

**5D Survey Report****Devon Energy**

Field Name: *Eddy Co, NM (Nad 83 NME)*
Site Name: *Hadar 10 Fed Com 3H*
Well Name: *Hadar 10 Fed Com 3H Lat*
Survey: *Wft MWD Svy*

16 July 2015



Well Survey Report



Hadar 10 Fed Com 3H Lat

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)	
Site: Hadar 10 Fed Com 3H	Comment:			
	Units: US ft	North Reference: Grid	Convergence Angle: 0.25	
Slot: Hadar 10 Fed Com 3H	Position:	Northing: 609114.35US ft	Latitude: 32° 40' 25.07"	
		Easting: 685210.40US ft	Longitude: -103° 51' 56.74"	
Well: Hadar 10 Fed Com 3H Lat	Elevation above MSL: 3570.00 US ft			
	Comment:			
Well: Hadar 10 Fed Com 3H Lat	Position (Relative to Site Centre)			
	+N/-S: 0.00US ft		Northing: 609114.35US ft	
Well: Hadar 10 Fed Com 3H Lat	+E/-W: 0.00US ft		Easting: 685210.40US ft	
	Elevation above MSL: 3570.00US ft		Longitude: -103°51'56.74"	
Well: Hadar 10 Fed Com 3H Lat	Comment:			
	Type: Sidetrack		UWI:	
Well: Hadar 10 Fed Com 3H Lat	Parent: Hadar 10 Fed Com 3H Pilot		Tie Point Method: MD	
	File Number:		Comment:	
Well: Hadar 10 Fed Com 3H Lat	Closure Distance: 4983.71US ft		Closure Azimuth: 88.37°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
Well: Hadar 10 Fed Com 3H Lat	+N/-S: 0.00US ft		+E/-W: 0.00US ft	
			Az: 89.64°	

Drill floor: Survey Name: Wft MWD Svy			
Rig Height (Well TVD Reference): 25.00us ft	Elevation above MSL: 3595.00us ft	Inclination: 0.00°	Azimuth: 0.00°

Survey Name: Wft MWD Svy			
Date: 10/Jul/2015	Survey Tool: MWD	Comment:	Company: Wft
Magnetic Model:			
Model Name: BGGM	Date: 15/Jul/2015	Field Strength: 48476.2nT	Declination: 7.43°
Tie Point:			
MD: 8456.58 US ft	Inclination: 2.11°	Azimuth: 290.16°	TVD: 8455.58 US ft
			North Offset: 21.98 US ft
			East Offset: 11.45 US ft

Wellpath created using minimum curvature.

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
8456.58	2.11	290.16	8455.58	21.98	11.45	11.59	0.00	609136.33	685221.85	Tie On VES
8549.00	8.04	60.17	8547.73	25.79	15.47	15.63	10.32	609140.14	685225.87	First Wft Svy

Survey Points

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Incl (°)	Az (°)	TVD (US ft)	R.Offset (US ft)	L.Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
8580.00	9.55	44.01	8578.37	28.72	19.14	19.32	9.29	609143.07	685229.54	
8612.00	12.73	41.32	8609.76	33.28	23.31	23.52	10.07	609147.63	685233.71	
8644.00	16.33	40.78	8640.73	39.33	28.58	28.82	11.26	609153.68	685238.98	
8675.00	19.61	43.49	8670.22	46.41	35.01	35.30	10.92	609160.76	685245.41	
8707.00	22.51	48.39	8700.08	54.38	43.29	43.63	10.59	609168.73	685253.69	
8737.00	25.98	52.50	8727.43	62.19	52.80	53.19	12.86	609176.54	685263.20	
8769.00	29.24	56.98	8755.79	70.72	64.91	65.36	12.07	609185.07	685275.31	
8801.00	32.35	62.08	8783.28	78.99	79.04	79.53	12.68	609193.34	685289.44	
8833.00	34.93	67.99	8809.92	86.44	95.10	95.64	13.02	609200.79	685305.50	
8864.00	37.42	72.39	8834.95	92.61	112.31	112.89	11.60	609206.96	685322.71	
8896.00	39.99	76.83	8859.92	97.90	131.60	132.21	11.82	609212.25	685342.00	
8927.00	43.80	78.92	8883.00	102.23	151.84	152.48	13.09	609216.58	685362.24	
8959.00	47.66	81.22	8905.33	106.17	174.40	175.07	13.11	609220.52	685384.80	
8990.00	51.16	83.59	8925.50	109.27	197.73	198.41	12.69	609223.62	685408.13	
9022.00	55.23	85.07	8944.67	111.79	223.22	223.92	13.25	609226.14	685433.62	
9054.00	59.21	86.55	8961.99	113.75	250.05	250.76	13.03	609228.10	685460.45	
9085.00	62.99	87.50	8976.97	115.15	277.15	277.86	12.49	609229.50	685487.55	
9117.00	66.87	88.34	8990.52	116.20	306.11	306.83	12.36	609230.55	685516.51	
9136.50	69.50	88.43	8997.77	116.71	324.20	324.93	13.47	609231.06	685534.60	Cross Prod. Box
9149.00	71.18	88.48	9001.98	117.03	335.97	336.70	13.47	609231.38	685546.37	
9181.00	74.99	88.54	9011.29	117.82	366.57	367.30	11.91	609232.17	685576.97	
9212.00	78.60	88.84	9018.37	118.51	396.73	397.47	11.68	609232.86	685607.13	
9244.00	81.58	89.35	9023.87	119.01	428.25	428.99	9.44	609233.36	685638.65	
9284.00	85.38	90.05	9028.41	119.22	467.98	468.72	9.66	609233.57	685678.38	
9316.00	86.64	90.48	9030.64	119.07	499.90	500.64	4.16	609233.42	685710.30	
9378.00	86.78	90.57	9034.20	118.50	561.80	562.53	0.27	609232.85	685772.20	
9472.00	86.36	90.67	9039.82	117.49	655.62	656.35	0.46	609231.84	685866.02	
9567.00	86.08	90.47	9046.09	116.54	750.41	751.13	0.36	609230.89	685960.81	
9662.00	87.13	89.28	9051.71	116.75	845.24	845.96	1.67	609231.10	686055.64	
9758.00	86.78	88.88	9056.81	118.29	941.10	941.82	0.55	609232.64	686151.50	
9852.00	87.20	89.33	9061.75	119.76	1034.95	1035.69	0.65	609234.11	686245.35	
9947.00	87.76	88.98	9065.92	121.16	1129.85	1130.59	0.69	609235.51	686340.25	
10041.00	88.67	86.96	9068.85	124.48	1223.74	1224.50	2.36	609238.83	686434.14	
10136.00	88.67	89.19	9071.06	127.67	1318.66	1319.43	2.35	609242.02	686529.06	
10231.00	88.39	89.70	9073.49	128.59	1413.62	1414.40	0.61	609242.94	686624.02	
10327.00	88.04	88.81	9076.48	129.84	1509.56	1510.35	1.00	609244.19	686719.96	
10422.00	89.65	89.15	9078.40	131.53	1604.53	1605.32	1.73	609245.88	686814.93	
10517.00	89.93	88.47	9078.75	133.51	1699.50	1700.31	0.77	609247.86	686909.90	
10611.00	90.56	88.34	9078.35	136.12	1793.47	1794.29	0.68	609250.47	687003.87	
10705.00	91.19	89.26	9076.91	138.09	1887.43	1888.26	1.19	609252.44	687097.83	
10799.00	90.63	89.56	9075.42	139.06	1981.42	1982.25	0.68	609253.41	687191.82	
10895.00	90.21	89.84	9074.71	139.56	2077.41	2078.25	0.53	609253.91	687287.81	
10990.00	90.21	89.67	9074.37	139.97	2172.41	2173.25	0.18	609254.32	687382.81	
11085.00	90.49	90.16	9073.79	140.11	2267.41	2268.24	0.59	609254.46	687477.81	
11180.00	88.81	90.31	9074.37	139.72	2362.40	2363.23	1.78	609254.07	687572.80	
11275.00	88.88	90.70	9076.28	138.88	2457.38	2458.20	0.42	609253.23	687667.78	
11370.00	88.88	91.21	9078.14	137.30	2552.35	2553.16	0.54	609251.65	687762.75	
11465.00	89.23	91.75	9079.70	134.84	2647.30	2648.10	0.68	609249.19	687857.70	
11560.00	88.95	90.39	9081.21	133.07	2742.27	2743.05	1.46	609247.42	687952.67	
11655.00	88.39	91.91	9083.42	131.17	2837.22	2837.99	1.70	609245.52	688047.62	
11750.00	89.44	91.03	9085.22	128.73	2932.17	2932.92	1.44	609243.08	688142.57	
11845.00	89.09	91.15	9086.44	126.92	3027.15	3027.88	0.39	609241.27	688237.55	
11940.00	89.30	90.29	9087.77	125.73	3122.13	3122.86	0.93	609240.08	688332.53	
12035.00	88.95	90.23	9089.22	125.30	3217.12	3217.84	0.37	609239.65	688427.52	
12130.00	89.86	89.45	9090.21	125.56	3312.11	3312.83	1.26	609239.91	688522.51	
12226.00	89.79	89.42	9090.50	126.51	3408.10	3408.83	0.08	609240.86	688618.50	
12320.00	90.07	89.42	9090.62	127.46	3502.10	3502.83	0.30	609241.81	688712.50	
12416.00	90.00	89.39	9090.56	128.46	3598.09	3598.83	0.08	609242.81	688808.49	

WD Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	UIS (%/100US ft)	Northing (US ft)	Easting (US ft)	Comment
12510.00	90.14	89.10	9090.44	129.70	3692.09	3692.83	0.34	609244.05	688902.49	
12605.00	89.79	89.39	9090.50	130.95	3787.08	3787.83	0.48	609245.30	688997.48	
12700.00	89.30	89.78	9091.25	131.64	3882.07	3882.82	0.66	609245.99	689092.47	
12795.00	89.09	90.83	9092.59	131.13	3977.06	3977.81	1.13	609245.48	689187.46	
12890.00	88.67	89.90	9094.45	130.53	4072.04	4072.78	1.07	609244.88	689282.44	
12985.00	88.39	89.71	9096.88	130.85	4167.01	4167.75	0.36	609245.20	689377.41	
13080.00	89.09	89.16	9098.97	131.79	4261.98	4262.72	0.94	609246.14	689472.38	
13174.00	88.60	89.52	9100.87	132.87	4355.95	4356.70	0.65	609247.22	689566.35	
13270.00	89.44	89.35	9102.51	133.81	4451.93	4452.69	0.89	609248.16	689662.33	
13365.00	90.84	88.84	9102.28	135.31	4546.92	4547.68	1.57	609249.66	689757.32	
13460.00	91.61	88.69	9100.25	137.36	4641.87	4642.64	0.83	609251.71	689852.27	
13555.00	91.82	88.96	9097.40	139.31	4736.81	4737.59	0.36	609253.66	689947.21	
13650.00	91.61	89.52	9094.56	140.57	4831.76	4832.55	0.63	609254.92	690042.16	
13720.00	91.61	89.51	9092.59	141.16	4901.73	4902.52	0.01	609255.51	690112.13	Last Wft Svy 3H
13760.08	91.61	89.51	9091.47	141.50	4941.79	4942.58	0.00	609255.85	690152.19	Cross Prod. Box
13800.00	91.61	89.51	9090.35	141.84	4981.69	4982.49	0.00	609256.19	690192.09	Proj.