

MAY 18 2015

RECEIVED



Weatherford

devon

North Thistle 15-10
State Com 1H
Lea Co, NM

Plan Data for North Thistle 15-10 State Com 1H Pilot

Plan Point Information:
Dogleg Severity Unit: $^{\circ}/100.00\text{ft}$ Position offsets from Slot centre
MD Inc Az TVD +N/-S +E/-W Northing Easting VSec DLS
(USft) ($^{\circ}$) ($^{\circ}$) (USft) (USft) (USft) (USft) (USft) (USft) (DLSU)
0.00 0.00 0.00 0.00 0.00 0.00 473219.69 778337.06 0.00 0.00
2288.00 0.00 0.00 2288.00 0.00 0.00 473219.69 778337.06 0.00 0.00
3288.00 10.00 60.00 3282.93 43.52 75.38 473263.21 778412.44 42.90 1.00
8717.56 10.00 60.00 8630.00 514.94 891.90 473734.63 779228.96 507.61 0.00
9717.56 0.00 0.00 9624.93 558.46 967.28 473778.15 779304.34 550.51 1.00
10383.63 0.00 0.00 10291.00 558.46 967.28 473778.15 779304.34 550.51 0.00

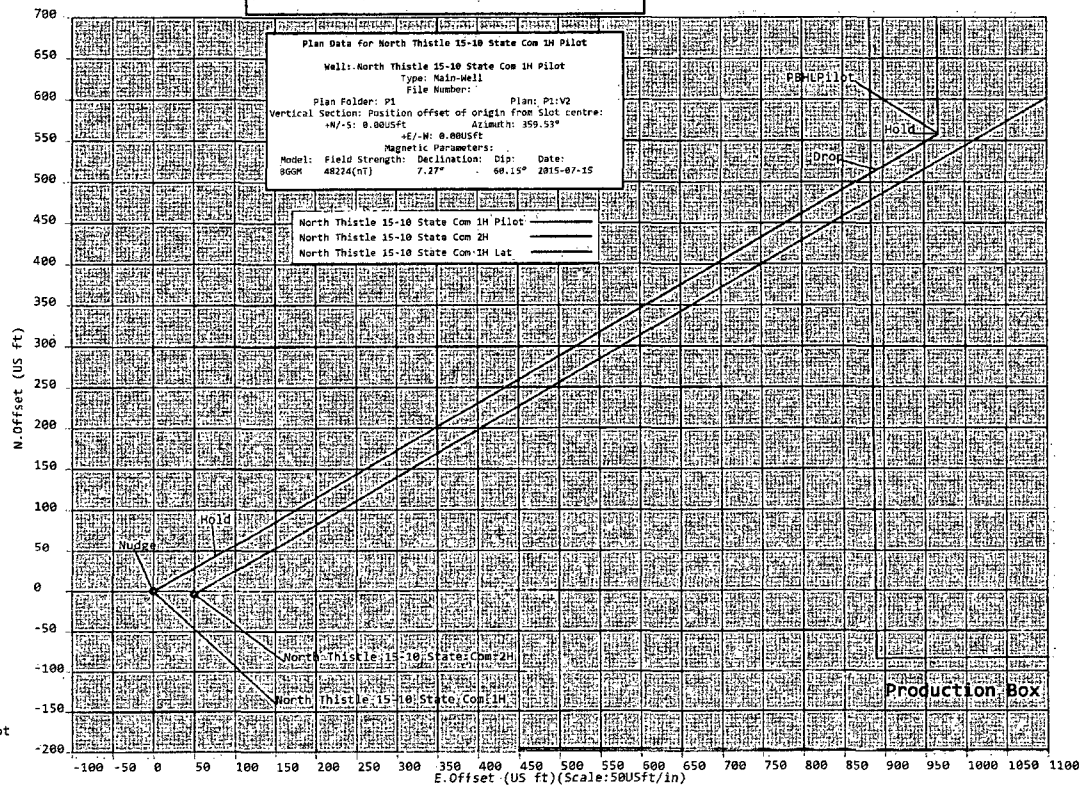
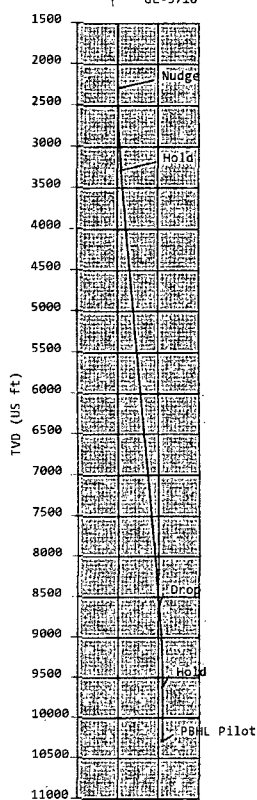
Plan Data for North Thistle 15-10 State Com 1H Pilot

Slot: North Thistle 15-10 State Com 1H
Position:
Offset is from Site centre
+N/-S: 0.00USft Northing: 473219.69USft Latitude: $32^{\circ}17'55.0''$
+E/-W: 0.00USft Easting: 778337.06USft Longitude: $-103^{\circ}33'58.7''$
Elevation Above VRD: 3710.00USft

Plan Data for North Thistle 15-10 State Com 1H Pilot

Target Set Information:
Name: North Thistle 15-10 State Com 1H Pilot
Position offsets from Slot centre
Name TVD SS +N/-S +E/-W Northing Easting
(USft) (USft) (USft) (USft) (USft) (USft)
PBHL Pilot 10291.00 -6556.00 558.46 967.28 473778.15 779304.34

KB-3735
GL-3710



Sign Off: Russell Joyner

MAY 18 2015

5D Plan Report**Devon Energy****Field Name:** *Lea Co, NM Nad 83 NMEZ***Site Name:** *North Thistle 15-10 State Com 1H,2H Pad***Well Name:** *North Thistle 15-10 State Com 1H Pilot***Plan:** *P1:V2*

14 May 2015



North Thistle 15-10 State Com 1H Pilot

Field Name	Map Units : US.ft		Company Name : Devon Energy	
Lea Co. NM-Nad83 NMEZ	Vertical Reference Datum (VRD) : Mean Sea Level			
	Projected Coordinate System : NAD83 / New Mexico East (ftUS)			
	Comment :			
Site Name	Units : US ft	North Reference : Grid	Convergence Angle : 0.41	
	Position	Northing : 473219.69 US.ft	Latitude : 32° 17' 55.05"	
	Easting : 778337.06 US.ft	Longitude : -103° 33' 58.69"		
North Thistle 15-10 State Com 1H 2H Pad	Elevation above Mean Sea Level: 3710.00 US ft			
Comment :				
Slot Name	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US.ft	Northing : 473219.69 US.ft	Latitude : 32° 17' 55.05"	
	+E / -W : 0.00 US.ft	Easting : 778337.06 US.ft	Longitude : -103° 33' 58.69"	
North Thistle 15-10 State Com 1H	Slot TVD Reference : Ground Elevation			
Elevation above Mean Sea Level : 3710.00 US ft				
Comment :				
Well Name	Type : Main well	UWI :	Plan : P1:V2	
	Rig Height : Kelly Bushing : 25.00 US ft	Comment :		
	Relative to Mean Sea Level: 3735.00 US ft			
North Thistle 15-10 State Com 1H Pilot	Closure Distance : 1116.92 US ft	Closure Azimuth : 60°		
	Vertical Section (Position of Origin Relative to Slot)			
	+N / -S : 0.00 US.ft	+E / -W : 0.00 US.ft	Az : 359.53°	
Magnetic Parameters				
Model : BGGM	Field Strength : 48224.9nT	Dec : 7.27°	Dip : 60.15°	Date : 15/Jul/2015

Well path created using minimum curvature

Salient Points (Relative to Slot centre, TVD relative to Kelly Bushing)											Comment
MD (US.ft)	Inc (°)	Az (°)	TVD (US.ft)	N.Offset (US.ft)	E.Offset (US.ft)	VS (US.ft)	DLS (°/100 US.ft)	B.Rate (°/100 US.ft)	T.Rate (°/100 US.ft)	T.Face (°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2288.00	0.00	0.00	2288.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Nudge
3288.00	10.00	60.00	3282.93	43.52	75.38	42.90	1.00	1.00	0.00	60.00	Hold
8717.56	10.00	60.00	8630.00	514.94	891.90	507.61	0.00	0.00	0.00	0.00	Drop
9717.56	0.00	0.00	9624.93	558.46	967.28	550.51	1.00	-1.00	0.00	180.00	Hold
10383.63	0.00	0.00	10291.00	558.46	967.28	550.51	0.00	0.00	0.00	0.00	PBHL Pilot

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)											Comment
MD (US.ft)	Inc (°)	Az (°)	TVD (US.ft)	N.Offset (US.ft)	E.Offset (US.ft)	VS (US.ft)	DLS (°/100 US.ft)	Northing (US.ft)	Easting (US.ft)		
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	473219.69	778337.06		
2288.00	0.00	0.00	2288.00	0.00	0.00	0.00	0.00	473219.69	778337.06		Nudge
2300.00	0.12	60.00	2300.00	0.01	0.01	0.01	1.00	473219.70	778337.07		
2400.00	1.12	60.00	2399.99	0.55	0.95	0.54	1.00	473220.24	778338.01		
2500.00	2.12	60.00	2499.95	1.96	3.40	1.93	1.00	473221.65	778340.46		
2600.00	3.12	60.00	2599.85	4.25	7.35	4.19	1.00	473223.94	778344.41		

5D Plan Report

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (%/100-US ft)	Northing (US ft)	Easting (US ft)	Comment	
2700.00	4.12	60.00	2699.65	7.40	12.82	7.30	1.00	473227.09	778349.88		
2800.00	5.12	60.00	2799.32	11.43	19.80	11.27	1.00	473231.12	778356.86		
2900.00	6.12	60.00	2898.84	16.33	28.28	16.09	1.00	473236.02	778365.34		
3000.00	7.12	60.00	2998.17	22.09	38.26	21.78	1.00	473241.78	778375.32		
3100.00	8.12	60.00	3097.28	28.72	49.75	28.31	1.00	473248.41	778386.81		
3200.00	9.12	60.00	3196.15	36.22	62.73	35.70	1.00	473255.91	778399.79		
3288.00	10.00	60.00	3282.93	43.52	75.38	42.90	1.00	473263.21	778412.44	Hold	
3300.00	10.00	60.00	3294.75	44.56	77.19	43.93	0.00	473264.25	778414.25		
3400.00	10.00	60.00	3393.23	53.25	92.23	52.49	0.00	473272.94	778429.29		
3500.00	10.00	60.00	3491.71	61.93	107.26	61.05	0.00	473281.62	778444.32		
3600.00	10.00	60.00	3590.19	70.61	122.30	69.61	0.00	473290.30	778459.36		
3700.00	10.00	60.00	3688.67	79.29	137.34	78.16	0.00	473298.98	778474.40		
3800.00	10.00	60.00	3787.15	87.98	152.38	86.72	0.00	473307.67	778489.44		
3900.00	10.00	60.00	3885.63	96.66	167.42	95.28	0.00	473316.35	778504.48		
4000.00	10.00	60.00	3984.11	105.34	182.46	103.84	0.00	473325.03	778519.52		
4100.00	10.00	60.00	4082.59	114.02	197.49	112.40	0.00	473333.71	778534.55		
4200.00	10.00	60.00	4181.08	122.71	212.53	120.96	0.00	473342.40	778549.59		
4300.00	10.00	60.00	4279.56	131.39	227.57	129.52	0.00	473351.08	778564.63		
4400.00	10.00	60.00	4378.04	140.07	242.61	138.08	0.00	473359.76	778579.67		
4500.00	10.00	60.00	4476.52	148.75	257.65	146.63	0.00	473368.44	778594.71		
4600.00	10.00	60.00	4575.00	157.44	272.69	155.19	0.00	473377.13	778609.75		
4700.00	10.00	60.00	4673.48	166.12	287.73	163.75	0.00	473385.81	778624.79		
4800.00	10.00	60.00	4771.96	174.80	302.76	172.31	0.00	473394.49	778639.82		
4900.00	10.00	60.00	4870.44	183.48	317.80	180.87	0.00	473403.17	778654.86		
5000.00	10.00	60.00	4968.92	192.17	332.84	189.43	0.00	473411.86	778669.90		
5100.00	10.00	60.00	5067.40	200.85	347.88	197.99	0.00	473420.54	778684.94		
5200.00	10.00	60.00	5165.88	209.53	362.92	206.55	0.00	473429.22	778699.98		
5300.00	10.00	60.00	5264.36	218.21	377.96	215.10	0.00	473437.90	778715.02		
5400.00	10.00	60.00	5362.84	226.90	392.99	223.66	0.00	473446.59	778730.05		
5500.00	10.00	60.00	5461.33	235.58	408.03	232.22	0.00	473455.27	778745.09		
5600.00	10.00	60.00	5559.81	244.26	423.07	240.78	0.00	473463.95	778760.13		
5700.00	10.00	60.00	5658.29	252.94	438.11	249.34	0.00	473472.63	778775.17		
5800.00	10.00	60.00	5756.77	261.62	453.15	257.90	0.00	473481.31	778790.21		
5900.00	10.00	60.00	5855.25	270.31	468.19	266.46	0.00	473490.00	778805.25		
6000.00	10.00	60.00	5953.73	278.99	483.22	275.02	0.00	473498.68	778820.28		
6100.00	10.00	60.00	6052.21	287.67	498.26	283.58	0.00	473507.36	778835.32		
6200.00	10.00	60.00	6150.69	296.35	513.30	292.13	0.00	473516.04	778850.36		
6300.00	10.00	60.00	6249.17	305.04	528.34	300.69	0.00	473524.73	778865.40		
6400.00	10.00	60.00	6347.65	313.72	543.38	309.25	0.00	473533.41	778880.44		
6500.00	10.00	60.00	6446.13	322.40	558.42	317.81	0.00	473542.09	778895.48		
6600.00	10.00	60.00	6544.61	331.08	573.45	326.37	0.00	473550.77	778910.51		
6700.00	10.00	60.00	6643.09	339.77	588.49	334.93	0.00	473559.46	778925.55		
6800.00	10.00	60.00	6741.58	348.45	603.53	343.49	0.00	473568.14	778940.59		
6900.00	10.00	60.00	6840.06	357.13	618.57	352.05	0.00	473576.82	778955.63		
7000.00	10.00	60.00	6938.54	365.81	633.61	360.60	0.00	473585.50	778970.67		
7100.00	10.00	60.00	7037.02	374.50	648.65	369.16	0.00	473594.19	778985.71		
7200.00	10.00	60.00	7135.50	383.18	663.68	377.72	0.00	473602.87	779000.74		
7300.00	10.00	60.00	7233.98	391.86	678.72	386.28	0.00	473611.55	779015.78		
7400.00	10.00	60.00	7332.46	400.54	693.76	394.84	0.00	473620.23	779030.82		
7500.00	10.00	60.00	7430.94	409.23	708.80	403.40	0.00	473628.92	779045.86		
7600.00	10.00	60.00	7529.42	417.91	723.84	411.96	0.00	473637.60	779060.90		
7700.00	10.00	60.00	7627.90	426.59	738.88	420.52	0.00	473646.28	779075.94		
7800.00	10.00	60.00	7726.38	435.27	753.91	429.07	0.00	473654.96	779090.97		
7900.00	10.00	60.00	7824.86	443.96	768.95	437.63	0.00	473663.65	779106.01		
8000.00	10.00	60.00	7923.34	452.64	783.99	446.19	0.00	473672.33	779121.05		
8100.00	10.00	60.00	8021.83	461.32	799.03	454.75	0.00	473681.01	779136.09		
8200.00	10.00	60.00	8120.31	470.00	814.07	463.31	0.00	473689.69	779151.13		
8300.00	10.00	60.00	8218.79	478.68	829.11	471.87	0.00	473698.37	779166.17		
8400.00	10.00	60.00	8317.27	487.37	844.14	480.43	0.00	473707.06	779181.20		

SD Plan Report

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)										
ID (US ft)	Incl (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (%/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
8500.00	10.00	60.00	8415.75	496.05	859.18	488.99	0.00	473715.74	779196.24	
8600.00	10.00	60.00	8514.23	504.73	874.22	497.54	0.00	473724.42	779211.28	
8700.00	10.00	60.00	8612.71	513.41	889.26	506.10	0.00	473733.10	779226.32	
8717.56	10.00	60.00	8630.00	514.94	891.90	507.61	0.00	473734.63	779228.96	Drop
8800.00	9.18	60.00	8711.29	521.80	903.79	514.37	1.00	473741.49	779240.85	
8900.00	8.18	60.00	8810.15	529.35	916.86	521.81	1.00	473749.04	779253.92	
9000.00	7.18	60.00	8909.25	536.02	928.42	528.39	1.00	473755.71	779265.48	
9100.00	6.18	60.00	9008.57	541.84	938.49	534.12	1.00	473761.53	779275.55	
9200.00	5.18	60.00	9108.08	546.78	947.05	538.99	1.00	473766.47	779284.11	
9300.00	4.18	60.00	9207.74	550.86	954.11	543.01	1.00	473770.55	779291.17	
9400.00	3.18	60.00	9307.54	554.06	959.66	546.17	1.00	473773.75	779296.72	
9500.00	2.18	60.00	9407.43	556.40	963.71	548.47	1.00	473776.09	779300.77	
9600.00	1.18	60.00	9507.38	557.86	966.24	549.91	1.00	473777.55	779303.30	
9700.00	0.18	60.00	9607.37	558.45	967.26	550.49	1.00	473778.14	779304.32	
9717.56	0.00	0.00	9624.93	558.46	967.28	550.51	1.00	473778.15	779304.34	Hold
9800.00	0.00	0.00	9707.37	558.46	967.28	550.51	0.00	473778.15	779304.34	
9900.00	0.00	0.00	9807.37	558.46	967.28	550.51	0.00	473778.15	779304.34	
10000.00	0.00	0.00	9907.37	558.46	967.28	550.51	0.00	473778.15	779304.34	
10100.00	0.00	0.00	10007.37	558.46	967.28	550.51	0.00	473778.15	779304.34	
10200.00	0.00	0.00	10107.37	558.46	967.28	550.51	0.00	473778.15	779304.34	
10300.00	0.00	0.00	10207.37	558.46	967.28	550.51	0.00	473778.15	779304.34	
10383.63	0.00	0.00	10291.00	558.46	967.28	550.51	0.00	473778.15	779304.34	PBHL Pilot

5D Anti-Collision Report**Devon Energy****Field Name:** *Lea Co, NM Nad 83 NMEZ***Site Name:** *North Thistle 15-10 State Com 1H,2H Pad***Well Name:** *North Thistle 15-10 State Com 1H Pilot*

14 May 2015




Weatherford®

North Thistle 15-10 State Com 1H Pilot

Field Name Lea Co. NM NAD 83 NMEZ	Map Units : US ft		Company Name : Devon Energy	
	Vertical Reference Datum (VRD) : Mean Sea Level			
	Projected Coordinate System : NAD83 / New Mexico East (ftUS)			
	Comment :			
Site Name North Thistle 15-10 State Com 1H 2H Pad	Units : US ft	North Reference : Grid	Convergence Angle : 0.41	
	Position	Northing : 473219.69 US ft	Latitude : 32° 17' 55.05"	
		Easting : 778337.06 US ft	Longitude : -103° 33' 58.69"	
	Elevation above Mean Sea Level : 3710.00 US ft			
	Comment :			
Slot Name North Thistle 15-10 State Com 1H	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing : 473219.69 US ft	Latitude : 32° 17' 55.05"	
	+E / -W : 0.00 US ft	Easting : 778337.06 US ft	Longitude : -103° 33' 58.69"	
	Slot TVD Reference : Ground Elevation			
	Elevation above Mean Sea Level : 3710.00 US ft			
	Comment :			
Well Name North Thistle 15-10 State Com 1H Pilot	Type : Main well	UWI :	Plan : Working Plan	
	Rig Height <i>Kelly Bushing</i> : 25.00 US ft	Comment :		
	Relative to Mean Sea Level : 3735.00 US ft			
	Closure Distance : 1116.92 US ft	Closure Azimuth : 60°		
	Vertical Section (Position of Origin Relative to Slot)			
	+N / -S : 0.00 US ft	+E / -W : 0.00 US ft	Az : 359.53°	
	Magnetic Parameters			
Model : BGGM	Field Strength : 48224.9nT	Dec : 7.27°	Dip : 60.15°	Date : 15/Jul/2015

Collision / Uncertainty Analysis				
Primary Well	Start MD (US ft)	End MD (US ft)	Collision Risk Interval	No. of Std Deviations in Error Computation
North Thistle 15-10 State Com 1H Pilot (p)	0.00	10383.63	100.00	2

Secondary Well Names
North Thistle 15-10 State Com 2H (p)

Anti-Collision Report Terminology
S.Minor, S.Major : Radii of the ellipse of uncertainty at the current location as seen in the along hole direction.
PHI : Angle between high-side vector and semi-minor axis
TVD Spread : Total TVD range of the ellipsoid of uncertainty at the current location
ES : Distance between the extremities of the primary and secondary uncertainty ellipsoids in the direction Cr-Cr
T.Face to Sec : Angle between the Hi-Side vector of the primary well at the current location and line of closest approach between the two wells

Separation factors calculated using Pedal Curve (Independent Uncertainty); Well path created using minimum curvature.

5D Anti-Collision Report

Anti-Collision Proximity Summary (TVD Relative to Kelly Bushing)

Secondary Well Name	PH MD (US ft)	Sec MD (US ft)	TVD (US ft)	CC (US ft)	ES (US ft)	SF	Risk
North Thistle 15-10 State Com 2H (p)	8781.05	8770.46	8692.59	95.63	52.72	2.23	

Primary Well: North Thistle 15-10 State Com 1H Pilot (p) (TVD Relative to Kelly Bushing; All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
0.00	0.00	94.20	0.00	0.00	North Thistle 15-10 State Com 2H (p)	50.14	49.57	87.06	
100.00	100.00	94.20	0.11	0.11	North Thistle 15-10 State Com 2H (p)	50.14	49.35	63.39	
200.00	200.00	94.20	0.34	0.34	North Thistle 15-10 State Com 2H (p)	50.14	48.91	40.50	
300.00	300.00	94.20	0.56	0.56	North Thistle 15-10 State Com 2H (p)	50.14	48.46	29.74	
400.00	400.00	94.20	0.79	0.79	North Thistle 15-10 State Com 2H (p)	50.14	48.01	23.49	
500.00	500.00	94.20	1.01	1.01	North Thistle 15-10 State Com 2H (p)	50.14	47.56	19.42	
600.00	600.00	94.20	1.24	1.24	North Thistle 15-10 State Com 2H (p)	50.14	47.11	16.54	
700.00	700.00	94.20	1.46	1.46	North Thistle 15-10 State Com 2H (p)	50.14	46.67	14.41	
800.00	800.00	94.20	1.69	1.69	North Thistle 15-10 State Com 2H (p)	50.14	46.22	12.77	
900.00	900.00	94.20	1.91	1.91	North Thistle 15-10 State Com 2H (p)	50.14	45.77	11.46	
1000.00	1000.00	94.20	2.14	2.14	North Thistle 15-10 State Com 2H (p)	50.14	45.32	10.39	
1100.00	1100.00	94.20	2.36	2.36	North Thistle 15-10 State Com 2H (p)	50.14	44.87	9.51	
1200.00	1200.00	94.20	2.59	2.59	North Thistle 15-10 State Com 2H (p)	50.14	44.42	8.76	
1300.00	1300.00	94.20	2.81	2.81	North Thistle 15-10 State Com 2H (p)	50.14	43.97	8.13	
1400.00	1400.00	94.20	3.03	3.03	North Thistle 15-10 State Com 2H (p)	50.14	43.53	7.58	
1500.00	1500.00	94.20	3.26	3.26	North Thistle 15-10 State Com 2H (p)	50.14	43.08	7.10	
1600.00	1600.00	94.20	3.48	3.48	North Thistle 15-10 State Com 2H (p)	50.14	42.63	6.67	
1700.00	1700.00	94.20	3.71	3.71	North Thistle 15-10 State Com 2H (p)	50.14	42.18	6.30	
1800.00	1800.00	94.20	3.93	3.93	North Thistle 15-10 State Com 2H (p)	50.14	41.73	5.96	
1900.00	1900.00	94.20	4.16	4.16	North Thistle 15-10 State Com 2H (p)	50.14	41.28	5.66	
2000.00	2000.00	94.20	4.38	4.38	North Thistle 15-10 State Com 2H (p)	50.14	40.83	5.38	
2100.00	2100.00	93.64	4.61	4.61	North Thistle 15-10 State Com 2H (p)	50.88	41.13	5.22	
2200.00	2200.00	92.09	4.83	4.83	North Thistle 15-10 State Com 2H (p)	53.08	42.88	5.21	

SD Anti-Collision Report

Primary Well: North Thistle 15-10 State Com 1H Pilot (p) (TVD Relative to Kelly Bushing, All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
2300.00	2300.00	29.78	5.06	5.06	North Thistle 15-10 State Com 2H (p)	56.79	46.18	5.35	
2400.00	2399.99	27.46	5.27	5.27	North Thistle 15-10 State Com 2H (p)	61.18	50.14	5.54	
2500.00	2499.95	25.46	5.48	5.47	North Thistle 15-10 State Com 2H (p)	65.63	54.21	5.75	
2600.00	2599.85	23.72	5.70	5.68	North Thistle 15-10 State Com 2H (p)	70.13	58.29	5.92	
2700.00	2699.65	22.20	5.91	5.89	North Thistle 15-10 State Com 2H (p)	74.68	62.43	6.10	
2800.00	2799.32	20.86	6.14	6.09	North Thistle 15-10 State Com 2H (p)	79.24	66.58	6.26	
2900.00	2898.84	19.67	6.36	6.30	North Thistle 15-10 State Com 2H (p)	83.82	70.75	6.41	
3000.00	2998.17	18.61	6.60	6.50	North Thistle 15-10 State Com 2H (p)	88.41	74.92	6.55	
3100.00	3097.28	17.78	6.85	6.71	North Thistle 15-10 State Com 2H (p)	92.35	78.41	6.62	
3200.00	3196.15	17.33	7.10	6.92	North Thistle 15-10 State Com 2H (p)	94.65	80.25	6.58	
3300.00	3294.75	17.20	7.38	7.13	North Thistle 15-10 State Com 2H (p)	95.29	80.45	6.42	
3400.00	3393.23	17.20	7.66	7.36	North Thistle 15-10 State Com 2H (p)	95.29	79.99	6.23	
3500.00	3491.71	17.20	7.95	7.58	North Thistle 15-10 State Com 2H (p)	95.29	79.52	6.04	
3600.00	3590.19	17.20	8.26	7.81	North Thistle 15-10 State Com 2H (p)	95.29	79.06	5.87	
3700.00	3688.67	17.20	8.56	8.04	North Thistle 15-10 State Com 2H (p)	95.29	78.58	5.70	
3800.00	3787.15	17.20	8.88	8.27	North Thistle 15-10 State Com 2H (p)	95.29	78.11	5.54	
3900.00	3885.63	17.20	9.20	8.51	North Thistle 15-10 State Com 2H (p)	95.29	77.63	5.39	
4000.00	3984.11	17.20	9.52	8.74	North Thistle 15-10 State Com 2H (p)	95.29	77.14	5.25	
4100.00	4082.59	17.20	9.85	8.98	North Thistle 15-10 State Com 2H (p)	95.29	76.65	5.11	
4200.00	4181.08	17.20	10.18	9.22	North Thistle 15-10 State Com 2H (p)	95.29	76.15	4.98	
4300.00	4279.56	17.20	10.52	9.46	North Thistle 15-10 State Com 2H (p)	95.29	75.66	4.85	
4400.00	4378.04	17.20	10.86	9.70	North Thistle 15-10 State Com 2H (p)	95.29	75.16	4.73	
4500.00	4476.52	17.20	11.20	9.94	North Thistle 15-10 State Com 2H (p)	95.29	74.65	4.62	
4600.00	4575.00	17.20	11.54	10.18	North Thistle 15-10 State Com 2H (p)	95.29	74.15	4.51	
4700.00	4673.48	17.20	11.89	10.43	North Thistle 15-10 State Com 2H (p)	95.29	73.64	4.40	
4800.00	4771.96	17.20	12.24	10.67	North Thistle 15-10 State Com 2H (p)	95.29	73.13	4.30	

5D Anti-Collision Report

Primary Well : North Thistle 15-10 State Com 1H Pilot (p) (TVD Relative to Kelly Bushing, All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T. Face to Sec (°)	S. Major (US ft)	S. Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
4900.00	4870.44	17.20	12.59	10.91	North Thistle 15-10 State Com 2H (p)	95.29	72.62	4.20	
5000.00	4968.92	17.20	12.95	11.16	North Thistle 15-10 State Com 2H (p)	95.29	72.11	4.11	
5100.00	5067.40	17.20	13.30	11.40	North Thistle 15-10 State Com 2H (p)	95.29	71.60	4.02	
5200.00	5165.88	17.20	13.66	11.65	North Thistle 15-10 State Com 2H (p)	95.29	71.09	3.94	
5300.00	5264.36	17.20	14.02	11.89	North Thistle 15-10 State Com 2H (p)	95.29	70.57	3.85	
5400.00	5362.84	17.20	14.38	12.14	North Thistle 15-10 State Com 2H (p)	95.29	70.06	3.78	
5500.00	5461.33	17.20	14.74	12.38	North Thistle 15-10 State Com 2H (p)	95.29	69.54	3.70	
5600.00	5559.81	17.20	15.10	12.63	North Thistle 15-10 State Com 2H (p)	95.29	69.03	3.63	
5700.00	5658.29	17.20	15.47	12.88	North Thistle 15-10 State Com 2H (p)	95.29	68.51	3.56	
5800.00	5756.77	17.20	15.83	13.13	North Thistle 15-10 State Com 2H (p)	95.29	67.99	3.49	
5900.00	5855.25	17.20	16.20	13.37	North Thistle 15-10 State Com 2H (p)	95.29	67.47	3.43	
6000.00	5953.73	17.20	16.57	13.62	North Thistle 15-10 State Com 2H (p)	95.29	66.95	3.36	
6100.00	6052.21	17.20	16.93	13.87	North Thistle 15-10 State Com 2H (p)	95.29	66.43	3.30	
6200.00	6150.69	17.20	17.30	14.12	North Thistle 15-10 State Com 2H (p)	95.29	65.91	3.24	
6300.00	6249.17	17.20	17.67	14.37	North Thistle 15-10 State Com 2H (p)	95.29	65.39	3.19	
6400.00	6347.65	17.20	18.04	14.62	North Thistle 15-10 State Com 2H (p)	95.29	64.87	3.13	
6500.00	6446.13	17.20	18.41	14.87	North Thistle 15-10 State Com 2H (p)	95.29	64.35	3.08	
6600.00	6544.61	17.20	18.78	15.12	North Thistle 15-10 State Com 2H (p)	95.29	63.83	3.03	
6700.00	6643.09	17.20	19.16	15.37	North Thistle 15-10 State Com 2H (p)	95.29	63.31	2.98	
6800.00	6741.58	17.20	19.53	15.62	North Thistle 15-10 State Com 2H (p)	95.29	62.78	2.93	
6900.00	6840.06	17.20	19.90	15.87	North Thistle 15-10 State Com 2H (p)	95.29	62.26	2.88	
7000.00	6938.54	17.20	20.27	16.12	North Thistle 15-10 State Com 2H (p)	95.29	61.74	2.84	
7100.00	7037.02	17.20	20.65	16.37	North Thistle 15-10 State Com 2H (p)	95.29	61.21	2.80	
7200.00	7135.50	17.20	21.02	16.62	North Thistle 15-10 State Com 2H (p)	95.29	60.69	2.75	
7300.00	7233.98	17.20	21.40	16.87	North Thistle 15-10 State Com 2H (p)	95.29	60.16	2.71	
7400.00	7332.46	17.20	21.77	17.12	North Thistle 15-10 State Com 2H (p)	95.29	59.64	2.67	

5D Anti-Collision Report

Primary Well: North Thistle 15-10 State Com 1H Pilot (p) (TVD Relative to Kelly Bushing, All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
7500.00	7430.94	17.20	22.15	17.37	North Thistle 15-10 State Com 2H (p)	95.29	59.11	2.63	
7600.00	7529.42	17.20	22.52	17.62	North Thistle 15-10 State Com 2H (p)	95.29	58.59	2.60	
7700.00	7627.90	17.20	22.90	17.88	North Thistle 15-10 State Com 2H (p)	95.29	58.06	2.56	
7800.00	7726.38	17.20	23.28	18.13	North Thistle 15-10 State Com 2H (p)	95.29	57.54	2.52	
7900.00	7824.86	17.20	23.65	18.38	North Thistle 15-10 State Com 2H (p)	95.29	57.01	2.49	
8000.00	7923.34	17.20	24.03	18.63	North Thistle 15-10 State Com 2H (p)	95.29	56.48	2.46	
8100.00	8021.83	17.20	24.41	18.88	North Thistle 15-10 State Com 2H (p)	95.29	55.96	2.42	
8200.00	8120.31	17.20	24.79	19.14	North Thistle 15-10 State Com 2H (p)	95.29	55.43	2.39	
8300.00	8218.79	17.20	25.16	19.39	North Thistle 15-10 State Com 2H (p)	95.29	54.90	2.36	
8400.00	8317.27	17.20	25.54	19.64	North Thistle 15-10 State Com 2H (p)	95.29	54.37	2.33	
8500.00	8415.75	17.20	25.92	19.89	North Thistle 15-10 State Com 2H (p)	95.29	53.85	2.30	
8600.00	8514.23	17.20	26.30	20.15	North Thistle 15-10 State Com 2H (p)	95.29	53.32	2.27	
8700.00	8612.71	17.20	26.68	20.40	North Thistle 15-10 State Com 2H (p)	95.29	52.79	2.24	
8800.00	8711.29	17.10	27.02	20.64	North Thistle 15-10 State Com 2H (p)	95.86	52.86	2.23	
8900.00	8810.15	16.71	27.30	20.86	North Thistle 15-10 State Com 2H (p)	98.07	54.66	2.26	
9000.00	8909.25	16.06	27.57	21.06	North Thistle 15-10 State Com 2H (p)	101.96	58.18	2.33	
9100.00	9008.57	15.22	27.81	21.25	North Thistle 15-10 State Com 2H (p)	107.55	63.44	2.44	
9200.00	9108.08	14.25	28.05	21.43	North Thistle 15-10 State Com 2H (p)	114.84	70.45	2.59	
9300.00	9207.74	13.22	28.26	21.60	North Thistle 15-10 State Com 2H (p)	123.86	79.18	2.77	
9400.00	9307.54	12.17	28.45	21.76	North Thistle 15-10 State Com 2H (p)	134.61	89.52	2.99	
9500.00	9407.43	11.15	28.63	21.91	North Thistle 15-10 State Com 2H (p)	147.10	101.63	3.24	
9600.00	9507.38	10.11	28.79	22.05	North Thistle 15-10 State Com 2H (p)	161.41	115.61	3.52	
9700.00	9607.37	6.24	28.94	22.18	North Thistle 15-10 State Com 2H (p)	181.34	135.76	3.98	
9800.00	9707.37	60.01	29.08	22.35	North Thistle 15-10 State Com 2H (p)	210.24	164.60	4.61	
9900.00	9807.37	53.56	29.24	22.55	North Thistle 15-10 State Com 2H (p)	249.22	203.82	5.49	
10000.00	9907.37	47.96	29.40	22.76	North Thistle 15-10 State Com 2H (p)	298.70	253.90	6.67	

SD Anti-Collision Report

Primary Well: North Thistle 15-10 State Com 1H Pilot (p) (TVD Relative to Kelly Bushing (Primary)); All Azimuth Relative to GRID NORTH									
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
10100.00	10007.37	43.43	29.56	22.96	North Thistle 15-10 State Com 2H (p)	357.61	313.43	8.09	
10200.00	10107.37	39.86	29.72	23.16	North Thistle 15-10 State Com 2H (p)	424.30	381.08	9.82	
10300.00	10207.37	37.07	29.88	23.36	North Thistle 15-10 State Com 2H (p)	497.14	454.71	11.72	
10383.63	10291.00	35.19	30.02	23.53	North Thistle 15-10 State Com 2H (p)	561.79	520.05	13.46	

Secondary Well: North Thistle 15-10 State Com 2H (p) (TVD Relative to Kelly Bushing (Primary)); All Azimuth Relative to GRID NORTH									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
0.00	0.00	1.00	94.20	0.01	0.01	50.14	49.57	87.06	
100.00	100.00	101.00	94.20	0.12	0.12	50.14	49.35	63.39	
200.00	200.00	201.00	94.20	0.34	0.34	50.14	48.91	40.50	
300.00	300.00	301.00	94.20	0.56	0.56	50.14	48.46	29.74	
400.00	400.00	401.00	94.20	0.79	0.79	50.14	48.01	23.49	
500.00	500.00	501.00	94.20	1.01	1.01	50.14	47.56	19.42	
600.00	600.00	601.00	94.20	1.24	1.24	50.14	47.11	16.54	
700.00	700.00	701.00	94.20	1.46	1.46	50.14	46.67	14.41	
800.00	800.00	801.00	94.20	1.69	1.69	50.14	46.22	12.77	
900.00	900.00	901.00	94.20	1.91	1.91	50.14	45.77	11.46	
1000.00	1000.00	1001.00	94.20	2.14	2.14	50.14	45.32	10.39	
1100.00	1100.00	1101.00	94.20	2.36	2.36	50.14	44.87	9.51	
1200.00	1200.00	1201.00	94.20	2.59	2.59	50.14	44.42	8.76	
1300.00	1300.00	1301.00	94.20	2.81	2.81	50.14	43.97	8.13	
1400.00	1400.00	1401.00	94.20	3.04	3.04	50.14	43.53	7.58	
1500.00	1500.00	1501.00	94.20	3.26	3.26	50.14	43.08	7.10	
1600.00	1600.00	1601.00	94.20	3.49	3.49	50.14	42.63	6.67	
1700.00	1700.00	1701.00	94.20	3.71	3.71	50.14	42.18	6.30	
1800.00	1800.00	1801.00	94.20	3.94	3.94	50.14	41.73	5.96	
1900.00	1900.00	1901.00	94.20	4.16	4.16	50.14	41.28	5.66	
2000.00	1999.99	2000.99	94.20	4.39	4.39	50.14	40.83	5.38	
2100.00	2099.26	2100.26	93.64	4.60	4.60	50.88	41.13	5.22	
2200.00	2198.43	2199.47	92.09	4.81	4.81	53.08	42.88	5.21	
2300.00	2297.43	2298.57	29.78	5.02	5.01	56.79	46.18	5.35	
2400.00	2396.23	2397.55	27.46	5.24	5.22	61.18	50.14	5.54	
2500.00	2494.82	2496.44	25.46	5.46	5.42	65.63	54.21	5.75	
2600.00	2593.19	2595.26	23.72	5.69	5.62	70.13	58.29	5.92	
2700.00	2691.29	2693.99	22.20	5.92	5.83	74.68	62.43	6.10	
2800.00	2789.11	2792.63	20.86	6.16	6.04	79.24	66.58	6.26	
2900.00	2886.61	2891.20	19.67	6.42	6.25	83.82	70.75	6.41	
3000.00	2983.77	2989.68	18.61	6.69	6.46	88.41	74.92	6.55	
3100.00	3082.01	3089.44	17.78	6.98	6.68	92.35	78.41	6.62	
3200.00	3180.46	3189.41	17.33	7.28	6.91	94.65	80.25	6.58	
3300.00	3278.94	3289.41	17.20	7.58	7.13	95.29	80.45	6.42	
3400.00	3377.42	3389.41	17.20	7.89	7.36	95.29	79.99	6.23	
3500.00	3475.90	3489.41	17.20	8.21	7.60	95.29	79.52	6.04	
3600.00	3574.38	3589.41	17.20	8.53	7.84	95.29	79.06	5.87	
3700.00	3672.86	3689.41	17.20	8.86	8.07	95.29	78.58	5.70	
3800.00	3771.35	3789.41	17.20	9.20	8.31	95.29	78.11	5.54	
3900.00	3869.83	3889.41	17.20	9.53	8.55	95.29	77.63	5.39	
4000.00	3968.31	3989.41	17.20	9.87	8.79	95.29	77.14	5.25	
4100.00	4066.79	4089.41	17.20	10.22	9.03	95.29	76.65	5.11	
4200.00	4165.27	4189.41	17.20	10.57	9.28	95.29	76.15	4.98	
4300.00	4263.75	4289.41	17.20	10.92	9.52	95.29	75.66	4.85	
4400.00	4362.23	4389.41	17.20	11.27	9.76	95.29	75.16	4.73	
4500.00	4460.71	4489.41	17.20	11.62	10.01	95.29	74.65	4.62	

5D Anti-Collision Report

Secondary Well	North Thistle U5-10 State Com 2H (p) (TVD Relative to Kelly Bushing (Primary))	All Azimuth Relative to GRID NORTH							
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T.Face to Sec (°)	S. Major (US ft)	S. Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
4600.00	4559.19	4589.41	17.20	11.98	10.25	95.29	74.15	4.51	
4700.00	4657.67	4689.41	17.20	12.34	10.50	95.29	73.64	4.40	
4800.00	4756.15	4789.41	17.20	12.69	10.74	95.29	73.13	4.30	
4900.00	4854.63	4889.41	17.20	13.06	10.99	95.29	72.62	4.20	
5000.00	4953.11	4989.41	17.20	13.42	11.24	95.29	72.11	4.11	
5100.00	5051.60	5089.41	17.20	13.78	11.49	95.29	71.60	4.02	
5200.00	5150.08	5189.41	17.20	14.15	11.73	95.29	71.09	3.94	
5300.00	5248.56	5289.41	17.20	14.51	11.98	95.29	70.57	3.85	
5400.00	5347.04	5389.41	17.20	14.88	12.23	95.29	70.06	3.78	
5500.00	5445.52	5489.41	17.20	15.25	12.48	95.29	69.54	3.70	
5600.00	5544.00	5589.41	17.20	15.62	12.73	95.29	69.03	3.63	
5700.00	5642.48	5689.41	17.20	15.99	12.98	95.29	68.51	3.56	
5800.00	5740.96	5789.41	17.20	16.36	13.23	95.29	67.99	3.49	
5900.00	5839.44	5889.41	17.20	16.73	13.47	95.29	67.47	3.43	
6000.00	5937.92	5989.41	17.20	17.10	13.72	95.29	66.95	3.36	
6100.00	6036.40	6089.41	17.20	17.47	13.98	95.29	66.43	3.30	
6200.00	6134.88	6189.41	17.20	17.85	14.23	95.29	65.91	3.24	
6300.00	6233.36	6289.41	17.20	18.22	14.48	95.29	65.39	3.19	
6400.00	6331.85	6389.41	17.20	18.59	14.73	95.29	64.87	3.13	
6500.00	6430.33	6489.41	17.20	18.97	14.98	95.29	64.35	3.08	
6600.00	6528.81	6589.41	17.20	19.34	15.23	95.29	63.83	3.03	
6700.00	6627.29	6689.41	17.20	19.72	15.48	95.29	63.31	2.98	
6800.00	6725.77	6789.41	17.20	20.09	15.73	95.29	62.78	2.93	
6900.00	6824.25	6889.41	17.20	20.47	15.98	95.29	62.26	2.88	
7000.00	6922.73	6989.41	17.20	20.85	16.24	95.29	61.74	2.84	
7100.00	7021.21	7089.41	17.20	21.22	16.49	95.29	61.21	2.80	
7200.00	7119.69	7189.41	17.20	21.60	16.74	95.29	60.69	2.75	
7300.00	7218.17	7289.41	17.20	21.98	16.99	95.29	60.16	2.71	
7400.00	7316.65	7389.41	17.20	22.36	17.24	95.29	59.64	2.67	
7500.00	7415.13	7489.41	17.20	22.73	17.50	95.29	59.11	2.63	
7600.00	7513.61	7589.41	17.20	23.11	17.75	95.29	58.59	2.60	
7700.00	7612.10	7689.41	17.20	23.49	18.00	95.29	58.06	2.56	
7800.00	7710.58	7789.41	17.20	23.87	18.25	95.29	57.54	2.52	
7900.00	7809.06	7889.41	17.20	24.25	18.51	95.29	57.01	2.49	
8000.00	7907.54	7989.41	17.20	24.63	18.76	95.29	56.48	2.46	
8100.00	8006.02	8089.41	17.20	25.01	19.01	95.29	55.96	2.42	
8200.00	8104.50	8189.41	17.20	25.39	19.27	95.29	55.43	2.39	
8300.00	8202.98	8289.41	17.20	25.77	19.52	95.29	54.90	2.36	
8400.00	8301.46	8389.41	17.20	26.15	19.77	95.29	54.37	2.33	
8500.00	8399.94	8489.41	17.20	26.53	20.03	95.29	53.85	2.30	
8600.00	8498.42	8589.41	17.20	26.91	20.28	95.29	53.32	2.27	
8700.00	8596.90	8689.41	17.20	27.29	20.53	95.29	52.79	2.24	
8800.00	8695.38	8789.40	17.10	27.67	20.79	95.86	52.86	2.23	
8900.00	8793.83	8889.38	16.71	28.05	21.04	98.07	54.66	2.26	
9000.00	8892.23	8989.29	16.06	28.43	21.29	101.96	58.18	2.33	
9100.00	8990.55	9089.12	15.22	28.81	21.55	107.55	63.44	2.44	
9200.00	9088.75	9188.84	14.25	29.19	21.80	114.84	70.45	2.59	
9300.00	9186.80	9288.40	13.22	29.57	22.05	123.86	79.18	2.77	
9400.00	9284.68	9387.79	12.17	29.95	22.30	134.61	89.52	2.99	
9500.00	9382.36	9486.98	11.15	30.33	22.56	147.10	101.63	3.24	
9600.00	9478.28	9584.40	10.11	30.69	22.79	161.41	115.61	3.52	
9700.00	9562.88	9671.80	6.24	30.59	22.85	181.34	135.76	3.98	
9800.00	9636.50	9751.40	60.01	30.25	22.95	210.24	164.60	4.61	
9900.00	9696.95	9821.19	53.56	29.80	22.78	249.22	203.82	5.49	
10000.00	9744.74	9880.84	47.96	29.27	22.47	298.70	253.90	6.67	
10100.00	9781.77	9931.16	43.43	28.96	22.05	357.61	313.43	8.09	
10200.00	9810.29	9973.45	39.86	28.70	21.49	424.30	381.08	9.82	
10300.00	9832.31	10009.04	37.07	28.63	20.98	497.14	454.71	11.72	

5D Anti-Collision Report

Secondary Well: North Thistle 15-10 State Com 2H (p) (TVD Relative to Kelly Bushing (Primary)) All Azimuth Relative to GRID NORTH									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
10383.63	9846.92	10034.54	35.19	28.60	20.58	561.79	520.05	13.46	



Weatherford

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date: May 14, 2015
Job Number: _____
Customer: Devon Energy
Well Name: North Thistle 15-10 State Com 1H
API Number: _____
Rig Name: _____
Location: Lea Co, NM Nad83 NME
Block: _____
Engineer: RWJ

NAD83 / New Mexico East (ftUS)	NAD83 (1986)
Projected Coordinate System	Geodetic Coordinate System
Datum: North American Datum 1983 (1986)	Datum: North American Datum 1983 (1986)
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
EPSG: 2257	EPSG: 4269
North: 473219.69 US Survey Foot	Latitude: 32.298624 Degree
East: 778337.06 US Survey Foot	Longitude: -103.566303 Degree
Convergence: 0.41°	
Declination: 7.27°	
Total Correction: 6.86°	
Datum Transformation: none	

Geodetic Location WGS84

MSL Elevation = 0 m
Latitude = 32° 17' 55.05" N
Longitude = 103° 33' 58.69" W

Magnetic Declination = 7.27 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6592
Local Field Strength = 48221 nT	Magnetic Vector X = 23810 nT
Magnetic Dip = 60.15 deg	Magnetic Vector Y = 3038 nT
Magnetic Model = bggm2014.dat	Magnetic Vector Z = 41822 nT
Run Date = July 15, 2015	Magnetic Vector H = 24003 nT

Signed: _____ Date: _____

© 2013 Weatherford

Warning: This information is controlled, and any printed version is deemed as uncontrolled unless suitably endorsed by a controlling authority or accompanied by a controlled table of contents in order to ensure adequate revision control.

devon

North Thistle 15-10
State Com 1H
Lea Co, NM



Weatherford

Plan Data for North Thistle 15-10 State Com 1H Lat

Plan Point Information:

DogLeg Severity Unit: °/100.00ft Position offsets from Slot centre

MD	Inc	Az	TVD	+N/-S	+E/-W	Northing	Easting	VSec	DLS
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)
9918.00	0.00	0.00	9825.37	558.50	967.35	473778.19	779304.41	550.55	0.00
10739.48	90.36	359.53	10346.23	1882.65	963.04	474302.34	779300.10	1074.71	11.00
19477.63	90.36	359.53	10291.00	9820.33	891.25	483040.02	779228.31	9812.69	0.00

Plan Data for North Thistle 15-10 State Com 1H Lat

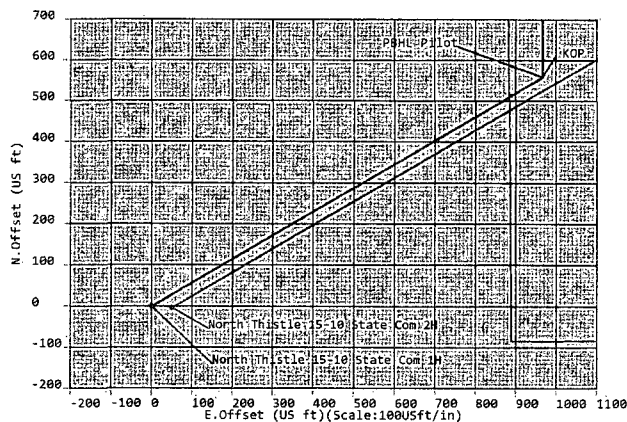
Slot: North Thistle 15-10 State Com 1H
Position:
Offset is from Site centre
+N/-S: 0.00USft Northing: 473219.69USft Latitude: 32°17'55.0"
+E/-W: 0.00USft Easting: 778337.06USft Longitude: -103°33'58.7"
Elevation Above VRD: 3710.00USft

Plan Data for North Thistle 15-10 State Com 1H Lat

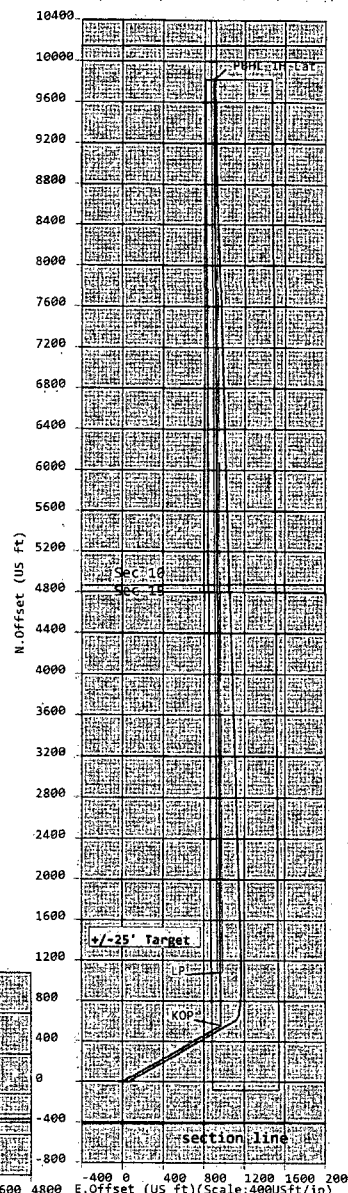
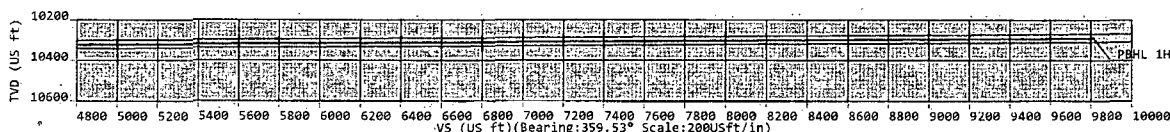
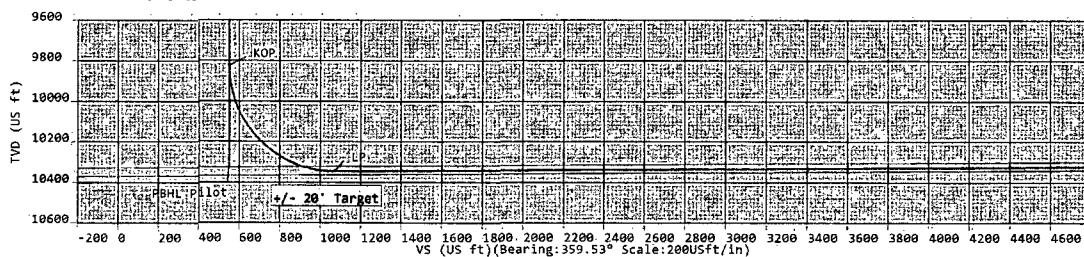
Target Set Information:
Name: North Thistle 15-10 State Com 1H Lat
Position offsets from Slot centre
Name TVD +N/-S +E/-W Northing Easting Shape Comment
(USft) (USft) (USft) (USft)
PBHL 10291.00 9820.33 891.25 483040.02 779228.31 Cuboid

Plan Data for North Thistle 15-10 State Com 1H Lat
Well: North Thistle 15-10 State Com 1H Lat
Type: Side-Track
File Number:
Plan Folder: P1 Plan: P1.V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 359.53°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
BGM 48220(NT) 7.27° 60.15° 2015-07-15

North Thistle 15-10 State Com 1H Lat
North Thistle 15-10 State Com 1H Pilot
North Thistle 15-10 State Com 2H



KB-3735
GL-3710



Sign Off: Russell Joyner

5D Plan Report**Devon Energy****Field Name:** *Lea Co, NM Nad 83 NMEZ***Site Name:** *North Thistle 15-10 State Com 1H,2H Pad***Well Name:** *North Thistle 15-10 State Com 1H Lat***Plan:** *P1:V2*

14 May 2015



North Thistle 15-10 State Com 1H Lat

Field Name Lea Co, NM Nad 83 NMEZ	Map Units : US ft Company Name : Devon Energy Vertical Reference Datum (VRD) : Mean Sea Level Projected Coordinate System : NAD83 / New Mexico East (ftUS) Comment :		
Site Name North Thistle 15-10 State Com 1H 2H Pad	Units : US ft North Reference : Grid Convergence Angle : 0.41 Position Northing : 473219.69 US ft Latitude : 32° 17' 55.05" Easting : 778337.06 US ft Longitude : -103° 33' 58.69" Elevation above Mean Sea Level: 3710.00 US ft Comment :		
Slot Name North Thistle 15-10 State Com 1H	Position (Offsets relative to Site Centre) +N / -S : 0.00 US ft Northing : 473219.69 US ft Latitude : 32° 17' 55.05" +E / -W : 0.00 US ft Easting : 778337.06 US ft Longitude : -103° 33' 58.69" Slot TVD Reference : Ground Elevation Elevation above Mean Sea Level : 3710.00 US ft Comment :		
Well Name North Thistle 15-10 State Com 1H Lat	Type : Sidetrack UWI : Plan : P1:V2 Parent : North Thistle 15-10 State Com 1H Pilot Tie Point Method : TVD Tie Point : 9824.93 US ft Rig Height Kelly Bushing : 25.00 US ft Comment : Relative to Mean Sea Level: 3735.00 US ft Closure Distance : 9860.69 US ft Closure Azimuth : 5.18571° Vertical Section (Position of Origin Relative to Slot) +N / -S : 0.00 US ft +E / -W : 0.00 US ft Az : 359.53° Magnetic Parameters Model : BGGM Field Strength : 48220.7nT Dec : 7.27° Dip : 60.15° Date : 15/Jul/2015		

Target Set

Name : North Thistle 15-10 **Number of Targets :** 1
 State Com 1H Lat

Comment :

Target Name: PBHL	Position (Relative to Slot centre) +N / -S : 9820.33 US ft Northing : 483040.02 US ft Latitude : 32° 19' 32.16" +E / -W : 891.25 US ft Easting : 779228.31 US ft Longitude : -103° 33' 47.48" Shape: TVD (Kelly Bushing) : 10291.00 US ft Cuboid Orientation Azimuth : 359.53° Inclination : 0.36° Dimensions Length : 17476.00 US ft Breadth : 50.00 US ft Height : 40.00 US ft		
-----------------------------	--	--	--

Well path created using minimum curvature

5D Plan Report

Salient Points (Relative to Slot centre, TVD relative to Kelly Bushing)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	B. Rate (°/100 US ft)	T. Rate (°/100 US ft)	T. Face (°)	Comment
9917.56	0.00	0.00	9824.93	558.46	967.28	550.51	0.00	0.00	0.00	0.00	KOP
10739.00	90.36	359.53	10345.79	1082.58	962.98	1074.64	11.00	11.00	0.00	359.53	LP
19477.22	90.36	359.53	10291.00	9820.33	891.25	9812.69	0.00	0.00	0.00	0.00	PBHL 1H Lat

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
9917.56	0.00	0.00	9824.93	558.46	967.28	550.51	0.00	473778.15	779304.34	KOP
10017.56	11.00	359.53	9924.32	568.03	967.21	560.08	11.00	473787.72	779304.27	
10117.56	22.00	359.53	10020.05	596.39	966.97	588.44	11.00	473816.08	779304.03	
10217.56	33.00	359.53	10108.62	642.49	966.59	634.54	11.00	473862.18	779303.65	
10317.56	44.00	359.53	10186.76	704.64	966.08	696.70	11.00	473924.33	779303.14	
10417.56	55.00	359.53	10251.60	780.57	965.46	772.62	11.00	474000.26	779302.52	
10517.56	66.00	359.53	10300.77	867.46	964.75	859.52	11.00	474087.15	779301.81	
10617.56	77.00	359.53	10332.45	962.15	963.97	954.21	11.00	474181.84	779301.03	
10717.56	88.00	359.53	10345.48	1061.14	963.16	1053.20	11.00	474280.83	779300.22	
10739.00	90.36	359.53	10345.79	1082.58	962.98	1074.64	11.00	474302.27	779300.04	LP
10817.56	90.36	359.53	10345.30	1161.13	962.34	1153.20	0.00	474380.82	779299.40	
10917.56	90.36	359.53	10344.67	1261.12	961.52	1253.19	0.00	474480.81	779298.58	
11017.56	90.36	359.53	10344.04	1361.12	960.69	1353.19	0.00	474580.81	779297.75	
11117.56	90.36	359.53	10343.42	1461.11	959.87	1453.19	0.00	474680.80	779296.93	
11217.56	90.36	359.53	10342.79	1561.11	959.05	1553.19	0.00	474780.80	779296.11	
11317.56	90.36	359.53	10342.16	1661.10	958.23	1653.19	0.00	474880.79	779295.29	
11417.56	90.36	359.53	10341.54	1761.10	957.41	1753.18	0.00	474980.79	779294.47	
11517.56	90.36	359.53	10340.91	1861.09	956.59	1853.18	0.00	475080.78	779293.65	
11617.56	90.36	359.53	10340.28	1961.09	955.77	1953.18	0.00	475180.78	779292.83	
11717.56	90.36	359.53	10339.65	2061.08	954.95	2053.18	0.00	475280.77	779292.01	
11817.56	90.36	359.53	10339.03	2161.08	954.13	2153.18	0.00	475380.77	779291.19	
11917.56	90.36	359.53	10338.40	2261.07	953.31	2253.17	0.00	475480.76	779290.37	
12017.56	90.36	359.53	10337.77	2361.06	952.49	2353.17	0.00	475580.75	779289.55	
12117.56	90.36	359.53	10337.15	2461.06	951.66	2453.17	0.00	475680.75	779288.72	
12217.56	90.36	359.53	10336.52	2561.05	950.84	2553.17	0.00	475780.74	779287.90	
12317.56	90.36	359.53	10335.89	2661.05	950.02	2653.17	0.00	475880.74	779287.08	
12417.56	90.36	359.53	10335.27	2761.04	949.20	2753.16	0.00	475980.73	779286.26	
12517.56	90.36	359.53	10334.64	2861.04	948.38	2853.16	0.00	476080.73	779285.44	
12617.56	90.36	359.53	10334.01	2961.03	947.56	2953.16	0.00	476180.72	779284.62	
12717.56	90.36	359.53	10333.38	3061.03	946.74	3053.16	0.00	476280.72	779283.80	
12817.56	90.36	359.53	10332.76	3161.02	945.92	3153.16	0.00	476380.71	779282.98	
12917.56	90.36	359.53	10332.13	3261.02	945.10	3253.15	0.00	476480.71	779282.16	
13017.56	90.36	359.53	10331.50	3361.01	944.28	3353.15	0.00	476580.70	779281.34	
13117.56	90.36	359.53	10330.88	3461.01	943.46	3453.15	0.00	476680.70	779280.52	
13217.56	90.36	359.53	10330.25	3561.00	942.63	3553.15	0.00	476780.69	779279.69	
13317.56	90.36	359.53	10329.62	3661.00	941.81	3653.15	0.00	476880.69	779278.87	
13417.56	90.36	359.53	10329.00	3760.99	940.99	3753.14	0.00	476980.68	779278.05	
13517.56	90.36	359.53	10328.37	3860.98	940.17	3853.14	0.00	477080.67	779277.23	
13617.56	90.36	359.53	10327.74	3960.98	939.35	3953.14	0.00	477180.67	779276.41	
13717.56	90.36	359.53	10327.11	4060.97	938.53	4053.14	0.00	477280.66	779275.59	
13817.56	90.36	359.53	10326.49	4160.97	937.71	4153.14	0.00	477380.66	779274.77	
13917.56	90.36	359.53	10325.86	4260.96	936.89	4253.13	0.00	477480.65	779273.95	
14017.56	90.36	359.53	10325.23	4360.96	936.07	4353.13	0.00	477580.65	779273.13	
14117.56	90.36	359.53	10324.61	4460.95	935.25	4453.13	0.00	477680.64	779272.31	
14217.56	90.36	359.53	10323.98	4560.95	934.43	4553.13	0.00	477780.64	779271.49	
14317.56	90.36	359.53	10323.35	4660.94	933.61	4653.13	0.00	477880.63	779270.67	
14417.56	90.36	359.53	10322.73	4760.94	932.78	4753.12	0.00	477980.63	779269.84	
14517.56	90.36	359.53	10322.10	4860.93	931.96	4853.12	0.00	478080.62	779269.02	
14617.56	90.36	359.53	10321.47	4960.93	931.14	4953.12	0.00	478180.62	779268.20	
14717.56	90.36	359.53	10320.84	5060.92	930.32	5053.12	0.00	478280.61	779267.38	
14817.56	90.36	359.53	10320.22	5160.92	929.50	5153.12	0.00	478380.61	779266.56	
14917.56	90.36	359.53	10319.59	5260.91	928.68	5253.11	0.00	478480.60	779265.74	

5D Plan Report

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)										
MD (US ft)	Incl (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
15017.56	90.36	359.53	10318.96	5360.90	927.86	5353.11	0.00	478580.59	779264.92	
15117.56	90.36	359.53	10318.34	5460.90	927.04	5453.11	0.00	478680.59	779264.10	
15217.56	90.36	359.53	10317.71	5560.89	926.22	5553.11	0.00	478780.58	779263.28	
15317.56	90.36	359.53	10317.08	5660.89	925.40	5653.11	0.00	478880.58	779262.46	
15417.56	90.36	359.53	10316.45	5760.88	924.58	5753.10	0.00	478980.57	779261.64	
15517.56	90.36	359.53	10315.83	5860.88	923.75	5853.10	0.00	479080.57	779260.81	
15617.56	90.36	359.53	10315.20	5960.87	922.93	5953.10	0.00	479180.56	779259.99	
15717.56	90.36	359.53	10314.57	6060.87	922.11	6053.10	0.00	479280.56	779259.17	
15817.56	90.36	359.53	10313.95	6160.86	921.29	6153.10	0.00	479380.55	779258.35	
15917.56	90.36	359.53	10313.32	6260.86	920.47	6253.10	0.00	479480.55	779257.53	
16017.56	90.36	359.53	10312.69	6360.85	919.65	6353.09	0.00	479580.54	779256.71	
16117.56	90.36	359.53	10312.07	6460.85	918.83	6453.09	0.00	479680.54	779255.89	
16217.56	90.36	359.53	10311.44	6560.84	918.01	6553.09	0.00	479780.53	779255.07	
16317.56	90.36	359.53	10310.81	6660.84	917.19	6653.09	0.00	479880.53	779254.25	
16417.56	90.36	359.53	10310.18	6760.83	916.37	6753.09	0.00	479980.52	779253.43	
16517.56	90.36	359.53	10309.56	6860.82	915.55	6853.08	0.00	480080.51	779252.61	
16617.56	90.36	359.53	10308.93	6960.82	914.72	6953.08	0.00	480180.51	779251.78	
16717.56	90.36	359.53	10308.30	7060.81	913.90	7053.08	0.00	480280.50	779250.96	
16817.56	90.36	359.53	10307.68	7160.81	913.08	7153.08	0.00	480380.50	779250.14	
16917.56	90.36	359.53	10307.05	7260.80	912.26	7253.08	0.00	480480.49	779249.32	
17017.56	90.36	359.53	10306.42	7360.80	911.44	7353.07	0.00	480580.49	779248.50	
17117.56	90.36	359.53	10305.80	7460.79	910.62	7453.07	0.00	480680.48	779247.68	
17217.56	90.36	359.53	10305.17	7560.79	909.80	7553.07	0.00	480780.48	779246.86	
17317.56	90.36	359.53	10304.54	7660.78	908.98	7653.07	0.00	480880.47	779246.04	
17417.56	90.36	359.53	10303.91	7760.78	908.16	7753.07	0.00	480980.47	779245.22	
17517.56	90.36	359.53	10303.29	7860.77	907.34	7853.06	0.00	481080.46	779244.40	
17617.56	90.36	359.53	10302.66	7960.77	906.52	7953.06	0.00	481180.46	779243.58	
17717.56	90.36	359.53	10302.03	8060.76	905.69	8053.06	0.00	481280.45	779242.75	
17817.56	90.36	359.53	10301.41	8160.76	904.87	8153.06	0.00	481380.45	779241.93	
17917.56	90.36	359.53	10300.78	8260.75	904.05	8253.06	0.00	481480.44	779241.11	
18017.56	90.36	359.53	10300.15	8360.74	903.23	8353.05	0.00	481580.43	779240.29	
18117.56	90.36	359.53	10299.53	8460.74	902.41	8453.05	0.00	481680.43	779239.47	
18217.56	90.36	359.53	10298.90	8560.73	901.59	8553.05	0.00	481780.42	779238.65	
18317.56	90.36	359.53	10298.27	8660.73	900.77	8653.05	0.00	481880.42	779237.83	
18417.56	90.36	359.53	10297.64	8760.72	899.95	8753.05	0.00	481980.41	779237.01	
18517.56	90.36	359.53	10297.02	8860.72	899.13	8853.04	0.00	482080.41	779236.19	
18617.56	90.36	359.53	10296.39	8960.71	898.31	8953.04	0.00	482180.40	779235.37	
18717.56	90.36	359.53	10295.76	9060.71	897.49	9053.04	0.00	482280.40	779234.55	
18817.56	90.36	359.53	10295.14	9160.70	896.67	9153.04	0.00	482380.39	779233.73	
18917.56	90.36	359.53	10294.51	9260.70	895.84	9253.04	0.00	482480.39	779232.90	
19017.56	90.36	359.53	10293.88	9360.69	895.02	9353.03	0.00	482580.38	779232.08	
19117.56	90.36	359.53	10293.26	9460.69	894.20	9453.03	0.00	482680.38	779231.26	
19217.56	90.36	359.53	10292.63	9560.68	893.38	9553.03	0.00	482780.37	779230.44	
19317.56	90.36	359.53	10292.00	9660.67	892.56	9653.03	0.00	482880.36	779229.62	
19417.56	90.36	359.53	10291.37	9760.67	891.74	9753.03	0.00	482980.36	779228.80	
19477.22	90.36	359.53	10291.00	9820.33	891.25	9812.69	0.00	483040.02	779228.31	PBHL 1H Lat

5D Anti-Collision Report

Devon Energy

Field Name: *Lea Co, NM Nad 83 NMEZ*

Site Name: *North Thistle 15-10 State Com 1H,2H Pad*

Well Name: *North Thistle 15-10 State Com 1H Lat*

14 May 2015





Weatherford

North Thistle 15-10 State Com 1H Lat

Field Name Lea Co - NM Nad 83 NMEZ	Map Units : US ft		Company Name : Devon Energy	
	Vertical Reference Datum (VRD) : Mean Sea Level			
Projected Coordinate System : NAD83 / New Mexico East (ftUS)				
Comment :				
Site Name North Thistle 15-10 State Com 1H-2H Pad	Units : US ft	North Reference : Grid	Convergence Angle : 0.41	
	Position	Northing : 473219.69 US ft	Latitude : 32° 17' 55.05"	
		Easting : 778337.06 US ft	Longitude : -103° 33' 58.69"	
	Elevation above Mean Sea Level : 3710.00 US ft			
Comment :				
Slot Name North Thistle 15-10 State Com 1H	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing : 473219.69 US ft	Latitude : 32° 17' 55.05"	
	+E / -W : 0.00 US ft	Easting : 778337.06 US ft	Longitude : -103° 33' 58.69"	
	Slot TVD Reference : Ground Elevation			
Elevation above Mean Sea Level : 3710.00 US ft				
Comment :				
Well Name North Thistle 15-10 State Com 1H Lat	Type : Sidetrack	UWI :	Plan : Working Plan	
	Parent : North Thistle 15-10 State Com 1H Pilot	Tie Point Method : TVD	Tie Point : 9824.93 US ft	
	Rig Height : <i>Kelly Bushing</i> : 25.00 US ft	Comment :		
	Relative to Mean Sea Level : 3735.00 US ft			
	Closure Distance : 9860.69 US ft	Closure Azimuth : 5.18571°		
	Vertical Section (Position of Origin Relative to Slot)			
	+N / -S : 0.00 US ft	+E / -W : 0.00 US ft	Az : 359.53°	
	Magnetic Parameters			
Model : BGGM	Field Strength : 48220.7nT	Dec : 7.27°	Dip : 60.15°	Date : 15/Jul/2015

Collision / Uncertainty Analysis				
Primary Well	Start MD (US ft)	End MD (US ft)	Collision Risk Interval	No. of Std Deviations in Error Computation
North Thistle 15-10 State Com 1H Lat (p)	0.00	19477.22	100.00	2

Secondary Well Names
North Thistle 15-10 State Com 2H (p)

Anti-Collision Report terminology	
S.Minor, S.Major	: Radii of the ellipse of uncertainty at the current location as seen in the along hole direction.
PHI	: Angle between high-side vector and semi-minor axis
TVD Spread	: Total TVD range of the ellipsoid of uncertainty at the current location
ES	: Distance between the extremities of the primary and secondary uncertainty ellipsoids in the direction Cr-Cr
T.Face to Sec	: Angle between the Hi-Side vector of the primary well at the current location and line of closest approach between the two wells

5D Anti-Collision Report

Separation factors calculated using Pedal Curve (Independent Uncertainty). Well path created using minimum curvature.

Anti-Collision Proximity Summary (TVD relative to Kelly Bushing)

Secondary Well Name	Pri MD (US ft)	Sec MD (US ft)	TVD (US ft)	CC (US ft)	ES (US ft)	SF	Risk
North Thistle 15-10 State Com 2H (p)	19477.22	19037.24	10291.00	356.00	215.51	2.53	

Primary Well: North Thistle 15-10 State Com 1H Lat (p) (TVD Relative to Kelly Bushing, All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T Face to Sec (")	S Major (US ft)	S Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
9917.56	9824.93	52.51	29.27	22.59	North Thistle 15-10 State Com 2H (p)	257.16	211.86	5.68	
10017.56	9924.32	44.13	29.08	22.96	North Thistle 15-10 State Com 2H (p)	302.77	258.15	6.79	
10117.56	10020.05	37.97	28.60	23.14	North Thistle 15-10 State Com 2H (p)	345.23	301.57	7.91	
10217.56	10108.62	33.68	27.72	23.10	North Thistle 15-10 State Com 2H (p)	382.56	340.10	9.01	
10317.56	10186.76	30.71	27.10	22.44	North Thistle 15-10 State Com 2H (p)	413.55	372.23	10.01	
10417.56	10251.60	28.70	27.13	20.96	North Thistle 15-10 State Com 2H (p)	437.43	397.05	10.83	
10517.56	10300.77	27.45	27.68	19.08	North Thistle 15-10 State Com 2H (p)	453.72	413.75	11.35	
10617.56	10332.45	26.82	28.51	17.44	North Thistle 15-10 State Com 2H (p)	462.10	421.92	11.50	
10717.56	10345.48	26.76	29.58	16.25	North Thistle 15-10 State Com 2H (p)	462.43	421.24	11.23	
10817.56	10345.30	26.72	30.84	16.31	North Thistle 15-10 State Com 2H (p)	459.35	416.78	10.79	
10917.56	10344.67	26.48	32.03	16.52	North Thistle 15-10 State Com 2H (p)	457.72	414.10	10.49	
11017.56	10344.04	26.25	33.20	16.76	North Thistle 15-10 State Com 2H (p)	456.10	411.33	10.19	
11117.56	10343.42	26.02	34.55	17.04	North Thistle 15-10 State Com 2H (p)	454.49	408.56	9.90	
11217.56	10342.79	25.78	35.95	17.38	North Thistle 15-10 State Com 2H (p)	452.88	405.79	9.62	
11317.56	10342.16	25.54	37.34	17.73	North Thistle 15-10 State Com 2H (p)	451.28	402.98	9.34	
11417.56	10341.54	25.30	38.73	18.11	North Thistle 15-10 State Com 2H (p)	449.69	400.11	9.07	
11517.56	10340.91	25.06	40.13	18.50	North Thistle 15-10 State Com 2H (p)	448.11	397.23	8.81	
11617.56	10340.28	24.82	41.57	18.86	North Thistle 15-10 State Com 2H (p)	446.54	394.32	8.55	
11717.56	10339.65	24.57	43.13	19.27	North Thistle 15-10 State Com 2H (p)	444.97	391.40	8.31	
11817.56	10339.03	24.33	44.71	19.68	North Thistle 15-10 State Com 2H (p)	443.41	388.48	8.07	
11917.56	10338.40	24.08	46.29	20.17	North Thistle 15-10 State Com 2H (p)	441.86	385.57	7.85	
12017.56	10337.77	23.83	47.87	20.68	North Thistle 15-10 State Com 2H (p)	440.32	382.67	7.64	

5D Anti-Collision Report

Primary Well: North Thistle 15-10 State Com 1H Lat (p) (TVD Relative to Kelly Bushing, All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T.Face to Sec (°)	S.Major (US ft)	S.Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
12117.56	10337.15	23.58	49.46	21.18	North Thistle 15-10 State Com 2H (p)	438.79	379.78	7.44	
12217.56	10336.52	23.32	51.06	21.68	North Thistle 15-10 State Com 2H (p)	437.26	376.92	7.25	
12317.56	10335.89	23.07	52.66	22.16	North Thistle 15-10 State Com 2H (p)	435.75	374.08	7.07	
12417.56	10335.27	22.81	54.27	22.74	North Thistle 15-10 State Com 2H (p)	434.24	371.29	6.90	
12517.56	10334.64	22.55	55.89	23.32	North Thistle 15-10 State Com 2H (p)	432.74	368.50	6.74	
12617.56	10334.01	22.29	57.51	23.86	North Thistle 15-10 State Com 2H (p)	431.25	365.70	6.58	
12717.56	10333.38	22.03	59.13	24.41	North Thistle 15-10 State Com 2H (p)	429.77	362.74	6.41	
12817.56	10332.76	21.76	60.76	25.06	North Thistle 15-10 State Com 2H (p)	428.30	359.79	6.25	
12917.56	10332.13	21.50	62.40	25.64	North Thistle 15-10 State Com 2H (p)	426.84	356.92	6.10	
13017.56	10331.50	21.23	64.10	26.05	North Thistle 15-10 State Com 2H (p)	425.39	354.12	5.97	
13117.56	10330.88	20.96	65.83	26.70	North Thistle 15-10 State Com 2H (p)	423.94	351.40	5.84	
13217.56	10330.25	20.69	67.56	27.29	North Thistle 15-10 State Com 2H (p)	422.51	348.76	5.73	
13317.56	10329.62	20.42	69.30	27.83	North Thistle 15-10 State Com 2H (p)	421.08	346.07	5.61	
13417.56	10329.00	20.14	71.04	28.48	North Thistle 15-10 State Com 2H (p)	419.67	343.41	5.50	
13517.56	10328.37	19.86	72.78	29.13	North Thistle 15-10 State Com 2H (p)	418.26	340.71	5.39	
13617.56	10327.74	19.58	74.53	29.76	North Thistle 15-10 State Com 2H (p)	416.87	338.05	5.29	
13717.56	10327.11	19.30	76.28	30.37	North Thistle 15-10 State Com 2H (p)	415.48	335.39	5.19	
13817.56	10326.49	19.02	78.03	30.96	North Thistle 15-10 State Com 2H (p)	414.11	332.76	5.09	
13917.56	10325.86	18.74	79.79	31.54	North Thistle 15-10 State Com 2H (p)	412.74	330.16	5.00	
14017.56	10325.23	18.45	81.55	32.23	North Thistle 15-10 State Com 2H (p)	411.39	327.56	4.91	
14117.56	10324.61	18.16	83.31	32.91	North Thistle 15-10 State Com 2H (p)	410.04	325.00	4.82	
14217.56	10323.98	17.87	85.07	33.58	North Thistle 15-10 State Com 2H (p)	408.71	322.47	4.74	
14317.56	10323.35	17.58	86.84	34.25	North Thistle 15-10 State Com 2H (p)	407.39	319.98	4.66	
14417.56	10322.73	17.28	88.61	34.91	North Thistle 15-10 State Com 2H (p)	406.07	317.51	4.59	
14517.56	10322.10	16.99	90.38	35.57	North Thistle 15-10 State Com 2H (p)	404.77	315.09	4.51	
14617.56	10321.47	16.69	92.15	36.23	North Thistle 15-10 State Com 2H (p)	403.48	312.64	4.44	

5D Anti-Collision Report

Primary Well ID (US ft)	North Thistle 15-10 State Com 2H TVD (US ft)	State Com 2H T.Face to Sec (°)	Lat (p) S.Major (US ft)	Long (p) S.Minor (US ft)	Nearest Well North Thistle 15-10 State Com 2H (p)	CC (US ft)	ES (US ft)	SF	Risk
14717.56	10320.84	16.39	93.92	36.88	North Thistle 15-10 State Com 2H (p)	402.20	310.24	4.37	
14817.56	10320.22	16.09	95.70	37.54	North Thistle 15-10 State Com 2H (p)	400.93	307.87	4.31	
14917.56	10319.59	15.79	97.48	38.20	North Thistle 15-10 State Com 2H (p)	399.67	305.53	4.25	
15017.56	10318.96	15.48	99.26	38.85	North Thistle 15-10 State Com 2H (p)	398.42	303.24	4.19	
15117.56	10318.34	15.17	101.04	39.51	North Thistle 15-10 State Com 2H (p)	397.19	300.95	4.13	
15217.56	10317.71	14.86	102.82	40.17	North Thistle 15-10 State Com 2H (p)	395.97	298.69	4.07	
15317.56	10317.08	14.55	104.61	40.84	North Thistle 15-10 State Com 2H (p)	394.75	296.47	4.02	
15417.56	10316.45	14.24	106.39	41.50	North Thistle 15-10 State Com 2H (p)	393.55	294.28	3.96	
15517.56	10315.83	13.92	108.18	42.16	North Thistle 15-10 State Com 2H (p)	392.36	292.14	3.91	
15617.56	10315.20	13.61	109.97	42.83	North Thistle 15-10 State Com 2H (p)	391.19	289.97	3.86	
15717.56	10314.57	13.29	111.76	43.50	North Thistle 15-10 State Com 2H (p)	390.02	287.76	3.81	
15817.56	10313.95	12.97	113.55	44.20	North Thistle 15-10 State Com 2H (p)	388.87	285.53	3.76	
15917.56	10313.32	12.65	115.34	44.90	North Thistle 15-10 State Com 2H (p)	387.73	283.34	3.71	
16017.56	10312.69	12.32	117.13	45.60	North Thistle 15-10 State Com 2H (p)	386.60	281.18	3.67	
16117.56	10312.07	11.99	118.93	46.30	North Thistle 15-10 State Com 2H (p)	385.49	279.05	3.62	
16217.56	10311.44	11.67	120.72	47.00	North Thistle 15-10 State Com 2H (p)	384.38	276.96	3.58	
16317.56	10310.81	11.34	122.52	47.70	North Thistle 15-10 State Com 2H (p)	383.29	274.91	3.54	
16417.56	10310.18	11.00	124.32	48.40	North Thistle 15-10 State Com 2H (p)	382.22	272.89	3.50	
16517.56	10309.56	10.67	126.11	49.10	North Thistle 15-10 State Com 2H (p)	381.15	270.90	3.46	
16617.56	10308.93	10.33	127.91	49.80	North Thistle 15-10 State Com 2H (p)	380.10	268.95	3.42	
16717.56	10308.30	10.00	129.71	50.51	North Thistle 15-10 State Com 2H (p)	379.06	267.04	3.38	
16817.56	10307.68	9.66	131.51	51.21	North Thistle 15-10 State Com 2H (p)	378.04	265.17	3.35	
16917.56	10307.05	9.32	133.31	51.91	North Thistle 15-10 State Com 2H (p)	377.03	263.33	3.32	
17017.56	10306.42	8.97	135.12	52.62	North Thistle 15-10 State Com 2H (p)	376.03	261.52	3.28	
17117.56	10305.80	8.63	136.92	53.32	North Thistle 15-10 State Com 2H (p)	375.04	259.58	3.25	
17217.56	10305.17	8.28	138.72	54.03	North Thistle 15-10 State Com 2H (p)	374.07	257.58	3.21	

5D Anti-Collision Report

Primary Well: North Thistle 15-10 State Com 1H Lat (p) (TVD Relative to Kelly Bushing: All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
17317.56	10304.54	7.93	140.53	54.74	North Thistle 15-10 State Com 2H (p)	373.12	255.61	3.18	
17417.56	10303.91	7.58	142.33	55.44	North Thistle 15-10 State Com 2H (p)	372.17	253.67	3.14	
17517.56	10303.29	7.23	144.14	56.15	North Thistle 15-10 State Com 2H (p)	371.24	251.76	3.11	
17617.56	10302.66	6.88	145.94	56.86	North Thistle 15-10 State Com 2H (p)	370.33	249.89	3.07	
17717.56	10302.03	6.52	147.75	57.57	North Thistle 15-10 State Com 2H (p)	369.43	248.05	3.04	
17817.56	10301.41	6.16	149.56	58.28	North Thistle 15-10 State Com 2H (p)	368.54	246.24	3.01	
17917.56	10300.78	5.81	151.36	58.99	North Thistle 15-10 State Com 2H (p)	367.67	244.47	2.98	
18017.56	10300.15	5.44	153.17	59.70	North Thistle 15-10 State Com 2H (p)	366.81	242.73	2.96	
18117.56	10299.53	5.08	154.98	60.41	North Thistle 15-10 State Com 2H (p)	365.97	241.03	2.93	
18217.56	10298.90	4.72	156.79	61.12	North Thistle 15-10 State Com 2H (p)	365.14	239.32	2.90	
18317.56	10298.27	4.35	158.60	61.83	North Thistle 15-10 State Com 2H (p)	364.32	237.39	2.87	
18417.56	10297.64	3.99	160.41	62.54	North Thistle 15-10 State Com 2H (p)	363.53	235.43	2.84	
18517.56	10297.02	3.62	162.22	63.26	North Thistle 15-10 State Com 2H (p)	362.74	233.50	2.81	
18617.56	10296.39	3.25	164.03	63.97	North Thistle 15-10 State Com 2H (p)	361.97	231.60	2.78	
18717.56	10295.76	2.87	165.84	64.68	North Thistle 15-10 State Com 2H (p)	361.22	229.72	2.75	
18817.56	10295.14	2.50	167.65	65.40	North Thistle 15-10 State Com 2H (p)	360.48	227.87	2.72	
18917.56	10294.51	2.13	169.46	66.11	North Thistle 15-10 State Com 2H (p)	359.76	226.06	2.69	
19017.56	10293.88	1.75	171.28	66.82	North Thistle 15-10 State Com 2H (p)	359.05	224.27	2.66	
19117.56	10293.26	1.37	173.09	67.54	North Thistle 15-10 State Com 2H (p)	358.36	222.51	2.64	
19217.56	10292.63	0.99	174.90	68.25	North Thistle 15-10 State Com 2H (p)	357.68	220.78	2.61	
19317.56	10292.00	0.61	176.71	68.97	North Thistle 15-10 State Com 2H (p)	357.02	218.85	2.58	
19417.56	10291.37	0.23	178.53	69.69	North Thistle 15-10 State Com 2H (p)	356.38	216.75	2.55	
19477.22	10291.00	0.00	179.61	70.11	North Thistle 15-10 State Com 2H (p)	356.00	215.51	2.53	
Secondary Well: North Thistle 15-10 State Com 2H (p) (TVD Relative to Kelly Bushing (Primary): All Azimuth Relative to GRID NORTH)									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
9917.56	9706.21	9832.38	52.51	29.71	22.73	257.16	211.86	5.68	
10017.56	9755.02	9894.39	44.13	29.18	22.38	302.77	258.15	6.79	
10117.56	9798.18	9955.04	37.97	28.80	21.78	345.23	301.57	7.91	

5D Anti-Collision Report

Secondary Well: North Thistle 15-10 State Com 2H (p) (TVD Relative to Kelly Bushing (Primary)) All Azimuth Relative to GRID (NORTH)									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T. Face to Sec (°)	S. Major (US ft)	S. Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
10217.56	9835.67	10014.74	33.68	28.62	20.90	382.56	340.10	9.01	
10317.56	9867.38	10073.79	30.71	28.58	19.85	413.55	372.23	10.01	
10417.56	9893.18	10132.38	28.70	28.67	18.70	437.43	397.05	10.83	
10517.56	9912.92	10190.68	27.45	28.94	17.52	453.72	413.75	11.35	
10617.56	9926.46	10248.80	26.82	29.37	16.49	462.10	421.92	11.50	
10717.56	9933.70	10306.85	26.76	29.86	15.66	462.43	421.24	11.23	
10817.56	9935.00	10380.21	26.72	30.58	15.33	459.35	416.78	10.79	
10917.56	9935.00	10480.18	26.48	31.81	15.56	457.72	414.10	10.49	
11017.56	9935.00	10580.15	26.25	33.07	15.85	456.10	411.33	10.19	
11117.56	9935.00	10680.12	26.02	34.31	16.16	454.49	408.56	9.90	
11217.56	9935.00	10780.09	25.78	35.57	16.47	452.88	405.79	9.62	
11317.56	9935.00	10880.06	25.54	37.03	16.82	451.28	402.98	9.34	
11417.56	9935.00	10980.03	25.30	38.48	17.20	449.69	400.11	9.07	
11517.56	9935.00	11080.00	25.06	39.92	17.58	448.11	397.23	8.81	
11617.56	9935.00	11179.97	24.82	41.37	17.99	446.54	394.32	8.55	
11717.56	9935.00	11279.94	24.57	42.82	18.44	444.97	391.40	8.31	
11817.56	9935.00	11379.91	24.33	44.28	18.94	443.41	388.48	8.07	
11917.56	9935.00	11479.88	24.08	45.88	19.38	441.86	385.57	7.85	
12017.56	9935.00	11579.85	23.83	47.50	19.88	440.32	382.67	7.64	
12117.56	9935.00	11679.82	23.58	49.11	20.38	438.79	379.78	7.44	
12217.56	9935.00	11779.79	23.32	50.73	20.88	437.26	376.92	7.25	
12317.56	9935.00	11879.76	23.07	52.36	21.38	435.75	374.08	7.07	
12417.56	9935.00	11979.73	22.81	53.99	21.98	434.24	371.29	6.90	
12517.56	9935.00	12079.70	22.55	55.62	22.57	432.74	368.50	6.74	
12617.56	9935.00	12179.67	22.29	57.26	23.15	431.25	365.70	6.58	
12717.56	9935.00	12279.63	22.03	58.90	23.69	429.77	362.74	6.41	
12817.56	9935.00	12379.60	21.76	60.54	24.30	428.30	359.79	6.25	
12917.56	9935.00	12479.57	21.50	62.19	24.95	426.84	356.92	6.10	
13017.56	9935.00	12579.54	21.23	63.84	25.56	425.39	354.12	5.97	
13117.56	9935.00	12679.51	20.96	65.50	26.12	423.94	351.40	5.84	
13217.56	9935.00	12779.48	20.69	67.16	26.79	422.51	348.76	5.73	
13317.56	9935.00	12879.45	20.42	68.89	27.30	421.08	346.07	5.61	
13417.56	9935.00	12979.42	20.14	70.64	27.90	419.67	343.41	5.50	
13517.56	9935.00	13079.39	19.86	72.40	28.47	418.26	340.71	5.39	
13617.56	9935.00	13179.36	19.58	74.16	29.13	416.87	338.05	5.29	
13717.56	9935.00	13279.33	19.30	75.92	29.81	415.48	335.39	5.19	
13817.56	9935.00	13379.30	19.02	77.68	30.47	414.11	332.76	5.09	
13917.56	9935.00	13479.27	18.74	79.45	31.11	412.74	330.16	5.00	
14017.56	9935.00	13579.24	18.45	81.21	31.73	411.39	327.56	4.91	
14117.56	9935.00	13679.21	18.16	82.98	32.34	410.04	325.00	4.82	
14217.56	9935.00	13779.18	17.87	84.76	32.96	408.71	322.47	4.74	
14317.56	9935.00	13879.15	17.58	86.53	33.66	407.39	319.98	4.66	
14417.56	9935.00	13979.12	17.28	88.31	34.36	406.07	317.51	4.59	
14517.56	9935.00	14079.09	16.99	90.09	35.05	404.77	315.09	4.51	
14617.56	9935.00	14179.06	16.69	91.87	35.73	403.48	312.64	4.44	
14717.56	9935.00	14279.03	16.39	93.65	36.41	402.20	310.24	4.37	
14817.56	9935.00	14379.00	16.09	95.44	37.08	400.93	307.87	4.31	
14917.56	9935.00	14478.97	15.79	97.22	37.76	399.67	305.53	4.25	
15017.56	9935.00	14578.94	15.48	99.01	38.43	398.42	303.24	4.19	
15117.56	9935.00	14678.90	15.17	100.80	39.11	397.19	300.95	4.13	
15217.56	9935.00	14778.87	14.86	102.59	39.78	395.97	298.69	4.07	
15317.56	9935.00	14878.84	14.55	104.38	40.45	394.75	296.47	4.02	
15417.56	9935.00	14978.81	14.24	106.18	41.12	393.55	294.28	3.96	
15517.56	9935.00	15078.78	13.92	107.97	41.80	392.36	292.14	3.91	
15617.56	9935.00	15178.75	13.61	109.77	42.47	391.19	289.97	3.86	
15717.56	9935.00	15278.72	13.29	111.57	43.15	390.02	287.76	3.81	
15817.56	9935.00	15378.69	12.97	113.36	43.82	388.87	285.53	3.76	
15917.56	9935.00	15478.66	12.65	115.16	44.50	387.73	283.34	3.71	

5D Anti-Collision Report

Secondary Well: North Thistle 15-10 State com 2H (P) (TVD Relative to Kelly Bushing (Primary)); All Azimuth Relative to GRID NORTH									
Pr MD (US ft)	TVD (US ft)	Sec MD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
16017.56	9935.00	15578.63	12.32	116.97	45.17	386.60	281.18	3.67	
16117.56	9935.00	15678.60	11.99	118.77	45.85	385.49	279.05	3.62	
16217.56	9935.00	15778.57	11.67	120.57	46.54	384.38	276.96	3.58	
16317.56	9935.00	15878.54	11.34	122.37	47.25	383.29	274.91	3.54	
16417.56	9935.00	15978.51	11.00	124.18	47.96	382.22	272.89	3.50	
16517.56	9935.00	16078.48	10.67	125.98	48.67	381.15	270.90	3.46	
16617.56	9935.00	16178.45	10.33	127.79	49.38	380.10	268.95	3.42	
16717.56	9935.00	16278.42	10.00	129.60	50.09	379.06	267.04	3.38	
16817.56	9935.00	16378.39	9.66	131.41	50.80	378.04	265.17	3.35	
16917.56	9935.00	16478.36	9.32	133.21	51.51	377.03	263.33	3.32	
17017.56	9935.00	16578.33	8.97	135.02	52.22	376.03	261.52	3.28	
17117.56	9935.00	16678.30	8.63	136.83	52.93	375.04	259.58	3.25	
17217.56	9935.00	16778.27	8.28	138.64	53.64	374.07	257.58	3.21	
17317.56	9935.00	16878.24	7.93	140.46	54.35	373.12	255.61	3.18	
17417.56	9935.00	16978.21	7.58	142.27	55.06	372.17	253.67	3.14	
17517.56	9935.00	17078.18	7.23	144.08	55.78	371.24	251.76	3.11	
17617.56	9935.00	17178.14	6.88	145.89	56.49	370.33	249.89	3.07	
17717.56	9935.00	17278.11	6.52	147.71	57.20	369.43	248.05	3.04	
17817.56	9935.00	17378.08	6.16	149.52	57.92	368.54	246.24	3.01	
17917.56	9935.00	17478.05	5.81	151.34	58.63	367.67	244.47	2.98	
18017.56	9935.00	17578.02	5.44	153.15	59.34	366.81	242.73	2.96	
18117.56	9935.00	17677.99	5.08	154.97	60.06	365.97	241.03	2.93	
18217.56	9935.00	17777.96	4.72	156.78	60.77	365.14	239.32	2.90	
18317.56	9935.00	17877.93	4.35	158.60	61.49	364.32	237.39	2.87	
18417.56	9935.00	17977.90	3.99	160.42	62.20	363.53	235.43	2.84	
18517.56	9935.00	18077.87	3.62	162.24	62.92	362.74	233.50	2.81	
18617.56	9935.00	18177.84	3.25	164.05	63.64	361.97	231.60	2.78	
18717.56	9935.00	18277.81	2.87	165.87	64.35	361.22	229.72	2.75	
18817.56	9935.00	18377.78	2.50	167.69	65.07	360.48	227.87	2.72	
18917.56	9935.00	18477.75	2.13	169.51	65.79	359.76	226.06	2.69	
19017.56	9935.00	18577.72	1.75	171.33	66.50	359.05	224.27	2.66	
19117.56	9935.00	18677.69	1.37	173.15	67.22	358.36	222.51	2.64	
19217.56	9935.00	18777.66	0.99	174.97	67.94	357.68	220.78	2.61	
19317.56	9935.00	18877.63	0.61	176.79	68.66	357.02	218.85	2.58	
19417.56	9935.00	18977.60	0.23	178.61	69.37	356.38	216.75	2.55	
19477.22	9935.00	19037.24	0.00	179.70	69.80	356.00	215.51	2.53	



Weatherford

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date: May 14, 2015
Job Number: _____
Customer: Devon Energy
Well Name: North Thistle 15-10 State Com 1H
API Number: _____
Rig Name: _____
Location: Lea Co, NM Nad83 NME
Block: _____
Engineer: RWJ

NAD83 / New Mexico East (ftUS)	NAD83 (1986)
Projected Coordinate System	Geodetic Coordinate System
Datum: North American Datum 1983 (1986)	Datum: North American Datum 1983 (1986)
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
EPSG: 2257	EPSG: 4269
North: 473219.69 US Survey Foot	Latitude: 32.298624 Degree
East: 778337.06 US Survey Foot	Longitude: -103.566303 Degree
Convergence: 0.41°	
Declination: 7.27°	
Total Correction: 6.86°	
Datum Transformation: none	

Geodetic Location WGS84

MSL Elevation = 0 m
Latitude = 32° 17' 55.05" N
Longitude = 103° 33' 58.69" W

Magnetic Declination = 7.27 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6592
Local Field Strength = 48221 nT	Magnetic Vector X = 23810 nT
Magnetic Dip = 60.15 deg	Magnetic Vector Y = 3038 nT
Magnetic Model = bggm2014.dat	Magnetic Vector Z = 41822 nT
Run Date = July 15, 2015	Magnetic Vector H = 24003 nT

Signed: _____ Date: _____

© 2013 Weatherford

Warning: This information is controlled, and any printed version is deemed as uncontrolled unless suitably endorsed by a controlling authority or accompanied by a controlled table of contents in order to ensure adequate revision control.