



US ROCKIES REGION PLANNING

KERR MCGEE OIL & GAS ONSHORE LP

WELD_VOGL 4 PAD

P_VOGL 14-36

P_VOGL 14-36

Plan: PLAN #1 09-16-09 RHS

Standard Planning Report

16 September, 2009





P_VOGL 14-36
KERR MCGEE OIL & GAS ONSHORE LP
SECTION 36 T6N R68W
690 FSL 727 FWL
LAT: 40° 10' 37.380 N
LONG: 104° 57' 29.052 W



Azimuths to True North
Magnetic North: 9.15°
Magnetic Field
Strength: 53197.6nT
Dip Angle: 66.90°
Date: 9/10/2009
Model: IGRF200510

WELL DETAILS: P_VOGL 14-36

+N/-S	+E/-W	Northing	Easting	Ground Level:	Latitude	Longitude	Slot
0.00	0.00	1307804.89	3151428.53	4817.00	40° 10' 37.380 N	104° 57' 29.052 W	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3629.00	3718.57	PARKMAN TOP
4095.00	4202.67	SUSSEX TOP
4619.00	4747.03	SHANNON TOP
7039.00	7201.86	NIO A TOP
7299.00	7461.86	CODELL TOP
7375.00	7537.86	GREENHORN TOP
7734.00	7896.86	JSAND TOP

SECTION DETAILS

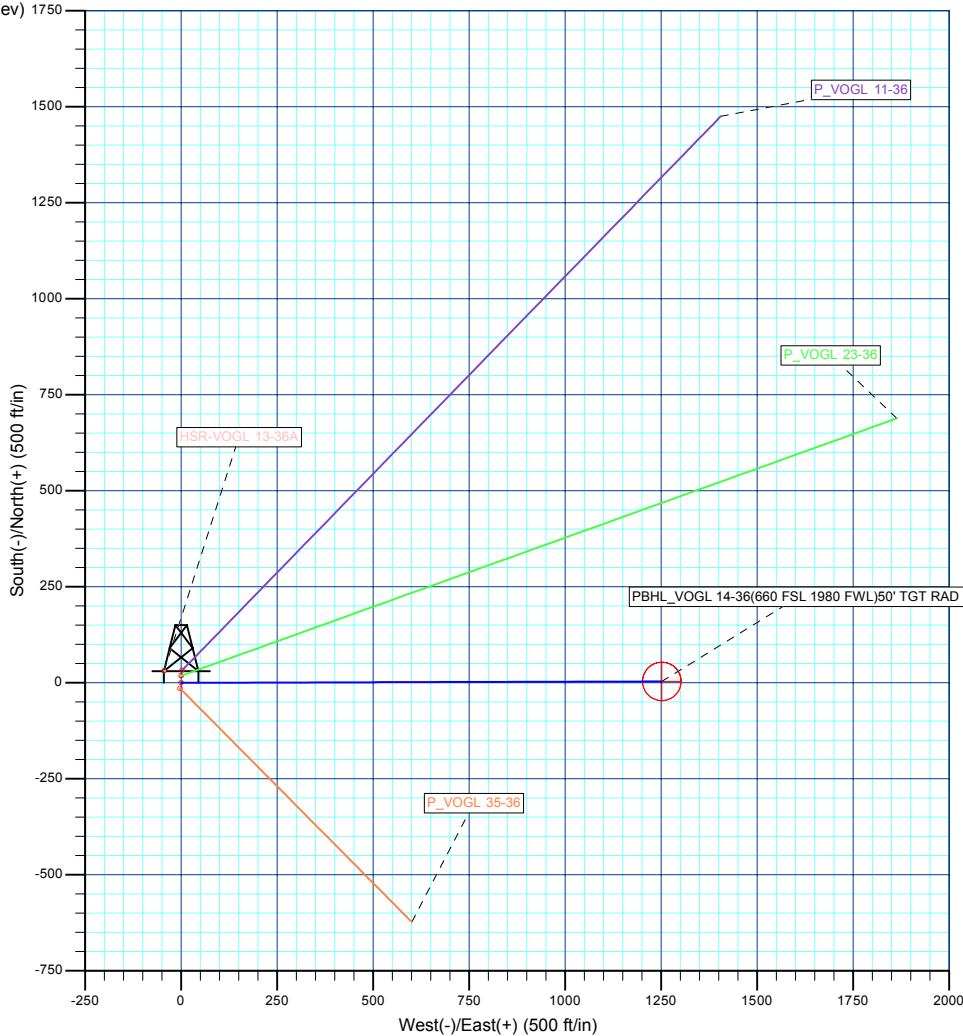
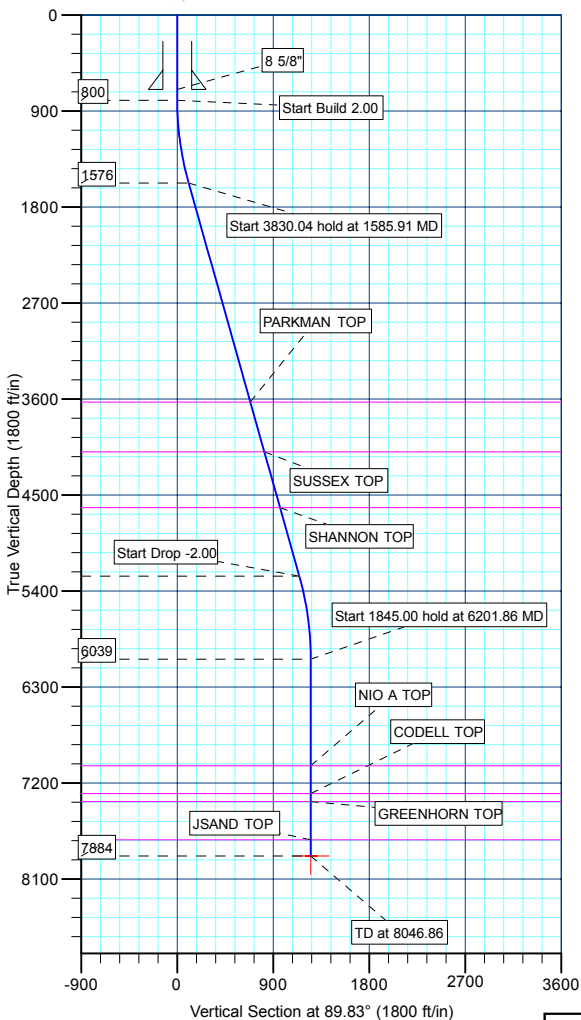
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	
1585.91	15.72	89.83	1576.09	0.32	107.13	2.00	89.83	107.13	
5415.95	15.72	89.83	5262.91	3.37	1144.71	0.00	0.00	1144.71	
6201.86	0.00	0.00	6039.00	3.68	1251.83	2.00	180.00	1251.84	
8046.86	0.00	0.00	7884.00	3.68	1251.83	0.00	0.00	1251.84	PBHL_VOGL 14-36(660 FSL 1980 FWL)50' TGT RAD

CASING DETAILS

TVD	MD	Name	Size
700.00	700.00	8 5/8"	8.62



KB ELEV: WELL @ 4832.00ft (Original Well Elev) 1750
GRD ELEV: 4817.00



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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	7884.00	3.68	1251.83	1307816.23	3152680.3240	40° 10' 37.416 N	104° 57' 12.924 W	Circle (Radius: 50.00)

Plan: PLAN #1 09-16-09 RHS (P_VOGL 14-36/P_VOGL 14-36)

Created By: Robert H. Scott



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_VOGL 14-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site:	WELD_VOGL 4 PAD	North Reference:	True
Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_VOGL 14-36		
Design:	PLAN #1 09-16-09 RHS		

Project	KERR MCGEE OIL & GAS ONSHORE LP, 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_VOGL 4 PAD, SECTION 36 T6N R68W			
Site Position:		Northing:	1,307,837.70 ft	Latitude:	40° 10' 37.704 N
From:	Lat/Long	Easting:	3,151,431.13 ft	Longitude:	104° 57' 29.016 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	0.35 °

Well	P_VOGL 14-36					
Well Position	+N/-S	-32.79 ft	Northing:	1,307,804.89 ft	Latitude:	40° 10' 37.380 N
	+E/-W	-2.79 ft	Easting:	3,151,428.53 ft	Longitude:	104° 57' 29.052 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,817.00 ft

Wellbore	P_VOGL 14-36				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/10/2009	9.15	66.91	53,198

Design	PLAN #1 09-16-09 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	89.83

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	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,585.91	15.72	89.83	1,576.09	0.32	107.13	2.00	2.00	0.00	89.83	
5,415.95	15.72	89.83	5,262.91	3.37	1,144.71	0.00	0.00	0.00	0.00	
6,201.86	0.00	0.00	6,039.00	3.68	1,251.83	2.00	-2.00	0.00	180.00	
8,046.86	0.00	0.00	7,884.00	3.68	1,251.83	0.00	0.00	0.00	0.00	PBHL_VOGL 14-36



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_VOGL 14-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site:	WELD_VOGL 4 PAD	North Reference:	True
Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_VOGL 14-36		
Design:	PLAN #1 09-16-09 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)
Start Build 2.00									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	2.00	89.83	899.98	0.01	1.75	1.75	2.00	2.00	0.00
1,000.00	4.00	89.83	999.84	0.02	6.98	6.98	2.00	2.00	0.00
1,100.00	6.00	89.83	1,099.45	0.05	15.69	15.69	2.00	2.00	0.00
1,200.00	8.00	89.83	1,198.70	0.08	27.88	27.88	2.00	2.00	0.00
1,300.00	10.00	89.83	1,297.47	0.13	43.52	43.52	2.00	2.00	0.00
1,400.00	12.00	89.83	1,395.62	0.18	62.60	62.60	2.00	2.00	0.00
1,500.00	14.00	89.83	1,493.06	0.25	85.10	85.10	2.00	2.00	0.00
Start 3830.04 hold at 1585.91 MD									
1,585.91	15.72	89.83	1,576.09	0.32	107.13	107.13	2.00	2.00	0.00
1,600.00	15.72	89.83	1,589.65	0.33	110.94	110.94	0.00	0.00	0.00
1,700.00	15.72	89.83	1,685.91	0.41	138.03	138.03	0.00	0.00	0.00
1,800.00	15.72	89.83	1,782.17	0.49	165.12	165.13	0.00	0.00	0.00
1,900.00	15.72	89.83	1,878.43	0.57	192.21	192.22	0.00	0.00	0.00
2,000.00	15.72	89.83	1,974.69	0.65	219.31	219.31	0.00	0.00	0.00
2,100.00	15.72	89.83	2,070.96	0.72	246.40	246.40	0.00	0.00	0.00
2,200.00	15.72	89.83	2,167.22	0.80	273.49	273.49	0.00	0.00	0.00
2,300.00	15.72	89.83	2,263.48	0.88	300.58	300.58	0.00	0.00	0.00
2,400.00	15.72	89.83	2,359.74	0.96	327.67	327.67	0.00	0.00	0.00
2,500.00	15.72	89.83	2,456.00	1.04	354.76	354.76	0.00	0.00	0.00
2,600.00	15.72	89.83	2,552.26	1.12	381.85	381.85	0.00	0.00	0.00
2,700.00	15.72	89.83	2,648.52	1.20	408.94	408.94	0.00	0.00	0.00
2,800.00	15.72	89.83	2,744.78	1.28	436.03	436.03	0.00	0.00	0.00
2,900.00	15.72	89.83	2,841.04	1.36	463.12	463.12	0.00	0.00	0.00
3,000.00	15.72	89.83	2,937.30	1.44	490.21	490.21	0.00	0.00	0.00
3,100.00	15.72	89.83	3,033.56	1.52	517.30	517.30	0.00	0.00	0.00
3,200.00	15.72	89.83	3,129.82	1.60	544.39	544.39	0.00	0.00	0.00
3,300.00	15.72	89.83	3,226.08	1.68	571.48	571.48	0.00	0.00	0.00
3,400.00	15.72	89.83	3,322.34	1.76	598.57	598.58	0.00	0.00	0.00
3,500.00	15.72	89.83	3,418.60	1.84	625.66	625.67	0.00	0.00	0.00
3,600.00	15.72	89.83	3,514.86	1.92	652.75	652.76	0.00	0.00	0.00
3,700.00	15.72	89.83	3,611.12	2.00	679.84	679.85	0.00	0.00	0.00
PARKMAN TOP									
3,718.57	15.72	89.83	3,629.00	2.01	684.88	684.88	0.00	0.00	0.00
3,800.00	15.72	89.83	3,707.38	2.08	706.94	706.94	0.00	0.00	0.00
3,900.00	15.72	89.83	3,803.65	2.16	734.03	734.03	0.00	0.00	0.00
4,000.00	15.72	89.83	3,899.91	2.24	761.12	761.12	0.00	0.00	0.00
4,100.00	15.72	89.83	3,996.17	2.32	788.21	788.21	0.00	0.00	0.00
4,200.00	15.72	89.83	4,092.43	2.40	815.30	815.30	0.00	0.00	0.00
SUSSEX TOP									
4,202.67	15.72	89.83	4,095.00	2.40	816.02	816.03	0.00	0.00	0.00
4,300.00	15.72	89.83	4,188.69	2.48	842.39	842.39	0.00	0.00	0.00
4,400.00	15.72	89.83	4,284.95	2.56	869.48	869.48	0.00	0.00	0.00
4,500.00	15.72	89.83	4,381.21	2.64	896.57	896.57	0.00	0.00	0.00
4,600.00	15.72	89.83	4,477.47	2.72	923.66	923.66	0.00	0.00	0.00
4,700.00	15.72	89.83	4,573.73	2.80	950.75	950.75	0.00	0.00	0.00
SHANNON TOP									
4,747.03	15.72	89.83	4,619.00	2.83	963.49	963.49	0.00	0.00	0.00
4,800.00	15.72	89.83	4,669.99	2.88	977.84	977.84	0.00	0.00	0.00
4,900.00	15.72	89.83	4,766.25	2.96	1,004.93	1,004.94	0.00	0.00	0.00
5,000.00	15.72	89.83	4,862.51	3.04	1,032.02	1,032.03	0.00	0.00	0.00
5,100.00	15.72	89.83	4,958.77	3.12	1,059.11	1,059.12	0.00	0.00	0.00



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_VOGL 14-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site:	WELD_VOGL 4 PAD	North Reference:	True
Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_VOGL 14-36		
Design:	PLAN #1 09-16-09 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)
5,200.00	15.72	89.83	5,055.03	3.20	1,086.20	1,086.21	0.00	0.00	0.00
5,300.00	15.72	89.83	5,151.29	3.28	1,113.29	1,113.30	0.00	0.00	0.00
5,400.00	15.72	89.83	5,247.55	3.35	1,140.38	1,140.39	0.00	0.00	0.00
Start Drop -2.00									
5,415.95	15.72	89.83	5,262.91	3.37	1,144.71	1,144.71	0.00	0.00	0.00
5,500.00	14.04	89.83	5,344.14	3.43	1,166.28	1,166.29	2.00	-2.00	0.00
5,600.00	12.04	89.83	5,441.55	3.50	1,188.84	1,188.85	2.00	-2.00	0.00
5,700.00	10.04	89.83	5,539.70	3.55	1,207.99	1,207.99	2.00	-2.00	0.00
5,800.00	8.04	89.83	5,638.45	3.60	1,223.69	1,223.70	2.00	-2.00	0.00
5,900.00	6.04	89.83	5,737.69	3.64	1,235.94	1,235.95	2.00	-2.00	0.00
6,000.00	4.04	89.83	5,837.30	3.66	1,244.72	1,244.73	2.00	-2.00	0.00
6,100.00	2.04	89.83	5,937.16	3.68	1,250.02	1,250.03	2.00	-2.00	0.00
6,200.00	0.04	89.83	6,037.14	3.68	1,251.83	1,251.84	2.00	-2.00	0.00
Start 1845.00 hold at 6201.86 MD									
6,201.86	0.00	0.00	6,039.00	3.68	1,251.83	1,251.84	2.00	-2.00	0.00
6,300.00	0.00	0.00	6,137.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
6,400.00	0.00	0.00	6,237.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
6,500.00	0.00	0.00	6,337.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
6,600.00	0.00	0.00	6,437.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
6,700.00	0.00	0.00	6,537.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
6,800.00	0.00	0.00	6,637.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
6,900.00	0.00	0.00	6,737.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
7,000.00	0.00	0.00	6,837.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
7,100.00	0.00	0.00	6,937.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
7,200.00	0.00	0.00	7,037.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
NIO A TOP									
7,201.86	0.00	0.00	7,039.00	3.68	1,251.83	1,251.84	0.00	0.00	0.00
7,300.00	0.00	0.00	7,137.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
7,400.00	0.00	0.00	7,237.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
CODELL TOP									
7,461.86	0.00	0.00	7,299.00	3.68	1,251.83	1,251.84	0.00	0.00	0.00
7,500.00	0.00	0.00	7,337.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
GREENHORN TOP									
7,537.86	0.00	0.00	7,375.00	3.68	1,251.83	1,251.84	0.00	0.00	0.00
7,600.00	0.00	0.00	7,437.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
7,700.00	0.00	0.00	7,537.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
7,800.00	0.00	0.00	7,637.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
JSAND TOP									
7,896.86	0.00	0.00	7,734.00	3.68	1,251.83	1,251.84	0.00	0.00	0.00
7,900.00	0.00	0.00	7,737.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
8,000.00	0.00	0.00	7,837.14	3.68	1,251.83	1,251.84	0.00	0.00	0.00
PBHL_VOGL 14-36(660 FSL 1980 FWL)50' TGT RAD									
8,046.86	0.00	0.00	7,884.00	3.68	1,251.83	1,251.84	0.00	0.00	0.00



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_VOGL 14-36
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site:	WELD_VOGL 4 PAD	North Reference:	True
Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_VOGL 14-36		
Design:	PLAN #1 09-16-09 RHS		

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
PBHL_VOGL 14-36(6 - plan hits target center - Circle (radius 50.00)	0.00	0.00	7,884.00	3.68	1,251.83	1,307,816.23	3,152,680.32	40° 10' 37.416 N	104° 57' 12.924 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
700.00	700.00	8 5/8"	8.62	11.00

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,718.57	3,629.00	PARKMAN TOP			
4,202.67	4,095.00	SUSSEX TOP			
4,747.03	4,619.00	SHANNON TOP			
7,201.86	7,039.00	NIO A TOP		0.00	
7,461.86	7,299.00	CODELL TOP			
7,537.86	7,375.00	GREENHORN TOP			
7,896.86	7,734.00	JSAND TOP			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
800.00	800.00	0.00	0.00	Start Build 2.00
1,585.91	1,576.09	0.32	107.13	Start 3830.04 hold at 1585.91 MD
5,415.95	5,262.91	3.37	1,144.71	Start Drop -2.00
6,201.86	6,039.00	3.68	1,251.83	Start 1845.00 hold at 6201.86 MD
8,046.86	7,884.00	3.68	1,251.83	TD at 8046.86



US ROCKIES REGION PLANNING

**KERR MCGEE OIL & GAS ONSHORE LP
WELD_VOGL 4 PAD
P_VOGL 14-36**

**P_VOGL 14-36
PLAN #1 09-16-09 RHS**

Anticollision Report

16 September, 2009





Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_VOGL 14-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Reference Site:	WELD_VOGL 4 PAD	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 09-16-09 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 9/16/2009			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,046.86	PLAN #1 09-16-09 RHS (P_VOGL 14-36)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
WELD_VOGL 4 PAD						
HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXISTING	800.00	800.00	54.18	22.81	1.727	CC
HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXISTING	900.00	899.98	55.61	20.04	1.563	ES
HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXISTING	1,000.00	999.84	60.00	20.29	1.511	SF
P_VOGL 11-36 - P_VOGL 11-36 - PLAN #1 09-16-09 RHS	800.00	800.00	32.91	29.57	9.861	CC, ES
P_VOGL 11-36 - P_VOGL 11-36 - PLAN #1 09-16-09 RHS	1,000.00	998.10	37.73	33.54	8.994	SF
P_VOGL 23-36 - P_VOGL 23-36 - PLAN #1 09-16-09 RHS	800.00	800.00	18.21	14.88	5.457	CC, ES
P_VOGL 23-36 - P_VOGL 23-36 - PLAN #1 09-16-09 RHS	1,000.00	999.54	20.55	16.37	4.908	SF
P_VOGL 35-36 - P_VOGL 35-36 - PLAN #1 09-10-09 RHS	800.00	800.00	14.84	11.50	4.446	CC, ES
P_VOGL 35-36 - P_VOGL 35-36 - PLAN #1 09-10-09 RHS	900.00	899.69	16.16	12.41	4.308	SF

Offset Design WELD_VOGL 4 PAD - HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXISTING													Offset Site Error: 0.00 ft
Survey Program: 0-UNKNOWN													Offset Well Error: 0.00 ft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-54.67	31.33	-44.20	54.18				
100.00	100.00	100.00	100.00	0.10	1.70	-54.67	31.33	-44.20	54.18	52.38	1.80	30.174	
200.00	200.00	200.00	200.00	0.32	5.70	-54.67	31.33	-44.20	54.18	48.16	6.02	8.999	
300.00	300.00	300.00	300.00	0.55	9.70	-54.67	31.33	-44.20	54.18	43.93	10.25	5.288	
400.00	400.00	400.00	400.00	0.77	13.70	-54.67	31.33	-44.20	54.18	39.71	14.47	3.744	
500.00	500.00	500.00	500.00	0.99	17.70	-54.67	31.33	-44.20	54.18	35.48	18.69	2.898	
600.00	600.00	600.00	600.00	1.22	21.70	-54.67	31.33	-44.20	54.18	31.26	22.92	2.364	
700.00	700.00	700.00	700.00	1.44	25.70	-54.67	31.33	-44.20	54.18	27.03	27.14	1.996	
800.00	800.00	800.00	800.00	1.67	29.70	-54.67	31.33	-44.20	54.18	22.81	31.37	1.727	CC
900.00	899.98	899.98	899.98	1.88	33.70	-145.53	31.33	-44.20	55.61	20.04	35.57	1.563	ES
1,000.00	999.84	999.84	999.84	2.09	37.69	-148.31	31.33	-44.20	60.00	20.29	39.71	1.511	SF
1,100.00	1,099.45	1,099.45	1,099.45	2.31	41.68	-152.12	31.33	-44.20	67.57	23.78	43.79	1.543	
1,200.00	1,198.70	1,198.70	1,198.70	2.56	45.65	-156.19	31.33	-44.20	78.56	30.78	47.78	1.644	
1,300.00	1,297.47	1,297.47	1,297.47	2.84	49.60	-159.97	31.33	-44.20	93.11	41.45	51.65	1.803	
1,400.00	1,395.62	1,395.62	1,395.62	3.17	53.52	-163.23	31.33	-44.20	111.25	55.86	55.39	2.008	
1,500.00	1,493.06	1,493.06	1,493.06	3.55	57.42	-165.91	31.33	-44.20	132.98	73.99	58.98	2.254	
1,585.91	1,576.09	1,576.09	1,576.09	3.92	60.74	-167.80	31.33	-44.20	154.47	92.53	61.94	2.494	
1,600.00	1,589.65	1,589.65	1,589.65	3.98	61.29	-168.10	31.33	-44.20	158.21	95.72	62.49	2.532	

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



Weatherford International Ltd.
Anticollision Report



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_VOGL 14-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Reference Site:	WELD_VOGL 4 PAD	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_VOGL 4 PAD - HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXIS												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
1,700.00	1,685.91	1,685.91	1,685.91	4.46	65.14	-169.83	31.33	-44.20	184.84	118.41	66.43	2.782	
1,800.00	1,782.17	1,782.17	1,782.17	4.96	68.99	-171.12	31.33	-44.20	211.58	141.21	70.38	3.006	
1,900.00	1,878.43	1,878.43	1,878.43	5.47	72.84	-172.13	31.33	-44.20	238.41	164.07	74.34	3.207	
2,000.00	1,974.69	1,974.69	1,974.69	5.99	76.69	-172.93	31.33	-44.20	265.29	186.98	78.30	3.388	
2,100.00	2,070.96	2,070.96	2,070.96	6.53	80.54	-173.58	31.33	-44.20	292.20	209.93	82.27	3.552	
2,200.00	2,167.22	2,167.22	2,167.22	7.06	84.39	-174.12	31.33	-44.20	319.15	232.90	86.25	3.700	
2,300.00	2,263.48	2,263.48	2,263.48	7.61	88.24	-174.58	31.33	-44.20	346.12	255.89	90.23	3.836	
2,400.00	2,359.74	2,359.74	2,359.74	8.16	92.09	-174.98	31.33	-44.20	373.11	278.90	94.21	3.960	
2,500.00	2,456.00	2,456.00	2,456.00	8.71	95.94	-175.32	31.33	-44.20	400.11	301.92	98.19	4.075	
2,600.00	2,552.26	2,552.26	2,552.26	9.26	99.79	-175.61	31.33	-44.20	427.12	324.94	102.18	4.180	
2,700.00	2,648.52	2,648.52	2,648.52	9.82	103.64	-175.87	31.33	-44.20	454.14	347.98	106.16	4.278	
2,800.00	2,744.78	2,744.78	2,744.78	10.37	107.49	-176.11	31.33	-44.20	481.17	371.02	110.15	4.368	
2,900.00	2,841.04	2,841.04	2,841.04	10.93	111.34	-176.31	31.33	-44.20	508.20	394.06	114.14	4.452	
3,000.00	2,937.30	2,937.30	2,937.30	11.49	115.19	-176.50	31.33	-44.20	535.25	417.11	118.13	4.531	
3,100.00	3,033.56	3,033.56	3,033.56	12.06	119.04	-176.67	31.33	-44.20	562.29	440.17	122.12	4.604	
3,200.00	3,129.82	3,129.82	3,129.82	12.62	122.89	-176.82	31.33	-44.20	589.34	463.23	126.12	4.673	
3,300.00	3,226.08	3,226.08	3,226.08	13.18	126.74	-176.96	31.33	-44.20	616.40	486.29	130.11	4.738	
3,400.00	3,322.34	3,322.34	3,322.34	13.75	130.59	-177.09	31.33	-44.20	643.45	509.35	134.10	4.798	
3,500.00	3,418.60	3,418.60	3,418.60	14.31	134.44	-177.21	31.33	-44.20	670.51	532.42	138.10	4.855	
3,600.00	3,514.86	3,514.86	3,514.86	14.88	138.29	-177.31	31.33	-44.20	697.57	555.48	142.09	4.909	
3,700.00	3,611.12	3,611.12	3,611.12	15.45	142.14	-177.41	31.33	-44.20	724.64	578.55	146.09	4.960	
3,800.00	3,707.38	3,707.38	3,707.38	16.01	146.00	-177.51	31.33	-44.20	751.70	601.62	150.08	5.009	
3,900.00	3,803.65	3,803.65	3,803.65	16.58	149.85	-177.59	31.33	-44.20	778.77	624.69	154.08	5.054	
4,000.00	3,899.91	3,899.91	3,899.91	17.15	153.70	-177.68	31.33	-44.20	805.84	647.76	158.08	5.098	
4,100.00	3,996.17	3,996.17	3,996.17	17.72	157.55	-177.75	31.33	-44.20	832.91	670.84	162.07	5.139	
4,200.00	4,092.43	4,092.43	4,092.43	18.28	161.40	-177.82	31.33	-44.20	859.98	693.91	166.07	5.178	
4,300.00	4,188.69	4,188.69	4,188.69	18.85	165.25	-177.89	31.33	-44.20	887.06	716.99	170.07	5.216	
4,400.00	4,284.95	4,284.95	4,284.95	19.42	169.10	-177.95	31.33	-44.20	914.13	740.06	174.07	5.252	
4,500.00	4,381.21	4,381.21	4,381.21	19.99	172.95	-178.01	31.33	-44.20	941.21	763.14	178.06	5.286	
4,600.00	4,477.47	4,477.47	4,477.47	20.56	176.80	-178.07	31.33	-44.20	968.28	786.22	182.06	5.318	
4,700.00	4,573.73	4,573.73	4,573.73	21.13	180.65	-178.12	31.33	-44.20	995.36	809.30	186.06	5.350	
4,800.00	4,669.99	4,669.99	4,669.99	21.70	184.50	-178.17	31.33	-44.20	1,022.44	832.38	190.06	5.380	
4,900.00	4,766.25	4,766.25	4,766.25	22.27	188.35	-178.22	31.33	-44.20	1,049.51	855.46	194.06	5.408	
5,000.00	4,862.51	4,862.51	4,862.51	22.84	192.20	-178.26	31.33	-44.20	1,076.59	878.53	198.06	5.436	
5,100.00	4,958.77	4,958.77	4,958.77	23.41	196.05	-178.30	31.33	-44.20	1,103.67	901.61	202.06	5.462	
5,200.00	5,055.03	5,055.03	5,055.03	23.98	199.90	-178.34	31.33	-44.20	1,130.75	924.70	206.06	5.488	
5,300.00	5,151.29	5,151.29	5,151.29	24.55	203.75	-178.38	31.33	-44.20	1,157.83	947.78	210.06	5.512	
5,400.00	5,247.55	5,247.55	5,247.55	25.12	207.60	-178.42	31.33	-44.20	1,184.91	970.86	214.06	5.536	
5,415.95	5,262.91	5,262.91	5,262.91	25.22	208.22	-178.43	31.33	-44.20	1,189.23	974.54	214.69	5.539	
5,500.00	5,344.14	5,344.14	5,344.14	25.62	211.47	-178.47	31.33	-44.20	1,210.81	991.16	219.64	5.513	
5,600.00	5,441.55	5,441.55	5,441.55	26.00	215.36	-178.51	31.33	-44.20	1,233.36	1,008.01	225.35	5.473	
5,700.00	5,539.70	5,539.70	5,539.70	26.33	219.29	-178.54	31.33	-44.20	1,252.49	1,021.64	230.86	5.425	
5,800.00	5,638.45	5,638.45	5,638.45	26.62	223.24	-178.56	31.33	-44.20	1,268.20	1,032.05	236.14	5.370	
5,900.00	5,737.69	5,737.69	5,737.69	26.86	227.21	-178.58	31.33	-44.20	1,280.44	1,039.26	241.18	5.309	
6,000.00	5,837.30	5,837.30	5,837.30	27.05	231.19	-178.60	31.33	-44.20	1,289.22	1,043.25	245.96	5.241	
6,100.00	5,937.16	5,937.16	5,937.16	27.21	235.19	-178.61	31.33	-44.20	1,294.52	1,044.05	250.46	5.169	
6,201.86	6,039.00	6,039.00	6,039.00	27.32	239.26	-88.78	31.33	-44.20	1,296.33	1,041.59	254.74	5.089	
6,300.00	6,137.14	6,137.14	6,137.14	27.41	243.19	-88.78	31.33	-44.20	1,296.33	1,037.50	258.82	5.009	
6,400.00	6,237.14	6,237.14	6,237.14	27.52	247.19	-88.78	31.33	-44.20	1,296.33	1,033.33	262.99	4.929	
6,500.00	6,337.14	6,337.14	6,337.14	27.63	251.19	-88.78	31.33	-44.20	1,296.33	1,029.16	267.17	4.852	
6,600.00	6,437.14	6,437.14	6,437.14	27.73	255.19	-88.78	31.33	-44.20	1,296.33	1,024.99	271.34	4.778	
6,700.00	6,537.14	6,537.14	6,537.14	27.84	259.19	-88.78	31.33	-44.20	1,296.33	1,020.81	275.51	4.705	

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



Weatherford International Ltd.

Anticollision Report



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_VOGL 14-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Reference Site:	WELD_VOGL 4 PAD	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design										WELD_VOGL 4 PAD - HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXIS		Offset Site Error:		0.00 ft	
Survey Program: 0-UNKNOWN												Offset Well Error:		0.00 ft	
Reference		Offset		Semi Major Axis			Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
6,800.00	6,637.14	6,637.14	6,637.14	27.96	263.19	-88.78	31.33	-44.20	1,296.33	1,016.64	279.69	4.635			
6,900.00	6,737.14	6,737.14	6,737.14	28.07	267.19	-88.78	31.33	-44.20	1,296.33	1,012.46	283.86	4.567			
7,000.00	6,837.14	6,837.14	6,837.14	28.18	271.19	-88.78	31.33	-44.20	1,296.33	1,008.28	288.04	4.500			
7,100.00	6,937.14	6,937.14	6,937.14	28.30	275.19	-88.78	31.33	-44.20	1,296.33	1,004.11	292.22	4.436			
7,200.00	7,037.14	7,037.14	7,037.14	28.41	279.19	-88.78	31.33	-44.20	1,296.33	999.93	296.40	4.374			
7,300.00	7,137.14	7,137.14	7,137.14	28.53	283.19	-88.78	31.33	-44.20	1,296.33	995.75	300.58	4.313			
7,400.00	7,237.14	7,237.14	7,237.14	28.65	287.19	-88.78	31.33	-44.20	1,296.33	991.56	304.76	4.254			
7,500.00	7,337.14	7,337.14	7,337.14	28.77	291.19	-88.78	31.33	-44.20	1,296.33	987.38	308.95	4.196			
7,600.00	7,437.14	7,437.14	7,437.14	28.89	295.19	-88.78	31.33	-44.20	1,296.33	983.20	313.13	4.140			
7,700.00	7,537.14	7,537.14	7,537.14	29.02	299.19	-88.78	31.33	-44.20	1,296.33	979.01	317.31	4.085			
7,800.00	7,637.14	7,637.14	7,637.14	29.14	303.19	-88.78	31.33	-44.20	1,296.33	974.83	321.50	4.032			
7,900.00	7,737.14	7,737.14	7,737.14	29.26	307.19	-88.78	31.33	-44.20	1,296.33	970.64	325.69	3.980			
8,000.00	7,837.14	7,837.14	7,837.14	29.39	311.19	-88.78	31.33	-44.20	1,296.33	966.45	329.87	3.930			
8,046.86	7,884.00	7,884.00	7,884.00	29.45	313.06	-88.78	31.33	-44.20	1,296.33	964.49	331.84	3.907			



Weatherford International Ltd.

Anticollision Report



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_VOGL 14-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Reference Site:	WELD_VOGL 4 PAD	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_VOGL 4 PAD - P_VOGL 11-36 - P_VOGL 11-36 - PLAN #1 09-16-09 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance								Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	4.87	32.79	2.79	32.91				
100.00	100.00	100.00	100.00	0.10	0.10	4.87	32.79	2.79	32.91	32.72	0.19	172.271	
200.00	200.00	200.00	200.00	0.32	0.32	4.87	32.79	2.79	32.91	32.27	0.64	51.379	
300.00	300.00	300.00	300.00	0.55	0.55	4.87	32.79	2.79	32.91	31.82	1.09	30.192	
400.00	400.00	400.00	400.00	0.77	0.77	4.87	32.79	2.79	32.91	31.37	1.54	21.377	
500.00	500.00	500.00	500.00	0.99	0.99	4.87	32.79	2.79	32.91	30.92	1.99	16.546	
600.00	600.00	600.00	600.00	1.22	1.22	4.87	32.79	2.79	32.91	30.47	2.44	13.496	
700.00	700.00	700.00	700.00	1.44	1.44	4.87	32.79	2.79	32.91	30.02	2.89	11.395	
800.00	800.00	800.00	800.00	1.67	1.67	4.87	32.79	2.79	32.91	29.57	3.34	9.861 CC, ES	
900.00	899.98	899.10	899.08	1.88	1.89	-86.01	34.02	3.99	34.10	30.33	3.77	9.048	
1,000.00	999.84	998.10	997.94	2.09	2.11	-88.74	37.70	7.57	37.73	33.54	4.20	8.994 SF	
1,100.00	1,099.45	1,096.88	1,096.35	2.31	2.34	-92.25	43.81	13.51	43.93	39.29	4.64	9.459	
1,200.00	1,198.70	1,195.34	1,194.09	2.56	2.58	-95.73	52.32	21.78	52.80	47.67	5.13	10.293	
1,300.00	1,297.47	1,293.39	1,290.96	2.84	2.85	-98.74	63.18	32.34	64.37	58.70	5.67	11.360	
1,400.00	1,395.62	1,390.93	1,386.75	3.17	3.16	-101.15	76.34	45.13	78.63	72.36	6.27	12.542	
1,500.00	1,493.06	1,487.86	1,481.27	3.55	3.52	-103.01	91.72	60.09	95.55	88.60	6.95	13.739	
1,585.91	1,576.09	1,570.58	1,561.32	3.92	3.86	-104.24	106.65	74.61	112.17	104.56	7.62	14.723	
1,600.00	1,589.65	1,584.10	1,574.35	3.98	3.92	-104.45	109.25	77.13	115.07	107.34	7.73	14.880	
1,700.00	1,685.91	1,679.71	1,665.95	4.46	4.37	-105.01	128.88	96.21	136.57	127.98	8.60	15.887	
1,800.00	1,782.17	1,774.60	1,755.91	4.96	4.87	-104.40	150.51	117.25	159.65	150.13	9.52	16.766	
1,900.00	1,878.43	1,868.58	1,843.98	5.47	5.44	-103.07	174.03	140.12	184.37	173.87	10.50	17.558	
2,000.00	1,974.69	1,961.46	1,929.90	5.99	6.05	-101.34	199.30	164.69	210.84	199.32	11.52	18.304	
2,100.00	2,070.96	2,053.46	2,013.85	6.53	6.71	-99.38	226.27	190.92	239.19	226.63	12.56	19.043	
2,200.00	2,167.22	2,148.75	2,100.28	7.06	7.43	-97.55	255.04	218.88	268.51	254.86	13.64	19.679	
2,300.00	2,263.48	2,244.04	2,186.72	7.61	8.17	-96.07	283.80	246.85	298.03	283.29	14.73	20.229	
2,400.00	2,359.74	2,339.32	2,273.15	8.16	8.92	-94.87	312.56	274.81	327.69	311.87	15.83	20.707	
2,500.00	2,456.00	2,434.61	2,359.58	8.71	9.67	-93.86	341.32	302.78	357.47	340.55	16.92	21.124	
2,600.00	2,552.26	2,529.90	2,446.02	9.26	10.44	-93.00	370.08	330.74	387.34	369.32	18.02	21.491	
2,700.00	2,648.52	2,625.19	2,532.45	9.82	11.21	-92.27	398.85	358.71	417.27	398.15	19.13	21.816	
2,800.00	2,744.78	2,720.48	2,618.88	10.37	11.98	-91.64	427.61	386.67	447.26	427.03	20.23	22.105	
2,900.00	2,841.04	2,815.77	2,705.31	10.93	12.76	-91.08	456.37	414.64	477.29	455.95	21.34	22.365	
3,000.00	2,937.30	2,911.06	2,791.75	11.49	13.54	-90.60	485.13	442.60	507.36	484.90	22.45	22.598	
3,100.00	3,033.56	3,006.35	2,878.18	12.06	14.32	-90.16	513.90	470.57	537.45	513.89	23.56	22.809	
3,200.00	3,129.82	3,101.64	2,964.61	12.62	15.10	-89.77	542.66	498.53	567.57	542.90	24.68	23.001	
3,300.00	3,226.08	3,196.92	3,051.05	13.18	15.89	-89.42	571.42	526.50	597.71	571.92	25.79	23.176	
3,400.00	3,322.34	3,292.21	3,137.48	13.75	16.68	-89.11	600.18	554.47	627.88	600.97	26.91	23.336	
3,500.00	3,418.60	3,387.50	3,223.91	14.31	17.47	-88.82	628.94	582.43	658.05	630.03	28.02	23.483	
3,600.00	3,514.86	3,482.79	3,310.34	14.88	18.26	-88.56	657.71	610.40	688.24	659.10	29.14	23.618	
3,700.00	3,611.12	3,578.08	3,396.78	15.45	19.05	-88.32	686.47	638.36	718.44	688.19	30.26	23.744	
3,800.00	3,707.38	3,673.37	3,483.21	16.01	19.84	-88.10	715.23	666.33	748.66	717.28	31.38	23.860	
3,900.00	3,803.65	3,768.66	3,569.64	16.58	20.63	-87.90	743.99	694.29	778.88	746.38	32.50	23.968	
4,000.00	3,899.91	3,863.95	3,656.08	17.15	21.43	-87.71	772.75	722.26	809.11	775.49	33.62	24.068	
4,100.00	3,996.17	3,959.24	3,742.51	17.72	22.22	-87.53	801.52	750.22	839.35	804.61	34.74	24.162	
4,200.00	4,092.43	4,054.52	3,828.94	18.28	23.01	-87.37	830.28	778.19	869.59	833.73	35.86	24.250	
4,300.00	4,188.69	4,149.81	3,915.38	18.85	23.81	-87.22	859.04	806.15	899.84	862.86	36.98	24.333	
4,400.00	4,284.95	4,245.10	4,001.81	19.42	24.60	-87.08	887.80	834.12	930.09	891.99	38.10	24.411	
4,500.00	4,381.21	4,340.39	4,088.24	19.99	25.40	-86.95	916.56	862.08	960.35	921.13	39.22	24.484	
4,600.00	4,477.47	4,435.68	4,174.67	20.56	26.20	-86.82	945.33	890.05	990.62	950.27	40.35	24.552	
4,700.00	4,573.73	4,530.97	4,261.11	21.13	26.99	-86.70	974.09	918.01	1,020.89	979.42	41.47	24.617	
4,800.00	4,669.99	4,626.26	4,347.54	21.70	27.79	-86.59	1,002.85	945.98	1,051.16	1,008.57	42.59	24.679	
4,900.00	4,766.25	4,721.55	4,433.97	22.27	28.59	-86.49	1,031.61	973.95	1,081.44	1,037.72	43.72	24.737	
5,000.00	4,862.51	4,816.84	4,520.41	22.84	29.38	-86.39	1,060.37	1,001.91	1,111.71	1,066.87	44.84	24.792	

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



Weatherford International Ltd.

Anticollision Report



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_VOGL 14-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Reference Site:	WELD_VOGL 4 PAD	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_VOGL 4 PAD - P_VOGL 11-36 - P_VOGL 11-36 - PLAN #1 09-16-09 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.00	4,958.77	4,912.12	4,606.84	23.41	30.18	-86.30	1,089.14	1,029.88	1,142.00	1,096.03	45.96	24.845	
5,200.00	5,055.03	5,007.41	4,693.27	23.98	30.98	-86.21	1,117.90	1,057.84	1,172.28	1,125.19	47.09	24.895	
5,300.00	5,151.29	5,102.70	4,779.70	24.55	31.78	-86.13	1,146.66	1,085.81	1,202.57	1,154.35	48.21	24.943	
5,400.00	5,247.55	5,197.99	4,866.14	25.12	32.58	-86.05	1,175.42	1,113.77	1,232.85	1,183.52	49.34	24.988	
5,415.95	5,262.91	5,213.19	4,879.93	25.22	32.70	-86.03	1,180.01	1,118.23	1,237.69	1,188.17	49.52	24.995	
5,500.00	5,344.14	5,293.22	4,952.52	25.62	33.37	-86.45	1,204.17	1,141.72	1,263.22	1,212.71	50.52	25.005	
5,600.00	5,441.55	5,388.23	5,038.69	26.00	34.17	-86.80	1,232.84	1,169.60	1,293.82	1,242.25	51.57	25.089	
5,700.00	5,539.70	5,482.89	5,124.55	26.33	34.96	-87.02	1,261.42	1,197.38	1,324.64	1,272.10	52.54	25.214	
5,800.00	5,638.45	5,586.84	5,218.91	26.62	35.81	-87.05	1,292.71	1,227.81	1,355.67	1,302.23	53.44	25.368	
5,900.00	5,737.69	5,735.07	5,355.47	26.86	36.72	-86.73	1,334.00	1,267.96	1,384.55	1,330.31	54.24	25.524	
6,000.00	5,837.30	5,887.31	5,498.63	27.05	37.56	-86.36	1,371.08	1,304.01	1,409.98	1,355.05	54.92	25.671	
6,100.00	5,937.16	6,043.28	5,647.95	27.21	38.29	-85.92	1,403.36	1,335.39	1,431.79	1,376.32	55.47	25.813	
6,201.86	6,039.00	6,205.68	5,805.77	27.32	38.95	4.41	1,430.72	1,362.00	1,450.16	1,394.28	55.88	25.950	
6,300.00	6,137.14	6,365.41	5,962.87	27.41	39.45	5.14	1,451.34	1,382.05	1,463.91	1,407.81	56.10	26.095	
6,400.00	6,237.14	6,531.04	6,127.20	27.52	39.85	5.64	1,466.06	1,396.36	1,473.61	1,417.27	56.34	26.156	
6,500.00	6,337.14	6,698.52	6,294.29	27.63	40.12	5.91	1,473.99	1,404.07	1,478.79	1,422.21	56.59	26.134	
6,600.00	6,437.14	6,841.39	6,437.14	27.73	40.25	5.96	1,475.39	1,405.43	1,479.70	1,422.89	56.82	26.043	
6,700.00	6,537.14	6,941.39	6,537.14	27.84	40.32	5.96	1,475.39	1,405.43	1,479.70	1,422.68	57.02	25.949	
6,800.00	6,637.14	7,041.39	6,637.14	27.96	40.39	5.96	1,475.39	1,405.43	1,479.70	1,422.46	57.24	25.851	
6,900.00	6,737.14	7,141.39	6,737.14	28.07	40.47	5.96	1,475.39	1,405.43	1,479.70	1,422.25	57.46	25.753	
7,000.00	6,837.14	7,241.39	6,837.14	28.18	40.54	5.96	1,475.39	1,405.43	1,479.70	1,422.03	57.68	25.655	
7,100.00	6,937.14	7,341.39	6,937.14	28.30	40.62	5.96	1,475.39	1,405.43	1,479.70	1,421.80	57.90	25.556	
7,200.00	7,037.14	7,441.39	7,037.14	28.41	40.70	5.96	1,475.39	1,405.43	1,479.70	1,421.58	58.13	25.456	
7,300.00	7,137.14	7,541.39	7,137.14	28.53	40.78	5.96	1,475.39	1,405.43	1,479.70	1,421.35	58.36	25.356	
7,400.00	7,237.14	7,641.39	7,237.14	28.65	40.86	5.96	1,475.39	1,405.43	1,479.70	1,421.12	58.59	25.256	
7,500.00	7,337.14	7,741.39	7,337.14	28.77	40.95	5.96	1,475.39	1,405.43	1,479.70	1,420.88	58.82	25.156	
7,600.00	7,437.14	7,841.39	7,437.14	28.89	41.03	5.96	1,475.39	1,405.43	1,479.70	1,420.65	59.06	25.056	
7,700.00	7,537.14	7,941.39	7,537.14	29.02	41.12	5.96	1,475.39	1,405.43	1,479.70	1,420.41	59.30	24.955	
7,800.00	7,637.14	8,041.39	7,637.14	29.14	41.20	5.96	1,475.39	1,405.43	1,479.70	1,420.17	59.54	24.854	
7,900.00	7,737.14	8,141.39	7,737.14	29.26	41.29	5.96	1,475.39	1,405.43	1,479.70	1,419.92	59.78	24.752	
8,000.00	7,837.14	8,241.39	7,837.14	29.39	41.38	5.96	1,475.39	1,405.43	1,479.70	1,419.68	60.03	24.651	
8,027.00	7,864.14	8,268.39	7,864.14	29.43	41.40	5.96	1,475.39	1,405.43	1,479.70	1,419.61	60.09	24.624	
8,046.86	7,884.00	8,278.25	7,874.00	29.45	41.41	5.96	1,475.39	1,405.43	1,479.74	1,419.61	60.13	24.609	



Weatherford International Ltd.

Anticollision Report



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_VOGL 14-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Reference Site:	WELD_VOGL 4 PAD	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_VOGL 4 PAD - P_VOGL 23-36 - P_VOGL 23-36 - PLAN #1 09-16-09 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Reference Depth (ft)	Offset Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.21	0.00	18.21				
100.00	100.00	100.00	100.00	0.10	0.10	0.00	18.21	0.00	18.21	18.02	0.19	95.336	
200.00	200.00	200.00	200.00	0.32	0.32	0.00	18.21	0.00	18.21	17.57	0.64	28.434	
300.00	300.00	300.00	300.00	0.55	0.55	0.00	18.21	0.00	18.21	17.12	1.09	16.708	
400.00	400.00	400.00	400.00	0.77	0.77	0.00	18.21	0.00	18.21	16.67	1.54	11.830	
500.00	500.00	500.00	500.00	0.99	0.99	0.00	18.21	0.00	18.21	16.22	1.99	9.157	
600.00	600.00	600.00	600.00	1.22	1.22	0.00	18.21	0.00	18.21	15.78	2.44	7.469	
700.00	700.00	700.00	700.00	1.44	1.44	0.00	18.21	0.00	18.21	15.33	2.89	6.306	
800.00	800.00	800.00	800.00	1.67	1.67	0.00	18.21	0.00	18.21	14.88	3.34	5.457 CC, ES	
900.00	899.98	899.78	899.76	1.88	1.89	-90.14	18.80	1.63	18.80	15.03	3.77	4.992	
1,000.00	999.84	999.54	999.38	2.09	2.10	-90.97	20.57	6.54	20.55	16.37	4.19	4.908 SF	
1,100.00	1,099.45	1,099.26	1,098.72	2.31	2.33	-92.07	23.50	14.69	23.49	18.85	4.64	5.063	
1,200.00	1,198.70	1,198.92	1,197.63	2.56	2.58	-93.20	27.60	26.09	27.60	22.46	5.13	5.375	
1,300.00	1,297.47	1,298.50	1,295.98	2.84	2.86	-94.23	32.86	40.71	32.88	27.19	5.69	5.775	
1,400.00	1,395.62	1,397.97	1,393.64	3.17	3.18	-95.08	39.26	58.51	39.34	33.00	6.34	6.210	
1,500.00	1,493.06	1,497.32	1,490.46	3.55	3.55	-95.77	46.80	79.47	46.96	39.88	7.08	6.637	
1,585.91	1,576.09	1,582.57	1,572.87	3.92	3.92	-96.23	54.17	99.95	54.42	46.62	7.80	6.973	
1,600.00	1,589.65	1,596.54	1,586.32	3.98	3.98	-96.29	55.45	103.53	55.72	47.79	7.93	7.028	
1,700.00	1,685.91	1,695.58	1,681.07	4.46	4.47	-94.94	65.21	130.66	65.40	56.52	8.88	7.364	
1,800.00	1,782.17	1,794.26	1,774.42	4.96	5.02	-91.45	76.03	160.73	76.06	66.16	9.90	7.682	
1,900.00	1,878.43	1,892.34	1,866.07	5.47	5.64	-86.77	87.85	193.60	88.17	77.22	10.95	8.051	
2,000.00	1,974.69	1,989.61	1,955.71	5.99	6.32	-81.55	100.62	229.10	102.23	90.24	11.99	8.525	
2,100.00	2,070.96	2,086.90	2,044.23	6.53	7.07	-76.38	114.29	267.10	118.49	105.50	12.99	9.121	
2,200.00	2,167.22	2,185.00	2,133.29	7.06	7.84	-72.30	128.20	305.78	135.73	121.76	13.97	9.716	
2,300.00	2,263.48	2,283.09	2,222.36	7.61	8.64	-69.14	142.11	344.46	153.50	138.56	14.94	10.275	
2,400.00	2,359.74	2,381.19	2,311.43	8.16	9.44	-66.63	156.02	383.14	171.62	155.72	15.90	10.795	
2,500.00	2,456.00	2,479.28	2,400.50	8.71	10.25	-64.61	169.94	421.81	190.00	173.15	16.85	11.274	
2,600.00	2,552.26	2,577.38	2,489.56	9.26	11.07	-62.94	183.85	460.49	208.58	190.77	17.81	11.714	
2,700.00	2,648.52	2,675.47	2,578.63	9.82	11.89	-61.55	197.76	499.17	227.29	208.53	18.76	12.117	
2,800.00	2,744.78	2,773.57	2,667.70	10.37	12.72	-60.37	211.67	537.85	246.12	226.41	19.71	12.487	
2,900.00	2,841.04	2,871.66	2,756.77	10.93	13.55	-59.36	225.58	576.53	265.03	244.37	20.66	12.827	
3,000.00	2,937.30	2,969.76	2,845.83	11.49	14.38	-58.48	239.50	615.21	284.01	262.39	21.61	13.139	
3,100.00	3,033.56	3,067.85	2,934.90	12.06	15.21	-57.71	253.41	653.89	303.05	280.48	22.57	13.428	
3,200.00	3,129.82	3,165.95	3,023.97	12.62	16.05	-57.03	267.32	692.57	322.13	298.61	23.52	13.695	
3,300.00	3,226.08	3,264.04	3,113.04	13.18	16.89	-56.43	281.23	731.25	341.25	316.78	24.48	13.942	
3,400.00	3,322.34	3,362.14	3,202.10	13.75	17.73	-55.89	295.15	769.93	360.41	334.97	25.43	14.170	
3,500.00	3,418.60	3,460.23	3,291.17	14.31	18.57	-55.41	309.06	808.60	379.59	353.20	26.40	14.381	
3,600.00	3,514.86	3,558.33	3,380.24	14.88	19.41	-54.97	322.97	847.28	398.80	371.44	27.36	14.577	
3,700.00	3,611.12	3,656.42	3,469.30	15.45	20.25	-54.57	336.88	885.96	418.02	389.70	28.32	14.760	
3,800.00	3,707.38	3,754.52	3,558.37	16.01	21.10	-54.21	350.80	924.64	437.27	407.98	29.29	14.931	
3,900.00	3,803.65	3,852.61	3,647.44	16.58	21.94	-53.88	364.71	963.32	456.53	426.28	30.25	15.092	
4,000.00	3,899.91	3,950.71	3,736.51	17.15	22.79	-53.58	378.62	1,002.00	475.80	444.59	31.22	15.242	
4,100.00	3,996.17	4,048.80	3,825.57	17.72	23.63	-53.30	392.53	1,040.68	495.09	462.90	32.18	15.384	
4,200.00	4,092.43	4,146.90	3,914.64	18.28	24.48	-53.04	406.45	1,079.36	514.38	481.23	33.15	15.517	
4,300.00	4,188.69	4,244.99	4,003.71	18.85	25.33	-52.79	420.36	1,118.04	533.69	499.57	34.12	15.643	
4,400.00	4,284.95	4,343.09	4,092.78	19.42	26.17	-52.57	434.27	1,156.72	553.00	517.92	35.09	15.761	
4,500.00	4,381.21	4,441.18	4,181.84	19.99	27.02	-52.36	448.18	1,195.39	572.32	536.27	36.05	15.874	
4,600.00	4,477.47	4,539.28	4,270.91	20.56	27.87	-52.17	462.10	1,234.07	591.65	554.63	37.02	15.980	
4,700.00	4,573.73	4,637.37	4,359.98	21.13	28.72	-51.98	476.01	1,272.75	610.99	572.99	37.99	16.081	
4,800.00	4,669.99	4,735.47	4,449.05	21.70	29.57	-51.81	489.92	1,311.43	630.33	591.36	38.96	16.177	
4,900.00	4,766.25	4,833.56	4,538.11	22.27	30.42	-51.65	503.83	1,350.11	649.67	609.74	39.93	16.268	
5,000.00	4,862.51	4,931.66	4,627.18	22.84	31.27	-51.50	517.74	1,388.79	669.02	628.12	40.91	16.355	

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_VOGL 14-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Reference Site:	WELD_VOGL 4 PAD	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_VOGL 4 PAD - P_VOGL 23-36 - P_VOGL 23-36 - PLAN #1 09-16-09 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,958.77	5,029.75	4,716.25	23.41	32.12	-51.35	531.66	1,427.47	688.37	646.50	41.88	16.438	
5,200.00	5,055.03	5,127.84	4,805.32	23.98	32.96	-51.22	545.57	1,466.15	707.73	664.89	42.85	16.517	
5,300.00	5,151.29	5,225.94	4,894.38	24.55	33.81	-51.09	559.48	1,504.83	727.09	683.27	43.82	16.593	
5,400.00	5,247.55	5,324.03	4,983.45	25.12	34.66	-50.97	573.39	1,543.51	746.46	701.67	44.79	16.665	
5,415.95	5,262.91	5,339.68	4,997.66	25.22	34.80	-50.95	575.61	1,549.68	749.55	704.60	44.95	16.676	
5,500.00	5,344.14	5,421.95	5,072.36	25.62	35.51	-51.05	587.28	1,582.12	766.59	720.86	45.73	16.762	
5,600.00	5,441.55	5,523.07	5,164.19	26.00	36.37	-51.01	601.61	1,621.95	788.83	742.33	46.50	16.965	
5,700.00	5,539.70	5,650.76	5,281.57	26.33	37.27	-50.78	618.61	1,669.23	810.97	763.82	47.15	17.199	
5,800.00	5,638.45	5,780.14	5,402.66	26.62	38.03	-50.51	634.02	1,712.07	831.59	783.93	47.66	17.448	
5,900.00	5,737.69	5,911.16	5,527.26	26.86	38.71	-50.20	647.73	1,750.16	850.62	802.56	48.06	17.699	
6,000.00	5,837.30	6,043.75	5,655.10	27.05	39.30	-49.85	659.61	1,783.22	868.01	819.67	48.34	17.955	
6,100.00	5,937.16	6,177.82	5,785.88	27.21	39.81	-49.47	669.59	1,810.94	883.72	835.20	48.52	18.215	
6,201.86	6,039.00	6,315.82	5,921.78	27.32	40.24	40.79	677.68	1,833.44	897.93	849.35	48.58	18.485	
6,300.00	6,137.14	6,450.28	6,055.15	27.41	40.55	41.32	683.42	1,849.41	908.77	860.14	48.64	18.685	
6,400.00	6,237.14	6,588.64	6,193.07	27.52	40.79	41.65	687.12	1,859.68	915.70	866.92	48.78	18.772	
6,500.00	6,337.14	6,727.74	6,332.09	27.63	40.94	41.78	688.55	1,863.67	918.38	869.39	48.99	18.746	
6,600.00	6,437.14	6,832.79	6,437.14	27.73	41.02	41.78	688.57	1,863.73	918.42	869.19	49.23	18.657	
6,700.00	6,537.14	6,932.79	6,537.14	27.84	41.09	41.78	688.57	1,863.73	918.42	868.95	49.46	18.567	
6,800.00	6,637.14	7,032.79	6,637.14	27.96	41.17	41.78	688.57	1,863.73	918.42	868.71	49.71	18.477	
6,900.00	6,737.14	7,132.79	6,737.14	28.07	41.24	41.78	688.57	1,863.73	918.42	868.47	49.95	18.387	
7,000.00	6,837.14	7,232.79	6,837.14	28.18	41.32	41.78	688.57	1,863.73	918.42	868.22	50.20	18.296	
7,100.00	6,937.14	7,332.79	6,937.14	28.30	41.40	41.78	688.57	1,863.73	918.42	867.97	50.45	18.205	
7,200.00	7,037.14	7,432.79	7,037.14	28.41	41.48	41.78	688.57	1,863.73	918.42	867.72	50.70	18.114	
7,300.00	7,137.14	7,532.79	7,137.14	28.53	41.57	41.78	688.57	1,863.73	918.42	867.46	50.96	18.024	
7,400.00	7,237.14	7,632.79	7,237.14	28.65	41.65	41.78	688.57	1,863.73	918.42	867.20	51.21	17.933	
7,500.00	7,337.14	7,732.79	7,337.14	28.77	41.73	41.78	688.57	1,863.73	918.42	866.94	51.48	17.842	
7,600.00	7,437.14	7,832.79	7,437.14	28.89	41.82	41.78	688.57	1,863.73	918.42	866.68	51.74	17.751	
7,700.00	7,537.14	7,932.79	7,537.14	29.02	41.90	41.78	688.57	1,863.73	918.42	866.41	52.00	17.660	
7,800.00	7,637.14	8,032.79	7,637.14	29.14	41.99	41.78	688.57	1,863.73	918.42	866.14	52.27	17.570	
7,900.00	7,737.14	8,132.79	7,737.14	29.26	42.08	41.78	688.57	1,863.73	918.42	865.87	52.54	17.479	
8,000.00	7,837.14	8,232.79	7,837.14	29.39	42.17	41.78	688.57	1,863.73	918.42	865.60	52.82	17.389	
8,046.86	7,884.00	8,279.66	7,884.00	29.45	42.21	41.78	688.57	1,863.73	918.42	865.47	52.95	17.346	



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_VOGL 14-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Reference Site:	WELD_VOGL 4 PAD	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_VOGL 4 PAD - P_VOGL 35-36 - P_VOGL 35-36 - PLAN #1 09-10-09 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWMD												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	-169.15	-14.58	-2.79	14.84				
100.00	100.00	100.00	100.00	0.10	0.10	-169.15	-14.58	-2.79	14.84	14.65	0.19	77.680	
200.00	200.00	200.00	200.00	0.32	0.32	-169.15	-14.58	-2.79	14.84	14.20	0.64	23.168	
300.00	300.00	300.00	300.00	0.55	0.55	-169.15	-14.58	-2.79	14.84	13.75	1.09	13.614	
400.00	400.00	400.00	400.00	0.77	0.77	-169.15	-14.58	-2.79	14.84	13.30	1.54	9.639	
500.00	500.00	500.00	500.00	0.99	0.99	-169.15	-14.58	-2.79	14.84	12.85	1.99	7.461	
600.00	600.00	600.00	600.00	1.22	1.22	-169.15	-14.58	-2.79	14.84	12.40	2.44	6.086	
700.00	700.00	700.00	700.00	1.44	1.44	-169.15	-14.58	-2.79	14.84	11.95	2.89	5.138	
800.00	800.00	800.00	800.00	1.67	1.67	-169.15	-14.58	-2.79	14.84	11.50	3.34	4.446 CC, ES	
900.00	899.98	899.69	899.67	1.88	1.87	101.97	-15.81	-1.57	16.16	12.41	3.75	4.308 SF	
1,000.00	999.84	999.27	999.11	2.09	2.06	104.07	-19.49	2.09	20.13	15.99	4.15	4.856	
1,100.00	1,099.45	1,098.64	1,098.10	2.31	2.26	106.15	-25.62	8.16	26.78	22.21	4.57	5.858	
1,200.00	1,198.70	1,197.69	1,196.42	2.56	2.50	107.74	-34.14	16.62	36.10	31.06	5.04	7.161	
1,300.00	1,297.47	1,296.32	1,293.84	2.84	2.77	108.82	-45.02	27.41	48.07	42.50	5.57	8.628	
1,400.00	1,395.62	1,394.43	1,390.18	3.17	3.08	109.51	-58.20	40.49	62.67	56.49	6.18	10.144	
1,500.00	1,493.06	1,491.94	1,485.23	3.55	3.44	109.94	-73.61	55.78	79.85	72.98	6.87	11.618	
1,585.91	1,576.09	1,575.15	1,565.72	3.92	3.80	110.16	-88.57	70.62	96.64	89.09	7.55	12.798	
1,600.00	1,589.65	1,588.74	1,578.81	3.98	3.86	110.22	-91.17	73.20	99.57	91.90	7.67	12.984	
1,700.00	1,685.91	1,686.45	1,672.78	4.46	4.33	110.38	-110.16	92.04	120.47	111.92	8.55	14.089	
1,800.00	1,782.17	1,784.24	1,766.84	4.96	4.82	110.49	-129.17	110.91	141.37	131.90	9.47	14.924	
1,900.00	1,878.43	1,882.03	1,860.89	5.47	5.33	110.58	-148.19	129.77	162.28	151.86	10.42	15.568	
2,000.00	1,974.69	1,979.82	1,954.94	5.99	5.85	110.64	-167.20	148.64	183.19	171.79	11.40	16.074	
2,100.00	2,070.96	2,077.61	2,048.99	6.53	6.38	110.69	-186.22	167.51	204.09	191.71	12.39	16.478	
2,200.00	2,167.22	2,175.40	2,143.04	7.06	6.92	110.73	-205.23	186.37	225.00	211.61	13.39	16.806	
2,300.00	2,263.48	2,273.19	2,237.09	7.61	7.46	110.77	-224.24	205.24	245.91	231.51	14.40	17.076	
2,400.00	2,359.74	2,370.98	2,331.14	8.16	8.00	110.80	-243.26	224.10	266.81	251.39	15.42	17.302	
2,500.00	2,456.00	2,468.77	2,425.19	8.71	8.55	110.82	-262.27	242.97	287.72	271.27	16.45	17.493	
2,600.00	2,552.26	2,566.56	2,519.24	9.26	9.10	110.84	-281.29	261.83	308.63	291.15	17.48	17.655	
2,700.00	2,648.52	2,664.35	2,613.29	9.82	9.65	110.86	-300.30	280.70	329.53	311.01	18.52	17.795	
2,800.00	2,744.78	2,762.14	2,707.34	10.37	10.21	110.88	-319.32	299.56	350.44	330.88	19.56	17.917	
2,900.00	2,841.04	2,859.93	2,801.39	10.93	10.77	110.89	-338.33	318.43	371.35	350.74	20.60	18.024	
3,000.00	2,937.30	2,957.72	2,895.44	11.49	11.32	110.91	-357.34	337.29	392.25	370.60	21.65	18.118	
3,100.00	3,033.56	3,055.51	2,989.49	12.06	11.88	110.92	-376.36	356.16	413.16	390.46	22.70	18.201	
3,200.00	3,129.82	3,153.30	3,083.54	12.62	12.45	110.93	-395.37	375.03	434.07	410.32	23.75	18.275	
3,300.00	3,226.08	3,251.09	3,177.59	13.18	13.01	110.94	-414.39	393.89	454.97	430.17	24.80	18.342	
3,400.00	3,322.34	3,348.88	3,271.64	13.75	13.57	110.95	-433.40	412.76	475.88	450.02	25.86	18.402	
3,500.00	3,418.60	3,446.67	3,365.69	14.31	14.13	110.95	-452.41	431.62	496.79	469.87	26.92	18.457	
3,600.00	3,514.86	3,544.46	3,459.74	14.88	14.70	110.96	-471.43	450.49	517.70	489.72	27.97	18.506	
3,700.00	3,611.12	3,642.25	3,553.79	15.45	15.26	110.97	-490.44	469.35	538.60	509.57	29.03	18.552	
3,800.00	3,707.38	3,740.04	3,647.84	16.01	15.83	110.97	-509.46	488.22	559.51	529.42	30.09	18.593	
3,900.00	3,803.65	3,837.83	3,741.89	16.58	16.39	110.98	-528.47	507.08	580.42	549.26	31.15	18.631	
4,000.00	3,899.91	3,936.69	3,836.98	17.15	16.95	110.99	-547.67	526.13	601.31	569.10	32.21	18.669	
4,100.00	3,996.17	4,043.46	3,940.31	17.72	17.42	111.21	-566.73	545.05	621.34	588.14	33.20	18.717	
4,200.00	4,092.43	4,150.55	4,044.88	18.28	17.81	111.75	-583.09	561.28	639.99	605.88	34.11	18.763	
4,300.00	4,188.69	4,257.66	4,150.27	18.85	18.15	112.59	-596.67	574.75	657.33	622.36	34.97	18.795	
4,400.00	4,284.95	4,364.50	4,256.03	19.42	18.44	113.70	-607.41	585.41	673.50	637.71	35.78	18.821	
4,500.00	4,381.21	4,470.78	4,361.71	19.99	18.68	115.05	-615.32	593.25	688.66	652.13	36.53	18.852	
4,600.00	4,477.47	4,576.20	4,466.88	20.56	18.86	116.64	-620.40	598.30	703.03	665.83	37.20	18.897	
4,700.00	4,573.73	4,680.49	4,571.12	21.13	19.00	118.43	-622.73	600.61	716.86	679.07	37.79	18.969	
4,800.00	4,669.99	4,779.36	4,669.99	21.70	19.11	120.28	-622.91	600.78	730.60	692.29	38.31	19.069	
4,900.00	4,766.25	4,875.62	4,766.25	22.27	19.21	122.03	-622.91	600.78	745.01	706.21	38.80	19.201	
5,000.00	4,862.51	4,971.88	4,862.51	22.84	19.31	123.72	-622.91	600.78	760.11	720.85	39.26	19.360	

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



Weatherford International Ltd.

Anticollision Report



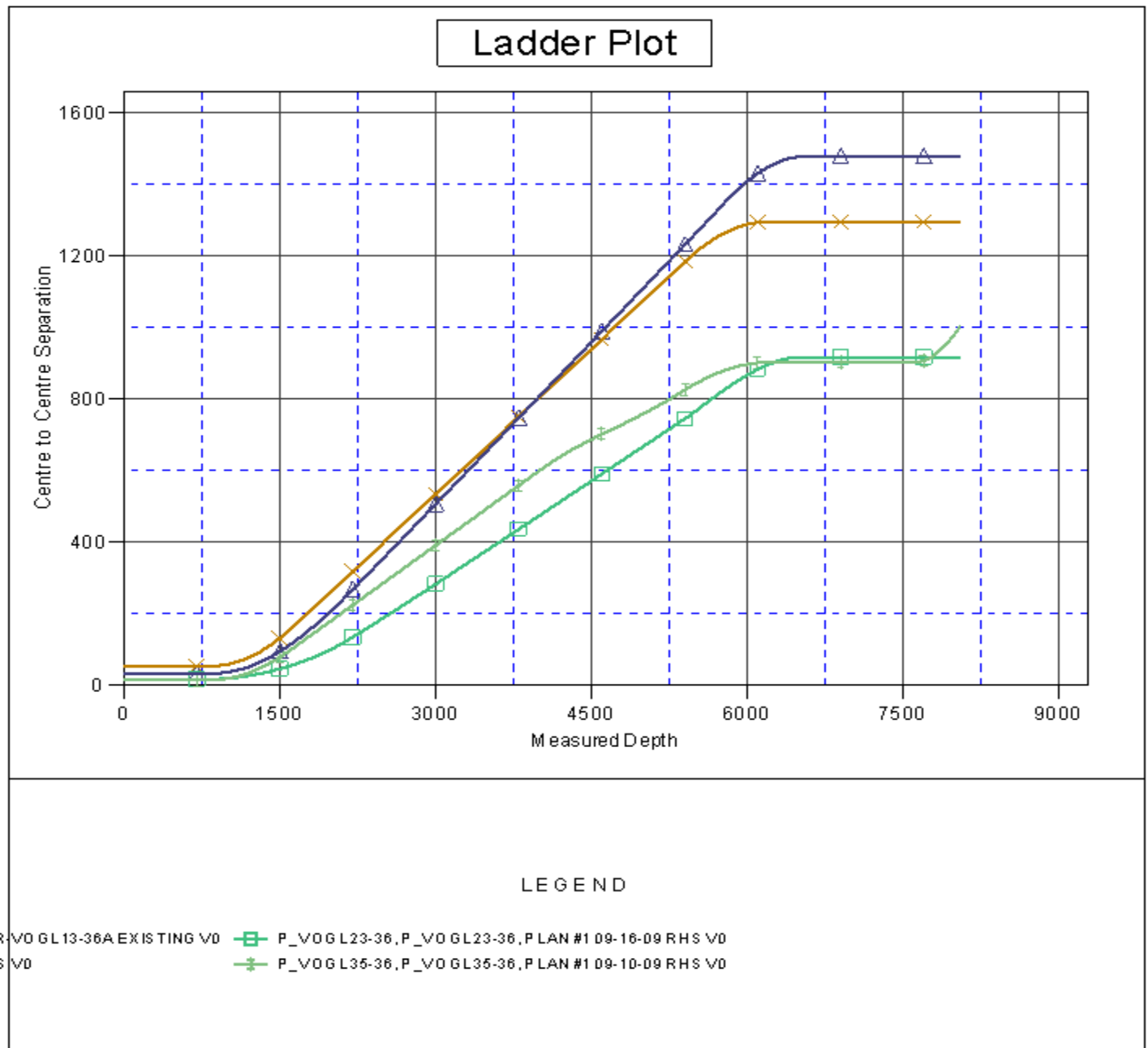
Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_VOGL 14-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Reference Site:	WELD_VOGL 4 PAD	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_VOGL 4 PAD - P_VOGL 35-36 - P_VOGL 35-36 - PLAN #1 09-10-09 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,958.77	5,068.14	4,958.77	23.41	19.42	125.34	-622.91	600.78	775.87	736.17	39.70	19.543	
5,200.00	5,055.03	5,164.41	5,055.03	23.98	19.53	126.90	-622.91	600.78	792.24	752.12	40.12	19.747	
5,300.00	5,151.29	5,260.67	5,151.29	24.55	19.63	128.40	-622.91	600.78	809.18	768.66	40.52	19.971	
5,400.00	5,247.55	5,356.93	5,247.55	25.12	19.74	129.84	-622.91	600.78	826.66	785.76	40.90	20.211	
5,415.95	5,262.91	5,372.28	5,262.91	25.22	19.76	130.06	-622.91	600.78	829.50	788.54	40.96	20.251	
5,500.00	5,344.14	5,453.51	5,344.14	25.62	19.86	131.38	-622.91	600.78	843.86	802.60	41.25	20.455	
5,600.00	5,441.55	5,550.93	5,441.55	26.00	19.97	132.72	-622.91	600.78	859.18	817.66	41.52	20.691	
5,700.00	5,539.70	5,649.07	5,539.70	26.33	20.09	133.83	-622.91	600.78	872.44	830.66	41.78	20.883	
5,800.00	5,638.45	5,747.83	5,638.45	26.62	20.21	134.72	-622.91	600.78	883.47	841.46	42.01	21.028	
5,900.00	5,737.69	5,847.07	5,737.69	26.86	20.33	135.40	-622.91	600.78	892.18	849.94	42.24	21.124	
6,000.00	5,837.30	5,946.68	5,837.30	27.05	20.45	135.88	-622.91	600.78	898.47	856.02	42.45	21.167	
6,100.00	5,937.16	6,046.53	5,937.16	27.21	20.58	136.17	-622.91	600.78	902.29	859.64	42.65	21.158	
6,201.86	6,039.00	6,148.37	6,039.00	27.32	20.71	-133.90	-622.91	600.78	903.59	860.75	42.84	21.092	
6,300.00	6,137.14	6,246.51	6,137.14	27.41	20.84	-133.90	-622.91	600.78	903.59	860.51	43.08	20.973	
6,400.00	6,237.14	6,346.51	6,237.14	27.52	20.97	-133.90	-622.91	600.78	903.59	860.25	43.34	20.849	
6,500.00	6,337.14	6,446.51	6,337.14	27.63	21.10	-133.90	-622.91	600.78	903.59	859.99	43.60	20.725	
6,600.00	6,437.14	6,546.51	6,437.14	27.73	21.24	-133.90	-622.91	600.78	903.59	859.73	43.86	20.601	
6,700.00	6,537.14	6,646.51	6,537.14	27.84	21.37	-133.90	-622.91	600.78	903.59	859.47	44.13	20.477	
6,800.00	6,637.14	6,746.51	6,637.14	27.96	21.51	-133.90	-622.91	600.78	903.59	859.20	44.40	20.353	
6,900.00	6,737.14	6,846.51	6,737.14	28.07	21.65	-133.90	-622.91	600.78	903.59	858.93	44.67	20.229	
7,000.00	6,837.14	6,946.51	6,837.14	28.18	21.79	-133.90	-622.91	600.78	903.59	858.65	44.94	20.106	
7,100.00	6,937.14	7,046.51	6,937.14	28.30	21.93	-133.90	-622.91	600.78	903.59	858.37	45.22	19.982	
7,200.00	7,037.14	7,146.51	7,037.14	28.41	22.07	-133.90	-622.91	600.78	903.59	858.09	45.50	19.860	
7,300.00	7,137.14	7,246.51	7,137.14	28.53	22.22	-133.90	-622.91	600.78	903.59	857.81	45.78	19.737	
7,400.00	7,237.14	7,346.51	7,237.14	28.65	22.37	-133.90	-622.91	600.78	903.59	857.53	46.07	19.615	
7,500.00	7,337.14	7,446.51	7,337.14	28.77	22.51	-133.90	-622.91	600.78	903.59	857.24	46.35	19.493	
7,600.00	7,437.14	7,546.51	7,437.14	28.89	22.66	-133.90	-622.91	600.78	903.59	856.95	46.65	19.372	
7,700.00	7,537.14	7,558.37	7,449.00	29.02	22.68	-133.90	-622.91	600.78	907.88	861.08	46.81	19.397	
7,800.00	7,637.14	7,558.37	7,449.00	29.14	22.68	-133.90	-622.91	600.78	922.97	876.02	46.95	19.658	
7,900.00	7,737.14	7,558.37	7,449.00	29.26	22.68	-133.90	-622.91	600.78	948.42	901.32	47.10	20.138	
8,000.00	7,837.14	7,558.37	7,449.00	29.39	22.68	-133.90	-622.91	600.78	983.43	936.18	47.24	20.816	
8,046.86	7,884.00	7,558.37	7,449.00	29.45	22.68	-133.90	-622.91	600.78	1,002.85	955.54	47.31	21.196	



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_VOGL 14-36
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4832.00ft (Original Well Elev)
Reference Site:	WELD_VOGL 4 PAD	MD Reference:	WELL @ 4832.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_VOGL 14-36	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4832.00ft (Original Well Elev)Coordinates are relative to: P_VOGL 14-36
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: 0.35°

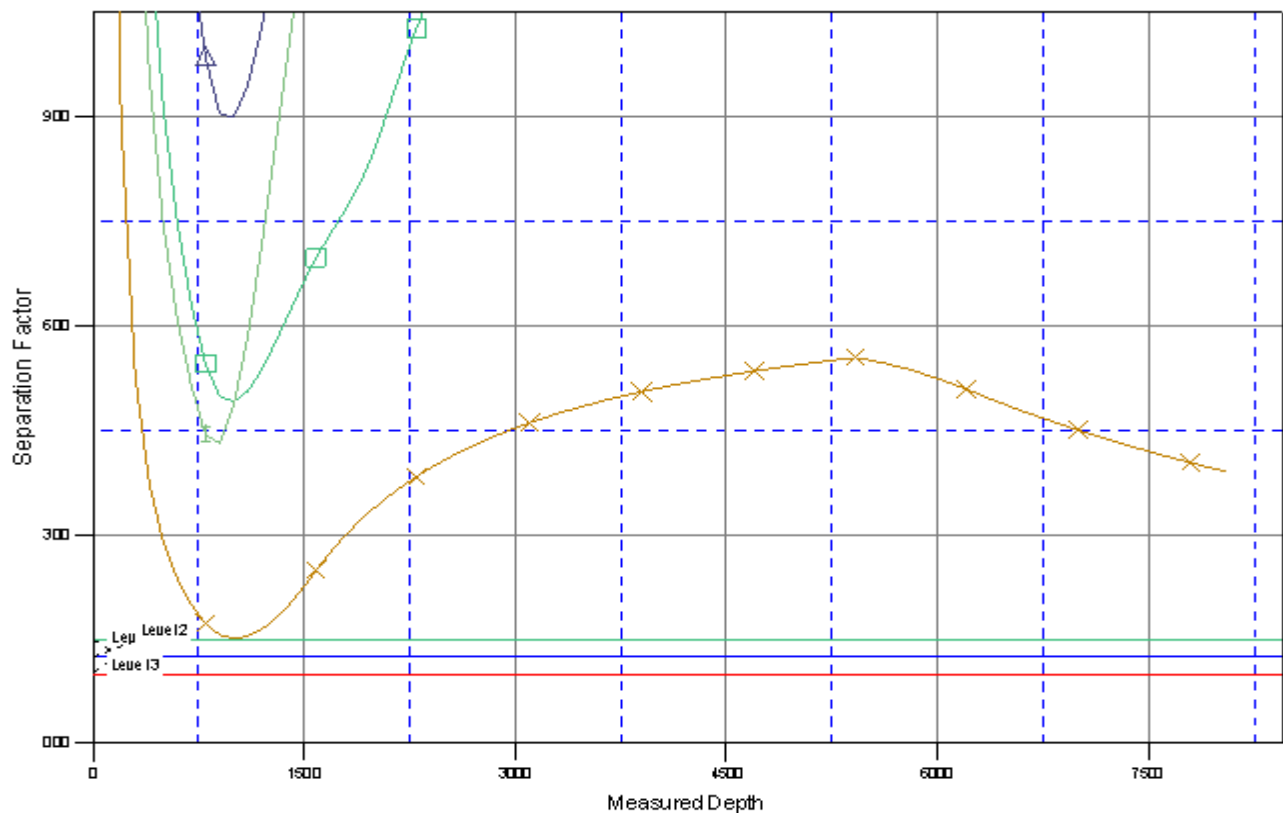




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Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_VOGL 14-36	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-16-09 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4832.00ft (Original Well Elev)Coordinates are relative to: P_VOGL 14-36
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: 0.35°

Separation Factor Plot



LEGEND

R_VOGL13-36A EXISTING VO - P_VOGL23-36, P_VOGL23-36, PLAN #1 09-16-09 RHS VO
IS VO - P_VOGL35-36, P_VOGL35-36, PLAN #1 09-10-09 RHS VO