



Project: Sec. 28-T6S-R91W
Site: KP 41-28 Pad
Well: KP 311-27
Design #1 31Jan11 kjs



Azimuths to True North
 Magnetic North: 10 20°
 Magnetic Field
 Strength: 52342 1snT
 Dip Angle: 65.84°
 Date: 1/31/2011
 Model: IGRF2010

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	V	Sed	Departure	Annotation
130.0	130.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	Start Build 3.00
650.3	657.0	15.81	98.30	-10.4	71.5	72.2	72.2		Hold 15.81 Inclination
4102.3	4244.7	15.81	98.30	-151.5	1038.7	1049.7	1049.7		Start Drop -1.50
5143.0	5298.7	0.00	0.00	-172.4	1181.7	1194.2	1194.2		Vertical
5243.0	5398.7	0.00	0.00	-172.4	1181.7	1194.2	1194.2		UMV_PC
8170.0	8325.7	0.00	0.00	-172.4	1181.7	1194.2	1194.2		TD at 8325.7

KOKOPELLI FIELD

Sec. 28-T6S-R91W

KP 41-28 Pad

KP 311-27 - Slot A7

Wellbore #1

Plan: Design #1 31Jan11 kjs

Standard Planning Report - Geographic

04 April, 2011

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well KP 311-27 - Slot A7
Company:	KOKOPELLI FIELD	TVD Reference:	KELLY BUSHING @ 7079.0usft (Cyclone 30 (23' RKB) kjs)
Project:	Sec. 28-T6S-R91W	MD Reference:	KELLY BUSHING @ 7079.0usft (Cyclone 30 (23' RKB) kjs)
Site:	KP 41-28 Pad	North Reference:	True
Well:	KP 311-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 31Jan11 kjs		

Project	Sec. 28-T6S-R91W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	KP 41-28 Pad				
Site Position:		Northing:	1,615,566.30 usft	Latitude:	39° 30' 20.028 N
From:	Map	Easting:	2,421,171.70 usft	Longitude:	107° 33' 5.679 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.294 °

Well	KP 311-27 - Slot A7					
Well Position	+N/-S	0.0 usft	Northing:	1,615,602.60 usft	Latitude:	39° 30' 20.393 N
	+E/-W	0.0 usft	Easting:	2,421,198.40 usft	Longitude:	107° 33' 5.349 W
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level:	7,056.0 usft	

Wellbore	Wellbore #1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/31/2011	10.200	65.840	52,342

Design	Design #1 31Jan11 kjs				
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Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	98.30	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.000	
130.0	0.00	0.00	130.0	0.0	0.0	0.00	0.00	0.00	0.000	
657.0	15.81	98.30	650.3	-10.4	71.5	3.00	3.00	0.00	98.299	
4,244.7	15.81	98.30	4,102.3	-151.5	1,038.7	0.00	0.00	0.00	0.000	
5,298.7	0.00	0.00	5,143.0	-172.4	1,181.7	1.50	-1.50	0.00	180.000	
5,398.7	0.00	0.00	5,243.0	-172.4	1,181.7	0.00	0.00	0.00	0.000	UMV_PC (25' Radius
8,325.7	0.00	0.00	8,170.0	-172.4	1,181.7	0.00	0.00	0.00	0.000	

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Planning Report - Geographic

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Site:	KP 41-28 Pad	North Reference:	True
Well:	KP 311-27	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 31Jan11 kjs		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	1,615,602.60	2,421,198.40	39° 30' 20.393 N	107° 33' 5.349 W	
130.0	0.00	0.00	130.0	0.0	0.0	1,615,602.60	2,421,198.40	39° 30' 20.393 N	107° 33' 5.349 W	
Start Build 3.00										
657.0	15.81	98.30	650.3	-10.4	71.5	1,615,590.56	2,421,269.64	39° 30' 20.290 N	107° 33' 4.437 W	
Hold 15.81 Inclination										
1,281.3	15.81	98.30	1,251.0	-35.0	239.8	1,615,562.21	2,421,437.35	39° 30' 20.047 N	107° 33' 2.290 W	
Offset Water Well TD										
1,343.6	15.81	98.30	1,311.0	-37.4	256.6	1,615,559.38	2,421,454.10	39° 30' 20.023 N	107° 33' 2.075 W	
9 5/8"										
4,244.7	15.81	98.30	4,102.3	-151.5	1,038.7	1,615,427.67	2,422,233.43	39° 30' 18.895 N	107° 32' 52.097 W	
Start Drop -1.50										
4,547.9	11.26	98.30	4,397.0	-161.7	1,108.9	1,615,415.85	2,422,303.38	39° 30' 18.794 N	107° 32' 51.201 W	
Mesaverde										
5,298.7	0.00	0.00	5,143.0	-172.4	1,181.7	1,615,403.60	2,422,375.90	39° 30' 18.689 N	107° 32' 50.273 W	
Vertical										
5,398.7	0.00	0.00	5,243.0	-172.4	1,181.7	1,615,403.60	2,422,375.90	39° 30' 18.689 N	107° 32' 50.273 W	
UMV_PC - UMV_PC										
5,675.7	0.00	0.00	5,520.0	-172.4	1,181.7	1,615,403.60	2,422,375.90	39° 30' 18.689 N	107° 32' 50.273 W	
Approx. Top Gas										
7,301.7	0.00	0.00	7,146.0	-172.4	1,181.7	1,615,403.60	2,422,375.90	39° 30' 18.689 N	107° 32' 50.273 W	
Upper Sand										
7,930.7	0.00	0.00	7,775.0	-172.4	1,181.7	1,615,403.60	2,422,375.90	39° 30' 18.689 N	107° 32' 50.273 W	
Cameo Coals										
8,175.7	0.00	0.00	8,020.0	-172.4	1,181.7	1,615,403.60	2,422,375.90	39° 30' 18.689 N	107° 32' 50.273 W	
Rollins SS										
8,325.7	0.00	0.00	8,170.0	-172.4	1,181.7	1,615,403.60	2,422,375.90	39° 30' 18.689 N	107° 32' 50.273 W	
TD at 8325.7 - TD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
UMV_PC (25' Radius) K	0.00	0.00	5,243.0	-172.4	1,181.7	1,615,403.60	2,422,375.90	39° 30' 18.689 N	107° 32' 50.273 W	
- plan hits target center										
- Circle (radius 25.0)										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,343.6	1,311.0	9 5/8"	9.625	12.250	

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Wellbore:	Wellbore #1		
Design:	Design #1 31Jan11 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (")	Dip Direction (")	
1,281.3	1,251.0	Offset Water Well TD				
4,547.9	4,397.0	Mesaverde				
5,398.7	5,243.0	UMV_PC				
5,675.7	5,520.0	Approx. Top Gas				
7,301.7	7,146.0	Upper Sand				
7,930.7	7,775.0	Cameo Coals				
8,175.7	8,020.0	Rollins SS				
8,325.7	8,170.0	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
130.0	130.0	0.0	0.0	Start Build 3.00	
657.0	650.3	-10.4	71.5	Hold 15.81 Inclination	
4,244.7	4,102.3	-151.5	1,038.7	Start Drop -1.50	
5,298.7	5,143.0	-172.4	1,181.7	Vertical	
5,398.7	5,243.0	-172.4	1,181.7	UMV_PC	
8,325.7	8,170.0	-172.4	1,181.7	TD at 8325.7	