



Mesa West Directional
Telephone: 505.402.8944
www.mesawestdirectional.com

Austin Exploration

Fremont County (Nad 83)

Sec 18, T20S,R69W

C-18-#1

DD

UWI:

API:

Plan: #6

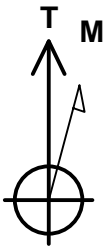
Mesa West Planning Report

01 May, 2014



Project: Fremont County (Nad 83)
Site: Sec 18, T20S,R69W
Well: C-18-#1
Wellbore: DD
Plan: #6

Reference Details - WELL CENTRE
Geodetic System: US State Plane 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone
Northing: 1173867.22
Easting: 3100933.08
Latitude: 38° 18' 36.684 N
Longitude: 105° 8' 53.736 W
Grid Convergence: 0.22° West
Ground Elevation: 6019.0
KB Elevation: Est RKB @ 6033.0usft (new)

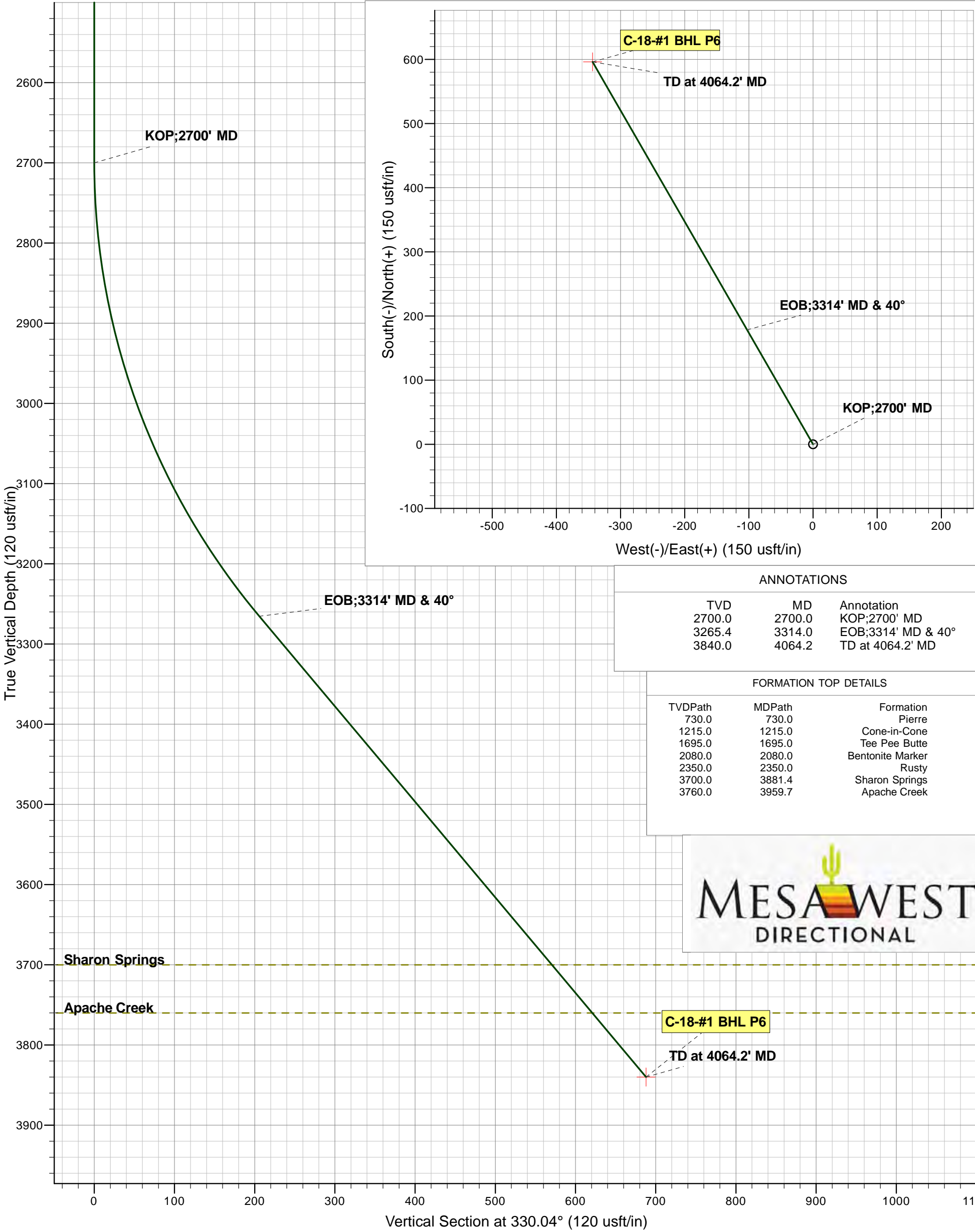


Azimuths to True North
Magnetic North: 8.49°

Magnetic Field
Strength: 51653.1snT
Dip Angle: 65.18°
Date: 5/5/2014
Model: IGRF2010

PLAN DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2700.0	0.00	0.00	2700.0	0.0	0.0	0.00	0.00	0.0	
3	3314.0	40.00	330.04	3265.4	178.3	-102.8	6.51	330.04	205.8	
4	4064.2	40.00	330.04	3840.0	596.0	-343.6	0.00	0.00	688.0	C-18-#1 BHL P6



ANNOTATIONS

TVD	MD	Annotation
2700.0	2700.0	KOP;2700' MD
3265.4	3314.0	EOB;3314' MD & 40°
3840.0	4064.2	TD at 4064.2' MD

FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
730.0	730.0	Pierre
1215.0	1215.0	Cone-in-Cone
1695.0	1695.0	Tee Pee Butte
2080.0	2080.0	Bentonite Marker
2350.0	2350.0	Rusty
3700.0	3881.4	Sharon Springs
3760.0	3959.7	Apache Creek





Mesa West Directional

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well C-18-#1
Company:	Austin Exploration	TVD Reference:	Est RKB @ 6033.0usft (new)
Project:	Fremont County (Nad 83)	MD Reference:	Est RKB @ 6033.0usft (new)
Site:	Sec 18, T20S,R69W	North Reference:	True
Well:	C-18-#1	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Plan:	#6		

Project	Fremont County (Nad 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	Sec 18, T20S,R69W			
Site Position:		Northing:	1,173,713.71 usft	Latitude: 38° 18' 35.172 N
From:	Lat/Long	Easting:	3,100,788.76 usft	Longitude: 105° 8' 55.554 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.22 °

Well	C-18-#1			
Well Position	+N/-S	153.0 usft	Northing:	1,173,867.22 usft
	+E/-W	144.9 usft	Easting:	3,100,933.08 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level: 6,019.0 usft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/5/2014	8.49	65.18	51,653

Plan	#6			
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	330.04

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	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,314.0	40.00	330.04	3,265.4	178.3	-102.8	6.51	6.51	0.00	330.04	
4,064.2	40.00	330.04	3,840.0	596.0	-343.6	0.00	0.00	0.00	0.00	C-18-#1 BHL P6

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Project:	Fremont County (Nad 83)	MD Reference:	Est RKB @ 6033.0usft (new)
Site:	Sec 18, T20S,R69W	North Reference:	True
Well:	C-18-#1	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Plan:	#6		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	-6,033.0	0.0	0.0	0.0	0.00	0.00	0.00
Pierre										
730.0	0.00	0.00	730.0	-5,303.0	0.0	0.0	0.0	0.00	0.00	0.00
Cone-in-Cone										
1,215.0	0.00	0.00	1,215.0	-4,818.0	0.0	0.0	0.0	0.00	0.00	0.00
Tee Pee Butte										
1,695.0	0.00	0.00	1,695.0	-4,338.0	0.0	0.0	0.0	0.00	0.00	0.00
Bentonite Marker										
2,080.0	0.00	0.00	2,080.0	-3,953.0	0.0	0.0	0.0	0.00	0.00	0.00
Rusty										
2,350.0	0.00	0.00	2,350.0	-3,683.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP;2700' MD										
2,700.0	0.00	0.00	2,700.0	-3,333.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	6.51	330.04	2,799.8	-3,233.2	4.9	-2.8	5.7	6.51	6.51	0.00
2,900.0	13.03	330.04	2,898.3	-3,134.7	19.6	-11.3	22.6	6.51	6.51	0.00
3,000.0	19.54	330.04	2,994.2	-3,038.8	43.9	-25.3	50.7	6.51	6.51	0.00
3,100.0	26.06	330.04	3,086.4	-2,946.6	77.4	-44.7	89.4	6.51	6.51	0.00
3,200.0	32.57	330.04	3,173.5	-2,859.5	119.8	-69.1	138.3	6.51	6.51	0.00
3,300.0	39.09	330.04	3,254.5	-2,778.5	170.5	-98.3	196.8	6.51	6.51	0.00
EOB;3314' MD & 40°										
3,314.0	40.00	330.04	3,265.4	-2,767.6	178.3	-102.8	205.8	6.51	6.51	0.00
3,400.0	40.00	330.04	3,331.2	-2,701.8	226.1	-130.4	261.0	0.00	0.00	0.00
3,500.0	40.00	330.04	3,407.8	-2,625.2	281.8	-162.5	325.3	0.00	0.00	0.00
3,600.0	40.00	330.04	3,484.4	-2,548.6	337.5	-194.6	389.6	0.00	0.00	0.00
3,700.0	40.00	330.04	3,561.0	-2,472.0	393.2	-226.7	453.9	0.00	0.00	0.00
3,800.0	40.00	330.04	3,637.6	-2,395.4	448.9	-258.8	518.1	0.00	0.00	0.00
Sharon Springs										
3,881.4	40.00	330.04	3,700.0	-2,333.0	494.2	-284.9	570.5	0.00	0.00	0.00
3,900.0	40.00	330.04	3,714.2	-2,318.8	504.6	-290.9	582.4	0.00	0.00	0.00
Apache Creek										
3,959.7	40.00	330.04	3,760.0	-2,273.0	537.8	-310.1	620.8	0.00	0.00	0.00
4,000.0	40.00	330.04	3,790.8	-2,242.2	560.3	-323.0	646.7	0.00	0.00	0.00
TD at 4064.2' MD										
4,064.2	40.00	330.04	3,840.0	-2,193.0	596.0	-343.6	688.0	0.00	0.00	0.00

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
C-18-#1 BHL P6	0.00	0.00	3,840.0	596.0	-343.6	1,174,461.88	3,100,587.18	38° 18' 42.575 N		105° 8' 58.047 W
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

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Site:	Sec 18, T20S,R69W	North Reference:	True
Well:	C-18-#1	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Plan:	#6		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Subsea Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
730.0	730.0	5,303.0	Pierre			
1,215.0	1,215.0	4,818.0	Cone-in-Cone			
1,695.0	1,695.0	4,338.0	Tee Pee Butte			
2,080.0	2,080.0	3,953.0	Bentonite Marker			
2,350.0	2,350.0	3,683.0	Rusty			
3,881.4	3,700.0	2,333.0	Sharon Springs			
3,959.7	3,760.0	2,273.0	Apache Creek			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
2,700.0	2,700.0	0.0	0.0	KOP;2700' MD	
3,314.0	3,265.4	178.3	-102.8	EOB;3314' MD & 40°	
4,064.2	3,840.0	596.0	-343.6	TD at 4064.2' MD	