



Vinola Unit 2H
Doddridge County WV
Northing: 14295213.10
Easting: 1715893.22
As Drilled



WELL DETAILS Vinola Unit 2H
 Ground Level: 998.0 altitude
 Northing: 14295213.10
 Easting: 1715893.22
 Longitude: 80° 43' 58.625 W

Genie Lightfoot
 10/34, May 11 2015
 Scientific Drilling
 11220 N.W. 10th St
 Yukon, OK 73099

PROJECT DETAILS: Doddridge County WV
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1983 (NAD83)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84° W to 78° W)
 System Datum: Mean Sea Level

SITE DETAILS:
 R.J. Smith Pole Blow/Drill/Mishka/Vinola
 Site Centre
 Northing: 14295223.06
 Easting: 1715891.05
 Positional Uncertainty: 0.0
 Coordinate System: Local North, Grid

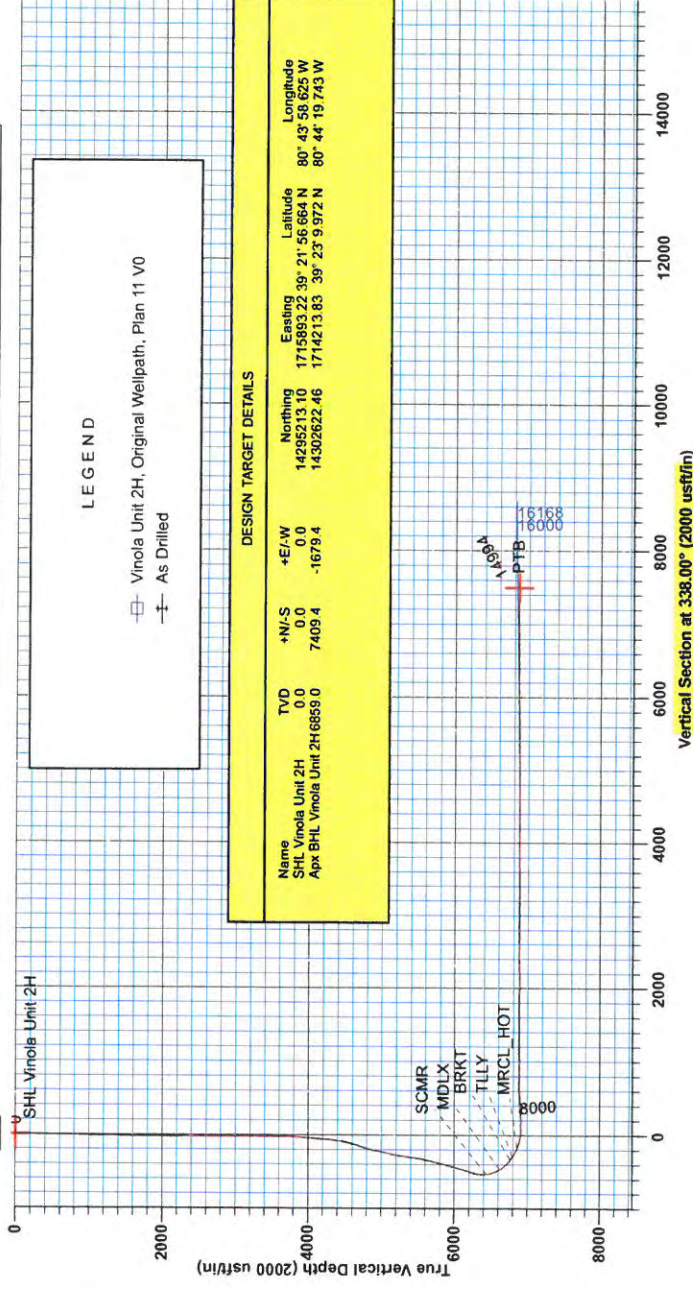
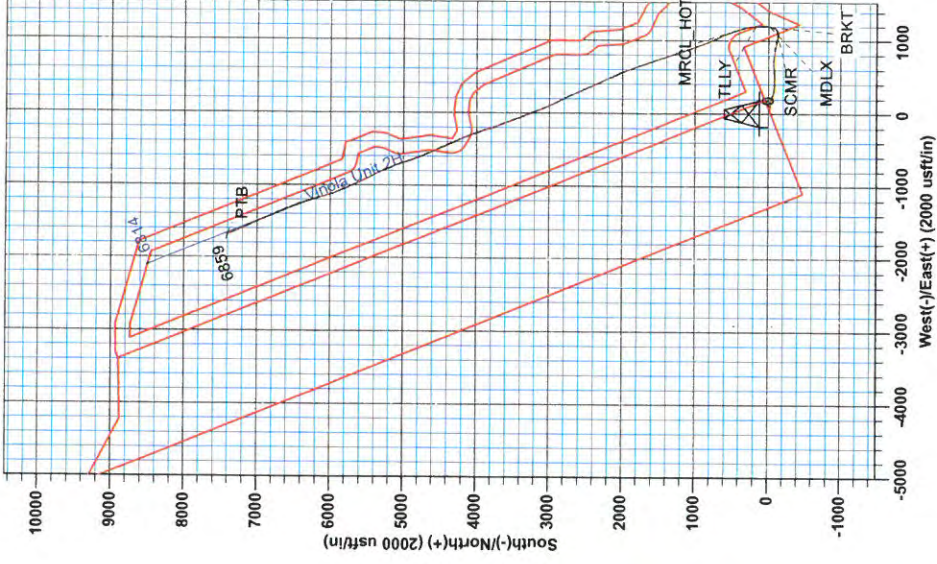
Precision 522: GL 988 + KB 18 @ 1016.0usft
 Gr: 998.0

Azimuths to Grid North
 True North: -0.17°
 Magnetic North: -8.70°

Magnetic Field
 Strength: 52181.8nT
 Dip Angle: 66.85°
 Date: 4/25/2015
 Model: BCGM2014



To convert Magnetic North to Grid, Subtract 8.70°
 To convert True North to Grid, Subtract 0.17°



LEGEND
 □ Vinola Unit 2H, Original Wellpath, Plan 11 V0
 — As Drilled

DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Longitude
SHL Vinola Unit 2H	0.0	0.0	0.0	14295213.10	80° 43' 58.625 W
Apx BHL Vinola Unit 2H 6659 0	7409.4	-1679.4	14302622.46	1714213.83	80° 44' 19.743 W



Antero

Doddridge County WV

R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinola

Vinola Unit 2H

Original Wellpath

Design: As Drilled

EOW Completion Report

11 May, 2015





EOW Completion Report



Company: Antero	Local Co-ordinate Reference: Well Vinola Unit 2H
Project: Doddridge County WV	TVD Reference: Precision 522: GL 998' + KB 18' @ 1016.0usft
Site: R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinola	MD Reference: Precision 522: GL 998' + KB 18' @ 1016.0usft
Well: Vinola Unit 2H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

Project	Doddridge County WV, McClellan District		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinola				
Site Position:		Northing:	14,295,223.06 usft	Latitude:	39° 21' 56.762 N
From:	Map	Easting:	1,715,891.05 usft	Longitude:	80° 43' 58.652 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.17 °

Well	Vinola Unit 2H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,295,213.10 usft	Latitude:	39° 21' 56.664 N
	+E/-W	0.0 usft	Easting:	1,715,893.22 usft	Longitude:	80° 43' 58.625 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,016.0 usft	Ground Level:	998.0 usft

Wellbore	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	4/25/2015	-8.53	66.85	52,182

Design	As Drilled				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
		0.0	0.0	0.0	338.00

Survey Program	Date 5/11/2015				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
106.0	6,338.2	Survey #9 Final Gyro to KOP (Original We	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
6,384.0	8,579.0	Survey #10 Crescent Drilling Surveys (Ori	Other MWD	MWD Other Company	
8,642.0	14,994.0	Survey #11 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
106.0	0.31	90.03	106.0	0.0	0.3	-0.1	0.29
107.0	0.31	90.60	107.0	0.0	0.3	-0.1	0.31
132.0	0.24	109.81	132.0	0.0	0.4	-0.2	0.46
157.0	0.22	142.98	157.0	-0.1	0.5	-0.3	0.53
182.0	0.18	173.66	182.0	-0.2	0.5	-0.3	0.45
207.0	0.21	188.99	207.0	-0.2	0.5	-0.4	0.24
232.0	0.28	177.71	232.0	-0.3	0.5	-0.5	0.34
257.0	0.16	203.69	257.0	-0.4	0.5	-0.6	0.61
282.0	0.13	199.90	282.0	-0.5	0.5	-0.6	0.13



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Vinola Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Site:	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	MD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Well:	Vinola Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
307.0	0.14	193.18	307.0	-0.6	0.5	-0.7	0.07
332.0	0.11	190.94	332.0	-0.6	0.4	-0.7	0.12
357.0	0.07	181.16	357.0	-0.6	0.4	-0.8	0.17
382.0	0.13	148.49	382.0	-0.7	0.5	-0.8	0.32
407.0	0.21	156.25	407.0	-0.7	0.5	-0.9	0.33
432.0	0.22	174.57	432.0	-0.8	0.5	-1.0	0.28
457.0	0.20	171.74	457.0	-0.9	0.5	-1.1	0.09
482.0	0.20	127.18	482.0	-1.0	0.6	-1.1	0.61
507.0	0.48	89.96	507.0	-1.0	0.7	-1.2	1.37
532.0	0.96	82.76	532.0	-1.0	1.0	-1.3	1.95
557.0	1.78	76.92	557.0	-0.9	1.6	-1.4	3.32
582.0	2.47	80.52	582.0	-0.7	2.5	-1.6	2.81
607.0	3.12	80.81	606.9	-0.5	3.7	-1.9	2.60
632.0	3.50	82.98	631.9	-0.3	5.1	-2.2	1.60
657.0	3.57	83.19	656.9	-0.1	6.7	-2.6	0.28
682.0	3.71	84.01	681.8	0.1	8.3	-3.0	0.60
707.0	4.33	86.98	706.7	0.2	10.0	-3.6	2.62
732.0	4.54	88.10	731.7	0.3	11.9	-4.2	0.91
757.0	4.62	88.28	756.6	0.3	13.9	-4.9	0.33
782.0	4.76	90.12	781.5	0.4	16.0	-5.6	0.82
807.0	4.78	90.10	806.4	0.4	18.1	-6.4	0.08
832.0	4.74	89.58	831.3	0.4	20.1	-7.2	0.24
857.0	4.78	89.44	856.2	0.4	22.2	-8.0	0.17
882.0	4.84	89.03	881.2	0.4	24.3	-8.7	0.28
907.0	4.95	88.61	906.1	0.5	26.4	-9.5	0.46
932.0	4.57	89.85	931.0	0.5	28.5	-10.2	1.57
957.0	4.41	90.64	955.9	0.5	30.5	-11.0	0.69
982.0	4.17	91.97	980.8	0.4	32.3	-11.7	1.04
1,007.0	3.71	93.02	1,005.8	0.4	34.0	-12.4	1.86
1,032.0	3.43	92.92	1,030.7	0.3	35.6	-13.1	1.12
1,057.0	3.16	92.55	1,055.7	0.2	37.0	-13.7	1.08
1,082.0	2.87	92.18	1,080.6	0.2	38.3	-14.2	1.16
1,107.0	2.60	88.80	1,105.6	0.1	39.5	-14.7	1.26
1,132.0	2.53	88.87	1,130.6	0.2	40.7	-15.1	0.28
1,157.0	2.26	87.78	1,155.6	0.2	41.7	-15.4	1.10
1,182.0	2.10	88.05	1,180.6	0.2	42.7	-15.8	0.64
1,207.0	1.84	89.59	1,205.5	0.2	43.5	-16.1	1.06
1,232.0	1.65	89.47	1,230.5	0.3	44.3	-16.3	0.76
1,257.0	1.48	88.84	1,255.5	0.3	45.0	-16.6	0.68
1,282.0	1.31	89.84	1,280.5	0.3	45.6	-16.8	0.69
1,307.0	1.17	93.02	1,305.5	0.3	46.1	-17.0	0.62
1,332.0	1.06	99.77	1,330.5	0.2	46.6	-17.3	0.68
1,357.0	0.98	101.42	1,355.5	0.1	47.0	-17.5	0.34
1,382.0	0.82	102.95	1,380.5	0.0	47.4	-17.7	0.65
1,407.0	0.64	109.38	1,405.5	0.0	47.7	-17.9	0.79



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Vinola Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Site:	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	MD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Well:	Vinola Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,432.0	0.63	104.10	1,430.5	-0.1	48.0	-18.1	0.24
1,457.0	0.65	106.37	1,455.5	-0.2	48.3	-18.3	0.13
1,482.0	0.70	102.43	1,480.5	-0.3	48.5	-18.4	0.27
1,507.0	0.75	105.97	1,505.5	-0.3	48.8	-18.6	0.27
1,532.0	0.65	112.63	1,530.5	-0.4	49.1	-18.8	0.52
1,557.0	0.62	112.31	1,555.5	-0.6	49.4	-19.0	0.12
1,582.0	0.67	119.80	1,580.5	-0.7	49.6	-19.2	0.39
1,607.0	0.62	125.58	1,605.5	-0.8	49.9	-19.5	0.33
1,632.0	0.48	117.26	1,630.5	-1.0	50.1	-19.6	0.64
1,657.0	0.55	132.72	1,655.5	-1.1	50.3	-19.8	0.62
1,682.0	0.32	126.24	1,680.5	-1.2	50.4	-20.0	0.94
1,707.0	0.28	127.79	1,705.5	-1.3	50.5	-20.1	0.16
1,732.0	0.30	126.18	1,730.5	-1.4	50.6	-20.2	0.09
1,757.0	0.31	115.68	1,755.5	-1.4	50.7	-20.3	0.23
1,782.0	0.23	102.47	1,780.5	-1.5	50.8	-20.4	0.40
1,807.0	0.24	125.58	1,805.5	-1.5	50.9	-20.5	0.38
1,832.0	0.29	136.74	1,830.5	-1.6	51.0	-20.6	0.29
1,857.0	0.20	102.38	1,855.5	-1.6	51.1	-20.7	0.67
1,882.0	0.32	145.62	1,880.5	-1.7	51.2	-20.8	0.89
1,907.0	0.26	141.84	1,905.5	-1.8	51.3	-20.9	0.25
1,932.0	0.26	132.53	1,930.5	-1.9	51.3	-21.0	0.17
1,957.0	0.30	161.18	1,955.5	-2.0	51.4	-21.1	0.58
1,982.0	0.19	149.66	1,980.5	-2.1	51.4	-21.2	0.48
2,007.0	0.22	175.04	2,005.5	-2.2	51.5	-21.3	0.38
2,032.0	0.22	183.93	2,030.5	-2.3	51.5	-21.4	0.14
2,057.0	0.16	179.02	2,055.5	-2.4	51.5	-21.5	0.25
2,082.0	0.09	122.75	2,080.5	-2.4	51.5	-21.5	0.53
2,107.0	0.07	195.56	2,105.5	-2.4	51.5	-21.5	0.39
2,132.0	0.11	170.38	2,130.5	-2.5	51.5	-21.6	0.22
2,157.0	0.15	118.14	2,155.5	-2.5	51.5	-21.6	0.48
2,182.0	0.26	126.46	2,180.5	-2.6	51.6	-21.7	0.45
2,207.0	0.22	146.62	2,205.5	-2.6	51.7	-21.8	0.37
2,232.0	0.22	153.26	2,230.5	-2.7	51.7	-21.9	0.10
2,257.0	0.16	169.39	2,255.5	-2.8	51.7	-22.0	0.32
2,282.0	0.13	134.85	2,280.5	-2.8	51.8	-22.0	0.36
2,307.0	0.13	158.09	2,305.5	-2.9	51.8	-22.1	0.21
2,332.0	0.05	170.05	2,330.5	-2.9	51.8	-22.1	0.33
2,357.0	0.10	164.69	2,355.5	-3.0	51.8	-22.2	0.20
2,382.0	0.13	193.97	2,380.5	-3.0	51.8	-22.2	0.26
2,407.0	0.09	158.79	2,405.5	-3.1	51.8	-22.2	0.31
2,432.0	0.11	224.50	2,430.5	-3.1	51.8	-22.3	0.44
2,457.0	0.11	142.72	2,455.5	-3.1	51.8	-22.3	0.58
2,482.0	0.15	138.99	2,480.5	-3.2	51.8	-22.4	0.16
2,507.0	0.18	196.82	2,505.5	-3.2	51.9	-22.4	0.65



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Vinola Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Site:	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	MD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Well:	Vinola Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
2,532.0	0.14	199.35	2,530.5	-3.3	51.8	-22.5	0.16
2,557.0	0.10	202.51	2,555.5	-3.3	51.8	-22.5	0.16
2,582.0	0.05	172.94	2,580.5	-3.4	51.8	-22.5	0.25
2,607.0	0.05	119.28	2,605.5	-3.4	51.8	-22.6	0.18
2,632.0	0.09	171.92	2,630.5	-3.4	51.8	-22.6	0.29
2,657.0	0.07	169.61	2,655.5	-3.5	51.8	-22.6	0.08
2,682.0	0.09	145.20	2,680.5	-3.5	51.9	-22.7	0.16
2,707.0	0.09	184.50	2,705.5	-3.5	51.9	-22.7	0.24
2,732.0	0.10	179.38	2,730.5	-3.6	51.9	-22.7	0.05
2,757.0	0.07	243.13	2,755.5	-3.6	51.8	-22.7	0.37
2,782.0	0.03	170.58	2,780.5	-3.6	51.8	-22.8	0.27
2,807.0	0.05	227.47	2,805.5	-3.6	51.8	-22.8	0.17
2,832.0	0.04	231.41	2,830.5	-3.6	51.8	-22.8	0.04
2,857.0	0.06	221.89	2,855.5	-3.6	51.8	-22.8	0.09
2,882.0	0.08	215.09	2,880.5	-3.7	51.8	-22.8	0.09
2,907.0	0.16	200.72	2,905.5	-3.7	51.8	-22.8	0.34
2,932.0	0.17	212.16	2,930.5	-3.8	51.7	-22.9	0.14
2,957.0	0.17	204.18	2,955.5	-3.8	51.7	-22.9	0.09
2,982.0	0.18	214.42	2,980.5	-3.9	51.6	-23.0	0.13
3,007.0	0.26	190.95	3,005.5	-4.0	51.6	-23.0	0.48
3,032.0	0.18	229.18	3,030.5	-4.1	51.6	-23.1	0.65
3,057.0	0.16	219.41	3,055.5	-4.1	51.5	-23.1	0.14
3,082.0	0.22	223.22	3,080.5	-4.2	51.5	-23.2	0.25
3,107.0	0.20	225.44	3,105.5	-4.3	51.4	-23.2	0.09
3,132.0	0.22	240.14	3,130.5	-4.3	51.3	-23.2	0.23
3,157.0	0.15	268.77	3,155.5	-4.3	51.3	-23.2	0.46
3,182.0	0.14	229.67	3,180.5	-4.4	51.2	-23.2	0.39
3,207.0	0.28	213.73	3,205.5	-4.4	51.1	-23.3	0.60
3,232.0	0.23	213.26	3,230.5	-4.5	51.1	-23.3	0.20
3,257.0	0.15	230.96	3,255.5	-4.6	51.0	-23.4	0.39
3,282.0	0.21	201.14	3,280.5	-4.6	51.0	-23.4	0.44
3,307.0	0.26	224.06	3,305.5	-4.7	50.9	-23.5	0.42
3,332.0	0.28	231.84	3,330.5	-4.8	50.8	-23.5	0.17
3,357.0	0.19	189.99	3,355.5	-4.9	50.8	-23.6	0.75
3,382.0	0.21	200.43	3,380.5	-5.0	50.8	-23.6	0.17
3,407.0	0.20	233.42	3,405.5	-5.0	50.7	-23.7	0.47
3,432.0	0.16	221.00	3,430.5	-5.1	50.7	-23.7	0.22
3,457.0	0.10	145.98	3,455.5	-5.1	50.6	-23.7	0.66
3,482.0	0.12	192.21	3,480.5	-5.2	50.7	-23.8	0.35
3,507.0	0.20	246.43	3,505.5	-5.2	50.6	-23.8	0.65
3,532.0	0.20	223.83	3,530.5	-5.3	50.5	-23.8	0.31
3,557.0	0.22	214.29	3,555.5	-5.3	50.5	-23.9	0.16
3,582.0	0.20	261.54	3,580.5	-5.4	50.4	-23.9	0.68
3,607.0	0.34	214.75	3,605.5	-5.5	50.3	-23.9	1.00



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Vinola Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Site:	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	MD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Well:	Vinola Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
3,632.0	0.34	227.08	3,630.5	-5.6	50.2	-24.0	0.29
3,657.0	0.41	222.90	3,655.5	-5.7	50.1	-24.0	0.30
3,682.0	0.31	215.41	3,680.5	-5.8	50.0	-24.1	0.44
3,707.0	0.25	190.17	3,705.5	-5.9	50.0	-24.2	0.54
3,732.0	1.09	134.40	3,730.5	-6.1	50.1	-24.5	3.89
3,757.0	1.87	132.02	3,755.5	-6.6	50.6	-25.1	3.13
3,782.0	2.66	130.92	3,780.4	-7.2	51.3	-25.9	3.16
3,807.0	3.40	127.55	3,805.4	-8.1	52.4	-27.1	3.04
3,832.0	3.96	126.44	3,830.3	-9.0	53.6	-28.5	2.26
3,857.0	4.88	124.12	3,855.3	-10.1	55.2	-30.1	3.75
3,882.0	5.40	120.94	3,880.2	-11.3	57.1	-31.9	2.37
3,907.0	5.68	119.75	3,905.1	-12.6	59.2	-33.8	1.21
3,932.0	6.23	115.73	3,929.9	-13.8	61.5	-35.8	2.76
3,957.0	6.57	112.89	3,954.8	-14.9	64.0	-37.8	1.86
3,982.0	7.18	107.87	3,979.6	-15.9	66.8	-39.8	3.42
4,007.0	7.73	102.94	4,004.4	-16.8	70.0	-41.8	3.37
4,032.0	8.09	99.67	4,029.1	-17.5	73.3	-43.7	2.30
4,057.0	8.35	96.06	4,053.9	-18.0	76.9	-45.4	2.31
4,082.0	8.43	94.69	4,078.6	-18.3	80.5	-47.1	0.86
4,107.0	9.06	95.50	4,103.3	-18.6	84.3	-48.9	2.57
4,132.0	9.66	96.45	4,128.0	-19.1	88.3	-50.8	2.48
4,157.0	10.28	97.34	4,152.6	-19.6	92.6	-52.9	2.56
4,182.0	10.78	97.24	4,177.2	-20.2	97.2	-55.1	2.00
4,207.0	11.61	95.32	4,201.7	-20.7	102.0	-57.4	3.64
4,232.0	12.27	93.15	4,226.2	-21.1	107.1	-59.7	3.19
4,257.0	13.11	91.14	4,250.6	-21.3	112.6	-61.9	3.80
4,282.0	13.75	89.60	4,274.9	-21.3	118.4	-64.1	2.93
4,307.0	14.43	88.21	4,299.1	-21.2	124.5	-66.3	3.04
4,332.0	15.34	87.11	4,323.3	-20.9	130.9	-68.4	3.81
4,357.0	16.10	87.91	4,347.3	-20.6	137.7	-70.7	3.16
4,382.0	16.46	88.61	4,371.3	-20.4	144.7	-73.1	1.64
4,407.0	16.80	90.38	4,395.3	-20.4	151.9	-75.8	2.44
4,432.0	16.94	95.10	4,419.2	-20.7	159.1	-78.8	5.51
4,457.0	16.94	101.23	4,443.1	-21.7	166.3	-82.4	7.14
4,482.0	17.12	106.79	4,467.0	-23.5	173.4	-86.8	6.55
4,507.0	17.59	111.02	4,490.9	-25.9	180.4	-91.6	5.38
4,532.0	18.09	112.98	4,514.7	-28.8	187.5	-97.0	3.13
4,557.0	18.86	112.48	4,538.4	-31.9	194.9	-102.5	3.14
4,582.0	19.97	112.16	4,562.0	-35.0	202.5	-108.3	4.46
4,607.0	20.92	112.69	4,585.4	-38.3	210.6	-114.4	3.87
4,632.0	22.31	113.47	4,608.7	-42.0	219.1	-121.0	5.68
4,657.0	23.97	113.99	4,631.7	-45.9	228.1	-128.0	6.69
4,682.0	25.21	113.55	4,654.4	-50.1	237.6	-135.5	5.01
4,707.0	26.14	111.23	4,676.9	-54.2	247.6	-143.0	5.48



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Vinola Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Site:	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	MD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Well:	Vinola Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
4,732.0	26.31	108.99	4,699.3	-58.0	258.0	-150.4	4.02
4,757.0	26.97	106.77	4,721.7	-61.5	268.7	-157.6	4.78
4,782.0	27.77	104.93	4,743.9	-64.6	279.7	-164.7	4.66
4,807.0	28.28	103.35	4,766.0	-67.5	291.1	-171.6	3.60
4,832.0	28.93	102.01	4,787.9	-70.1	302.8	-178.4	3.65
4,857.0	28.97	99.80	4,809.8	-72.4	314.7	-185.0	4.28
4,882.0	29.33	97.40	4,831.6	-74.2	326.7	-191.2	4.89
4,907.0	29.54	94.30	4,853.4	-75.4	338.9	-196.9	6.15
4,932.0	29.42	91.81	4,875.2	-76.1	351.2	-202.1	4.92
4,957.0	29.70	90.96	4,896.9	-76.4	363.5	-207.0	2.02
4,982.0	29.50	90.24	4,918.6	-76.5	375.9	-211.8	1.63
5,007.0	29.01	89.88	4,940.5	-76.5	388.1	-216.4	2.08
5,032.0	28.38	89.61	4,962.4	-76.5	400.1	-220.8	2.57
5,057.0	27.80	89.74	4,984.4	-76.4	411.9	-225.1	2.33
5,082.0	28.04	89.77	5,006.5	-76.4	423.6	-229.5	0.96
5,107.0	28.25	90.44	5,028.6	-76.4	435.4	-233.9	1.52
5,132.0	28.26	91.72	5,050.6	-76.6	447.2	-238.6	2.42
5,157.0	28.52	92.36	5,072.6	-77.0	459.1	-243.4	1.60
5,182.0	28.70	94.08	5,094.5	-77.7	471.0	-248.5	3.37
5,207.0	29.01	94.57	5,116.4	-78.6	483.1	-253.9	1.56
5,232.0	29.66	94.01	5,138.2	-79.5	495.3	-259.3	2.82
5,257.0	30.48	91.68	5,159.9	-80.2	507.8	-264.5	5.71
5,282.0	30.89	89.46	5,181.4	-80.3	520.5	-269.4	4.82
5,307.0	30.61	87.30	5,202.8	-79.9	533.3	-273.9	4.56
5,332.0	30.16	85.05	5,224.4	-79.1	545.9	-277.8	4.89
5,357.0	29.54	82.93	5,246.1	-77.8	558.3	-281.3	4.90
5,382.0	29.12	81.46	5,267.9	-76.1	570.4	-284.3	3.33
5,407.0	28.57	81.00	5,289.8	-74.3	582.4	-287.0	2.37
5,432.0	28.03	81.03	5,311.8	-72.4	594.1	-289.7	2.16
5,457.0	27.04	81.66	5,334.0	-70.7	605.5	-292.4	4.13
5,482.0	25.51	82.76	5,356.4	-69.2	616.4	-295.1	6.42
5,507.0	24.60	83.50	5,379.0	-67.9	627.0	-297.8	3.85
5,532.0	23.63	85.76	5,401.9	-67.0	637.1	-300.8	5.36
5,557.0	23.54	87.95	5,424.8	-66.4	647.1	-304.0	3.52
5,582.0	23.59	89.61	5,447.7	-66.2	657.1	-307.5	2.66
5,607.0	23.70	90.24	5,470.6	-66.2	667.1	-311.3	1.10
5,632.0	24.03	90.68	5,493.4	-66.3	677.2	-315.1	1.50
5,657.0	24.56	91.06	5,516.2	-66.4	687.5	-319.1	2.21
5,682.0	25.06	91.85	5,538.9	-66.7	698.0	-323.3	2.40
5,707.0	25.75	92.69	5,561.5	-67.1	708.7	-327.7	3.11
5,732.0	25.97	94.17	5,584.0	-67.8	719.6	-332.4	2.73
5,757.0	25.62	96.88	5,606.5	-68.8	730.4	-337.4	4.92
5,782.0	25.35	98.05	5,629.1	-70.2	741.1	-342.7	2.28
5,807.0	25.47	98.80	5,651.7	-71.8	751.7	-348.2	1.37



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Vinola Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Site:	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	MD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Well:	Vinola Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,832.0	25.23	98.98	5,674.3	-73.4	762.3	-353.6	1.01
5,857.0	25.72	99.03	5,696.8	-75.1	772.9	-359.2	1.96
5,882.0	25.92	98.58	5,719.3	-76.8	783.7	-364.8	1.12
5,907.0	26.67	98.48	5,741.7	-78.4	794.6	-370.4	3.01
5,932.0	27.15	98.34	5,764.0	-80.1	805.8	-376.1	1.94
5,957.0	27.60	98.48	5,786.2	-81.8	817.2	-381.9	1.82
5,982.0	27.43	98.05	5,808.4	-83.4	828.6	-387.8	1.05
6,007.0	27.93	97.77	5,830.5	-85.0	840.1	-393.5	2.07
6,032.0	28.22	96.87	5,852.6	-86.5	851.8	-399.3	2.05
6,057.0	28.35	95.73	5,874.6	-87.8	863.6	-404.9	2.22
6,082.0	28.14	95.58	5,896.6	-89.0	875.3	-410.4	0.89
6,107.0	28.04	95.98	5,918.7	-90.2	887.1	-415.9	0.85
6,132.0	27.58	97.91	5,940.8	-91.6	898.6	-421.5	4.04
6,157.0	27.40	99.09	5,963.0	-93.3	910.0	-427.4	2.29
6,182.0	27.27	100.52	5,985.2	-95.2	921.4	-433.5	2.68
6,207.0	27.18	102.02	6,007.4	-97.5	932.6	-439.7	2.77
6,232.0	27.06	102.81	6,029.7	-99.9	943.7	-446.2	1.52
6,257.0	27.52	103.46	6,051.9	-102.5	954.9	-452.8	2.19
6,282.0	27.63	103.34	6,074.1	-105.2	966.1	-459.5	0.49
6,307.0	27.79	103.41	6,096.2	-107.9	977.4	-466.2	0.65
6,332.0	28.47	103.16	6,118.2	-110.6	988.9	-473.0	2.76
6,338.2	28.56	103.20	6,123.7	-111.3	991.8	-474.7	1.48
6,386.0	29.29	101.18	6,165.5	-116.2	1,014.4	-487.7	2.55
6,448.0	29.34	102.11	6,219.6	-122.3	1,044.1	-504.5	0.74
6,478.0	29.60	103.70	6,245.7	-125.6	1,058.5	-513.0	2.75
6,509.0	28.50	101.50	6,272.8	-128.9	1,073.2	-521.5	4.95
6,540.0	25.46	93.25	6,300.4	-130.7	1,087.1	-528.4	15.53
6,571.0	24.38	85.08	6,328.6	-130.6	1,100.1	-533.2	11.63
6,602.0	24.40	77.30	6,356.8	-128.6	1,112.7	-536.1	10.36
6,632.0	24.96	70.49	6,384.1	-125.1	1,124.8	-537.4	9.66
6,663.0	24.86	62.87	6,412.2	-120.0	1,136.7	-537.1	10.35
6,694.0	25.20	53.50	6,440.3	-113.1	1,147.8	-534.8	12.82
6,698.0	25.30	52.36	6,443.9	-112.0	1,149.2	-534.4	12.41
SCMR							
6,725.0	26.18	44.91	6,468.2	-104.3	1,158.0	-530.5	12.41
6,756.0	27.28	37.54	6,495.9	-93.8	1,167.1	-524.2	11.26
6,787.0	29.27	32.16	6,523.2	-81.8	1,175.5	-516.2	10.42
6,817.0	30.86	26.76	6,549.2	-68.7	1,182.9	-506.8	10.46
6,848.0	32.75	22.56	6,575.5	-53.8	1,189.7	-495.6	9.39
6,879.0	34.86	17.35	6,601.3	-37.6	1,195.5	-482.7	11.56
6,910.0	37.50	12.26	6,626.3	-19.9	1,200.2	-468.1	12.90
6,914.0	37.81	11.80	6,629.5	-17.6	1,200.7	-466.1	10.42
MDLX							
6,941.0	39.92	8.84	6,650.5	-0.9	1,203.7	-451.7	10.42
6,972.0	42.48	5.24	6,673.9	19.4	1,206.2	-433.9	11.25



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Vinola Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Site:	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	MD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Well:	Vinola Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,002.0	45.56	0.29	6,695.4	40.2	1,207.2	-415.0	15.38
7,033.0	48.49	0.33	6,716.6	62.9	1,207.3	-394.0	9.45
7,064.0	50.94	358.80	6,736.6	86.5	1,207.1	-372.0	8.75
7,095.0	54.00	357.59	6,755.5	111.1	1,206.3	-348.9	10.34
7,119.0	56.37	356.93	6,769.2	130.7	1,205.4	-330.3	10.13
BRKT							
7,126.0	57.06	356.74	6,773.0	136.6	1,205.1	-324.8	10.13
7,157.0	57.77	356.71	6,789.7	162.7	1,203.6	-300.0	2.29
7,174.0	58.69	355.92	6,798.7	177.1	1,202.6	-286.3	6.72
TLLY							
7,188.0	59.46	355.28	6,805.9	189.1	1,201.7	-274.9	6.72
7,219.0	61.12	352.71	6,821.2	215.8	1,198.9	-249.0	8.97
7,249.0	63.70	349.39	6,835.1	242.1	1,194.7	-223.1	13.04
7,280.0	65.75	348.11	6,848.4	269.6	1,189.3	-195.6	7.59
7,307.0	68.08	347.36	6,859.0	293.9	1,184.0	-171.1	8.98
MRCL_HOT							
7,311.0	68.42	347.25	6,860.4	297.5	1,183.2	-167.4	8.98
7,342.0	70.31	345.29	6,871.4	325.7	1,176.3	-138.7	8.50
7,376.0	73.20	342.60	6,882.0	356.7	1,167.4	-106.6	11.34
7,407.0	76.00	342.20	6,890.2	385.2	1,158.3	-76.8	9.12
7,438.0	79.40	342.70	6,896.8	414.0	1,149.2	-46.6	11.08
7,468.0	82.70	343.00	6,901.5	442.3	1,140.5	-17.1	11.04
7,499.0	86.00	341.80	6,904.6	471.8	1,131.1	13.7	11.32
7,561.0	91.50	337.70	6,905.9	529.9	1,109.7	75.6	11.06
7,654.0	90.50	334.60	6,904.3	614.9	1,072.1	168.5	3.50
7,746.0	91.20	334.80	6,902.9	698.1	1,032.8	260.4	0.79
7,839.0	94.00	337.70	6,898.7	783.1	995.4	353.2	4.33
7,931.0	94.90	337.60	6,891.6	867.9	960.5	444.9	0.98
8,093.0	92.40	340.89	6,881.2	1,019.1	903.2	606.5	2.55
8,124.0	91.78	337.98	6,880.1	1,048.1	892.3	637.5	9.59
8,178.0	86.70	339.50	6,880.8	1,098.4	872.8	691.4	9.82
8,271.0	87.30	342.10	6,885.7	1,186.1	842.2	784.2	2.87
8,301.0	87.50	342.00	6,887.1	1,214.6	833.0	814.1	0.75
8,394.0	91.90	342.30	6,887.5	1,303.1	804.5	906.8	4.74
8,486.0	92.30	342.40	6,884.2	1,390.7	776.6	998.5	0.45
8,579.0	90.30	341.60	6,882.1	1,479.1	747.9	1,091.2	2.32
8,642.0	90.54	339.25	6,881.6	1,538.5	726.8	1,154.2	3.75
8,707.0	91.24	340.10	6,880.6	1,599.4	704.2	1,219.1	1.69
8,800.0	89.73	341.17	6,879.8	1,687.1	673.4	1,312.0	1.99
8,892.0	89.56	340.41	6,880.4	1,774.0	643.1	1,403.9	0.85
8,985.0	90.07	339.60	6,880.7	1,861.4	611.3	1,496.9	1.03
9,078.0	90.81	339.24	6,880.0	1,948.5	578.6	1,589.8	0.88
9,170.0	89.63	336.70	6,879.6	2,033.7	544.1	1,681.8	3.04
9,263.0	89.80	335.42	6,880.1	2,118.7	506.4	1,774.8	1.39



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Vinola Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Site:	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	MD Reference:	Precision 522: GL 998' + KB 18' @ 1016.0usft
Well:	Vinola Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
9,355.0	88.52	334.96	6,881.4	2,202.2	467.8	1,866.6	1.48
9,448.0	88.29	334.79	6,884.0	2,286.4	428.3	1,959.5	0.31
9,540.0	90.47	336.98	6,885.0	2,370.4	390.7	2,051.4	3.36
9,633.0	91.78	336.11	6,883.2	2,455.7	353.7	2,144.3	1.69
9,727.0	90.84	335.32	6,881.0	2,541.3	315.1	2,238.2	1.31
9,821.0	92.08	337.05	6,878.6	2,627.3	277.1	2,332.2	2.26
9,916.0	91.28	336.75	6,875.9	2,714.6	239.9	2,427.1	0.90
9,979.0	86.81	335.20	6,876.9	2,772.1	214.2	2,490.0	7.51
10,010.0	87.72	334.64	6,878.4	2,800.2	201.1	2,521.0	3.45
10,064.0	88.02	333.15	6,880.4	2,848.6	177.4	2,574.8	2.81
10,079.0	87.95	333.09	6,880.9	2,862.0	170.6	2,589.7	0.61
10,104.0	88.12	332.99	6,881.8	2,884.3	159.2	2,614.6	0.79
10,198.0	89.46	335.02	6,883.8	2,968.7	118.1	2,708.3	2.59
10,292.0	91.14	337.16	6,883.3	3,054.7	80.0	2,802.3	2.89
10,387.0	90.30	337.33	6,882.1	3,142.3	43.2	2,897.3	0.90
10,481.0	90.64	339.57	6,881.3	3,229.7	8.7	2,991.3	2.41
10,576.0	91.11	338.86	6,879.9	3,318.5	-25.0	3,086.2	0.90
10,669.0	90.54	338.82	6,878.5	3,405.2	-58.6	3,179.2	0.61
10,763.0	89.66	339.03	6,878.3	3,492.9	-92.4	3,273.2	0.96
10,856.0	89.93	338.29	6,878.7	3,579.6	-126.2	3,366.2	0.85
10,951.0	90.81	340.51	6,878.1	3,668.5	-159.6	3,461.1	2.51
11,041.0	89.43	339.56	6,877.9	3,753.1	-190.4	3,551.1	1.86
11,134.0	90.81	342.00	6,877.7	3,840.9	-221.0	3,644.0	3.01
11,226.0	90.54	341.52	6,876.6	3,928.2	-249.8	3,735.8	0.60
11,318.0	90.27	340.01	6,875.9	4,015.1	-280.1	3,827.7	1.67
11,411.0	89.87	338.77	6,875.8	4,102.1	-312.8	3,920.6	1.40
11,503.0	90.60	337.63	6,875.5	4,187.6	-347.0	4,012.6	1.47
11,575.0	90.81	337.19	6,874.6	4,254.0	-374.6	4,084.6	0.68
11,667.0	89.30	335.40	6,874.5	4,338.3	-411.6	4,176.6	2.55
11,760.0	89.83	335.74	6,875.2	4,422.9	-450.1	4,269.5	0.68
11,852.0	89.43	335.36	6,875.8	4,506.7	-488.2	4,361.4	0.60
11,945.0	90.87	335.91	6,875.5	4,591.4	-526.5	4,454.3	1.66
12,037.0	89.63	336.79	6,875.1	4,675.7	-563.4	4,546.3	1.65
12,130.0	90.60	337.01	6,875.0	4,761.2	-599.9	4,639.2	1.07
12,222.0	89.53	338.10	6,874.8	4,846.2	-635.0	4,731.2	1.66
12,315.0	91.31	341.48	6,874.2	4,933.5	-667.2	4,824.2	4.11
12,408.0	89.33	340.45	6,873.6	5,021.4	-697.5	4,917.0	2.40
12,501.0	89.13	339.62	6,874.9	5,108.8	-729.2	5,010.0	0.92
12,593.0	90.57	338.76	6,875.1	5,194.8	-761.9	5,102.0	1.82
12,686.0	91.04	338.26	6,873.8	5,281.3	-796.0	5,194.9	0.74
12,778.0	89.77	332.69	6,873.2	5,365.0	-834.2	5,286.8	6.21
12,871.0	89.29	332.76	6,873.9	5,447.6	-876.8	5,379.4	0.52
12,963.0	91.28	334.28	6,873.5	5,530.0	-917.8	5,471.1	2.72
13,056.0	92.11	334.53	6,870.7	5,613.8	-958.0	5,563.9	0.93
13,149.0	91.11	334.35	6,868.1	5,697.7	-998.1	5,656.7	1.09



EOW Completion Report



Company: Antero	Local Co-ordinate Reference: Well Vinola Unit 2H
Project: Doddridge County WV	TVD Reference: Precision 522: GL 998' + KB 18' @ 1016.0usft
Site: R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	MD Reference: Precision 522: GL 998' + KB 18' @ 1016.0usft
Well: Vinola Unit 2H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
13,241.0	89.87	336.45	6,867.3	5,781.3	-1,036.4	5,748.6	2.65
13,333.0	91.74	338.98	6,866.0	5,866.4	-1,071.2	5,840.6	3.42
13,425.0	92.72	339.20	6,862.5	5,952.3	-1,104.1	5,932.5	1.09
13,518.0	90.64	341.90	6,859.7	6,039.9	-1,135.0	6,025.3	3.66
13,611.0	90.47	344.92	6,858.8	6,129.1	-1,161.5	6,117.9	3.25
13,703.0	90.91	343.53	6,857.7	6,217.6	-1,186.6	6,209.3	1.58
13,796.0	89.73	339.98	6,857.2	6,305.9	-1,215.7	6,302.1	4.02
13,888.0	90.10	341.13	6,857.3	6,392.6	-1,246.3	6,394.0	1.31
13,981.0	90.54	340.80	6,856.8	6,480.6	-1,276.6	6,486.9	0.59
14,073.0	89.66	337.13	6,856.7	6,566.4	-1,309.6	6,578.9	4.10
14,166.0	89.70	336.30	6,857.2	6,651.8	-1,346.4	6,671.8	0.89
14,259.0	90.27	337.60	6,857.2	6,737.4	-1,382.8	6,764.8	1.53
14,351.0	90.77	335.39	6,856.4	6,821.8	-1,419.5	6,856.8	2.46
14,444.0	89.97	333.91	6,855.8	6,905.8	-1,459.3	6,949.6	1.81
14,536.0	90.10	334.93	6,855.7	6,988.8	-1,499.0	7,041.4	1.12
14,629.0	90.00	334.39	6,855.6	7,072.8	-1,538.8	7,134.3	0.59
14,721.0	90.71	335.97	6,855.1	7,156.3	-1,577.5	7,226.2	1.88
14,814.0	88.09	335.90	6,856.0	7,241.2	-1,615.4	7,319.1	2.82
14,908.0	88.92	339.64	6,858.5	7,328.2	-1,650.9	7,413.0	4.07
14,929.0	89.73	340.81	6,858.7	7,348.0	-1,658.0	7,434.0	6.78
14,994.0	89.73	340.81	6,859.0	7,409.4	-1,679.4	7,498.9	0.00

PTB

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,698.0	6,443.9	-112.0	1,149.2	SCMR
6,914.0	6,629.5	-17.6	1,200.7	MDLX
7,119.0	6,769.2	130.7	1,205.4	BRKT
7,174.0	6,798.7	177.1	1,202.6	TLLY
7,307.0	6,859.0	293.9	1,184.0	MRCL_HOT
14,994.0	6,859.0	7,409.4	-1,679.4	PTB

Checked By: _____ Approved By: _____ Date: _____