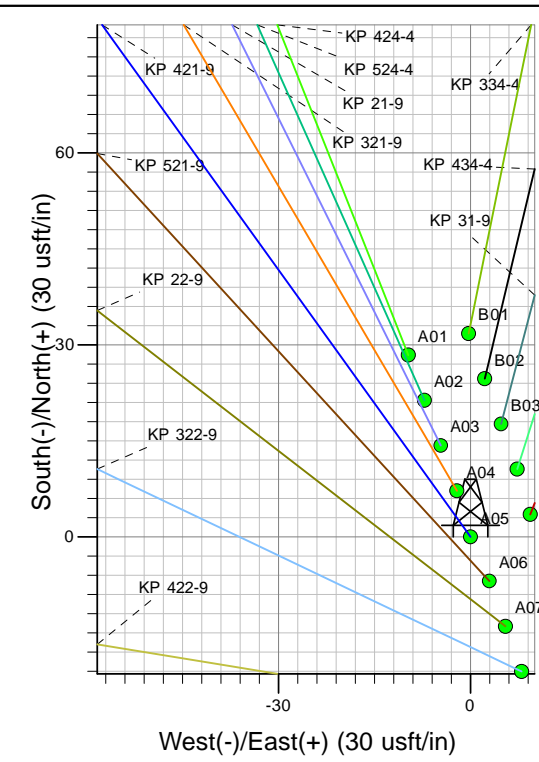
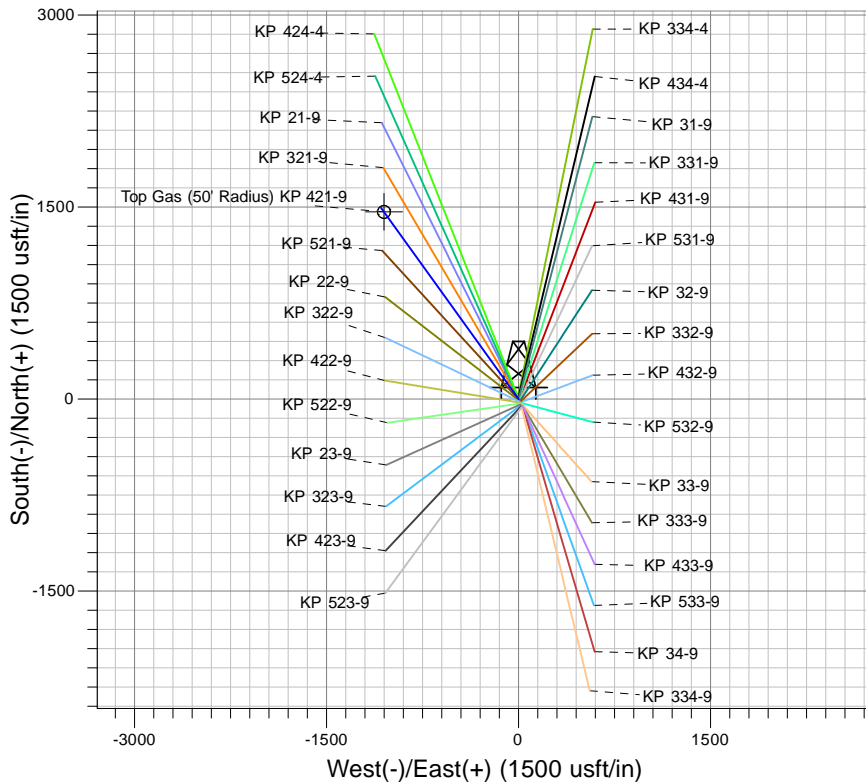
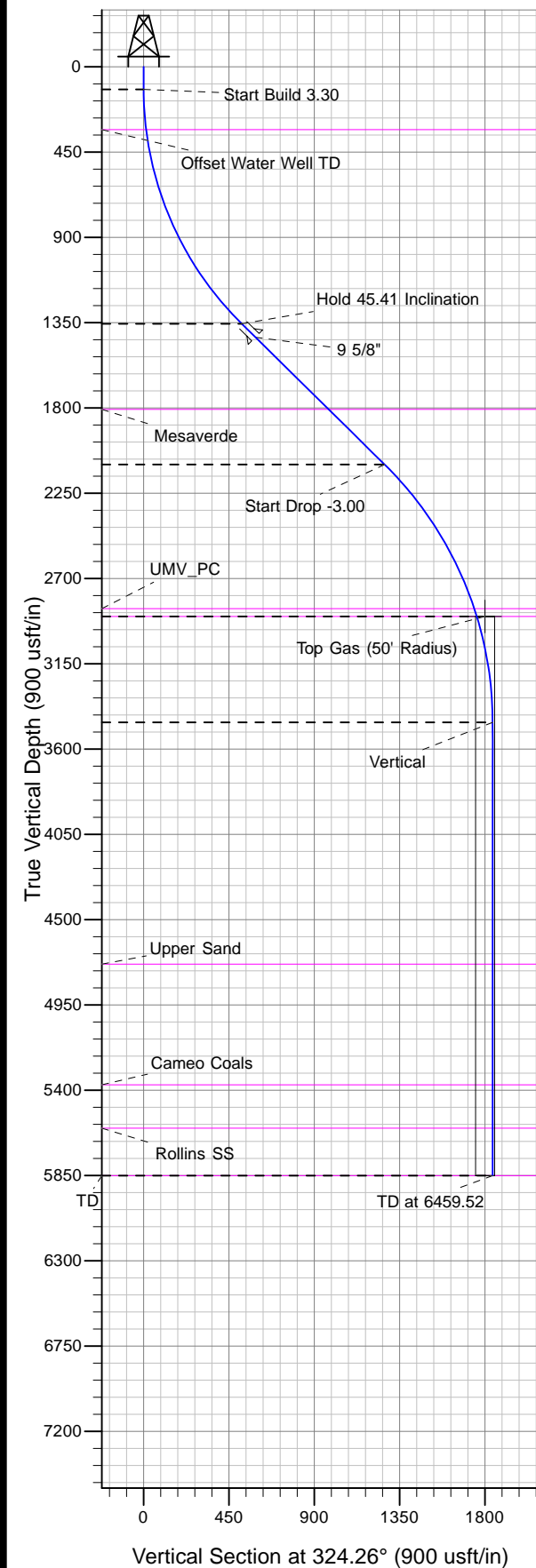




Well Name: KP 421-9
 Surface Location: KP 32-9 Pad
 North American Datum 1983 , US State Plane 1983 , Colorado Central Zone
 Ground Elevation: 5762.00
 +N/-S 0.00 +E/-W 0.00 Northing 1629340.10 Easting 2419564.60 Latitude 39.54327 Longitude -107.55838 Slot A05
 KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)



Project: Sec. 09-T6S-R91W
 Site: KP 32-9 Pad
 Well: KP 421-9
 Design #2 09Sep13 kjs

Azimuths to True North
 Magnetic North: 9.92°
 Magnetic Field
 Strength: 52148.5snT
 Dip Angle: 65.81°
 Date: 4/15/2013
 Model: IGRF2010

ANNOTATIONS								
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
120.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 3.30
1356.53	1496.17	45.41	324.26	419.99	-302.22	517.43	517.43	Hold 45.41 Inclination
2099.20	2554.12	45.41	324.26	1031.57	-742.32	1270.89	1270.89	Start Drop -3.00
2901.00	3501.24	17.00	324.26	1425.82	-1026.02	1756.61	1756.61	Top Gas
3459.39	4067.91	0.00	0.00	1493.56	-1074.76	1840.06	1840.06	Vertical
5851.00	6459.52	0.00	0.00	1493.56	-1074.76	1840.06	1840.06	TD at 6459.52



KOKOPELLI FIELD

Sec. 09-T6S-R91W

KP 32-9 Pad

KP 421-9 - Slot A05

Wellbore #1

Plan: Design #2 09Sep13 kjs

Standard Planning Report - Geographic

11 September, 2013



IBM Global Services
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well KP 421-9 - Slot A05
Company:	KOKOPELLI FIELD	TVD Reference:	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
Project:	Sec. 09-T6S-R91W	MD Reference:	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
Site:	KP 32-9 Pad	North Reference:	True
Well:	KP 421-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 09Sep13 kjs		

Project	Sec. 09-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 32-9 Pad			
Site Position:		Northing:	1,629,318.90 usft	Latitude: 39.54321
From: Map		Easting:	2,419,572.10 usft	Longitude: -107.55835
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.30 °

Well	KP 421-9 - Slot A05			
Well Position	+N/-S	0.00 usft	Northing:	1,629,340.10 usft
	+E/-W	0.00 usft	Easting:	2,419,564.60 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	
			Ground Level:	5,762.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/15/2013	9.92	65.81	52,148

Design	Design #2 09Sep13 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	324.26

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,496.17	45.41	324.26	1,356.53	419.99	-302.22	3.30	3.30	0.00	324.26	
2,554.12	45.41	324.26	2,099.20	1,031.57	-742.32	0.00	0.00	0.00	0.00	
3,501.24	17.00	324.26	2,901.00	1,425.82	-1,026.02	3.00	-3.00	0.00	180.00	Top Gas (50' Radius)
4,067.91	0.00	0.00	3,459.39	1,493.56	-1,074.76	3.00	-3.00	0.00	180.00	
6,459.52	0.00	0.00	5,851.00	1,493.56	-1,074.76	0.00	0.00	0.00	0.00	



IBM Global Services
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well KP 421-9 - Slot A05
Company:	KOKOPELLI FIELD	TVD Reference:	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
Project:	Sec. 09-T6S-R91W	MD Reference:	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
Site:	KP 32-9 Pad	North Reference:	True
Well:	KP 421-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 09Sep13 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	
0.00	0.00	0.00	0.00	0.00	0.00	1,629,340.10	2,419,564.60	39.54327	-107.55838	
120.00	0.00	0.00	120.00	0.00	0.00	1,629,340.10	2,419,564.60	39.54327	-107.55838	
Start Build 3.30										
332.53	7.01	324.26	332.00	10.55	-7.59	1,629,350.81	2,419,557.26	39.54330	-107.55841	
Offset Water Well TD										
500.00	12.54	324.26	496.97	33.62	-24.19	1,629,374.25	2,419,541.18	39.54336	-107.55847	
1,000.00	29.04	324.26	962.80	177.17	-127.49	1,629,520.11	2,419,441.16	39.54376	-107.55883	
1,496.17	45.41	324.26	1,356.53	419.99	-302.22	1,629,766.82	2,419,271.97	39.54442	-107.55945	
Hold 45.41 Inclination										
1,500.00	45.41	324.26	1,359.22	422.20	-303.82	1,629,769.07	2,419,270.43	39.54443	-107.55946	
1,597.00	45.41	324.26	1,427.32	478.28	-344.17	1,629,826.05	2,419,231.36	39.54458	-107.55960	
9 5/8"										
2,000.00	45.41	324.26	1,710.22	711.24	-511.81	1,630,062.75	2,419,069.04	39.54522	-107.56020	
2,139.30	45.41	324.26	1,808.00	791.77	-569.76	1,630,144.57	2,419,012.93	39.54544	-107.56040	
Mesaverde										
2,500.00	45.41	324.26	2,061.21	1,000.28	-719.80	1,630,356.43	2,418,867.65	39.54602	-107.56093	
2,554.12	45.41	324.26	2,099.20	1,031.57	-742.32	1,630,388.22	2,418,845.85	39.54610	-107.56101	
Start Drop -3.00										
3,000.00	32.04	324.26	2,446.26	1,257.46	-904.87	1,630,617.74	2,418,688.45	39.54672	-107.56159	
3,457.17	18.32	324.26	2,859.00	1,414.97	-1,018.21	1,630,777.77	2,418,578.71	39.54715	-107.56199	
UMV_PC										
3,500.00	17.04	324.26	2,899.81	1,425.52	-1,025.81	1,630,788.50	2,418,571.36	39.54718	-107.56202	
3,501.24	17.00	324.26	2,901.00	1,425.82	-1,026.02	1,630,788.80	2,418,571.15	39.54718	-107.56202	
Top Gas - Approx. Top Gas										
4,000.00	2.04	324.26	3,391.49	1,492.58	-1,074.06	1,630,856.62	2,418,524.64	39.54737	-107.56219	
4,067.91	0.00	0.00	3,459.39	1,493.56	-1,074.76	1,630,857.62	2,418,523.95	39.54737	-107.56219	
Vertical										
4,500.00	0.00	0.00	3,891.48	1,493.56	-1,074.76	1,630,857.62	2,418,523.95	39.54737	-107.56219	
5,000.00	0.00	0.00	4,391.48	1,493.56	-1,074.76	1,630,857.62	2,418,523.95	39.54737	-107.56219	
5,343.52	0.00	0.00	4,735.00	1,493.56	-1,074.76	1,630,857.62	2,418,523.95	39.54737	-107.56219	
Upper Sand										
5,500.00	0.00	0.00	4,891.48	1,493.56	-1,074.76	1,630,857.62	2,418,523.95	39.54737	-107.56219	
5,980.52	0.00	0.00	5,372.00	1,493.56	-1,074.76	1,630,857.62	2,418,523.95	39.54737	-107.56219	
Cameo Coals										
6,000.00	0.00	0.00	5,391.48	1,493.56	-1,074.76	1,630,857.62	2,418,523.95	39.54737	-107.56219	
6,209.52	0.00	0.00	5,601.00	1,493.56	-1,074.76	1,630,857.62	2,418,523.95	39.54737	-107.56219	
Rollins SS										
6,459.51	0.00	0.00	5,850.99	1,493.56	-1,074.76	1,630,857.62	2,418,523.95	39.54737	-107.56219	
TD										
6,459.52	0.00	0.00	5,851.00	1,493.56	-1,074.76	1,630,857.62	2,418,523.95	39.54737	-107.56219	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Top Gas (50' Radius) KF	0.00	0.00	2,901.00	1,461.25	-1,051.72	1,630,824.80	2,418,546.26	39.54728	-107.56211	
- hit/miss target										
- Shape										
- plan misses target center by 42.23usft at 3508.50usft MD (2907.94 TVD, 1427.53 N, -1027.25 E)										
- Circle (radius 50.00)										



IBM Global Services
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well KP 421-9 - Slot A05
Company:	KOKOPELLI FIELD	TVD Reference:	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
Project:	Sec. 09-T6S-R91W	MD Reference:	KELLY BUSHING @ 5783.00usft (Cyclone 17 (21' RKB) kjs)
Site:	KP 32-9 Pad	North Reference:	True
Well:	KP 421-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 09Sep13 kjs		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,597.00	1,427.32	9 5/8"	9.625	12.250	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
332.53	332.00	Offset Water Well TD				
2,139.30	1,808.00	Mesaverde				
3,457.17	2,859.00	UMV_PC				
3,501.24	2,901.00	Approx. Top Gas				
5,343.52	4,735.00	Upper Sand				
5,980.52	5,372.00	Cameo Coals				
6,209.52	5,601.00	Rollins SS				
6,459.51	5,850.99	TD		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.00	120.00	0.00	0.00	Start Build 3.30	
1,496.17	1,356.53	419.99	-302.22	Hold 45.41 Inclination	
2,554.12	2,099.20	1,031.57	-742.32	Start Drop -3.00	
3,501.24	2,901.00	1,425.82	-1,026.02	Top Gas	
4,067.91	3,459.39	1,493.56	-1,074.76	Vertical	
6,459.52	5,851.00	1,493.56	-1,074.76	TD at 6459.52	