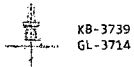


MAR 13 2015

RECEIVED



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



KB-3739
GL-3714

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

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) (DLSU)
0.00 0.00 0.00 0.00 0.00 0.00 475459.48 779538.27 0.00 0.00
10500.00 0.00 0.00 10500.00 0.00 0.00 475459.48 779538.27 0.00 0.00

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

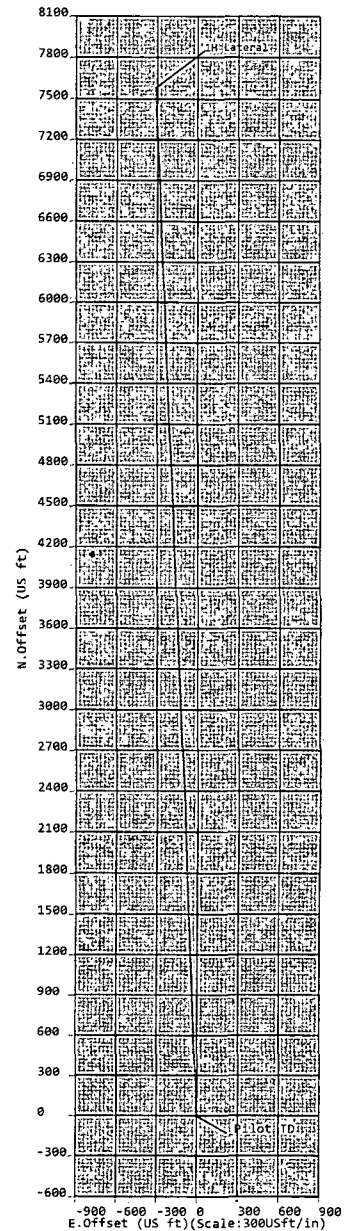
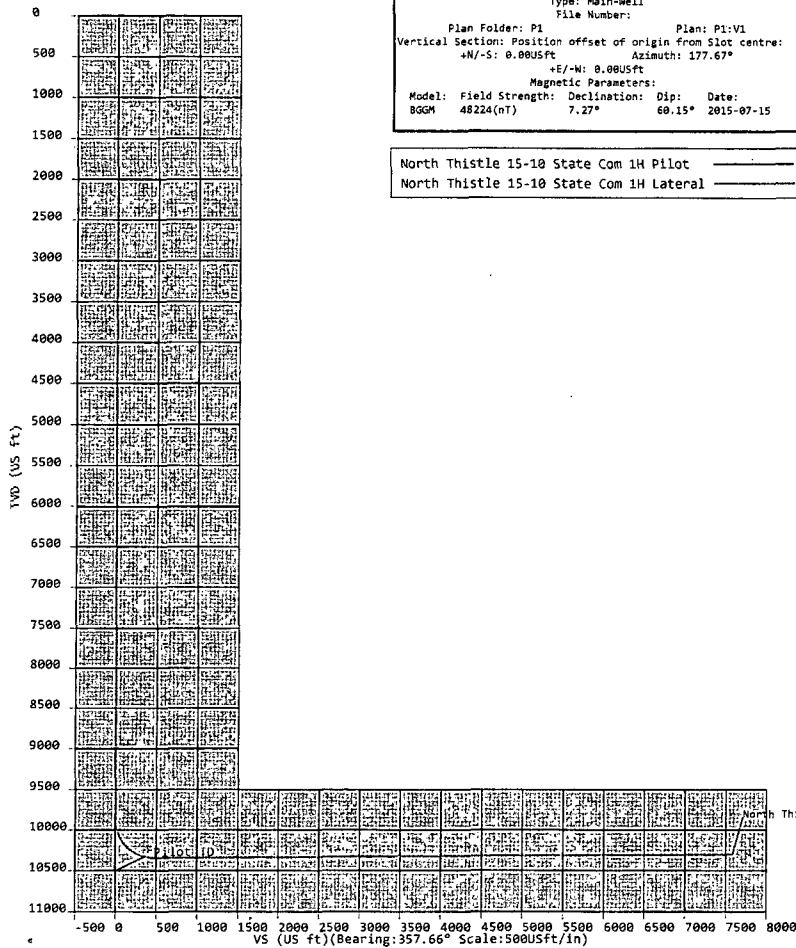
Slot: North Thistle 15-10 State Com 1H
Position:
Offset is from Site centre
+N/-S: 0.00USft Northing: 475459.48USft Latitude: 32°18'17.1"
+E/-W: 0.00USft Easting: 779538.27USft Longitude: -103°33'44.5"
Elevation Above VRD: 3714.00USft

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

Well: North Thistle 15-10 State Com 1H Pilot
Type: Main-Well
File Number:
Plan Folder: P1 Plan: P1/V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 177.67°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
BGM 48224(nT) 7.27° 60.15° 2015-07-15

North Thistle 15-10 State Com 1H Pilot

North Thistle 15-10 State Com 1H Lateral



Weatherford

Sign Off: Russell Joyner

MAR 16 2015

5D Plan Report

Devon Energy

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

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

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

Plan: *P1:V1*

06 March 2015



North Thistle 15-10 State Com 1H Pilot

Field Name Lea Co, NM Natl SS 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	Units : US ft	North Reference : Grid	Convergence Angle : 0.41	
	Position	Northing : 475459.48 US ft	Latitude : 32° 18' 17.12"	
		Easting : 779538.27 US ft	Longitude : -103° 33' 44.51"	
	Elevation above Mean Sea Level: 3714.00 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 : 475459.48 US ft	Latitude : 32° 18' 17.12"	
	+E / -W : 0.00 US ft	Easting : 779538.27 US ft	Longitude : -103° 33' 44.51"	
	Slot TVD Reference : Ground Elevation			
Elevation above Mean Sea Level : 3714.00 US ft				
Comment :				
Well Name North Thistle 15- 10 State Com 1H Pilot	Type : Main well		UWI :	Plan : P1:V1
	Rig Height Kelly Bushing : 25.00 US ft		Comment :	
	Relative to Mean Sea Level: 3739.00 US ft			
	Closure Distance : 0 US ft		Closure Azimuth : 0°	
	Vertical Section (Position of Origin Relative to Slot)			
	+N / -S : 0.00 US ft		+E / -W : 0.00 US ft	Az : 357.66°
	Magnetic Parameters			
	Model : BGGM	Field Strength : 48224.9nT	Dec : 7.27°	Dip : 60.15° Date : 15/Jul/2015

Target Set
Name : North Thistle 15-10 State Com 1H
Number of Targets : 1

Comment :

Target Name: PBHL Shape: Cuboid	Position (Relative to Slot centre)			
	+N / -S : 7580.54 US ft	Northing : 483040.02 US ft	Latitude : 32° 19' 32.16"	
	+E / -W : -309.96 US ft	Easting : 779228.31 US ft	Longitude : -103° 33' 47.48"	
	TV D (Kelly Bushing) : 10295.00 US ft			
Orientation Azimuth : 0.00°		Inclination : 0.00°		
Dimensions Length : 0.00 US ft	Breadth : 0.00 US ft	Height : 0.00 US ft		

Well path created using minimum curvature

5D Plan Report

Salient Points (Relative to Slot centre, TVD relative to Kelly Bushing)											
ID (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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10500.00	0.00	0.00	10500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Pilot TD

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)											
ID (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northings (US ft)	Eastings (US ft)		Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
1900.00	0.00	0.00	1900.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
2300.00	0.00	0.00	2300.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
2700.00	0.00	0.00	2700.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
2800.00	0.00	0.00	2800.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
3200.00	0.00	0.00	3200.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
3300.00	0.00	0.00	3300.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
3400.00	0.00	0.00	3400.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
3800.00	0.00	0.00	3800.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
3900.00	0.00	0.00	3900.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
4000.00	0.00	0.00	4000.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
4100.00	0.00	0.00	4100.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
4200.00	0.00	0.00	4200.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
4400.00	0.00	0.00	4400.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
4500.00	0.00	0.00	4500.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
4600.00	0.00	0.00	4600.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
4700.00	0.00	0.00	4700.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
4800.00	0.00	0.00	4800.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
4900.00	0.00	0.00	4900.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
5100.00	0.00	0.00	5100.00	0.00	0.00	0.00	0.00	475459.48	779538.27		
5200.00	0.00	0.00	5200.00	0.00	0.00	0.00	0.00	475459.48	779538.27		

SD Plan Report

Interpolated Points (Relative to Slot centre, TWD relative to Kelly Bushing)										
MD (US.ft)	Inc (°)	Az (°)	TWD (US.ft)	N.Offset (US.ft)	E.Offset (US.ft)	VS (US.ft)	DLS (7/100 US.ft)	Northing (US.ft)	Easting (US.ft)	Comment
5300.00	0.00	0.00	5300.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
5400.00	0.00	0.00	5400.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
5500.00	0.00	0.00	5500.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
5700.00	0.00	0.00	5700.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
5800.00	0.00	0.00	5800.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
5900.00	0.00	0.00	5900.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
6000.00	0.00	0.00	6000.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
6100.00	0.00	0.00	6100.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
6200.00	0.00	0.00	6200.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
6300.00	0.00	0.00	6300.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
6400.00	0.00	0.00	6400.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
6500.00	0.00	0.00	6500.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
6600.00	0.00	0.00	6600.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
6700.00	0.00	0.00	6700.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
6800.00	0.00	0.00	6800.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
6900.00	0.00	0.00	6900.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
7000.00	0.00	0.00	7000.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
7100.00	0.00	0.00	7100.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
7200.00	0.00	0.00	7200.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
7300.00	0.00	0.00	7300.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
7400.00	0.00	0.00	7400.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
7500.00	0.00	0.00	7500.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
7600.00	0.00	0.00	7600.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
7700.00	0.00	0.00	7700.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
7800.00	0.00	0.00	7800.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
7900.00	0.00	0.00	7900.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
8000.00	0.00	0.00	8000.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
8100.00	0.00	0.00	8100.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
8200.00	0.00	0.00	8200.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
8300.00	0.00	0.00	8300.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
8400.00	0.00	0.00	8400.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
8500.00	0.00	0.00	8500.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
8600.00	0.00	0.00	8600.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
8700.00	0.00	0.00	8700.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
8800.00	0.00	0.00	8800.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
8900.00	0.00	0.00	8900.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
9000.00	0.00	0.00	9000.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
9100.00	0.00	0.00	9100.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
9200.00	0.00	0.00	9200.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
9300.00	0.00	0.00	9300.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
9400.00	0.00	0.00	9400.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
9500.00	0.00	0.00	9500.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
9600.00	0.00	0.00	9600.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
9700.00	0.00	0.00	9700.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
9800.00	0.00	0.00	9800.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
9900.00	0.00	0.00	9900.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
10000.00	0.00	0.00	10000.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
10100.00	0.00	0.00	10100.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
10200.00	0.00	0.00	10200.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
10300.00	0.00	0.00	10300.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
10400.00	0.00	0.00	10400.00	0.00	0.00	0.00	0.00	475459.48	779538.27	
10500.00	0.00	0.00	10500.00	0.00	0.00	0.00	0.00	475459.48	779538.27	Pilot TD

**Weatherford**

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date: March 06, 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: 475459.48 US Survey Foot	Latitude: 32.304757 Degree
East: 779538.27 US Survey Foot	Longitude: -103.562363 Degree
Convergence: 0.41°	
Declination: 7.27°	
Total Correction: 6.86°	
Datum Transformation: none	

Geodetic Location WGS84

MSL Elevation = 0 m
Latitude = 32° 18' 17.12" N
Longitude = 103° 33' 44.51" W

Magnetic Declination = 7.27 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6612
Local Field Strength = 48225 nT	Magnetic Vector X = 23808 nT
Magnetic Dip = 60.15 deg	Magnetic Vector Y = 3037 nT
Magnetic Model = bggm2014.dat	Magnetic Vector Z = 41828 nT
Run Date = July 15, 2015	Magnetic Vector H = 24001 nT

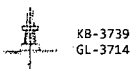
Signed: _____ Date: _____

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devon

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



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

Site: North Thistle 15-10 State Com 1H
Unit: USFeet TVD Reference:
Company Name: Devon Energy
Position: Northing: 475459.48USft Latitude: 32.304757°
Easting: 779538.27USft Longitude: -103.562363°
North Reference: Grid Grid Convergence: 0.41°
Elevation Above VRD: 0.00USft

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

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)
0.00	0.00	0.00	0.00	0.00	0.00	475459.48	779538.27	0.00	0.00
9862.54	0.00	0.00	9862.54	0.00	0.00	475459.48	779538.27	0.00	0.00
10615.56	90.36	357.66	10340.00	480.09	-19.63	475939.57	779518.64	480.49	12.00
17722.09	90.36	357.66	10295.00	7580.54	-309.96	483040.02	779228.31	7586.87	0.00

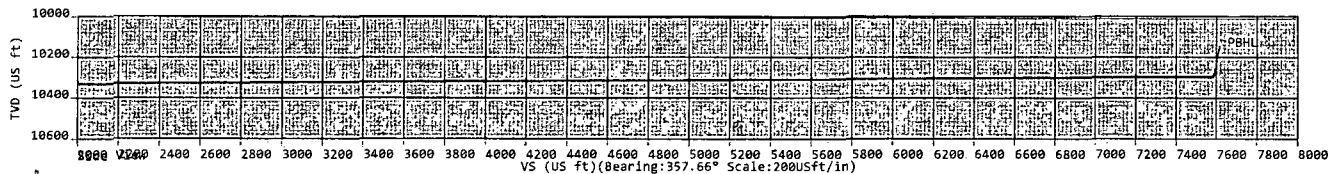
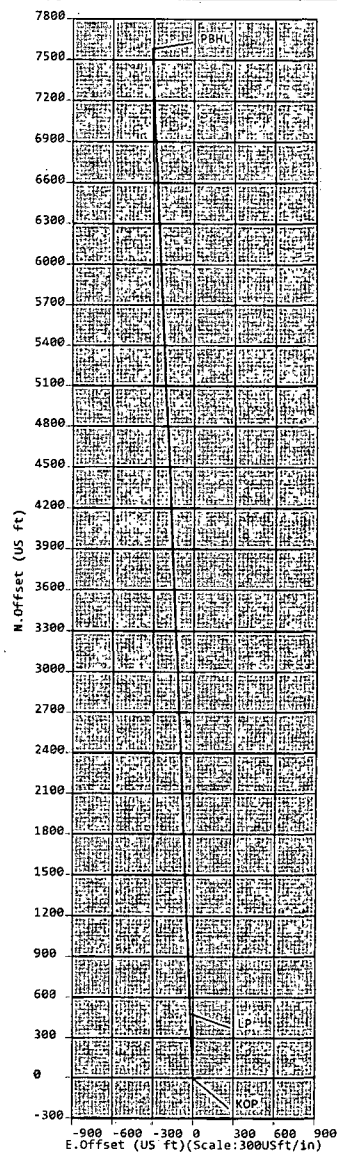
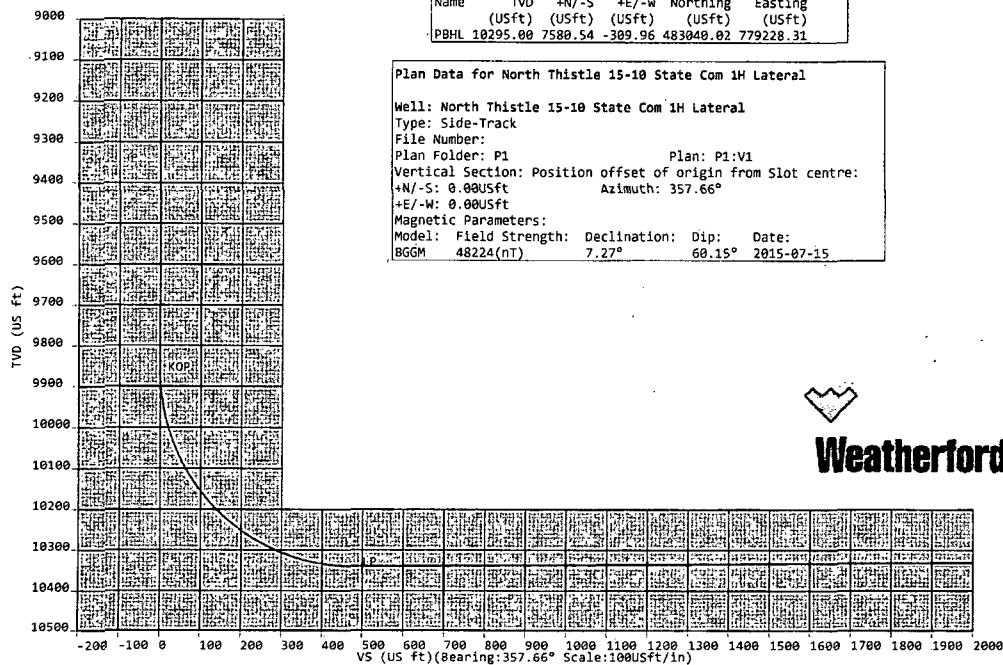
Plan Data for North Thistle 15-10 State Com 1H Lateral

Target Set Information:
Name: North Thistle 15-10 State Com 1H
Position offsets from Slot centre

Name	TVD	+N/-S	+E/-W	Northing	Easting
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)
PBHL	10295.00	7580.54	-309.96	483040.02	779228.31

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

Well: North Thistle 15-10 State Com 1H Lateral
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: 357.66°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
BGGM 48224(nT) 7.27° 60.15° 2015-07-15



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*
Well Name: *North Thistle 15-10 State Com 1H Lateral*
Plan: *P1:V1*

06 March 2015



North Thistle 15-10 State Com 1H Lateral

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	Units : US ft		North Reference : Grid		Convergence Angle : 0.41	
	Position		Northing : 475459.48 US ft		Latitude : 32° 18' 17.12"	
			Easting : 779538.27 US ft		Longitude : -103° 33' 44.51"	
	Elevation above Mean Sea Level: 3714.00 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 : 475459.48 US ft		Latitude : 32° 18' 17.12"	
	+E / -W : 0.00 US ft		Easting : 779538.27 US ft		Longitude : -103° 33' 44.51"	
	Slot TVD Reference : Ground Elevation					
	Elevation above Mean Sea Level : 3714.00 US ft					
Comment :						
Well Name North Thistle 15-10 State Com 1H Lateral	Type : Sidetrack		UWI :		Plan : P1:V1	
	Parent : North Thistle 15-10 State Com 1H Pilot		Tie Point Method : MD		Tie Point : 9862.54 US ft	
	Rig Height <i>Kelly Bushing</i> : 25.00 US ft		Comment :			
	Relative to Mean Sea Level: 3739.00 US ft					
	Closure Distance : 7586.87 US ft		Closure Azimuth : 357.659°			
	Vertical Section (Position of Origin Relative to Slot)					
	+N / -S : 0.00 US ft		+E / -W : 0.00 US ft		Az : 357.66°	
	Magnetic Parameters					
	Model : BGGM		Field Strength : 48224.9nT		Dec : 7.27°	
					Dip : 60.15°	
Date : 15/Jul/2015						

Target Set

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

Comment :

Target Name: PBHL Shape: Cuboid	Position (Relative to Slot centre)					
	+N / -S : 7580.54 US ft		Northing : 483040.02 US ft		Latitude : 32° 19' 32.16"	
	+E / -W : 309.96 US ft		Easting : 779228.31 US ft		Longitude : -103° 33' 47.48"	
	TVD (Kelly Bushing) : 10295.00 US ft					
	Orientation Azimuth : 0.00°		Inclination : 0.00°			
Dimensions Length : 0.00 US ft		Breadth : 0.00 US ft		Height : 0.00 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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9862.54	0.00	0.00	9862.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP
10615.56	90.36	357.66	10340.00	480.09	-19.63	480.49	12.00	12.00	0.00	357.66	LP
17722.09	90.36	357.66	10295.00	7580.54	-309.96	7586.87	0.00	0.00	0.00	0.00	PBHL

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)	North (US ft)	Easting (US ft)		Comment
9862.54	0.00	0.00	9862.54	0.00	0.00	0.00	0.00	475459.48	779538.27		KOP
9962.54	12.00	357.66	9961.81	10.43	-0.43	10.43	12.00	475469.91	779537.84		
10062.54	24.00	357.66	10056.74	41.24	-1.69	41.28	12.00	475500.72	779536.58		
10162.54	36.00	357.66	10143.19	91.11	-3.73	91.19	12.00	475550.59	779534.54		
10262.54	48.00	357.66	10217.37	157.85	-6.45	157.98	12.00	475617.33	779531.82		
10362.54	60.00	357.66	10276.04	238.53	-9.75	238.73	12.00	475698.01	779528.52		
10462.54	72.00	357.66	10316.64	329.64	-13.48	329.92	12.00	475789.12	779524.79		
10562.54	84.00	357.66	10337.39	427.20	-17.47	427.56	12.00	475886.68	779520.80		
10615.56	90.36	357.66	10340.00	480.09	-19.63	480.49	12.00	475939.57	779518.64		LP
10662.54	90.36	357.66	10339.70	527.02	-21.55	527.46	0.00	475986.50	779516.72		
10762.54	90.36	357.66	10339.06	626.94	-25.63	627.46	0.00	476086.42	779512.64		
10862.54	90.36	357.66	10338.43	726.85	-29.72	727.46	0.00	476186.33	779508.55		
10962.54	90.36	357.66	10337.80	826.77	-33.81	827.46	0.00	476286.25	779504.46		
11062.54	90.36	357.66	10337.17	926.68	-37.89	927.46	0.00	476386.16	779500.38		
11162.54	90.36	357.66	10336.53	1026.60	-41.98	1027.45	0.00	476486.08	779496.29		
11262.54	90.36	357.66	10335.90	1126.51	-46.06	1127.45	0.00	476585.99	779492.21		
11362.54	90.36	357.66	10335.27	1226.43	-50.15	1227.45	0.00	476685.91	779488.12		
11462.54	90.36	357.66	10334.63	1326.34	-54.23	1327.45	0.00	476785.82	779484.04		
11562.54	90.36	357.66	10334.00	1426.25	-58.32	1427.45	0.00	476885.73	779479.95		
11662.54	90.36	357.66	10333.37	1526.17	-62.40	1527.44	0.00	476985.65	779475.87		
11762.54	90.36	357.66	10332.73	1626.08	-66.49	1627.44	0.00	477085.56	779471.78		
11862.54	90.36	357.66	10332.10	1726.00	-70.57	1727.44	0.00	477185.48	779467.70		
11962.54	90.36	357.66	10331.47	1825.91	-74.66	1827.44	0.00	477285.39	779463.61		
12062.54	90.36	357.66	10330.83	1925.83	-78.74	1927.44	0.00	477385.31	779459.53		
12162.54	90.36	357.66	10330.20	2025.74	-82.83	2027.43	0.00	477485.22	779455.44		
12262.54	90.36	357.66	10329.57	2125.66	-86.92	2127.43	0.00	477585.14	779451.35		
12362.54	90.36	357.66	10328.93	2225.57	-91.00	2227.43	0.00	477685.05	779447.27		
12462.54	90.36	357.66	10328.30	2325.48	-95.09	2327.43	0.00	477784.96	779443.18		
12562.54	90.36	357.66	10327.67	2425.40	-99.17	2427.43	0.00	477884.88	779439.10		
12662.54	90.36	357.66	10327.03	2525.31	-103.26	2527.42	0.00	477984.79	779435.01		
12762.54	90.36	357.66	10326.40	2625.23	-107.34	2627.42	0.00	478084.71	779430.93		
12862.54	90.36	357.66	10325.77	2725.14	-111.43	2727.42	0.00	478184.62	779426.84		
12962.54	90.36	357.66	10325.14	2825.06	-115.51	2827.42	0.00	478284.54	779422.76		
13062.54	90.36	357.66	10324.50	2924.97	-119.60	2927.42	0.00	478384.45	779418.67		
13162.54	90.36	357.66	10323.87	3024.89	-123.68	3027.41	0.00	478484.37	779414.59		
13262.54	90.36	357.66	10323.24	3124.80	-127.77	3127.41	0.00	478584.28	779410.50		
13362.54	90.36	357.66	10322.60	3224.72	-131.86	3227.41	0.00	478684.20	779406.41		
13462.54	90.36	357.66	10321.97	3324.63	-135.94	3327.41	0.00	478784.11	779402.33		
13562.54	90.36	357.66	10321.34	3424.54	-140.03	3427.41	0.00	478884.02	779398.24		
13662.54	90.36	357.66	10320.70	3524.46	-144.11	3527.40	0.00	478983.94	779394.16		
13762.54	90.36	357.66	10320.07	3624.37	-148.20	3627.40	0.00	479083.85	779390.07		
13862.54	90.36	357.66	10319.44	3724.29	-152.28	3727.40	0.00	479183.77	779385.99		
13962.54	90.36	357.66	10318.80	3824.20	-156.37	3827.40	0.00	479283.68	779381.90		
14062.54	90.36	357.66	10318.17	3924.12	-160.45	3927.40	0.00	479383.60	779377.82		
14162.54	90.36	357.66	10317.54	4024.03	-164.54	4027.39	0.00	479483.51	779373.73		
14262.54	90.36	357.66	10316.90	4123.95	-168.62	4127.39	0.00	479583.43	779369.65		
14362.54	90.36	357.66	10316.27	4223.86	-172.71	4227.39	0.00	479683.34	779365.56		
14462.54	90.36	357.66	10315.64	4323.77	-176.79	4327.39	0.00	479783.25	779361.48		
14562.54	90.36	357.66	10315.00	4423.69	-180.88	4427.39	0.00	479883.17	779357.39		
14662.54	90.36	357.66	10314.37	4523.60	-184.97	4527.38	0.00	479983.08	779353.30		
14762.54	90.36	357.66	10313.74	4623.52	-189.05	4627.38	0.00	480083.00	779349.22		

SD Plan Report

Interpolated Points (Relative to Slot Centre, TVD relative to Kelly Bushing)										
ID (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)	Comments
14862.54	90.36	357.66	10313.11	4723.43	-193.14	4727.38	0.00	480182.91	779345.13	
14962.54	90.36	357.66	10312.47	4823.35	-197.22	4827.38	0.00	480282.83	779341.05	
15062.54	90.36	357.66	10311.84	4923.26	-201.31	4927.38	0.00	480382.74	779336.96	
15162.54	90.36	357.66	10311.21	5023.18	-205.39	5027.37	0.00	480482.66	779332.88	
15262.54	90.36	357.66	10310.57	5123.09	-209.48	5127.37	0.00	480582.57	779328.79	
15362.54	90.36	357.66	10309.94	5223.01	-213.56	5227.37	0.00	480682.49	779324.71	
15462.54	90.36	357.66	10309.31	5322.92	-217.65	5327.37	0.00	480782.40	779320.62	
15562.54	90.36	357.66	10308.67	5422.83	-221.73	5427.37	0.00	480882.31	779316.54	
15662.54	90.36	357.66	10308.04	5522.75	-225.82	5527.36	0.00	480982.23	779312.45	
15762.54	90.36	357.66	10307.41	5622.66	-229.90	5627.36	0.00	481082.14	779308.37	
15862.54	90.36	357.66	10306.77	5722.58	-233.99	5727.36	0.00	481182.06	779304.28	
15962.54	90.36	357.66	10306.14	5822.49	-238.08	5827.36	0.00	481281.97	779300.19	
16062.54	90.36	357.66	10305.51	5922.41	-242.16	5927.36	0.00	481381.89	779296.11	
16162.54	90.36	357.66	10304.87	6022.32	-246.25	6027.35	0.00	481481.80	779292.02	
16262.54	90.36	357.66	10304.24	6122.24	-250.33	6127.35	0.00	481581.72	779287.94	
16362.54	90.36	357.66	10303.61	6222.15	-254.42	6227.35	0.00	481681.63	779283.85	
16462.54	90.36	357.66	10302.97	6322.06	-258.50	6327.35	0.00	481781.54	779279.77	
16562.54	90.36	357.66	10302.34	6421.98	-262.59	6427.35	0.00	481881.46	779275.68	
16662.54	90.36	357.66	10301.71	6521.89	-266.67	6527.34	0.00	481981.37	779271.60	
16762.54	90.36	357.66	10301.08	6621.81	-270.76	6627.34	0.00	482081.29	779267.51	
16862.54	90.36	357.66	10300.44	6721.72	-274.84	6727.34	0.00	482181.20	779263.43	
16962.54	90.36	357.66	10299.81	6821.64	-278.93	6827.34	0.00	482281.12	779259.34	
17062.54	90.36	357.66	10299.18	6921.55	-283.01	6927.34	0.00	482381.03	779255.26	
17162.54	90.36	357.66	10298.54	7021.47	-287.10	7027.33	0.00	482480.95	779251.17	
17262.54	90.36	357.66	10297.91	7121.38	-291.19	7127.33	0.00	482580.86	779247.08	
17362.54	90.36	357.66	10297.28	7221.30	-295.27	7227.33	0.00	482680.78	779243.00	
17462.54	90.36	357.66	10296.64	7321.21	-299.36	7327.33	0.00	482780.69	779238.91	
17562.54	90.36	357.66	10296.01	7421.12	-303.44	7427.33	0.00	482880.60	779234.83	
17662.54	90.36	357.66	10295.38	7521.04	-307.53	7527.32	0.00	482980.52	779230.74	
17722.09	90.36	357.66	10295.00	7580.54	-309.96	7586.87	0.00	483040.02	779228.31	PBHL

**Weatherford****Weatherford Drilling Services**

GeoDec4 v2.1.0.0

Report Date: March 06, 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: 475459.48 US Survey Foot	Latitude: 32.304757 Degree
East: 779538.27 US Survey Foot	Longitude: -103.562363 Degree
Convergence: 0.41°	
Declination: 7.27°	
Total Correction: 6.86°	
Datum Transformation: none	

Geodetic Location WGS84

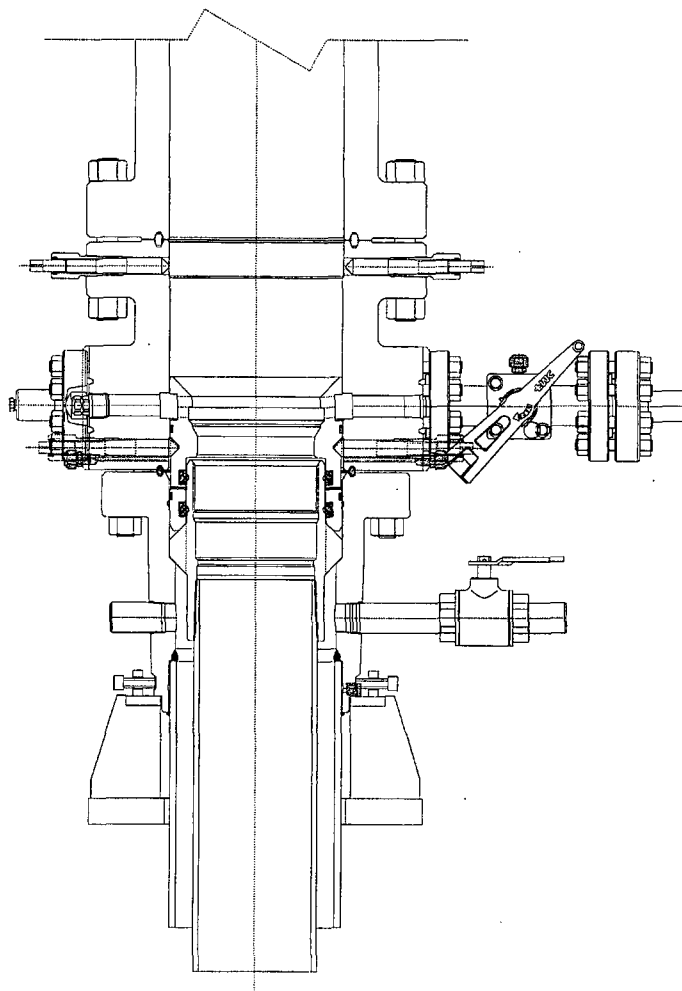
MSL Elevation = 0 m
Latitude = 32° 18' 17.12" N
Longitude = 103° 33' 44.51" W

Magnetic Declination = 7.27 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6612
Local Field Strength = 48225 nT	Magnetic Vector X = 23808 nT
Magnetic Dip = 60.15 deg	Magnetic Vector Y = 3037 nT
Magnetic Model = bggm2014.dat	Magnetic Vector Z = 41828 nT
Run Date = July 15, 2015	Magnetic Vector H = 24001 nT

Signed: _____ Date: _____

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PRIMARY MODE

DEVON ENERGY

ARTESIA

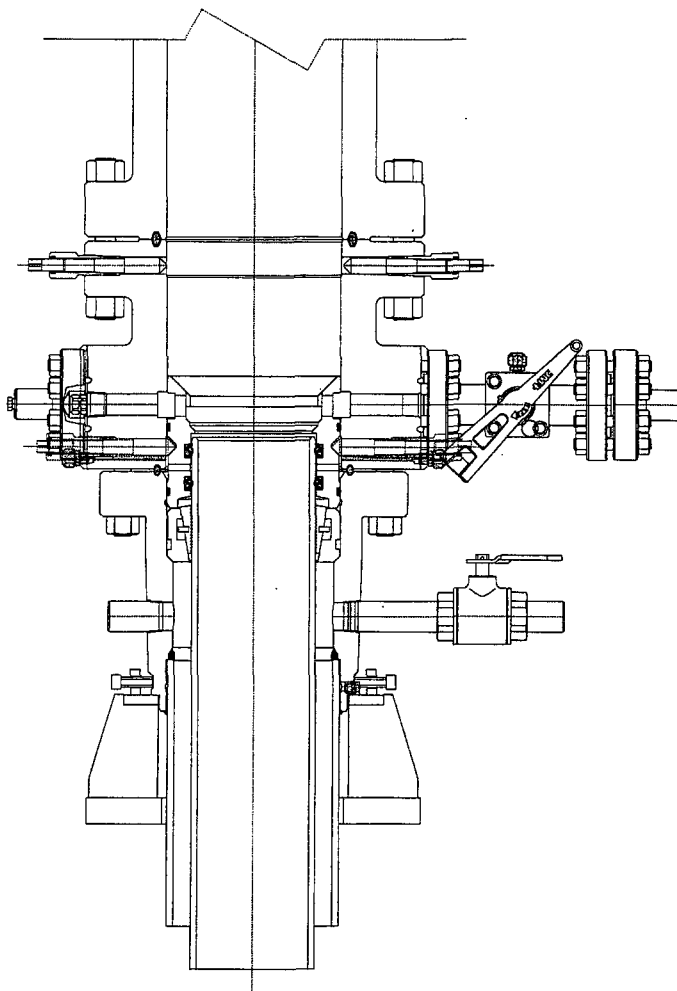
S.E.N.M

13 3/8 X 9 5/8

QUOTE LAYOUT
F18648
REF: DM100161737
DM100151315

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	A	05-08-13		
	B	1-22-14		
	C	5-13-14		
SURFACE WELLHEAD LAYOUT UNIHEAD, UH-1, SOW, DEVON ENERGY, ODESSA			05-08-13	K. VU
			05-08-13	Z. MARQUEZ
			05-08-13	K. TAHA
			05-08-13	R. HAMILTON
			DRAWING NUMBER	
			DM100161771-2A	

FMC Technologies



CONTINGENCY MODE

DEVON ENERGY

ARTESIA

S.E.N.M

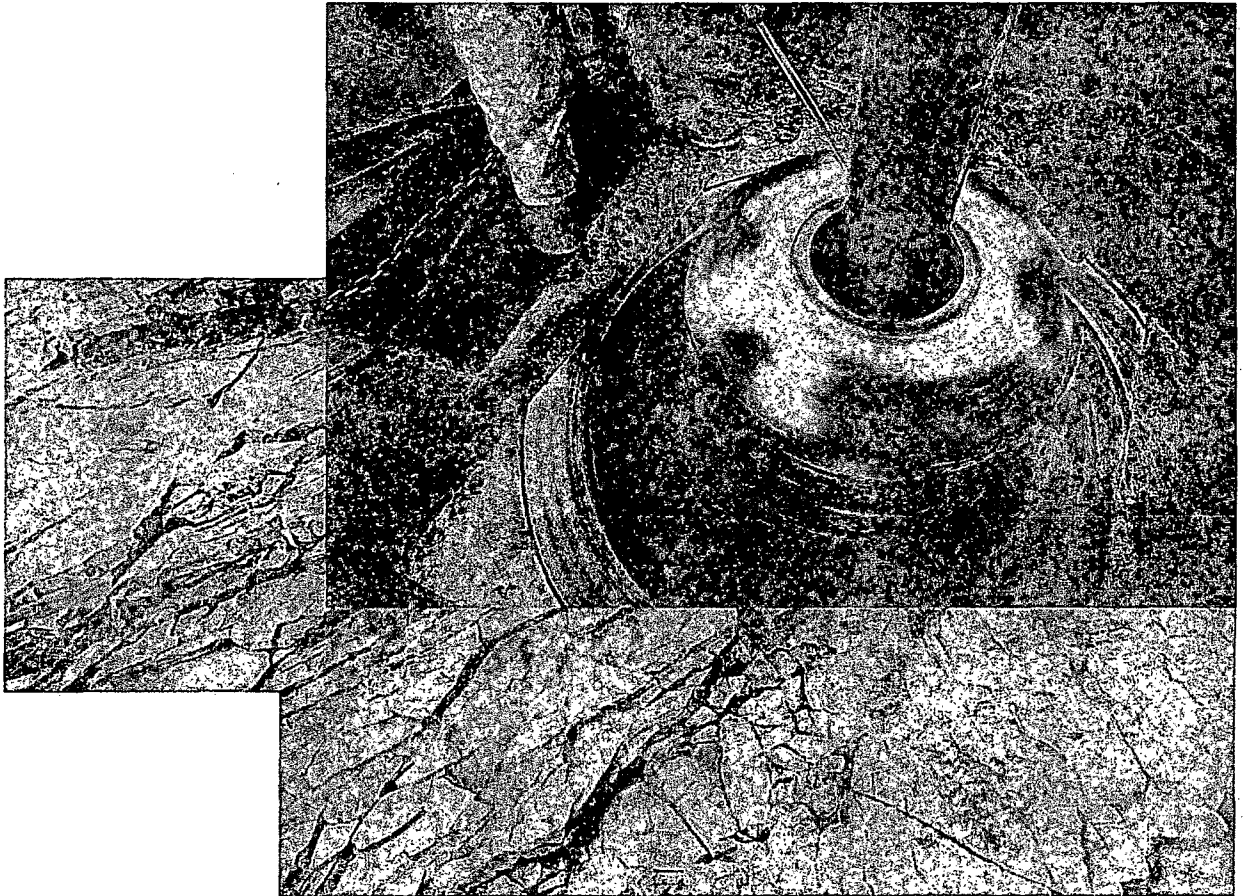
13 3/8 X 9 5/8

QUOTE LAYOUT
F18648
REF: DM100161737
DM100151315

PRIVATE AND CONFIDENTIAL		REVISIONS	DESCRIPTION				
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		B	1-22-14		K. VU	05-08-13	
		C	5-13-14		DRAFTING REVIEW	Z. MARQUEZ	05-08-13
					DESIGN REVIEW	K. TAHA	05-08-13
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Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
February 2015

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

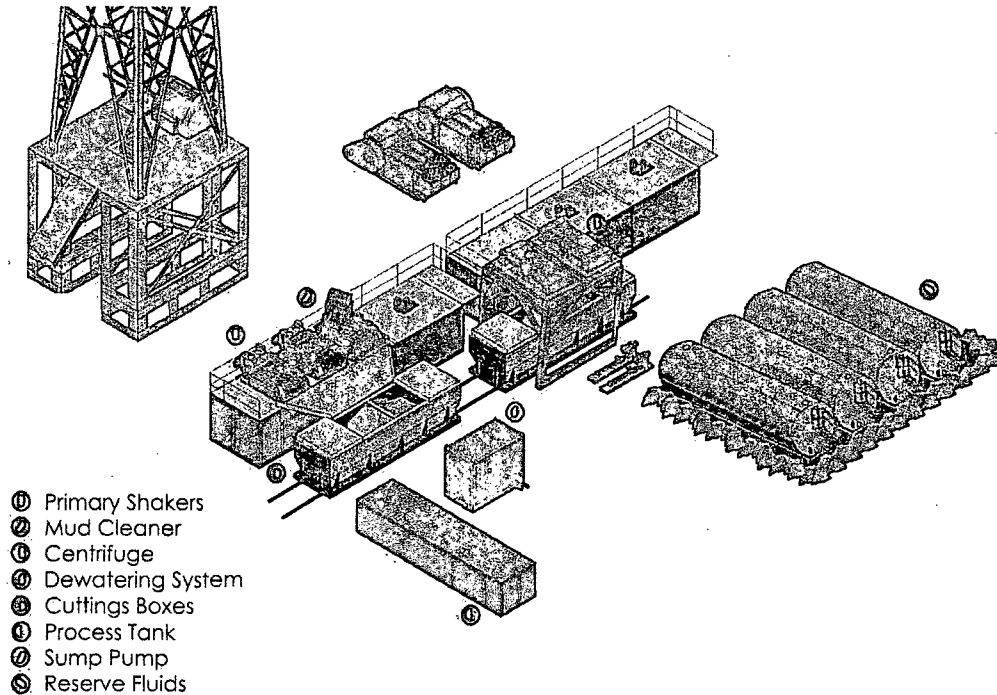
II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Closed Loop Schematic



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.