



HOBBS OCD
SEP 15 2017
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5D Plan Report

Apache Corporation

Field Name: *Apache Lea Co, NM (Nad 83 NME)*
Site Name: *Black & Tan 27 Fed Com W*
Well Name: *Black & Tan 27 Fed Com 301H*
Plan: *P1:V1*

14 March 2017



Black & Tan 27 Fed Com 301H

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 W	Units: US ft	North Reference: Grid	Convergence Angle: 0.42	
	Position:	Northing: 560131.70 US ft	Latitude: 32.537447998	
		Easting: 781352.90 US ft	Longitude: -103.554493117	
	Elevation above MSL:3728.00 US ft			
Comment:				
Slot: Black & Tan 27 Fed Com 301H	Position (Relative to Site Centre)			
	+N/-S: 0.00 US ft	Northing: 560131.70 US ft	Latitude: 32.537447998	
	+E/-W: 0.00 US ft	Easting: 781352.90 US ft	Longitude: -103.554493117	
	Slot TVD Reference: Ground Elevation			
	Elevation above MSL: 3728.00 US ft			
Comment:				
Well: Black & Tan 27 Fed Com 301H	Type:Main well		UWI:	Plan:P1:V1
	File Number:	Comment:		
	Closure Distance:4787.83US ft		Closure Azimuth:356.13°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: 0.00 US ft		+E/-W: 0.00 US ft	
	Az: 356.13°			
	Magnetic Parameters:			
	Model: bggm2016	Field Strength: 48262.9nT	Declination: 7.03°	Dip: 60.38°
		Date:	13/Mar/2017	

Drill floor: Plan: P1:V1				
Rig Height (Drill Floor):	Elevation above MSL:	Inclination: 0.00°	Azimuth: 0.00°	
25.00us ft	3753.00us ft			

Target set: Black & Tan 27 Fed Com 301H Comment:									
Target Name:	Shape:	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (USft)	Easting (USft)	Latitude (° ' ")	Longitude (° ' ")	Comment
PBHL 301H	Cuboid	11024.00	4776.90	-323.40	564908.60	781029.50	32°33'2.10"	- 103°33'19.55"	

Wellpath created using minimum curvature.

Tie Point:					
MD: 0.00USFt	Inclination: 0.00°	Azimuth: 0.00°	TVD: 0.00USFt	North Offset: 0.00USFt	East Offset: 0.00USFt

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	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	
1633.00	0.00	0.00	1633.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	Rustler :

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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
1968.00	0.00	0.00	1968.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	Salado :
3363.00	0.00	0.00	3363.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	Tansill :
3523.00	0.00	0.00	3523.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	Yates :
3613.00	0.00	0.00	3613.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	Seven Rivers :
5683.00	0.00	0.00	5683.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	Delaware :
8595.00	0.00	0.00	8595.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	Bone Spring :
9021.00	0.00	0.00	9021.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	Avalon :
9273.00	0.00	0.00	9273.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	1st Bone Spring Carb :
9675.00	0.00	0.00	9675.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	1st Bone Spring Sand :
9948.00	0.00	0.00	9948.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	2nd Bone Spring Carb :
10203.00	0.00	0.00	10203.00	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	2nd Bone Spring Sand :
10473.05	0.00	0.00	10473.05	0.00	0.00	0.00	32.537447 998	- 103.55449 3117	0.00	0.00	0.00	KOP
10723.05	30.00	276.58	10711.79	11.61	7.34	-63.55	32.537469 436	- 103.55469 9130	12.00	0.00	12.00	Build/Turn
10736.02	30.21	279.66	10723.00	12.96	8.25	-69.98	32.537472 091	- 103.55471 9987	1.65	23.70	12.00	3rd Bone Spring Carb :
11051.31	50.72	331.12	10968.00	147.02	132.98	-212.34	32.537817 757	- 103.55517 8955	6.50	16.32	12.00	3rd Bone Spring Sand :
11451.23	91.00	359.60	11098.84	508.22	489.53	-293.30	32.538799 367	- 103.55543 3199	10.07	7.12	12.00	LP
15739.36	91.00	359.60	11024.00	4787.83	4776.90	-323.40	32.550583 865	- 103.55542 9241	0.00	0.00	0.00	PBHL 301H

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	560131.70	781352.90	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	

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
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
1633.00	0.00	0.00	1633.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	Rustler :
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
1968.00	0.00	0.00	1968.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	Salado :
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
3363.00	0.00	0.00	3363.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	Tansill :
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
3523.00	0.00	0.00	3523.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	Yates :
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
3613.00	0.00	0.00	3613.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	Seven Rivers :
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
4100.00	0.00	0.00	4100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
4200.00	0.00	0.00	4200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
4400.00	0.00	0.00	4400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
4600.00	0.00	0.00	4600.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
4700.00	0.00	0.00	4700.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
4800.00	0.00	0.00	4800.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
5100.00	0.00	0.00	5100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
5683.00	0.00	0.00	5683.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	Delaware :
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
6000.00	0.00	0.00	6000.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
6100.00	0.00	0.00	6100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
6300.00	0.00	0.00	6300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
6400.00	0.00	0.00	6400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
6500.00	0.00	0.00	6500.00	0.00	0.00	0.00	560131.70	781352.90	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	560131.70	781352.90	0.00	0.00	0.00	
6700.00	0.00	0.00	6700.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
6800.00	0.00	0.00	6800.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
6900.00	0.00	0.00	6900.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
7000.00	0.00	0.00	7000.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
7100.00	0.00	0.00	7100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
7200.00	0.00	0.00	7200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
7300.00	0.00	0.00	7300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
7400.00	0.00	0.00	7400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
7500.00	0.00	0.00	7500.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
7600.00	0.00	0.00	7600.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
7700.00	0.00	0.00	7700.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
7800.00	0.00	0.00	7800.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
7900.00	0.00	0.00	7900.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
8000.00	0.00	0.00	8000.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
8100.00	0.00	0.00	8100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
8200.00	0.00	0.00	8200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
8300.00	0.00	0.00	8300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
8400.00	0.00	0.00	8400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
8500.00	0.00	0.00	8500.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
8595.00	0.00	0.00	8595.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	Bone Spring :
8600.00	0.00	0.00	8600.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
8700.00	0.00	0.00	8700.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
8800.00	0.00	0.00	8800.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
8900.00	0.00	0.00	8900.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9000.00	0.00	0.00	9000.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9021.00	0.00	0.00	9021.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	Avalon :
9100.00	0.00	0.00	9100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9200.00	0.00	0.00	9200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9273.00	0.00	0.00	9273.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	1st Bone Spring Carb :
9300.00	0.00	0.00	9300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9400.00	0.00	0.00	9400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9500.00	0.00	0.00	9500.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9600.00	0.00	0.00	9600.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9675.00	0.00	0.00	9675.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	1st Bone Spring Sand :
9700.00	0.00	0.00	9700.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9800.00	0.00	0.00	9800.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9900.00	0.00	0.00	9900.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
9948.00	0.00	0.00	9948.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	2nd Bone Spring Carb :
10000.00	0.00	0.00	10000.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
10100.00	0.00	0.00	10100.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
10200.00	0.00	0.00	10200.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
10203.00	0.00	0.00	10203.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	2nd Bone Spring Sand :
10300.00	0.00	0.00	10300.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
10400.00	0.00	0.00	10400.00	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	
10473.05	0.00	0.00	10473.05	0.00	0.00	0.00	560131.70	781352.90	0.00	0.00	0.00	KOP
10500.00	3.23	276.58	10499.99	0.14	0.09	-0.76	560131.79	781352.14	12.00	0.00	12.00	
10600.00	15.23	276.58	10598.51	3.05	1.92	-16.67	560133.62	781336.23	12.00	-0.00	12.00	
10700.00	27.23	276.58	10691.55	9.61	6.07	-52.58	560137.77	781300.32	12.00	0.00	12.00	
10723.05	30.00	276.58	10711.79	11.61	7.34	-63.55	560139.04	781289.35	12.00	0.00	12.00	Build/Turn
10736.02	30.21	279.66	10723.00	12.96	8.25	-69.98	560139.95	781282.92	1.65	23.70	12.00	3rd Bone Spring Carb :

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
10800.00	32.26	293.96	10777.78	24.72	17.90	-101.50	560149.60	781251.40	3.20	22.36	12.00	
10900.00	38.14	312.22	10859.69	59.55	49.61	-148.93	560181.31	781203.97	5.88	18.26	12.00	
11000.00	46.12	325.64	10933.95	113.05	100.30	-192.30	560232.00	781160.60	7.99	13.42	12.00	
11051.31	50.72	331.12	10968.00	147.02	132.98	-212.34	560264.68	781140.56	8.96	10.68	12.00	3rd Bone Spring Sand :
11100.00	55.30	335.67	10997.30	182.88	167.75	-229.71	560299.45	781123.19	9.39	9.36	12.00	
11200.00	65.12	343.63	11046.98	265.99	249.03	-259.53	560380.73	781093.37	9.83	7.96	12.00	
11300.00	75.30	350.39	11080.83	358.73	340.57	-280.46	560472.27	781072.44	10.18	6.76	12.00	
11400.00	85.67	356.54	11097.35	457.07	438.38	-291.58	560570.08	781061.32	10.36	6.15	12.00	
11451.23	91.00	359.60	11098.84	508.22	489.53	-293.30	560621.23	781059.60	10.41	5.97	12.00	LP
11500.00	91.00	359.60	11097.99	556.90	538.29	-293.65	560669.99	781059.25	0.00	0.00	0.00	
11600.00	91.00	359.60	11096.24	656.70	638.28	-294.35	560769.98	781058.55	0.00	0.00	0.00	
11700.00	91.00	359.60	11094.50	756.50	738.26	-295.05	560869.96	781057.85	0.00	0.00	0.00	
11800.00	91.00	359.60	11092.75	856.30	838.24	-295.75	560969.94	781057.15	0.00	0.00	0.00	
11900.00	91.00	359.60	11091.01	956.11	938.22	-296.45	561069.92	781056.45	0.00	0.00	0.00	
12000.00	91.00	359.60	11089.26	1055.91	1038.21	-297.16	561169.91	781055.74	0.00	0.00	0.00	
12100.00	91.00	359.60	11087.52	1155.71	1138.19	-297.86	561269.89	781055.04	0.00	0.00	0.00	
12200.00	91.00	359.60	11085.77	1255.51	1238.17	-298.56	561369.87	781054.34	0.00	0.00	0.00	
12300.00	91.00	359.60	11084.03	1355.31	1338.15	-299.26	561469.85	781053.64	0.00	0.00	0.00	
12400.00	91.00	359.60	11082.28	1455.11	1438.14	-299.96	561569.84	781052.94	0.00	0.00	0.00	
12500.00	91.00	359.60	11080.53	1554.91	1538.12	-300.66	561669.82	781052.24	0.00	0.00	0.00	
12600.00	91.00	359.60	11078.79	1654.72	1638.10	-301.37	561769.80	781051.53	0.00	0.00	0.00	
12700.00	91.00	359.60	11077.04	1754.52	1738.08	-302.07	561869.78	781050.83	0.00	0.00	0.00	
12800.00	91.00	359.60	11075.30	1854.32	1838.06	-302.77	561969.76	781050.13	0.00	0.00	0.00	
12900.00	91.00	359.60	11073.55	1954.12	1938.05	-303.47	562069.75	781049.43	0.00	0.00	0.00	
13000.00	91.00	359.60	11071.81	2053.92	2038.03	-304.17	562169.73	781048.73	0.00	0.00	0.00	
13100.00	91.00	359.60	11070.06	2153.72	2138.01	-304.88	562269.71	781048.02	0.00	0.00	0.00	
13200.00	91.00	359.60	11068.32	2253.52	2237.99	-305.58	562369.69	781047.32	0.00	0.00	0.00	
13300.00	91.00	359.60	11066.57	2353.32	2337.98	-306.28	562469.68	781046.62	0.00	0.00	0.00	
13400.00	91.00	359.60	11064.83	2453.13	2437.96	-306.98	562569.66	781045.92	0.00	0.00	0.00	
13500.00	91.00	359.60	11063.08	2552.93	2537.94	-307.68	562669.64	781045.22	0.00	0.00	0.00	
13600.00	91.00	359.60	11061.34	2652.73	2637.92	-308.38	562769.62	781044.52	0.00	0.00	0.00	
13700.00	91.00	359.60	11059.59	2752.53	2737.91	-309.09	562869.61	781043.81	0.00	0.00	0.00	
13800.00	91.00	359.60	11057.85	2852.33	2837.89	-309.79	562969.59	781043.11	0.00	0.00	0.00	
13900.00	91.00	359.60	11056.10	2952.13	2937.87	-310.49	563069.57	781042.41	0.00	0.00	0.00	
14000.00	91.00	359.60	11054.36	3051.93	3037.85	-311.19	563169.55	781041.71	0.00	0.00	0.00	
14100.00	91.00	359.60	11052.61	3151.74	3137.83	-311.89	563269.53	781041.01	0.00	0.00	0.00	
14200.00	91.00	359.60	11050.87	3251.54	3237.82	-312.60	563369.52	781040.30	0.00	0.00	0.00	
14300.00	91.00	359.60	11049.12	3351.34	3337.80	-313.30	563469.50	781039.60	0.00	0.00	0.00	
14400.00	91.00	359.60	11047.37	3451.14	3437.78	-314.00	563569.48	781038.90	0.00	0.00	0.00	
14500.00	91.00	359.60	11045.63	3550.94	3537.76	-314.70	563669.46	781038.20	0.00	0.00	0.00	
14600.00	91.00	359.60	11043.88	3650.74	3637.75	-315.40	563769.45	781037.50	0.00	0.00	0.00	
14700.00	91.00	359.60	11042.14	3750.54	3737.73	-316.11	563869.43	781036.79	0.00	0.00	0.00	
14800.00	91.00	359.60	11040.39	3850.35	3837.71	-316.81	563969.41	781036.09	0.00	0.00	0.00	
14900.00	91.00	359.60	11038.65	3950.15	3937.69	-317.51	564069.39	781035.39	0.00	0.00	0.00	
15000.00	91.00	359.60	11036.90	4049.95	4037.68	-318.21	564169.38	781034.69	0.00	0.00	0.00	
15100.00	91.00	359.60	11035.16	4149.75	4137.66	-318.91	564269.36	781033.99	0.00	0.00	0.00	
15200.00	91.00	359.60	11033.41	4249.55	4237.64	-319.61	564369.34	781033.29	0.00	0.00	0.00	
15300.00	91.00	359.60	11031.67	4349.35	4337.62	-320.32	564469.32	781032.58	0.00	0.00	0.00	
15400.00	91.00	359.60	11029.92	4449.15	4437.60	-321.02	564569.30	781031.88	0.00	0.00	0.00	
15500.00	91.00	359.60	11028.18	4548.95	4537.59	-321.72	564669.29	781031.18	0.00	0.00	0.00	
15600.00	91.00	359.60	11026.43	4648.76	4637.57	-322.42	564769.27	781030.48	0.00	0.00	0.00	
15700.00	91.00	359.60	11024.69	4748.56	4737.55	-323.12	564869.25	781029.78	0.00	0.00	0.00	
15739.36	91.00	359.60	11024.00	4787.83	4776.90	-323.40	564908.60	781029.50	0.00	0.00	0.00	PBHL 301H

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	1633.00	0.00	0.00	1633.00	-2120.00	0.00	0.00	0	0
Salado	1968.00	0.00	0.00	1968.00	-1785.00	0.00	0.00	0	0
Tansill	3363.00	0.00	0.00	3363.00	-390.00	0.00	0.00	0	0
Yates	3523.00	0.00	0.00	3523.00	-230.00	0.00	0.00	0	0
Seven Rivers	3613.00	0.00	0.00	3613.00	-140.00	0.00	0.00	0	0
Delaware	5683.00	0.00	0.00	5683.00	1930.00	0.00	0.00	0	0
Bone Spring	8595.00	0.00	0.00	8595.00	4842.00	0.00	0.00	0	0
Avalon	9021.00	0.00	0.00	9021.00	5268.00	0.00	0.00	0	0
1st Bone Spring Carb	9273.00	0.00	0.00	9273.00	5520.00	0.00	0.00	0	0
1st Bone Spring Sand	9675.00	0.00	0.00	9675.00	5922.00	0.00	0.00	0	0
2nd Bone Spring Carb	9948.00	0.00	0.00	9948.00	6195.00	0.00	0.00	0	0
2nd Bone Spring Sand	10203.00	0.00	0.00	10203.00	6450.00	0.00	0.00	0	0
3rd Bone Spring Carb	10736.02	30.21	279.66	10723.00	6970.00	8.25	-69.98	0	0
3rd Bone Spring Sand	11051.31	50.72	331.12	10968.00	7215.00	132.98	-212.34	0	0



Apache
Black & Tan 27 Fed Com 301H
Lea Co, NM



RB:3753+
GL:3728+

Plan Data for Black & Tan 27 Fed Com 301H

Plan Point Information:

MD	Inc	Az	TVD	+N/-S	+E/-W	North	East	Vsec	DLS	Comments
(USFt)	(°)	(°)	(USFt)	(USFt)	(USFt)	(USFt)	(USFt)	(USFt)	(DLSU)	
0.00	0.00	0.00	-0.00	-0.00	0.00	566131.70	781352.90	0.00	0.00	
10473.05	0.00	0.00	10473.05	-0.00	0.00	566131.70	781352.90	0.00	0.00	KOP
10723.05	30.00	276.58	10711.79	7.34	-63.55	566139.64	781289.35	11.61	12.00	Build/Turn
11451.23	91.00	359.00	11098.84	489.53	-293.50	564961.23	781059.60	588.22	12.00	LP
15759.36	91.00	359.00	11024.00	4776.90	-323.40	564980.60	781029.50	4767.85	0.00	PHIL 301H

Plan Data for Black & Tan 27 Fed Com 301H

Map Unit: USFt
Projected Coordinate System: NAD83 / New Mexico East (FtUS)

Site: Black & Tan 27 Fed Com W
Unit: USFt
Company Name: Apache Corporation
Position:
North Reference: Grid
Elevation Above WVD: 3728.00USFt

Slot: Black & Tan 27 Fed Com 301H

Position:
Offset is from site centre
+N/-S: 0.00USFt
+E/-W: 0.00USFt
Northing: 566131.70USFt
Easting: 781352.90USFt
Latitude: 32.537448°
Longitude: -103.554493°
Elevation Above WVD: 3728.00USFt

Well: Black & Tan 27 Fed Com 301H

Type: Main-Mu11
File Number:
Plan Folder: P1
Vertical Section: Position offset of origin from slot centre:
+N/-S: -0.00USFt
+E/-W: 0.00USFt
Magnetic Parameters:
Modul: Field Strength: 48262(07)
Declination: 60.38°
Date: 2017-03-13
Dip: 7.03°

Plan Data for Black & Tan 27 Fed Com 301H

Formation Point Information:

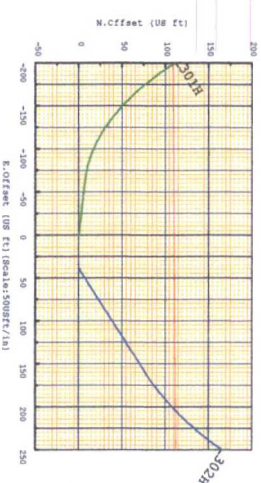
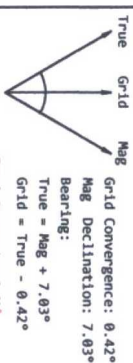
Name	TVD	SS	MD
(USFt)	(USFt)	(USFt)	(USFt)
Rustler	1633.00	2120.00	1633.00
Salado	1968.00	1785.00	1968.00
Tansill	3363.00	390.00	3363.00
Vaca	3523.00	230.00	3523.00
Seven Rivers	3613.00	140.00	3613.00
Delgadito	3613.00	140.00	3613.00
Bone Spring	8595.00	-4842.00	8595.00
Bone Spring	9021.00	-5268.00	9021.00
1st Bone Spring Carb	9273.00	-5520.00	9273.00
1st Bone Spring Sand	9675.00	-5922.00	9675.00
2nd Bone Spring Carb	9948.00	-6195.00	9948.00
2nd Bone Spring Sand	10203.00	-6450.00	10203.00
3rd Bone Spring Carb	10723.00	-6970.00	10723.00
3rd Bone Spring Sand	10968.00	-7215.00	11051.31

Plan Data for Black & Tan 27 Fed Com 301H

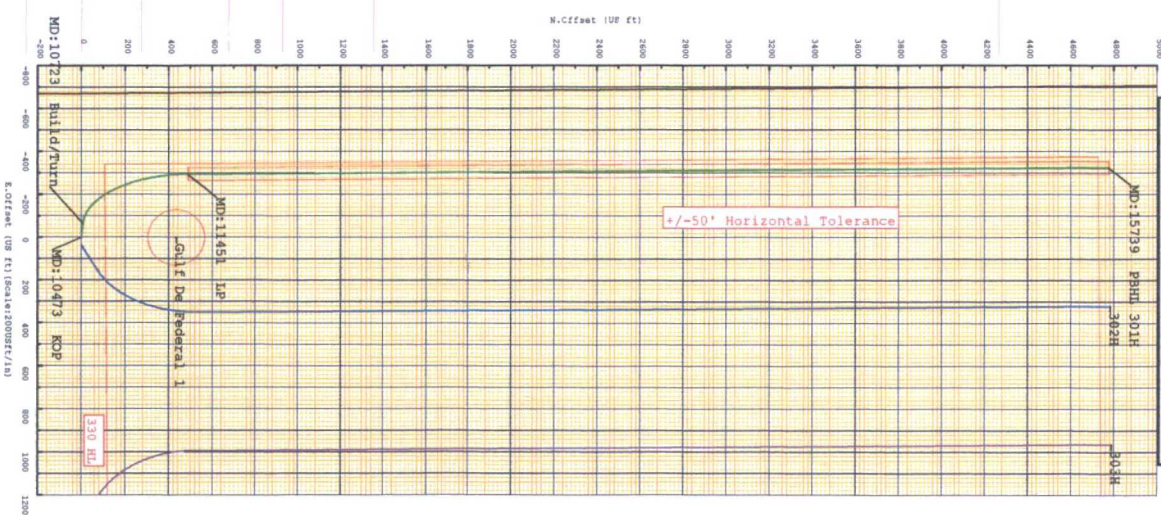
Target Set Information:
Name: Black & Tan 27 Fed Com 301H
Position offsets from slot centre
TVD SS +N/-S +E/-W Northing Easting
(USFt) (USFt) (USFt) (USFt) (USFt) (USFt)
PHL 301H 11024.00 -7271.00 4776.90 -323.40 564980.60 781029.50

+/-20' Vertical Tolerance

MD:15739 Inc:91.0° PHIL 301H



Black & Tan 27 Fed Com 301H
Gulf De Federal 1
Black & Tan 27 Fed Com 301H
Black & Tan 27 Fed Com 301H - Lateral



Drawing By: GWR Date: 03-14-2017
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