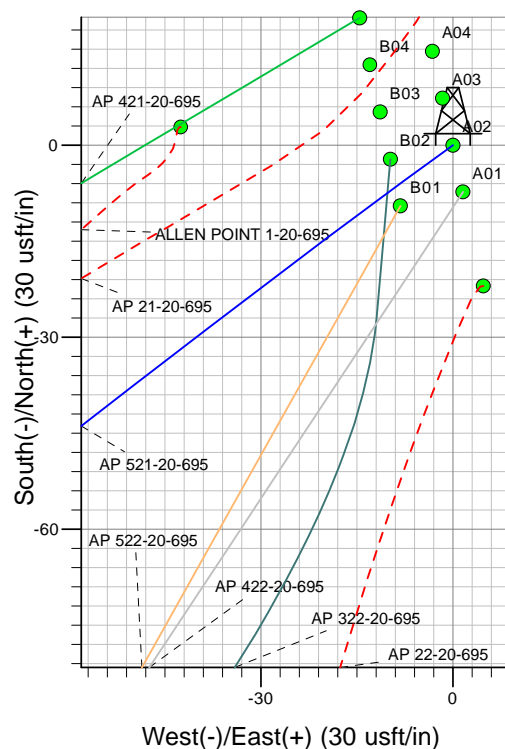
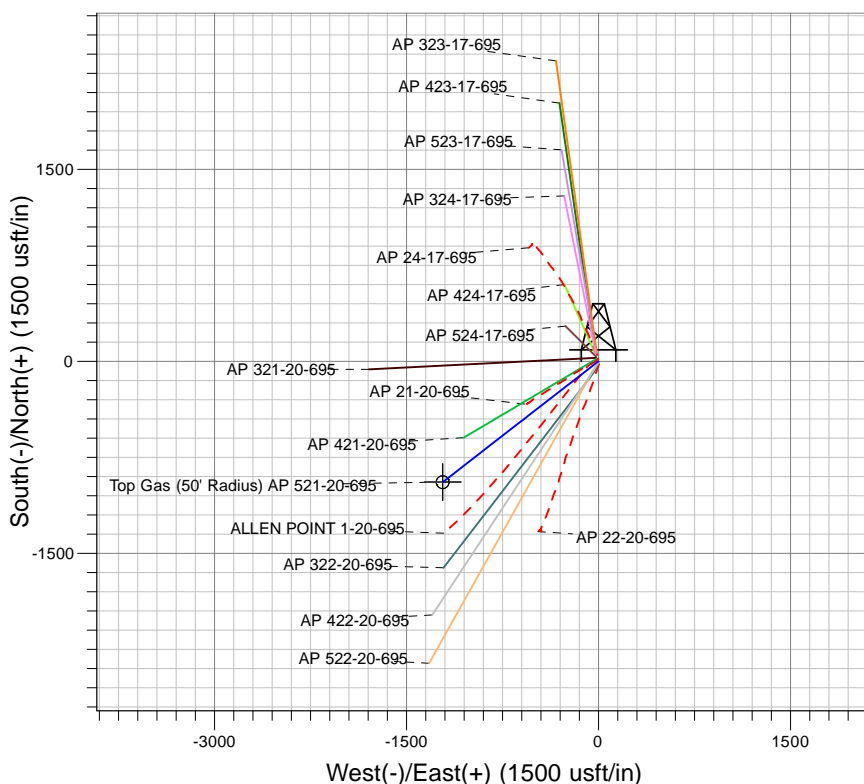
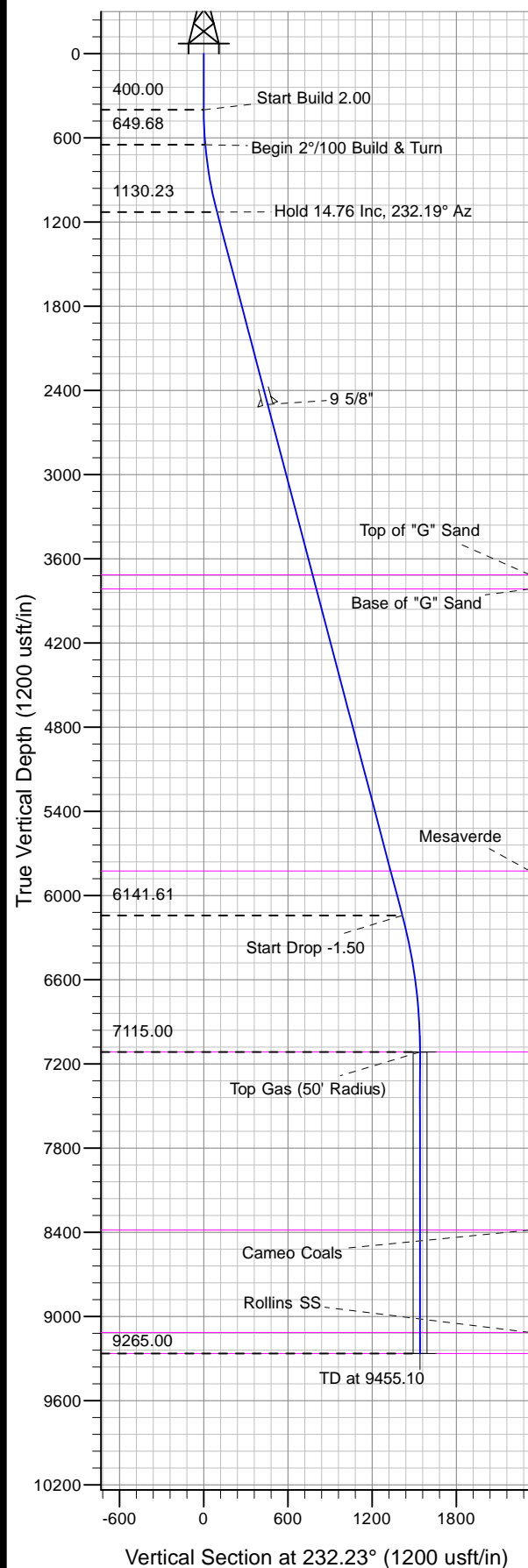




Well Name: AP 521-20-695
 Surface Location: AP 21-20-695 Pad
 North American Datum 1983 , US State Plane 1983, Colorado Central Zone
 Ground Elevation: 6909.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1623236.92	2288346.22	39.51744	-108.02289	A02

KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)



Project: AP 20-06S-095W
 Site: AP 21-20-695 Pad
 Well: AP 521-20-695
 Plan #2 16Aug11 kjs

Azimuths to True North
 Magnetic North: 10.46°
 Magnetic Field
 Strength: 52373.0snT
 Dip Angle: 65.79°
 Date: 7/16/2010
 Model: IGRF2005-10

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
400.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
649.68	650.00	5.00	234.00	-6.41	-8.82	10.90	10.90	Begin 2°/100 Build & Turn
1130.23	1138.37	14.76	232.19	-57.19	-75.36	94.60	94.61	Hold 14.76 Inc, 232.19° Az
6141.61	6320.85	14.76	232.19	-866.78	-1118.78	1415.27	1415.28	Start Drop -1.50
7115.00	7305.10	0.00	0.00	-944.08	-1218.42	1541.37	1541.38	Top Gas
9265.00	9455.10	0.00	0.00	-944.08	-1218.41	1541.37	1541.38	TD at 9455.10



PICEANCE VLY NAD 83

AP 20-06S-095W

AP 21-20-695 Pad

AP 521-20-695 - Slot A02

Wellbore #1

Plan: Plan #2 16Aug11 kjs

Standard Planning Report - Geographic

12 November, 2013



IBM Global Services
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well AP 521-20-695 - Slot A02
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Project:	AP 20-06S-095W	MD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Site:	AP 21-20-695 Pad	North Reference:	True
Well:	AP 521-20-695	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 16Aug11 kjs		

Project	AP 20-06S-095W, Garfield County, CO, 20-06S-095W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site	AP 21-20-695 Pad			
Site Position:		Northing:	1,623,258.80 usft	Latitude: 39.51750
From: Map		Easting:	2,288,342.20 usft	Longitude: -108.02291
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.591 °

Well	AP 521-20-695 - Slot A02					
Well Position	+N/-S	0.00 usft	Northing:	1,623,236.92 usft	Latitude:	39.51744
	+E/-W	0.00 usft	Easting:	2,288,346.22 usft	Longitude:	-108.02290
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	6,909.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	7/16/2010	10.461	65.788	52,373

Design	Plan #2 16Aug11 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	232.23

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	0.000	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.000	
650.00	5.00	234.00	649.68	-6.41	-8.82	2.00	2.00	0.00	234.000	
1,138.37	14.76	232.19	1,130.23	-57.19	-75.36	2.00	2.00	-0.37	-2.716	
6,320.85	14.76	232.19	6,141.61	-866.78	-1,118.78	0.00	0.00	0.00	0.000	
7,305.10	0.00	0.00	7,115.00	-944.08	-1,218.42	1.50	-1.50	0.00	180.000	Top Gas (50' Radius)
9,455.10	0.00	0.00	9,265.00	-944.08	-1,218.41	0.00	0.00	0.00	0.000	TD / PBHL AP 521-2C



IBM Global Services
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well AP 521-20-695 - Slot A02
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Project:	AP 20-06S-095W	MD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Site:	AP 21-20-695 Pad	North Reference:	True
Well:	AP 521-20-695	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 16Aug11 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	1,623,236.92	2,288,346.22	39.51744	-108.02290	
400.00	0.00	0.00	400.00	0.00	0.00	1,623,236.92	2,288,346.22	39.51744	-108.02290	
Start Build 2.00										
500.00	2.00	234.00	499.98	-1.03	-1.41	1,623,235.93	2,288,344.78	39.51743	-108.02290	
650.00	5.00	234.00	649.68	-6.41	-8.82	1,623,230.76	2,288,337.23	39.51742	-108.02293	
Begin 2°/100 Build & Turn										
1,000.00	12.00	232.41	995.63	-37.60	-50.03	1,623,200.72	2,288,295.17	39.51733	-108.02307	
1,138.37	14.76	232.19	1,130.23	-57.19	-75.36	1,623,181.85	2,288,269.30	39.51728	-108.02316	
Hold 14.76 Inc, 232.19° Az										
1,500.00	14.76	232.19	1,479.92	-113.68	-148.17	1,623,127.40	2,288,194.96	39.51712	-108.02342	
2,000.00	14.76	232.19	1,963.41	-191.79	-248.84	1,623,052.12	2,288,092.16	39.51691	-108.02378	
2,500.00	14.76	232.19	2,446.90	-269.90	-349.51	1,622,976.84	2,287,989.37	39.51670	-108.02414	
2,554.91	14.76	232.19	2,500.00	-278.47	-360.56	1,622,968.57	2,287,978.08	39.51667	-108.02418	
9 5/8"										
3,000.00	14.76	232.19	2,930.39	-348.00	-450.17	1,622,901.56	2,287,886.57	39.51648	-108.02449	
3,500.00	14.76	232.19	3,413.89	-426.11	-550.84	1,622,826.28	2,287,783.78	39.51627	-108.02485	
3,811.39	14.76	232.19	3,715.00	-474.76	-613.54	1,622,779.40	2,287,719.76	39.51613	-108.02507	
Top of "G" Sand										
3,914.81	14.76	232.19	3,815.00	-490.91	-634.36	1,622,763.83	2,287,698.50	39.51609	-108.02515	
Base of "G" Sand										
4,000.00	14.76	232.19	3,897.38	-504.22	-651.51	1,622,751.00	2,287,680.99	39.51605	-108.02521	
4,500.00	14.76	232.19	4,380.87	-582.33	-752.18	1,622,675.72	2,287,578.19	39.51584	-108.02556	
5,000.00	14.76	232.19	4,864.36	-660.44	-852.85	1,622,600.44	2,287,475.40	39.51562	-108.02592	
5,500.00	14.76	232.19	5,347.86	-738.55	-953.52	1,622,525.16	2,287,372.60	39.51541	-108.02628	
5,993.43	14.76	232.19	5,825.00	-815.63	-1,052.86	1,622,450.87	2,287,271.16	39.51520	-108.02663	
Mesaverde										
6,000.00	14.76	232.19	5,831.35	-816.65	-1,054.18	1,622,449.88	2,287,269.81	39.51519	-108.02663	
6,320.85	14.76	232.19	6,141.61	-866.78	-1,118.78	1,622,401.57	2,287,203.84	39.51506	-108.02686	
Start Drop -1.50										
6,500.00	12.08	232.19	6,315.85	-892.26	-1,151.63	1,622,377.01	2,287,170.30	39.51499	-108.02698	
7,000.00	4.58	232.19	6,810.23	-936.62	-1,208.80	1,622,334.26	2,287,111.93	39.51487	-108.02718	
7,305.10	0.00	0.00	7,115.00	-944.08	-1,218.42	1,622,327.06	2,287,102.11	39.51484	-108.02722	
Top Gas - Approx. Top Gas										
7,500.00	0.00	0.00	7,309.90	-944.08	-1,218.42	1,622,327.06	2,287,102.11	39.51484	-108.02722	
8,000.00	0.00	0.00	7,809.90	-944.08	-1,218.42	1,622,327.06	2,287,102.11	39.51484	-108.02722	
8,500.00	0.00	0.00	8,309.90	-944.08	-1,218.42	1,622,327.06	2,287,102.11	39.51484	-108.02722	
8,575.10	0.00	0.00	8,385.00	-944.08	-1,218.42	1,622,327.06	2,287,102.11	39.51484	-108.02722	
Cameo Coals										
9,000.00	0.00	0.00	8,809.90	-944.08	-1,218.42	1,622,327.06	2,287,102.11	39.51484	-108.02722	
9,305.10	0.00	0.00	9,115.00	-944.08	-1,218.42	1,622,327.06	2,287,102.11	39.51484	-108.02722	
Rollins SS										
9,455.10	0.00	0.00	9,265.00	-944.08	-1,218.41	1,622,327.07	2,287,102.11	39.51484	-108.02722	
TD at 9455.10 - TD										



IBM Global Services
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well AP 521-20-695 - Slot A02
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Project:	AP 20-06S-095W	MD Reference:	KELLY BUSHING @ 6935.00usft (Nabors 573 (26' RKB) kjs)
Site:	AP 21-20-695 Pad	North Reference:	True
Well:	AP 521-20-695	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 16Aug11 kjs		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Gas (50' Radius) AF - plan hits target center - Circle (radius 50.00)	0.00	0.00	7,115.00	-944.08	-1,218.42	1,622,327.06	2,287,102.11	39.51484	-108.02722
TD / PBHL AP 521-20-6' - plan hits target center - Point	0.00	0.00	9,265.00	-944.08	-1,218.41	1,622,327.07	2,287,102.11	39.51484	-108.02722

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,554.91	2,500.00	9 5/8"	9.625	12.250	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,811.39	3,715.00	Top of "G" Sand				
3,914.81	3,815.00	Base of "G" Sand				
5,993.43	5,825.00	Mesaverde				
7,305.10	7,115.00	Approx. Top Gas				
8,575.10	8,385.00	Cameo Coals				
9,305.10	9,115.00	Rollins SS				
9,455.10	9,265.00	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
400.00	400.00	0.00	0.00	Start Build 2.00	
650.00	649.68	-6.41	-8.82	Begin 2°/100 Build & Turn	
1,138.37	1,130.23	-57.19	-75.36	Hold 14.76 Inc, 232.19° Az	
6,320.85	6,141.61	-866.78	-1,118.78	Start Drop -1.50	
7,305.10	7,115.00	-944.08	-1,218.42	Top Gas	
9,455.10	9,265.00	-944.08	-1,218.41	TD at 9455.10	