	-993.93	600.46	554.84	45.62	13.163	
3,700.00	3,475.18	3,618.00	3,299.55	23.28	27.59	79.54	-833.62	-1,031.66	623.43	576.18	47.25	13.195	
3,800.00	3,566.54	3,715.32	3,383.79	24.09	28.60	79.39	-864.42	-1,069.40	646.40	597.52	48.88	13.224	
3,900.00	3,657.91	3,812.63	3,468.04	24.90	29.60	79.26	-895.23	-1,107.13	669.37	618.86	50.51	13.252	
4,000.00	3,749.27	3,909.94	3,552.29	25.71	30.61	79.14	-926.03	-1,144.87	692.35	640.21	52.14	13.278	
4,100.00	3,840.63	4,007.26	3,636.53	26.52	31.62	79.02	-956.83	-1,182.60	715.33	661.56	53.77	13.302	
4,200.00	3,931.99	4,104.57	3,720.78	27.33	32.62	78.91	-987.64	-1,220.33	738.31	682.91	55.41	13.326	
4,300.00	4,023.35	4,201.89	3,805.02	28.13	33.63	78.81	-1,018.44	-1,258.07	761.30	704.27	57.03	13.348	
4,400.00	4,114.72	4,299.20	3,889.27	28.94	34.64	78.72	-1,049.24	-1,295.80	784.29	725.62	58.66	13.369	
4,500.00	4,206.08	4,396.51	3,973.51	29.75	35.64	78.63	-1,080.04	-1,333.53	807.28	746.98	60.29	13.389	
4,600.00	4,297.44	4,493.83	4,057.76	30.56	36.65	78.54	-1,110.85	-1,371.27	830.27	768.35	61.92	13.408	
4,700.00	4,388.80	4,591.14	4,142.01	31.37	37.66	78.46	-1,141.65	-1,409.00	853.26	789.71	63.55	13.427	
4,800.00	4,480.16	4,688.45	4,226.25	32.18	38.67	78.38	-1,172.45	-1,446.73	876.26	811.08	65.18	13.444	
4,900.00	4,571.53	4,785.77	4,310.50	32.99	39.67	78.31	-1,203.25	-1,484.47	899.25	832.45	66.80	13.461	
5,000.00	4,662.89	4,883.08	4,394.74	33.80	40.68	78.24	-1,234.06	-1,522.20	922.25	853.82	68.43	13.477	

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 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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
5,100.00	4,754.25	4,980.40	4,478.99	34.61	41.69	78.18	-1,264.86	-1,559.93	945.25	875.19	70.06	13.492	
5,172.26	4,820.27	5,050.72	4,539.87	35.19	42.42	78.13	-1,287.12	-1,587.20	961.87	890.64	71.23	13.503	
5,200.00	4,845.67	5,077.70	4,563.23	35.38	42.70	78.23	-1,295.66	-1,597.66	968.28	896.59	71.69	13.506	
5,300.00	4,938.09	5,174.82	4,647.30	35.93	43.70	78.49	-1,326.40	-1,635.32	991.82	918.67	73.15	13.559	
5,400.00	5,031.80	5,271.58	4,731.07	36.43	44.71	78.58	-1,357.03	-1,672.84	1,016.07	941.57	74.50	13.639	
5,500.00	5,126.66	5,367.88	4,814.44	36.90	45.70	78.51	-1,387.51	-1,710.18	1,041.06	965.33	75.73	13.748	
5,600.00	5,222.57	5,463.59	4,897.29	37.33	46.69	78.30	-1,417.81	-1,747.29	1,066.85	990.01	76.84	13.884	
5,700.00	5,319.41	5,558.59	4,979.54	37.72	47.68	77.96	-1,447.88	-1,784.13	1,093.54	1,015.70	77.83	14.050	
5,800.00	5,417.06	5,652.78	5,061.08	38.06	48.66	77.52	-1,477.69	-1,820.65	1,121.21	1,042.50	78.71	14.245	
5,900.00	5,515.40	5,746.03	5,141.81	38.36	49.62	76.99	-1,507.21	-1,856.81	1,149.97	1,070.51	79.46	14.472	
6,000.00	5,614.31	5,838.23	5,221.63	38.61	50.58	76.38	-1,536.39	-1,892.56	1,179.96	1,099.86	80.10	14.731	
6,100.00	5,713.68	5,957.48	5,325.69	38.82	51.59	75.35	-1,573.21	-1,937.67	1,210.48	1,130.01	80.46	15.044	
6,200.00	5,813.37	6,088.08	5,442.28	38.98	52.53	74.23	-1,610.41	-1,983.23	1,239.65	1,159.05	80.60	15.380	
6,300.00	5,913.28	6,222.06	5,564.55	39.09	53.41	73.11	-1,645.04	-2,025.65	1,267.29	1,186.70	80.59	15.725	
6,371.73	5,985.00	6,320.27	5,655.72	39.15	53.99	-83.37	-1,668.10	-2,053.91	1,286.09	1,205.59	80.50	15.976	
6,400.00	6,013.27	6,359.52	5,692.51	39.17	54.21	-83.82	-1,676.77	-2,064.52	1,293.22	1,212.86	80.36	16.094	
6,500.00	6,113.27	6,501.49	5,827.03	39.23	54.95	-85.26	-1,705.42	-2,099.62	1,316.52	1,236.63	79.89	16.480	
6,600.00	6,213.27	6,647.94	5,967.98	39.29	55.59	-86.46	-1,730.53	-2,130.38	1,336.59	1,257.11	79.49	16.816	
6,700.00	6,313.27	6,798.30	6,114.61	39.35	56.14	-87.43	-1,751.53	-2,156.11	1,353.13	1,273.95	79.18	17.089	
6,800.00	6,413.27	6,951.86	6,265.95	39.41	56.58	-88.16	-1,767.94	-2,176.20	1,365.88	1,286.91	78.97	17.296	
6,900.00	6,513.27	7,107.83	6,420.85	39.47	56.90	-88.65	-1,779.32	-2,190.15	1,374.65	1,295.77	78.88	17.428	
7,000.00	6,613.27	7,265.32	6,578.03	39.53	57.10	-88.91	-1,785.39	-2,197.58	1,379.29	1,300.39	78.90	17.482	
7,100.00	6,713.27	7,400.58	6,713.27	39.60	57.19	-88.95	-1,786.41	-2,198.83	1,380.07	1,301.04	79.03	17.462	
7,200.00	6,813.27	7,500.58	6,813.27	39.66	57.24	-88.95	-1,786.41	-2,198.83	1,380.07	1,300.91	79.16	17.434	
7,300.00	6,913.27	7,600.58	6,913.27	39.73	57.29	-88.95	-1,786.41	-2,198.83	1,380.07	1,300.77	79.29	17.404	
7,400.00	7,013.27	7,700.58	7,013.27	39.80	57.34	-88.95	-1,786.41	-2,198.83	1,380.07	1,300.64	79.43	17.375	
7,500.00	7,113.27	7,800.58	7,113.27	39.87	57.39	-88.95	-1,786.41	-2,198.83	1,380.07	1,300.50	79.57	17.345	
7,600.00	7,213.27	7,900.58	7,213.27	39.94	57.44	-88.95	-1,786.41	-2,198.83	1,380.07	1,300.36	79.70	17.315	
7,700.00	7,313.27	8,000.58	7,313.27	40.01	57.50	-88.95	-1,786.41	-2,198.83	1,380.07	1,300.22	79.85	17.284	
7,800.00	7,413.27	8,100.58	7,413.27	40.09	57.55	-88.95	-1,786.41	-2,198.83	1,380.07	1,300.08	79.99	17.253	
7,900.00	7,513.27	8,200.58	7,513.27	40.16	57.61	-88.95	-1,786.41	-2,198.83	1,380.07	1,299.93	80.14	17.221	
8,000.00	7,613.27	8,300.58	7,613.27	40.23	57.66	-88.95	-1,786.41	-2,198.83	1,380.07	1,299.78	80.28	17.190	
8,100.00	7,713.27	8,400.58	7,713.27	40.31	57.72	-88.95	-1,786.41	-2,198.83	1,380.07	1,299.63	80.44	17.157	
8,143.49	7,756.76	8,444.07	7,756.76	40.34	57.74	-88.95	-1,786.41	-2,198.83	1,380.07	1,299.57	80.50	17.143	
8,171.73	7,785.00	8,461.31	7,774.00	40.37	57.75	-88.95	-1,786.41	-2,198.83	1,380.11	1,299.57	80.54	17.136	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	90.00	0.00	20.05	20.05				
100.00	100.00	100.00	100.00	0.10	0.10	90.00	0.00	20.05	20.05	19.86	0.19	104.939	
200.00	200.00	200.00	200.00	0.32	0.32	90.00	0.00	20.05	20.05	19.41	0.64	31.298	
300.00	300.00	300.00	300.00	0.55	0.55	90.00	0.00	20.05	20.05	18.96	1.09	18.391 CC, ES	
400.00	399.98	399.79	399.77	0.75	0.74	-114.09	-1.67	20.54	21.26	19.77	1.49	14.274	
500.00	499.84	499.49	499.33	0.94	0.94	-113.50	-6.66	21.99	24.88	22.99	1.88	13.201	
600.00	599.45	599.02	598.48	1.18	1.17	-112.80	-14.97	24.42	30.91	28.56	2.34	13.189 SF	
700.00	698.70	698.29	697.01	1.45	1.44	-112.16	-26.53	27.80	39.33	36.46	2.88	13.670	
800.00	797.47	797.22	794.73	1.77	1.76	-111.61	-41.32	32.11	50.14	46.64	3.50	14.327	
900.00	895.62	895.73	891.44	2.15	2.13	-111.15	-59.24	37.35	63.31	59.09	4.22	14.999	
1,000.00	993.06	993.74	986.98	2.58	2.56	-110.75	-80.24	43.47	78.81	73.76	5.05	15.613	
1,100.00	1,089.64	1,091.18	1,081.16	3.07	3.03	-110.39	-104.21	50.47	96.61	90.63	5.98	16.145	
1,200.00	1,185.27	1,187.99	1,173.84	3.63	3.57	-110.05	-131.05	58.31	116.68	109.65	7.03	16.593	
1,300.00	1,279.82	1,284.10	1,264.86	4.24	4.16	-109.72	-160.66	66.95	138.97	130.78	8.19	16.966	
1,400.00	1,373.17	1,379.45	1,354.09	4.92	4.80	-109.38	-192.92	76.37	163.45	153.99	9.46	17.278	
1,499.47	1,464.73	1,473.50	1,440.96	5.66	5.49	-109.05	-227.51	86.47	189.91	179.09	10.82	17.547	
1,600.00	1,556.58	1,570.07	1,529.51	6.44	6.23	-109.21	-264.48	97.27	217.74	205.44	12.30	17.704	
1,700.00	1,647.94	1,666.16	1,617.63	7.22	6.98	-109.34	-301.28	108.01	245.41	231.63	13.78	17.809	
1,800.00	1,739.30	1,762.25	1,705.74	8.01	7.73	-109.44	-338.07	118.75	273.09	257.82	15.27	17.881	
1,900.00	1,830.66	1,858.34	1,793.86	8.80	8.49	-109.52	-374.86	129.49	300.77	284.00	16.77	17.932	
2,000.00	1,922.03	1,954.44	1,881.98	9.60	9.25	-109.58	-411.66	140.23	328.45	310.17	18.28	17.969	
2,100.00	2,013.39	2,050.53	1,970.09	10.40	10.01	-109.64	-448.45	150.97	356.13	336.34	19.79	17.997	
2,200.00	2,104.75	2,146.62	2,058.21	11.20	10.77	-109.69	-485.24	161.72	383.81	362.51	21.30	18.018	
2,300.00	2,196.11	2,242.71	2,146.33	12.00	11.54	-109.73	-522.04	172.46	411.49	388.67	22.82	18.035	
2,400.00	2,287.47	2,338.80	2,234.44	12.80	12.30	-109.77	-558.83	183.20	439.17	414.84	24.33	18.048	
2,500.00	2,378.84	2,434.90	2,322.56	13.60	13.07	-109.80	-595.62	193.94	466.85	441.00	25.85	18.059	
2,600.00	2,470.20	2,530.99	2,410.68	14.41	13.84	-109.83	-632.42	204.68	494.53	467.16	27.37	18.068	
2,700.00	2,561.56	2,627.08	2,498.79	15.21	14.61	-109.86	-669.21	215.43	522.21	493.32	28.89	18.075	
2,800.00	2,652.92	2,723.17	2,586.91	16.02	15.38	-109.88	-706.00	226.17	549.90	519.48	30.41	18.081	
2,900.00	2,744.28	2,819.27	2,675.03	16.82	16.15	-109.90	-742.80	236.91	577.58	545.64	31.93	18.087	
3,000.00	2,835.65	2,915.36	2,763.14	17.63	16.92	-109.92	-779.59	247.65	605.26	571.80	33.45	18.092	
3,100.00	2,927.01	3,011.45	2,851.26	18.44	17.69	-109.94	-816.38	258.39	632.94	597.96	34.98	18.096	
3,200.00	3,018.37	3,107.54	2,939.38	19.24	18.46	-109.95	-853.17	269.14	660.62	624.12	36.50	18.100	
3,300.00	3,109.73	3,203.63	3,027.50	20.05	19.23	-109.97	-889.97	279.88	688.30	650.28	38.02	18.104	
3,400.00	3,201.10	3,299.73	3,115.61	20.86	20.00	-109.98	-926.76	290.62	715.98	676.44	39.54	18.107	
3,500.00	3,292.46	3,395.82	3,203.73	21.67	20.77	-110.00	-963.55	301.36	743.67	702.60	41.06	18.111	
3,600.00	3,383.82	3,491.91	3,291.85	22.47	21.54	-110.01	-1,000.35	312.10	771.35	728.76	42.58	18.114	
3,700.00	3,475.18	3,588.00	3,379.96	23.28	22.32	-110.02	-1,037.14	322.85	799.03	754.92	44.10	18.117	
3,800.00	3,566.54	3,684.10	3,468.08	24.09	23.09	-110.03	-1,073.93	333.59	826.71	781.09	45.62	18.120	
3,900.00	3,657.91	3,780.19	3,556.20	24.90	23.86	-110.04	-1,110.73	344.33	854.39	807.25	47.14	18.123	
4,000.00	3,749.27	3,876.28	3,644.31	25.71	24.63	-110.05	-1,147.52	355.07	882.07	833.41	48.66	18.126	
4,100.00	3,840.63	3,972.37	3,732.43	26.52	25.41	-110.06	-1,184.31	365.81	909.75	859.57	50.18	18.128	
4,200.00	3,931.99	4,068.46	3,820.55	27.33	26.18	-110.06	-1,221.11	376.55	937.44	885.73	51.70	18.131	
4,300.00	4,023.35	4,164.56	3,908.66	28.13	26.95	-110.07	-1,257.90	387.30	965.12	911.90	53.22	18.134	
4,400.00	4,114.72	4,260.65	3,996.78	28.94	27.73	-110.08	-1,294.69	398.04	992.80	938.06	54.74	18.137	
4,500.00	4,206.08	4,356.74	4,084.90	29.75	28.50	-110.08	-1,331.49	408.78	1,020.48	964.22	56.26	18.139	
4,600.00	4,297.44	4,452.83	4,173.02	30.56	29.27	-110.09	-1,368.28	419.52	1,048.16	990.39	57.78	18.142	
4,700.00	4,388.80	4,548.92	4,261.13	31.37	30.05	-110.10	-1,405.07	430.26	1,075.84	1,016.55	59.29	18.145	
4,800.00	4,480.16	4,645.02	4,349.25	32.18	30.82	-110.10	-1,441.87	441.01	1,103.53	1,042.72	60.81	18.148	
4,900.00	4,571.53	4,741.11	4,437.37	32.99	31.59	-110.11	-1,478.66	451.75	1,131.21	1,068.88	62.32	18.150	
5,000.00	4,662.89	4,837.20	4,525.48	33.80	32.37	-110.11	-1,515.45	462.49	1,158.89	1,095.05	63.84	18.153	
5,100.00	4,754.25	4,933.29	4,613.60	34.61	33.14	-110.12	-1,552.24	473.23	1,186.57	1,121.22	65.35	18.156	

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 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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
5,172.26	4,820.27	5,002.73	4,677.28	35.19	33.70	-110.12	-1,578.83	480.99	1,206.58	1,140.13	66.45	18.158	
5,200.00	4,845.67	5,029.40	4,701.73	35.38	33.91	-110.26	-1,589.04	483.97	1,214.21	1,147.35	66.86	18.160	
5,300.00	4,938.09	5,133.45	4,797.39	35.93	34.63	-110.68	-1,628.33	495.45	1,240.82	1,172.65	68.17	18.202	
5,400.00	5,031.80	5,245.02	4,901.40	36.43	35.23	-111.05	-1,667.05	506.75	1,265.25	1,195.93	69.32	18.253	
5,500.00	5,126.66	5,357.63	5,007.90	36.90	35.78	-111.39	-1,702.16	517.00	1,287.31	1,216.94	70.37	18.292	
5,600.00	5,222.57	5,471.19	5,116.67	37.33	36.28	-111.70	-1,733.47	526.14	1,306.97	1,235.63	71.34	18.321	
5,700.00	5,319.41	5,585.58	5,227.45	37.72	36.73	-112.00	-1,760.80	534.12	1,324.18	1,251.98	72.20	18.340	
5,800.00	5,417.06	5,700.68	5,339.98	38.06	37.13	-112.27	-1,783.99	540.89	1,338.90	1,265.94	72.96	18.351	
5,900.00	5,515.40	5,816.36	5,453.95	38.36	37.46	-112.52	-1,802.91	546.41	1,351.10	1,277.50	73.60	18.357	
6,000.00	5,614.31	5,932.47	5,569.07	38.61	37.73	-112.75	-1,817.45	550.66	1,360.77	1,286.63	74.13	18.356	
6,100.00	5,713.68	6,048.89	5,685.01	38.82	37.93	-112.97	-1,827.51	553.60	1,367.86	1,293.31	74.55	18.348	
6,200.00	5,813.37	6,165.45	5,801.42	38.98	38.08	-113.17	-1,833.05	555.21	1,372.39	1,297.53	74.86	18.334	
6,300.00	5,913.28	6,277.32	5,913.28	39.09	38.17	-113.34	-1,834.22	555.56	1,374.38	1,299.32	75.06	18.311	
6,371.73	5,985.00	6,349.04	5,985.00	39.15	38.21	90.94	-1,834.22	555.56	1,374.73	1,299.57	75.16	18.290	
6,400.00	6,013.27	6,377.31	6,013.27	39.17	38.23	90.94	-1,834.22	555.56	1,374.73	1,299.53	75.20	18.281	
6,500.00	6,113.27	6,477.31	6,113.27	39.23	38.29	90.94	-1,834.22	555.56	1,374.73	1,299.41	75.32	18.252	
6,600.00	6,213.27	6,577.31	6,213.27	39.29	38.35	90.94	-1,834.22	555.56	1,374.73	1,299.29	75.44	18.222	
6,700.00	6,313.27	6,677.31	6,313.27	39.35	38.41	90.94	-1,834.22	555.56	1,374.73	1,299.16	75.57	18.192	
6,800.00	6,413.27	6,777.31	6,413.27	39.41	38.48	90.94	-1,834.22	555.56	1,374.73	1,299.04	75.70	18.161	
6,900.00	6,513.27	6,877.31	6,513.27	39.47	38.54	90.94	-1,834.22	555.56	1,374.73	1,298.90	75.83	18.129	
7,000.00	6,613.27	6,977.31	6,613.27	39.53	38.61	90.94	-1,834.22	555.56	1,374.73	1,298.77	75.96	18.098	
7,100.00	6,713.27	7,077.31	6,713.27	39.60	38.67	90.94	-1,834.22	555.56	1,374.73	1,298.64	76.10	18.065	
7,200.00	6,813.27	7,177.31	6,813.27	39.66	38.74	90.94	-1,834.22	555.56	1,374.73	1,298.50	76.24	18.032	
7,300.00	6,913.27	7,277.31	6,913.27	39.73	38.81	90.94	-1,834.22	555.56	1,374.73	1,298.36	76.38	17.999	
7,400.00	7,013.27	7,377.31	7,013.27	39.80	38.88	90.94	-1,834.22	555.56	1,374.73	1,298.21	76.52	17.965	
7,500.00	7,113.27	7,477.31	7,113.27	39.87	38.95	90.94	-1,834.22	555.56	1,374.73	1,298.07	76.67	17.931	
7,600.00	7,213.27	7,577.31	7,213.27	39.94	39.02	90.94	-1,834.22	555.56	1,374.73	1,297.92	76.81	17.897	
7,700.00	7,313.27	7,677.31	7,313.27	40.01	39.10	90.94	-1,834.22	555.56	1,374.73	1,297.77	76.97	17.862	
7,800.00	7,413.27	7,777.31	7,413.27	40.09	39.17	90.94	-1,834.22	555.56	1,374.73	1,297.62	77.12	17.826	
7,900.00	7,513.27	7,877.31	7,513.27	40.16	39.25	90.94	-1,834.22	555.56	1,374.73	1,297.46	77.27	17.791	
8,000.00	7,613.27	7,977.31	7,613.27	40.23	39.33	90.94	-1,834.22	555.56	1,374.73	1,297.30	77.43	17.754	
8,100.00	7,713.27	8,077.31	7,713.27	40.31	39.40	90.94	-1,834.22	555.56	1,374.73	1,297.14	77.59	17.718	
8,171.73	7,785.00	8,149.04	7,785.00	40.37	39.46	90.94	-1,834.22	555.56	1,374.73	1,297.03	77.71	17.691	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	-88.60	0.73	-30.07	30.08				
100.00	100.00	100.00	100.00	0.10	0.10	-88.60	0.73	-30.07	30.08	29.89	0.19	157.455	
200.00	200.00	200.00	200.00	0.32	0.32	-88.60	0.73	-30.07	30.08	29.44	0.64	46.960	
300.00	300.00	300.00	300.00	0.55	0.55	-88.60	0.73	-30.07	30.08	28.99	1.09	27.595	
400.00	399.98	399.98	399.98	0.75	0.77	70.21	0.73	-30.07	29.45	27.93	1.51	19.439	
500.00	499.84	499.84	499.84	0.94	0.99	80.31	0.73	-30.07	28.11	26.17	1.94	14.500	
559.23	558.88	558.88	558.88	1.08	1.13	90.00	0.73	-30.07	27.70	25.50	2.21	12.540 CC, ES	
600.00	599.45	599.45	599.45	1.18	1.22	98.12	0.73	-30.07	27.99	25.59	2.40	11.683	
700.00	698.70	698.70	698.70	1.45	1.44	120.01	0.73	-30.07	32.07	29.21	2.87	11.185 SF	
800.00	797.47	797.71	797.71	1.77	1.65	138.04	0.49	-30.39	42.04	38.73	3.31	12.698	
900.00	895.62	897.14	897.08	2.15	1.84	147.80	-1.58	-33.06	55.95	52.22	3.73	15.008	
1,000.00	993.06	996.93	996.62	2.58	2.04	152.56	-5.79	-38.47	71.92	67.75	4.18	17.225	
1,100.00	1,089.64	1,097.04	1,096.20	3.07	2.27	154.70	-12.14	-46.66	89.23	84.56	4.66	19.138	
1,200.00	1,185.27	1,197.45	1,195.63	3.63	2.53	155.40	-20.65	-57.62	107.61	102.41	5.20	20.696	
1,300.00	1,279.82	1,298.10	1,294.77	4.24	2.83	155.24	-31.33	-71.36	126.99	121.19	5.80	21.893	
1,400.00	1,373.17	1,398.98	1,393.44	4.92	3.19	154.56	-44.16	-87.89	147.34	140.86	6.48	22.740	
1,499.47	1,464.73	1,499.49	1,490.97	5.66	3.60	153.56	-59.05	-107.07	168.57	161.32	7.25	23.264	
1,600.00	1,556.58	1,601.53	1,589.05	6.44	4.09	152.29	-76.31	-129.30	189.52	181.34	8.17	23.187	
1,700.00	1,647.94	1,703.60	1,686.09	7.22	4.65	150.44	-95.71	-154.28	208.45	199.22	9.23	22.584	
1,800.00	1,739.30	1,805.97	1,782.22	8.01	5.29	148.11	-117.28	-182.06	225.68	215.24	10.44	21.623	
1,900.00	1,830.66	1,908.39	1,877.08	8.80	6.00	145.37	-140.95	-212.55	241.45	229.63	11.82	20.425	
2,000.00	1,922.03	2,008.99	1,968.96	9.60	6.76	142.36	-166.07	-244.90	256.22	242.85	13.37	19.159	
2,100.00	2,013.39	2,107.04	2,058.26	10.40	7.53	139.62	-190.92	-276.90	271.33	256.35	14.97	18.120	
2,200.00	2,104.75	2,205.10	2,147.55	11.20	8.32	137.18	-215.76	-308.90	286.98	270.38	16.61	17.278	
2,300.00	2,196.11	2,303.15	2,236.84	12.00	9.11	134.98	-240.61	-340.90	303.11	284.84	18.27	16.592	
2,400.00	2,287.47	2,401.20	2,326.13	12.80	9.92	133.01	-265.46	-372.90	319.62	299.68	19.94	16.028	
2,500.00	2,378.84	2,499.25	2,415.42	13.60	10.72	131.23	-290.30	-404.90	336.47	314.85	21.62	15.560	
2,600.00	2,470.20	2,597.30	2,504.71	14.41	11.54	129.62	-315.15	-436.90	353.61	330.30	23.31	15.169	
2,700.00	2,561.56	2,695.36	2,594.00	15.21	12.35	128.16	-340.00	-468.90	371.00	345.99	25.00	14.839	
2,800.00	2,652.92	2,793.41	2,683.30	16.02	13.17	126.83	-364.84	-500.89	388.60	361.91	26.69	14.558	
2,900.00	2,744.28	2,891.46	2,772.59	16.82	13.99	125.61	-389.69	-532.89	406.39	378.00	28.38	14.318	
3,000.00	2,835.65	2,989.51	2,861.88	17.63	14.82	124.50	-414.53	-564.89	424.34	394.27	30.07	14.112	
3,100.00	2,927.01	3,087.57	2,951.17	18.44	15.64	123.48	-439.38	-596.89	442.43	410.68	31.76	13.932	
3,200.00	3,018.37	3,185.62	3,040.46	19.24	16.47	122.53	-464.23	-628.89	460.66	427.22	33.44	13.776	
3,300.00	3,109.73	3,283.67	3,129.75	20.05	17.30	121.66	-489.07	-660.89	478.99	443.87	35.12	13.638	
3,400.00	3,201.10	3,381.72	3,219.04	20.86	18.12	120.85	-513.92	-692.89	497.42	460.62	36.80	13.517	
3,500.00	3,292.46	3,479.78	3,308.34	21.67	18.95	120.10	-538.77	-724.89	515.95	477.47	38.47	13.410	
3,600.00	3,383.82	3,577.83	3,397.63	22.47	19.79	119.41	-563.61	-756.89	534.55	494.40	40.15	13.315	
3,700.00	3,475.18	3,675.88	3,486.92	23.28	20.62	118.76	-588.46	-788.89	553.22	511.41	41.82	13.230	
3,800.00	3,566.54	3,773.93	3,576.21	24.09	21.45	118.15	-613.30	-820.89	571.96	528.48	43.48	13.153	
3,900.00	3,657.91	3,871.98	3,665.50	24.90	22.28	117.58	-638.15	-852.89	590.76	545.61	45.15	13.085	
4,000.00	3,749.27	3,970.04	3,754.79	25.71	23.11	117.04	-663.00	-884.89	609.61	562.80	46.81	13.023	
4,100.00	3,840.63	4,068.09	3,844.08	26.52	23.95	116.54	-687.84	-916.89	628.51	580.04	48.47	12.967	
4,200.00	3,931.99	4,166.14	3,933.38	27.33	24.78	116.06	-712.69	-948.89	647.45	597.32	50.13	12.916	
4,300.00	4,023.35	4,264.19	4,022.67	28.13	25.61	115.62	-737.54	-980.89	666.44	614.65	51.78	12.869	
4,400.00	4,114.72	4,362.25	4,111.96	28.94	26.45	115.20	-762.38	-1,012.88	685.46	632.02	53.44	12.827	
4,500.00	4,206.08	4,460.30	4,201.25	29.75	27.28	114.80	-787.23	-1,044.88	704.51	649.42	55.09	12.789	
4,600.00	4,297.44	4,558.35	4,290.54	30.56	28.12	114.42	-812.07	-1,076.88	723.60	666.86	56.74	12.753	
4,700.00	4,388.80	4,656.40	4,379.83	31.37	28.95	114.06	-836.92	-1,108.88	742.71	684.33	58.39	12.721	
4,800.00	4,480.16	4,754.46	4,469.12	32.18	29.79	113.72	-861.77	-1,140.88	761.86	701.82	60.03	12.691	
4,900.00	4,571.53	4,852.51	4,558.42	32.99	30.63	113.39	-886.61	-1,172.88	781.02	719.35	61.68	12.663	
5,000.00	4,662.89	4,950.56	4,647.71	33.80	31.46	113.08	-911.46	-1,204.88	800.21	736.89	63.32	12.638	

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 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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
5,100.00	4,754.25	5,048.61	4,737.00	34.61	32.30	112.79	-936.31	-1,236.88	819.42	754.46	64.96	12.614	
5,172.26	4,820.27	5,119.47	4,801.52	35.19	32.90	112.59	-954.26	-1,260.00	833.32	767.17	66.15	12.598	
5,200.00	4,845.67	5,146.67	4,826.29	35.38	33.13	112.60	-961.15	-1,268.88	838.60	772.02	66.58	12.596	
5,300.00	4,938.09	5,245.10	4,915.95	35.93	33.95	112.51	-986.07	-1,300.97	856.84	788.82	68.02	12.597	
5,400.00	5,031.80	5,345.46	5,008.29	36.43	34.62	112.33	-1,010.17	-1,332.01	873.67	804.38	69.28	12.610	
5,500.00	5,126.66	5,446.39	5,102.48	36.90	35.19	112.16	-1,032.40	-1,360.64	889.00	818.59	70.40	12.627	
5,600.00	5,222.57	5,547.86	5,198.40	37.33	35.71	111.99	-1,052.68	-1,386.76	902.80	831.37	71.43	12.639	
5,700.00	5,319.41	5,649.82	5,295.92	37.72	36.20	111.82	-1,070.95	-1,410.29	915.04	842.68	72.36	12.645	
5,800.00	5,417.06	5,752.26	5,394.88	38.06	36.63	111.64	-1,087.15	-1,431.15	925.71	852.51	73.19	12.648	
5,900.00	5,515.40	5,855.12	5,495.15	38.36	37.01	111.47	-1,101.22	-1,449.28	934.77	860.85	73.92	12.645	
6,000.00	5,614.31	5,958.37	5,596.56	38.61	37.34	111.28	-1,113.12	-1,464.60	942.21	867.67	74.55	12.639	
6,100.00	5,713.68	6,061.97	5,698.93	38.82	37.63	111.09	-1,122.79	-1,477.06	948.02	872.95	75.07	12.629	
6,200.00	5,813.37	6,165.85	5,802.10	38.98	37.85	110.90	-1,130.21	-1,486.61	952.17	876.69	75.48	12.614	
6,300.00	5,913.28	6,269.98	5,905.89	39.09	38.03	110.69	-1,135.34	-1,493.21	954.67	878.87	75.80	12.595	
6,371.73	5,985.00	6,344.79	5,980.61	39.15	38.13	-45.13	-1,137.59	-1,496.12	955.43	879.46	75.96	12.577	
6,400.00	6,013.27	6,374.31	6,010.11	39.17	38.16	-45.19	-1,138.15	-1,496.84	955.54	879.52	76.02	12.569	
6,500.00	6,113.27	6,477.47	6,113.27	39.23	38.24	-45.24	-1,138.74	-1,497.59	955.66	879.48	76.17	12.546	
6,600.00	6,213.27	6,577.47	6,213.27	39.29	38.31	-45.24	-1,138.74	-1,497.59	955.66	879.35	76.31	12.524	
6,700.00	6,313.27	6,677.47	6,313.27	39.35	38.38	-45.24	-1,138.74	-1,497.59	955.66	879.22	76.44	12.502	
6,800.00	6,413.27	6,777.47	6,413.27	39.41	38.45	-45.24	-1,138.74	-1,497.59	955.66	879.08	76.58	12.480	
6,900.00	6,513.27	6,877.47	6,513.27	39.47	38.52	-45.24	-1,138.74	-1,497.59	955.66	878.94	76.71	12.457	
7,000.00	6,613.27	6,977.47	6,613.27	39.53	38.60	-45.24	-1,138.74	-1,497.59	955.66	878.80	76.86	12.434	
7,100.00	6,713.27	7,077.47	6,713.27	39.60	38.67	-45.24	-1,138.74	-1,497.59	955.66	878.66	77.00	12.411	
7,200.00	6,813.27	7,177.47	6,813.27	39.66	38.74	-45.24	-1,138.74	-1,497.59	955.66	878.51	77.15	12.388	
7,300.00	6,913.27	7,277.47	6,913.27	39.73	38.82	-45.24	-1,138.74	-1,497.59	955.66	878.36	77.29	12.364	
7,400.00	7,013.27	7,377.47	7,013.27	39.80	38.90	-45.24	-1,138.74	-1,497.59	955.66	878.21	77.44	12.340	
7,500.00	7,113.27	7,477.47	7,113.27	39.87	38.98	-45.24	-1,138.74	-1,497.59	955.66	878.06	77.60	12.316	
7,600.00	7,213.27	7,577.47	7,213.27	39.94	39.06	-45.24	-1,138.74	-1,497.59	955.66	877.90	77.75	12.291	
7,700.00	7,313.27	7,677.47	7,313.27	40.01	39.14	-45.24	-1,138.74	-1,497.59	955.66	877.75	77.91	12.266	
7,800.00	7,413.27	7,777.47	7,413.27	40.09	39.22	-45.24	-1,138.74	-1,497.59	955.66	877.59	78.07	12.241	
7,900.00	7,513.27	7,877.47	7,513.27	40.16	39.30	-45.24	-1,138.74	-1,497.59	955.66	877.42	78.23	12.216	
8,000.00	7,613.27	7,977.47	7,613.27	40.23	39.39	-45.24	-1,138.74	-1,497.59	955.66	877.26	78.40	12.190	
8,100.00	7,713.27	8,077.47	7,713.27	40.31	39.47	-45.24	-1,138.74	-1,497.59	955.66	877.09	78.56	12.164	
8,147.48	7,760.75	8,124.95	7,760.75	40.35	39.51	-45.24	-1,138.74	-1,497.59	955.66	877.01	78.64	12.152	
8,171.73	7,785.00	8,148.20	7,784.00	40.37	39.53	-45.24	-1,138.74	-1,497.59	955.66	876.97	78.68	12.146	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	-89.16	0.73	-49.84	49.85				
100.00	100.00	100.00	100.00	0.10	0.10	-89.16	0.73	-49.84	49.85	49.66	0.19	260.917	
200.00	200.00	200.00	200.00	0.32	0.32	-89.16	0.73	-49.84	49.85	49.21	0.64	77.817	
300.00	300.00	300.00	300.00	0.55	0.55	-89.16	0.73	-49.84	49.85	48.76	1.09	45.728	
400.00	399.98	399.98	399.98	0.75	0.77	68.39	0.73	-49.84	49.18	47.66	1.51	32.467	
500.00	499.84	499.84	499.84	0.94	0.99	74.29	0.73	-49.84	47.50	45.56	1.94	24.512	
600.00	599.45	599.45	599.45	1.18	1.22	84.81	0.73	-49.84	45.91	43.51	2.40	19.164	
637.59	636.81	636.81	636.81	1.28	1.30	90.00	0.73	-49.84	45.72	43.14	2.58	17.704	CC, ES
700.00	698.70	698.70	698.70	1.45	1.44	99.84	0.73	-49.84	46.41	43.52	2.89	16.059	
800.00	797.47	796.83	796.83	1.77	1.66	116.61	0.79	-50.22	51.76	48.38	3.39	15.276	SF
900.00	895.62	893.81	893.75	2.15	1.86	129.48	1.35	-53.40	64.62	60.76	3.86	16.733	
1,000.00	993.06	990.13	989.85	2.58	2.07	137.29	2.46	-59.75	83.79	79.44	4.35	19.275	
1,100.00	1,089.64	1,085.56	1,084.79	3.07	2.30	141.56	4.11	-69.18	107.93	103.06	4.87	22.173	
1,200.00	1,185.27	1,179.84	1,178.23	3.63	2.55	143.70	6.28	-81.55	136.32	130.88	5.44	25.065	
1,300.00	1,279.82	1,272.78	1,269.88	4.24	2.83	144.60	8.93	-96.70	168.60	162.53	6.07	27.773	
1,400.00	1,373.17	1,364.16	1,359.47	4.92	3.14	144.78	12.04	-114.44	204.58	197.81	6.77	30.218	
1,499.47	1,464.73	1,453.33	1,446.29	5.66	3.49	144.53	15.54	-134.46	243.91	236.37	7.54	32.363	
1,600.00	1,556.58	1,542.13	1,532.07	6.44	3.89	144.34	19.49	-157.03	285.85	277.44	8.41	33.985	
1,700.00	1,647.94	1,629.55	1,615.80	7.22	4.32	143.70	23.83	-181.80	328.47	319.12	9.35	35.127	
1,800.00	1,739.30	1,715.92	1,697.72	8.01	4.81	142.79	28.54	-208.73	372.03	361.68	10.35	35.933	
1,900.00	1,830.66	1,803.55	1,780.11	8.80	5.35	141.74	33.68	-238.12	416.45	405.02	11.43	36.442	
2,000.00	1,922.03	1,892.83	1,863.97	9.60	5.92	140.84	38.97	-268.31	461.07	448.53	12.53	36.783	
2,100.00	2,013.39	1,982.11	1,947.83	10.40	6.51	140.09	44.25	-298.50	505.75	492.10	13.65	37.043	
2,200.00	2,104.75	2,071.39	2,031.68	11.20	7.11	139.47	49.54	-328.68	550.50	535.71	14.79	37.225	
2,300.00	2,196.11	2,160.67	2,115.54	12.00	7.71	138.94	54.82	-358.87	595.29	579.36	15.93	37.368	
2,400.00	2,287.47	2,249.96	2,199.40	12.80	8.33	138.48	60.10	-389.05	640.12	623.04	17.08	37.484	
2,500.00	2,378.84	2,339.24	2,283.26	13.60	8.94	138.08	65.39	-419.24	684.97	666.75	18.23	37.581	
2,600.00	2,470.20	2,428.52	2,367.12	14.41	9.56	137.74	70.67	-449.42	729.85	710.47	19.38	37.663	
2,700.00	2,561.56	2,517.80	2,450.98	15.21	10.19	137.43	75.95	-479.61	774.75	754.21	20.53	37.734	
2,800.00	2,652.92	2,607.08	2,534.83	16.02	10.81	137.15	81.24	-509.79	819.66	797.97	21.69	37.795	
2,900.00	2,744.28	2,696.37	2,618.69	16.82	11.44	136.91	86.52	-539.98	864.58	841.74	22.84	37.849	
3,000.00	2,835.65	2,785.65	2,702.55	17.63	12.07	136.69	91.80	-570.16	909.52	885.52	24.00	37.897	
3,100.00	2,927.01	2,874.93	2,786.41	18.44	12.71	136.49	97.09	-600.35	954.47	929.31	25.16	37.940	
3,200.00	3,018.37	2,964.21	2,870.27	19.24	13.34	136.30	102.37	-630.53	999.42	973.11	26.31	37.980	
3,300.00	3,109.73	3,053.49	2,954.13	20.05	13.97	136.14	107.65	-660.72	1,044.39	1,016.91	27.47	38.016	
3,400.00	3,201.10	3,142.78	3,037.98	20.86	14.61	135.98	112.94	-690.90	1,089.35	1,060.73	28.63	38.050	
3,500.00	3,292.46	3,232.06	3,121.84	21.67	15.25	135.84	118.22	-721.09	1,134.33	1,104.54	29.79	38.081	
3,600.00	3,383.82	3,321.34	3,205.70	22.47	15.88	135.71	123.50	-751.27	1,179.31	1,148.37	30.94	38.111	
3,700.00	3,475.18	3,410.62	3,289.56	23.28	16.52	135.59	128.79	-781.46	1,224.29	1,192.19	32.10	38.139	
3,800.00	3,566.54	3,499.90	3,373.42	24.09	17.16	135.48	134.07	-811.64	1,269.28	1,236.03	33.26	38.165	
3,900.00	3,657.91	3,589.19	3,457.28	24.90	17.80	135.38	139.35	-841.83	1,314.28	1,279.86	34.41	38.190	
4,000.00	3,749.27	3,678.47	3,541.13	25.71	18.44	135.28	144.64	-872.02	1,359.27	1,323.70	35.57	38.214	
4,100.00	3,840.63	3,767.75	3,624.99	26.52	19.08	135.19	149.92	-902.20	1,404.27	1,367.54	36.72	38.238	
4,200.00	3,931.99	3,857.03	3,708.85	27.33	19.72	135.10	155.21	-932.39	1,449.27	1,411.38	37.89	38.250	
4,300.00	4,023.35	3,946.31	3,792.71	28.13	20.36	135.02	160.49	-962.57	1,494.27	1,455.22	39.05	38.262	
4,400.00	4,114.72	4,035.60	3,876.57	28.94	21.00	134.94	165.77	-992.76	1,539.28	1,499.06	40.22	38.272	
4,500.00	4,206.08	4,124.88	3,960.42	29.75	21.65	134.87	171.06	-1,022.94	1,584.29	1,542.90	41.38	38.282	
4,600.00	4,297.44	4,214.16	4,044.28	30.56	22.29	134.81	176.34	-1,053.13	1,629.30	1,586.75	42.55	38.291	
4,700.00	4,388.80	4,303.44	4,128.14	31.37	22.93	134.74	181.62	-1,083.31	1,674.31	1,630.59	43.72	38.299	
4,800.00	4,480.16	4,392.72	4,212.00	32.18	23.57	134.68	186.91	-1,113.50	1,719.32	1,674.44	44.88	38.307	
4,900.00	4,571.53	4,482.01	4,295.86	32.99	24.22	134.62	192.19	-1,143.68	1,764.34	1,718.29	46.05	38.314	
5,000.00	4,662.89	4,571.29	4,379.72	33.80	24.86	134.57	197.47	-1,173.87	1,809.35	1,762.14	47.22	38.321	

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 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	4,754.25	4,660.57	4,463.57	34.61	25.50	134.52	202.76	-1,204.05	1,854.37	1,805.99	48.38	38.328	
5,172.26	4,820.27	4,725.09	4,524.17	35.19	25.97	134.48	206.57	-1,225.87	1,886.90	1,837.67	49.23	38.332	
5,200.00	4,845.67	4,749.89	4,547.47	35.38	26.15	134.66	208.04	-1,234.25	1,899.30	1,849.74	49.57	38.318	
5,300.00	4,938.09	4,839.96	4,632.07	35.93	26.79	135.23	213.37	-1,264.70	1,942.61	1,891.90	50.71	38.308	
5,400.00	5,031.80	4,930.95	4,717.53	36.43	27.45	135.68	218.76	-1,295.47	1,983.68	1,931.84	51.84	38.264	
5,500.00	5,126.66	5,022.75	4,803.75	36.90	28.11	136.02	224.19	-1,326.50	2,022.49	1,969.53	52.95	38.193	
5,600.00	5,222.57	5,115.25	4,890.63	37.33	28.78	136.25	229.66	-1,357.77	2,059.01	2,004.97	54.04	38.100	
5,700.00	5,319.41	5,240.20	5,008.48	37.72	29.55	136.28	236.82	-1,398.65	2,092.78	2,037.58	55.20	37.914	
5,800.00	5,417.06	5,386.62	5,148.66	38.06	30.25	136.25	244.10	-1,440.27	2,122.11	2,065.86	56.25	37.724	
5,900.00	5,515.40	5,537.11	5,294.79	38.36	30.86	136.25	250.29	-1,475.63	2,146.67	2,089.51	57.17	37.551	
6,000.00	5,614.31	5,691.02	5,445.97	38.61	31.36	136.26	255.25	-1,503.93	2,166.31	2,108.37	57.94	37.392	
6,100.00	5,713.68	5,847.59	5,601.13	38.82	31.75	136.30	258.84	-1,524.47	2,180.89	2,122.35	58.53	37.258	
6,200.00	5,813.37	6,005.96	5,758.99	38.98	32.03	136.37	260.99	-1,536.72	2,190.31	2,131.33	58.97	37.141	
6,300.00	5,913.28	6,160.31	5,913.28	39.09	32.20	136.46	261.63	-1,540.39	2,194.53	2,135.29	59.24	37.046	
6,371.73	5,985.00	6,232.03	5,985.00	39.15	32.26	-19.19	261.63	-1,540.39	2,195.18	2,135.83	59.35	36.988	
6,400.00	6,013.27	6,260.30	6,013.27	39.17	32.28	-19.19	261.63	-1,540.39	2,195.18	2,135.78	59.40	36.957	
6,500.00	6,113.27	6,360.30	6,113.27	39.23	32.37	-19.19	261.63	-1,540.39	2,195.18	2,135.60	59.57	36.848	
6,600.00	6,213.27	6,460.30	6,213.27	39.29	32.46	-19.19	261.63	-1,540.39	2,195.18	2,135.42	59.75	36.738	
6,700.00	6,313.27	6,560.30	6,313.27	39.35	32.55	-19.19	261.63	-1,540.39	2,195.18	2,135.24	59.93	36.627	
6,800.00	6,413.27	6,660.30	6,413.27	39.41	32.65	-19.19	261.63	-1,540.39	2,195.18	2,135.06	60.12	36.515	
6,900.00	6,513.27	6,760.30	6,513.27	39.47	32.74	-19.19	261.63	-1,540.39	2,195.18	2,134.87	60.30	36.403	
7,000.00	6,613.27	6,860.30	6,613.27	39.53	32.84	-19.19	261.63	-1,540.39	2,195.18	2,134.68	60.49	36.289	
7,100.00	6,713.27	6,960.30	6,713.27	39.60	32.93	-19.19	261.63	-1,540.39	2,195.18	2,134.49	60.68	36.174	
7,200.00	6,813.27	7,060.30	6,813.27	39.66	33.03	-19.19	261.63	-1,540.39	2,195.18	2,134.30	60.88	36.058	
7,300.00	6,913.27	7,160.30	6,913.27	39.73	33.13	-19.19	261.63	-1,540.39	2,195.18	2,134.10	61.08	35.942	
7,400.00	7,013.27	7,260.30	7,013.27	39.80	33.23	-19.19	261.63	-1,540.39	2,195.18	2,133.90	61.28	35.824	
7,500.00	7,113.27	7,360.30	7,113.27	39.87	33.34	-19.19	261.63	-1,540.39	2,195.18	2,133.70	61.48	35.706	
7,600.00	7,213.27	7,460.30	7,213.27	39.94	33.44	-19.19	261.63	-1,540.39	2,195.18	2,133.49	61.68	35.587	
7,700.00	7,313.27	7,560.30	7,313.27	40.01	33.54	-19.19	261.63	-1,540.39	2,195.18	2,133.28	61.89	35.468	
7,800.00	7,413.27	7,660.30	7,413.27	40.09	33.65	-19.19	261.63	-1,540.39	2,195.18	2,133.07	62.10	35.348	
7,900.00	7,513.27	7,760.30	7,513.27	40.16	33.76	-19.19	261.63	-1,540.39	2,195.18	2,132.86	62.32	35.227	
8,000.00	7,613.27	7,860.30	7,613.27	40.23	33.87	-19.19	261.63	-1,540.39	2,195.18	2,132.65	62.53	35.105	
8,100.00	7,713.27	7,960.30	7,713.27	40.31	33.97	-19.19	261.63	-1,540.39	2,195.18	2,132.43	62.75	34.984	
8,171.73	7,785.00	8,032.03	7,785.00	40.37	34.05	-19.19	261.63	-1,540.39	2,195.18	2,132.27	62.91	34.896	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	89.98	0.00	10.02	10.02				
100.00	100.00	100.00	100.00	0.10	0.10	89.98	0.00	10.02	10.02	9.83	0.19	52.469	
200.00	200.00	200.00	200.00	0.32	0.32	89.98	0.00	10.02	10.02	9.38	0.64	15.649	
300.00	300.00	300.00	300.00	0.55	0.55	89.98	0.00	10.02	10.02	8.93	1.09	9.196 CC, ES	
400.00	399.98	399.98	399.98	0.75	0.77	-122.75	0.00	10.02	10.86	9.35	1.51	7.171 SF	
500.00	499.84	499.84	499.84	0.94	0.99	-140.51	0.00	10.02	14.38	12.45	1.93	7.445	
600.00	599.45	599.45	599.45	1.18	1.22	-155.15	0.00	10.02	21.83	19.47	2.36	9.249	
700.00	698.70	698.70	698.70	1.45	1.44	-163.93	0.00	10.02	33.29	30.50	2.79	11.921	
800.00	797.47	798.23	798.23	1.77	1.65	-168.85	-0.39	9.92	48.15	44.93	3.22	14.968	
900.00	895.62	898.84	898.77	2.15	1.83	-171.08	-3.73	9.02	63.75	60.14	3.62	17.632	
1,000.00	993.06	999.99	999.68	2.58	2.02	-172.02	-10.52	7.20	79.50	75.47	4.03	19.705	
1,100.00	1,089.64	1,101.70	1,100.82	3.07	2.24	-172.29	-20.82	4.44	95.34	90.86	4.47	21.305	
1,200.00	1,185.27	1,203.96	1,202.06	3.63	2.50	-172.18	-34.66	0.73	111.22	106.28	4.94	22.520	
1,300.00	1,279.82	1,306.77	1,303.27	4.24	2.81	-171.82	-52.09	-3.94	127.14	121.71	5.43	23.413	
1,400.00	1,373.17	1,410.13	1,404.31	4.92	3.17	-171.29	-73.13	-9.58	143.09	137.14	5.95	24.029	
1,499.47	1,464.73	1,513.50	1,504.49	5.66	3.59	-170.65	-97.69	-16.17	158.97	152.45	6.51	24.406	
1,600.00	1,556.58	1,613.81	1,601.11	6.44	4.06	-170.02	-123.76	-23.16	174.47	167.31	7.16	24.368	
1,700.00	1,647.94	1,712.61	1,696.24	7.22	4.53	-169.50	-149.49	-30.06	189.84	182.02	7.82	24.278	
1,800.00	1,739.30	1,811.41	1,791.38	8.01	5.03	-169.05	-175.23	-36.96	205.23	196.74	8.50	24.157	
1,900.00	1,830.66	1,910.20	1,886.51	8.80	5.54	-168.67	-200.97	-43.86	220.64	211.45	9.19	24.021	
2,000.00	1,922.03	2,009.00	1,981.65	9.60	6.05	-168.34	-226.70	-50.76	236.05	226.16	9.89	23.879	
2,100.00	2,013.39	2,107.80	2,076.79	10.40	6.57	-168.05	-252.44	-57.66	251.46	240.87	10.59	23.736	
2,200.00	2,104.75	2,206.59	2,171.92	11.20	7.10	-167.79	-278.17	-64.56	266.88	255.57	11.31	23.597	
2,300.00	2,196.11	2,305.39	2,267.06	12.00	7.63	-167.56	-303.91	-71.46	282.31	270.28	12.03	23.462	
2,400.00	2,287.47	2,404.19	2,362.19	12.80	8.16	-167.36	-329.65	-78.36	297.74	284.98	12.76	23.334	
2,500.00	2,378.84	2,502.98	2,457.33	13.60	8.70	-167.17	-355.38	-85.26	313.18	299.68	13.49	23.212	
2,600.00	2,470.20	2,601.78	2,552.47	14.41	9.24	-167.00	-381.12	-92.16	328.61	314.39	14.23	23.097	
2,700.00	2,561.56	2,700.58	2,647.60	15.21	9.78	-166.85	-406.85	-99.06	344.05	329.09	14.97	22.988	
2,800.00	2,652.92	2,799.38	2,742.74	16.02	10.32	-166.71	-432.59	-105.96	359.49	343.79	15.71	22.885	
2,900.00	2,744.28	2,898.17	2,837.88	16.82	10.87	-166.58	-458.33	-112.86	374.94	358.48	16.45	22.788	
3,000.00	2,835.65	2,996.97	2,933.01	17.63	11.41	-166.46	-484.06	-119.76	390.38	373.18	17.20	22.697	
3,100.00	2,927.01	3,095.77	3,028.15	18.44	11.96	-166.35	-509.80	-126.66	405.83	387.88	17.95	22.611	
3,200.00	3,018.37	3,194.56	3,123.28	19.24	12.50	-166.25	-535.53	-133.56	421.28	402.58	18.70	22.529	
3,300.00	3,109.73	3,293.36	3,218.42	20.05	13.05	-166.16	-561.27	-140.46	436.73	417.28	19.45	22.453	
3,400.00	3,201.10	3,392.16	3,313.56	20.86	13.60	-166.07	-587.00	-147.36	452.18	431.97	20.20	22.380	
3,500.00	3,292.46	3,490.95	3,408.69	21.67	14.15	-165.99	-612.74	-154.26	467.63	446.67	20.96	22.312	
3,600.00	3,383.82	3,589.75	3,503.83	22.47	14.70	-165.91	-638.48	-161.16	483.08	461.37	21.71	22.247	
3,700.00	3,475.18	3,688.55	3,598.97	23.28	15.25	-165.84	-664.21	-168.06	498.53	476.06	22.47	22.186	
3,800.00	3,566.54	3,787.35	3,694.10	24.09	15.80	-165.77	-689.95	-174.96	513.99	490.76	23.23	22.127	
3,900.00	3,657.91	3,886.14	3,789.24	24.90	16.35	-165.71	-715.68	-181.86	529.44	505.46	23.99	22.072	
4,000.00	3,749.27	3,984.94	3,884.37	25.71	16.90	-165.65	-741.42	-188.76	544.90	520.15	24.75	22.020	
4,100.00	3,840.63	4,083.74	3,979.51	26.52	17.45	-165.59	-767.16	-195.66	560.35	534.85	25.51	21.970	
4,200.00	3,931.99	4,182.53	4,074.65	27.33	18.00	-165.54	-792.89	-202.56	575.81	549.54	26.27	21.922	
4,300.00	4,023.35	4,281.33	4,169.78	28.13	18.55	-165.49	-818.63	-209.46	591.27	564.24	27.03	21.876	
4,400.00	4,114.72	4,380.13	4,264.92	28.94	19.11	-165.44	-844.36	-216.36	606.72	578.93	27.79	21.833	
4,500.00	4,206.08	4,478.92	4,360.05	29.75	19.66	-165.40	-870.10	-223.26	622.18	593.63	28.55	21.792	
4,600.00	4,297.44	4,577.72	4,455.19	30.56	20.21	-165.35	-895.83	-230.16	637.64	608.32	29.31	21.752	
4,700.00	4,388.80	4,676.52	4,550.33	31.37	20.76	-165.31	-921.57	-237.06	653.10	623.02	30.08	21.714	
4,800.00	4,480.16	4,775.31	4,645.46	32.18	21.31	-165.27	-947.31	-243.96	668.55	637.71	30.84	21.678	
4,900.00	4,571.53	4,874.11	4,740.60	32.99	21.87	-165.23	-973.04	-250.86	684.01	652.41	31.60	21.643	
5,000.00	4,662.89	4,972.91	4,835.74	33.80	22.42	-165.20	-998.78	-257.76	699.47	667.10	32.37	21.610	
5,100.00	4,754.25	5,071.71	4,930.87	34.61	22.97	-165.16	-1,024.51	-264.66	714.93	681.80	33.13	21.578	

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 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	
5,172.26	4,820.27	5,143.10	4,999.62	35.19	23.37	-165.14	-1,043.11	-269.64	726.10	692.42	33.69	21.555	
5,200.00	4,845.67	5,170.52	5,026.03	35.38	23.53	-165.15	-1,050.26	-271.56	730.26	696.35	33.91	21.535	
5,300.00	4,938.09	5,269.68	5,121.51	35.93	24.08	-165.13	-1,076.09	-278.48	743.13	708.44	34.69	21.424	
5,400.00	5,031.80	5,350.09	5,199.22	36.43	24.41	-165.10	-1,096.00	-283.82	753.89	718.59	35.31	21.354	
5,500.00	5,126.66	5,430.18	5,277.19	36.90	24.69	-165.07	-1,113.74	-288.58	763.85	728.00	35.85	21.308	
5,600.00	5,222.57	5,510.16	5,355.51	37.33	24.95	-165.07	-1,129.34	-292.76	772.99	736.67	36.32	21.281	
5,700.00	5,319.41	5,590.03	5,434.15	37.72	25.18	-165.07	-1,142.81	-296.37	781.31	744.58	36.73	21.272	
5,800.00	5,417.06	5,669.79	5,513.04	38.06	25.38	-165.08	-1,154.15	-299.41	788.81	751.74	37.06	21.283	
5,900.00	5,515.40	5,749.46	5,592.14	38.36	25.56	-165.10	-1,163.35	-301.88	795.47	758.14	37.33	21.311	
6,000.00	5,614.31	5,829.05	5,671.39	38.61	25.72	-165.13	-1,170.41	-303.77	801.30	763.78	37.52	21.356	
6,100.00	5,713.68	5,900.00	5,742.18	38.82	25.84	-165.17	-1,174.91	-304.98	806.35	768.72	37.63	21.428	
6,200.00	5,813.37	5,988.01	5,830.13	38.98	25.95	-165.22	-1,178.14	-305.85	810.44	772.75	37.69	21.502	
6,300.00	5,913.28	6,071.17	5,913.28	39.09	26.04	-165.28	-1,178.85	-306.04	813.70	776.02	37.68	21.593	
6,371.73	5,985.00	6,142.89	5,985.00	39.15	26.11	39.03	-1,178.85	-306.04	814.57	776.90	37.67	21.623	
6,400.00	6,013.27	6,171.16	6,013.27	39.17	26.13	39.03	-1,178.85	-306.04	814.57	776.83	37.74	21.582	
6,500.00	6,113.27	6,271.16	6,113.27	39.23	26.22	39.03	-1,178.85	-306.04	814.57	776.58	37.99	21.442	
6,600.00	6,213.27	6,371.16	6,213.27	39.29	26.31	39.03	-1,178.85	-306.04	814.57	776.33	38.24	21.302	
6,700.00	6,313.27	6,471.16	6,313.27	39.35	26.40	39.03	-1,178.85	-306.04	814.57	776.08	38.49	21.161	
6,800.00	6,413.27	6,571.16	6,413.27	39.41	26.49	39.03	-1,178.85	-306.04	814.57	775.82	38.75	21.021	
6,900.00	6,513.27	6,671.16	6,513.27	39.47	26.59	39.03	-1,178.85	-306.04	814.57	775.56	39.01	20.881	
7,000.00	6,613.27	6,771.16	6,613.27	39.53	26.68	39.03	-1,178.85	-306.04	814.57	775.30	39.27	20.740	
7,100.00	6,713.27	6,871.16	6,713.27	39.60	26.78	39.03	-1,178.85	-306.04	814.57	775.03	39.54	20.600	
7,200.00	6,813.27	6,971.16	6,813.27	39.66	26.88	39.03	-1,178.85	-306.04	814.57	774.76	39.81	20.460	
7,300.00	6,913.27	7,071.16	6,913.27	39.73	26.98	39.03	-1,178.85	-306.04	814.57	774.49	40.09	20.320	
7,400.00	7,013.27	7,171.16	7,013.27	39.80	27.08	39.03	-1,178.85	-306.04	814.57	774.21	40.36	20.181	
7,500.00	7,113.27	7,271.16	7,113.27	39.87	27.19	39.03	-1,178.85	-306.04	814.57	773.93	40.64	20.042	
7,600.00	7,213.27	7,371.16	7,213.27	39.94	27.29	39.03	-1,178.85	-306.04	814.57	773.65	40.93	19.903	
7,700.00	7,313.27	7,471.16	7,313.27	40.01	27.40	39.03	-1,178.85	-306.04	814.57	773.36	41.21	19.765	
7,800.00	7,413.27	7,571.16	7,413.27	40.09	27.51	39.03	-1,178.85	-306.04	814.57	773.07	41.50	19.628	
7,900.00	7,513.27	7,671.16	7,513.27	40.16	27.62	39.03	-1,178.85	-306.04	814.57	772.78	41.79	19.491	
8,000.00	7,613.27	7,771.16	7,613.27	40.23	27.73	39.03	-1,178.85	-306.04	814.57	772.49	42.09	19.354	
8,100.00	7,713.27	7,871.16	7,713.27	40.31	27.84	39.03	-1,178.85	-306.04	814.57	772.19	42.38	19.219	
8,171.73	7,785.00	7,942.89	7,785.00	40.37	27.92	39.03	-1,178.85	-306.04	814.57	771.97	42.60	19.122	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	-88.96	0.36	-20.05	20.05				
100.00	100.00	100.00	100.00	0.10	0.10	-88.96	0.36	-20.05	20.05	19.86	0.19	104.956	
200.00	200.00	200.00	200.00	0.32	0.32	-88.96	0.36	-20.05	20.05	19.41	0.64	31.303	
300.00	300.00	300.00	300.00	0.55	0.55	-88.96	0.36	-20.05	20.05	18.96	1.09	18.394	
400.00	399.98	399.98	399.98	0.75	0.77	71.46	0.36	-20.05	19.43	17.91	1.51	12.826	
500.00	499.84	499.84	499.84	0.94	0.99	87.06	0.36	-20.05	18.44	16.50	1.94	9.512	
513.12	512.92	512.92	512.92	0.98	1.02	89.99	0.36	-20.05	18.42	16.42	2.00	9.215 CC, ES	
600.00	599.45	599.45	599.45	1.18	1.22	112.75	0.36	-20.05	19.99	17.60	2.39	8.362 SF	
700.00	698.70	698.70	698.70	1.45	1.44	137.01	0.36	-20.05	27.15	24.32	2.84	9.571	
800.00	797.47	796.84	796.84	1.77	1.66	152.39	0.73	-19.94	40.45	37.18	3.27	12.377	
900.00	895.62	892.94	892.88	2.15	1.88	161.43	3.76	-19.07	61.24	57.55	3.69	16.588	
1,000.00	993.06	989.26	989.10	2.58	2.09	166.52	7.97	-17.85	87.31	83.19	4.12	21.180	
1,100.00	1,089.64	1,084.58	1,084.33	3.07	2.31	169.54	12.13	-16.65	117.04	112.48	4.56	25.682	
1,200.00	1,185.27	1,178.80	1,178.44	3.63	2.53	171.51	16.24	-15.46	150.24	145.24	5.00	30.075	
1,300.00	1,279.82	1,271.78	1,271.33	4.24	2.74	172.89	20.30	-14.29	186.80	181.36	5.44	34.361	
1,400.00	1,373.17	1,363.43	1,362.88	4.92	2.95	173.88	24.29	-13.13	226.63	220.75	5.88	38.550	
1,499.47	1,464.73	1,453.14	1,452.51	5.66	3.16	174.63	28.21	-12.00	269.44	263.12	6.32	42.628	
1,600.00	1,556.58	1,543.06	1,542.33	6.44	3.37	175.28	32.13	-10.87	314.31	307.47	6.84	45.959	
1,700.00	1,647.94	1,632.50	1,631.68	7.22	3.58	175.76	36.04	-9.74	358.97	351.61	7.36	48.773	
1,800.00	1,739.30	1,721.94	1,721.03	8.01	3.79	176.14	39.94	-8.61	403.64	395.75	7.89	51.188	
1,900.00	1,830.66	1,811.38	1,810.38	8.80	4.00	176.44	43.84	-7.48	448.32	439.91	8.41	53.281	
2,000.00	1,922.03	1,900.82	1,899.72	9.60	4.21	176.69	47.75	-6.36	493.01	484.06	8.95	55.110	
2,100.00	2,013.39	1,990.26	1,989.07	10.40	4.42	176.90	51.65	-5.23	537.71	528.23	9.48	56.722	
2,200.00	2,104.75	2,079.70	2,078.42	11.20	4.63	177.07	55.55	-4.10	582.41	572.39	10.02	58.152	
2,300.00	2,196.11	2,169.14	2,167.77	12.00	4.84	177.22	59.46	-2.97	627.11	616.56	10.55	59.428	
2,400.00	2,287.47	2,258.58	2,257.11	12.80	5.05	177.35	63.36	-1.84	671.82	660.73	11.09	60.575	
2,500.00	2,378.84	2,348.02	2,346.46	13.60	5.26	177.46	67.26	-0.72	716.53	704.90	11.63	61.609	
2,600.00	2,470.20	2,437.46	2,435.81	14.41	5.47	177.56	71.17	0.41	761.24	749.07	12.17	62.548	
2,700.00	2,561.56	2,526.90	2,525.16	15.21	5.68	177.65	75.07	1.54	805.96	793.24	12.71	63.403	
2,800.00	2,652.92	2,616.34	2,614.50	16.02	5.89	177.73	78.97	2.67	850.67	837.42	13.25	64.185	
2,900.00	2,744.28	2,705.78	2,703.85	16.82	6.10	177.80	82.88	3.80	895.39	881.59	13.80	64.903	
3,000.00	2,835.65	2,795.22	2,793.20	17.63	6.32	177.87	86.78	4.92	940.11	925.77	14.34	65.564	
3,100.00	2,927.01	2,884.66	2,882.55	18.44	6.53	177.93	90.68	6.05	984.82	969.94	14.88	66.175	
3,200.00	3,018.37	2,974.10	2,971.89	19.24	6.74	177.98	94.59	7.18	1,029.54	1,014.12	15.43	66.741	
3,300.00	3,109.73	3,063.54	3,061.24	20.05	6.95	178.03	98.49	8.31	1,074.26	1,058.29	15.97	67.267	
3,400.00	3,201.10	3,152.98	3,150.59	20.86	7.16	178.08	102.39	9.44	1,118.98	1,102.47	16.51	67.758	
3,500.00	3,292.46	3,242.42	3,239.94	21.67	7.37	178.12	106.30	10.56	1,163.70	1,146.65	17.06	68.216	
3,600.00	3,383.82	3,331.86	3,329.28	22.47	7.58	178.16	110.20	11.69	1,208.43	1,190.82	17.60	68.644	
3,700.00	3,475.18	3,421.30	3,418.63	23.28	7.80	178.19	114.10	12.82	1,253.15	1,235.00	18.15	69.046	
3,800.00	3,566.54	3,510.74	3,507.98	24.09	8.01	178.23	118.01	13.95	1,297.87	1,279.17	18.69	69.424	
3,900.00	3,657.91	3,600.18	3,597.33	24.90	8.22	178.26	121.91	15.08	1,342.59	1,323.35	19.24	69.779	
4,000.00	3,749.27	3,689.62	3,686.67	25.71	8.43	178.29	125.81	16.20	1,387.31	1,367.53	19.79	70.115	
4,100.00	3,840.63	3,779.06	3,776.02	26.52	8.64	178.32	129.72	17.33	1,432.04	1,411.71	20.33	70.431	
4,200.00	3,931.99	3,868.50	3,865.37	27.33	8.86	178.34	133.62	18.46	1,476.76	1,455.88	20.88	70.731	
4,300.00	4,023.35	3,957.94	3,954.72	28.13	9.07	178.37	137.52	19.59	1,521.48	1,500.06	21.42	71.015	
4,400.00	4,114.72	4,047.38	4,044.06	28.94	9.28	178.39	141.43	20.72	1,566.21	1,544.24	21.97	71.285	
4,500.00	4,206.08	4,136.82	4,133.41	29.75	9.49	178.41	145.33	21.84	1,610.93	1,588.41	22.52	71.541	
4,600.00	4,297.44	4,226.26	4,222.76	30.56	9.70	178.43	149.23	22.97	1,655.66	1,632.59	23.06	71.784	
4,700.00	4,388.80	4,315.70	4,312.11	31.37	9.92	178.45	153.13	24.10	1,700.38	1,676.77	23.61	72.016	
4,800.00	4,480.16	4,405.14	4,401.45	32.18	10.13	178.47	157.04	25.23	1,745.11	1,720.95	24.16	72.238	
4,900.00	4,571.53	4,494.58	4,490.80	32.99	10.34	178.49	160.94	26.36	1,789.83	1,765.13	24.70	72.449	
5,000.00	4,662.89	4,584.02	4,580.15	33.80	10.55	178.50	164.84	27.48	1,834.55	1,809.30	25.25	72.651	

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 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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	4,754.25	4,673.46	4,669.50	34.61	10.76	178.52	168.75	28.61	1,879.28	1,853.48	25.80	72.844	
5,172.26	4,820.27	4,738.09	4,734.06	35.19	10.92	178.53	171.57	29.43	1,911.60	1,885.41	26.19	72.978	
5,200.00	4,845.67	4,762.96	4,758.90	35.38	10.98	178.54	172.65	29.74	1,923.88	1,897.49	26.39	72.905	
5,300.00	4,938.09	4,853.57	4,849.42	35.93	11.19	178.58	176.61	30.88	1,966.16	1,939.11	27.05	72.683	
5,400.00	5,031.80	4,945.61	4,941.37	36.43	11.41	178.61	180.62	32.04	2,005.26	1,977.58	27.67	72.458	
5,500.00	5,126.66	5,038.95	5,034.61	36.90	11.63	178.63	184.70	33.22	2,041.12	2,012.86	28.26	72.234	
5,600.00	5,222.57	5,133.49	5,129.05	37.33	11.85	178.65	188.82	34.41	2,073.70	2,044.90	28.80	72.013	
5,700.00	5,319.41	5,229.11	5,224.57	37.72	12.08	178.67	193.00	35.62	2,102.96	2,073.67	29.29	71.794	
5,800.00	5,417.06	5,325.69	5,321.05	38.06	12.31	178.68	197.21	36.84	2,128.87	2,099.12	29.74	71.581	
5,900.00	5,515.40	5,423.11	5,418.38	38.36	12.54	178.68	201.46	38.07	2,151.39	2,121.25	30.14	71.374	
6,000.00	5,614.31	5,521.27	5,516.43	38.61	12.77	178.69	205.75	39.30	2,170.50	2,140.00	30.50	71.174	
6,100.00	5,713.68	5,620.02	5,615.09	38.82	13.01	178.69	210.06	40.55	2,186.17	2,155.37	30.80	70.981	
6,200.00	5,813.37	5,719.27	5,714.23	38.98	13.24	178.68	214.39	41.80	2,198.39	2,167.34	31.05	70.797	
6,300.00	5,913.28	5,818.43	5,813.28	39.09	13.64	178.67	220.05	43.44	2,206.25	2,174.85	31.41	70.251	
6,371.73	5,985.00	5,990.15	5,985.00	39.15	13.77	23.00	220.05	43.44	2,207.15	2,175.65	31.50	70.065	
6,400.00	6,013.27	6,018.42	6,013.27	39.17	13.83	23.00	220.05	43.44	2,207.15	2,175.55	31.60	69.847	
6,500.00	6,113.27	6,118.42	6,113.27	39.23	14.04	23.00	220.05	43.44	2,207.15	2,175.20	31.95	69.085	
6,600.00	6,213.27	6,218.42	6,213.27	39.29	14.25	23.00	220.05	43.44	2,207.15	2,174.85	32.30	68.335	
6,700.00	6,313.27	6,318.42	6,313.27	39.35	14.47	23.00	220.05	43.44	2,207.15	2,174.50	32.65	67.598	
6,800.00	6,413.27	6,418.42	6,413.27	39.41	14.68	23.00	220.05	43.44	2,207.15	2,174.14	33.01	66.872	
6,900.00	6,513.27	6,518.42	6,513.27	39.47	14.90	23.00	220.05	43.44	2,207.15	2,173.79	33.36	66.158	
7,000.00	6,613.27	6,618.42	6,613.27	39.53	15.11	23.00	220.05	43.44	2,207.15	2,173.43	33.72	65.456	
7,100.00	6,713.27	6,718.42	6,713.27	39.60	15.33	23.00	220.05	43.44	2,207.15	2,173.07	34.08	64.765	
7,200.00	6,813.27	6,818.42	6,813.27	39.66	15.54	23.00	220.05	43.44	2,207.15	2,172.71	34.44	64.085	
7,300.00	6,913.27	6,918.42	6,913.27	39.73	15.76	23.00	220.05	43.44	2,207.15	2,172.35	34.80	63.417	
7,400.00	7,013.27	7,018.42	7,013.27	39.80	15.97	23.00	220.05	43.44	2,207.15	2,171.98	35.17	62.759	
7,500.00	7,113.27	7,118.42	7,113.27	39.87	16.19	23.00	220.05	43.44	2,207.15	2,171.61	35.53	62.112	
7,600.00	7,213.27	7,218.42	7,213.27	39.94	16.40	23.00	220.05	43.44	2,207.15	2,171.25	35.90	61.476	
7,700.00	7,313.27	7,318.42	7,313.27	40.01	16.62	23.00	220.05	43.44	2,207.15	2,170.88	36.27	60.850	
7,800.00	7,413.27	7,418.42	7,413.27	40.09	16.84	23.00	220.05	43.44	2,207.15	2,170.51	36.64	60.234	
7,900.00	7,513.27	7,518.42	7,513.27	40.16	17.05	23.00	220.05	43.44	2,207.15	2,170.13	37.02	59.628	
8,000.00	7,613.27	7,618.42	7,613.27	40.23	17.27	23.00	220.05	43.44	2,207.15	2,169.76	37.39	59.032	
8,100.00	7,713.27	7,718.42	7,713.27	40.31	17.49	23.00	220.05	43.44	2,207.15	2,169.38	37.76	58.445	
8,171.73	7,785.00	7,790.15	7,785.00	40.37	17.65	23.00	220.05	43.44	2,207.15	2,169.11	38.03	58.030	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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
LARIMER_MIRACLE 25-12 PAD - P_MIRACLE 7-12 - P_MIRACLE 7-12 - PLAN #1 3-23-10 RHS													
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	90.50	-0.35	39.82	39.82				
100.00	100.00	100.00	100.00	0.10	0.10	90.50	-0.35	39.82	39.82	39.63	0.19	208.428	
200.00	200.00	200.00	200.00	0.32	0.32	90.50	-0.35	39.82	39.82	39.18	0.64	62.163	
300.00	300.00	300.00	300.00	0.55	0.55	90.50	-0.35	39.82	39.82	38.73	1.09	36.529 CC, ES	
400.00	399.98	399.98	399.98	0.75	0.77	-116.07	-0.35	39.82	40.56	39.04	1.51	26.776	
500.00	499.84	499.84	499.84	0.94	0.99	-122.28	-0.35	39.82	43.11	41.18	1.94	22.279	
600.00	599.45	599.45	599.45	1.18	1.22	-130.95	-0.35	39.82	48.34	45.96	2.38	20.340	
700.00	698.70	698.70	698.70	1.45	1.44	-140.08	-0.35	39.82	57.10	54.27	2.83	20.184 SF	
800.00	797.47	796.40	796.40	1.77	1.66	-148.20	-0.04	40.04	70.22	66.94	3.28	21.423	
900.00	895.62	891.34	891.28	2.15	1.87	-154.94	2.48	41.86	90.21	86.50	3.71	24.294	
1,000.00	993.06	983.83	983.57	2.58	2.08	-159.93	7.38	45.41	117.37	113.23	4.14	28.333	
1,100.00	1,089.64	1,073.33	1,072.64	3.07	2.29	-163.42	14.42	50.50	151.32	146.75	4.57	33.123	
1,200.00	1,185.27	1,159.38	1,157.98	3.63	2.51	-165.83	23.31	56.93	191.63	186.64	4.99	38.389	
1,300.00	1,279.82	1,241.60	1,239.19	4.24	2.75	-167.50	33.74	64.48	237.90	232.49	5.41	43.952	
1,400.00	1,373.17	1,319.70	1,315.96	4.92	2.99	-168.67	45.40	72.91	289.75	283.92	5.83	49.698	
1,499.47	1,464.73	1,398.51	1,393.08	5.66	3.26	-169.56	58.52	82.41	346.08	339.83	6.25	55.344	
1,600.00	1,556.58	1,480.06	1,472.86	6.44	3.56	-170.48	72.22	92.32	404.67	397.91	6.76	59.896	
1,700.00	1,647.94	1,561.18	1,552.22	7.22	3.86	-171.17	85.84	102.17	462.99	455.73	7.26	63.743	
1,800.00	1,739.30	1,642.30	1,631.58	8.01	4.18	-171.70	99.46	112.03	521.35	513.57	7.78	67.041	
1,900.00	1,830.66	1,723.43	1,710.94	8.80	4.50	-172.13	113.09	121.88	579.73	571.43	8.29	69.893	
2,000.00	1,922.03	1,804.55	1,790.30	9.60	4.83	-172.47	126.71	131.74	638.13	629.31	8.82	72.379	
2,100.00	2,013.39	1,885.67	1,869.66	10.40	5.16	-172.76	140.33	141.60	696.54	687.19	9.34	74.557	
2,200.00	2,104.75	1,966.79	1,949.02	11.20	5.50	-173.01	153.96	151.45	754.96	745.09	9.87	76.482	
2,300.00	2,196.11	2,047.91	2,028.38	12.00	5.84	-173.22	167.58	161.31	813.39	802.98	10.40	78.195	
2,400.00	2,287.47	2,129.03	2,107.74	12.80	6.18	-173.40	181.20	171.16	871.82	860.89	10.93	79.729	
2,500.00	2,378.84	2,210.15	2,187.10	13.60	6.52	-173.56	194.83	181.02	930.26	918.79	11.47	81.108	
2,600.00	2,470.20	2,291.27	2,266.45	14.41	6.87	-173.70	208.45	190.88	988.71	976.70	12.01	82.353	
2,700.00	2,561.56	2,372.40	2,345.81	15.21	7.22	-173.82	222.07	200.73	1,047.15	1,034.61	12.54	83.483	
2,800.00	2,652.92	2,453.52	2,425.17	16.02	7.56	-173.93	235.70	210.59	1,105.60	1,092.52	13.08	84.513	
2,900.00	2,744.28	2,534.64	2,504.53	16.82	7.91	-174.03	249.32	220.45	1,164.06	1,150.44	13.62	85.456	
3,000.00	2,835.65	2,615.76	2,583.89	17.63	8.27	-174.12	262.95	230.30	1,222.51	1,208.35	14.16	86.322	
3,100.00	2,927.01	2,696.88	2,663.25	18.44	8.62	-174.21	276.57	240.16	1,280.97	1,266.27	14.70	87.119	
3,200.00	3,018.37	2,778.00	2,742.61	19.24	8.97	-174.28	290.19	250.01	1,339.43	1,324.18	15.25	87.855	
3,300.00	3,109.73	2,859.12	2,821.97	20.05	9.32	-174.35	303.82	259.87	1,397.89	1,382.10	15.79	88.537	
3,400.00	3,201.10	2,940.25	2,901.33	20.86	9.68	-174.41	317.44	269.73	1,456.35	1,440.02	16.33	89.170	
3,500.00	3,292.46	3,021.37	2,980.69	21.67	10.03	-174.47	331.06	279.58	1,514.81	1,497.93	16.88	89.761	
3,600.00	3,383.82	3,102.49	3,060.05	22.47	10.39	-174.53	344.69	289.44	1,573.27	1,555.85	17.42	90.312	
3,700.00	3,475.18	3,183.61	3,139.41	23.28	10.74	-174.58	358.31	299.29	1,631.74	1,613.77	17.97	90.827	
3,800.00	3,566.54	3,264.73	3,218.77	24.09	11.10	-174.62	371.93	309.15	1,690.20	1,671.69	18.51	91.310	
3,900.00	3,657.91	3,345.85	3,298.13	24.90	11.46	-174.67	385.56	319.01	1,748.67	1,729.61	19.06	91.763	
4,000.00	3,749.27	3,426.97	3,377.49	25.71	11.81	-174.71	399.18	328.86	1,807.13	1,787.53	19.60	92.190	
4,100.00	3,840.63	3,508.09	3,456.85	26.52	12.17	-174.75	412.81	338.72	1,865.60	1,845.45	20.15	92.593	
4,200.00	3,931.99	3,589.22	3,536.21	27.33	12.53	-174.78	426.43	348.58	1,924.07	1,903.37	20.70	92.972	
4,300.00	4,023.35	3,670.34	3,615.56	28.13	12.88	-174.82	440.05	358.43	1,982.54	1,961.29	21.24	93.331	
4,400.00	4,114.72	3,751.46	3,694.92	28.94	13.24	-174.85	453.68	368.29	2,041.00	2,019.21	21.79	93.672	
4,500.00	4,206.08	3,832.58	3,774.28	29.75	13.60	-174.88	467.30	378.14	2,099.47	2,077.14	22.34	93.994	
4,600.00	4,297.44	3,913.70	3,853.64	30.56	13.96	-174.91	480.92	388.00	2,157.94	2,135.06	22.88	94.300	
4,700.00	4,388.80	3,994.82	3,933.00	31.37	14.32	-174.93	494.55	397.86	2,216.41	2,192.98	23.43	94.591	
4,800.00	4,480.16	4,075.94	4,012.36	32.18	14.67	-174.96	508.17	407.71	2,274.88	2,250.90	23.98	94.868	
4,900.00	4,571.53	4,157.06	4,091.72	32.99	15.03	-174.98	521.79	417.57	2,333.35	2,308.82	24.53	95.133	
5,000.00	4,662.89	4,238.19	4,171.08	33.80	15.39	-175.01	535.42	427.42	2,391.82	2,366.74	25.08	95.384	
5,100.00	4,754.25	4,319.31	4,250.44	34.61	15.75	-175.03	549.04	437.28	2,450.29	2,424.67	25.62	95.625	

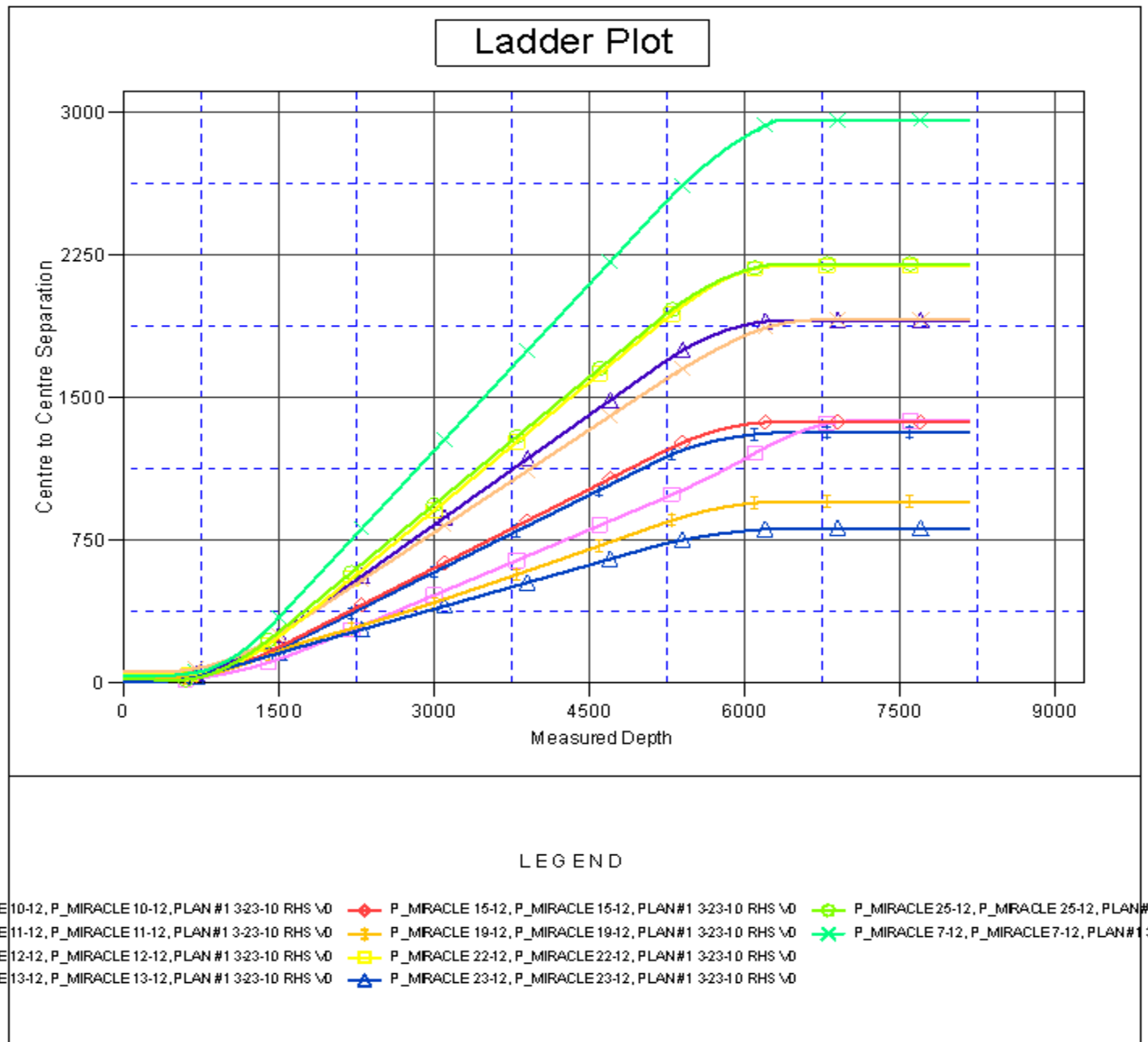
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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
5,172.26	4,820.27	4,377.93	4,307.79	35.19	16.01	-175.04	558.89	444.40	2,492.54	2,466.52	26.02	95.792	
5,200.00	4,845.67	4,400.51	4,329.88	35.38	16.11	-175.08	562.68	447.15	2,508.65	2,482.43	26.23	95.655	
5,300.00	4,938.09	4,483.18	4,410.75	35.93	16.48	-175.21	576.56	457.19	2,564.90	2,537.97	26.93	95.244	
5,400.00	5,031.80	4,567.75	4,493.49	36.43	16.85	-175.32	590.77	467.47	2,618.25	2,590.65	27.60	94.861	
5,500.00	5,126.66	4,654.14	4,578.00	36.90	17.23	-175.41	605.27	477.96	2,668.62	2,640.38	28.24	94.509	
5,600.00	5,222.57	4,742.22	4,664.16	37.33	17.62	-175.49	620.06	488.66	2,715.95	2,687.12	28.84	94.188	
5,700.00	5,319.41	4,831.89	4,751.89	37.72	18.02	-175.55	635.12	499.56	2,760.20	2,730.80	29.40	93.899	
5,800.00	5,417.06	4,923.05	4,841.07	38.06	18.43	-175.60	650.43	510.63	2,801.29	2,771.38	29.91	93.643	
5,900.00	5,515.40	5,015.57	4,931.58	38.36	18.84	-175.64	665.97	521.88	2,839.19	2,808.80	30.39	93.420	
6,000.00	5,614.31	5,109.36	5,023.33	38.61	19.25	-175.66	681.72	533.27	2,873.84	2,843.02	30.83	93.230	
6,100.00	5,713.68	5,204.29	5,116.20	38.82	19.67	-175.68	697.67	544.81	2,905.22	2,874.00	31.21	93.074	
6,200.00	5,813.37	5,300.25	5,210.08	38.98	20.10	-175.68	713.78	556.46	2,933.27	2,901.71	31.56	92.952	
6,300.00	5,913.28	5,397.12	5,304.85	39.09	20.53	-175.68	730.05	568.23	2,957.96	2,926.11	31.85	92.866	
6,371.73	5,985.00	6,081.98	5,985.00	39.15	22.10	28.79	783.27	606.73	2,960.77	2,927.62	33.15	89.311	
6,400.00	6,013.27	6,110.25	6,013.27	39.17	22.13	28.79	783.27	606.73	2,960.77	2,927.53	33.24	89.073	
6,500.00	6,113.27	6,210.25	6,113.27	39.23	22.26	28.79	783.27	606.73	2,960.77	2,927.21	33.56	88.232	
6,600.00	6,213.27	6,310.25	6,213.27	39.29	22.39	28.79	783.27	606.73	2,960.77	2,926.89	33.88	87.400	
6,700.00	6,313.27	6,410.25	6,313.27	39.35	22.52	28.79	783.27	606.73	2,960.77	2,926.57	34.20	86.576	
6,800.00	6,413.27	6,510.25	6,413.27	39.41	22.65	28.79	783.27	606.73	2,960.77	2,926.25	34.52	85.761	
6,900.00	6,513.27	6,610.25	6,513.27	39.47	22.79	28.79	783.27	606.73	2,960.77	2,925.92	34.85	84.955	
7,000.00	6,613.27	6,710.25	6,613.27	39.53	22.92	28.79	783.27	606.73	2,960.77	2,925.59	35.18	84.158	
7,100.00	6,713.27	6,810.25	6,713.27	39.60	23.06	28.79	783.27	606.73	2,960.77	2,925.26	35.51	83.370	
7,200.00	6,813.27	6,910.25	6,813.27	39.66	23.20	28.79	783.27	606.73	2,960.77	2,924.92	35.85	82.592	
7,300.00	6,913.27	7,010.25	6,913.27	39.73	23.34	28.79	783.27	606.73	2,960.77	2,924.58	36.19	81.822	
7,400.00	7,013.27	7,110.25	7,013.27	39.80	23.48	28.79	783.27	606.73	2,960.77	2,924.24	36.52	81.062	
7,500.00	7,113.27	7,210.25	7,113.27	39.87	23.62	28.79	783.27	606.73	2,960.77	2,923.90	36.87	80.311	
7,600.00	7,213.27	7,310.25	7,213.27	39.94	23.76	28.79	783.27	606.73	2,960.77	2,923.56	37.21	79.569	
7,700.00	7,313.27	7,410.25	7,313.27	40.01	23.91	28.79	783.27	606.73	2,960.77	2,923.21	37.56	78.837	
7,800.00	7,413.27	7,510.25	7,413.27	40.09	24.05	28.79	783.27	606.73	2,960.77	2,922.87	37.90	78.113	
7,900.00	7,513.27	7,610.25	7,513.27	40.16	24.20	28.79	783.27	606.73	2,960.77	2,922.52	38.25	77.399	
8,000.00	7,613.27	7,710.25	7,613.27	40.23	24.35	28.79	783.27	606.73	2,960.77	2,922.16	38.61	76.694	
8,100.00	7,713.27	7,810.25	7,713.27	40.31	24.50	28.79	783.27	606.73	2,960.77	2,921.81	38.96	75.998	
8,171.73	7,785.00	7,881.98	7,785.00	40.37	24.61	28.79	783.27	606.73	2,960.77	2,921.56	39.21	75.504	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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 14-12
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.35°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_MIRACLE 14-12
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 14-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_MIRACLE 14-12	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 14-12
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.35°

