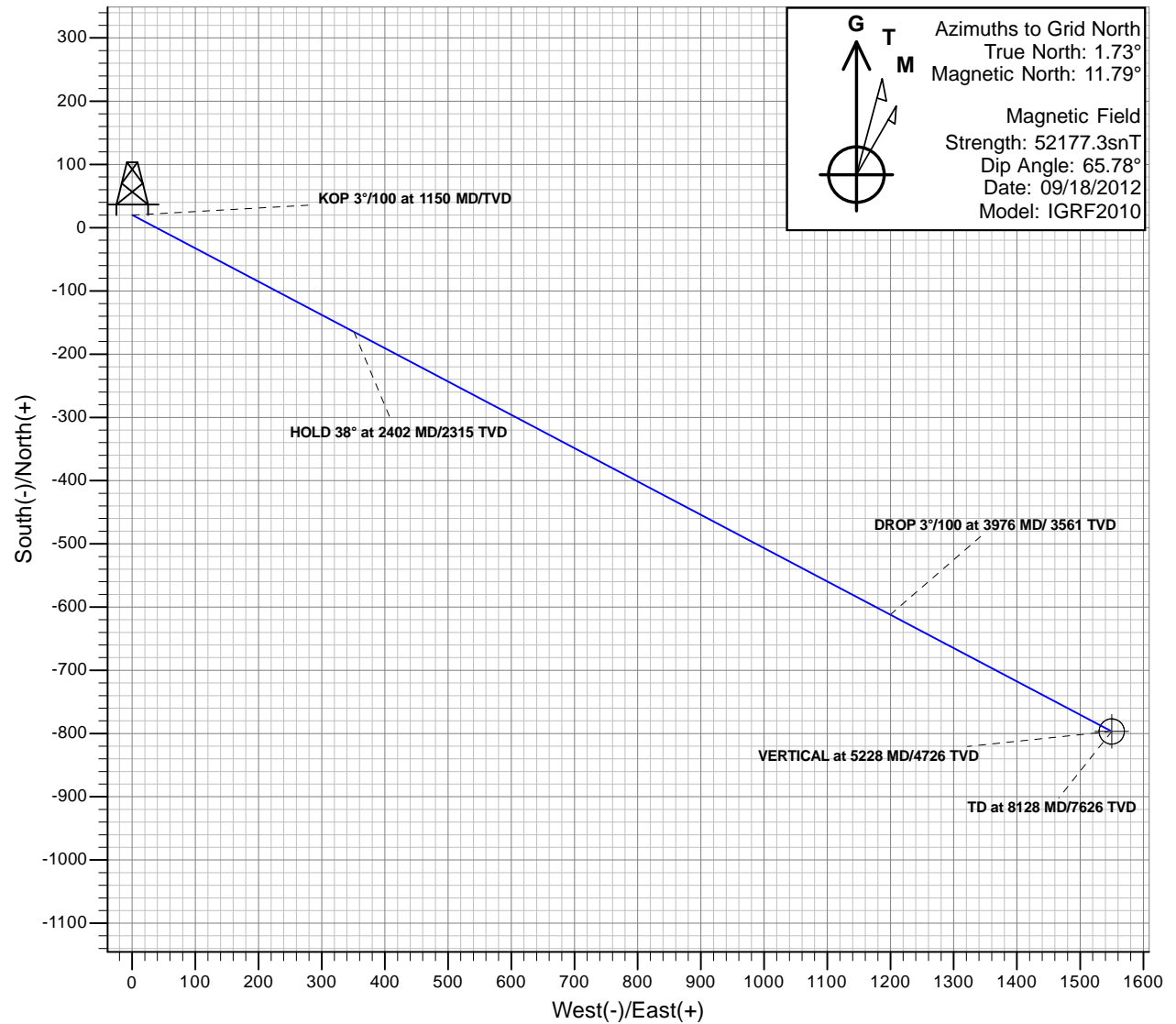
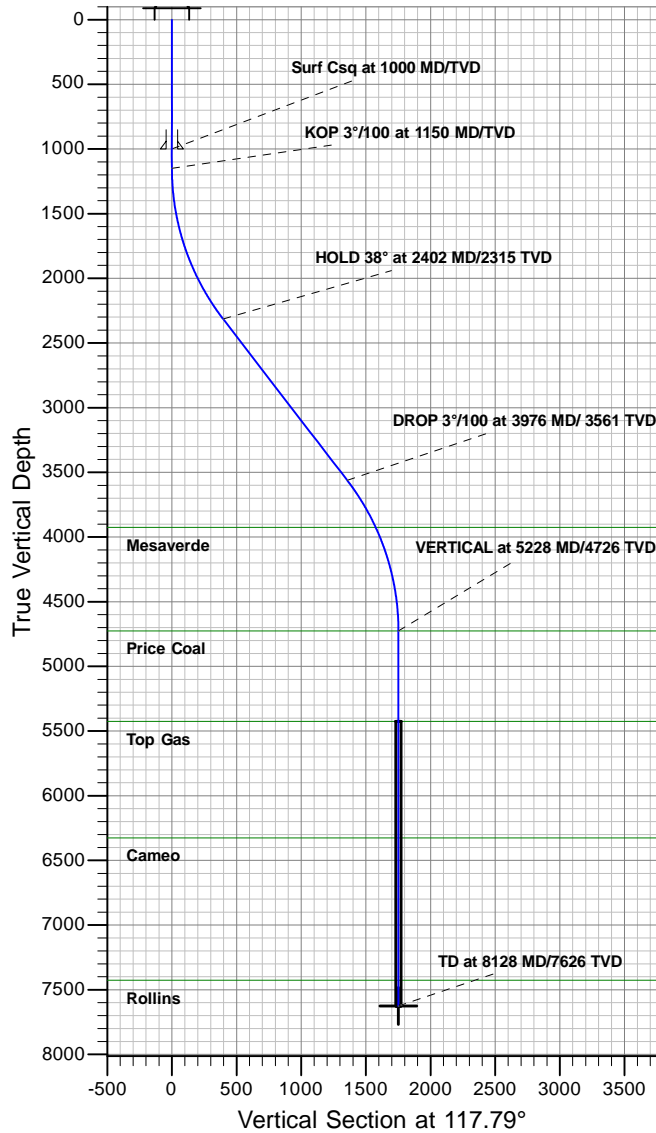




Ursa Operating Company LLC

Dever A07 (112035)
Dever A07 P01



REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Site Dever A, Grid North
Vertical (TVD) Reference: RKB @ 5596.00ft
Section (VS) Reference: Slot - (20.00N, 0.47E)
Measured Depth Reference: RKB @ 5596.00ft
Calculation Method: Minimum Curvature

PROJECT DETAILS: Dever

Geodetic System: Universal Transverse Mercator
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Zone 13N (108 W to 102 W)
System Datum: Mean Sea Level

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
0.00	0.00	0.00	0.00	20.00	0.47	0.00	0.00	0.00	
1150.00	0.00	0.00	1150.00	20.00	0.47	0.00	0.00	0.00	
2402.40	37.57	117.79	2314.55	-164.71	350.90	3.00	117.79	396.13	
3975.60	37.57	117.79	3561.45	-612.01	1199.50	0.00	0.00	1355.40	
5228.00	0.00	0.00	4726.00	-796.72	1549.93	3.00	180.00	1751.53	
8128.00	0.00	0.00	7626.00	-796.72	1549.93	0.00	0.00	1751.53	A07 BH



Ursa Operating Company LLC

Dever

Dever A

Dever A07 (112035)

Dever A07

Plan: Dever A07 P01

Standard Planning Report - Geographic

21 June, 2012

Database:	EDM5000	Local Co-ordinate Reference:	Site Dever A
Company:	Ursa Operating Company LLC	TVD Reference:	RKB @ 5596.00ft
Project:	Dever	MD Reference:	RKB @ 5596.00ft
Site:	Dever A	North Reference:	Grid
Well:	Dever A07 (112035) Dever A07	Survey Calculation Method:	Minimum Curvature
Wellbore:	Dever A07 P01		
Design:			

Project	Dever		
Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	Dever A				
Site Position:		Northing:	14,364,188.06 usft	Latitude:	39.522029499°N
From:	Map	Easting:	876,519.77 usft	Longitude:	107.708720443°W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.72 °

Well	Dever A07 (112035)					
Well Position	+N/-S	20.00 ft	Northing:	14,364,208.05 usft	Latitude:	39.522084391°N
	+E/-W	0.47 ft	Easting:	876,520.24 usft	Longitude:	107.708720911°W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,572.00 ft

Wellbore	Dever A07				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	09/18/12	10.06	65.78	52,177

Design	Dever A07 P01			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	20.00	0.47	117.79

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	20.00	0.47	0.00	0.00	0.00	0.00	
1,150.00	0.00	0.00	1,150.00	20.00	0.47	0.00	0.00	0.00	0.00	
2,402.40	37.57	117.79	2,314.55	-164.71	350.90	3.00	3.00	0.00	117.79	
3,975.60	37.57	117.79	3,561.45	-612.01	1,199.50	0.00	0.00	0.00	0.00	
5,228.00	0.00	0.00	4,726.00	-796.72	1,549.93	3.00	-3.00	0.00	180.00	
8,128.00	0.00	0.00	7,626.00	-796.72	1,549.93	0.00	0.00	0.00	0.00	A07 BH



Database:	EDM5000	Local Co-ordinate Reference:	Site Dever A
Company:	Ursa Operating Company LLC	TVD Reference:	RKB @ 5596.00ft
Project:	Dever	MD Reference:	RKB @ 5596.00ft
Site:	Dever A	North Reference:	Grid
Well:	Dever A07 (112035) Dever A07	Survey Calculation Method:	Minimum Curvature
Wellbore:	Dever A07 P01		
Design:			

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
100.00	0.00	0.00	100.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
200.00	0.00	0.00	200.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
300.00	0.00	0.00	300.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
400.00	0.00	0.00	400.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
500.00	0.00	0.00	500.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
600.00	0.00	0.00	600.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
700.00	0.00	0.00	700.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
800.00	0.00	0.00	800.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
900.00	0.00	0.00	900.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
1,000.00	0.00	0.00	1,000.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
Surf Csq at 1000 MD/TVD										
1,100.00	0.00	0.00	1,100.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
1,150.00	0.00	0.00	1,150.00	20.00	0.47	14,364,208.05	876,520.24	39.522084391°N	107.708720911°W	
KOP 3°/100 at 1150 MD/TVD										
1,200.00	1.50	117.79	1,199.99	19.69	1.05	14,364,207.75	876,520.81	39.522083601°N	107.708718827°W	
1,300.00	4.50	117.79	1,299.85	17.25	5.68	14,364,205.31	876,525.44	39.522077290°N	107.708702169°W	
1,400.00	7.50	117.79	1,399.29	12.38	14.92	14,364,200.43	876,534.69	39.522064684°N	107.708668899°W	
1,500.00	10.50	117.79	1,498.04	5.08	28.76	14,364,193.14	876,548.53	39.522045818°N	107.708619107°W	
1,600.00	13.50	117.79	1,595.85	-4.61	47.15	14,364,183.45	876,566.92	39.522020745°N	107.708552930°W	
1,700.00	16.50	117.79	1,692.43	-16.68	70.05	14,364,171.38	876,589.81	39.521989532°N	107.708470550°W	
1,800.00	19.50	117.79	1,787.52	-31.08	97.38	14,364,156.97	876,617.14	39.521952265°N	107.708372193°W	
1,900.00	22.50	117.79	1,880.87	-47.79	129.08	14,364,140.26	876,648.84	39.521909046°N	107.708258128°W	
2,000.00	25.50	117.79	1,972.22	-66.76	165.05	14,364,121.30	876,684.82	39.521859994°N	107.708128668°W	
2,100.00	28.50	117.79	2,061.31	-87.92	205.21	14,364,100.14	876,724.98	39.521805243°N	107.707984167°W	
2,200.00	31.50	117.79	2,147.90	-111.23	249.44	14,364,076.82	876,769.20	39.521744944°N	107.707825023°W	
2,300.00	34.50	117.79	2,231.76	-136.63	297.61	14,364,051.43	876,817.38	39.521679260°N	107.707651670°W	
2,400.00	37.50	117.79	2,312.65	-164.03	349.61	14,364,024.03	876,869.37	39.521608373°N	107.707464585°W	
2,402.40	37.57	117.79	2,314.55	-164.71	350.90	14,364,023.34	876,870.66	39.521606609°N	107.707459929°W	
HOLD 38° at 2402 MD/2315 TVD										
2,500.00	37.57	117.79	2,391.91	-192.46	403.55	14,363,995.60	876,923.31	39.521534828°N	107.707270488°W	
2,600.00	37.57	117.79	2,471.17	-220.90	457.49	14,363,967.16	876,977.25	39.521461282°N	107.707076388°W	
2,700.00	37.57	117.79	2,550.43	-249.33	511.43	14,363,938.73	877,031.19	39.521387736°N	107.706882288°W	
2,800.00	37.57	117.79	2,629.68	-277.76	565.37	14,363,910.30	877,085.13	39.521314189°N	107.706688189°W	
2,900.00	37.57	117.79	2,708.94	-306.19	619.31	14,363,881.87	877,139.08	39.521240641°N	107.706494090°W	
3,000.00	37.57	117.79	2,788.20	-334.62	673.25	14,363,853.43	877,193.02	39.521167094°N	107.706299992°W	
3,100.00	37.57	117.79	2,867.46	-363.06	727.19	14,363,825.00	877,246.96	39.521093546°N	107.706105893°W	
3,200.00	37.57	117.79	2,946.72	-391.49	781.13	14,363,796.57	877,300.90	39.521019997°N	107.705911796°W	
3,300.00	37.57	117.79	3,025.98	-419.92	835.08	14,363,768.14	877,354.84	39.520946449°N	107.705717698°W	
3,400.00	37.57	117.79	3,105.24	-448.35	889.02	14,363,739.71	877,408.78	39.520872900°N	107.705523601°W	
3,500.00	37.57	117.79	3,184.50	-476.78	942.96	14,363,711.27	877,462.72	39.520799350°N	107.705329505°W	
3,600.00	37.57	117.79	3,263.75	-505.22	996.90	14,363,682.84	877,516.66	39.520725801°N	107.705135408°W	
3,700.00	37.57	117.79	3,343.01	-533.65	1,050.84	14,363,654.41	877,570.60	39.520652251°N	107.704941313°W	
3,800.00	37.57	117.79	3,422.27	-562.08	1,104.78	14,363,625.98	877,624.55	39.520578700°N	107.704747217°W	
3,900.00	37.57	117.79	3,501.53	-590.51	1,158.72	14,363,597.55	877,678.49	39.520505150°N	107.704553122°W	
3,975.60	37.57	117.79	3,561.45	-612.01	1,199.50	14,363,576.05	877,719.26	39.520449548°N	107.704406394°W	
DROP 3°/100 at 3976 MD/ 3561 TVD										
4,000.00	36.84	117.79	3,580.88	-618.89	1,212.56	14,363,569.17	877,732.32	39.520431748°N	107.704359422°W	
4,100.00	33.84	117.79	3,662.45	-645.86	1,263.72	14,363,542.20	877,783.48	39.520361984°N	107.704175323°W	
4,200.00	30.84	117.79	3,746.93	-670.80	1,311.04	14,363,517.26	877,830.80	39.520297465°N	107.704005063°W	
4,300.00	27.84	117.79	3,834.09	-693.64	1,354.38	14,363,494.42	877,874.14	39.520238367°N	107.703849111°W	
4,400.00	24.84	117.79	3,923.70	-714.33	1,393.62	14,363,473.73	877,913.39	39.520184852°N	107.703707894°W	
4,402.54	24.76	117.79	3,926.00	-714.82	1,394.57	14,363,473.24	877,914.33	39.520183569°N	107.703704508°W	
Mesaverde										



Database:	EDM5000	Local Co-ordinate Reference:	Site Dever A
Company:	Ursa Operating Company LLC	TVD Reference:	RKB @ 5596.00ft
Project:	Dever	MD Reference:	RKB @ 5596.00ft
Site:	Dever A	North Reference:	Grid
Well:	Dever A07 (112035) Dever A07	Survey Calculation Method:	Minimum Curvature
Wellbore:	Dever A07 P01		
Design:			

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,500.00	21.84	117.79	4,015.50	-732.80	1,428.67	14,363,455.26	877,948.43	39.520137067°N	107.703581798°W	
4,600.00	18.84	117.79	4,109.26	-749.00	1,459.41	14,363,439.06	877,979.18	39.520095144°N	107.703471169°W	
4,700.00	15.84	117.79	4,204.70	-762.90	1,485.78	14,363,425.16	878,005.54	39.520059196°N	107.703376311°W	
4,800.00	12.84	117.79	4,301.58	-774.45	1,507.68	14,363,413.61	878,027.45	39.520029324°N	107.703297483°W	
4,900.00	9.84	117.79	4,399.61	-783.61	1,525.08	14,363,404.44	878,044.84	39.520005608°N	107.703234901°W	
5,000.00	6.84	117.79	4,498.54	-790.38	1,537.91	14,363,397.68	878,057.67	39.519988113°N	107.703188737°W	
5,100.00	3.84	117.79	4,598.10	-794.72	1,546.14	14,363,393.34	878,065.90	39.519976889°N	107.703159117°W	
5,200.00	0.84	117.79	4,698.00	-796.62	1,549.75	14,363,391.44	878,069.51	39.519971964°N	107.703146122°W	
5,228.00	0.00	0.00	4,726.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
VERTICAL at 5228 MD/4726 TVD - Price Coal										
5,300.00	0.00	0.00	4,798.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
5,400.00	0.00	0.00	4,898.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
5,500.00	0.00	0.00	4,998.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
5,600.00	0.00	0.00	5,098.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
5,700.00	0.00	0.00	5,198.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
5,800.00	0.00	0.00	5,298.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
5,900.00	0.00	0.00	5,398.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
5,928.00	0.00	0.00	5,426.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
Top Gas										
6,000.00	0.00	0.00	5,498.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
6,100.00	0.00	0.00	5,598.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
6,200.00	0.00	0.00	5,698.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
6,300.00	0.00	0.00	5,798.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
6,400.00	0.00	0.00	5,898.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
6,500.00	0.00	0.00	5,998.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
6,600.00	0.00	0.00	6,098.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
6,700.00	0.00	0.00	6,198.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
6,800.00	0.00	0.00	6,298.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
6,828.00	0.00	0.00	6,326.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
Cameo										
6,900.00	0.00	0.00	6,398.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,000.00	0.00	0.00	6,498.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,100.00	0.00	0.00	6,598.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,200.00	0.00	0.00	6,698.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,300.00	0.00	0.00	6,798.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,400.00	0.00	0.00	6,898.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,500.00	0.00	0.00	6,998.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,600.00	0.00	0.00	7,098.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,700.00	0.00	0.00	7,198.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,800.00	0.00	0.00	7,298.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,900.00	0.00	0.00	7,398.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
7,928.00	0.00	0.00	7,426.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
Rollins										
8,000.00	0.00	0.00	7,498.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
8,100.00	0.00	0.00	7,598.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
8,128.00	0.00	0.00	7,626.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W	
TD at 8128 MD/7626 TVD - A07 BH										

Database:	EDM5000	Local Co-ordinate Reference:	Site Dever A
Company:	Ursa Operating Company LLC	TVD Reference:	RKB @ 5596.00ft
Project:	Dever	MD Reference:	RKB @ 5596.00ft
Site:	Dever A	North Reference:	Grid
Well:	Dever A07 (112035) Dever A07	Survey Calculation Method:	Minimum Curvature
Wellbore:	Dever A07 P01		
Design:			

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
A07 BH - hit/miss target - Shape	0.00	0.00	7,626.00	-796.72	1,549.93	14,363,391.34	878,069.69	39.519971717°N	107.703145469°W
- plan hits target center - Circle (radius 20.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	1,000.00	Surf Csq at 1000 MD/TVD	5.500	6.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,402.54	3,926.00	Mesaverde			
5,228.00	4,726.00	Price Coal			
5,928.00	5,426.00	Top Gas			
6,828.00	6,326.00	Cameo			
7,928.00	7,426.00	Rollins			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,150.00	1,150.00	20.00	0.47	KOP 3°/100 at 1150 MD/TVD	
2,402.40	2,314.55	-164.71	350.90	HOLD 38° at 2402 MD/2315 TVD	
3,975.60	3,561.45	-612.01	1,199.50	DROP 3°/100 at 3976 MD/ 3561 TVD	
5,228.00	4,726.00	-796.72	1,549.93	VERTICAL at 5228 MD/4726 TVD	
8,128.00	7,626.00	-796.72	1,549.93	TD at 8128 MD/7626 TVD	