

**5D Plan Report**

Apache Corporation**Field Name:** *Apache Lea Co, NM (Nad 83 NME)***Site Name:** *Black & Tan 27 Fed Com ME***Well Name:** *Black & Tan 27 Fed Com 306H***Plan:** *P1:V1*

14 March 2017



Black & Tan 27 Fed Com 306H

Field Name: Apache Lea Co, NM (Nad 83 NME)	Map Units: US ft		Company Name: Apache Corporation	
	Vertical Reference Datum (VRD): Mean Sea Level			
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)			
	Comment:			
Site: Black & Tan 27 Fed Com ME	Units: US ft	North Reference: Grid	Convergence Angle: 0.42	
	Position:	Northing: 560146.00 US ft	Latitude: 32.537436611	
		Easting: 783862.20 US ft	Longitude: -103.546350856	
	Elevation above MSL: 3714.00 US ft		Comment:	
Slot: Black & Tan 27 Fed Com 306H	Position (Relative to Site Centre)			
	+N/-S: 0.30 US ft	Northing: 560146.30 US ft	Latitude: 32.537436621	
	+E/-W: 40.10 US ft	Easting: 783902.30 US ft	Longitude: -103.546220736	
	Slot TVD Reference: Ground Elevation			
	Elevation above MSL: 3715.00 US ft			
Well: Black & Tan 27 Fed Com 306H	Type: Main well		UWI:	Plan: P1:V1
	File Number:	Comment:		
	Closure Distance: 4804.35 US ft		Closure Azimuth: 4.35°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: 0.00 US ft	+E/-W: 0.00 US ft	Az: 0.00°	
	Magnetic Parameters:			
	Model: bggm2016	Field Strength: 48263.6nT	Declination: 7.02°	Dip: 60.38° Date: 13/Mar/2017

Drill floor: Plan: P1:V1

Rig Height (Drill Floor): 25.00 US ft	Elevation above MSL: 3740.00 US ft	Inclination: 0.00°	Azimuth: 0.00°
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Target set: Black & Tan 27 Fed Com 306H Comment:

Target Name:	Shape:	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (USft)	Easting (USft)	Latitude (° ' ")	Longitude (° ' ")	Comment
PBHL 306H	Cuboid	10985.00	4790.50	364.50	564936.80	784266.80	32°33'2.15"	- 103°32'41.72"	

Wellpath created using minimum curvature.**Tie Point:**

MD: 0.00 USft	Inclination: 0.00°	Azimuth: 0.00°	TVD: 0.00 USft	North Offset: 0.00 USft	East Offset: 0.00 USft
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Salient Points: (Relative to Slot centre)(TVD relative to Drill Floor)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	
1630.00	0.00	0.00	1630.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	Rustler :

SD Plan Report

Salient Points: (Relative to Slot centre)(TVD relative to Drill Floor)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	Comment
1965.00	0.00	0.00	1965.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	Salado :
3370.00	0.00	0.00	3370.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	Tansill :
3530.00	0.00	0.00	3530.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	Yates :
3640.00	0.00	0.00	3640.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	Seven Rivers :
5675.00	0.00	0.00	5675.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	Delaware :
8578.00	0.00	0.00	8578.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	Bone Spring :
9025.00	0.00	0.00	9025.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	Avalon :
9285.00	0.00	0.00	9285.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	1st Bone Spring Carb :
9695.00	0.00	0.00	9695.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	1st Bone Spring Sand :
9955.00	0.00	0.00	9955.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	2nd Bone Spring Carb :
10225.00	0.00	0.00	10225.00	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	2nd Bone Spring Sand :
10450.03	0.00	0.00	10450.03	0.00	0.00	0.00	32.537436 621	- 103.54622 0736	0.00	0.00	0.00	KOP
10780.83	39.70	73.01	10755.00	32.16	32.16	105.28	32.537522 875	- 103.54587 8361	12.00	0.00	12.00	3rd Bone Spring Carb :
10825.03	45.00	73.01	10787.65	40.86	40.86	133.75	32.537546 195	- 103.54578 5795	12.00	-0.00	12.00	Build/Turn
11152.80	63.29	29.19	10985.00	209.19	209.19	323.47	32.538005 001	- 103.54516 6146	5.58	-13.37	12.00	3rd Bone Spring Sand :
11484.25	91.00	359.56	11059.60	516.58	516.58	397.38	32.538848 357	- 103.54491 8948	8.36	-8.94	12.00	LP
15758.95	91.00	359.56	10985.00	4790.50	4790.50	364.50	32.550595 931	- 103.54492 2978	0.00	0.00	0.00	PBHL 306H

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)												Comment
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
1630.00	0.00	0.00	1630.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	Rustler :
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
1965.00	0.00	0.00	1965.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	Salado :
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
3370.00	0.00	0.00	3370.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	Tansill :
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
3530.00	0.00	0.00	3530.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	Yates :
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
3640.00	0.00	0.00	3640.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	Seven Rivers :
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
4100.00	0.00	0.00	4100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
4200.00	0.00	0.00	4200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
4400.00	0.00	0.00	4400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
4600.00	0.00	0.00	4600.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
4700.00	0.00	0.00	4700.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
4800.00	0.00	0.00	4800.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
5100.00	0.00	0.00	5100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
5675.00	0.00	0.00	5675.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	Delaware :
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
6000.00	0.00	0.00	6000.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
6100.00	0.00	0.00	6100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
6300.00	0.00	0.00	6300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
6400.00	0.00	0.00	6400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
6500.00	0.00	0.00	6500.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)												Comment
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	
6600.00	0.00	0.00	6600.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
6700.00	0.00	0.00	6700.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
6800.00	0.00	0.00	6800.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
6900.00	0.00	0.00	6900.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
7000.00	0.00	0.00	7000.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
7100.00	0.00	0.00	7100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
7200.00	0.00	0.00	7200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
7300.00	0.00	0.00	7300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
7400.00	0.00	0.00	7400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
7500.00	0.00	0.00	7500.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
7600.00	0.00	0.00	7600.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
7700.00	0.00	0.00	7700.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
7800.00	0.00	0.00	7800.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
7900.00	0.00	0.00	7900.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
8000.00	0.00	0.00	8000.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
8100.00	0.00	0.00	8100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
8200.00	0.00	0.00	8200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
8300.00	0.00	0.00	8300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
8400.00	0.00	0.00	8400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
8500.00	0.00	0.00	8500.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
8578.00	0.00	0.00	8578.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	Bone Spring :
8600.00	0.00	0.00	8600.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
8700.00	0.00	0.00	8700.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
8800.00	0.00	0.00	8800.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
8900.00	0.00	0.00	8900.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9000.00	0.00	0.00	9000.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9025.00	0.00	0.00	9025.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	Avalon :
9100.00	0.00	0.00	9100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9200.00	0.00	0.00	9200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9285.00	0.00	0.00	9285.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	1st Bone Spring Carb :
9300.00	0.00	0.00	9300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9400.00	0.00	0.00	9400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9500.00	0.00	0.00	9500.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9600.00	0.00	0.00	9600.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9695.00	0.00	0.00	9695.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	1st Bone Spring Sand :
9700.00	0.00	0.00	9700.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9800.00	0.00	0.00	9800.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9900.00	0.00	0.00	9900.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
9955.00	0.00	0.00	9955.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	2nd Bone Spring Carb :
10000.00	0.00	0.00	10000.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
10100.00	0.00	0.00	10100.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
10200.00	0.00	0.00	10200.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
10225.00	0.00	0.00	10225.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	2nd Bone Spring Sand :
10300.00	0.00	0.00	10300.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
10400.00	0.00	0.00	10400.00	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	
10450.03	0.00	0.00	10450.03	0.00	0.00	0.00	560146.30	783902.30	0.00	0.00	0.00	KOP
10500.00	6.00	73.01	10499.91	0.76	0.76	2.50	560147.06	783904.80	12.00	0.00	12.00	
10600.00	18.00	73.01	10597.55	6.82	6.82	22.34	560153.12	783924.64	12.00	-0.00	12.00	
10700.00	30.00	73.01	10688.74	18.68	18.68	61.16	560164.98	783963.46	12.00	0.00	12.00	
10780.83	39.70	73.01	10755.00	32.16	32.16	105.28	560178.46	784007.58	12.00	0.00	12.00	3rd Bone Spring Carb :
10800.00	42.00	73.01	10769.49	35.82	35.82	117.27	560182.12	784019.57	12.00	-0.00	12.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	B.Rate (°/100US ft)	T.Rate (°/100US ft)	DLS (°/100US ft)	Comment
10825.03	45.00	73.01	10787.65	40.86	40.86	133.75	560187.16	784036.05	12.00	0.00	12.00	Build/Turn
10900.00	47.60	61.09	10839.54	62.03	62.03	183.42	560208.33	784085.72	3.46	-15.91	12.00	
11000.00	52.77	46.96	10903.74	107.21	107.21	245.06	560253.51	784147.36	5.17	-14.13	12.00	
11100.00	59.39	34.87	10959.66	169.92	169.92	298.96	560316.22	784201.26	6.62	-12.09	12.00	
11152.80	63.29	29.19	10985.00	209.19	209.19	323.47	560355.49	784225.77	7.40	-10.77	12.00	
11200.00	66.97	24.43	11004.85	247.40	247.40	342.75	560393.70	784245.05	7.78	-10.07	12.00	3rd Bone Spring Sand :
11300.00	75.16	15.15	11037.34	336.27	336.27	374.53	560482.57	784276.83	8.19	-9.28	12.00	
11400.00	83.70	6.56	11055.70	432.65	432.65	392.91	560578.95	784295.21	8.54	-8.59	12.00	LP
11484.25	91.00	359.56	11059.60	516.58	516.58	397.38	560662.88	784299.68	8.67	-8.31	12.00	
11500.00	91.00	359.56	11059.33	532.33	532.33	397.26	560678.63	784299.56	0.00	0.00	0.00	
11600.00	91.00	359.56	11057.58	632.31	632.31	396.49	560778.61	784298.79	0.00	0.00	0.00	
11700.00	91.00	359.56	11055.84	732.29	732.29	395.72	560878.59	784298.02	0.00	0.00	0.00	
11800.00	91.00	359.56	11054.09	832.27	832.27	394.95	560978.57	784297.25	0.00	0.00	0.00	
11900.00	91.00	359.56	11052.35	932.25	932.25	394.18	561078.55	784296.48	0.00	0.00	0.00	
12000.00	91.00	359.56	11050.60	1032.24	1032.24	393.41	561178.54	784295.71	0.00	0.00	0.00	
12100.00	91.00	359.56	11048.86	1132.22	1132.22	392.65	561278.52	784294.95	0.00	0.00	0.00	
12200.00	91.00	359.56	11047.11	1232.20	1232.20	391.88	561378.50	784294.18	0.00	0.00	0.00	
12300.00	91.00	359.56	11045.37	1332.18	1332.18	391.11	561478.48	784293.41	0.00	0.00	0.00	
12400.00	91.00	359.56	11043.62	1432.16	1432.16	390.34	561578.46	784292.64	0.00	0.00	0.00	
12500.00	91.00	359.56	11041.88	1532.14	1532.14	389.57	561678.44	784291.87	0.00	0.00	0.00	
12600.00	91.00	359.56	11040.13	1632.13	1632.13	388.80	561778.43	784291.10	0.00	0.00	0.00	
12700.00	91.00	359.56	11038.39	1732.11	1732.11	388.03	561878.41	784290.33	0.00	0.00	0.00	
12800.00	91.00	359.56	11036.64	1832.09	1832.09	387.26	561978.39	784289.56	0.00	0.00	0.00	
12900.00	91.00	359.56	11034.90	1932.07	1932.07	386.49	562078.37	784288.79	0.00	0.00	0.00	
13000.00	91.00	359.56	11033.15	2032.05	2032.05	385.72	562178.35	784288.02	0.00	0.00	0.00	
13100.00	91.00	359.56	11031.41	2132.04	2132.04	384.95	562278.34	784287.25	0.00	0.00	0.00	
13200.00	91.00	359.56	11029.66	2232.02	2232.02	384.18	562378.32	784286.48	0.00	0.00	0.00	
13300.00	91.00	359.56	11027.91	2332.00	2332.00	383.41	562478.30	784285.71	0.00	0.00	0.00	
13400.00	91.00	359.56	11026.17	2431.98	2431.98	382.65	562578.28	784284.95	0.00	0.00	0.00	
13500.00	91.00	359.56	11024.42	2531.96	2531.96	381.88	562678.26	784284.18	0.00	0.00	0.00	
13600.00	91.00	359.56	11022.68	2631.94	2631.94	381.11	562778.24	784283.41	0.00	0.00	0.00	
13700.00	91.00	359.56	11020.93	2731.93	2731.93	380.34	562878.23	784282.64	0.00	0.00	0.00	
13800.00	91.00	359.56	11019.19	2831.91	2831.91	379.57	562978.21	784281.87	0.00	0.00	0.00	
13900.00	91.00	359.56	11017.44	2931.89	2931.89	378.80	563078.19	784281.10	0.00	0.00	0.00	
14000.00	91.00	359.56	11015.70	3031.87	3031.87	378.03	563178.17	784280.33	0.00	0.00	0.00	
14100.00	91.00	359.56	11013.95	3131.85	3131.85	377.26	563278.15	784279.56	0.00	0.00	0.00	
14200.00	91.00	359.56	11012.21	3231.84	3231.84	376.49	563378.14	784278.79	0.00	0.00	0.00	
14300.00	91.00	359.56	11010.46	3331.82	3331.82	375.72	563478.12	784278.02	0.00	0.00	0.00	
14400.00	91.00	359.56	11008.72	3431.80	3431.80	374.95	563578.10	784277.25	0.00	0.00	0.00	
14500.00	91.00	359.56	11006.97	3531.78	3531.78	374.18	563678.08	784276.48	0.00	0.00	0.00	
14600.00	91.00	359.56	11005.23	3631.76	3631.76	373.41	563778.06	784275.71	0.00	0.00	0.00	
14700.00	91.00	359.56	11003.48	3731.74	3731.74	372.65	563878.04	784274.95	0.00	0.00	0.00	
14800.00	91.00	359.56	11001.74	3831.73	3831.73	371.88	563978.03	784274.18	0.00	0.00	0.00	
14900.00	91.00	359.56	10999.99	3931.71	3931.71	371.11	564078.01	784273.41	0.00	0.00	0.00	
15000.00	91.00	359.56	10998.25	4031.69	4031.69	370.34	564177.99	784272.64	0.00	0.00	0.00	
15100.00	91.00	359.56	10996.50	4131.67	4131.67	369.57	564277.97	784271.87	0.00	0.00	0.00	
15200.00	91.00	359.56	10994.75	4231.65	4231.65	368.80	564377.95	784271.10	0.00	0.00	0.00	
15300.00	91.00	359.56	10993.01	4331.64	4331.64	368.03	564477.94	784270.33	0.00	0.00	0.00	
15400.00	91.00	359.56	10991.26	4431.62	4431.62	367.26	564577.92	784269.56	0.00	0.00	0.00	
15500.00	91.00	359.56	10989.52	4531.60	4531.60	366.49	564677.90	784268.79	0.00	0.00	0.00	
15600.00	91.00	359.56	10987.77	4631.58	4631.58	365.72	564777.88	784268.02	0.00	0.00	0.00	
15700.00	91.00	359.56	10986.03	4731.56	4731.56	364.95	564877.86	784267.25	0.00	0.00	0.00	
15758.95	91.00	359.56	10985.00	4790.50	4790.50	364.50	564936.80	784266.80	0.00	0.00	0.00	PBHL 306H

5D Plan Report

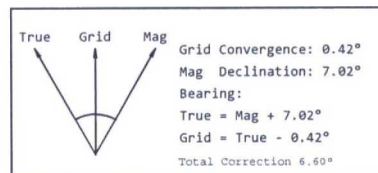
Formation Points: (Relative to Slot centre)(TVD relative to Drill Floor)									
Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	N.Offset (US ft)	E.Offset (US ft)	F.Dip (°)	F.Dir (°)
Rustler	1630.00	0.00	0.00	1630.00	-2110.00	0.00	0.00	0	0
Salado	1965.00	0.00	0.00	1965.00	-1775.00	0.00	0.00	0	0
Tansill	3370.00	0.00	0.00	3370.00	-370.00	0.00	0.00	0	0
Yates	3530.00	0.00	0.00	3530.00	-210.00	0.00	0.00	0	0
Seven Rivers	3640.00	0.00	0.00	3640.00	-100.00	0.00	0.00	0	0
Delaware	5675.00	0.00	0.00	5675.00	1935.00	0.00	0.00	0	0
Bone Spring	8578.00	0.00	0.00	8578.00	4838.00	0.00	0.00	0	0
Avalon	9025.00	0.00	0.00	9025.00	5285.00	0.00	0.00	0	0
1st Bone Spring Carb	9285.00	0.00	0.00	9285.00	5545.00	0.00	0.00	0	0
1st Bone Spring Sand	9695.00	0.00	0.00	9695.00	5955.00	0.00	0.00	0	0
2nd Bone Spring Carb	9955.00	0.00	0.00	9955.00	6215.00	0.00	0.00	0	0
2nd Bone Spring Sand	10225.00	0.00	0.00	10225.00	6485.00	0.00	0.00	0	0
3rd Bone Spring Carb	10780.83	39.70	73.01	10755.00	7015.00	32.16	105.28	0	0
3rd Bone Spring Sand	11152.80	63.29	29.19	10985.00	7245.00	209.19	323.47	0	0



Apache
Black & Tan 27 Fed Com 306H
Lea Co, NM

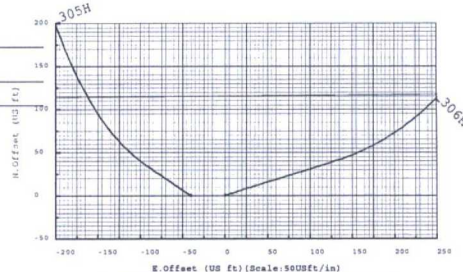


Weatherford®



Plan Data for Black & Tan 27 Fed Com 306H

Plan Point Information:									
Dogleg Severity Unit: °/100.00ft Position offsets from Slot centre									
MD	Inc	Az	TVD	+N/-S	+E/-W	Northing	Easting	VSec	DLS Comments
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)
0.00	0.00	0.00	0.00	-0.00	0.00	560146.30	783902.30	-0.00	0.00
10450.03	0.00	0.00	10450.03	-0.00	0.00	560146.30	783902.30	-0.00	0.00 KOP
10825.03	45.00	73.01	10787.65	40.86	133.75	560187.16	784036.05	50.88	12.00 Build/Turn
11484.25	91.00	359.56	11059.60	516.58	397.38	560662.88	784299.68	545.24	12.00 LP
15758.95	91.00	359.56	10985.00	4790.50	364.50	564936.80	784266.80	4804.35	0.00 PBHL 306H



Plan Data for Black & Tan 27 Fed Com 306H

Field: Apache Lea Co, NM (Nad 83 NME)
Map Unit: USft Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / New Mexico East (ftUS)

Site: Black & Tan 27 Fed Com ME
Unit: USFeet TVD Reference:
Company Name: Apache Corporation
Position: Northing: 560146.00USft Latitude: 32.537437°
Easting: 783862.20USft Longitude: -103.546351°
North Reference: Grid Grid Convergence: 0.42°
Elevation Above VRD: 3714.00USft

Slot: Black & Tan 27 Fed Com 306H

Position:
Offset is from Site centre
+N/-S: 0.30USft Northing: 560146.30USft Latitude: 32.537437°
+E/-W: 40.10USft Easting: 783902.30USft Longitude: -103.546221°
Elevation Above VRD: 3715.00USft

Well: Black & Tan 27 Fed Com 306H

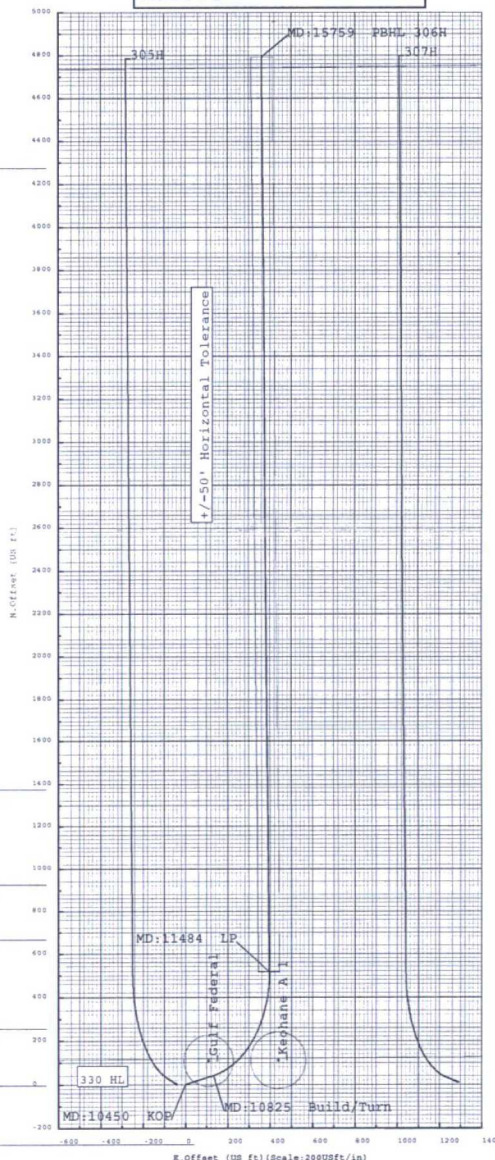
Type: Main-Well
File Number:
Plan Folder: P1 Plan: P1.V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 4.35°
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
bggm2016 48263(nT) 7.02° 60.38° 2017-03-13

Plan Data for Black & Tan 27 Fed Com 306H

Formation Point Information:				
Name	TVD	SS	MD	
(USft)	(USft)	(USft)	(USft)	
Rustler	1630.00	2110.00	1630.00	
Salado	1965.00	1775.00	1965.00	
Tansill	3370.00	370.00	3370.00	
Yates	3530.00	210.00	3530.00	
Seven Rivers	3640.00	100.00	3640.00	
Delaware	5675.00	-1395.00	5675.00	
Bone Spring	8578.00	-4838.00	8578.00	
Avalon	9025.00	-5285.00	9025.00	
1st Bone Spring Carb	9285.00	-5545.00	9285.00	
1st Bone Spring Sand	9695.00	-5955.00	9695.00	
2nd Bone Spring Carb	9955.00	-6215.00	9955.00	
2nd Bone Spring Sand	10225.00	-6485.00	10225.00	
3rd Bone Spring Carb	10755.00	-7015.00	10780.83	
3rd Bone Spring Sand	10985.00	-7245.00	11152.80	

Plan Data for Black & Tan 27 Fed Com 306H

Target Set Information:
Name: Black & Tan 27 Fed Com 306H
Position offsets from Slot centre
Name TVD SS +N/-S +E/-W Northing Easting
(USft) (USft) (USft) (USft) (USft)
PBHL 306H 10985.00 -7245.00 4790.50 364.50 564936.80 784266.80



Drawing By: GWR Date: 03-14-2017
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