

CONFIDENTIAL

NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 03 2017

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Weatherford

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

Devon Energy
333 W. Sherridan Ave
Oklahoma City, OK, 73102

Date: November 17, 2015

Attention: Jacob Beard

30-015-43372

Re: Devon Energy
Well: Emerald PWU 20 62H
Eddy County, New Mexico

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:

<u>Name & Title Of Surveyor</u>	<u>Well Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Jesus Lopez MWD Supervisor	62H	3489 MD 13702 MD	11/2/2015 11/11/2015	Measurement While Drilling

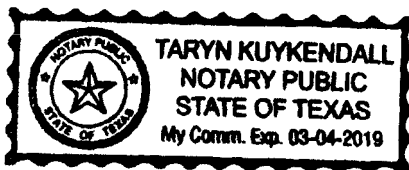
A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Jonathan Leger
MWD Coordinator

On this, the *19th* day of *November*, 20 *15*, before me a notary public, the undersigned officer, personally appeared *Jonathan Leger*, 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****Devon Energy**

Field Name: *Eddy Co, NM (Nad 83 NME)*
Site Name: *Emerald PWU 20 62H*
Well Name: *Emerald PWU 20 62H*
Survey: *Definitive survey*

12 November 2015





Emerald PWU 20 62H

Field Name: Eddy Co, NM (Nad 83 NME)
Map Units: US ft
Company Name: Devon Energy
Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / New Mexico East (ftUS)
Comment:

Units: US ft
North Reference: Grid
Convergence Angle: 0.12
Site: Emerald PWU 20 62H
Elevation above MSL: 3318.00 US ft
Comment:

Slot: Emerald PWU 20 62H
Slot TVD Reference: Ground Elevation
Elevation above MSL: 3318.00US ft
Comment:

Well: Emerald PWU 20 62H
Type: Main well
UWI:
File Number: **Comment:**
Closure Distance: 4798.19US ft
Closure Azimuth: 89.41°
Vertical Section: Position of Origin (Relative to Slot centre)
+N/-S: 0.00US ft
+E/-W: 0.00US ft
Az: 90.10°

Drill floor: Survey Name: Definitive Survey
Rig Height (Kelly Bushing): Elevation above MSL: 25.00us ft
Inclination: 0.00°
Azimuth: 0.00°
 3343.00us ft

Survey Name: Definitive Survey

Date: 04/Sep/2015
Survey Tool: See Survey Tool Ranges below.
Comment:
Company:

Magnetic Model:
Model Name: bggm2015
Date: 01/Nov/2015
Field Strength: 48396.0nT
Declination: 7.53°
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

Survey Tool Ranges:

Name	Start MD(usft)	End MD(usft)	Source Survey
MWD	0.00	3354.00	Teledrift Svys
MWD	3354.00	13783.00	Wft MWD Svys

Wellpath created using minimum curvature.

SD Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Kelly Bushing)									
Station	Offset	Depth	True	Apparent	True	Apparent	True	Apparent	Station
0.00	0.00	0.00	-0.00	0.00	0.00	-0.00	0.00	597558.10	611684.30
203.00	0.50	313.00	203.00	0.60	-0.65	-0.65	0.25	597558.70	611683.65
293.00	0.80	357.00	292.99	1.50	-0.97	-0.97	0.62	597559.60	611683.33
384.00	1.10	16.00	383.98	2.97	-0.76	-0.77	0.47	597561.07	611683.54
476.00	1.20	17.00	475.96	4.74	-0.24	-0.24	0.11	597562.84	611684.06
567.00	1.10	26.00	566.94	6.44	0.43	0.41	0.23	597564.54	611684.73
658.00	1.20	33.00	657.92	8.02	1.33	1.31	0.19	597566.12	611685.63
747.00	1.20	48.00	746.91	9.43	2.53	2.51	0.35	597567.53	611686.83
842.00	1.20	65.00	841.88	10.52	4.17	4.15	0.37	597568.62	611688.47
937.00	0.60	46.00	936.87	11.28	5.43	5.41	0.70	597569.38	611689.73
1031.00	0.50	29.00	1030.87	11.98	5.98	5.96	0.20	597570.08	611690.28
1128.00	0.30	13.00	1127.87	12.60	6.24	6.22	0.23	597570.70	611690.54
1222.00	0.30	44.00	1221.86	13.02	6.47	6.45	0.17	597571.12	611690.77
1316.00	0.70	331.00	1315.86	13.70	6.36	6.34	0.72	597571.80	611690.66
1410.00	0.40	299.00	1409.86	14.36	5.80	5.77	0.45	597572.46	611690.10
1504.00	0.80	339.00	1503.85	15.13	5.28	5.25	0.59	597573.23	611689.58
1598.00	0.60	288.00	1597.85	15.89	4.57	4.54	0.67	597573.99	611688.87
1693.00	0.50	318.00	1692.84	16.36	3.82	3.79	0.32	597574.46	611688.12
1787.00	1.00	307.00	1786.83	17.15	2.89	2.86	0.55	597575.25	611687.19
1880.00	0.60	293.00	1879.82	17.83	1.80	1.76	0.48	597575.93	611686.10
1974.00	0.70	318.00	1973.82	18.45	0.96	0.93	0.32	597576.55	611685.26
2068.00	1.00	314.00	2067.81	19.45	-0.02	-0.05	0.33	597577.55	611684.28
2164.00	0.80	324.00	2163.80	20.57	-1.01	-1.05	0.26	597578.67	611683.29
2258.00	0.80	326.00	2257.79	21.65	-1.77	-1.80	0.03	597579.75	611682.53
2349.00	0.90	292.00	2348.78	22.44	-2.78	-2.82	0.56	597580.54	611681.52
2443.00	0.20	215.00	2442.77	22.58	-3.56	-3.60	0.93	597580.68	611680.74
2538.00	0.10	212.00	2537.77	22.38	-3.70	-3.74	0.11	597580.48	611680.60
2632.00	0.20	95.00	2631.77	22.29	-3.58	-3.62	0.28	597580.39	611680.72
2726.00	0.10	74.00	2725.77	22.30	-3.34	-3.38	0.12	597580.40	611680.96
2820.00	0.30	190.00	2819.77	22.08	-3.30	-3.34	0.38	597580.18	611681.00
2914.00	0.40	112.00	2913.77	21.72	-3.04	-3.08	0.48	597579.82	611681.26
3011.00	0.50	126.00	3010.77	21.34	-2.38	-2.42	0.15	597579.44	611681.92
3105.00	0.50	123.00	3104.76	20.88	-1.71	-1.75	0.03	597578.98	611682.59
3199.00	0.30	147.00	3198.76	20.45	-1.23	-1.27	0.27	597578.55	611683.07
3293.00	0.30	127.00	3292.76	20.09	-0.90	-0.94	0.11	597578.19	611683.40
3354.00	0.70	83.00	3353.76	20.04	-0.40	-0.44	0.86	597578.14	611683.90
3489.00	0.73	55.26	3488.75	20.63	1.12	1.09	0.25	597578.73	611685.42
3583.00	1.07	59.66	3582.74	21.42	2.37	2.33	0.37	597579.52	611686.67
3677.00	1.28	47.78	3676.72	22.57	3.91	3.87	0.34	597580.67	611688.21
3771.00	1.79	54.28	3770.68	24.13	5.88	5.83	0.57	597582.23	611690.18
3865.00	2.13	43.11	3864.63	26.26	8.26	8.22	0.54	597584.36	611692.56
3959.00	2.56	32.57	3958.55	29.31	10.59	10.53	0.65	597587.41	611694.89
4054.00	2.82	16.91	4053.45	33.33	12.41	12.35	0.82	597591.43	611696.71
4148.00	3.06	1.37	4147.32	38.05	13.14	13.07	0.88	597596.15	611697.44
4242.00	2.89	353.04	4241.20	42.91	12.91	12.84	0.49	597601.01	611697.21
4336.00	2.43	347.94	4335.10	47.21	12.21	12.13	0.55	597605.31	611696.51
4430.00	2.58	329.12	4429.01	50.98	10.71	10.62	0.89	597609.08	611695.01
4524.00	1.92	321.56	4522.94	54.02	8.64	8.55	0.77	597612.12	611692.94
4618.00	1.20	298.49	4616.90	55.73	6.80	6.70	1.00	597613.83	611691.10
4712.00	0.70	268.72	4710.89	56.18	5.36	5.26	0.73	597614.28	611689.66
4807.00	1.12	222.59	4805.88	55.49	4.15	4.05	0.85	597613.59	611688.45
4901.00	1.84	197.64	4899.85	53.37	3.07	2.98	1.01	597611.47	611687.37
4996.00	2.13	196.33	4994.79	50.23	2.11	2.03	0.31	597608.33	611686.41
5090.00	1.75	212.70	5088.74	47.34	0.85	0.76	0.71	597605.44	611685.15
5184.00	1.88	220.05	5182.69	44.95	-0.92	-1.00	0.28	597603.05	611683.38
5278.00	2.03	199.16	5276.64	42.20	-2.46	-2.53	0.77	597600.30	611681.84
5373.00	2.10	204.50	5371.57	39.03	-3.73	-3.80	0.22	597597.13	611680.57

Tie-on
Teledrift
First Wft Svy

SD Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Kelly Bushing)									
Point	W	N	E	S	W	N	E	S	Point
5467.00	1.65	210.27	5465.52	36.29	-5.13	-5.19	0.52	597594.39	611679.17
5561.00	1.56	201.63	5559.49	33.93	-6.28	-6.34	0.27	597592.03	611678.02
5655.00	1.83	196.20	5653.45	31.30	-7.17	-7.23	0.33	597589.40	611677.13
5749.00	2.17	228.04	5747.39	28.67	-8.92	-8.97	1.22	597586.77	611675.38
5843.00	2.80	247.90	5841.30	26.62	-12.37	-12.41	1.13	597584.72	611671.93
5938.00	3.34	263.64	5936.17	25.44	-17.27	-17.31	1.05	597583.54	611667.03
6028.00	4.19	268.29	6025.97	25.05	-23.16	-23.20	1.00	597583.15	611661.14
6122.00	3.97	274.65	6119.74	25.21	-29.84	-29.88	0.53	597583.31	611654.46
6216.00	3.51	283.51	6213.54	26.15	-35.88	-35.92	0.78	597584.25	611648.42
6310.00	3.56	280.29	6307.36	27.34	-41.55	-41.59	0.22	597585.44	611642.75
6405.00	4.13	278.87	6402.14	28.39	-47.83	-47.88	0.61	597586.49	611636.47
6499.00	4.63	277.88	6495.87	29.44	-54.93	-54.98	0.54	597587.54	611629.37
6594.00	5.28	273.28	6590.51	30.21	-63.09	-63.15	0.80	597588.31	611621.21
6688.00	7.03	273.29	6683.97	30.79	-73.15	-73.21	1.86	597588.89	611611.15
6782.00	7.60	269.40	6777.20	31.05	-85.11	-85.17	0.80	597589.15	611599.19
6876.00	7.43	272.07	6870.40	31.21	-97.40	-97.46	0.41	597589.31	611586.90
6970.00	7.30	273.24	6963.62	31.77	-109.44	-109.49	0.21	597589.87	611574.86
7065.00	8.17	272.89	7057.75	32.45	-122.21	-122.26	0.92	597590.55	611562.09
7159.00	6.44	273.02	7150.99	33.06	-134.14	-134.20	1.84	597591.16	611550.16
7254.00	7.48	267.81	7245.29	33.11	-145.64	-145.70	1.28	597591.21	611538.66
7348.00	7.81	265.05	7338.45	32.32	-158.12	-158.18	0.53	597590.42	611526.18
7442.00	6.90	266.04	7431.68	31.38	-170.12	-170.17	0.98	597589.48	611514.18
7536.00	6.68	271.39	7525.02	31.12	-181.21	-181.27	0.71	597589.22	611503.09
7630.00	7.42	279.02	7618.31	32.21	-192.67	-192.73	1.27	597590.31	611491.63
7724.00	7.80	273.93	7711.48	33.60	-205.03	-205.09	0.82	597591.70	611479.27
7818.00	6.40	281.52	7804.76	35.08	-216.53	-216.59	1.79	597593.18	611467.77
7913.00	4.75	286.12	7899.31	37.23	-225.50	-225.56	1.80	597595.33	611458.80
8007.00	2.99	273.72	7993.09	38.47	-231.68	-231.75	2.06	597596.57	611452.62
8101.00	1.11	294.43	8087.03	39.01	-234.96	-235.03	2.12	597597.11	611449.34
8195.00	0.38	272.52	8181.02	39.40	-236.10	-236.17	0.82	597597.50	611448.20
8289.00	0.38	247.23	8275.02	39.29	-236.70	-236.77	0.18	597597.39	611447.60
8381.00	0.45	76.46	8367.02	39.26	-236.63	-236.70	0.90	597597.36	611447.67
8428.00	1.12	80.15	8414.01	39.38	-236.00	-236.07	1.43	597597.48	611448.30
8476.00	4.56	86.31	8461.95	39.58	-233.63	-233.70	7.18	597597.68	611450.67
8523.00	10.20	89.24	8508.54	39.76	-227.60	-227.67	12.02	597597.86	611456.70
8570.00	15.09	87.40	8554.39	40.09	-217.32	-217.39	10.44	597598.19	611466.98
8617.00	20.07	85.27	8599.18	41.03	-203.16	-203.23	10.68	597599.13	611481.14
8663.00	24.80	86.64	8641.68	42.25	-185.66	-185.73	10.34	597600.35	611498.64
8710.00	30.21	88.06	8683.36	43.23	-163.98	-164.06	11.59	597601.33	611520.32
8758.00	35.00	90.23	8723.78	43.58	-138.13	-138.21	10.27	597601.68	611546.17
8805.00	39.17	91.18	8761.27	43.22	-109.80	-109.88	8.96	597601.32	611574.50
8852.00	41.98	92.53	8796.96	42.22	-79.25	-79.32	6.26	597600.32	611605.05
8899.00	47.03	91.84	8830.47	40.97	-46.34	-46.41	10.79	597599.07	611637.96
8946.00	51.31	91.67	8861.20	39.89	-10.80	-10.87	9.11	597597.99	611673.50
8993.00	56.95	91.92	8888.72	38.69	27.25	27.18	12.01	597596.79	611711.55
9040.00	62.11	92.89	8912.55	36.98	67.71	67.64	11.12	597595.08	611752.01
9055.00	63.33	92.66	8919.42	36.34	81.03	80.96	8.25	597594.44	611765.33
9087.00	65.92	92.20	8933.14	35.11	109.91	109.85	8.20	597593.21	611794.21
9134.00	70.15	92.07	8950.71	33.49	153.46	153.40	9.00	597591.59	611837.76
9181.00	74.86	90.60	8964.84	32.45	198.26	198.20	10.46	597590.55	611882.56
9228.00	80.86	88.65	8974.72	32.76	244.18	244.12	13.39	597590.86	611928.48
9260.00	86.08	87.94	8978.36	33.71	275.95	275.89	16.46	597591.81	611960.25
9309.00	91.26	88.83	8979.49	35.09	324.90	324.84	10.73	597593.19	612009.20
9341.00	91.89	89.04	8978.61	35.68	356.88	356.82	2.08	597593.78	612041.18
9435.00	90.00	89.58	8977.06	36.82	450.86	450.79	2.09	597594.92	612135.16
9529.00	89.44	89.37	8977.52	37.68	544.85	544.79	0.64	597595.78	612229.15
9624.00	90.35	89.98	8977.70	38.22	639.85	639.78	1.15	597596.32	612324.15
9718.00	89.86	90.00	8977.53	38.23	733.85	733.78	0.52	597596.33	612418.15

Cross Prod
Box

SD Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Kelly Bushing)									
Point ID	W	N	E	S	W	N	E	S	W
9813.00	90.70	90.85	8977.06	37.53	828.84	828.78	1.26	597595.63	612513.14
9907.00	90.63	90.63	8975.97	36.31	922.83	922.76	0.25	597594.41	612607.13
10001.00	90.91	89.61	8974.71	36.12	1016.82	1016.75	1.13	597594.22	612701.12
10095.00	89.93	89.52	8974.02	36.83	1110.81	1110.75	1.05	597594.93	612795.11
10190.00	89.23	89.80	8974.71	37.39	1205.81	1205.74	0.79	597595.49	612890.11
10284.00	88.81	90.35	8976.32	37.27	1299.79	1299.73	0.74	597595.37	612984.09
10378.00	88.60	90.88	8978.45	36.26	1393.76	1393.70	0.61	597594.36	613078.06
10472.00	90.07	90.29	8979.54	35.30	1487.75	1487.68	1.69	597593.40	613172.05
10566.00	89.79	90.10	8979.65	34.98	1581.75	1581.68	0.36	597593.08	613266.05
10660.00	89.37	90.06	8980.34	34.85	1675.75	1675.68	0.45	597592.95	613360.05
10754.00	90.07	90.48	8980.80	34.41	1769.74	1769.68	0.87	597592.51	613454.04
10848.00	91.12	89.96	8979.82	34.05	1863.73	1863.67	1.25	597592.15	613548.03
10943.00	91.26	89.72	8977.85	34.31	1958.71	1958.65	0.29	597592.41	613643.01
11037.00	91.33	89.58	8975.73	34.89	2052.69	2052.62	0.17	597592.99	613736.99
11131.00	91.26	89.19	8973.60	35.90	2146.66	2146.59	0.42	597594.00	613830.96
11225.00	91.82	88.87	8971.08	37.49	2240.61	2240.54	0.69	597595.59	613924.91
11319.00	91.54	89.18	8968.32	39.09	2334.56	2334.48	0.44	597597.19	614018.86
11414.00	90.91	89.81	8966.29	39.92	2429.53	2429.46	0.94	597598.02	614113.83
11508.00	89.23	90.64	8966.18	39.55	2523.53	2523.45	1.99	597597.65	614207.83
11602.00	88.95	90.96	8967.67	38.24	2617.50	2617.43	0.45	597596.34	614301.80
11696.00	88.25	90.54	8969.96	37.01	2711.47	2711.40	0.87	597595.11	614395.77
11790.00	89.30	90.20	8971.97	36.40	2805.44	2805.37	1.17	597594.50	614489.74
11885.00	89.93	90.20	8972.61	36.07	2900.44	2900.37	0.66	597594.17	614584.74
11979.00	90.63	89.79	8972.15	36.08	2994.44	2994.37	0.86	597594.18	614678.74
12073.00	90.49	90.42	8971.23	35.91	3088.43	3088.36	0.69	597594.01	614772.73
12168.00	91.12	90.46	8969.90	35.18	3183.42	3183.35	0.66	597593.28	614867.72
12262.00	89.30	90.51	8969.56	34.38	3277.41	3277.35	1.94	597592.48	614961.71
12356.00	89.37	90.57	8970.65	33.50	3371.40	3371.34	0.10	597591.60	615055.70
12450.00	89.23	90.30	8971.79	32.78	3465.39	3465.33	0.32	597590.88	615149.69
12544.00	89.65	90.38	8972.71	32.23	3559.38	3559.32	0.45	597590.33	615243.68
12638.00	89.86	90.68	8973.12	31.36	3653.38	3653.32	0.39	597589.46	615337.68
12732.00	90.00	90.10	8973.23	30.72	3747.38	3747.32	0.63	597588.82	615431.68
12826.00	90.28	90.09	8973.00	30.56	3841.38	3841.32	0.30	597588.66	615525.68
12920.00	90.63	90.13	8972.25	30.38	3935.37	3935.31	0.37	597588.48	615619.67
13014.00	90.70	90.01	8971.16	30.27	4029.37	4029.31	0.15	597588.37	615713.67
13109.00	90.56	89.72	8970.12	30.49	4124.36	4124.30	0.34	597588.59	615808.66
13203.00	90.77	89.55	8969.03	31.09	4218.35	4218.29	0.29	597589.19	615902.65
13297.00	90.63	88.96	8967.88	32.31	4312.34	4312.27	0.65	597590.41	615996.64
13391.00	90.49	88.56	8966.96	34.35	4406.31	4406.24	0.45	597592.45	616090.61
13486.00	89.09	88.48	8967.31	36.80	4501.28	4501.20	1.48	597594.90	616185.58
13580.00	88.60	87.53	8969.20	40.07	4595.20	4595.12	1.14	597598.17	616279.50
13674.00	88.67	87.41	8971.44	44.22	4689.08	4689.00	0.15	597602.32	616373.38
13702.00	88.88	87.34	8972.04	45.50	4717.04	4716.96	0.79	597603.60	616401.34
13703.45	88.88	87.34	8972.07	45.57	4718.49	4718.41	0.00	597603.67	616402.79
13783.00	88.88	87.34	8973.62	49.26	4797.94	4797.85	0.00	597607.36	616482.24

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