



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_BERNHARDT 8 PAD 4N67W1
P_BERNHARDT STATE 37-36**

P_BERNHARDT STATE 37-36

Plan: PLAN #1 11-04-09 RHS

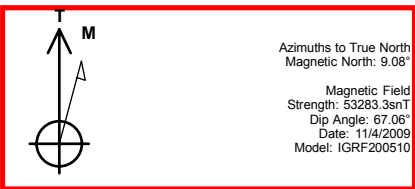
Standard Planning Report

04 November, 2009





P. BERNHARDT STATE 37-36
 COLORADO NORTHERN ZONE - 83
 SECTION 1 T4N R67W
 1303 FNL 1985 FWL
 LAT: 40° 20' 42.864 N
 LONG: 104° 50' 28.788 W



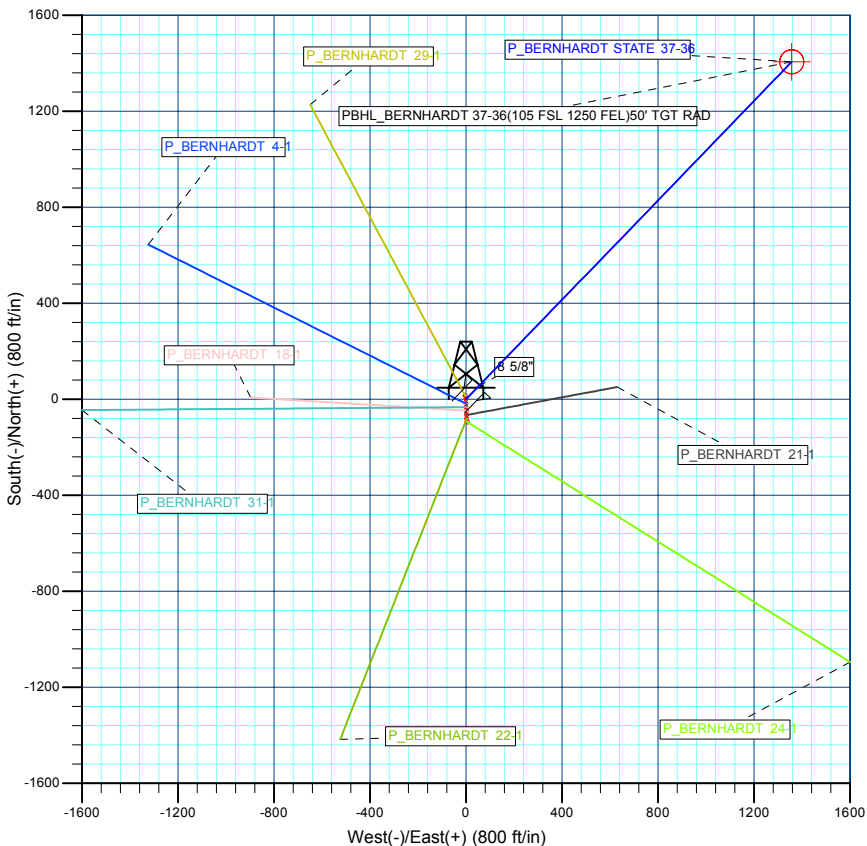
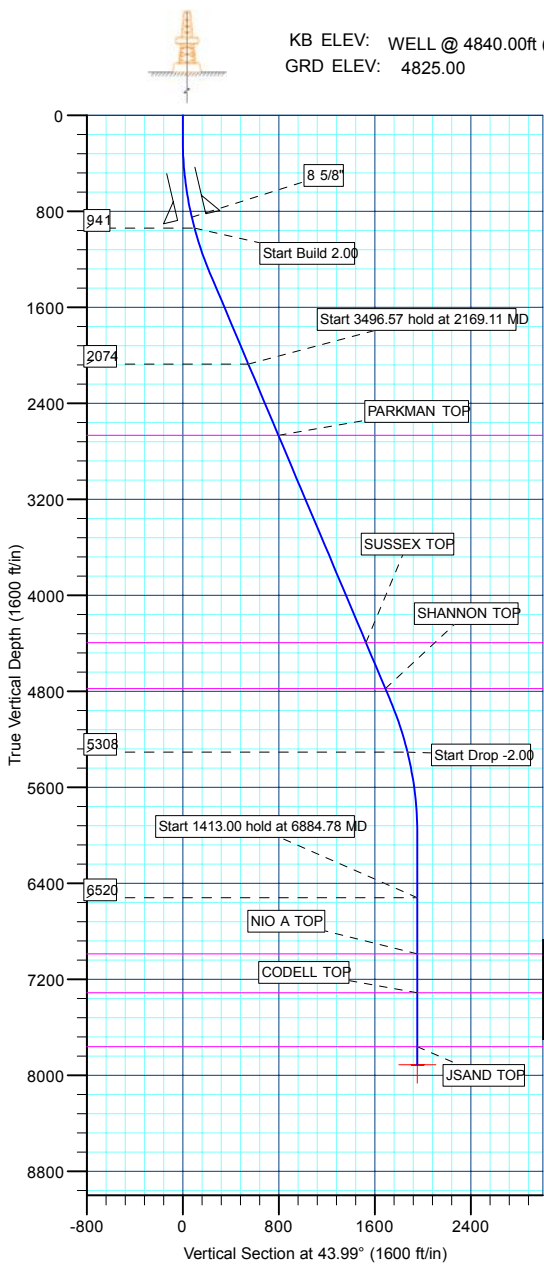
WELL DETAILS: P_BERNHARDT STATE 37-36						
+N/-S	+E/-W	Northing	Easting	Ground Level:	Latitude	Longitude
0.00	0.00	1369293.46	3183592.91	4825.00	40° 20' 42.864 N	104° 50' 28.788 W

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
2668.00	2813.86	PARKMAN TOP
4396.00	4689.49	SUSSEX TOP
4779.00	5105.21	SHANNON TOP
6990.00	7354.67	NIO A TOP
7313.00	7677.67	CODELL TOP
7763.00	8127.67	JSAND TOP

SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1344.23	22.88	43.99	1314.05	162.24	156.60	2.00	43.99	225.49		
5210.44	22.88	43.99	4875.95	1243.98	1200.77	0.00	0.00	1728.97		
6354.67	0.00	0.00	5990.00	1406.22	1357.37	2.00	180.00	1954.46		
8277.67	0.00	0.00	7913.00	1406.22	1357.37	0.00	0.00	1954.46		PBHL_BERNHARDT 37-36(105 FSL 1250 FEL)

CASING DETAILS			
TVD	MD	Name	Size
850.00	855.71	8 5/8"	8.62

KB ELEV: WELL @ 4840.00ft (Original Well Elev)
 GRD ELEV: 4825.00



WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	7913.00	1406.22	1357.37	1370709.72	3184939.79	40° 20' 56.760 N	104° 50' 11.256 W	Circle (Radius: 50.00)



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Project:	COLORADO NOTHERN ZONE - 83	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site:	WELD_BERNHARDT 8 PAD 4N67W1	North Reference:	True
Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_BERNHARDT STATE 37-36		
Design:	PLAN #1 11-04-09 RHS		

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

Site	WELD_BERNHARDT 8 PAD 4N67W1, SECTION 1 T4N R67W				
Site Position:		Northing:	1,369,246.13 ft	Latitude:	40° 20' 42.396 N
From:	Lat/Long	Easting:	3,183,596.05 ft	Longitude:	104° 50' 28.752 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	0.43 °

Well	P_BERNHARDT STATE 37-36					
Well Position	+N/-S	47.35 ft	Northing:	1,369,293.46 ft	Latitude:	40° 20' 42.864 N
	+E/-W	-2.79 ft	Easting:	3,183,592.91 ft	Longitude:	104° 50' 28.788 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,825.00 ft

Wellbore	P_BERNHARDT STATE 37-36				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	11/4/2009	9.08	67.06	53,283

Design	PLAN #1 11-04-09 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	43.99

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,344.23	22.88	43.99	1,314.05	162.24	156.60	2.00	2.00	0.00	43.99	
5,210.44	22.88	43.99	4,875.95	1,243.98	1,200.77	0.00	0.00	0.00	0.00	
6,354.67	0.00	0.00	5,990.00	1,406.22	1,357.37	2.00	-2.00	0.00	180.00	
8,277.67	0.00	0.00	7,913.00	1,406.22	1,357.37	0.00	0.00	0.00	0.00	PBHL_BERNHARD

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Project:	COLORADO NOTHERN ZONE - 83	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site:	WELD_BERNHARDT 8 PAD 4N67W1	North Reference:	True
Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_BERNHARDT STATE 37-36		
Design:	PLAN #1 11-04-09 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)	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	2.00	43.99	299.98	1.26	1.21	1.75	2.00	2.00	2.00	0.00
400.00	4.00	43.99	399.84	5.02	4.85	6.98	2.00	2.00	2.00	0.00
500.00	6.00	43.99	499.45	11.29	10.90	15.69	2.00	2.00	2.00	0.00
600.00	8.00	43.99	598.70	20.06	19.36	27.88	2.00	2.00	2.00	0.00
700.00	10.00	43.99	697.47	31.31	30.23	43.52	2.00	2.00	2.00	0.00
800.00	12.00	43.99	795.62	45.04	43.48	62.60	2.00	2.00	2.00	0.00
8 5/8"										
855.71	13.11	43.99	850.00	53.76	51.89	74.71	2.00	2.00	2.00	0.00
900.00	14.00	43.99	893.06	61.23	59.10	85.10	2.00	2.00	2.00	0.00
Start Build 2.00										
950.00	15.00	43.99	941.46	70.23	67.79	97.62	2.00	2.00	2.00	0.00
1,000.00	16.00	43.99	989.64	79.85	77.07	110.98	2.00	2.00	2.00	0.00
1,100.00	18.00	43.99	1,085.27	100.88	97.38	140.21	2.00	2.00	2.00	0.00
1,200.00	20.00	43.99	1,179.82	124.31	119.99	172.77	2.00	2.00	2.00	0.00
1,300.00	22.00	43.99	1,273.17	150.09	144.87	208.60	2.00	2.00	2.00	0.00
1,344.23	22.88	43.99	1,314.05	162.24	156.60	225.49	2.00	2.00	2.00	0.00
1,400.00	22.88	43.99	1,365.43	177.84	171.66	247.18	0.00	0.00	0.00	0.00
1,500.00	22.88	43.99	1,457.56	205.82	198.67	286.06	0.00	0.00	0.00	0.00
1,600.00	22.88	43.99	1,549.69	233.80	225.68	324.95	0.00	0.00	0.00	0.00
1,700.00	22.88	43.99	1,641.82	261.78	252.68	363.84	0.00	0.00	0.00	0.00
1,800.00	22.88	43.99	1,733.94	289.76	279.69	402.73	0.00	0.00	0.00	0.00
1,900.00	22.88	43.99	1,826.07	317.74	306.70	441.61	0.00	0.00	0.00	0.00
2,000.00	22.88	43.99	1,918.20	345.72	333.71	480.50	0.00	0.00	0.00	0.00
2,100.00	22.88	43.99	2,010.33	373.70	360.71	519.39	0.00	0.00	0.00	0.00
Start 3496.57 hold at 2169.11 MD										
2,169.11	22.88	43.99	2,074.00	393.03	379.38	546.26	0.00	0.00	0.00	0.00
2,200.00	22.88	43.99	2,102.46	401.68	387.72	558.28	0.00	0.00	0.00	0.00
2,300.00	22.88	43.99	2,194.59	429.66	414.73	597.16	0.00	0.00	0.00	0.00
2,400.00	22.88	43.99	2,286.72	457.64	441.74	636.05	0.00	0.00	0.00	0.00
2,500.00	22.88	43.99	2,378.85	485.62	468.74	674.94	0.00	0.00	0.00	0.00
2,600.00	22.88	43.99	2,470.98	513.60	495.75	713.83	0.00	0.00	0.00	0.00
2,700.00	22.88	43.99	2,563.11	541.58	522.76	752.72	0.00	0.00	0.00	0.00
2,800.00	22.88	43.99	2,655.23	569.55	549.77	791.60	0.00	0.00	0.00	0.00
PARKMAN TOP										
2,813.86	22.88	43.99	2,668.00	573.43	553.51	796.99	0.00	0.00	0.00	0.00
2,900.00	22.88	43.99	2,747.36	597.53	576.77	830.49	0.00	0.00	0.00	0.00
3,000.00	22.88	43.99	2,839.49	625.51	603.78	869.38	0.00	0.00	0.00	0.00
3,100.00	22.88	43.99	2,931.62	653.49	630.79	908.27	0.00	0.00	0.00	0.00
3,200.00	22.88	43.99	3,023.75	681.47	657.80	947.15	0.00	0.00	0.00	0.00
3,300.00	22.88	43.99	3,115.88	709.45	684.80	986.04	0.00	0.00	0.00	0.00
3,400.00	22.88	43.99	3,208.01	737.43	711.81	1,024.93	0.00	0.00	0.00	0.00
3,500.00	22.88	43.99	3,300.14	765.41	738.82	1,063.82	0.00	0.00	0.00	0.00
3,600.00	22.88	43.99	3,392.27	793.39	765.83	1,102.71	0.00	0.00	0.00	0.00
3,700.00	22.88	43.99	3,484.39	821.37	792.83	1,141.59	0.00	0.00	0.00	0.00
3,800.00	22.88	43.99	3,576.52	849.35	819.84	1,180.48	0.00	0.00	0.00	0.00
3,900.00	22.88	43.99	3,668.65	877.33	846.85	1,219.37	0.00	0.00	0.00	0.00
4,000.00	22.88	43.99	3,760.78	905.31	873.86	1,258.26	0.00	0.00	0.00	0.00
4,100.00	22.88	43.99	3,852.91	933.29	900.86	1,297.14	0.00	0.00	0.00	0.00
4,200.00	22.88	43.99	3,945.04	961.27	927.87	1,336.03	0.00	0.00	0.00	0.00
4,300.00	22.88	43.99	4,037.17	989.25	954.88	1,374.92	0.00	0.00	0.00	0.00
4,400.00	22.88	43.99	4,129.30	1,017.23	981.89	1,413.81	0.00	0.00	0.00	0.00
4,500.00	22.88	43.99	4,221.43	1,045.21	1,008.89	1,452.69	0.00	0.00	0.00	0.00

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Project:	COLORADO NOTHERN ZONE - 83	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site:	WELD_BERNHARDT 8 PAD 4N67W1	North Reference:	True
Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_BERNHARDT STATE 37-36		
Design:	PLAN #1 11-04-09 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)
4,600.00	22.88	43.99	4,313.56	1,073.19	1,035.90	1,491.58	0.00	0.00	0.00
SUSSEX TOP									
4,689.49	22.88	43.99	4,396.00	1,098.22	1,060.07	1,526.38	0.00	0.00	0.00
4,700.00	22.88	43.99	4,405.68	1,101.17	1,062.91	1,530.47	0.00	0.00	0.00
4,800.00	22.88	43.99	4,497.81	1,129.15	1,089.92	1,569.36	0.00	0.00	0.00
4,900.00	22.88	43.99	4,589.94	1,157.12	1,116.92	1,608.25	0.00	0.00	0.00
5,000.00	22.88	43.99	4,682.07	1,185.10	1,143.93	1,647.13	0.00	0.00	0.00
5,100.00	22.88	43.99	4,774.20	1,213.08	1,170.94	1,686.02	0.00	0.00	0.00
SHANNON TOP									
5,105.21	22.88	43.99	4,779.00	1,214.54	1,172.34	1,688.05	0.00	0.00	0.00
5,200.00	22.88	43.99	4,866.33	1,241.06	1,197.95	1,724.91	0.00	0.00	0.00
5,210.44	22.88	43.99	4,875.95	1,243.98	1,200.77	1,728.97	0.00	0.00	0.00
5,300.00	21.09	43.99	4,958.99	1,268.11	1,224.05	1,762.50	2.00	-2.00	0.00
5,400.00	19.09	43.99	5,052.90	1,292.83	1,247.91	1,796.85	2.00	-2.00	0.00
5,500.00	17.09	43.99	5,147.95	1,315.17	1,269.48	1,827.91	2.00	-2.00	0.00
5,600.00	15.09	43.99	5,244.02	1,335.12	1,288.73	1,855.63	2.00	-2.00	0.00
Start Drop -2.00									
5,665.67	13.78	43.99	5,307.62	1,346.90	1,300.10	1,872.00	2.00	-2.00	0.00
5,700.00	13.09	43.99	5,341.01	1,352.64	1,305.64	1,879.98	2.00	-2.00	0.00
5,800.00	11.09	43.99	5,438.79	1,367.71	1,320.19	1,900.93	2.00	-2.00	0.00
5,900.00	9.09	43.99	5,537.23	1,380.32	1,332.36	1,918.45	2.00	-2.00	0.00
6,000.00	7.09	43.99	5,636.23	1,390.45	1,342.14	1,932.53	2.00	-2.00	0.00
6,100.00	5.09	43.99	5,735.66	1,398.08	1,349.51	1,943.15	2.00	-2.00	0.00
6,200.00	3.09	43.99	5,835.40	1,403.22	1,354.47	1,950.28	2.00	-2.00	0.00
6,300.00	1.09	43.99	5,935.33	1,405.85	1,357.00	1,953.94	2.00	-2.00	0.00
6,354.67	0.00	0.00	5,990.00	1,406.22	1,357.37	1,954.46	2.00	-2.00	0.00
6,400.00	0.00	0.00	6,035.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
6,500.00	0.00	0.00	6,135.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
6,600.00	0.00	0.00	6,235.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
6,700.00	0.00	0.00	6,335.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
6,800.00	0.00	0.00	6,435.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
Start 1413.00 hold at 6884.78 MD									
6,884.78	0.00	0.00	6,520.10	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
6,900.00	0.00	0.00	6,535.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
7,000.00	0.00	0.00	6,635.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
7,100.00	0.00	0.00	6,735.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
7,200.00	0.00	0.00	6,835.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
7,300.00	0.00	0.00	6,935.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
NIO A TOP									
7,354.67	0.00	0.00	6,990.00	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
7,400.00	0.00	0.00	7,035.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
7,500.00	0.00	0.00	7,135.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
7,600.00	0.00	0.00	7,235.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
CODELL TOP									
7,677.67	0.00	0.00	7,313.00	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
7,700.00	0.00	0.00	7,335.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
7,800.00	0.00	0.00	7,435.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
7,900.00	0.00	0.00	7,535.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
8,000.00	0.00	0.00	7,635.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
8,100.00	0.00	0.00	7,735.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
JSAND TOP									
8,127.67	0.00	0.00	7,763.00	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00
8,200.00	0.00	0.00	7,835.33	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00

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Project:	COLORADO NOTHERN ZONE - 83	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site:	WELD_BERNHARDT 8 PAD 4N67W1	North Reference:	True
Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_BERNHARDT STATE 37-36		
Design:	PLAN #1 11-04-09 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)
PBHL_BERNHARDT 37-36(105 FSL 1250 FEL)									
8,277.67	0.00	0.00	7,913.00	1,406.22	1,357.37	1,954.46	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL_BERNHARDT	0.00	0.00	7,913.00	1,406.22	1,357.37	1,370,709.72	3,184,939.79	40° 20' 56.760 N	104° 50' 11.256 W
- hit/miss target									
- Shape									
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
855.71	850.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,813.86	2,668.00	PARKMAN TOP				
4,689.49	4,396.00	SUSSEX TOP				
5,105.21	4,779.00	SHANNON TOP				
7,354.67	6,990.00	NIO A TOP				
7,677.67	7,313.00	CODELL TOP				
8,127.67	7,763.00	JSAND TOP				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
950.00	941.46	70.23	67.79	Start Build 2.00	
2,169.11	2,074.00	393.03	379.38	Start 3496.57 hold at 2169.11 MD	
5,665.67	5,307.62	1,346.90	1,300.10	Start Drop -2.00	
6,884.78	6,520.10	1,406.22	1,357.37	Start 1413.00 hold at 6884.78 MD	
8,297.78				TD at 8297.78	



US ROCKIES REGION PLANNING

**COLORADO NOTHERN ZONE - 83
WELD_BERNHARDT 8 PAD 4N67W1
P_BERNHARDT STATE 37-36**

**P_BERNHARDT STATE 37-36
PLAN #1 11-04-09 RHS**

Anticollision Report

04 November, 2009



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 11-04-09 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	11/4/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,277.67	PLAN #1 11-04-09 RHS (P_BERNHARDT	MWD	MWD - Standard

Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
WELD_BERNHARDT 8 PAD 4N67W1						
P_BERNHARDT 18-1 - P_BERNHARDT 18-1 - PLAN #1	200.00	200.00	47.43	46.79	74.038	CC, ES
P_BERNHARDT 18-1 - P_BERNHARDT 18-1 - PLAN #1	600.00	598.70	69.41	66.96	28.249	SF
P_BERNHARDT 21-1 - P_BERNHARDT 21-1 - PLAN #1	200.00	200.00	65.64	65.00	102.463	CC, ES
P_BERNHARDT 21-1 - P_BERNHARDT 21-1 - PLAN #1	700.00	697.47	100.70	97.77	34.361	SF
P_BERNHARDT 22-1 - P_BERNHARDT 22-1 - PLAN #1	200.00	200.00	80.19	79.55	125.187	CC, ES
P_BERNHARDT 22-1 - P_BERNHARDT 22-1 - PLAN #1	800.00	795.62	131.63	128.22	38.596	SF
P_BERNHARDT 24-1 - P_BERNHARDT 24-1 - PLAN #1	200.00	200.00	94.88	94.24	148.115	CC, ES
P_BERNHARDT 24-1 - P_BERNHARDT 24-1 - PLAN #1	8,277.67	8,369.92	2,829.08	2,754.44	37.903	SF
P_BERNHARDT 29-1 - P_BERNHARDT 29-1 - PLAN #1	421.39	421.17	12.13	10.48	7.383	CC, ES
P_BERNHARDT 29-1 - P_BERNHARDT 29-1 - PLAN #1	500.00	499.45	14.07	12.07	7.028	SF
P_BERNHARDT 31-1 - P_BERNHARDT 31-1 - PLAN #1	200.00	200.00	32.79	32.15	51.182	CC, ES
P_BERNHARDT 31-1 - P_BERNHARDT 31-1 - PLAN #1	500.00	497.21	51.50	49.53	26.062	SF
P_BERNHARDT 4-1 - P_BERNHARDT 4-1 - PLAN #1	200.00	200.00	18.21	17.57	28.435	CC, ES
P_BERNHARDT 4-1 - P_BERNHARDT 4-1 - PLAN #1	400.00	399.84	23.74	22.20	15.457	SF

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	176.63	-47.35	2.79	47.43					
100.00	100.00	100.00	100.00	0.10	0.10	176.63	-47.35	2.79	47.43	47.24	0.19	248.246		
200.00	200.00	200.00	200.00	0.32	0.32	176.63	-47.35	2.79	47.43	46.79	0.64	74.038	CC, ES	
300.00	299.98	299.98	299.98	0.54	0.55	134.14	-47.35	2.79	48.63	47.54	1.09	44.717		
400.00	399.84	399.84	399.84	0.77	0.77	138.20	-47.35	2.79	52.41	50.87	1.54	34.083		
500.00	499.45	499.45	499.45	1.02	0.99	143.74	-47.35	2.79	59.20	57.20	2.00	29.666		
600.00	598.70	598.70	598.70	1.31	1.22	149.58	-47.35	2.79	69.41	66.96	2.46	28.249	SF	
700.00	697.47	697.47	697.47	1.63	1.44	154.91	-47.35	2.79	83.31	80.39	2.92	28.541		
800.00	795.62	795.62	795.62	2.01	1.66	159.37	-47.35	2.79	100.95	97.57	3.38	29.884		
900.00	893.06	893.06	893.06	2.44	1.88	162.95	-47.35	2.79	122.31	118.47	3.84	31.890		
1,000.00	989.64	988.74	988.74	2.93	2.09	165.84	-47.33	2.53	147.42	143.13	4.29	34.400		
1,100.00	1,085.27	1,081.26	1,081.21	3.49	2.28	168.79	-47.16	-0.21	177.36	172.65	4.71	37.653		
1,200.00	1,179.82	1,171.13	1,170.91	4.10	2.47	171.70	-46.83	-5.73	212.53	207.40	5.13	41.418		
1,300.00	1,273.17	1,257.96	1,257.37	4.78	2.67	174.39	-46.34	-13.72	252.96	247.40	5.55	45.546		

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_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 18-1 - P_BERNHARDT 18-1 - PLAN #1 11-04	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
1,344.23	1,314.05	1,295.31	1,294.48	5.10	2.75	175.49	-46.09	-17.96	272.50	266.76	5.74	47.469			
1,400.00	1,365.43	1,341.66	1,340.44	5.51	2.87	176.84	-45.73	-23.89	298.08	292.06	6.01	49.565			
1,500.00	1,457.56	1,423.17	1,421.03	6.26	3.09	179.01	-44.98	-36.13	345.50	338.98	6.51	53.055			
1,600.00	1,549.69	1,502.60	1,499.18	7.02	3.33	-179.08	-44.13	-50.25	394.88	387.85	7.03	56.210			
1,700.00	1,641.82	1,585.61	1,580.53	7.78	3.61	-177.30	-43.13	-66.71	445.80	438.23	7.57	58.885			
1,800.00	1,733.94	1,670.83	1,664.03	8.54	3.91	-175.83	-42.09	-83.72	497.07	488.94	8.14	61.078			
1,900.00	1,826.07	1,756.05	1,747.53	9.31	4.23	-174.63	-41.06	-100.73	548.55	539.83	8.72	62.920			
2,000.00	1,918.20	1,841.26	1,831.03	10.08	4.55	-173.64	-40.03	-117.73	600.17	590.86	9.31	64.481			
2,100.00	2,010.33	1,926.48	1,914.52	10.85	4.88	-172.80	-39.00	-134.74	651.90	641.99	9.91	65.815			
2,200.00	2,102.46	2,011.70	1,998.02	11.62	5.22	-172.09	-37.96	-151.74	703.72	693.21	10.51	66.965			
2,300.00	2,194.59	2,096.92	2,081.52	12.39	5.57	-171.47	-36.93	-168.75	755.60	744.49	11.12	67.965			
2,400.00	2,286.72	2,182.14	2,165.02	13.16	5.92	-170.93	-35.90	-185.76	807.55	795.82	11.73	68.838			
2,500.00	2,378.85	2,267.36	2,248.52	13.94	6.27	-170.46	-34.87	-202.76	859.54	847.19	12.35	69.609			
2,600.00	2,470.98	2,352.57	2,332.01	14.71	6.62	-170.04	-33.83	-219.77	911.57	898.60	12.97	70.293			
2,700.00	2,563.11	2,437.79	2,415.51	15.49	6.98	-169.67	-32.80	-236.78	963.63	950.04	13.59	70.905			
2,800.00	2,655.23	2,523.01	2,499.01	16.26	7.34	-169.33	-31.77	-253.78	1,015.72	1,001.50	14.22	71.453			
2,900.00	2,747.36	2,608.23	2,582.51	17.04	7.71	-169.03	-30.74	-270.79	1,067.83	1,052.99	14.84	71.948			
3,000.00	2,839.49	2,693.45	2,666.00	17.81	8.07	-168.75	-29.70	-287.79	1,119.96	1,104.49	15.47	72.395			
3,100.00	2,931.62	2,778.67	2,749.50	18.59	8.44	-168.50	-28.67	-304.80	1,172.11	1,156.01	16.10	72.802			
3,200.00	3,023.75	2,863.88	2,833.00	19.36	8.80	-168.27	-27.64	-321.81	1,224.27	1,207.54	16.73	73.174			
3,300.00	3,115.88	2,949.10	2,916.50	20.14	9.17	-168.06	-26.61	-338.81	1,276.45	1,259.09	17.36	73.515			
3,400.00	3,208.01	3,034.32	3,000.00	20.92	9.54	-167.86	-25.57	-355.82	1,328.64	1,310.64	18.00	73.828			
3,500.00	3,300.14	3,119.54	3,083.49	21.69	9.91	-167.68	-24.54	-372.83	1,380.84	1,362.21	18.63	74.117			
3,600.00	3,392.27	3,204.76	3,166.99	22.47	10.28	-167.52	-23.51	-389.83	1,433.05	1,413.78	19.27	74.384			
3,700.00	3,484.39	3,289.98	3,250.49	23.25	10.65	-167.36	-22.48	-406.84	1,485.26	1,465.36	19.90	74.632			
3,800.00	3,576.52	3,375.19	3,333.99	24.03	11.02	-167.22	-21.44	-423.84	1,537.48	1,516.95	20.54	74.862			
3,900.00	3,668.65	3,460.41	3,417.48	24.80	11.40	-167.08	-20.41	-440.85	1,589.71	1,568.54	21.17	75.077			
4,000.00	3,760.78	3,545.63	3,500.98	25.58	11.77	-166.96	-19.38	-457.86	1,641.95	1,620.14	21.81	75.277			
4,100.00	3,852.91	3,630.85	3,584.48	26.36	12.14	-166.84	-18.35	-474.86	1,694.19	1,671.74	22.45	75.465			
4,200.00	3,945.04	3,716.07	3,667.98	27.14	12.52	-166.73	-17.31	-491.87	1,746.44	1,723.35	23.09	75.641			
4,300.00	4,037.17	3,801.29	3,751.48	27.91	12.89	-166.62	-16.28	-508.88	1,798.69	1,774.96	23.73	75.807			
4,400.00	4,129.30	3,886.50	3,834.97	28.69	13.27	-166.52	-15.25	-525.88	1,850.94	1,826.58	24.37	75.963			
4,500.00	4,221.43	3,971.72	3,918.47	29.47	13.64	-166.43	-14.22	-542.89	1,903.20	1,878.20	25.01	76.109			
4,600.00	4,313.56	4,056.94	4,001.97	30.25	14.02	-166.34	-13.18	-559.89	1,955.47	1,929.82	25.65	76.248			
4,700.00	4,405.68	4,142.16	4,085.47	31.03	14.39	-166.26	-12.15	-576.90	2,007.73	1,981.45	26.29	76.379			
4,800.00	4,497.81	4,227.38	4,168.96	31.80	14.77	-166.18	-11.12	-593.91	2,060.00	2,033.07	26.93	76.504			
4,900.00	4,589.94	4,312.60	4,252.46	32.58	15.14	-166.10	-10.09	-610.91	2,112.27	2,084.70	27.57	76.622			
5,000.00	4,682.07	4,397.81	4,335.96	33.36	15.52	-166.03	-9.05	-627.92	2,164.55	2,136.34	28.21	76.734			
5,100.00	4,774.20	4,483.03	4,419.46	34.14	15.90	-165.96	-8.02	-644.93	2,216.82	2,187.97	28.85	76.840			
5,200.00	4,866.33	4,568.25	4,502.96	34.92	16.27	-165.89	-6.99	-661.93	2,269.10	2,239.61	29.49	76.941			
5,210.44	4,875.95	4,577.15	4,511.67	35.00	16.31	-165.89	-6.88	-663.71	2,274.56	2,245.00	29.56	76.952			
5,300.00	4,958.99	4,654.16	4,587.13	35.60	16.65	-166.08	-5.95	-679.07	2,320.22	2,289.94	30.27	76.641			
5,400.00	5,052.90	4,741.71	4,672.91	36.14	17.04	-166.25	-4.89	-696.55	2,368.41	2,337.39	31.02	76.346			
5,500.00	5,147.95	4,830.81	4,760.21	36.64	17.44	-166.38	-3.81	-714.33	2,413.61	2,381.88	31.74	76.051			
5,600.00	5,244.02	4,921.34	4,848.92	37.10	17.84	-166.47	-2.71	-732.39	2,455.78	2,423.36	32.41	75.761			
5,700.00	5,341.01	5,013.21	4,938.93	37.50	18.24	-166.52	-1.60	-750.73	2,494.85	2,461.79	33.05	75.478			
5,800.00	5,438.79	5,106.29	5,030.13	37.86	18.66	-166.54	-0.47	-769.30	2,530.79	2,497.14	33.65	75.206			
5,900.00	5,537.23	5,200.47	5,122.41	38.17	19.07	-166.53	0.67	-788.10	2,563.56	2,529.35	34.21	74.945			
6,000.00	5,636.23	5,295.64	5,215.66	38.43	19.50	-166.48	1.82	-807.09	2,593.13	2,558.42	34.72	74.698			
6,100.00	5,735.66	5,391.69	5,309.77	38.64	19.92	-166.41	2.99	-826.26	2,619.47	2,584.30	35.18	74.465			
6,200.00	5,835.40	5,576.27	5,491.07	38.80	20.60	-166.13	5.08	-860.76	2,642.08	2,606.26	35.82	73.754			
6,300.00	5,935.33	5,980.17	5,892.99	38.92	21.44	-165.80	7.28	-896.98	2,652.97	2,616.28	36.69	72.305			

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_BERNHARDT STATE 37-36
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design												WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 18-1 - P_BERNHARDT 18-1 - PLAN #1 11-04	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	
6,354.67	5,990.00	6,077.17	5,990.00	38.96	21.55	-121.81	7.31	-897.53	2,653.58	2,616.75	36.83	72.042		
6,400.00	6,035.33	6,122.50	6,035.33	38.99	21.61	-121.81	7.31	-897.53	2,653.58	2,616.62	36.96	71.795		
6,500.00	6,135.33	6,222.50	6,135.33	39.06	21.74	-121.81	7.31	-897.53	2,653.58	2,616.33	37.25	71.232		
6,600.00	6,235.33	6,322.50	6,235.33	39.14	21.88	-121.81	7.31	-897.53	2,653.58	2,616.03	37.55	70.673		
6,700.00	6,335.33	6,422.50	6,335.33	39.21	22.01	-121.81	7.31	-897.53	2,653.58	2,615.74	37.85	70.117		
6,800.00	6,435.33	6,522.50	6,435.33	39.28	22.15	-121.81	7.31	-897.53	2,653.58	2,615.44	38.15	69.564		
6,900.00	6,535.33	6,622.50	6,535.33	39.36	22.28	-121.81	7.31	-897.53	2,653.58	2,615.13	38.45	69.014		
7,000.00	6,635.33	6,722.50	6,635.33	39.44	22.42	-121.81	7.31	-897.53	2,653.58	2,614.83	38.76	68.468		
7,100.00	6,735.33	6,822.50	6,735.33	39.52	22.56	-121.81	7.31	-897.53	2,653.58	2,614.52	39.07	67.927		
7,200.00	6,835.33	6,922.50	6,835.33	39.59	22.70	-121.81	7.31	-897.53	2,653.58	2,614.20	39.38	67.389		
7,300.00	6,935.33	7,022.50	6,935.33	39.67	22.85	-121.81	7.31	-897.53	2,653.58	2,613.89	39.69	66.855		
7,400.00	7,035.33	7,122.50	7,035.33	39.76	22.99	-121.81	7.31	-897.53	2,653.58	2,613.57	40.01	66.325		
7,500.00	7,135.33	7,222.50	7,135.33	39.84	23.13	-121.81	7.31	-897.53	2,653.58	2,613.25	40.33	65.799		
7,600.00	7,235.33	7,322.50	7,235.33	39.92	23.28	-121.81	7.31	-897.53	2,653.58	2,612.93	40.65	65.278		
7,700.00	7,335.33	7,422.50	7,335.33	40.01	23.43	-121.81	7.31	-897.53	2,653.58	2,612.61	40.97	64.762		
7,800.00	7,435.33	7,522.50	7,435.33	40.09	23.58	-121.81	7.31	-897.53	2,653.58	2,612.28	41.30	64.250		
7,900.00	7,535.33	7,622.50	7,535.33	40.18	23.73	-121.81	7.31	-897.53	2,653.58	2,611.95	41.63	63.742		
8,000.00	7,635.33	7,722.50	7,635.33	40.27	23.88	-121.81	7.31	-897.53	2,653.58	2,611.62	41.96	63.239		
8,100.00	7,735.33	7,822.50	7,735.33	40.36	24.03	-121.81	7.31	-897.53	2,653.58	2,611.29	42.29	62.741		
8,200.00	7,835.33	7,922.50	7,835.33	40.45	24.19	-121.81	7.31	-897.53	2,653.58	2,610.95	42.63	62.247		
8,222.84	7,858.16	7,945.34	7,858.16	40.47	24.22	-121.81	7.31	-897.53	2,653.58	2,610.88	42.71	62.135		
8,277.67	7,913.00	7,959.17	7,872.00	40.52	24.24	-121.81	7.31	-897.53	2,653.90	2,611.08	42.82	61.982		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 21-1 - P_BERNHARDT 21-1 - PLAN #1 11-04	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference				Offset			Semi Major Axis			Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	177.57	-65.58	2.79	65.64						
100.00	100.00	100.00	100.00	0.10	0.10	177.57	-65.58	2.79	65.64	65.45	0.19	343.552			
200.00	200.00	200.00	200.00	0.32	0.32	177.57	-65.58	2.79	65.64	65.00	0.64	102.463	CC, ES		
300.00	299.98	299.98	299.98	0.54	0.55	134.65	-65.58	2.79	66.85	65.76	1.09	61.476			
400.00	399.84	399.84	399.84	0.77	0.77	137.61	-65.58	2.79	70.63	69.09	1.54	45.928			
500.00	499.45	499.45	499.45	1.02	0.99	141.88	-65.58	2.79	77.30	75.30	2.00	38.709			
600.00	598.70	598.70	598.70	1.31	1.22	146.71	-65.58	2.79	87.23	84.76	2.46	35.421			
700.00	697.47	697.47	697.47	1.63	1.44	151.46	-65.58	2.79	100.70	97.77	2.93	34.361	SF		
800.00	795.62	795.62	795.62	2.01	1.66	155.74	-65.58	2.79	117.87	114.47	3.40	34.690			
900.00	893.06	893.06	893.06	2.44	1.88	159.40	-65.58	2.79	138.74	134.88	3.86	35.925			
1,000.00	989.64	991.07	991.07	2.93	2.09	162.39	-65.52	3.08	163.13	158.80	4.32	37.738			
1,100.00	1,085.27	1,091.24	1,091.19	3.49	2.30	164.23	-64.94	6.21	189.32	184.54	4.79	39.557			
1,200.00	1,179.82	1,191.93	1,191.64	4.10	2.52	165.11	-63.71	12.82	216.73	211.46	5.27	41.095			
1,300.00	1,273.17	1,293.07	1,292.25	4.78	2.75	165.32	-61.83	22.96	245.23	239.43	5.79	42.325			
1,344.23	1,314.05	1,337.94	1,336.76	5.10	2.87	165.26	-60.78	28.57	258.16	252.12	6.04	42.768			
1,400.00	1,365.43	1,391.64	1,389.94	5.51	3.01	165.20	-59.44	35.81	274.51	268.14	6.37	43.087			
1,500.00	1,457.56	1,487.24	1,484.64	6.26	3.27	165.11	-57.04	48.71	303.84	296.85	6.98	43.510			
1,600.00	1,549.69	1,582.84	1,579.34	7.02	3.54	165.03	-54.64	61.61	333.16	325.55	7.61	43.794			
1,700.00	1,641.82	1,678.45	1,674.04	7.78	3.82	164.97	-52.24	74.51	362.48	354.24	8.24	43.981			
1,800.00	1,733.94	1,774.05	1,768.74	8.54	4.11	164.91	-49.84	87.41	391.81	382.92	8.88	44.103			
1,900.00	1,826.07	1,869.65	1,863.44	9.31	4.40	164.86	-47.45	100.31	421.13	411.60	9.53	44.178			
2,000.00	1,918.20	1,965.26	1,958.14	10.08	4.70	164.82	-45.05	113.21	450.46	440.27	10.19	44.221			
2,100.00	2,010.33	2,060.86	2,052.83	10.85	5.00	164.79	-42.65	126.11	479.78	468.94	10.84	44.242			
2,200.00	2,102.46	2,156.46	2,147.53	11.62	5.30	164.76	-40.25	139.01	509.11	497.60	11.51	44.247			
2,300.00	2,194.59	2,252.06	2,242.23	12.39	5.61	164.73	-37.85	151.91	538.43	526.26	12.17	44.240			
2,400.00	2,286.72	2,347.67	2,336.93	13.16	5.92	164.70	-35.45	164.81	567.76	554.92	12.84	44.225			
2,500.00	2,378.85	2,443.27	2,431.63	13.94	6.23	164.68	-33.06	177.71	597.08	583.58	13.51	44.204			
2,600.00	2,470.98	2,538.87	2,526.33	14.71	6.54	164.66	-30.66	190.61	626.41	612.23	14.18	44.180			
2,700.00	2,563.11	2,634.48	2,621.03	15.49	6.85	164.64	-28.26	203.51	655.73	640.88	14.85	44.153			
2,800.00	2,655.23	2,730.08	2,715.72	16.26	7.17	164.62	-25.86	216.41	685.06	669.53	15.53	44.124			
2,900.00	2,747.36	2,825.68	2,810.42	17.04	7.48	164.61	-23.46	229.31	714.39	698.18	16.20	44.094			
3,000.00	2,839.49	2,921.29	2,905.12	17.81	7.80	164.59	-21.06	242.21	743.71	726.83	16.88	44.064			
3,100.00	2,931.62	3,016.89	2,999.82	18.59	8.12	164.58	-18.67	255.11	773.04	755.48	17.56	44.034			
3,200.00	3,023.75	3,112.49	3,094.52	19.36	8.44	164.57	-16.27	268.01	802.36	784.13	18.23	44.003			
3,300.00	3,115.88	3,208.10	3,189.22	20.14	8.75	164.56	-13.87	280.91	831.69	812.77	18.91	43.974			
3,400.00	3,208.01	3,303.70	3,283.92	20.92	9.07	164.54	-11.47	293.81	861.01	841.42	19.59	43.944			
3,500.00	3,300.14	3,399.30	3,378.61	21.69	9.39	164.53	-9.07	306.71	890.34	870.07	20.27	43.916			
3,600.00	3,392.27	3,494.91	3,473.31	22.47	9.71	164.53	-6.67	319.61	919.67	898.71	20.95	43.888			
3,700.00	3,484.39	3,590.51	3,568.01	23.25	10.04	164.52	-4.28	332.51	948.99	927.35	21.64	43.860			
3,800.00	3,576.52	3,686.11	3,662.71	24.03	10.36	164.51	-1.88	345.41	978.32	956.00	22.32	43.834			
3,900.00	3,668.65	3,781.72	3,757.41	24.80	10.68	164.50	0.52	358.31	1,007.64	984.64	23.00	43.808			
4,000.00	3,760.78	3,877.32	3,852.11	25.58	11.00	164.49	2.92	371.21	1,036.97	1,013.28	23.68	43.783			
4,100.00	3,852.91	3,972.92	3,946.81	26.36	11.32	164.49	5.32	384.11	1,066.29	1,041.93	24.37	43.759			
4,200.00	3,945.04	4,068.53	4,041.50	27.14	11.65	164.48	7.72	397.01	1,095.62	1,070.57	25.05	43.735			
4,300.00	4,037.17	4,164.13	4,136.20	27.91	11.97	164.47	10.11	409.91	1,124.95	1,099.21	25.74	43.713			
4,400.00	4,129.30	4,259.73	4,230.90	28.69	12.29	164.47	12.51	422.81	1,154.27	1,127.85	26.42	43.691			
4,500.00	4,221.43	4,355.34	4,325.60	29.47	12.62	164.46	14.91	435.71	1,183.60	1,156.49	27.10	43.669			
4,600.00	4,313.56	4,450.94	4,420.30	30.25	12.94	164.46	17.31	448.61	1,212.92	1,185.14	27.79	43.649			
4,700.00	4,405.68	4,546.54	4,515.00	31.03	13.26	164.45	19.71	461.51	1,242.25	1,213.78	28.47	43.629			
4,800.00	4,497.81	4,642.15	4,609.70	31.80	13.59	164.45	22.10	474.41	1,271.58	1,242.42	29.16	43.609			
4,900.00	4,589.94	4,737.75	4,704.39	32.58	13.91	164.44	24.50	487.31	1,300.90	1,271.06	29.84	43.591			
5,000.00	4,682.07	4,833.35	4,799.09	33.36	14.23	164.44	26.90	500.21	1,330.23	1,299.70	30.53	43.572			

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_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 21-1 - P_BERNHARDT 21-1 - PLAN #1 11-04	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
							+N/-S (ft)	+E/-W (ft)							
5,100.00	4,774.20	4,928.96	4,893.79	34.14	14.56	164.43	29.30	513.11	1,359.55	1,328.34	31.21	43.555			
5,200.00	4,866.33	5,024.56	4,988.49	34.92	14.88	164.43	31.70	526.01	1,388.88	1,356.98	31.90	43.538			
5,210.44	4,875.95	5,034.54	4,998.38	35.00	14.92	164.43	31.95	527.35	1,391.94	1,359.97	31.97	43.536			
5,300.00	4,958.99	5,120.54	5,083.57	35.60	15.21	164.55	34.11	538.96	1,416.91	1,384.27	32.64	43.407			
5,400.00	5,052.90	5,217.40	5,179.51	36.14	15.54	164.63	36.54	552.03	1,441.72	1,408.38	33.34	43.246			
5,500.00	5,147.95	5,315.02	5,276.21	36.64	15.87	164.65	38.98	565.20	1,463.25	1,429.25	34.00	43.032			
5,600.00	5,244.02	5,413.29	5,373.54	37.10	16.20	164.62	41.45	578.46	1,481.50	1,446.86	34.64	42.769			
5,700.00	5,341.01	5,512.08	5,471.39	37.50	16.54	164.54	43.93	591.79	1,496.43	1,461.19	35.24	42.459			
5,800.00	5,438.79	5,600.00	5,558.49	37.86	16.84	164.44	46.13	603.65	1,508.08	1,472.31	35.77	42.159			
5,900.00	5,537.23	5,682.38	5,640.25	38.17	17.04	164.34	47.97	613.54	1,517.39	1,481.23	36.15	41.971			
6,000.00	5,636.23	5,757.07	5,714.60	38.43	17.20	164.28	49.27	620.50	1,525.02	1,488.58	36.44	41.850			
6,100.00	5,735.66	5,831.84	5,789.19	38.64	17.35	164.24	50.21	625.56	1,530.93	1,494.28	36.65	41.767			
6,200.00	5,835.40	5,900.00	5,857.28	38.80	17.47	164.23	50.75	628.50	1,535.15	1,498.36	36.78	41.734			
6,300.00	5,935.33	5,991.73	5,949.00	38.92	17.60	164.23	51.02	629.94	1,537.65	1,500.77	36.88	41.696			
6,354.67	5,990.00	6,032.73	5,990.00	38.96	17.67	-151.77	51.02	629.94	1,538.09	1,501.19	36.90	41.687			
6,400.00	6,035.33	6,078.06	6,035.33	38.99	17.74	-151.77	51.02	629.94	1,538.09	1,501.06	37.03	41.539			
6,500.00	6,135.33	6,178.06	6,135.33	39.06	17.90	-151.77	51.02	629.94	1,538.09	1,500.76	37.33	41.202			
6,600.00	6,235.33	6,278.06	6,235.33	39.14	18.06	-151.77	51.02	629.94	1,538.09	1,500.45	37.64	40.867			
6,700.00	6,335.33	6,378.06	6,335.33	39.21	18.22	-151.77	51.02	629.94	1,538.09	1,500.14	37.95	40.534			
6,800.00	6,435.33	6,478.06	6,435.33	39.28	18.39	-151.77	51.02	629.94	1,538.09	1,499.83	38.26	40.204			
6,900.00	6,535.33	6,578.06	6,535.33	39.36	18.55	-151.77	51.02	629.94	1,538.09	1,499.52	38.57	39.876			
7,000.00	6,635.33	6,678.06	6,635.33	39.44	18.72	-151.77	51.02	629.94	1,538.09	1,499.20	38.89	39.551			
7,100.00	6,735.33	6,778.06	6,735.33	39.52	18.88	-151.77	51.02	629.94	1,538.09	1,498.88	39.21	39.229			
7,200.00	6,835.33	6,878.06	6,835.33	39.59	19.05	-151.77	51.02	629.94	1,538.09	1,498.56	39.53	38.910			
7,300.00	6,935.33	6,978.06	6,935.33	39.67	19.22	-151.77	51.02	629.94	1,538.09	1,498.23	39.85	38.593			
7,400.00	7,035.33	7,078.06	7,035.33	39.76	19.39	-151.77	51.02	629.94	1,538.09	1,497.91	40.18	38.279			
7,500.00	7,135.33	7,178.06	7,135.33	39.84	19.56	-151.77	51.02	629.94	1,538.09	1,497.58	40.51	37.969			
7,600.00	7,235.33	7,278.06	7,235.33	39.92	19.74	-151.77	51.02	629.94	1,538.09	1,497.25	40.84	37.661			
7,700.00	7,335.33	7,378.06	7,335.33	40.01	19.91	-151.77	51.02	629.94	1,538.09	1,496.91	41.17	37.356			
7,800.00	7,435.33	7,478.06	7,435.33	40.09	20.09	-151.77	51.02	629.94	1,538.09	1,496.58	41.51	37.054			
7,900.00	7,535.33	7,578.06	7,535.33	40.18	20.26	-151.77	51.02	629.94	1,538.09	1,496.24	41.85	36.755			
8,000.00	7,635.33	7,678.06	7,635.33	40.27	20.44	-151.77	51.02	629.94	1,538.09	1,495.90	42.19	36.459			
8,100.00	7,735.33	7,778.06	7,735.33	40.36	20.62	-151.77	51.02	629.94	1,538.09	1,495.56	42.53	36.166			
8,200.00	7,835.33	7,878.06	7,835.33	40.45	20.80	-151.77	51.02	629.94	1,538.09	1,495.22	42.87	35.877			
8,249.62	7,884.94	7,927.67	7,884.94	40.49	20.88	-151.77	51.02	629.94	1,538.09	1,495.05	43.04	35.734			
8,277.67	7,913.00	7,949.73	7,907.00	40.52	20.92	-151.77	51.02	629.94	1,538.10	1,494.97	43.13	35.663			

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 22-1 - P_BERNHARDT 22-1 - PLAN #1 11-04	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference				Offset			Semi Major Axis			Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	178.01	-80.14	2.79	80.19						
100.00	100.00	100.00	100.00	0.10	0.10	178.01	-80.14	2.79	80.19	80.00	0.19	419.746			
200.00	200.00	200.00	200.00	0.32	0.32	178.01	-80.14	2.79	80.19	79.55	0.64	125.187	CC, ES		
300.00	299.98	299.98	299.98	0.54	0.55	134.89	-80.14	2.79	81.42	80.33	1.09	74.870			
400.00	399.84	399.84	399.84	0.77	0.77	137.33	-80.14	2.79	85.19	83.65	1.54	55.396			
500.00	499.45	499.45	499.45	1.02	0.99	140.93	-80.14	2.79	91.80	89.80	2.00	45.953			
600.00	598.70	598.70	598.70	1.31	1.22	145.14	-80.14	2.79	101.57	99.10	2.47	41.195			
700.00	697.47	697.47	697.47	1.63	1.44	149.46	-80.14	2.79	114.79	111.85	2.94	39.073			
800.00	795.62	795.62	795.62	2.01	1.66	153.52	-80.14	2.79	131.63	128.22	3.41	38.596	SF		
900.00	893.06	893.06	893.06	2.44	1.88	157.12	-80.14	2.79	152.17	148.29	3.88	39.209			
1,000.00	989.64	987.35	987.34	2.93	2.08	160.13	-80.37	2.70	176.65	172.32	4.33	40.756			
1,100.00	1,085.27	1,076.23	1,076.19	3.49	2.24	162.48	-82.73	1.77	207.21	202.47	4.75	43.646			
1,200.00	1,179.82	1,162.13	1,161.94	4.10	2.40	164.27	-87.45	-0.09	244.09	238.92	5.16	47.284			
1,300.00	1,273.17	1,244.64	1,244.12	4.78	2.56	165.60	-94.23	-2.76	286.93	281.35	5.58	51.390			
1,344.23	1,314.05	1,279.97	1,279.24	5.10	2.63	166.07	-97.81	-4.17	307.70	301.93	5.77	53.320			
1,400.00	1,365.43	1,323.69	1,322.63	5.51	2.73	166.69	-102.79	-6.14	334.96	328.92	6.04	55.502			
1,500.00	1,457.56	1,400.00	1,398.15	6.26	2.91	167.53	-112.96	-10.14	385.68	379.17	6.51	59.234			
1,600.00	1,549.69	1,474.53	1,471.60	7.02	3.12	168.12	-124.70	-14.77	438.67	431.67	6.99	62.713			
1,700.00	1,641.82	1,546.48	1,542.18	7.78	3.34	168.52	-137.71	-19.90	493.78	486.30	7.48	66.003			
1,800.00	1,733.94	1,616.14	1,610.15	8.54	3.58	168.79	-151.87	-25.48	550.90	542.94	7.97	69.130			
1,900.00	1,826.07	1,683.53	1,675.54	9.31	3.84	168.97	-167.04	-31.45	609.93	601.47	8.46	72.095			
2,000.00	1,918.20	1,748.70	1,738.39	10.08	4.11	169.08	-183.06	-37.77	670.77	661.82	8.95	74.912			
2,100.00	2,010.33	1,811.69	1,798.75	10.85	4.40	169.14	-199.81	-44.37	733.32	723.88	9.45	77.625			
2,200.00	2,102.46	1,872.54	1,856.68	11.62	4.71	169.16	-217.15	-51.20	797.51	787.56	9.94	80.209			
2,300.00	2,194.59	1,931.82	1,912.71	12.39	5.03	169.16	-235.15	-58.29	863.23	852.80	10.44	82.704			
2,400.00	2,286.72	2,005.87	1,982.46	13.16	5.45	169.14	-258.30	-67.42	929.72	918.75	10.97	84.750			
2,500.00	2,378.85	2,080.57	2,052.81	13.94	5.89	169.12	-281.65	-76.62	996.21	984.70	11.51	86.560			
2,600.00	2,470.98	2,155.26	2,123.16	14.71	6.34	169.10	-305.01	-85.82	1,062.69	1,050.64	12.05	88.182			
2,700.00	2,563.11	2,229.96	2,193.51	15.49	6.80	169.09	-328.36	-95.03	1,129.18	1,116.58	12.60	89.645			
2,800.00	2,655.23	2,304.65	2,263.86	16.26	7.26	169.07	-351.71	-104.23	1,195.67	1,182.52	13.14	90.969			
2,900.00	2,747.36	2,379.35	2,334.21	17.04	7.73	169.06	-375.07	-113.43	1,262.15	1,248.46	13.70	92.159			
3,000.00	2,839.49	2,454.04	2,404.57	17.81	8.21	169.05	-398.42	-122.63	1,328.64	1,314.39	14.25	93.243			
3,100.00	2,931.62	2,528.74	2,474.92	18.59	8.69	169.04	-421.78	-131.84	1,395.13	1,380.32	14.80	94.235			
3,200.00	3,023.75	2,603.44	2,545.27	19.36	9.17	169.04	-445.13	-141.04	1,461.61	1,446.25	15.36	95.145			
3,300.00	3,115.88	2,678.13	2,615.62	20.14	9.65	169.03	-468.48	-150.24	1,528.10	1,512.18	15.92	95.976			
3,400.00	3,208.01	2,752.83	2,685.97	20.92	10.14	169.02	-491.84	-159.45	1,594.59	1,578.11	16.48	96.742			
3,500.00	3,300.14	2,827.52	2,756.33	21.69	10.63	169.01	-515.19	-168.65	1,661.08	1,644.03	17.05	97.451			
3,600.00	3,392.27	2,902.22	2,826.68	22.47	11.12	169.01	-538.54	-177.85	1,727.56	1,709.95	17.61	98.109			
3,700.00	3,484.39	2,976.92	2,897.03	23.25	11.61	169.00	-561.90	-187.05	1,794.05	1,775.88	18.17	98.716			
3,800.00	3,576.52	3,051.61	2,967.38	24.03	12.11	169.00	-585.25	-196.26	1,860.54	1,841.80	18.74	99.282			
3,900.00	3,668.65	3,126.31	3,037.73	24.80	12.60	168.99	-608.61	-205.46	1,927.02	1,907.72	19.31	99.811			
4,000.00	3,760.78	3,201.00	3,108.08	25.58	13.10	168.99	-631.96	-214.66	1,993.51	1,973.64	19.87	100.305			
4,100.00	3,852.91	3,275.70	3,178.44	26.36	13.59	168.98	-655.31	-223.87	2,060.00	2,039.55	20.44	100.767			
4,200.00	3,945.04	3,350.39	3,248.79	27.14	14.09	168.98	-678.67	-233.07	2,126.48	2,105.47	21.01	101.200			
4,300.00	4,037.17	3,425.09	3,319.14	27.91	14.59	168.98	-702.02	-242.27	2,192.97	2,171.39	21.58	101.607			
4,400.00	4,129.30	3,499.79	3,389.49	28.69	15.09	168.97	-725.37	-251.48	2,259.46	2,237.30	22.15	101.991			
4,500.00	4,221.43	3,574.48	3,459.84	29.47	15.59	168.97	-748.73	-260.68	2,325.95	2,303.22	22.72	102.352			
4,600.00	4,313.56	3,649.18	3,530.20	30.25	16.09	168.97	-772.08	-269.88	2,392.43	2,369.14	23.30	102.693			
4,700.00	4,405.68	3,723.87	3,600.55	31.03	16.59	168.96	-795.44	-279.08	2,458.92	2,435.05	23.87	103.016			
4,800.00	4,497.81	3,798.57	3,670.90	31.80	17.09	168.96	-818.79	-288.29	2,525.41	2,500.96	24.44	103.322			
4,900.00	4,589.94	3,873.27	3,741.25	32.58	17.59	168.96	-842.14	-297.49	2,591.89	2,566.88	25.02	103.612			
5,000.00	4,682.07	3,947.96	3,811.60	33.36	18.09	168.95	-865.50	-306.69	2,658.38	2,632.79	25.59	103.887			

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_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 22-1 - P_BERNHARDT 22-1 - PLAN #1 11-04	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,100.00	4,774.20	4,022.66	3,881.95	34.14	18.60	168.95	-888.85	-315.90	2,724.87	2,698.70	26.16	104.148			
5,200.00	4,866.33	4,097.35	3,952.31	34.92	19.10	168.95	-912.20	-325.10	2,791.35	2,764.62	26.74	104.398			
5,210.44	4,875.95	4,105.15	3,959.65	35.00	19.15	168.95	-914.64	-326.06	2,798.30	2,771.50	26.80	104.423			
5,300.00	4,958.99	4,172.95	4,023.51	35.60	19.61	169.23	-935.84	-334.41	2,856.81	2,829.34	27.47	104.006			
5,400.00	5,052.90	4,250.73	4,096.76	36.14	20.13	169.51	-960.16	-344.00	2,919.64	2,891.47	28.17	103.644			
5,500.00	5,147.95	4,330.61	4,172.00	36.64	20.67	169.74	-985.13	-353.84	2,979.77	2,950.92	28.85	103.296			
5,600.00	5,244.02	4,412.49	4,249.12	37.10	21.22	169.93	-1,010.73	-363.92	3,037.12	3,007.63	29.50	102.970			
5,700.00	5,341.01	4,496.28	4,328.03	37.50	21.79	170.09	-1,036.93	-374.25	3,091.63	3,061.51	30.11	102.668			
5,800.00	5,438.79	4,581.86	4,408.64	37.86	22.36	170.22	-1,063.69	-384.79	3,143.22	3,112.53	30.70	102.395			
5,900.00	5,537.23	4,669.14	4,490.84	38.17	22.95	170.33	-1,090.97	-395.55	3,191.84	3,160.60	31.25	102.154			
6,000.00	5,636.23	4,758.01	4,574.54	38.43	23.55	170.40	-1,118.76	-406.49	3,237.44	3,205.68	31.76	101.947			
6,100.00	5,735.66	4,848.36	4,659.64	38.64	24.16	170.46	-1,147.01	-417.63	3,279.95	3,247.72	32.23	101.775			
6,200.00	5,835.40	4,940.08	4,746.03	38.80	24.78	170.49	-1,175.68	-428.93	3,319.33	3,286.68	32.66	101.640			
6,300.00	5,935.33	5,033.07	4,833.60	38.92	25.41	170.50	-1,204.76	-440.38	3,355.54	3,322.49	33.05	101.544			
6,354.67	5,990.00	5,084.40	4,881.95	38.96	25.76	-145.52	-1,220.80	-446.71	3,373.98	3,340.74	33.24	101.506			
6,400.00	6,035.33	5,127.09	4,922.15	38.99	26.05	-145.58	-1,234.15	-451.97	3,388.87	3,355.42	33.44	101.333			
6,500.00	6,135.33	6,364.56	6,135.33	39.06	29.69	-146.32	-1,417.08	-524.05	3,392.76	3,356.41	36.35	93.343			
6,600.00	6,235.33	6,464.56	6,235.33	39.14	29.77	-146.32	-1,417.08	-524.05	3,392.76	3,356.12	36.63	92.614			
6,700.00	6,335.33	6,564.56	6,335.33	39.21	29.85	-146.32	-1,417.08	-524.05	3,392.76	3,355.83	36.92	91.889			
6,800.00	6,435.33	6,664.56	6,435.33	39.28	29.94	-146.32	-1,417.08	-524.05	3,392.76	3,355.54	37.22	91.166			
6,900.00	6,535.33	6,764.56	6,535.33	39.36	30.02	-146.32	-1,417.08	-524.05	3,392.76	3,355.25	37.51	90.447			
7,000.00	6,635.33	6,864.56	6,635.33	39.44	30.11	-146.32	-1,417.08	-524.05	3,392.76	3,354.95	37.81	89.733			
7,100.00	6,735.33	6,964.56	6,735.33	39.52	30.20	-146.32	-1,417.08	-524.05	3,392.76	3,354.65	38.11	89.022			
7,200.00	6,835.33	7,064.56	6,835.33	39.59	30.29	-146.32	-1,417.08	-524.05	3,392.76	3,354.34	38.42	88.317			
7,300.00	6,935.33	7,164.56	6,935.33	39.67	30.38	-146.32	-1,417.08	-524.05	3,392.76	3,354.03	38.72	87.615			
7,400.00	7,035.33	7,264.56	7,035.33	39.76	30.47	-146.32	-1,417.08	-524.05	3,392.76	3,353.72	39.03	86.919			
7,500.00	7,135.33	7,364.56	7,135.33	39.84	30.56	-146.32	-1,417.08	-524.05	3,392.76	3,353.41	39.35	86.228			
7,600.00	7,235.33	7,464.56	7,235.33	39.92	30.66	-146.32	-1,417.08	-524.05	3,392.76	3,353.09	39.66	85.542			
7,700.00	7,335.33	7,564.56	7,335.33	40.01	30.76	-146.32	-1,417.08	-524.05	3,392.76	3,352.78	39.98	84.861			
7,800.00	7,435.33	7,664.56	7,435.33	40.09	30.85	-146.32	-1,417.08	-524.05	3,392.76	3,352.46	40.30	84.186			
7,900.00	7,535.33	7,764.56	7,535.33	40.18	30.95	-146.32	-1,417.08	-524.05	3,392.76	3,352.13	40.62	83.517			
8,000.00	7,635.33	7,864.56	7,635.33	40.27	31.05	-146.32	-1,417.08	-524.05	3,392.76	3,351.81	40.95	82.853			
8,100.00	7,735.33	7,964.56	7,735.33	40.36	31.16	-146.32	-1,417.08	-524.05	3,392.76	3,351.48	41.28	82.195			
8,200.00	7,835.33	8,064.56	7,835.33	40.45	31.26	-146.32	-1,417.08	-524.05	3,392.76	3,351.15	41.61	81.543			
8,242.19	7,877.51	8,106.75	7,877.51	40.49	31.30	-146.32	-1,417.08	-524.05	3,392.76	3,351.01	41.75	81.270			
8,277.67	7,913.00	8,121.23	7,892.00	40.52	31.32	-146.32	-1,417.08	-524.05	3,392.82	3,350.99	41.83	81.111			

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 24-1 - P_BERNHARDT 24-1 - PLAN #1 11-04	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	176.63	-94.72	5.57	94.88						
100.00	100.00	100.00	100.00	0.10	0.10	176.63	-94.72	5.57	94.88	94.69	0.19	496.621			
200.00	200.00	200.00	200.00	0.32	0.32	176.63	-94.72	5.57	94.88	94.24	0.64	148.115 CC, ES			
300.00	299.98	298.07	298.05	0.54	0.52	132.55	-95.61	7.00	97.06	95.99	1.07	91.004			
400.00	399.84	395.86	395.71	0.77	0.74	132.28	-98.27	11.25	103.57	102.07	1.50	69.036			
500.00	499.45	493.11	492.60	1.02	0.98	131.89	-102.67	18.27	114.41	112.44	1.97	58.088			
600.00	598.70	589.54	588.34	1.31	1.25	131.43	-108.76	27.98	129.53	127.04	2.48	52.169			
700.00	697.47	684.91	682.60	1.63	1.57	130.93	-116.46	40.26	148.86	145.81	3.05	48.825			
800.00	795.62	778.98	775.04	2.01	1.93	130.43	-125.69	54.98	172.35	168.68	3.68	46.896			
900.00	893.06	871.53	865.39	2.44	2.33	129.93	-136.33	71.95	199.90	195.53	4.37	45.782			
1,000.00	989.64	962.36	953.39	2.93	2.78	129.42	-148.28	91.01	231.41	226.29	5.12	45.154			
1,100.00	1,085.27	1,051.29	1,038.82	3.49	3.27	128.91	-161.41	111.95	266.77	260.82	5.95	44.828			
1,200.00	1,179.82	1,138.18	1,121.50	4.10	3.80	128.38	-175.59	134.57	305.86	299.02	6.84	44.695			
1,300.00	1,273.17	1,222.88	1,201.28	4.78	4.37	127.84	-190.69	158.66	348.55	340.75	7.80	44.690			
1,344.23	1,314.05	1,259.62	1,235.62	5.10	4.63	127.59	-197.63	169.72	368.55	360.30	8.24	44.702			
1,400.00	1,365.43	1,305.44	1,278.21	5.51	4.96	127.67	-206.61	184.04	394.41	385.58	8.83	44.656			
1,500.00	1,457.56	1,386.46	1,352.83	6.26	5.60	127.57	-223.37	210.78	441.95	432.02	9.92	44.536			
1,600.00	1,549.69	1,467.61	1,426.67	7.02	6.28	127.25	-241.25	239.29	490.90	479.85	11.05	44.422			
1,700.00	1,641.82	1,554.50	1,505.42	7.78	7.03	126.90	-260.75	270.39	540.33	528.09	12.24	44.157			
1,800.00	1,733.94	1,641.39	1,584.17	8.54	7.79	126.60	-280.25	301.50	589.76	576.33	13.43	43.915			
1,900.00	1,826.07	1,728.28	1,662.93	9.31	8.55	126.35	-299.75	332.60	639.20	624.58	14.63	43.694			
2,000.00	1,918.20	1,815.16	1,741.68	10.08	9.31	126.13	-319.25	363.71	688.66	672.82	15.83	43.494			
2,100.00	2,010.33	1,902.05	1,820.43	10.85	10.08	125.95	-338.76	394.82	738.12	721.08	17.04	43.313			
2,200.00	2,102.46	1,988.94	1,899.18	11.62	10.85	125.78	-358.26	425.92	787.58	769.33	18.25	43.148			
2,300.00	2,194.59	2,075.83	1,977.93	12.39	11.62	125.64	-377.76	457.03	837.05	817.58	19.47	42.998			
2,400.00	2,286.72	2,162.72	2,056.69	13.16	12.39	125.51	-397.26	488.13	886.52	865.84	20.68	42.862			
2,500.00	2,378.85	2,249.61	2,135.44	13.94	13.16	125.40	-416.76	519.24	936.00	914.10	21.90	42.739			
2,600.00	2,470.98	2,336.50	2,214.19	14.71	13.93	125.30	-436.27	550.34	985.47	962.35	23.12	42.625			
2,700.00	2,563.11	2,423.39	2,292.94	15.49	14.71	125.20	-455.77	581.45	1,034.95	1,010.61	24.34	42.521			
2,800.00	2,655.23	2,510.28	2,371.69	16.26	15.48	125.12	-475.27	612.56	1,084.43	1,058.87	25.56	42.426			
2,900.00	2,747.36	2,597.17	2,450.44	17.04	16.26	125.04	-494.77	643.66	1,133.92	1,107.14	26.78	42.338			
3,000.00	2,839.49	2,684.06	2,529.20	17.81	17.03	124.97	-514.28	674.77	1,183.40	1,155.40	28.01	42.256			
3,100.00	2,931.62	2,770.95	2,607.95	18.59	17.81	124.91	-533.78	705.87	1,232.89	1,203.66	29.23	42.180			
3,200.00	3,023.75	2,857.84	2,686.70	19.36	18.59	124.85	-553.28	736.98	1,282.38	1,251.92	30.45	42.110			
3,300.00	3,115.88	2,944.73	2,765.45	20.14	19.36	124.79	-572.78	768.08	1,331.86	1,300.19	31.68	42.044			
3,400.00	3,208.01	3,031.61	2,844.20	20.92	20.14	124.74	-592.28	799.19	1,381.35	1,348.45	32.90	41.983			
3,500.00	3,300.14	3,118.50	2,922.95	21.69	20.92	124.69	-611.79	830.30	1,430.84	1,396.71	34.13	41.925			
3,600.00	3,392.27	3,205.39	3,001.71	22.47	21.70	124.65	-631.29	861.40	1,480.33	1,444.98	35.35	41.871			
3,700.00	3,484.39	3,292.28	3,080.46	23.25	22.47	124.61	-650.79	892.51	1,529.82	1,493.24	36.58	41.821			
3,800.00	3,576.52	3,379.17	3,159.21	24.03	23.25	124.57	-670.29	923.61	1,579.31	1,541.51	37.81	41.773			
3,900.00	3,668.65	3,466.06	3,237.96	24.80	24.03	124.53	-689.79	954.72	1,628.81	1,589.77	39.03	41.728			
4,000.00	3,760.78	3,552.95	3,316.71	25.58	24.81	124.50	-709.30	985.83	1,678.30	1,638.04	40.26	41.686			
4,100.00	3,852.91	3,639.84	3,395.47	26.36	25.59	124.46	-728.80	1,016.93	1,727.79	1,686.30	41.49	41.646			
4,200.00	3,945.04	3,726.73	3,474.22	27.14	26.37	124.43	-748.30	1,048.04	1,777.28	1,734.57	42.72	41.608			
4,300.00	4,037.17	3,813.62	3,552.97	27.91	27.15	124.40	-767.80	1,079.14	1,826.78	1,782.84	43.94	41.572			
4,400.00	4,129.30	3,900.51	3,631.72	28.69	27.92	124.38	-787.31	1,110.25	1,876.27	1,831.10	45.17	41.538			
4,500.00	4,221.43	3,987.40	3,710.47	29.47	28.70	124.35	-806.81	1,141.35	1,925.77	1,879.37	46.40	41.505			
4,600.00	4,313.56	4,074.29	3,789.22	30.25	29.48	124.33	-826.31	1,172.46	1,975.26	1,927.63	47.63	41.474			
4,700.00	4,405.68	4,161.18	3,867.98	31.03	30.26	124.30	-845.81	1,203.57	2,024.76	1,975.90	48.85	41.445			
4,800.00	4,497.81	4,248.06	3,946.73	31.80	31.04	124.28	-865.31	1,234.67	2,074.25	2,024.17	50.08	41.416			
4,900.00	4,589.94	4,334.95	4,025.48	32.58	31.82	124.26	-884.82	1,265.78	2,123.75	2,072.43	51.31	41.389			
5,000.00	4,682.07	4,421.84	4,104.23	33.36	32.60	124.24	-904.32	1,296.88	2,173.24	2,120.70	52.54	41.364			

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_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design												WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 24-1 - P_BERNHARDT 24-1 - PLAN #1 11-04	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	4,774.20	4,508.73	4,182.98	34.14	33.38	124.22	-923.82	1,327.99	2,222.74	2,168.97	53.77	41.339		
5,200.00	4,866.33	4,595.62	4,261.74	34.92	34.16	124.20	-943.32	1,359.09	2,272.23	2,217.24	55.00	41.315		
5,210.44	4,875.95	4,604.69	4,269.96	35.00	34.24	124.20	-945.36	1,362.34	2,277.40	2,222.28	55.13	41.313		
5,300.00	4,958.99	4,682.88	4,340.82	35.60	34.94	124.97	-962.91	1,390.33	2,321.04	2,264.62	56.41	41.142		
5,400.00	5,052.90	4,770.99	4,420.68	36.14	35.73	125.71	-982.68	1,421.87	2,368.10	2,310.36	57.74	41.011		
5,500.00	5,147.95	4,859.84	4,501.21	36.64	36.53	126.34	-1,002.63	1,453.68	2,413.38	2,354.35	59.03	40.885		
5,600.00	5,244.02	4,949.33	4,582.32	37.10	37.33	126.85	-1,022.71	1,485.72	2,456.83	2,396.56	60.27	40.767		
5,700.00	5,341.01	5,039.36	4,663.91	37.50	38.14	127.26	-1,042.92	1,517.95	2,498.44	2,436.99	61.45	40.658		
5,800.00	5,438.79	5,129.80	4,745.89	37.86	38.95	127.57	-1,063.22	1,550.33	2,538.20	2,475.63	62.58	40.561		
5,900.00	5,537.23	5,220.56	4,828.14	38.17	39.76	127.79	-1,083.59	1,582.82	2,576.11	2,512.47	63.64	40.477		
6,000.00	5,636.23	5,311.51	4,910.58	38.43	40.58	127.93	-1,104.00	1,615.38	2,612.18	2,547.54	64.64	40.409		
6,100.00	5,735.66	5,402.55	4,993.10	38.64	41.40	127.98	-1,124.44	1,647.97	2,646.43	2,580.85	65.58	40.357		
6,200.00	5,835.40	5,493.57	5,075.59	38.80	42.22	127.96	-1,144.87	1,680.55	2,678.88	2,612.44	66.43	40.324		
6,300.00	5,935.33	5,584.46	5,157.97	38.92	43.03	127.86	-1,165.27	1,713.09	2,709.56	2,642.34	67.22	40.310		
6,354.67	5,990.00	5,634.06	5,202.92	38.96	43.48	171.77	-1,176.40	1,730.85	2,725.60	2,657.99	67.61	40.312		
6,400.00	6,035.33	5,675.14	5,240.15	38.99	43.84	171.48	-1,185.62	1,745.55	2,738.73	2,670.81	67.91	40.327		
6,500.00	6,135.33	5,772.03	5,327.98	39.06	44.70	170.81	-1,207.36	1,780.23	2,767.93	2,699.32	68.61	40.344		
6,600.00	6,235.33	6,060.42	5,595.39	39.14	46.52	169.11	-1,264.53	1,871.42	2,794.05	2,724.10	69.95	39.946		
6,700.00	6,335.33	6,370.25	5,893.17	39.21	47.94	167.82	-1,309.72	1,943.49	2,813.43	2,742.43	70.99	39.629		
6,800.00	6,435.33	6,696.09	6,214.28	39.28	48.89	167.03	-1,338.52	1,989.44	2,825.24	2,753.50	71.75	39.378		
6,900.00	6,535.33	7,017.78	6,535.33	39.36	49.29	166.78	-1,347.79	2,004.22	2,828.96	2,756.77	72.19	39.189		
7,000.00	6,635.33	7,117.78	6,635.33	39.44	49.35	166.78	-1,347.79	2,004.22	2,828.96	2,756.61	72.35	39.100		
7,100.00	6,735.33	7,217.78	6,735.33	39.52	49.40	166.78	-1,347.79	2,004.22	2,828.96	2,756.44	72.52	39.010		
7,200.00	6,835.33	7,317.78	6,835.33	39.59	49.46	166.78	-1,347.79	2,004.22	2,828.96	2,756.27	72.69	38.919		
7,300.00	6,935.33	7,417.78	6,935.33	39.67	49.53	166.78	-1,347.79	2,004.22	2,828.96	2,756.10	72.86	38.827		
7,400.00	7,035.33	7,517.78	7,035.33	39.76	49.59	166.78	-1,347.79	2,004.22	2,828.96	2,755.93	73.03	38.735		
7,500.00	7,135.33	7,617.78	7,135.33	39.84	49.65	166.78	-1,347.79	2,004.22	2,828.96	2,755.75	73.21	38.641		
7,600.00	7,235.33	7,717.78	7,235.33	39.92	49.72	166.78	-1,347.79	2,004.22	2,828.96	2,755.57	73.39	38.547		
7,700.00	7,335.33	7,817.78	7,335.33	40.01	49.78	166.78	-1,347.79	2,004.22	2,828.96	2,755.39	73.57	38.452		
7,800.00	7,435.33	7,917.78	7,435.33	40.09	49.85	166.78	-1,347.79	2,004.22	2,828.96	2,755.21	73.75	38.356		
7,900.00	7,535.33	8,017.78	7,535.33	40.18	49.91	166.78	-1,347.79	2,004.22	2,828.96	2,755.02	73.94	38.260		
8,000.00	7,635.33	8,117.78	7,635.33	40.27	49.98	166.78	-1,347.79	2,004.22	2,828.96	2,754.83	74.13	38.163		
8,100.00	7,735.33	8,217.78	7,735.33	40.36	50.05	166.78	-1,347.79	2,004.22	2,828.96	2,754.64	74.32	38.065		
8,200.00	7,835.33	8,317.78	7,835.33	40.45	50.12	166.78	-1,347.79	2,004.22	2,828.96	2,754.45	74.51	37.967		
8,239.11	7,874.43	8,356.88	7,874.43	40.48	50.15	166.78	-1,347.79	2,004.22	2,828.96	2,754.37	74.59	37.928		
8,277.67	7,913.00	8,369.92	7,887.47	40.52	50.16	166.78	-1,347.79	2,004.22	2,829.08	2,754.44	74.64	37.903 SF		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 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	-10.83	14.57	-2.79	14.84						
100.00	100.00	100.00	100.00	0.10	0.10	-10.83	14.57	-2.79	14.84	14.64	0.19	77.654			
200.00	200.00	200.00	200.00	0.32	0.32	-10.83	14.57	-2.79	14.84	14.20	0.64	23.160			
300.00	299.98	299.98	299.98	0.54	0.55	-60.72	14.57	-2.79	13.90	12.82	1.09	12.784			
400.00	399.84	399.84	399.84	0.77	0.77	-82.64	14.57	-2.79	12.23	10.69	1.54	7.932			
421.39	421.17	421.17	421.17	0.83	0.82	-90.01	14.57	-2.79	12.13	10.48	1.64	7.383 CC, ES			
500.00	499.45	499.45	499.45	1.02	0.99	-120.37	14.57	-2.79	14.07	12.07	2.00	7.028 SF			
600.00	598.70	598.70	598.70	1.31	1.22	-147.65	14.57	-2.79	22.82	20.37	2.45	9.328			
700.00	697.47	697.47	697.47	1.63	1.44	-160.61	14.57	-2.79	37.02	34.13	2.89	12.817			
800.00	795.62	795.62	795.62	2.01	1.66	-167.08	14.57	-2.79	55.40	52.06	3.33	16.619			
900.00	893.06	893.06	893.06	2.44	1.88	-170.73	14.57	-2.79	77.50	73.72	3.78	20.493			
1,000.00	989.64	989.92	989.92	2.93	2.10	-172.83	14.82	-2.92	103.09	98.86	4.23	24.349			
1,100.00	1,085.27	1,086.55	1,086.50	3.49	2.31	-173.04	17.44	-4.32	131.55	126.86	4.69	28.030			
1,200.00	1,179.82	1,182.48	1,182.23	4.10	2.53	-172.12	22.89	-7.22	162.70	157.54	5.17	31.485			
1,300.00	1,273.17	1,277.49	1,276.78	4.78	2.75	-170.64	31.07	-11.58	196.61	190.95	5.67	34.692			
1,344.23	1,314.05	1,319.16	1,318.14	5.10	2.86	-169.89	35.53	-13.96	212.51	206.61	5.90	36.023			
1,400.00	1,365.43	1,371.55	1,370.03	5.51	2.99	-168.95	41.89	-17.35	232.87	226.64	6.23	37.351			
1,500.00	1,457.56	1,465.38	1,462.61	6.26	3.26	-167.08	55.37	-24.54	269.22	262.35	6.88	39.151			
1,600.00	1,549.69	1,558.91	1,554.33	7.02	3.55	-165.04	71.46	-33.11	305.53	297.95	7.58	40.307			
1,700.00	1,641.82	1,651.92	1,644.92	7.78	3.89	-162.91	90.08	-43.03	341.97	333.61	8.35	40.935			
1,800.00	1,733.94	1,744.24	1,734.11	8.54	4.27	-160.72	111.11	-54.25	378.72	369.52	9.20	41.145			
1,900.00	1,826.07	1,835.69	1,821.64	9.31	4.69	-158.49	134.43	-66.68	415.97	405.84	10.13	41.054			
2,000.00	1,918.20	1,926.64	1,907.97	10.08	5.15	-156.31	159.70	-80.15	453.85	442.72	11.14	40.758			
2,100.00	2,010.33	2,017.80	1,994.40	10.85	5.65	-154.41	185.27	-93.78	492.26	480.09	12.17	40.436			
2,200.00	2,102.46	2,108.96	2,080.83	11.62	6.16	-152.78	210.85	-107.41	531.07	517.84	13.23	40.135			
2,300.00	2,194.59	2,200.12	2,167.27	12.39	6.68	-151.37	236.42	-121.04	570.21	555.90	14.30	39.861			
2,400.00	2,286.72	2,291.28	2,253.70	13.16	7.21	-150.14	261.99	-134.67	609.60	594.21	15.39	39.615			
2,500.00	2,378.85	2,382.44	2,340.13	13.94	7.76	-149.05	287.57	-148.30	649.21	632.73	16.48	39.397			
2,600.00	2,470.98	2,473.60	2,426.56	14.71	8.30	-148.09	313.14	-161.93	688.99	671.42	17.57	39.205			
2,700.00	2,563.11	2,564.76	2,512.99	15.49	8.86	-147.24	338.71	-175.57	728.92	710.24	18.67	39.034			
2,800.00	2,655.23	2,655.92	2,599.42	16.26	9.41	-146.47	364.29	-189.20	768.97	749.20	19.78	38.883			
2,900.00	2,747.36	2,747.08	2,685.86	17.04	9.98	-145.77	389.86	-202.83	809.13	788.25	20.88	38.749			
3,000.00	2,839.49	2,838.24	2,772.29	17.81	10.54	-145.15	415.43	-216.46	849.38	827.39	21.99	38.629			
3,100.00	2,931.62	2,929.40	2,858.72	18.59	11.11	-144.58	441.01	-230.09	889.71	866.61	23.10	38.522			
3,200.00	3,023.75	3,020.56	2,945.15	19.36	11.67	-144.05	466.58	-243.72	930.10	905.90	24.21	38.425			
3,300.00	3,115.88	3,111.73	3,031.58	20.14	12.24	-143.57	492.15	-257.35	970.56	945.25	25.32	38.338			
3,400.00	3,208.01	3,202.89	3,118.01	20.92	12.82	-143.13	517.73	-270.99	1,011.07	984.64	26.43	38.260			
3,500.00	3,300.14	3,294.05	3,204.45	21.69	13.39	-142.73	543.30	-284.62	1,051.62	1,024.09	27.54	38.188			
3,600.00	3,392.27	3,385.21	3,290.88	22.47	13.97	-142.35	568.87	-298.25	1,092.22	1,063.57	28.65	38.123			
3,700.00	3,484.39	3,476.37	3,377.31	23.25	14.54	-142.00	594.45	-311.88	1,132.85	1,103.09	29.76	38.064			
3,800.00	3,576.52	3,567.53	3,463.74	24.03	15.12	-141.67	620.02	-325.51	1,173.52	1,142.64	30.87	38.010			
3,900.00	3,668.65	3,658.69	3,550.17	24.80	15.70	-141.37	645.59	-339.14	1,214.21	1,182.23	31.99	37.960			
4,000.00	3,760.78	3,749.85	3,636.60	25.58	16.27	-141.08	671.16	-352.77	1,254.94	1,221.84	33.10	37.914			
4,100.00	3,852.91	3,841.01	3,723.03	26.36	16.85	-140.82	696.74	-366.41	1,295.68	1,261.47	34.21	37.871			
4,200.00	3,945.04	3,932.17	3,809.47	27.14	17.43	-140.57	722.31	-380.04	1,336.45	1,301.13	35.33	37.832			
4,300.00	4,037.17	4,023.33	3,895.90	27.91	18.01	-140.33	747.88	-393.67	1,377.24	1,340.80	36.44	37.796			
4,400.00	4,129.30	4,114.49	3,982.33	28.69	18.59	-140.11	773.46	-407.30	1,418.05	1,380.50	37.55	37.762			
4,500.00	4,221.43	4,205.65	4,068.76	29.47	19.17	-139.90	799.03	-420.93	1,458.87	1,420.21	38.67	37.731			
4,600.00	4,313.56	4,296.81	4,155.19	30.25	19.76	-139.70	824.60	-434.56	1,499.71	1,459.93	39.78	37.701			
4,700.00	4,405.68	4,387.97	4,241.62	31.03	20.34	-139.51	850.18	-448.20	1,540.57	1,499.67	40.89	37.674			
4,800.00	4,497.81	4,479.13	4,328.06	31.80	20.92	-139.34	875.75	-461.83	1,581.43	1,539.43	42.01	37.648			
4,900.00	4,589.94	4,570.29	4,414.49	32.58	21.50	-139.17	901.32	-475.46	1,622.31	1,579.19	43.12	37.624			

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_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 29-1 - P_BERNHARDT 29-1 - PLAN #1 11-04	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,000.00	4,682.07	4,661.45	4,500.92	33.36	22.09	-139.01	926.90	-489.09	1,663.20	1,618.97	44.23	37.602			
5,100.00	4,774.20	4,752.61	4,587.35	34.14	22.67	-138.85	952.47	-502.72	1,704.10	1,658.76	45.35	37.580			
5,200.00	4,866.33	4,843.77	4,673.78	34.92	23.25	-138.71	978.04	-516.35	1,745.01	1,698.55	46.46	37.560			
5,210.44	4,875.95	4,853.29	4,682.81	35.00	23.31	-138.69	980.71	-517.78	1,749.29	1,702.71	46.58	37.558			
5,300.00	4,958.99	4,935.31	4,760.57	35.60	23.84	-139.05	1,003.72	-530.04	1,784.97	1,737.35	47.62	37.487			
5,400.00	5,052.90	5,027.71	4,848.18	36.14	24.43	-139.34	1,029.65	-543.86	1,822.53	1,773.82	48.71	37.415			
5,500.00	5,147.95	5,120.88	4,936.51	36.64	25.03	-139.52	1,055.78	-557.79	1,857.66	1,807.87	49.79	37.313			
5,600.00	5,244.02	5,214.69	5,025.45	37.10	25.63	-139.60	1,082.10	-571.82	1,890.35	1,839.51	50.84	37.185			
5,700.00	5,341.01	5,323.16	5,128.48	37.50	26.26	-139.54	1,112.05	-587.78	1,920.44	1,868.55	51.89	37.008			
5,800.00	5,438.79	5,451.11	5,251.39	37.86	26.83	-139.40	1,143.39	-604.49	1,946.75	1,893.88	52.86	36.825			
5,900.00	5,537.23	5,581.92	5,378.56	38.17	27.35	-139.29	1,170.40	-618.88	1,968.91	1,915.18	53.72	36.649			
6,000.00	5,636.23	5,715.16	5,509.39	38.43	27.79	-139.20	1,192.61	-630.72	1,986.81	1,932.35	54.45	36.486			
6,100.00	5,735.66	5,850.37	5,643.20	38.64	28.16	-139.13	1,209.63	-639.80	2,000.35	1,945.31	55.05	36.340			
6,200.00	5,835.40	5,987.01	5,779.20	38.80	28.45	-139.09	1,221.16	-645.94	2,009.46	1,953.96	55.50	36.207			
6,300.00	5,935.33	6,124.53	5,916.55	38.92	28.65	-139.07	1,226.97	-649.09	2,014.09	1,958.29	55.80	36.093			
6,354.67	5,990.00	6,197.99	5,990.00	38.96	28.73	-95.08	1,227.69	-649.42	2,014.71	1,958.81	55.91	36.036			
6,400.00	6,035.33	6,243.31	6,035.33	38.99	28.78	-95.08	1,227.69	-649.42	2,014.71	1,958.72	55.99	35.981			
6,500.00	6,135.33	6,343.31	6,135.33	39.06	28.87	-95.08	1,227.69	-649.42	2,014.71	1,958.53	56.19	35.858			
6,600.00	6,235.33	6,443.31	6,235.33	39.14	28.97	-95.08	1,227.69	-649.42	2,014.71	1,958.33	56.38	35.734			
6,700.00	6,335.33	6,543.31	6,335.33	39.21	29.07	-95.08	1,227.69	-649.42	2,014.71	1,958.14	56.58	35.609			
6,800.00	6,435.33	6,643.31	6,435.33	39.28	29.18	-95.08	1,227.69	-649.42	2,014.71	1,957.94	56.78	35.483			
6,900.00	6,535.33	6,743.31	6,535.33	39.36	29.28	-95.08	1,227.69	-649.42	2,014.71	1,957.73	56.98	35.356			
7,000.00	6,635.33	6,843.31	6,635.33	39.44	29.38	-95.08	1,227.69	-649.42	2,014.71	1,957.53	57.19	35.229			
7,100.00	6,735.33	6,943.31	6,735.33	39.52	29.49	-95.08	1,227.69	-649.42	2,014.71	1,957.32	57.40	35.100			
7,200.00	6,835.33	7,043.31	6,835.33	39.59	29.60	-95.08	1,227.69	-649.42	2,014.71	1,957.10	57.61	34.971			
7,300.00	6,935.33	7,143.31	6,935.33	39.67	29.71	-95.08	1,227.69	-649.42	2,014.71	1,956.89	57.83	34.841			
7,400.00	7,035.33	7,243.31	7,035.33	39.76	29.82	-95.08	1,227.69	-649.42	2,014.71	1,956.67	58.04	34.711			
7,500.00	7,135.33	7,343.31	7,135.33	39.84	29.93	-95.08	1,227.69	-649.42	2,014.71	1,956.45	58.26	34.580			
7,600.00	7,235.33	7,443.31	7,235.33	39.92	30.04	-95.08	1,227.69	-649.42	2,014.71	1,956.23	58.49	34.448			
7,700.00	7,335.33	7,543.31	7,335.33	40.01	30.16	-95.08	1,227.69	-649.42	2,014.71	1,956.00	58.71	34.316			
7,800.00	7,435.33	7,643.31	7,435.33	40.09	30.27	-95.08	1,227.69	-649.42	2,014.71	1,955.78	58.94	34.183			
7,900.00	7,535.33	7,743.31	7,535.33	40.18	30.39	-95.08	1,227.69	-649.42	2,014.71	1,955.55	59.17	34.050			
8,000.00	7,635.33	7,843.31	7,635.33	40.27	30.51	-95.08	1,227.69	-649.42	2,014.71	1,955.31	59.40	33.916			
8,100.00	7,735.33	7,943.31	7,735.33	40.36	30.63	-95.08	1,227.69	-649.42	2,014.71	1,955.08	59.64	33.783			
8,200.00	7,835.33	8,043.31	7,835.33	40.45	30.75	-95.08	1,227.69	-649.42	2,014.71	1,954.84	59.88	33.648			
8,250.00	7,885.33	8,093.31	7,885.33	40.49	30.81	-95.08	1,227.69	-649.42	2,014.71	1,954.72	60.00	33.581			
8,277.67	7,913.00	8,115.99	7,908.00	40.52	30.83	-95.08	1,227.69	-649.42	2,014.72	1,954.67	60.06	33.548			

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 31-1 - P_BERNHARDT 31-1 - PLAN #1 11-04	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	180.00	-32.79	0.00	32.79						
100.00	100.00	100.00	100.00	0.10	0.10	180.00	-32.79	0.00	32.79	32.60	0.19	171.610			
200.00	200.00	200.00	200.00	0.32	0.32	180.00	-32.79	0.00	32.79	32.15	0.64	51.182 CC, ES			
300.00	299.98	299.89	299.87	0.54	0.53	140.95	-32.80	-1.74	34.18	33.11	1.08	31.738			
400.00	399.84	399.16	399.00	0.77	0.76	153.18	-32.84	-6.92	39.65	38.13	1.52	26.090			
500.00	499.45	497.21	496.68	1.02	1.00	166.63	-32.90	-15.40	51.50	49.53	1.98	26.062 SF			
600.00	598.70	593.48	592.24	1.31	1.28	177.09	-32.99	-26.98	70.74	68.30	2.44	29.039			
700.00	697.47	687.43	685.08	1.63	1.60	-175.81	-33.10	-41.37	97.10	94.20	2.90	33.479			
800.00	795.62	778.60	774.68	2.01	1.94	-171.07	-33.23	-58.23	130.04	126.66	3.37	38.548			
900.00	893.06	866.59	860.59	2.44	2.33	-167.83	-33.37	-77.20	169.06	165.20	3.86	43.828			
1,000.00	989.64	951.04	942.47	2.93	2.74	-165.49	-33.53	-97.88	213.75	209.40	4.35	49.109			
1,100.00	1,085.27	1,031.69	1,020.06	3.49	3.17	-163.74	-33.69	-119.88	263.75	258.89	4.86	54.287			
1,200.00	1,179.82	1,108.34	1,093.19	4.10	3.62	-162.34	-33.87	-142.80	318.71	313.34	5.37	59.308			
1,300.00	1,273.17	1,180.83	1,161.78	4.78	4.08	-161.17	-34.05	-166.27	378.31	372.41	5.90	64.102			
1,344.23	1,314.05	1,211.55	1,190.66	5.10	4.29	-160.70	-34.13	-176.73	406.07	399.94	6.14	66.164			
1,400.00	1,365.43	1,249.37	1,226.06	5.51	4.56	-160.43	-34.23	-190.05	441.85	435.37	6.48	68.208			
1,500.00	1,457.56	1,315.32	1,287.36	6.26	5.04	-159.96	-34.41	-214.37	507.23	500.14	7.09	71.530			
1,600.00	1,549.69	1,388.95	1,355.42	7.02	5.61	-159.48	-34.62	-242.48	573.56	565.81	7.75	74.036			
1,700.00	1,641.82	1,463.71	1,424.50	7.78	6.19	-159.10	-34.84	-271.03	639.91	631.49	8.41	76.045			
1,800.00	1,733.94	1,538.46	1,493.59	8.54	6.77	-158.78	-35.06	-299.57	706.27	697.19	9.09	77.709			
1,900.00	1,826.07	1,613.21	1,562.68	9.31	7.36	-158.52	-35.27	-328.12	772.65	762.88	9.77	79.105			
2,000.00	1,918.20	1,687.97	1,631.77	10.08	7.95	-158.30	-35.49	-356.66	839.03	828.58	10.45	80.287			
2,100.00	2,010.33	1,762.72	1,700.86	10.85	8.55	-158.12	-35.70	-385.21	905.42	894.29	11.14	81.300			
2,200.00	2,102.46	1,837.47	1,769.94	11.62	9.14	-157.96	-35.92	-413.75	971.82	959.99	11.83	82.178			
2,300.00	2,194.59	1,912.23	1,839.03	12.39	9.74	-157.82	-36.14	-442.30	1,038.21	1,025.70	12.52	83.945			
2,400.00	2,286.72	1,986.98	1,908.12	13.16	10.34	-157.69	-36.35	-470.85	1,104.61	1,091.40	13.21	85.619			
2,500.00	2,378.85	2,061.73	1,977.21	13.94	10.93	-157.58	-36.57	-499.39	1,171.02	1,157.11	13.90	84.216			
2,600.00	2,470.98	2,136.49	2,046.30	14.71	11.53	-157.48	-36.79	-527.94	1,237.42	1,222.82	14.60	84.748			
2,700.00	2,563.11	2,211.24	2,115.38	15.49	12.13	-157.40	-37.00	-556.48	1,303.83	1,288.53	15.30	85.226			
2,800.00	2,655.23	2,285.99	2,184.47	16.26	12.73	-157.32	-37.22	-585.03	1,370.24	1,354.24	16.00	85.656			
2,900.00	2,747.36	2,360.74	2,253.56	17.04	13.33	-157.24	-37.43	-613.57	1,436.65	1,419.95	16.70	86.045			
3,000.00	2,839.49	2,435.50	2,322.65	17.81	13.93	-157.18	-37.65	-642.12	1,503.06	1,485.66	17.40	86.399			
3,100.00	2,931.62	2,510.25	2,391.73	18.59	14.54	-157.12	-37.87	-670.66	1,569.47	1,551.37	18.10	86.722			
3,200.00	3,023.75	2,585.00	2,460.82	19.36	15.14	-157.06	-38.08	-699.21	1,635.88	1,617.08	18.80	87.019			
3,300.00	3,115.88	2,659.76	2,529.91	20.14	15.74	-157.01	-38.30	-727.75	1,702.29	1,682.79	19.50	87.291			
3,400.00	3,208.01	2,734.51	2,599.00	20.92	16.34	-156.97	-38.52	-756.30	1,768.71	1,748.50	20.20	87.542			
3,500.00	3,300.14	2,809.26	2,668.09	21.69	16.94	-156.92	-38.73	-784.84	1,835.12	1,814.22	20.91	87.775			
3,600.00	3,392.27	2,884.02	2,737.17	22.47	17.55	-156.88	-38.95	-813.39	1,901.54	1,879.93	21.61	87.991			
3,700.00	3,484.39	2,958.77	2,806.26	23.25	18.15	-156.84	-39.16	-841.93	1,967.95	1,945.64	22.31	88.191			
3,800.00	3,576.52	3,033.52	2,875.35	24.03	18.75	-156.81	-39.38	-870.48	2,034.37	2,011.35	23.02	88.378			
3,900.00	3,668.65	3,108.27	2,944.44	24.80	19.36	-156.77	-39.60	-899.02	2,100.79	2,077.06	23.72	88.553			
4,000.00	3,760.78	3,183.03	3,013.53	25.58	19.96	-156.74	-39.81	-927.57	2,167.20	2,142.78	24.43	88.717			
4,100.00	3,852.91	3,257.78	3,082.61	26.36	20.56	-156.71	-40.03	-956.11	2,233.62	2,208.49	25.13	88.870			
4,200.00	3,945.04	3,332.53	3,151.70	27.14	21.17	-156.69	-40.25	-984.66	2,300.04	2,274.20	25.84	89.015			
4,300.00	4,037.17	3,407.29	3,220.79	27.91	21.77	-156.66	-40.46	-1,013.20	2,366.46	2,339.91	26.54	89.151			
4,400.00	4,129.30	3,482.04	3,289.88	28.69	22.37	-156.64	-40.68	-1,041.75	2,432.88	2,405.63	27.25	89.279			
4,500.00	4,221.43	3,556.79	3,358.97	29.47	22.98	-156.61	-40.89	-1,070.29	2,499.29	2,471.34	27.96	89.400			
4,600.00	4,313.56	3,631.55	3,428.05	30.25	23.58	-156.59	-41.11	-1,098.84	2,565.71	2,537.05	28.66	89.515			
4,700.00	4,405.68	3,706.30	3,497.14	31.03	24.19	-156.57	-41.33	-1,127.38	2,632.13	2,602.76	29.37	89.624			
4,800.00	4,497.81	3,781.05	3,566.23	31.80	24.79	-156.55	-41.54	-1,155.93	2,698.55	2,668.48	30.08	89.727			
4,900.00	4,589.94	3,855.81	3,635.32	32.58	25.40	-156.53	-41.76	-1,184.47	2,764.97	2,734.19	30.78	89.825			
5,000.00	4,682.07	3,930.56	3,704.41	33.36	26.00	-156.51	-41.98	-1,213.02	2,831.39	2,799.90	31.49	89.918			

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_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 31-1 - P_BERNHARDT 31-1 - PLAN #1 11-04	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,100.00	4,774.20	4,005.31	3,773.49	34.14	26.60	-156.49	-42.19	-1,241.56	2,897.81	2,865.61	32.20	90.007			
5,200.00	4,866.33	4,080.06	3,842.58	34.92	27.21	-156.48	-42.41	-1,270.11	2,964.23	2,931.33	32.90	90.092			
5,210.44	4,875.95	4,087.87	3,849.80	35.00	27.27	-156.48	-42.43	-1,273.09	2,971.16	2,938.19	32.98	90.100			
5,300.00	4,958.99	4,155.65	3,912.44	35.60	27.82	-157.06	-42.63	-1,298.97	3,029.68	2,995.84	33.84	89.526			
5,400.00	5,052.90	4,233.26	3,984.17	36.14	28.45	-157.62	-42.85	-1,328.61	3,092.68	3,057.92	34.76	88.978			
5,500.00	5,147.95	4,312.81	4,057.69	36.64	29.09	-158.10	-43.08	-1,358.99	3,153.15	3,117.50	35.65	88.452			
5,600.00	5,244.02	4,394.20	4,132.91	37.10	29.75	-158.51	-43.32	-1,390.06	3,211.01	3,174.50	36.51	87.956			
5,700.00	5,341.01	4,477.32	4,209.73	37.50	30.42	-158.86	-43.56	-1,421.81	3,266.21	3,228.88	37.33	87.496			
5,800.00	5,438.79	4,562.09	4,288.08	37.86	31.11	-159.14	-43.80	-1,454.18	3,318.67	3,280.56	38.11	87.076			
5,900.00	5,537.23	4,648.39	4,367.84	38.17	31.80	-159.37	-44.05	-1,487.13	3,368.36	3,329.51	38.85	86.699			
6,000.00	5,636.23	4,736.13	4,448.92	38.43	32.51	-159.54	-44.31	-1,520.63	3,415.21	3,375.67	39.54	86.367			
6,100.00	5,735.66	4,825.18	4,531.23	38.64	33.23	-159.67	-44.56	-1,554.64	3,459.19	3,419.00	40.18	86.082			
6,200.00	5,835.40	4,915.46	4,614.66	38.80	33.97	-159.76	-44.82	-1,589.11	3,500.24	3,459.47	40.77	85.844			
6,300.00	5,935.33	5,006.84	4,699.12	38.92	34.70	-159.80	-45.09	-1,624.01	3,538.34	3,497.03	41.31	85.655			
6,354.67	5,990.00	5,057.22	4,745.69	38.96	35.11	-115.81	-45.23	-1,643.25	3,557.91	3,516.33	41.58	85.571			
6,400.00	6,035.33	5,099.12	4,784.40	38.99	35.45	-115.70	-45.36	-1,659.24	3,573.77	3,531.95	41.81	85.467			
6,500.00	6,135.33	6,485.64	6,135.33	39.06	40.14	-113.97	-47.27	-1,912.13	3,578.03	3,532.81	45.22	79.124			
6,600.00	6,235.33	6,585.64	6,235.33	39.14	40.21	-113.97	-47.27	-1,912.13	3,578.03	3,532.57	45.45	78.717			
6,700.00	6,335.33	6,685.64	6,335.33	39.21	40.28	-113.97	-47.27	-1,912.13	3,578.03	3,532.33	45.69	78.308			
6,800.00	6,435.33	6,785.64	6,435.33	39.28	40.36	-113.97	-47.27	-1,912.13	3,578.03	3,532.09	45.93	77.899			
6,900.00	6,535.33	6,885.64	6,535.33	39.36	40.44	-113.97	-47.27	-1,912.13	3,578.03	3,531.85	46.18	77.488			
7,000.00	6,635.33	6,985.64	6,635.33	39.44	40.51	-113.97	-47.27	-1,912.13	3,578.03	3,531.60	46.42	77.076			
7,100.00	6,735.33	7,085.64	6,735.33	39.52	40.59	-113.97	-47.27	-1,912.13	3,578.03	3,531.35	46.67	76.664			
7,200.00	6,835.33	7,185.64	6,835.33	39.59	40.67	-113.97	-47.27	-1,912.13	3,578.03	3,531.10	46.92	76.251			
7,300.00	6,935.33	7,285.64	6,935.33	39.67	40.75	-113.97	-47.27	-1,912.13	3,578.03	3,530.85	47.18	75.839			
7,400.00	7,035.33	7,385.64	7,035.33	39.76	40.83	-113.97	-47.27	-1,912.13	3,578.03	3,530.59	47.44	75.425			
7,500.00	7,135.33	7,485.64	7,135.33	39.84	40.91	-113.97	-47.27	-1,912.13	3,578.03	3,530.33	47.70	75.012			
7,600.00	7,235.33	7,585.64	7,235.33	39.92	41.00	-113.97	-47.27	-1,912.13	3,578.03	3,530.06	47.96	74.599			
7,700.00	7,335.33	7,685.64	7,335.33	40.01	41.08	-113.97	-47.27	-1,912.13	3,578.03	3,529.80	48.23	74.187			
7,800.00	7,435.33	7,785.64	7,435.33	40.09	41.17	-113.97	-47.27	-1,912.13	3,578.03	3,529.53	48.50	73.775			
7,900.00	7,535.33	7,885.64	7,535.33	40.18	41.26	-113.97	-47.27	-1,912.13	3,578.03	3,529.25	48.77	73.363			
8,000.00	7,635.33	7,985.64	7,635.33	40.27	41.34	-113.97	-47.27	-1,912.13	3,578.03	3,528.98	49.05	72.952			
8,100.00	7,735.33	8,085.64	7,735.33	40.36	41.43	-113.97	-47.27	-1,912.13	3,578.03	3,528.70	49.32	72.542			
8,200.00	7,835.33	8,185.64	7,835.33	40.45	41.52	-113.97	-47.27	-1,912.13	3,578.03	3,528.42	49.60	72.133			
8,239.49	7,874.82	8,225.13	7,874.82	40.48	41.56	-113.97	-47.27	-1,912.13	3,578.03	3,528.31	49.71	71.971			
8,277.67	7,913.00	8,238.31	7,888.00	40.52	41.57	-113.97	-47.27	-1,912.13	3,578.11	3,528.33	49.79	71.868			

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 4-1 - P_BERNHARDT 4-1 - PLAN #1 11-04-09	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference				Offset			Semi Major Axis			Distance					Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.00	0.00	0.00	0.00	0.00	0.00	180.00	-18.21	0.00	18.21						
100.00	100.00	100.00	100.00	0.10	0.10	180.00	-18.21	0.00	18.21	18.02	0.19	95.339			
200.00	200.00	200.00	200.00	0.32	0.32	180.00	-18.21	0.00	18.21	17.57	0.64	28.435	CC, ES		
300.00	299.98	299.98	299.98	0.54	0.55	139.56	-18.21	0.00	19.51	18.42	1.09	17.941			
400.00	399.84	399.84	399.84	0.77	0.77	147.73	-18.21	0.00	23.74	22.20	1.54	15.457	SF		
500.00	499.45	499.45	499.45	1.02	0.99	156.17	-18.21	0.00	31.45	29.47	1.99	15.837			
600.00	598.70	598.70	598.70	1.31	1.22	162.69	-18.21	0.00	42.89	40.46	2.44	17.604			
700.00	697.47	697.47	697.47	1.63	1.44	167.22	-18.21	0.00	58.02	55.14	2.89	20.103			
800.00	795.62	795.62	795.62	2.01	1.66	170.31	-18.21	0.00	76.76	73.42	3.34	23.004			
900.00	893.06	893.06	893.06	2.44	1.88	172.44	-18.21	0.00	99.01	95.23	3.79	26.138			
1,000.00	989.64	989.30	989.30	2.93	2.09	174.07	-18.09	-0.24	124.78	120.54	4.24	29.449			
1,100.00	1,085.27	1,083.60	1,083.55	3.49	2.29	176.21	-16.82	-2.78	154.56	149.89	4.67	33.068			
1,200.00	1,179.82	1,175.91	1,175.68	4.10	2.50	178.65	-14.23	-7.96	188.62	183.51	5.11	36.884			
1,300.00	1,273.17	1,265.88	1,265.25	4.78	2.71	-178.91	-10.42	-15.56	227.08	221.51	5.57	40.804			
1,344.23	1,314.05	1,304.85	1,303.95	5.10	2.80	-177.86	-8.39	-19.63	245.50	239.73	5.77	42.557			
1,400.00	1,365.43	1,353.43	1,352.10	5.51	2.93	-176.60	-5.52	-25.36	269.47	263.40	6.07	44.412			
1,500.00	1,457.56	1,439.40	1,437.03	6.26	3.17	-174.44	0.46	-37.29	313.48	306.86	6.62	47.326			
1,600.00	1,549.69	1,523.83	1,520.00	7.02	3.43	-172.42	7.43	-51.21	358.88	351.66	7.21	49.757			
1,700.00	1,641.82	1,606.61	1,600.88	7.78	3.71	-170.51	15.33	-66.99	405.71	397.88	7.84	51.780			
1,800.00	1,733.94	1,687.66	1,679.53	8.54	4.03	-168.71	24.08	-84.45	454.03	445.54	8.50	53.437			
1,900.00	1,826.07	1,766.90	1,755.87	9.31	4.39	-167.00	33.59	-103.44	503.87	494.67	9.20	54.797			
2,000.00	1,918.20	1,844.28	1,829.82	10.08	4.77	-165.39	43.78	-123.79	555.23	545.31	9.93	55.937			
2,100.00	2,010.33	1,919.75	1,901.33	10.85	5.17	-163.88	54.58	-145.36	608.13	597.45	10.68	56.918			
2,200.00	2,102.46	1,997.39	1,974.29	11.62	5.63	-162.38	66.48	-169.11	662.46	650.96	11.49	57.643			
2,300.00	2,194.59	2,079.82	2,051.63	12.39	6.14	-161.00	79.24	-194.60	717.29	704.94	12.35	58.098			
2,400.00	2,286.72	2,162.24	2,128.97	13.16	6.66	-159.81	92.01	-220.08	772.38	759.17	13.21	58.474			
2,500.00	2,378.85	2,244.67	2,206.32	13.94	7.20	-158.78	104.77	-245.57	827.68	813.60	14.08	58.790			
2,600.00	2,470.98	2,327.10	2,283.66	14.71	7.74	-157.87	117.53	-271.05	883.15	868.19	14.95	59.061			
2,700.00	2,563.11	2,409.53	2,361.00	15.49	8.29	-157.07	130.30	-296.54	938.75	922.92	15.83	59.295			
2,800.00	2,655.23	2,491.95	2,438.34	16.26	8.85	-156.36	143.06	-322.03	994.47	977.75	16.71	59.500			
2,900.00	2,747.36	2,574.38	2,515.69	17.04	9.41	-155.72	155.83	-347.51	1,050.28	1,032.68	17.60	59.681			
3,000.00	2,839.49	2,656.81	2,593.03	17.81	9.97	-155.14	168.59	-373.00	1,106.18	1,087.69	18.48	59.844			
3,100.00	2,931.62	2,739.24	2,670.37	18.59	10.54	-154.62	181.35	-398.48	1,162.14	1,142.77	19.37	59.992			
3,200.00	3,023.75	2,821.66	2,747.71	19.36	11.11	-154.15	194.12	-423.97	1,218.17	1,197.91	20.26	60.126			
3,300.00	3,115.88	2,904.09	2,825.05	20.14	11.69	-153.72	206.88	-449.46	1,274.25	1,253.10	21.15	60.249			
3,400.00	3,208.01	2,986.52	2,902.40	20.92	12.26	-153.32	219.64	-474.94	1,330.37	1,308.33	22.04	60.362			
3,500.00	3,300.14	3,068.95	2,979.74	21.69	12.84	-152.96	232.41	-500.43	1,386.54	1,363.60	22.93	60.466			
3,600.00	3,392.27	3,151.37	3,057.08	22.47	13.42	-152.62	245.17	-525.91	1,442.74	1,418.91	23.82	60.562			
3,700.00	3,484.39	3,233.80	3,134.42	23.25	14.00	-152.31	257.94	-551.40	1,498.97	1,474.25	24.71	60.652			
3,800.00	3,576.52	3,316.23	3,211.77	24.03	14.58	-152.02	270.70	-576.89	1,555.23	1,529.62	25.61	60.736			
3,900.00	3,668.65	3,398.66	3,289.11	24.80	15.17	-151.76	283.46	-602.37	1,611.51	1,585.01	26.50	60.814			
4,000.00	3,760.78	3,481.08	3,366.45	25.58	15.75	-151.51	296.23	-627.86	1,667.82	1,640.43	27.39	60.887			
4,100.00	3,852.91	3,563.51	3,443.79	26.36	16.34	-151.27	308.99	-653.34	1,724.15	1,695.86	28.28	60.956			
4,200.00	3,945.04	3,645.94	3,521.14	27.14	16.92	-151.05	321.76	-678.83	1,780.49	1,751.32	29.18	61.021			
4,300.00	4,037.17	3,728.37	3,598.48	27.91	17.51	-150.85	334.52	-704.32	1,836.86	1,806.79	30.07	61.083			
4,400.00	4,129.30	3,810.79	3,675.82	28.69	18.09	-150.65	347.28	-729.80	1,893.24	1,862.27	30.97	61.141			
4,500.00	4,221.43	3,893.22	3,753.16	29.47	18.68	-150.47	360.05	-755.29	1,949.63	1,917.77	31.86	61.196			
4,600.00	4,313.56	3,975.65	3,830.50	30.25	19.27	-150.30	372.81	-780.77	2,006.03	1,973.28	32.75	61.248			
4,700.00	4,405.68	4,058.07	3,907.85	31.03	19.86	-150.14	385.57	-806.26	2,062.45	2,028.80	33.65	61.298			
4,800.00	4,497.81	4,140.50	3,985.19	31.80	20.44	-149.98	398.34	-831.75	2,118.88	2,084.34	34.54	61.345			
4,900.00	4,589.94	4,222.93	4,062.53	32.58	21.03	-149.84	411.10	-857.23	2,175.32	2,139.88	35.43	61.390			
5,000.00	4,682.07	4,305.36	4,139.87	33.36	21.62	-149.70	423.87	-882.72	2,231.76	2,195.43	36.33	61.433			

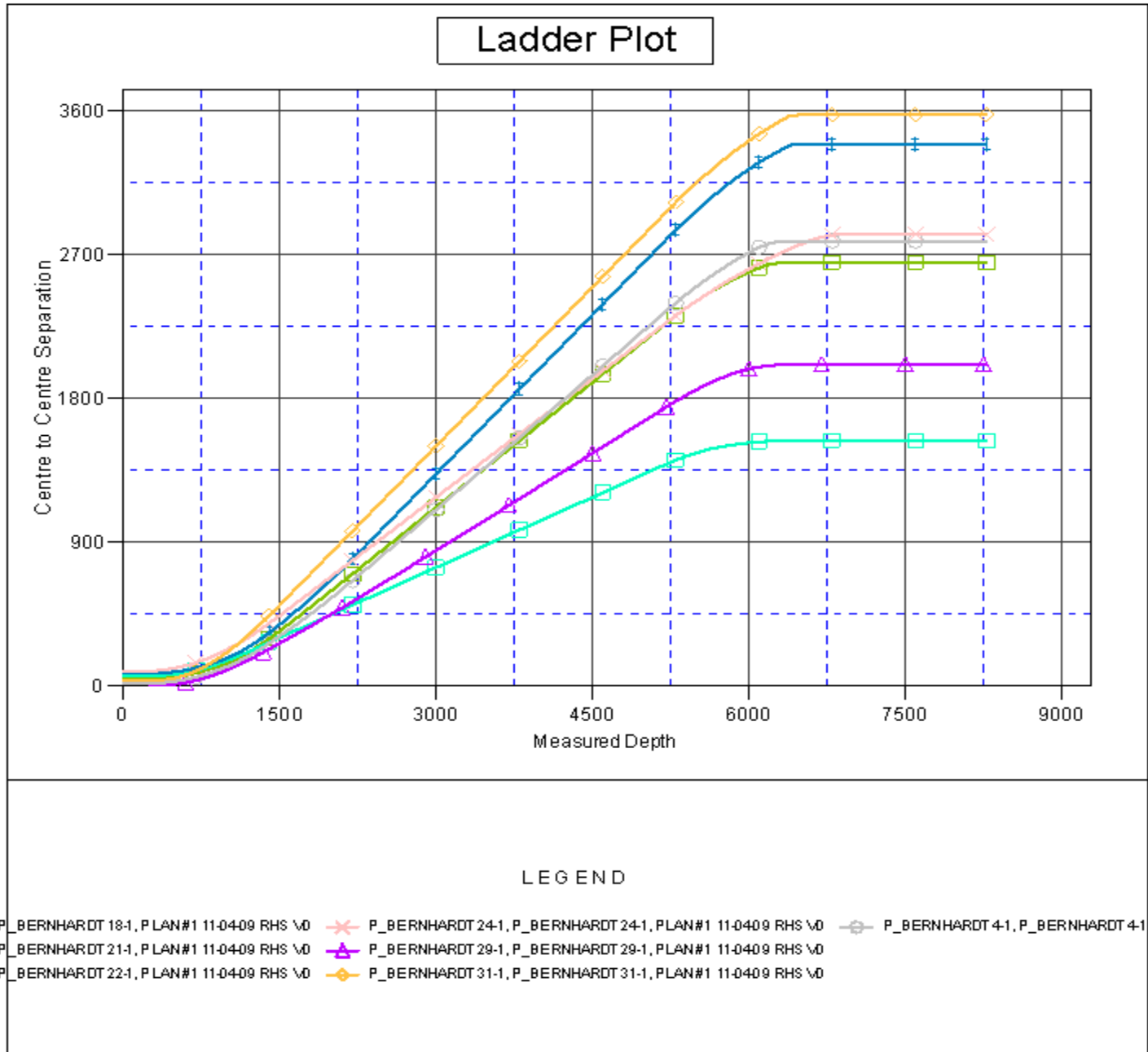
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design													WELD_BERNHARDT 8 PAD 4N67W1 - P_BERNHARDT 4-1 - P_BERNHARDT 4-1 - PLAN #1 11-04-09	Offset Site Error:	0.00 ft
Survey Program: 0-MWD														Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,100.00	4,774.20	4,387.78	4,217.22	34.14	22.21	-149.57	436.63	-908.20	2,288.22	2,251.00	37.22	61.474			
5,200.00	4,866.33	4,470.21	4,294.56	34.92	22.80	-149.44	449.39	-933.69	2,344.68	2,306.57	38.12	61.513			
5,210.44	4,875.95	4,478.82	4,302.63	35.00	22.86	-149.43	450.73	-936.35	2,350.58	2,312.37	38.21	61.517			
5,300.00	4,958.99	4,553.27	4,372.49	35.60	23.40	-149.90	462.25	-959.37	2,400.15	2,361.01	39.14	61.315			
5,400.00	5,052.90	4,637.84	4,451.84	36.14	24.00	-150.34	475.35	-985.52	2,453.11	2,412.98	40.13	61.126			
5,500.00	5,147.95	4,723.81	4,532.52	36.64	24.62	-150.70	488.66	-1,012.10	2,503.50	2,462.40	41.09	60.921			
5,600.00	5,244.02	4,811.10	4,614.42	37.10	25.25	-150.97	502.18	-1,039.09	2,551.26	2,509.24	42.03	60.706			
5,700.00	5,341.01	4,899.59	4,697.44	37.50	25.88	-151.17	515.88	-1,066.45	2,596.37	2,553.45	42.92	60.487			
5,800.00	5,438.79	4,989.17	4,781.50	37.86	26.52	-151.31	529.75	-1,094.15	2,638.79	2,595.01	43.78	60.268			
5,900.00	5,537.23	5,079.73	4,866.47	38.17	27.17	-151.38	543.78	-1,122.15	2,678.50	2,633.89	44.60	60.054			
6,000.00	5,636.23	5,171.17	4,952.27	38.43	27.83	-151.39	557.94	-1,150.42	2,715.46	2,670.09	45.37	59.849			
6,100.00	5,735.66	5,262.93	5,039.36	38.64	28.49	-151.36	572.25	-1,178.76	2,752.33	2,702.38	46.13	59.646			
6,200.00	5,835.40	5,352.28	5,126.60	38.80	29.15	-151.26	586.69	-1,207.69	2,789.20	2,725.06	46.88	59.454			
6,300.00	5,935.33	5,439.44	5,213.71	38.92	29.81	-149.89	601.25	-1,237.12	2,826.07	2,736.73	47.63	59.271			
6,354.67	5,990.00	5,492.88	5,270.00	38.96	30.47	-105.85	615.85	-1,266.05	2,862.94	2,738.25	48.38	59.098			
6,400.00	6,035.33	5,538.21	5,316.33	38.99	31.13	-105.85	630.45	-1,295.00	2,899.81	2,738.16	49.13	58.935			
6,500.00	6,135.33	5,625.21	5,403.33	39.06	31.79	-105.85	645.05	-1,323.95	2,936.68	2,737.94	49.88	58.782			
6,600.00	6,235.33	5,712.21	5,490.33	39.14	32.45	-105.85	659.65	-1,352.90	2,973.55	2,737.72	50.63	58.639			
6,700.00	6,335.33	5,800.21	5,577.33	39.21	33.11	-105.85	674.25	-1,381.85	2,978.33	2,737.50	49.83	55.936			
6,800.00	6,435.33	5,888.21	5,664.33	39.28	33.77	-105.85	688.85	-1,410.80	2,973.11	2,737.27	50.06	55.684			
6,900.00	6,535.33	5,976.21	5,751.33	39.36	34.43	-105.85	703.45	-1,439.75	2,967.89	2,737.04	50.29	55.430			
7,000.00	6,635.33	6,064.21	5,838.33	39.44	35.09	-105.85	718.05	-1,468.70	2,962.67	2,736.81	50.52	55.175			
7,100.00	6,735.33	6,152.21	5,925.33	39.52	35.75	-105.85	732.65	-1,497.65	2,957.45	2,736.58	50.75	54.919			
7,200.00	6,835.33	6,240.21	6,012.33	39.59	36.41	-105.85	747.25	-1,526.60	2,952.23	2,736.34	50.99	54.663			
7,300.00	6,935.33	6,328.21	6,100.33	39.67	37.07	-105.85	761.85	-1,555.55	2,947.01	2,736.10	51.23	54.406			
7,400.00	7,035.33	6,416.21	6,188.33	39.76	37.73	-105.85	776.45	-1,584.50	2,941.79	2,735.85	51.48	54.148			
7,500.00	7,135.33	6,504.21	6,276.33	39.84	38.39	-105.85	791.05	-1,613.45	2,936.57	2,735.61	51.72	53.890			
7,600.00	7,235.33	6,592.21	6,364.33	39.92	39.05	-105.85	805.65	-1,642.40	2,931.35	2,735.36	51.97	53.632			
7,700.00	7,335.33	6,680.21	6,452.33	40.01	39.71	-105.85	820.25	-1,671.35	2,926.13	2,735.11	52.22	53.373			
7,800.00	7,435.33	6,768.21	6,540.33	40.09	40.37	-105.85	834.85	-1,700.30	2,920.91	2,734.85	52.48	53.115			
7,900.00	7,535.33	6,856.21	6,628.33	40.18	41.03	-105.85	849.45	-1,729.25	2,915.69	2,734.60	52.73	52.856			
8,000.00	7,635.33	6,944.21	6,716.33	40.27	41.69	-105.85	864.05	-1,758.20	2,910.47	2,734.34	52.99	52.597			
8,100.00	7,735.33	7,032.21	6,804.33	40.36	42.35	-105.85	878.65	-1,787.15	2,905.25	2,734.07	53.26	52.338			
8,200.00	7,835.33	7,120.21	6,892.33	40.45	43.01	-105.85	893.25	-1,816.10	2,900.03	2,733.81	53.52	52.079			
8,277.67	7,913.00	7,199.88	6,970.00	40.52	43.67	-105.85	907.85	-1,845.05	2,894.81	2,733.60	53.73	51.878			

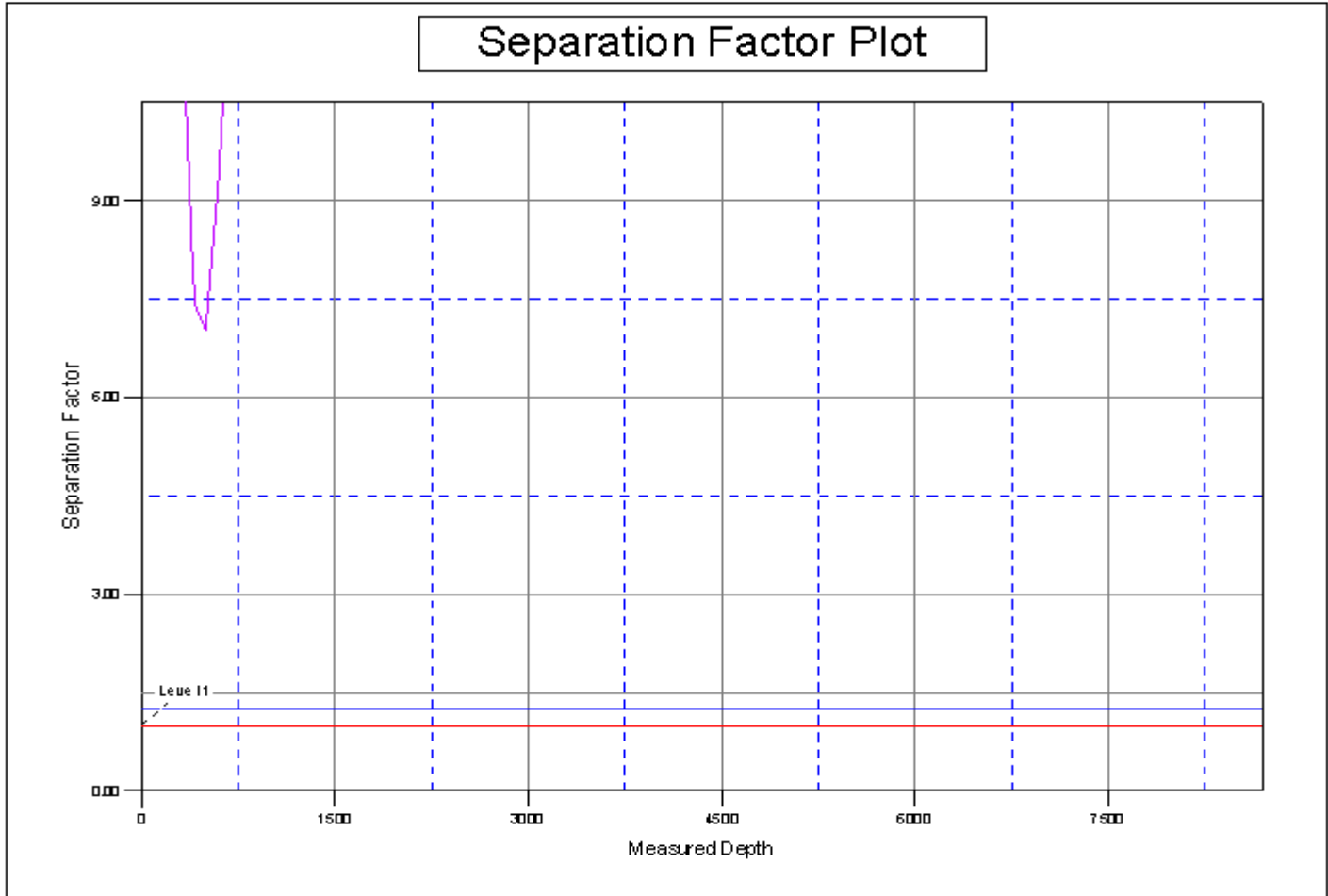
Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4840.00ft (Original Well Elev) Coordinates are relative to: P_BERNHARDT STATE 37-36
 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: 0.43°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_BERNHARDT STATE 37-36
Project:	COLORADO NOTHERN ZONE - 83	TVD Reference:	WELL @ 4840.00ft (Original Well Elev)
Reference Site:	WELD_BERNHARDT 8 PAD 4N67W1	MD Reference:	WELL @ 4840.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_BERNHARDT STATE 37-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_BERNHARDT STATE 37-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 11-04-09 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4840.00ft (Original Well Elev) Coordinates are relative to: P_BERNHARDT STATE 37-36
 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: 0.43°



LEGEND

- .P_BERNHARDT 18-1, P.LAN#1 11-04-09 RHS \0 ✖ P_BERNHARDT 24-1, P_BERNHARDT 24-1, PLAN#1 11-04-09 RHS \0 ⊕ P_BERNHARDT 4-1, P_BERNHARDT 4-1, P
- .P_BERNHARDT 21-1, P.LAN#1 11-04-09 RHS \0 ▲ P_BERNHARDT 29-1, P_BERNHARDT 29-1, PLAN#1 11-04-09 RHS \0
- .P_BERNHARDT 22-1, P.LAN#1 11-04-09 RHS \0 ◆ P_BERNHARDT 31-1, P_BERNHARDT 31-1, PLAN#1 11-04-09 RHS \0