

APR 26 2019

DISTRICT II-ARTESIA O.C.D.



5D Survey Report

Apache Corporation

Field Name: Apache NM (Nad 83 NMEZ)
Site Name: Palmillo 26 State COM (315H,316H,214H)
Well Name: Palmillo 26 State COM 214H
File number: 13357764
Survey: Definitive survey

11 October 2018



Weatherford



Weatherford

Palmillo 26 State COM 214H

Field Name: Apache NM (Nad 83-NMEZ)	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: Palmillo 26 State COM 214H (313H 316H 214H)	Units: US ft	North Reference: Grid
	Convergence Angle: 0.10	
	Position:	Latitude: 32.636858387
	Northings: 595474.30 US ft	Longitudes: -104.139666791
	Easting: 600953.20 US ft	
	Elevation above MSL: 3360.00 US ft	
	Comment: Eddy Co. New Mexico	
Slot: Palmillo 26 State COM 214H	Position (Relative to Site Centre)	
	+N/-S: 80.00 US ft	Northings: 595554.30 US ft
	+E/-W: -0.20 US ft	Easting: 600953.00 US ft
		Longitudes: -104.139666967
	Slot TVD Reference: Ground Elevation	
	Elevation above MSL: 3359.00 US ft	
	Comment:	
Well: Palmillo 26 State COM 214H	Type: Main well	UWI:
	File Number: 13357764	Comment: H&P 482
	Closure Distance: 4910.44 US ft	Closure Azimuth: 272.63°
	Vertical Section: Position of Origin (Relative to Slot centre)	
	+N/-S: 0.00 US ft	+E/-W: -0.00 US ft
		Az: 272.62°

Drill floor: Survey Name: Definitive Survey

Rig Height (Drill Floor): 26.00 US ft **Elevation above MSL:** 3385.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00°

Survey Name: Definitive Survey

Date: 12/Jun/2018

Survey Tool: See Survey Tool Ranges below.

Comment:
Company:
Magnetic Model:
Model Name: Surcon IFR1

Date: 28/Sep/2018

Field Strength: 48002.0nT

Declination: 7.47°

Dip: 60.41°

Tie Point:
MD: 0.00 US ft

Inclination: 0.00°

Azimuth: 0.00°

TVD: -0.00 US ft

North Offset: 0.00 US ft

East Offset: -0.00 US ft

SD Survey Report

Survey Tool Ranges:			
Name	Start MD(usft)	End MD(usft)	Source Survey
VES Gyroflex V3	0.00	6944.00	VES Gyro
MWD - IFR - MS	6944.00	7495.00	MWD 5
MWD - IFR - MS	7495.00	7873.00	MWD 6
MWD - IFR - Sag Cont - MS	7873.00	12780.00	MWD 7

Wellpath created using minimum curvature.

Survey Points (Relative to Slot centre) (TVD relative to Drill Floor)											
MD (US ft)	Incl (°)	Az (°)	TVD (US ft)	VS (US ft)	R.Offset (US ft)	E.Offset (US ft)	DLS (%/100US ft)	Northing (US ft)	Easting (US ft)	Comment	
6944.00	1.91	208.79	6931.17	27.90	236.04	-17.13	0.29	595790.34	600935.87	lie on VES Gyro	
7116.00	4.21	250.88	7102.91	35.81	231.46	-24.47	1.79	595785.76	600928.53	First WFT Svy 7 (Begin NSA)	
7211.00	13.63	274.25	7196.70	49.49	231.15	-38.97	10.43	595785.45	600914.03		
7258.00	19.33	279.98	7241.75	62.75	232.91	-52.16	12.60	595787.21	600900.84		
7306.00	24.37	280.68	7286.29	80.45	236.12	-69.73	10.51	595790.42	600883.27		
7353.00	27.45	273.47	7338.57	100.89	238.57	-90.08	9.36	595792.87	600862.92		
7400.00	31.21	269.57	7369.54	123.89	239.14	-113.08	8.87	595793.44	600839.92		
7452.00	37.63	268.08	7421.49	159.40	238.37	-148.66	10.20	595792.67	600804.34		
7495.00	40.67	268.76	7446.30	179.55	237.82	-168.86	9.59	595792.12	600784.14		
7542.00	46.51	268.80	7486.33	211.87	237.13	-201.24	12.43	595791.43	600751.76		
7589.00	53.62	270.23	7510.48	247.81	236.85	-237.25	15.31	595791.15	600715.75		
7636.00	62.84	270.74	7535.20	287.77	237.19	-277.17	19.64	595791.49	600675.83		
7684.00	68.46	270.19	7554.98	331.40	237.55	-320.88	11.75	595791.85	600632.12		
7731.00	72.16	269.60	7570.81	375.59	237.46	-365.12	7.96	595791.76	600587.88		
7778.00	76.45	270.79	7583.53	420.79	237.62	-410.36	9.45	595791.92	600542.64		
7825.00	78.46	271.07	7593.73	466.65	238.37	-456.23	4.32	595792.67	600496.77		
7873.00	83.27	271.30	7601.35	514.01	239.35	-503.59	10.03	595793.65	600449.41		
7897.00	87.20	270.70	7609.35	537.91	239.76	-527.50	16.56	595794.06	600425.50	Begin Sag	
7991.00	92.28	270.37	7603.81	631.82	240.64	-621.47	5.37	595794.94	600331.53		
8086.00	94.55	269.56	7598.18	726.54	240.58	-716.29	7.58	595794.88	600236.71		
8180.00	95.12	269.44	7590.26	820.07	239.77	-809.95	0.62	595794.07	600143.05		
8275.00	94.27	267.80	7582.48	914.51	237.48	-894.60	1.94	595791.78	600048.10		
8370.00	94.62	267.92	7575.12	1008.90	233.95	-999.25	0.39	595788.25	599953.75		
8464.00	92.87	267.42	7568.98	1102.35	230.13	-1092.97	1.94	595784.43	599860.03		
8559.00	92.31	267.26	7564.69	1196.85	225.73	-1187.77	0.61	595780.03	599765.23		
8653.00	92.17	266.70	7561.01	1290.35	220.78	-1281.57	0.61	595775.08	599671.43		
8748.00	92.10	266.41	7557.47	1384.72	215.08	-1376.33	0.31	595769.38	599576.67		
8842.00	92.38	267.75	7553.80	1478.21	210.29	-1470.13	1.46	595764.59	599482.87		
8937.00	93.22	269.43	7549.16	1572.86	207.96	-1564.99	1.98	595762.26	599388.01		
9032.00	93.97	270.14	7543.24	1667.56	207.60	-1659.80	1.05	595761.00	599293.20		
9126.00	93.43	270.29	7537.22	1761.28	207.95	-1753.61	0.55	595762.25	599199.39		
9221.00	93.29	271.22	7531.65	1856.06	209.20	-1849.43	0.99	595763.50	599104.57		
9315.00	93.85	271.02	7525.80	1949.85	211.04	-1942.23	0.63	595765.34	599010.77		
9410.00	91.82	270.40	7521.10	2044.68	212.29	-2037.10	2.21	595766.59	598915.90		
9504.00	92.00	270.13	7517.96	2138.55	212.79	-2131.05	0.43	595767.09	598821.95		
9599.00	91.44	270.16	7515.11	2233.42	213.03	-2226.01	0.59	595767.33	598726.99		
9694.00	90.67	271.16	7513.36	2328.34	214.13	-2320.98	1.33	595768.43	598632.02		
9788.00	90.81	271.24	7512.15	2422.31	216.10	-2414.95	0.17	595770.40	598538.05		
9883.00	91.23	271.31	7510.46	2517.27	218.21	-2509.91	0.45	595772.51	598443.09		
9978.00	91.16	271.37	7508.48	2612.22	220.43	-2604.87	0.10	595774.73	598348.13		
10072.00	91.58	271.76	7506.23	2706.18	223.00	-2698.81	0.61	595777.30	598254.19		
10167.00	92.00	271.33	7503.26	2801.11	225.56	-2793.72	0.63	595779.86	598159.28		
10262.00	92.35	271.79	7499.66	2896.03	228.14	-2888.62	0.61	595782.44	598064.38		
10356.00	92.91	271.92	7495.34	2989.92	231.18	-2982.47	0.61	595785.48	597970.53		
10451.00	93.40	272.10	7490.11	3084.77	234.51	-3077.27	0.55	595788.81	597875.73		
10543.00	93.26	272.04	7484.65	3178.61	237.90	-3171.05	0.16	595792.20	597781.95		
10640.00	90.46	271.82	7481.57	3273.54	241.10	-3265.94	2.96	595795.40	597687.06		
10734.00	90.81	271.94	7480.53	3367.53	244.18	-3359.88	0.39	595798.48	597593.12		

Survey Points: (Relative to Slot Centre) (TVD relative to Drill Floor)										
ID (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
10829.00	90.81	271.44	7479.19	3462.51	246.98	-3454.83	0.53	595801.28	597498.17	
10923.00	89.97	269.78	7478.55	3556.42	247.57	-3548.87	2.47	595801.57	597404.16	
11018.00	90.18	268.82	7478.42	3651.24	246.00	-3643.80	0.53	595800.30	597309.20	
11113.00	90.39	267.32	7477.95	3745.94	242.80	-3738.75	1.59	595797.10	597214.25	
11207.00	90.53	266.89	7477.20	3839.50	238.05	-3832.62	0.48	595792.35	597120.38	
11301.00	90.74	266.93	7475.15	3933.03	232.98	-3926.48	0.23	595787.28	597026.52	
11396.00	91.09	268.74	7474.64	4027.68	229.39	-4021.40	1.94	595783.69	596931.60	
11491.00	91.23	269.49	7472.71	4122.48	227.93	-4116.37	0.80	595782.23	596836.63	
11585.00	91.44	269.70	7470.52	4216.32	227.26	-4210.34	0.32	595781.56	596742.66	
11680.00	91.58	269.93	7468.02	4311.18	226.96	-4305.30	0.28	595781.26	596647.70	
11774.00	90.25	270.13	7466.52	4405.07	227.01	-4399.29	1.43	595781.31	596553.71	
11869.00	90.04	270.46	7466.28	4499.94	227.50	-4494.29	0.41	595781.80	596458.71	
11963.00	90.25	270.14	7466.04	4593.91	227.99	-4588.29	0.41	595782.29	596364.71	
12058.00	90.46	269.85	7465.45	4688.81	227.98	-4683.28	0.38	595782.28	596269.72	
12153.00	90.25	259.47	7464.86	4783.68	227.42	-4778.28	0.46	595781.72	596174.72	
12215.00	90.04	268.94	7464.71	4845.57	226.56	-4840.27	0.92	595780.86	596112.73	LAST WIT MWD SVY
12280.00	90.04	268.94	7464.66	4910.44	225.35	-4905.26	0.00	595779.65	596047.74	TD @ 12280 / 118

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