



US ROCKIES REGION PLANNING

**KERR MCGEE OIL & GAS ONSHORE LP
WELD_HOUSTON STATE 2 PAD
P_HOUSTON STATE 32-16**

P_HOUSTON STATE 32-16

Plan: PLAN #1 09-02-09 RHS

Standard Planning Report

02 September, 2009





P_HOUSTON STATE 32-16
KERR MCGEE OIL & GAS ONSHORE LP
SECTION 16 T3N R67W
1772 FNL 499 FWL
LAT: 40° 13' 41.520 N
LONG: 104° 54' 10.368 W



Azimuths to True North
Magnetic North: 9.13°
Magnetic Field
Strength: 53233.5nT
Dip Angle: 66.96°
Date: 9/2/2009
Model: IGRF200510

WELL DETAILS: P_HOUSTON STATE 32-16

+N/-S	+E/-W	Northing	Ground Level: Easting	4733.00 Latitude	Longitude	Slot
0.00	0.00	1326536.60	3166724.28	40° 13' 41.520 N	104° 54' 10.368 W	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3500.00	3657.59	PARKMAN
4050.00	4211.03	SUSSEX TOP
6515.00	6676.03	NIO A TOP
7076.00	7237.03	CODELL TOP
7495.00	7656.03	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	
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	
1948.18	23.96	208.25	1913.55	-217.53	-116.87	2.00	208.25	246.93	
3012.85	23.96	208.25	2886.45	-598.46	-321.52	0.00	0.00	679.36	
4211.03	0.00	0.00	4050.00	-815.98	-438.38	2.00	180.00	926.29	
7806.03	0.00	0.00	7645.00	-815.98	-438.38	0.00	0.00	926.29	PBHL_HOUSTON STATE 32-16(590 FNL 50 FWL)50' TGT

CASING DETAILS

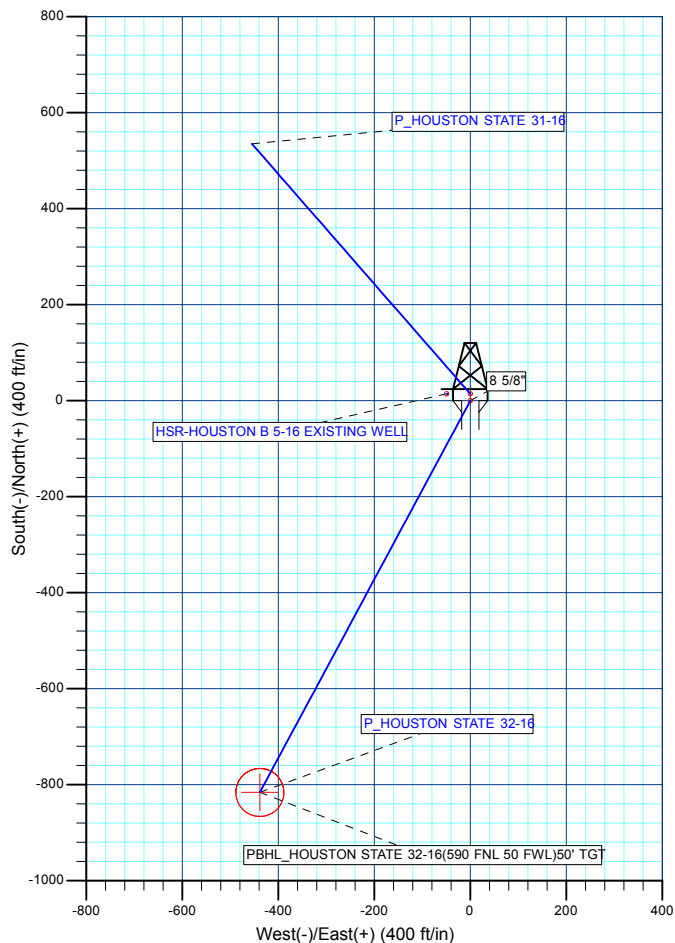
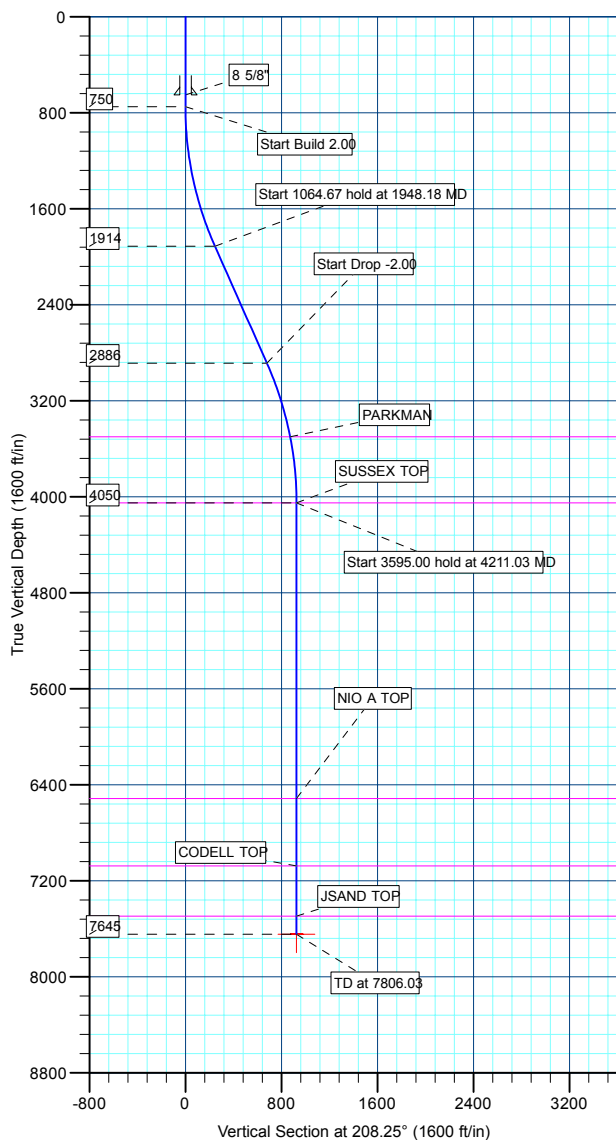
TVD	MD	Name	Size
650.00	650.00	8 5/8"	8.62

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	7645.00	-815.98	-438.38	1325717.69	3166291.40	40° 13' 33.456 N	104° 54' 16.020 W	Circle (Radius: 50.00)



KB ELEV: WELL @ 4748.00ft (Original Well Elev)
GRD ELEV: 4733.00



Plan: PLAN #1 09-02-09 RHS (P_HOUSTON STATE 32-16/P_HOUSTON STATE 32-16)

Created By: Robert H. Scott



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_HOUSTON STATE 32-16
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4748.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site:	WELD_HOUSTON STATE 2 PAD	North Reference:	True
Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_HOUSTON STATE 32-16		
Design:	PLAN #1 09-02-09 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_HOUSTON STATE 2 PAD, SECTION 16 T3N R67W			
Site Position:		Northing:	1,326,551.19 ft	Latitude:	40° 13' 41.664 N
From:	Lat/Long	Easting:	3,166,724.18 ft	Longitude:	104° 54' 10.368 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	0.39 °

Well	P_HOUSTON STATE 32-16					
Well Position	+N/-S	-14.58 ft	Northing:	1,326,536.60 ft	Latitude:	40° 13' 41.520 N
	+E/-W	0.00 ft	Easting:	3,166,724.28 ft	Longitude:	104° 54' 10.368 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,733.00 ft

Wellbore	P_HOUSTON STATE 32-16				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/2/2009	9.13	66.96	53,234

Design	PLAN #1 09-02-09 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	208.25

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,948.18	23.96	208.25	1,913.55	-217.53	-116.87	2.00	2.00	0.00	208.25	
3,012.85	23.96	208.25	2,886.45	-598.46	-321.52	0.00	0.00	0.00	0.00	
4,211.03	0.00	0.00	4,050.00	-815.98	-438.38	2.00	-2.00	0.00	180.00	
7,806.03	0.00	0.00	7,645.00	-815.98	-438.38	0.00	0.00	0.00	0.00	PBHL_HOUSTON :



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_HOUSTON STATE 32-16
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4748.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site:	WELD_HOUSTON STATE 2 PAD	North Reference:	True
Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_HOUSTON STATE 32-16		
Design:	PLAN #1 09-02-09 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									
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	1.00	208.25	800.00	-0.38	-0.21	0.44	2.00	2.00	0.00
900.00	3.00	208.25	899.93	-3.46	-1.86	3.93	2.00	2.00	0.00
1,000.00	5.00	208.25	999.68	-9.60	-5.16	10.90	2.00	2.00	0.00
1,100.00	7.00	208.25	1,099.13	-18.81	-10.11	21.35	2.00	2.00	0.00
1,200.00	9.00	208.25	1,198.15	-31.07	-16.69	35.27	2.00	2.00	0.00
1,300.00	11.00	208.25	1,296.63	-46.37	-24.91	52.63	2.00	2.00	0.00
1,400.00	13.00	208.25	1,394.44	-64.68	-34.75	73.42	2.00	2.00	0.00
1,500.00	15.00	208.25	1,491.46	-85.99	-46.20	97.62	2.00	2.00	0.00
1,600.00	17.00	208.25	1,587.58	-110.27	-59.24	125.18	2.00	2.00	0.00
1,700.00	19.00	208.25	1,682.68	-137.49	-73.87	156.08	2.00	2.00	0.00
1,800.00	21.00	208.25	1,776.65	-167.62	-90.05	190.28	2.00	2.00	0.00
1,900.00	23.00	208.25	1,869.36	-200.62	-107.78	227.74	2.00	2.00	0.00
Start 1064.67 hold at 1948.18 MD									
1,948.18	23.96	208.25	1,913.55	-217.53	-116.87	246.93	2.00	2.00	0.00
2,000.00	23.96	208.25	1,960.91	-236.07	-126.83	267.98	0.00	0.00	0.00
2,100.00	23.96	208.25	2,052.29	-271.85	-146.05	308.60	0.00	0.00	0.00
2,200.00	23.96	208.25	2,143.67	-307.63	-165.27	349.21	0.00	0.00	0.00
2,300.00	23.96	208.25	2,235.05	-343.41	-184.49	389.83	0.00	0.00	0.00
2,400.00	23.96	208.25	2,326.43	-379.18	-203.72	430.44	0.00	0.00	0.00
2,500.00	23.96	208.25	2,417.81	-414.96	-222.94	471.06	0.00	0.00	0.00
2,600.00	23.96	208.25	2,509.19	-450.74	-242.16	511.67	0.00	0.00	0.00
2,700.00	23.96	208.25	2,600.57	-486.52	-261.38	552.29	0.00	0.00	0.00
2,800.00	23.96	208.25	2,691.95	-522.30	-280.60	592.91	0.00	0.00	0.00
2,900.00	23.96	208.25	2,783.33	-558.08	-299.83	633.52	0.00	0.00	0.00
3,000.00	23.96	208.25	2,874.71	-593.86	-319.05	674.14	0.00	0.00	0.00
Start Drop -2.00									
3,012.85	23.96	208.25	2,886.45	-598.46	-321.52	679.36	0.00	0.00	0.00
3,100.00	22.22	208.25	2,966.62	-628.57	-337.69	713.54	2.00	-2.00	0.00
3,200.00	20.22	208.25	3,059.83	-660.45	-354.82	749.73	2.00	-2.00	0.00
3,300.00	18.22	208.25	3,154.25	-689.45	-370.40	782.65	2.00	-2.00	0.00
3,400.00	16.22	208.25	3,249.76	-715.53	-384.41	812.25	2.00	-2.00	0.00
3,500.00	14.22	208.25	3,346.25	-738.65	-396.84	838.50	2.00	-2.00	0.00
3,600.00	12.22	208.25	3,443.60	-758.80	-407.66	861.37	2.00	-2.00	0.00
PARKMAN									
3,657.59	11.07	208.25	3,500.00	-769.04	-413.16	873.00	2.00	-2.00	0.00
3,700.00	10.22	208.25	3,541.68	-775.94	-416.87	880.83	2.00	-2.00	0.00
3,800.00	8.22	208.25	3,640.38	-790.05	-424.45	896.85	2.00	-2.00	0.00
3,900.00	6.22	208.25	3,739.58	-801.12	-430.40	909.42	2.00	-2.00	0.00
4,000.00	4.22	208.25	3,839.16	-809.14	-434.71	918.52	2.00	-2.00	0.00
4,100.00	2.22	208.25	3,939.00	-814.09	-437.37	924.14	2.00	-2.00	0.00
4,200.00	0.22	208.25	4,038.97	-815.96	-438.37	926.27	2.00	-2.00	0.00
Start 3595.00 hold at 4211.03 MD - SUSSEX TOP									
4,211.03	0.00	0.00	4,050.00	-815.98	-438.38	926.29	2.00	-2.00	0.00
4,300.00	0.00	0.00	4,138.97	-815.98	-438.38	926.29	0.00	0.00	0.00
4,400.00	0.00	0.00	4,238.97	-815.98	-438.38	926.29	0.00	0.00	0.00
4,500.00	0.00	0.00	4,338.97	-815.98	-438.38	926.29	0.00	0.00	0.00
4,600.00	0.00	0.00	4,438.97	-815.98	-438.38	926.29	0.00	0.00	0.00
4,700.00	0.00	0.00	4,538.97	-815.98	-438.38	926.29	0.00	0.00	0.00
4,800.00	0.00	0.00	4,638.97	-815.98	-438.38	926.29	0.00	0.00	0.00
4,900.00	0.00	0.00	4,738.97	-815.98	-438.38	926.29	0.00	0.00	0.00
5,000.00	0.00	0.00	4,838.97	-815.98	-438.38	926.29	0.00	0.00	0.00



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_HOUSTON STATE 32-16
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4748.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site:	WELD_HOUSTON STATE 2 PAD	North Reference:	True
Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_HOUSTON STATE 32-16		
Design:	PLAN #1 09-02-09 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)
5,100.00	0.00	0.00	4,938.97	-815.98	-438.38	926.29	0.00	0.00	0.00
5,200.00	0.00	0.00	5,038.97	-815.98	-438.38	926.29	0.00	0.00	0.00
5,300.00	0.00	0.00	5,138.97	-815.98	-438.38	926.29	0.00	0.00	0.00
5,400.00	0.00	0.00	5,238.97	-815.98	-438.38	926.29	0.00	0.00	0.00
5,500.00	0.00	0.00	5,338.97	-815.98	-438.38	926.29	0.00	0.00	0.00
5,600.00	0.00	0.00	5,438.97	-815.98	-438.38	926.29	0.00	0.00	0.00
5,700.00	0.00	0.00	5,538.97	-815.98	-438.38	926.29	0.00	0.00	0.00
5,800.00	0.00	0.00	5,638.97	-815.98	-438.38	926.29	0.00	0.00	0.00
5,900.00	0.00	0.00	5,738.97	-815.98	-438.38	926.29	0.00	0.00	0.00
6,000.00	0.00	0.00	5,838.97	-815.98	-438.38	926.29	0.00	0.00	0.00
6,100.00	0.00	0.00	5,938.97	-815.98	-438.38	926.29	0.00	0.00	0.00
6,200.00	0.00	0.00	6,038.97	-815.98	-438.38	926.29	0.00	0.00	0.00
6,300.00	0.00	0.00	6,138.97	-815.98	-438.38	926.29	0.00	0.00	0.00
6,400.00	0.00	0.00	6,238.97	-815.98	-438.38	926.29	0.00	0.00	0.00
6,500.00	0.00	0.00	6,338.97	-815.98	-438.38	926.29	0.00	0.00	0.00
6,600.00	0.00	0.00	6,438.97	-815.98	-438.38	926.29	0.00	0.00	0.00
NIO A TOP									
6,676.03	0.00	0.00	6,515.00	-815.98	-438.38	926.29	0.00	0.00	0.00
6,700.00	0.00	0.00	6,538.97	-815.98	-438.38	926.29	0.00	0.00	0.00
6,800.00	0.00	0.00	6,638.97	-815.98	-438.38	926.29	0.00	0.00	0.00
6,900.00	0.00	0.00	6,738.97	-815.98	-438.38	926.29	0.00	0.00	0.00
7,000.00	0.00	0.00	6,838.97	-815.98	-438.38	926.29	0.00	0.00	0.00
7,100.00	0.00	0.00	6,938.97	-815.98	-438.38	926.29	0.00	0.00	0.00
7,200.00	0.00	0.00	7,038.97	-815.98	-438.38	926.29	0.00	0.00	0.00
CODELL TOP									
7,237.03	0.00	0.00	7,076.00	-815.98	-438.38	926.29	0.00	0.00	0.00
7,300.00	0.00	0.00	7,138.97	-815.98	-438.38	926.29	0.00	0.00	0.00
7,400.00	0.00	0.00	7,238.97	-815.98	-438.38	926.29	0.00	0.00	0.00
7,500.00	0.00	0.00	7,338.97	-815.98	-438.38	926.29	0.00	0.00	0.00
7,600.00	0.00	0.00	7,438.97	-815.98	-438.38	926.29	0.00	0.00	0.00
JSAND TOP									
7,656.03	0.00	0.00	7,495.00	-815.98	-438.38	926.29	0.00	0.00	0.00
7,700.00	0.00	0.00	7,538.97	-815.98	-438.38	926.29	0.00	0.00	0.00
7,800.00	0.00	0.00	7,638.97	-815.98	-438.38	926.29	0.00	0.00	0.00
PBHL_HOUSTON STATE 32-16(590 FNL 50 FWL)50' TGT									
7,806.03	0.00	0.00	7,645.00	-815.98	-438.38	926.29	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_HOUSTON ST	0.00	0.00	7,645.00	-815.98	-438.38	1,325,717.69	3,166,291.40	40° 13' 33.456 N	104° 54' 16.020 W
- plan hits target center									
- Circle (radius 50.00)									



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_HOUSTON STATE 32-16
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4748.00ft (Original Well Elev)
Project:	KERR MCGEE OIL & GAS ONSHORE LP	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site:	WELD_HOUSTON STATE 2 PAD	North Reference:	True
Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_HOUSTON STATE 32-16		
Design:	PLAN #1 09-02-09 RHS		

Casing Points

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

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,657.59	3,500.00	PARKMAN			
4,211.03	4,050.00	SUSSEX TOP			
6,676.03	6,515.00	NIO A TOP			
7,237.03	7,076.00	CODELL TOP			
7,656.03	7,495.00	JSAND TOP			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
750.00	750.00	0.00	0.00	Start Build 2.00
1,948.18	1,913.55	-217.53	-116.87	Start 1064.67 hold at 1948.18 MD
3,012.85	2,886.45	-598.46	-321.52	Start Drop -2.00
4,211.03	4,050.00	-815.98	-438.38	Start 3595.00 hold at 4211.03 MD
7,806.03	7,645.00	-815.98	-438.38	TD at 7806.03



US ROCKIES REGION PLANNING

**KERR MCGEE OIL & GAS ONSHORE LP
WELD_HOUSTON STATE 2 PAD
P_HOUSTON STATE 32-16**

**P_HOUSTON STATE 32-16
PLAN #1 09-02-09 RHS**

Anticollision Report

02 September, 2009





Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HOUSTON STATE 32-16
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4748.00ft (Original Well Elev)
Reference Site:	WELD_HOUSTON STATE 2 PAD	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HOUSTON STATE 32-16	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-02-09 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 09-02-09 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 9/2/2009			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	7,806.03	PLAN #1 09-02-09 RHS (P_HOUSTON S	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_HOUSTON STATE 2 PAD						
HSR-HOUSTON B 5-16 EXISTING WELL - HSR-HOUST	992.70	992.41	50.11	10.70	1.272	Level 3, CC
HSR-HOUSTON B 5-16 EXISTING WELL - HSR-HOUST	1,100.00	1,099.13	51.32	7.42	1.169	Level 2, ES
HSR-HOUSTON B 5-16 EXISTING WELL - HSR-HOUST	1,200.00	1,198.15	56.00	7.99	1.167	Level 2, SF
P_HOUSTON STATE 31-16 - P_HOUSTON STATE 31-	750.00	750.00	14.58	11.47	4.685	CC, ES
P_HOUSTON STATE 31-16 - P_HOUSTON STATE 31-	800.00	799.80	15.30	11.97	4.605	SF

Offset Design WELD_HOUSTON STATE 2 PAD - HSR-HOUSTON B 5-16 EXISTING WELL - HSR-HOUSTON B 5-16												
Survey Program: 0-UNKNOWN												
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
0.00	0.00	0.00	0.00	0.00	0.00	-73.34	14.66	-49.01	51.16			
100.00	100.00	100.00	100.00	0.10	1.70	-73.34	14.66	-49.01	51.16	49.36	1.80	28.491
200.00	200.00	200.00	200.00	0.32	5.70	-73.34	14.66	-49.01	51.16	45.14	6.02	8.497
300.00	300.00	300.00	300.00	0.55	9.70	-73.34	14.66	-49.01	51.16	40.91	10.25	4.993
400.00	400.00	400.00	400.00	0.77	13.70	-73.34	14.66	-49.01	51.16	36.69	14.47	3.535
500.00	500.00	500.00	500.00	0.99	17.70	-73.34	14.66	-49.01	51.16	32.46	18.69	2.736
600.00	600.00	600.00	600.00	1.22	21.70	-73.34	14.66	-49.01	51.16	28.24	22.92	2.232
700.00	700.00	700.00	700.00	1.44	25.70	-73.34	14.66	-49.01	51.16	24.01	27.14	1.885
750.00	750.00	750.00	750.00	1.56	27.70	-73.34	14.66	-49.01	51.16	21.90	29.26	1.749
800.00	800.00	800.00	800.00	1.66	29.70	78.89	14.66	-49.01	51.07	19.71	31.35	1.629
900.00	899.93	899.93	899.93	1.83	33.70	82.79	14.66	-49.01	50.51	14.98	35.53	1.422 Level 3
992.70	992.41	992.41	992.41	2.01	37.40	90.00	14.66	-49.01	50.11	10.70	39.41	1.272 Level 3, CC
1,000.00	999.68	999.68	999.68	2.03	37.69	90.71	14.66	-49.01	50.12	10.40	39.72	1.262 Level 3
1,100.00	1,099.13	1,099.13	1,099.13	2.25	41.67	102.37	14.66	-49.01	51.32	7.42	43.90	1.169 Level 2, ES
1,200.00	1,198.15	1,198.15	1,198.15	2.50	45.63	116.22	14.66	-49.01	56.00	7.99	48.00	1.167 Level 2, SF
1,300.00	1,296.63	1,296.63	1,296.63	2.80	49.57	129.68	14.66	-49.01	65.61	13.69	51.93	1.264 Level 3
1,400.00	1,394.44	1,394.44	1,394.44	3.14	53.48	140.84	14.66	-49.01	80.61	24.98	55.63	1.449 Level 3
1,500.00	1,491.46	1,491.46	1,491.46	3.55	57.36	149.29	14.66	-49.01	100.69	41.56	59.13	1.703
1,600.00	1,587.58	1,587.58	1,587.58	4.02	61.20	155.48	14.66	-49.01	125.35	62.91	62.44	2.007
1,700.00	1,682.68	1,682.68	1,682.68	4.55	65.01	160.02	14.66	-49.01	154.17	88.59	65.58	2.351
1,800.00	1,776.65	1,776.65	1,776.65	5.15	68.77	163.39	14.66	-49.01	186.85	118.31	68.53	2.726
1,900.00	1,869.36	1,869.36	1,869.36	5.82	72.47	165.95	14.66	-49.01	223.16	151.87	71.28	3.131

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_HOUSTON STATE 32-16
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4748.00ft (Original Well Elev)
Reference Site:	WELD_HOUSTON STATE 2 PAD	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HOUSTON STATE 32-16	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-02-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												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
1,948.18	1,913.55	1,913.55	1,913.55	6.16	74.24	166.95	14.66	-49.01	241.90	169.37	72.53	3.335	
2,000.00	1,960.91	1,960.91	1,960.91	6.54	76.14	167.99	14.66	-49.01	262.53	188.15	74.38	3.530	
2,100.00	2,052.29	2,052.29	2,052.29	7.29	79.79	169.58	14.66	-49.01	302.50	224.54	77.96	3.880	
2,200.00	2,143.67	2,143.67	2,143.67	8.05	83.45	170.81	14.66	-49.01	342.62	261.04	81.57	4.200	
2,300.00	2,235.05	2,235.05	2,235.05	8.82	87.10	171.78	14.66	-49.01	382.84	297.64	85.20	4.493	
2,400.00	2,326.43	2,326.43	2,326.43	9.60	90.76	172.56	14.66	-49.01	423.14	334.29	88.85	4.763	
2,500.00	2,417.81	2,417.81	2,417.81	10.38	94.41	173.21	14.66	-49.01	463.50	370.99	92.50	5.011	
2,600.00	2,509.19	2,509.19	2,509.19	11.17	98.07	173.76	14.66	-49.01	503.89	407.73	96.16	5.240	
2,700.00	2,600.57	2,600.57	2,600.57	11.96	101.72	174.22	14.66	-49.01	544.32	444.49	99.83	5.452	
2,800.00	2,691.95	2,691.95	2,691.95	12.75	105.38	174.62	14.66	-49.01	584.78	481.27	103.50	5.650	
2,900.00	2,783.33	2,783.33	2,783.33	13.55	109.03	174.97	14.66	-49.01	625.25	518.07	107.18	5.834	
3,000.00	2,874.71	2,874.71	2,874.71	14.34	112.69	175.28	14.66	-49.01	665.75	554.89	110.86	6.005	
3,012.85	2,886.45	2,886.45	2,886.45	14.45	113.16	175.31	14.66	-49.01	670.95	559.62	111.33	6.027	
3,100.00	2,966.62	2,966.62	2,966.62	15.03	116.36	175.60	14.66	-49.01	705.04	589.13	115.91	6.083	
3,200.00	3,059.83	3,059.83	3,059.83	15.57	120.09	175.87	14.66	-49.01	741.15	619.99	121.16	6.117	
3,300.00	3,154.25	3,154.25	3,154.25	16.08	123.87	176.09	14.66	-49.01	773.99	647.57	126.42	6.122	
3,400.00	3,249.76	3,249.76	3,249.76	16.55	127.69	176.28	14.66	-49.01	803.54	671.89	131.64	6.104	
3,500.00	3,346.25	3,346.25	3,346.25	16.98	131.55	176.43	14.66	-49.01	829.74	692.93	136.81	6.065	
3,600.00	3,443.60	3,443.60	3,443.60	17.38	135.44	176.55	14.66	-49.01	852.57	710.68	141.89	6.009	
3,700.00	3,541.68	3,541.68	3,541.68	17.73	139.37	176.65	14.66	-49.01	871.99	725.12	146.88	5.937	
3,800.00	3,640.38	3,640.38	3,640.38	18.03	143.32	176.73	14.66	-49.01	887.99	736.25	151.74	5.852	
3,900.00	3,739.58	3,739.58	3,739.58	18.29	147.28	176.79	14.66	-49.01	900.54	744.07	156.47	5.755	
4,000.00	3,839.16	3,839.16	3,839.16	18.51	151.27	176.83	14.66	-49.01	909.62	748.58	161.04	5.648	
4,100.00	3,939.00	3,939.00	3,939.00	18.67	155.26	176.86	14.66	-49.01	915.23	749.80	165.43	5.532	
4,200.00	4,038.97	4,038.97	4,038.97	18.79	159.26	176.87	14.66	-49.01	917.36	747.73	169.62	5.408	
4,211.03	4,050.00	4,050.00	4,050.00	18.80	159.70	25.12	14.66	-49.01	917.38	747.31	170.07	5.394	
4,300.00	4,138.97	4,138.97	4,138.97	18.88	163.26	25.12	14.66	-49.01	917.38	743.60	173.78	5.279	
4,400.00	4,238.97	4,238.97	4,238.97	18.97	167.26	25.12	14.66	-49.01	917.38	739.44	177.94	5.155	
4,500.00	4,338.97	4,338.97	4,338.97	19.07	171.26	25.12	14.66	-49.01	917.38	735.27	182.11	5.038	
4,600.00	4,438.97	4,438.97	4,438.97	19.17	175.26	25.12	14.66	-49.01	917.38	731.10	186.28	4.925	
4,700.00	4,538.97	4,538.97	4,538.97	19.26	179.26	25.12	14.66	-49.01	917.38	726.93	190.45	4.817	
4,800.00	4,638.97	4,638.97	4,638.97	19.37	183.26	25.12	14.66	-49.01	917.38	722.76	194.62	4.714	
4,900.00	4,738.97	4,738.97	4,738.97	19.47	187.26	25.12	14.66	-49.01	917.38	718.58	198.80	4.615	
5,000.00	4,838.97	4,838.97	4,838.97	19.57	191.26	25.12	14.66	-49.01	917.38	714.41	202.97	4.520	
5,100.00	4,938.97	4,938.97	4,938.97	19.68	195.26	25.12	14.66	-49.01	917.38	710.23	207.15	4.429	
5,200.00	5,038.97	5,038.97	5,038.97	19.79	199.26	25.12	14.66	-49.01	917.38	706.05	211.33	4.341	
5,300.00	5,138.97	5,138.97	5,138.97	19.90	203.26	25.12	14.66	-49.01	917.38	701.87	215.51	4.257	
5,400.00	5,238.97	5,238.97	5,238.97	20.01	207.26	25.12	14.66	-49.01	917.38	697.69	219.69	4.176	
5,500.00	5,338.97	5,338.97	5,338.97	20.13	211.26	25.12	14.66	-49.01	917.38	693.50	223.88	4.098	
5,600.00	5,438.97	5,438.97	5,438.97	20.25	215.26	25.12	14.66	-49.01	917.38	689.32	228.06	4.023	
5,700.00	5,538.97	5,538.97	5,538.97	20.36	219.26	25.12	14.66	-49.01	917.38	685.13	232.25	3.950	
5,800.00	5,638.97	5,638.97	5,638.97	20.49	223.26	25.12	14.66	-49.01	917.38	680.94	236.44	3.880	
5,900.00	5,738.97	5,738.97	5,738.97	20.61	227.26	25.12	14.66	-49.01	917.38	676.76	240.62	3.813	
6,000.00	5,838.97	5,838.97	5,838.97	20.73	231.26	25.12	14.66	-49.01	917.38	672.57	244.81	3.747	
6,100.00	5,938.97	5,938.97	5,938.97	20.86	235.26	25.12	14.66	-49.01	917.38	668.38	249.00	3.684	
6,200.00	6,038.97	6,038.97	6,038.97	20.98	239.26	25.12	14.66	-49.01	917.38	664.18	253.20	3.623	
6,300.00	6,138.97	6,138.97	6,138.97	21.11	243.26	25.12	14.66	-49.01	917.38	659.99	257.39	3.564	
6,400.00	6,238.97	6,238.97	6,238.97	21.24	247.26	25.12	14.66	-49.01	917.38	655.80	261.58	3.507	
6,500.00	6,338.97	6,338.97	6,338.97	21.38	251.26	25.12	14.66	-49.01	917.38	651.60	265.78	3.452	
6,600.00	6,438.97	6,438.97	6,438.97	21.51	255.26	25.12	14.66	-49.01	917.38	647.41	269.97	3.398	
6,700.00	6,538.97	6,538.97	6,538.97	21.64	259.26	25.12	14.66	-49.01	917.38	643.21	274.17	3.346	
6,800.00	6,638.97	6,638.97	6,638.97	21.78	263.26	25.12	14.66	-49.01	917.38	639.01	278.37	3.296	

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_HOUSTON STATE 32-16
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4748.00ft (Original Well Elev)
Reference Site:	WELD_HOUSTON STATE 2 PAD	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HOUSTON STATE 32-16	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-02-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design										WELD_HOUSTON STATE 2 PAD - HSR-HOUSTON B 5-16 EXISTING WELL - HSR-HOUSTON B 5-16				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					
6,900.00	6,738.97	6,738.97	6,738.97	21.92	267.26	25.12	14.66	-49.01	917.38	634.82	282.56	3.247					
7,000.00	6,838.97	6,838.97	6,838.97	22.06	271.26	25.12	14.66	-49.01	917.38	630.62	286.76	3.199					
7,100.00	6,938.97	6,938.97	6,938.97	22.20	275.26	25.12	14.66	-49.01	917.38	626.42	290.96	3.153					
7,200.00	7,038.97	7,038.97	7,038.97	22.34	279.26	25.12	14.66	-49.01	917.38	622.22	295.16	3.108					
7,300.00	7,138.97	7,138.97	7,138.97	22.48	283.26	25.12	14.66	-49.01	917.38	618.02	299.36	3.064					
7,400.00	7,238.97	7,238.97	7,238.97	22.63	287.26	25.12	14.66	-49.01	917.38	613.82	303.56	3.022					
7,500.00	7,338.97	7,338.97	7,338.97	22.78	291.26	25.12	14.66	-49.01	917.38	609.61	307.76	2.981					
7,600.00	7,438.97	7,438.97	7,438.97	22.92	295.26	25.12	14.66	-49.01	917.38	605.41	311.97	2.941					
7,700.00	7,538.97	7,538.97	7,538.97	23.07	299.26	25.12	14.66	-49.01	917.38	601.21	316.17	2.902					
7,806.03	7,645.00	7,645.00	7,645.00	23.23	303.50	25.12	14.66	-49.01	917.38	596.75	320.63	2.861					



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HOUSTON STATE 32-16
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4748.00ft (Original Well Elev)
Reference Site:	WELD_HOUSTON STATE 2 PAD	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HOUSTON STATE 32-16	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-02-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HOUSTON STATE 2 PAD - P_HOUSTON STATE 31-16 - P_HOUSTON STATE 31-16 - PLAN ;												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.58	0.00	14.58				
100.00	100.00	100.00	100.00	0.10	0.10	0.00	14.58	0.00	14.58	14.39	0.19	76.335	
200.00	200.00	200.00	200.00	0.32	0.32	0.00	14.58	0.00	14.58	13.94	0.64	22.767	
300.00	300.00	300.00	300.00	0.55	0.55	0.00	14.58	0.00	14.58	13.49	1.09	13.378	
400.00	400.00	400.00	400.00	0.77	0.77	0.00	14.58	0.00	14.58	13.04	1.54	9.472	
500.00	500.00	500.00	500.00	0.99	0.99	0.00	14.58	0.00	14.58	12.59	1.99	7.332	
600.00	600.00	600.00	600.00	1.22	1.22	0.00	14.58	0.00	14.58	12.15	2.44	5.980	
700.00	700.00	700.00	700.00	1.44	1.44	0.00	14.58	0.00	14.58	11.70	2.89	5.049	
750.00	750.00	750.00	750.00	1.56	1.56	0.00	14.58	0.00	14.58	11.47	3.11	4.685 CC, ES	
800.00	800.00	799.80	799.80	1.66	1.67	151.45	14.91	-0.28	15.30	11.97	3.32	4.605 SF	
900.00	899.93	899.15	899.08	1.83	1.89	149.76	17.51	-2.55	20.99	17.28	3.72	5.650	
1,000.00	999.68	997.78	997.47	2.03	2.11	148.13	22.65	-7.05	32.38	28.26	4.12	7.857	
1,100.00	1,099.13	1,095.21	1,094.37	2.25	2.35	147.04	30.23	-13.67	49.40	44.86	4.54	10.881	
1,200.00	1,198.15	1,191.00	1,189.26	2.50	2.60	146.31	40.10	-22.29	71.94	66.96	4.98	14.458	
1,300.00	1,296.63	1,284.76	1,281.66	2.80	2.89	145.77	52.06	-32.74	99.87	94.43	5.43	18.381	
1,400.00	1,394.44	1,376.10	1,371.12	3.14	3.20	145.33	65.90	-44.83	133.03	127.11	5.92	22.485	
1,500.00	1,491.46	1,464.70	1,457.31	3.55	3.54	144.92	81.37	-58.35	171.25	164.82	6.43	26.638	
1,600.00	1,587.58	1,552.48	1,542.09	4.02	3.92	144.56	98.49	-73.30	214.12	207.15	6.97	30.699	
1,700.00	1,682.68	1,641.35	1,627.82	4.55	4.33	144.52	116.13	-88.72	259.91	252.36	7.56	34.388	
1,800.00	1,776.65	1,728.81	1,712.19	5.15	4.75	144.69	133.50	-103.89	308.25	300.08	8.17	37.751	
1,900.00	1,869.36	1,814.77	1,795.11	5.82	5.17	144.97	150.56	-118.80	359.11	350.32	8.79	40.837	
1,948.18	1,913.55	1,855.61	1,834.50	6.16	5.37	145.12	158.67	-125.88	384.52	375.41	9.10	42.234	
2,000.00	1,960.91	1,899.34	1,876.69	6.54	5.59	145.63	167.35	-133.46	412.17	402.69	9.48	43.498	
2,100.00	2,052.29	1,983.72	1,958.08	7.29	6.02	146.43	184.10	-148.10	465.58	455.38	10.20	45.624	
2,200.00	2,143.67	2,068.10	2,039.47	8.05	6.46	147.07	200.85	-162.73	519.05	508.10	10.95	47.420	
2,300.00	2,235.05	2,152.48	2,120.87	8.82	6.89	147.59	217.60	-177.37	572.55	560.86	11.70	48.953	
2,400.00	2,326.43	2,236.86	2,202.26	9.60	7.33	148.02	234.35	-192.00	626.09	613.63	12.45	50.272	
2,500.00	2,417.81	2,321.24	2,283.66	10.38	7.78	148.38	251.11	-206.64	679.64	666.42	13.22	51.417	
2,600.00	2,509.19	2,405.61	2,365.05	11.17	8.22	148.69	267.86	-221.27	733.21	719.22	13.99	52.419	
2,700.00	2,600.57	2,489.99	2,446.45	11.96	8.67	148.96	284.61	-235.91	786.79	772.03	14.76	53.300	
2,800.00	2,691.95	2,574.37	2,527.84	12.75	9.12	149.20	301.36	-250.54	840.39	824.85	15.54	54.082	
2,900.00	2,783.33	2,658.75	2,609.23	13.55	9.57	149.40	318.11	-265.18	893.99	877.67	16.32	54.779	
3,000.00	2,874.71	2,743.13	2,690.63	14.34	10.02	149.58	334.86	-279.81	947.60	930.50	17.10	55.403	
3,012.85	2,886.45	2,753.97	2,701.09	14.45	10.08	149.61	337.02	-281.69	954.49	937.29	17.20	55.479	
3,100.00	2,966.62	2,828.13	2,772.62	15.03	10.48	150.24	351.74	-294.55	1,000.24	982.31	17.94	55.758	
3,200.00	3,059.83	2,914.69	2,856.12	15.57	10.95	150.81	368.92	-309.57	1,050.31	1,031.57	18.74	56.057	
3,300.00	3,154.25	3,002.71	2,941.03	16.08	11.42	151.22	386.40	-324.83	1,097.72	1,078.19	19.53	56.210	
3,400.00	3,249.76	3,092.10	3,027.26	16.55	11.90	151.51	404.14	-340.34	1,142.41	1,122.10	20.31	56.248	
3,500.00	3,346.25	3,182.74	3,114.69	16.98	12.39	151.69	422.14	-356.06	1,184.36	1,163.29	21.08	56.196	
3,600.00	3,443.60	3,274.52	3,203.22	17.38	12.89	151.76	440.36	-371.98	1,223.53	1,201.71	21.82	56.074	
3,700.00	3,541.68	3,367.33	3,292.75	17.73	13.39	151.73	458.78	-388.07	1,259.89	1,237.35	22.54	55.897	
3,800.00	3,640.38	3,508.26	3,429.53	18.03	13.97	151.49	484.31	-410.37	1,291.76	1,268.48	23.29	55.469	
3,900.00	3,739.58	3,655.39	3,573.92	18.29	14.47	151.30	505.52	-428.90	1,317.10	1,293.16	23.95	54.999	
4,000.00	3,839.16	3,806.63	3,723.65	18.51	14.89	151.16	521.47	-442.84	1,335.64	1,311.12	24.52	54.464	
4,100.00	3,939.00	3,960.77	3,877.19	18.67	15.21	151.08	531.59	-451.68	1,347.17	1,322.18	24.99	53.899	
4,200.00	4,038.97	4,116.48	4,032.80	18.79	15.45	151.04	535.48	-455.08	1,351.56	1,326.20	25.36	53.288	
4,211.03	4,050.00	4,133.69	4,050.00	18.80	15.47	-0.71	535.52	-455.11	1,351.60	1,326.21	25.40	53.219	
4,300.00	4,138.97	4,222.66	4,138.97	18.88	15.57	-0.71	535.52	-455.11	1,351.60	1,325.96	25.64	52.710	
4,400.00	4,238.97	4,322.66	4,238.97	18.97	15.69	-0.71	535.52	-455.11	1,351.60	1,325.67	25.93	52.120	
4,500.00	4,338.97	4,422.66	4,338.97	19.07	15.82	-0.71	535.52	-455.11	1,351.60	1,325.38	26.23	51.535	
4,600.00	4,438.97	4,522.66	4,438.97	19.17	15.95	-0.71	535.52	-455.11	1,351.60	1,325.08	26.53	50.955	
4,700.00	4,538.97	4,622.66	4,538.97	19.26	16.08	-0.71	535.52	-455.11	1,351.60	1,324.77	26.83	50.380	

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



Weatherford International Ltd.

Anticollision Report



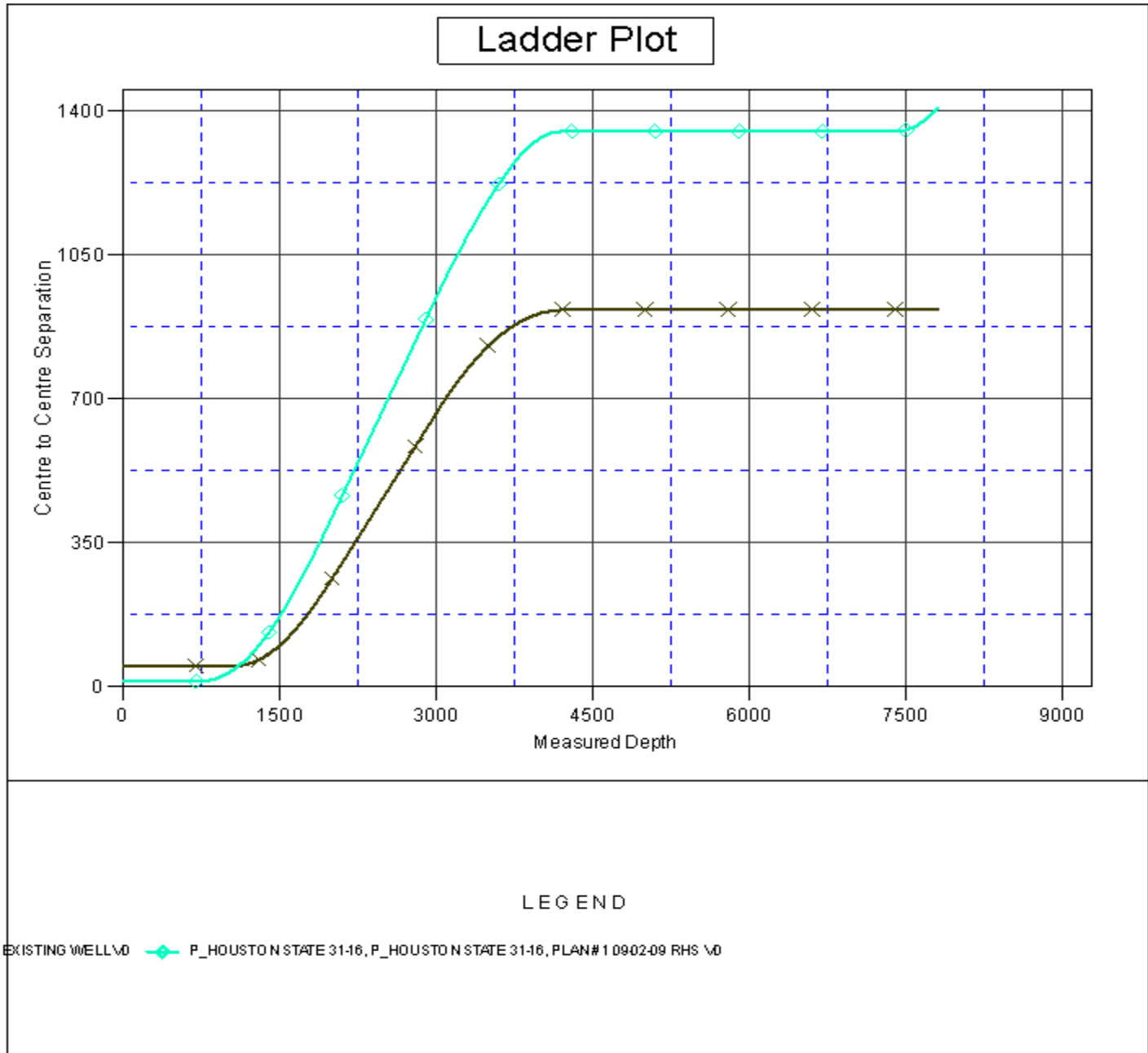
Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HOUSTON STATE 32-16
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4748.00ft (Original Well Elev)
Reference Site:	WELD_HOUSTON STATE 2 PAD	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HOUSTON STATE 32-16	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-02-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_HOUSTON STATE 2 PAD - P_HOUSTON STATE 31-16 - P_HOUSTON STATE 31-16 - PLAN ;												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
4,800.00	4,638.97	4,722.66	4,638.97	19.37	16.22	-0.71	535.52	-455.11	1,351.60	1,324.47	27.14	49.810	
4,900.00	4,738.97	4,822.66	4,738.97	19.47	16.35	-0.71	535.52	-455.11	1,351.60	1,324.16	27.45	49.245	
5,000.00	4,838.97	4,922.66	4,838.97	19.57	16.49	-0.71	535.52	-455.11	1,351.60	1,323.84	27.76	48.687	
5,100.00	4,938.97	5,022.66	4,938.97	19.68	16.63	-0.71	535.52	-455.11	1,351.60	1,323.52	28.08	48.135	
5,200.00	5,038.97	5,122.66	5,038.97	19.79	16.77	-0.71	535.52	-455.11	1,351.60	1,323.20	28.40	47.590	
5,300.00	5,138.97	5,222.66	5,138.97	19.90	16.91	-0.71	535.52	-455.11	1,351.60	1,322.88	28.73	47.051	
5,400.00	5,238.97	5,322.66	5,238.97	20.01	17.06	-0.71	535.52	-455.11	1,351.60	1,322.55	29.06	46.519	
5,500.00	5,338.97	5,422.66	5,338.97	20.13	17.21	-0.71	535.52	-455.11	1,351.60	1,322.22	29.39	45.993	
5,600.00	5,438.97	5,522.66	5,438.97	20.25	17.35	-0.71	535.52	-455.11	1,351.60	1,321.88	29.72	45.475	
5,700.00	5,538.97	5,622.66	5,538.97	20.36	17.50	-0.71	535.52	-455.11	1,351.60	1,321.54	30.06	44.964	
5,800.00	5,638.97	5,722.66	5,638.97	20.49	17.66	-0.71	535.52	-455.11	1,351.60	1,321.20	30.40	44.460	
5,900.00	5,738.97	5,822.66	5,738.97	20.61	17.81	-0.71	535.52	-455.11	1,351.60	1,320.86	30.74	43.963	
6,000.00	5,838.97	5,922.66	5,838.97	20.73	17.96	-0.71	535.52	-455.11	1,351.60	1,320.51	31.09	43.474	
6,100.00	5,938.97	6,022.66	5,938.97	20.86	18.12	-0.71	535.52	-455.11	1,351.60	1,320.16	31.44	42.991	
6,200.00	6,038.97	6,122.66	6,038.97	20.98	18.28	-0.71	535.52	-455.11	1,351.60	1,319.81	31.79	42.516	
6,300.00	6,138.97	6,222.66	6,138.97	21.11	18.44	-0.71	535.52	-455.11	1,351.60	1,319.46	32.14	42.048	
6,400.00	6,238.97	6,322.66	6,238.97	21.24	18.60	-0.71	535.52	-455.11	1,351.60	1,319.10	32.50	41.587	
6,500.00	6,338.97	6,422.66	6,338.97	21.38	18.76	-0.71	535.52	-455.11	1,351.60	1,318.74	32.86	41.134	
6,600.00	6,438.97	6,522.66	6,438.97	21.51	18.92	-0.71	535.52	-455.11	1,351.60	1,318.38	33.22	40.687	
6,700.00	6,538.97	6,622.66	6,538.97	21.64	19.08	-0.71	535.52	-455.11	1,351.60	1,318.02	33.58	40.247	
6,800.00	6,638.97	6,722.66	6,638.97	21.78	19.25	-0.71	535.52	-455.11	1,351.60	1,317.66	33.95	39.815	
6,900.00	6,738.97	6,822.66	6,738.97	21.92	19.42	-0.71	535.52	-455.11	1,351.60	1,317.29	34.31	39.389	
7,000.00	6,838.97	6,922.66	6,838.97	22.06	19.58	-0.71	535.52	-455.11	1,351.60	1,316.92	34.68	38.970	
7,100.00	6,938.97	7,022.66	6,938.97	22.20	19.75	-0.71	535.52	-455.11	1,351.60	1,316.55	35.05	38.558	
7,200.00	7,038.97	7,122.66	7,038.97	22.34	19.92	-0.71	535.52	-455.11	1,351.60	1,316.18	35.43	38.153	
7,300.00	7,138.97	7,222.66	7,138.97	22.48	20.09	-0.71	535.52	-455.11	1,351.60	1,315.80	35.80	37.754	
7,400.00	7,238.97	7,322.66	7,238.97	22.63	20.27	-0.71	535.52	-455.11	1,351.60	1,315.43	36.18	37.361	
7,500.00	7,338.97	7,333.69	7,250.00	22.78	20.28	-0.71	535.52	-455.11	1,354.53	1,318.15	36.38	37.231	
7,600.00	7,438.97	7,333.69	7,250.00	22.92	20.28	-0.71	535.52	-455.11	1,364.75	1,328.18	36.57	37.322	
7,700.00	7,538.97	7,333.69	7,250.00	23.07	20.28	-0.71	535.52	-455.11	1,382.15	1,345.40	36.75	37.606	
7,806.03	7,645.00	7,333.69	7,250.00	23.23	20.28	-0.71	535.52	-455.11	1,408.14	1,371.19	36.95	38.108	



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Reference Site:	WELD_HOUSTON STATE 2 PAD	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HOUSTON STATE 32-16	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-02-09 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4748.00ft (Original Well Elev)Coordinates are relative to: P_HOUSTON STATE 32-16
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W °
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.39°

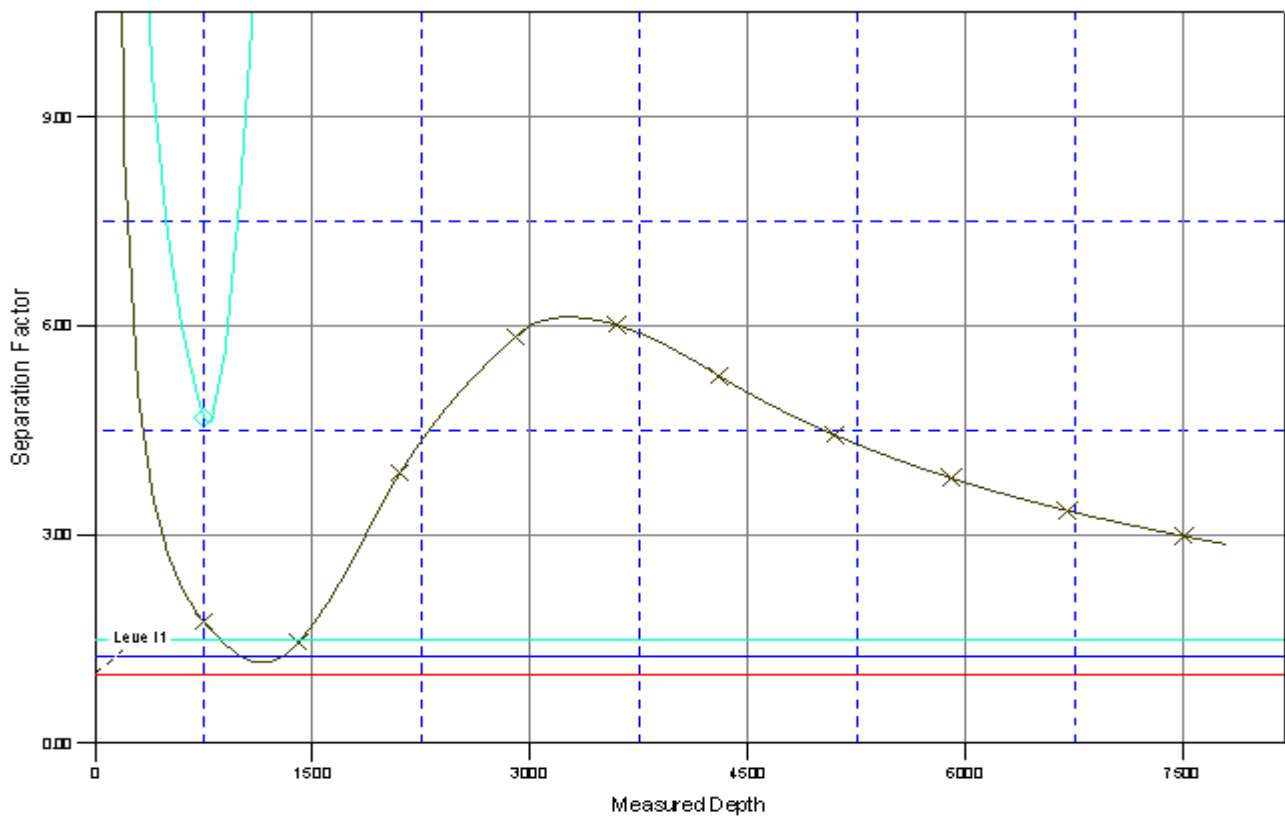




Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_HOUSTON STATE 32-16
Project:	KERR MCGEE OIL & GAS ONSHORE LP	TVD Reference:	WELL @ 4748.00ft (Original Well Elev)
Reference Site:	WELD_HOUSTON STATE 2 PAD	MD Reference:	WELL @ 4748.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_HOUSTON STATE 32-16	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_HOUSTON STATE 32-16	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 09-02-09 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4748.00ft (Original Well Elev) Coordinates are relative to: P_HOUSTON STATE 32-16
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: 0.39°

Separation Factor Plot



LEGEND

6 EXISTING WELL \0 P_HOUSTON STATE 31-16, P_HOUSTON STATE 31-16, PLAN#1 09-02-09 RHS \0