



Weatherford

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

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

Date: January 20, 2015

Attention: Scott Schmidt

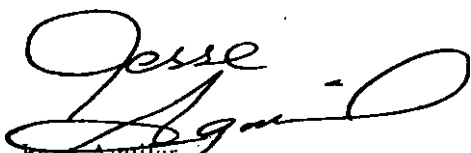
3001542770

Re: Devon Energy
Well: Cotton Draw Unit 99
Eddy County, New Mexico

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

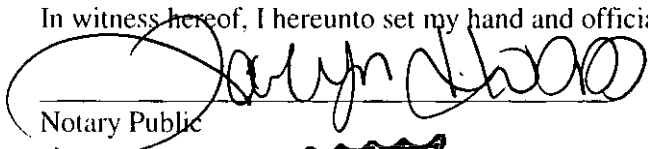
Name & Title Of Surveyor	Well Number	Surveyed Depths	Dates Performed	Type of Survey
Kurt Wolfmueller	99	4430 MD	1/4/2015	Measurement
MWD Supervisor		10682 MD	1/16/2015	While Drilling

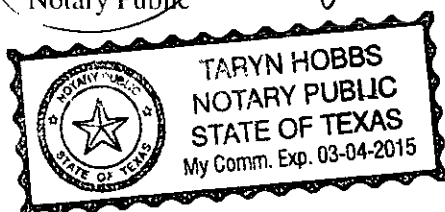
A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.


Jesus Aguilar
MWD Coordinator

On this, the 18th day of February, 2015, before me a notary public, the undersigned officer, personally appeared Jesus Aguilar, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

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


Notary Public



5D Survey Report

Devon Energy**Field Name:** *Eddy Co, NM (Nad 83 NME)***Site Name:** *Cotton Draw #99***Well Name:** *Cotton Draw #99***Survey:** *Wft MWD Svy*

16 January 2015

**Weatherford®**

Cotton Draw #99

Field Name Eddy Co, NM (Nad 83 NME)	Map Units : US ft		Company Name : Devon Energy	
	Vertical Reference Datum (VRD) : Mean Sea Level			
	Projected Coordinate System : NAD83 / New Mexico East (ftUS)			
	Comment :			
Site Name Cotton Draw #99	Units : US ft	North Reference : Grid	Convergence Angle : 0.32	
	Position	Northing : 429807.12 US ft	Latitude : 32° 10' 48.65"	
		Easting : 727865.08 US ft	Longitude : -103° 43' 49.55"	
	Elevation above Mean Sea Level: 3508.30 US ft			
Comment :				
Slot Name Cotton Draw #99	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing : 429807.12 US ft	Latitude : 32° 10' 48.65"	
	+E / -W : 0.00 US ft	Easting : 727865.08 US ft	Longitude : -103° 43' 49.55"	
	Elevation above Mean Sea Level : 3508.30 US ft			
Comment :				
Well Name Cotton Draw #99	Type : Main well		UWI :	
	Rig Height Well TVD Reference : 25.00 US ft		Comment :	
	Relative to Mean Sea Level: 3533.30 US ft			
	Closure Distance : 51.588 US ft		Closure Azimuth : 157.539°	
Vertical Section (Position of Origin Relative to Slot)				
+N / -S : 0.00 US ft +E / -W : 0.00 US ft Az : 0.00°				

Survey Name : Wft MWD Svy

Date : 06/Jan/2015	Survey Tool : MWD	Comment :	Company :
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Magnetic Model

Model Name: BGGM	Date: 19/Dec/2014	Field Strength: 48199.8 nT	Declination: 7.40°	Dip: 60.02°
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Tie Point

MD: 4239.88	Inclination: 3.95	Azimuth: 93.95	TVD: 4239.21	North Offset: -22.2576	East Offset: -15.6987
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Casing Points (Relative to Slot centre, TVD relative to Well TVD Reference)								
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	Name
4310.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9 5/8 in

Well path created using minimum curvature

Survey Points (Relative to Slot centre, TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
4430.00	2.59	114.81	4429.02	-24.51	-5.27	-24.51	0.00	429782.61	727859.81	First Wft Svy
4525.00	3.08	106.55	4523.90	-26.14	-0.87	-26.14	0.67	429780.98	727864.21	
4619.00	3.92	87.28	4617.73	-26.71	4.76	-26.71	1.53	429780.41	727869.84	
4714.00	3.53	93.52	4712.53	-26.73	10.92	-26.73	0.59	429780.39	727876.00	
4808.00	1.97	104.48	4806.42	-27.31	15.38	-27.31	1.74	429779.81	727880.46	
4903.00	1.11	100.22	4901.39	-27.88	17.86	-27.88	0.91	429779.24	727882.94	
4997.00	0.58	97.07	4995.37	-28.10	19.23	-28.10	0.57	429779.02	727884.31	
5092.00	0.56	81.09	5090.37	-28.09	20.17	-28.09	0.17	429779.03	727885.25	

5D Survey Report

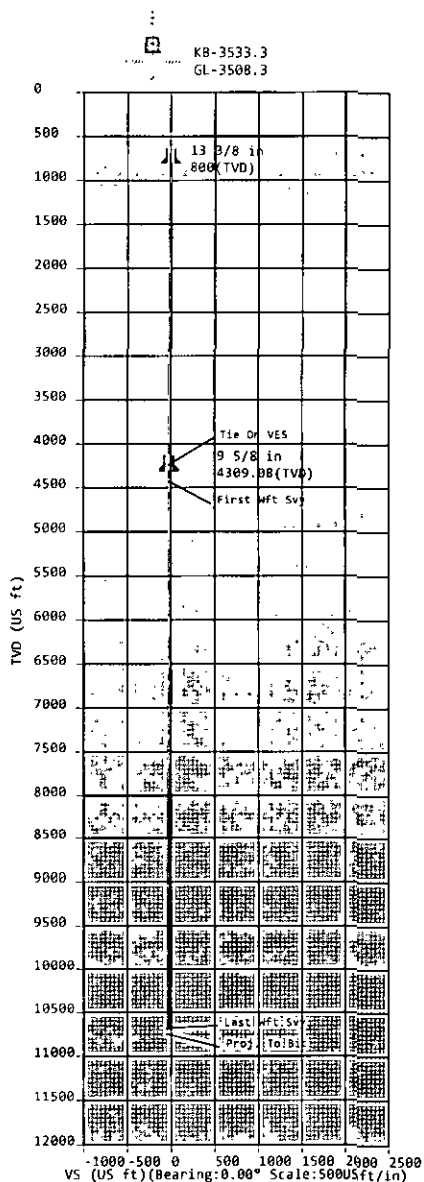
Survey Points (Relative to Slot centre, TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (%/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
5186.00	0.51	85.83	5184.37	-27.99	21.04	-27.99	0.07	429779.13	727886.12	
5281.00	0.66	75.17	5279.36	-27.82	21.99	-27.82	0.19	429779.30	727887.07	
5375.00	0.58	99.26	5373.36	-27.76	22.98	-27.76	0.29	429779.36	727888.06	
5470.00	0.60	94.68	5468.35	-27.88	23.95	-27.88	0.05	429779.24	727889.03	
5565.00	0.31	102.08	5563.35	-27.97	24.70	-27.97	0.31	429779.15	727889.78	
5659.00	0.50	102.10	5657.35	-28.11	25.35	-28.11	0.20	429779.01	727890.43	
5754.00	0.36	82.14	5752.34	-28.16	26.05	-28.16	0.21	429778.96	727891.13	
5848.00	0.25	80.20	5846.34	-28.08	26.54	-28.08	0.12	429779.04	727891.62	
5943.00	0.45	84.94	5941.34	-28.01	27.12	-28.01	0.21	429779.11	727892.20	
6037.00	0.55	86.25	6035.34	-27.95	27.94	-27.95	0.11	429779.17	727893.02	
6132.00	0.30	68.80	6130.33	-27.83	28.62	-27.83	0.29	429779.29	727893.70	
6226.00	0.50	71.81	6224.33	-27.61	29.24	-27.61	0.21	429779.51	727894.32	
6321.00	0.29	102.78	6319.33	-27.54	29.87	-27.54	0.31	429779.58	727894.95	
6415.00	0.30	90.02	6413.33	-27.59	30.35	-27.59	0.07	429779.53	727895.43	
6510.00	0.49	121.25	6508.33	-27.80	30.95	-27.80	0.30	429779.32	727896.03	
6604.00	0.45	108.56	6602.32	-28.13	31.64	-28.13	0.12	429778.99	727896.72	
6699.00	0.35	84.06	6697.32	-28.22	32.28	-28.22	0.21	429778.90	727897.36	
6794.00	0.22	129.36	6792.32	-28.30	32.71	-28.30	0.26	429778.82	727897.79	
6888.00	0.60	136.31	6886.32	-28.77	33.19	-28.77	0.41	429778.35	727898.27	
6983.00	0.49	126.45	6981.31	-29.37	33.86	-29.37	0.15	429777.75	727898.94	
7078.00	0.45	121.47	7076.31	-29.81	34.51	-29.81	0.06	429777.31	727899.59	
7172.00	0.50	135.57	7170.31	-30.29	35.11	-30.29	0.13	429776.83	727900.19	
7267.00	0.47	175.03	7265.30	-30.98	35.43	-30.98	0.35	429776.14	727900.51	
7361.00	0.45	166.00	7359.30	-31.72	35.55	-31.72	0.08	429775.40	727900.63	
7456.00	0.49	171.13	7454.30	-32.48	35.71	-32.48	0.06	429774.64	727900.79	
7551.00	0.58	169.26	7549.29	-33.36	35.86	-33.36	0.10	429773.76	727900.94	
7645.00	0.84	176.23	7643.28	-34.51	35.99	-34.51	0.29	429772.61	727901.07	
7739.00	0.92	157.45	7737.27	-35.90	36.33	-35.90	0.32	429771.22	727901.41	
7834.00	0.88	157.00	7832.26	-37.27	36.91	-37.27	0.04	429769.85	727901.99	
7928.00	0.72	168.75	7926.25	-38.52	37.30	-38.52	0.24	429768.60	727902.38	
8022.00	1.04	175.31	8020.24	-39.95	37.49	-39.95	0.36	429767.17	727902.57	
8117.00	0.38	243.51	8115.24	-40.95	37.28	-40.95	1.02	429766.17	727902.36	
8211.00	0.35	243.79	8209.23	-41.21	36.74	-41.21	0.03	429765.91	727901.82	
8306.00	0.22	230.11	8304.23	-41.46	36.34	-41.46	0.15	429765.66	727901.42	
8400.00	0.41	190.98	8398.23	-41.90	36.14	-41.90	0.29	429765.22	727901.22	
8494.00	0.59	215.21	8492.23	-42.63	35.79	-42.63	0.29	429764.49	727900.87	
8589.00	0.25	240.60	8587.22	-43.13	35.33	-43.13	0.40	429763.99	727900.41	
8684.00	0.55	277.05	8682.22	-43.18	34.70	-43.18	0.40	429763.94	727899.78	
8778.00	0.45	243.89	8776.22	-43.28	33.92	-43.28	0.32	429763.84	727899.00	
8873.00	0.80	244.57	8871.21	-43.73	32.98	-43.73	0.37	429763.39	727898.06	
8967.00	0.87	258.51	8965.20	-44.16	31.69	-44.16	0.23	429762.96	727896.77	
9062.00	0.55	276.38	9060.20	-44.25	30.53	-44.25	0.41	429762.87	727895.61	
9157.00	0.91	295.48	9155.19	-43.87	29.40	-43.87	0.45	429763.25	727894.48	
9252.00	0.56	341.88	9250.18	-43.11	28.57	-43.11	0.70	429764.01	727893.65	
9346.00	1.24	304.09	9344.17	-42.10	27.59	-42.10	0.92	429765.02	727892.67	
9441.00	0.51	226.46	9439.16	-41.82	26.43	-41.82	1.30	429765.30	727891.51	
9535.00	0.44	207.92	9533.16	-42.42	25.96	-42.42	0.18	429764.70	727891.04	
9630.00	0.25	263.98	9628.16	-42.77	25.58	-42.77	0.38	429764.35	727890.66	
9724.00	0.56	235.47	9722.15	-43.05	25.00	-43.05	0.38	429764.07	727890.08	
9819.00	0.25	223.82	9817.15	-43.46	24.47	-43.46	0.34	429763.66	727889.55	
9913.00	0.71	192.61	9911.15	-44.18	24.20	-44.18	0.55	429762.94	727889.28	
10008.00	0.47	320.62	10006.14	-44.45	23.83	-44.45	1.12	429762.67	727888.91	
10039.00	0.58	321.35	10037.14	-44.23	23.65	-44.23	0.36	429762.89	727888.73	
10071.00	0.21	286.68	10069.14	-44.09	23.49	-44.09	1.33	429763.03	727888.57	
10102.00	0.16	283.54	10100.14	-44.06	23.40	-44.06	0.16	429763.06	727888.48	
10124.00	0.16	218.31	10122.14	-44.08	23.35	-44.08	0.78	429763.04	727888.43	
10288.00	0.36	231.22	10286.14	-44.58	22.80	-44.58	0.13	429762.54	727887.88	
10382.00	0.56	229.88	10380.14	-45.06	22.22	-45.06	0.21	429762.06	727887.30	
10477.00	0.77	229.74	10475.13	-45.77	21.38	-45.77	0.22	429761.35	727886.46	

5D Survey Report

Survey Points (Relative to Slot centre, TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
10572.00	0.59	226.62	10570.12	-46.52	20.54	-46.52	0.19	429760.60	727885.62	
10667.00	0.30	203.35	10665.12	-47.09	20.08	-47.09	0.35	429760.03	727885.16	
10682.00	0.50	212.86	10680.12	-47.18	20.03	-47.18	1.40	429759.94	727885.11	Last Wft Svy
10750.00	0.50	212.86	10748.12	-47.67	19.71	-47.67	0.00	429759.45	727884.79	Proj. To Bit



Cotton Draw 99
Eddy Co., New Mexico



Plan Data for Cotton Draw #99

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)
4239.98 3.95 93.95 4239.21 -22.26 -15.70 429784.86 727849.38 -22.26 1.09
4388.00 0.13 288.75 4387.11 -22.55 -10.77 429784.57 727854.31 -22.55 2.75
4481.02 0.01 198.43 4480.13 -22.55 -10.78 429784.57 727854.30 -22.55 1.00
10700.89 0.01 198.43 10700.00 -23.20 -11.00 429783.92 727854.08 -23.20 0.00



Plan Data for Cotton Draw #99

Site: Cotton Draw #99
Unit: USFeet TVD Reference:
Company Name: Devon Energy
Position: Northing: 429807.12USft Latitude: 32.180181°
Easting: 727865.08USft Longitude: -103.730431°
North Reference: Grid Grid Convergence: 0.32°
Elevation Above VRD: 3508.30USft

Plan Data for Cotton Draw #99

Well: Cotton Draw #99
Type: Main-Well
File Number:
Plan Folder: P2 Plan: P2:V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 0.00°
+E/-W: 0.00USft
Magnetic Parameters:
Model: Field Strength: Declination: Dip: Date:
8GGM 48199(nT) 7.40° 60.02° 2014-12-19

Plan Data for Cotton Draw #99

Target Set Information:
Name: Cotton Draw #99
Position offsets from Slot centre
Name TVD +N/-S +E/-W Northing Easting
(USft) (USft) (USft) (USft) (USft)
PBHL 10700.00 -23.20 -11.00 429783.92 727854.08

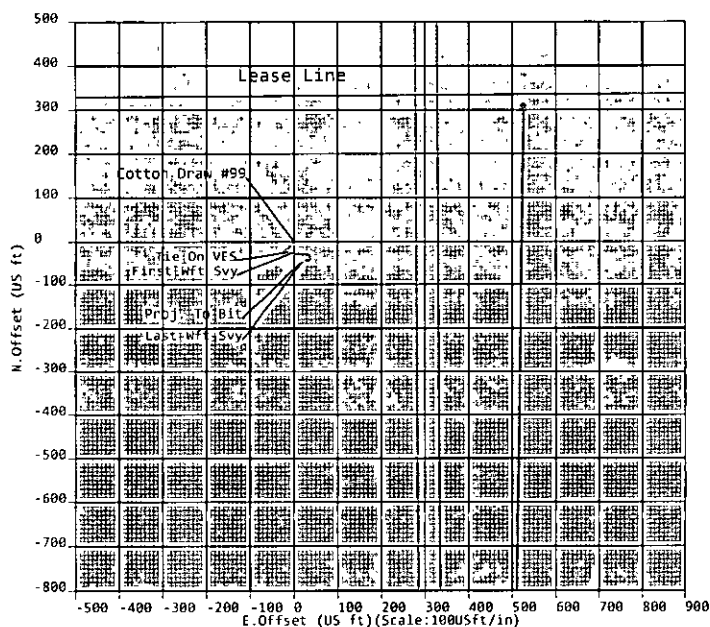
Cotton Draw #99

CDU182H

CDU 245H

Cotton Draw Unit #165H

Cotton Draw #99



Sign Off: Russell Joyner



January 16, 2015

Devon Energy Production Co., L. P.
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

Attn: David Cook

NM OIL CONSERVATION
ARTESTA DISTRICT
FEB 08 2016

Re: **Cotton Draw Unit 99**

RECEIVED

Please find enclosed a copy of the survey from 0' to 4310' ran on the above referenced well.

If I can be of any further service please do not hesitate to call me at 800-606-4976.

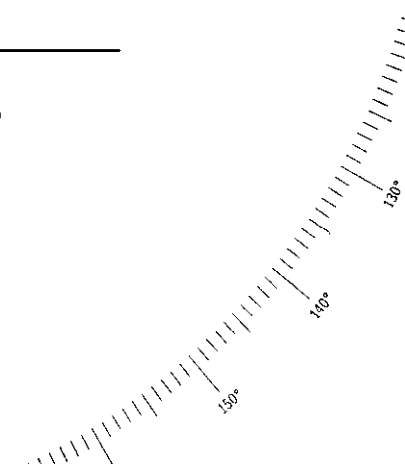
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the _____ day of _____,
A.D., 2015, by Keith Havelka.

Jennifer Ann Byerly
Notary Public, State of Texas





Company: Devon

Lease/Well: Cotton Draw Unit/99

Location: Sec 36 T24S R31E

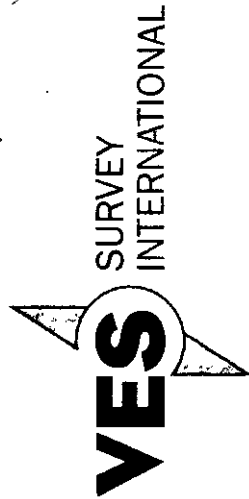
Rig Name: H&P 214

State/County: New Mexico/Eddy

Latitude: 32.18, Longitude: -103.73

GRID North is 0.32 Degrees East of True North

VS-Azi: 0.00 Degrees



NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 08 2016
RECEIVED

Depth Reference : RKB = 25 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 1/16/2015 / 13:43

VES Survey International

West Texas

(432) 563-5444

Surveyor: Noe Garza

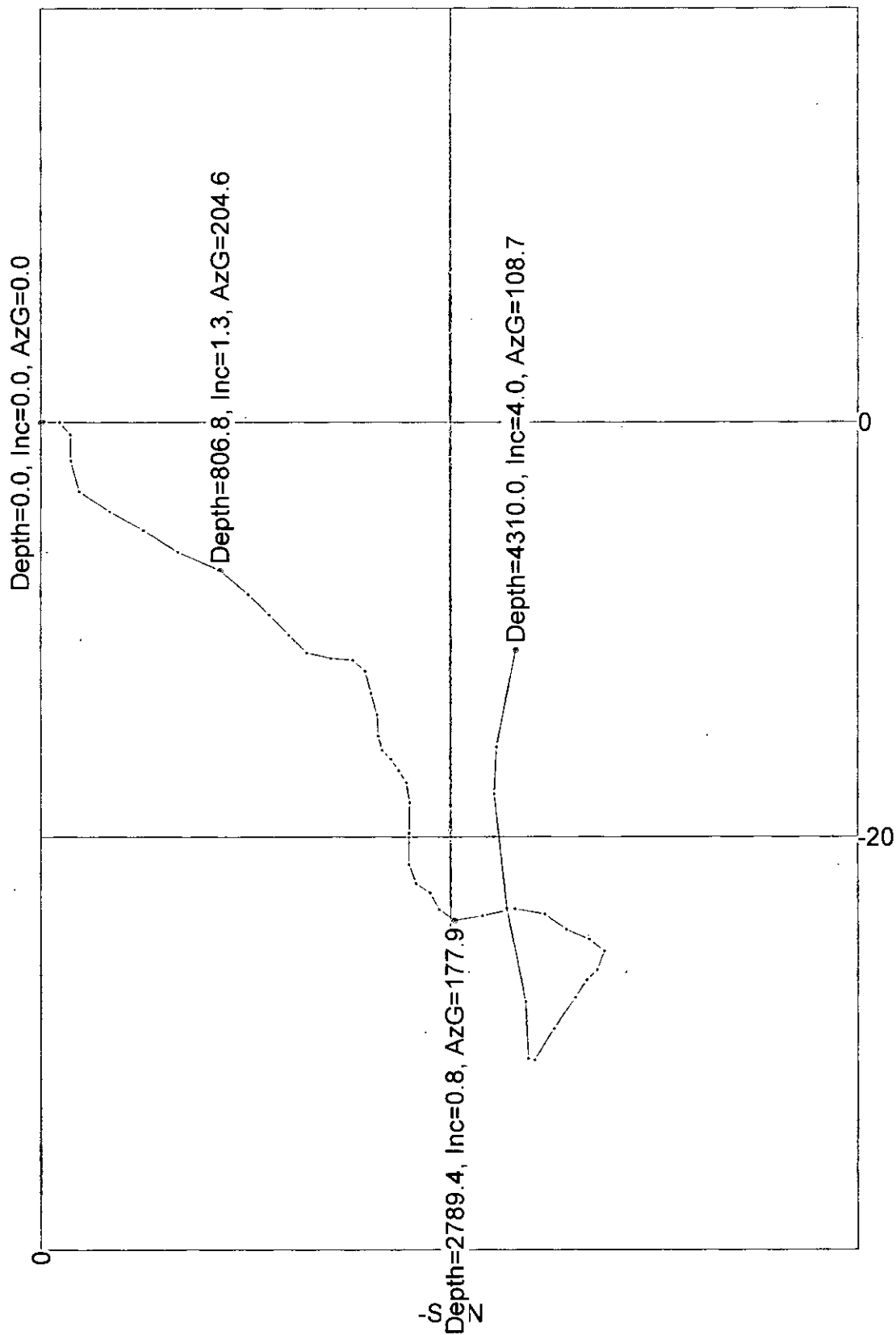
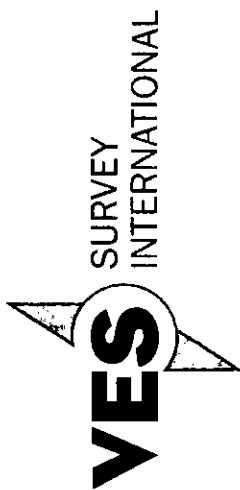
Cotton Draw Unit 99 / API 30-015-42770

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
51.55	0.40	161.48	51.55	-0.17	0.06	-0.17	0.18	161.48	0.79
145.96	0.54	199.95	145.96	-0.91	0.01	-0.91	0.91	179.22	0.36
240.37	0.57	255.25	240.36	-1.44	-0.59	-1.44	1.56	202.37	0.55
334.78	0.99	277.03	334.76	-1.46	-1.86	-1.46	2.36	231.78	0.54
429.19	1.02	233.30	429.16	-1.87	-3.34	-1.87	3.83	240.81	0.79
523.60	1.28	195.92	523.55	-3.38	-4.31	-3.38	5.48	231.85	0.82
618.01	1.06	224.35	617.94	-5.02	-5.21	-5.02	7.23	226.04	0.65
712.42	1.38	202.36	712.33	-6.70	-6.25	-6.70	9.16	223.02	0.60
806.83	1.35	204.57	806.72	-8.76	-7.14	-8.76	11.30	219.20	0.07
901.24	0.94	242.29	901.11	-10.13	-8.29	-10.13	13.09	219.31	0.88
995.65	0.89	204.13	995.51	-11.16	-9.28	-11.16	14.51	219.75	0.64
1090.06	0.89	247.58	1089.91	-12.10	-10.25	-12.10	15.86	220.27	0.70
1184.47	0.77	196.42	1184.31	-12.99	-11.11	-12.99	17.09	220.54	0.77
1278.88	0.69	188.69	1278.71	-14.16	-11.37	-14.16	18.16	218.77	0.13
1373.29	0.61	179.69	1373.11	-15.23	-11.46	-15.23	19.05	216.96	0.14
1467.70	0.67	260.26	1467.52	-15.82	-11.99	-15.82	19.86	217.16	0.88
1562.11	0.67	249.64	1561.92	-16.11	-13.05	-16.11	20.73	219.01	0.13
1656.52	0.66	258.26	1656.33	-16.41	-14.10	-16.41	21.63	220.67	0.11

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/S FT	+E/W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1750.93	0.59	276.37	1750.73	-16.47	-15.12	-16.47	22.36	222.56	0.22
1845.34	0.38	220.16	1845.14	-16.65	-15.81	-16.65	22.96	223.52	0.53
1939.75	0.37	231.60	1939.55	-17.08	-16.25	-17.08	23.57	223.58	0.08
2034.16	0.45	238.66	2033.95	-17.46	-16.80	-17.46	24.23	223.90	0.09
2128.57	0.39	234.93	2128.36	-17.84	-17.38	-17.84	24.91	224.26	0.06
2222.98	0.85	271.79	2222.77	-18.00	-18.34	-18.00	25.70	225.54	0.61
2317.39	0.96	270.94	2317.17	-17.97	-19.83	-17.97	26.76	227.82	0.12
2411.80	0.88	269.01	2411.56	-17.97	-21.34	-17.97	27.89	229.90	0.09
2506.21	0.48	210.84	2505.97	-18.32	-22.26	-18.32	28.83	230.55	0.79
2600.62	0.51	217.27	2600.37	-18.99	-22.72	-18.99	29.61	230.10	0.07
2695.03	0.67	257.96	2694.78	-19.44	-23.51	-19.44	30.51	230.41	0.46
2789.44	0.78	177.88	2789.18	-20.20	-24.03	-20.20	31.39	229.95	0.99
2883.85	0.90	164.97	2883.58	-21.56	-23.81	-21.56	32.12	227.85	0.24
2978.26	1.06	170.28	2977.98	-23.14	-23.47	-23.14	32.96	225.41	0.20
3072.67	0.89	213.48	3072.38	-24.61	-23.73	-24.61	34.18	223.96	0.78
3167.08	0.68	217.57	3166.78	-25.66	-24.47	-25.66	35.46	223.64	0.23
3261.49	0.85	189.48	3261.18	-26.79	-24.93	-26.79	36.59	222.94	0.43
3355.90	0.63	263.63	3355.58	-27.53	-25.56	-27.53	37.57	222.87	0.96
3450.31	0.68	318.37	3449.99	-27.17	-26.44	-27.17	37.91	224.22	0.64
3544.72	0.21	294.63	3544.40	-26.68	-26.97	-26.68	37.94	225.31	0.53
3639.13	1.03	306.38	3638.80	-26.11	-27.81	-26.11	38.14	226.81	0.87
3733.54	1.22	303.11	3733.19	-25.06	-29.33	-25.06	38.58	229.49	0.21
3827.95	0.97	299.89	3827.58	-24.11	-30.87	-24.11	39.17	232.01	0.27
3922.36	0.93	96.85	3921.99	-23.80	-30.80	-23.80	38.92	232.30	1.98
4016.77	2.45	83.80	4016.36	-23.67	-28.03	-23.67	36.69	229.81	1.65
4111.18	3.23	74.72	4110.65	-22.75	-23.45	-22.75	32.68	225.86	0.95
4205.59	3.61	91.53	4204.89	-22.13	-17.91	-22.13	28.47	218.99	1.13
4239.98	3.95	93.95	4239.21	-22.24	-15.65	-22.24	27.20	215.13	1.10
4310.00	3.96	108.74	4309.06	-23.19	-10.95	-23.19	25.64	205.29	1.45



VES Survey International
West Texas
(432) 563-5444
Surveyor: Noe Garza
Cotton Draw Unit 99 / API 30-015-42770





Well Name: COTTON DRAW UNIT 99

Sub-Division DELAWARE BASIN WEST		Region BASIN WEST		Field Name PADUCA NORTHWEST		County EDDY		State/Province NM					
Surface Legal Location SEC36 T24S R31E		API/UWI 3001542770		Latitude (") 32° 10' 48.204" N		Longitude (") 103° 43' 47.825" W		Orig KB Elevation (ft) 3,533.30		Ground Elev MSL (ft) 3,508.30		KB - GL (ft) 25.00	
Wellbores													
Wellbore Name OH				Parent Wellbore OH				SAP Well ID 37623				Vertical Section Direction (")	
Kick Offs & Key Depths													
Date				Type				Top Depth (ftKB)					
Actual Deviation Survey GYRO AND MWD, Proposed? No				Definitive? Yes		Proposed? No		Proposed Deviation Survey					
Deviation Survey													
Date 1/4/2015				Description GYRO AND MWD									
MD Tie In (ftKB)				TVD Tie In (ftKB)		Inclination Tie In (")		Azimuth Tie In (")		NSTie In (ft)		EWTie In (ft)	
Survey Data													
Date	MD (ftKB)	Incl (")	Azm (")	TVD (ftKB)	VS (ft)	N/S (ft)	EW (ft)	DLS ("/100ft)	Survey Tool	Survey Company			
1/4/2015	51.55	0.40	161.48	51.55	0.18	-0.17	0.06	0.78	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	145.96	0.54	199.95	145.96	0.84	-0.90	0.01	0.36	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	240.37	0.57	255.25	240.36	1.10	-1.44	-0.60	0.55	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	334.78	0.99	277.03	334.76	0.64	-1.46	-1.86	0.54	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	429.19	1.02	233.30	429.16	0.44	-1.86	-3.34	0.79	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	523.60	1.28	195.92	523.55	1.48	-3.38	-4.31	0.82	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	618.01	1.06	224.35	617.94	2.65	-5.02	-5.21	0.65	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	712.42	1.38	202.36	712.33	3.80	-6.69	-6.25	0.59	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	800.11	1.35	204.41	800.00	5.25	-8.61	-7.08	0.07	MWD	WEATHERFORD			
1/4/2015	806.83	1.35	204.57	806.72	5.36	-8.75	-7.14	0.06	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	901.24	0.94	242.29	901.11	6.19	-10.12	-8.29	0.89	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	995.65	0.89	204.13	995.51	6.76	-11.15	-9.28	0.64	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	1,090.06	0.89	247.58	1,089.91	7.27	-12.10	-10.25	0.70	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	1,184.47	0.77	196.42	1,184.31	7.76	-12.99	-11.11	0.77	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	1,278.88	0.69	188.69	1,278.71	8.74	-14.16	-11.38	0.13	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	1,373.29	0.81	179.69	1,373.11	9.69	-15.23	-11.46	0.14	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	1,467.70	0.67	260.26	1,467.52	10.04	-15.82	-12.00	0.88	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	1,562.11	0.67	249.64	1,561.92	9.89	-16.11	-13.06	0.13	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	1,656.52	0.66	258.26	1,656.33	9.77	-16.41	-14.11	0.11	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	1,750.93	0.59	276.37	1,750.73	9.44	-16.47	-15.13	0.22	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	1,845.34	0.38	220.16	1,845.14	9.35	-16.65	-15.81	0.52	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	1,939.75	0.37	231.60	1,939.55	9.57	-17.08	-16.25	0.08	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,034.16	0.45	238.66	2,033.95	9.71	-17.46	-16.81	0.10	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,128.57	0.39	234.93	2,128.36	9.84	-17.84	-17.39	0.07	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,222.98	0.85	271.79	2,222.77	9.62	-18.00	-18.35	0.62	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,317.39	0.96	270.94	2,317.16	9.02	-17.97	-19.84	0.12	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,411.80	0.88	269.01	2,411.56	8.44	-17.97	-21.36	0.09	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,506.21	0.48	210.84	2,505.97	8.41	-18.32	-22.29	0.79	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,600.62	0.51	217.27	2,600.37	8.86	-18.99	-22.74	0.07	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,695.03	0.67	257.96	2,694.78	8.97	-19.44	-23.54	0.46	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,789.44	0.78	177.88	2,789.18	9.48	-20.20	-24.05	0.99	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,883.85	0.90	164.97	2,883.58	10.81	-21.56	-23.84	0.24	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	2,978.26	1.06	170.28	2,977.98	12.40	-23.14	-23.50	0.19	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	3,072.67	0.89	213.48	3,072.38	13.66	-24.61	-23.75	0.78	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	3,167.08	0.68	217.57	3,166.78	14.35	-25.66	-24.50	0.23	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	3,261.49	0.85	189.48	3,261.18	15.23	-26.80	-24.96	0.43	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	3,355.90	0.63	263.63	3,355.58	15.68	-27.55	-25.59	0.96	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	3,450.31	0.68	318.37	3,449.99	15.00	-27.19	-26.48	0.64	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	3,544.72	0.21	294.63	3,544.40	14.35	-26.69	-27.01	0.52	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	3,639.13	1.03	306.38	3,638.80	13.50	-26.12	-27.85	0.87	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	3,733.54	1.22	303.11	3,733.19	11.94	-25.07	-29.37	0.21	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	3,827.95	0.97	299.89	3,827.58	10.48	-24.12	-30.91	0.27	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	3,922.36	0.93	96.85	3,921.99	10.22	-23.81	-30.84	1.97	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	4,016.77	2.45	83.80	4,016.36	11.16	-23.69	-28.07	1.65	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	4,111.18	3.23	74.72	4,110.65	12.06	-22.77	-23.50	0.95	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	4,205.59	3.61	91.53	4,204.89	13.60	-22.15	-17.96	1.13	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	4,239.98	3.95	93.95	4,239.21	14.57	-22.26	-15.70	1.09	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	4,310.00	3.40	99.68	4,309.08	16.75	-22.77	-11.25	0.94	GYRO	VAUHG N ENERGY SERVICES			
1/4/2015	4,430.00	2.59	114.81	4,428.92	20.63	-24.51	-5.28	0.94	MWD	WEATHERFORD			
1/4/2015	4,525.00	3.08	106.55	4,523.81	23.81	-26.14	-0.88	0.67	MWD	WEATHERFORD			
1/4/2015	4,619.00	3.92	87.28	4,617.63	26.49	-26.70	4.75	1.53	MWD	WEATHERFORD			
1/4/2015	4,714.00	3.53	93.52	4,712.43	28.87	-26.73	10.91	0.59	MWD	WEATHERFORD			
1/4/2015	4,808.00	1.97	104.48	4,806.32	31.11	-27.31	15.36	1.74	MWD	WEATHERFORD			
1/4/2015	4,903.00	1.11	100.22	4,901.29	32.59	-27.88	17.85	0.91	MWD	WEATHERFORD			
1/4/2015	4,997.00	0.58	97.07	4,995.28	33.31	-28.10	19.22	0.57	MWD	WEATHERFORD			
1/4/2015	5,092.00	0.56	81.09	5,090.27	33.66	-28.09	20.16	0.17	MWD	WEATHERFORD			
1/4/2015	5,186.00	0.51	85.83	5,184.27	33.90	-27.99	21.03	0.07	MWD	WEATHERFORD			
1/4/2015	5,281.00	0.66	75.17	5,279.26	34.10	-27.82	21.98	0.19	MWD	WEATHERFORD			
1/4/2015	5,375.00	0.58	99.26	5,373.26	34.43	-27.75	22.97	0.29	MWD	WEATHERFORD			
1/4/2015	5,470.00	0.60	94.68	5,468.25	34.90	-27.87	23.94	0.05	MWD	WEATHERFORD			
1/4/2015	5,565.00	0.31	102.08	5,563.25	35.28	-27.97	24.69	0.31	MWD	WEATHERFORD			
1/4/2015	5,659.00	0.50	102.10	5,657.25	35.65	-28.11	25.34	0.20	MWD	WEATHERFORD			
1/4/2015	5,754.00	0.36	82.14	5,752.24	35.96	-28.15	26.04	0.21	MWD	WEATHERFORD			
1/4/2015	5,848.00	0.25	80.20	5,846.24	36.08	-28.08	26.53	0.12	MWD	WEATHERFORD			
1/4/2015	5,943.00	0.45	84.94	5,941.24	36.24	-28.01	27.11	0.21	MWD	WEATHERFORD			
1/4/2015	6,037.00	0.55	86.25	6,035.24	36.50	-27.95	27.93	0.11	MWD	WEATHERFORD			



Well Name: COTTON DRAW UNIT 99

Sub-Division DELAWARE BASIN WEST		Region BASIN WEST		Field Name PADUCA NORTHWEST				County EDDY		State/Province NM			
Surface Legal Location SEC36 T24S R31E		API/UWI 3001542770		Latitude (") 32° 10' 48.204" N		Longitude (") 103° 43' 47.825" W		Orig KB Elevation (ft) 3,533.30		Ground Elev MSL (ft) 3,508.30		KB - GL (ft) 25.00	
Survey Data													
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS ("/100ft)	Survey Tool	Survey Company			
1/4/2015	6,132.00	0.30	68.80	6,130.23	36.65	-27.83	28.61	0.29	MWD	WEATHERFORD			
1/4/2015	6,226.00	0.50	71.81	6,224.23	36.68	-27.61	29.23	0.21	MWD	WEATHERFORD			
1/4/2015	6,321.00	0.29	102.78	6,319.23	36.85	-27.53	29.86	0.31	MWD	WEATHERFORD			
1/4/2015	6,415.00	0.30	90.02	6,413.23	37.09	-27.59	30.34	0.07	MWD	WEATHERFORD			
1/4/2015	6,510.00	0.49	121.25	6,508.23	37.51	-27.80	30.93	0.30	MWD	WEATHERFORD			
1/4/2015	6,604.00	0.45	108.56	6,602.22	38.07	-28.12	31.63	0.12	MWD	WEATHERFORD			
1/4/2015	6,699.00	0.35	84.06	6,697.22	38.40	-28.21	32.27	0.21	MWD	WEATHERFORD			
1/4/2015	6,794.00	0.22	129.36	6,792.22	38.64	-28.30	32.70	0.26	MWD	WEATHERFORD			
1/4/2015	6,888.00	0.60	136.31	6,886.22	39.26	-28.77	33.18	0.41	MWD	WEATHERFORD			
1/4/2015	6,983.00	0.49	126.45	6,981.21	40.07	-29.37	33.85	0.15	MWD	WEATHERFORD			
1/4/2015	7,078.00	0.45	121.47	7,076.21	40.72	-29.80	34.49	0.06	MWD	WEATHERFORD			
1/4/2015	7,172.00	0.50	135.57	7,170.21	41.40	-30.29	35.10	0.13	MWD	WEATHERFORD			
1/4/2015	7,267.00	0.47	175.03	7,265.20	42.16	-30.97	35.42	0.35	MWD	WEATHERFORD			
1/4/2015	7,361.00	0.45	166.00	7,359.20	42.89	-31.72	35.54	0.08	MWD	WEATHERFORD			
1/4/2015	7,456.00	0.49	171.13	7,454.20	43.66	-32.48	35.70	0.06	MWD	WEATHERFORD			
1/4/2015	7,551.00	0.58	169.26	7,549.19	44.52	-33.35	35.85	0.10	MWD	WEATHERFORD			
1/4/2015	7,645.00	0.84	176.23	7,643.19	45.64	-34.51	35.98	0.29	MWD	WEATHERFORD			
1/4/2015	7,739.00	0.92	157.45	7,737.17	47.05	-35.89	36.32	0.32	MWD	WEATHERFORD			
1/4/2015	7,834.00	0.88	157.00	7,832.16	48.54	-37.27	36.89	0.04	MWD	WEATHERFORD			
1/4/2015	7,928.00	0.72	168.75	7,926.15	49.84	-38.51	37.29	0.24	MWD	WEATHERFORD			
1/4/2015	8,022.00	1.04	175.31	8,020.14	51.23	-39.94	37.48	0.36	MWD	WEATHERFORD			
1/4/2015	8,117.00	0.38	243.51	8,115.14	52.07	-40.94	37.27	1.02	MWD	WEATHERFORD			
1/4/2015	8,211.00	0.35	243.79	8,209.13	52.12	-41.21	36.73	0.03	MWD	WEATHERFORD			
1/4/2015	8,306.00	0.22	230.11	8,304.13	52.19	-41.45	36.33	0.15	MWD	WEATHERFORD			
1/4/2015	8,400.00	0.41	190.98	8,398.13	52.52	-41.90	36.13	0.29	MWD	WEATHERFORD			
1/4/2015	8,494.00	0.59	215.21	8,492.13	53.06	-42.62	35.78	0.29	MWD	WEATHERFORD			
1/4/2015	8,589.00	0.25	240.60	8,587.13	53.35	-43.13	35.32	0.40	MWD	WEATHERFORD			
1/4/2015	8,684.00	0.55	277.05	8,682.12	53.15	-43.17	34.69	0.40	MWD	WEATHERFORD			
1/4/2015	8,778.00	0.45	243.89	8,776.12	52.95	-43.28	33.91	0.32	MWD	WEATHERFORD			
1/4/2015	8,873.00	0.80	244.57	8,871.11	53.01	-43.73	32.97	0.37	MWD	WEATHERFORD			
1/4/2015	8,967.00	0.87	258.51	8,965.10	52.91	-44.15	31.68	0.23	MWD	WEATHERFORD			
1/4/2015	9,062.00	0.55	276.38	9,060.10	52.55	-44.24	30.52	0.41	MWD	WEATHERFORD			
1/4/2015	9,157.00	0.91	295.48	9,155.09	51.77	-43.87	29.39	0.45	MWD	WEATHERFORD			
1/4/2015	9,252.00	0.56	341.88	9,250.08	50.75	-43.10	28.56	0.70	MWD	WEATHERFORD			
1/4/2015	9,346.00	1.24	304.09	9,344.07	49.44	-42.10	27.58	0.92	MWD	WEATHERFORD			
1/4/2015	9,441.00	0.51	226.46	9,439.06	48.73	-41.81	26.42	1.30	MWD	WEATHERFORD			
1/4/2015	9,535.00	0.44	207.92	9,533.06	49.11	-42.42	25.95	0.18	MWD	WEATHERFORD			
1/4/2015	9,630.00	0.25	263.98	9,628.06	49.29	-42.76	25.57	0.38	MWD	WEATHERFORD			
1/4/2015	9,724.00	0.56	235.47	9,722.05	49.33	-43.04	24.99	0.38	MWD	WEATHERFORD			
1/4/2015	9,819.00	0.25	223.82	9,817.05	49.51	-43.46	24.46	0.34	MWD	WEATHERFORD			
1/4/2015	9,913.00	0.71	192.61	9,911.05	50.07	-44.17	24.19	0.55	MWD	WEATHERFORD			
1/4/2015	10,008.00	0.47	320.62	10,006.05	50.18	-44.45	23.82	1.12	MWD	WEATHERFORD			
1/4/2015	10,039.00	0.58	321.35	10,037.04	49.90	-44.23	23.64	0.36	MWD	WEATHERFORD			
1/4/2015	10,071.00	0.21	286.68	10,069.04	49.71	-44.08	23.48	1.33	MWD	WEATHERFORD			
1/4/2015	10,102.00	0.16	283.54	10,100.04	49.65	-44.06	23.38	0.16	MWD	WEATHERFORD			
1/4/2015	10,124.00	0.16	218.31	10,122.04	49.65	-44.07	23.34	0.78	MWD	WEATHERFORD			
1/4/2015	10,288.00	0.36	231.22	10,286.04	49.90	-44.58	22.79	0.13	MWD	WEATHERFORD			
1/4/2015	10,382.00	0.56	229.88	10,380.04	50.12	-45.06	22.21	0.21	MWD	WEATHERFORD			
1/4/2015	10,477.00	0.77	229.74	10,475.03	50.46	-45.77	21.37	0.22	MWD	WEATHERFORD			
1/4/2015	10,572.00	0.59	226.62	10,570.02	50.83	-46.52	20.53	0.19	MWD	WEATHERFORD			
1/4/2015	10,667.00	0.30	203.35	10,665.02	51.18	-47.08	20.07	0.35	MWD	WEATHERFORD			
1/4/2015	10,682.00	0.50	212.86	10,680.02	51.24	-47.17	20.02	1.40	MWD	WEATHERFORD			
1/4/2015	10,750.00	0.50	212.86	10,748.02	51.58	-47.67	19.70	0.00	BIT	WEATHERFORD			

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