



Weatherford

Drilling Services
10000 West County Rd. 116
P.O. Box 61028
Midland, TX USA 79711
Tel. (432) 561-8892 Fax (432) 561-8895

Apache Corporation
303 Veterans Airpark Lane
Midland, TX, 79705

Date: May 14, 2018

Attention: John Vacek

Re: Apache Corporation
Well: Palmillo 14-15 State 206H
County: Eddy, New Mexico

30-015-44675

**NM OIL CONSERVATION
ARTESIA DISTRICT**

NOV 15 2018

RECEIVED

Enclosed, please find the original survey performed on the referenced well by Precision Energy Services, Inc. (P-5 No. 676004), a Weatherford company. Other information required by your office is as follows:

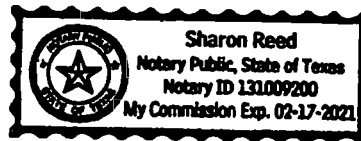
Name & Title Of Surveyor	Well Number	Surveyed Depths	Dates Performed	Type of Survey
Jeff Johnson MWD O.S.	206H	6,792 MD 13,080 MD	4/30/2018 5/12/2018	Measurement While Drilling

A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Jeffery Johnson
MWD Ops Supervisor

On this, the 16th day of May, 2018, before me a notary public, the undersigned officer, personally appeared Jeffery Johnson, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.

Notary Public



5D Survey Report

Apache Corporation

Field Name: *Apache NM (Nad 83 NMEZ)*

Site Name: *Palmillo 14-15 State 206H*

Well Name: *Palmillo 14-15 State 206H*

File number: *13150776*

Survey: *Definitive survey*

14 May 2018





Palmillo 14-15 State 206H

Field Name: Apache NM (Nad S3 NH-EZ)
Map Units: US ft
Company Name: Apache Corporation
Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / New Mexico East (ftUS)
Comment:

Units: US ft
North Reference: Grid
Convergence Angle: 0.10
Site:
Palmillo 14-15 State 206H
Elevation above MSL: 3434.00 US ft
Comment: Eddy Co., NM

Slot:
Palmillo 14-15 State 206H
Slot TVD Reference: Ground Elevation
Elevation above MSL: 3434.00 US ft
Comment:

Well:
Palmillo 14-15 State 206H
Type: Main well
File Number: 13150776
Comment: H&P 482
UWI:
Closure Distance: 5988.89 US ft
Closure Azimuth: 268.51°
Vertical Section: Position of Origin (Relative to Slot centre)
+N/-S: 0.00 US ft
+E/-W: 0.00 US ft
Az: 268.79°

Drill floor: Survey Name: Definitive Survey
Rig Height (Drill Floor): 26.00 US ft
Elevation above MSL: 3460.00 US ft
Inclination: 0.00°
Azimuth: 0.00°

Survey Name: Definitive Survey

Date: 15/Mar/2018
Survey Tool: See Survey Tool Ranges below.
Comment:
Company:

Magnetic Model:
Model Name: HGDM
Date: 01/May/2018
Field Strength: 48092.0 nT
Declination: 7.33°
Dip: 60.52°

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

Survey Tool Ranges:

Name	Start MD(usft)	End MD(usft)	Source Survey
	0.00	6671.00	VES

5D Survey Report

Survey Tool Ranges:			
Name	Start MD(usft)	End MD(usft)	Source Survey
	6671.00	7721.00	MWD 3
	7721.00	9467.00	MWD 4
	9467.00	13155.00	MWD 5

Wellpath created using minimum curvature.

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
ID (usft)	Inc. (°)	As. (°)	TVD (usft)	NS (usft)	NE Offset (usft)	LO Offset (usft)	True Az. (usft)	Running (usft)	Easting (usft)	Comment
6671.00	1.39	175.84	6670.55	7.94	-3.33	-7.87	0.42	603516.57	596836.03	VES Gyro tie-on
6792.00	1.41	203.09	6791.52	8.47	-6.16	-8.35	0.55	603513.74	596835.55	First WFT MWD Svy
6887.00	7.59	264.28	6886.20	15.22	-7.87	-15.06	7.39	603512.03	596828.84	
6934.00	13.16	267.85	6932.42	23.67	-8.38	-23.50	11.92	603511.52	596820.40	
6982.00	17.85	268.79	6978.66	36.50	-8.74	-36.32	9.78	603511.16	596807.58	
7029.00	21.66	267.63	7022.88	52.38	-9.25	-52.19	8.15	603510.65	596791.71	
7076.00	25.26	263.91	7065.99	71.05	-10.67	-70.84	8.28	603509.23	596773.06	
7123.00	29.21	259.85	7107.78	92.38	-13.76	-92.11	9.28	603506.14	596751.79	
7171.00	33.15	258.56	7148.84	116.87	-18.43	-116.51	8.33	603501.47	596727.39	
7218.00	37.96	258.79	7187.06	143.77	-23.79	-143.30	10.24	603496.11	596700.60	
7265.00	41.02	259.54	7223.33	173.24	-29.40	-172.66	6.59	603490.50	596671.24	
7313.00	44.20	260.06	7258.65	205.33	-35.15	-204.63	6.67	603484.75	596639.27	
7360.00	50.75	261.82	7290.41	239.63	-40.57	-238.82	14.21	603479.33	596605.08	
7407.00	59.25	262.67	7317.34	277.84	-45.75	-276.94	18.15	603474.15	596566.96	
7455.00	64.73	264.23	7339.87	320.02	-50.57	-319.02	11.77	603469.33	596524.88	
7502.00	68.16	266.54	7358.66	363.02	-54.02	-361.96	8.58	603465.88	596481.94	
7550.00	70.32	267.07	7375.67	407.87	-56.52	-406.77	4.62	603463.38	596437.13	
7597.00	73.49	267.89	7390.27	452.53	-58.48	-451.39	6.95	603461.42	596392.51	
7644.00	77.95	266.27	7401.86	498.04	-60.81	-496.87	10.06	603459.09	596347.03	
7691.00	82.01	264.97	7410.03	544.24	-64.35	-543.01	9.06	603455.55	596300.89	
7721.00	85.31	264.42	7413.34	573.98	-67.10	-572.69	11.15	603452.80	596271.21	
7786.00	91.33	265.61	7415.25	638.78	-72.74	-637.39	9.44	603447.16	596206.51	
7878.00	92.52	265.67	7412.16	730.59	-79.73	-729.07	1.30	603440.17	596114.83	
7970.00	92.94	265.49	7407.78	822.34	-86.82	-820.69	0.50	603433.08	596023.21	
8063.00	93.43	264.74	7402.61	915.00	-94.72	-913.21	0.96	603425.18	595930.69	
8155.00	93.99	264.18	7396.66	1006.55	-103.59	-1004.59	0.86	603416.31	595839.31	
8247.00	94.06	264.27	7390.20	1098.03	-112.82	-1095.89	0.12	603407.08	595748.01	
8359.00	94.21	263.10	7382.12	1209.29	-125.11	-1206.92	1.05	603394.79	595636.98	
8431.00	93.85	261.81	7377.06	1280.68	-134.54	-1278.12	1.86	603385.36	595565.78	
8523.00	94.56	262.32	7370.32	1371.80	-147.20	-1368.99	0.95	603372.70	595474.91	
8615.00	95.96	262.42	7361.88	1462.83	-159.37	-1459.79	1.53	603360.53	595384.11	
8710.00	97.15	261.23	7351.04	1556.51	-172.79	-1553.21	1.77	603347.11	595290.69	
8804.00	97.79	261.16	7338.82	1648.89	-187.05	-1645.31	0.68	603332.85	595198.59	
8899.00	96.22	263.43	7327.23	1742.57	-199.69	-1738.74	2.89	603320.21	595105.16	
8994.00	95.90	264.11	7317.20	1836.68	-209.94	-1832.65	0.79	603309.96	595011.25	
9089.00	96.17	266.97	7307.21	1930.99	-217.29	-1926.83	3.01	603302.61	594917.07	
9183.00	94.69	269.34	7298.31	2024.55	-220.30	-2020.35	2.96	603299.60	594823.55	
9278.00	93.35	269.88	7291.66	2119.31	-220.94	-2115.11	1.52	603298.96	594728.79	
9373.00	94.54	268.55	7285.12	2214.07	-222.24	-2209.87	1.88	603297.66	594634.03	
9467.00	94.20	268.88	7277.96	2307.80	-224.34	-2303.58	0.50	603295.56	594540.32	
9532.00	93.92	269.06	7273.35	2372.64	-225.51	-2368.40	0.51	603294.39	594475.50	
9564.00	93.86	269.81	7271.18	2404.56	-225.82	-2400.33	2.35	603294.08	594443.57	
9595.00	93.71	271.90	7269.14	2435.47	-225.36	-2431.26	6.74	603294.54	594412.64	
9627.00	94.06	270.85	7266.97	2467.37	-224.60	-2463.17	3.45	603295.30	594380.73	
9658.00	94.48	270.59	7264.66	2498.26	-224.21	-2494.08	1.59	603295.69	594349.82	
9690.00	95.12	270.84	7261.98	2530.13	-223.81	-2525.97	2.15	603296.09	594317.93	
9721.00	93.99	271.90	7259.52	2561.00	-223.07	-2556.86	4.99	603296.83	594287.04	
9753.00	94.21	272.11	7257.23	2592.87	-221.95	-2588.76	0.95	603297.95	594255.14	
9784.00	92.73	271.54	7255.36	2623.77	-220.97	-2619.69	5.11	603298.93	594224.21	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
ED (US ft)	IN (ft)	SD (ft)	TVD (US ft)	TS (US ft)	N.D. Offset (US ft)	E. Offset (US ft)	E.T.S. * (US ft)	Broken (US ft)	East by (US ft)	Comment
9816.00	92.52	271.47	7253.89	2655.70	-220.13	-2651.64	0.69	603299.77	594192.26	
9847.00	90.98	271.63	7252.94	2686.65	-219.29	-2682.61	4.99	603300.61	594161.29	
9879.00	90.91	271.83	7252.42	2718.60	-218.32	-2714.60	0.66	603301.58	594129.30	
9910.00	89.93	271.78	7252.19	2749.56	-217.35	-2745.58	3.17	603302.55	594098.32	
9942.00	90.21	272.14	7252.15	2781.51	-216.25	-2777.56	1.43	603303.65	594066.34	
9973.00	90.63	271.86	7251.92	2812.46	-215.17	-2808.54	1.63	603304.73	594035.36	
10037.00	90.35	271.69	7251.38	2876.37	-213.19	-2872.51	0.51	603306.71	593971.39	
10131.00	90.70	272.32	7250.51	2970.22	-209.90	-2966.45	0.77	603310.00	593877.45	
10226.00	91.12	272.24	7249.01	3065.03	-206.12	-3061.36	0.45	603313.78	593782.54	
10320.00	90.49	271.64	7247.69	3158.88	-202.94	-3155.29	0.93	603316.96	593688.61	
10415.00	91.54	270.46	7246.00	3253.78	-201.20	-3250.26	1.66	603318.70	593593.64	
10509.00	92.73	270.16	7242.50	3347.68	-200.69	-3344.19	1.31	603319.21	593499.71	
10604.00	93.85	269.24	7237.05	3442.51	-201.19	-3439.03	1.52	603318.71	593404.87	
10698.00	95.96	268.91	7229.01	3536.16	-202.70	-3532.67	2.27	603317.20	593311.23	
10793.00	95.33	270.20	7219.67	3630.69	-203.43	-3627.20	1.51	603316.47	593216.70	
10888.00	90.77	271.25	7214.61	3725.48	-202.23	-3722.03	4.93	603317.67	593121.87	
10982.00	89.58	270.33	7214.33	3819.41	-200.93	-3816.02	1.60	603318.97	593027.88	
11077.00	90.49	269.24	7214.27	3914.40	-201.29	-3911.02	1.49	603318.61	592932.88	
11171.00	90.14	268.81	7213.75	4008.40	-202.89	-4005.00	0.59	603317.01	592838.90	
11266.00	89.37	267.76	7214.16	4103.39	-205.73	-4099.96	1.37	603314.17	592743.94	
11360.00	89.58	268.63	7215.02	4197.38	-208.69	-4193.91	0.95	603311.21	592649.99	
11455.00	90.63	269.83	7214.84	4292.37	-209.97	-4288.90	1.68	603309.93	592555.00	
11550.00	91.26	271.27	7213.28	4387.31	-209.06	-4383.87	1.65	603310.84	592460.03	
11644.00	92.59	272.62	7210.12	4481.11	-205.87	-4477.76	2.02	603314.03	592366.14	
11739.00	92.17	272.73	7206.17	4575.81	-201.44	-4572.58	0.46	603318.46	592271.32	
11833.00	92.80	273.17	7202.10	4669.48	-196.61	-4666.36	0.82	603323.29	592177.54	
11928.00	91.61	273.94	7198.44	4764.07	-190.72	-4761.11	1.49	603329.18	592082.79	
12022.00	90.42	273.69	7196.78	4857.70	-184.47	-4854.88	1.29	603335.43	591989.02	
12117.00	91.68	273.55	7195.04	4952.34	-178.47	-4949.68	1.33	603341.43	591894.22	
12212.00	91.47	273.17	7192.43	5047.00	-172.91	-5044.48	0.46	603346.99	591799.42	
12306.00	89.86	273.02	7191.34	5140.73	-167.83	-5138.33	1.72	603352.07	591705.57	
12401.00	90.63	272.70	7190.93	5235.49	-163.09	-5233.21	0.88	603356.81	591610.69	
12495.00	90.70	272.65	7189.84	5329.27	-158.70	-5327.10	0.09	603361.20	591516.80	
12590.00	88.81	271.32	7190.25	5424.11	-155.41	-5422.04	2.43	603364.49	591421.86	
12685.00	89.93	270.28	7191.29	5519.04	-154.09	-5517.02	1.61	603365.81	591326.88	
12779.00	89.37	270.14	7191.86	5613.01	-153.74	-5611.02	0.61	603366.16	591232.88	
12874.00	88.95	269.87	7193.26	5707.98	-153.74	-5706.01	0.53	603366.16	591137.89	
12969.00	90.42	269.45	7193.78	5802.97	-154.30	-5801.00	1.61	603365.60	591042.90	
13063.00	91.69	268.95	7192.05	5896.94	-155.61	-5894.97	1.45	603364.29	590948.93	
13080.00	92.10	269.20	7191.49	5913.94	-155.89	-5911.96	2.82	603364.01	590931.94	Last WFT MWD Svy
13155.00	93.91	270.30	7187.55	5988.82	-156.21	-5986.85	2.82	603363.69	590857.05	Proj to TD