



Project: Marshall County, WV  
 Site: Conner Pad  
 Well: Conner 6H  
 Wellbore: Lateral  
 Design: Lateral



WELL DETAILS: Conner 6H

+N/-S	+E/-W	Ground Level:	1220.00
0.00	0.00	Northing	505536.87
		Eastings	1617524.51
		Latitude	39° 52' 50.495 N
		Longitude	80° 45' 2.459 W

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Conner 6H, True North  
 Vertical (TVD) Reference: GL 1220' & 32' KB @ 1252.00ft (Nabors X7)  
 Section (VS) Reference: Slot - (0.00N, 0.00E)  
 Measured Depth Reference: GL 1220' & 32' KB @ 1252.00ft (Nabors X7)  
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Marshall County, WV

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: West Virginia Northern Zone  
 System Datum: Mean Sea Level

SECTION DETAILS

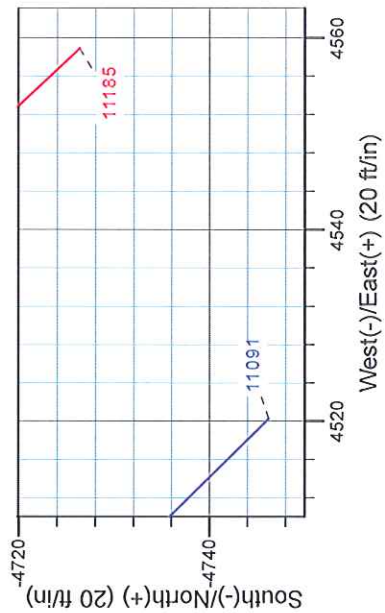
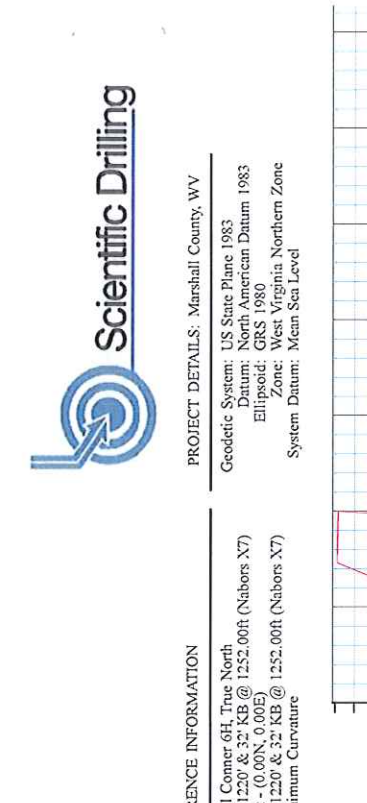
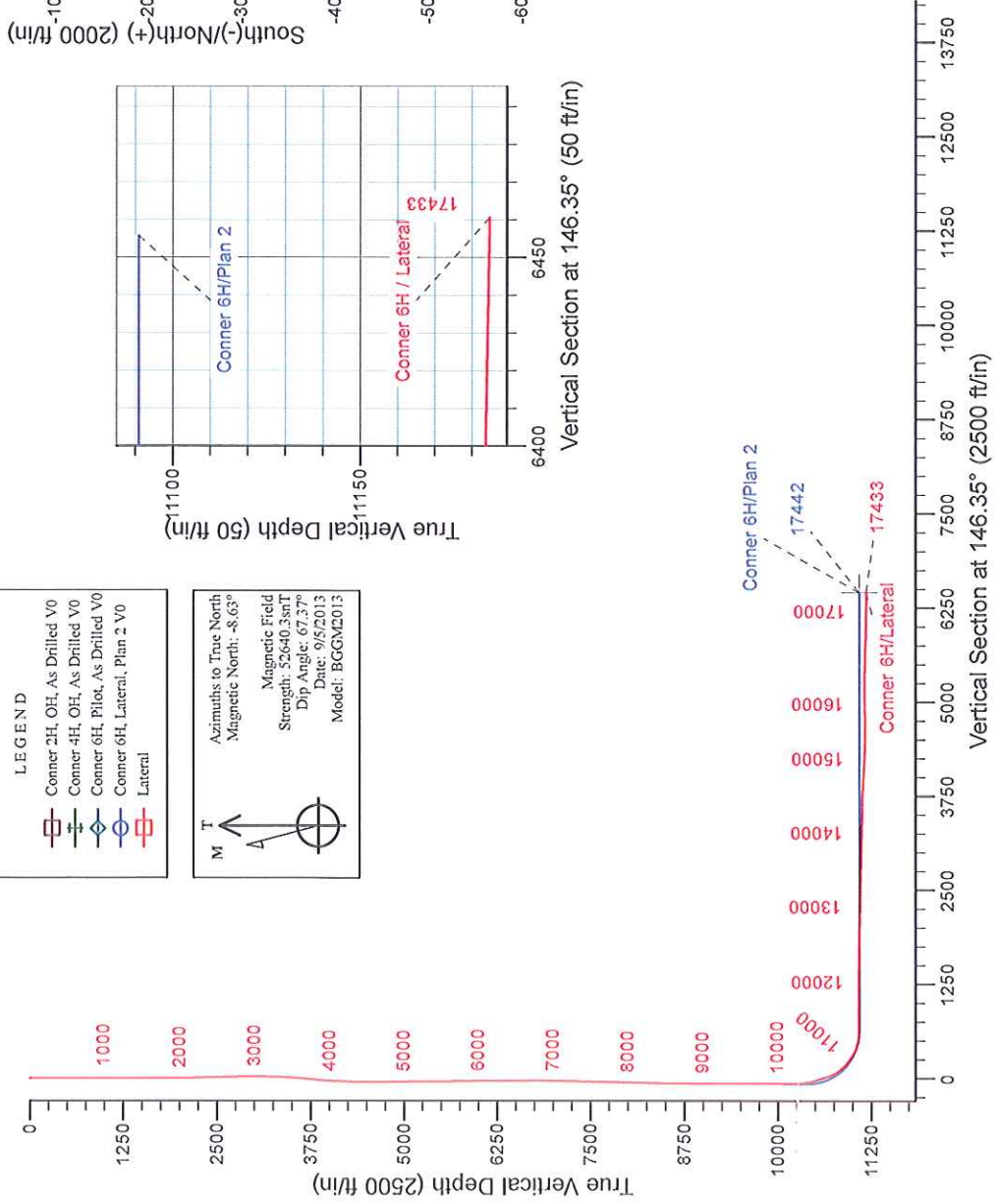
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	TFace	VSet	Target
10093.00	0.86	297.27	0082.75	-1.13	-129.44	0.00	0.00	0.00	-88.45	
10375.00	0.86	297.27	0364.72	0.81	-133.20	0.00	0.00	0.00	-92.45	
11510.03	90.00	135.54	1091.00	-512.64	365.85	8.00	-61.72	623.53		
117441.50	90.00	135.54	1091.00	-4746.23	4520.26	0.00	0.006554	35		Conner 6H PBHL rev1

**LEGEND**

- Conner 2H, OH, As Drilled V0
- Conner 4H, OH, As Drilled V0
- Conner 6H, Pilot, As Drilled V0
- Conner 6H, Lateral, Plan 2 V0
- Lateral

Azimuths to True North  
 Magnetic North: -8.63°

Magnetic Field  
 Strength: 52640.3snT  
 Dip Angle: 67.37°  
 Date: 9/5/2013  
 Model: BGGME013





# Chevron Appalachia, LLC

Marshall County, WV

Conner Pad

Conner 6H

Lateral

Design: Lateral

## Standard Survey Report

05 December, 2013



[www.scientificdrilling.com](http://www.scientificdrilling.com)





**Scientific Drilling International**  
Survey Report



<b>Company:</b>	Chevron Appalachia, LLC	<b>Local Co-ordinate Reference:</b>	Well Conner 6H
<b>Project:</b>	Marshall County, WV	<b>TVD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Site:</b>	Conner Pad	<b>MD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Well:</b>	Conner 6H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Lateral	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Lateral	<b>Database:</b>	Northeast District

<b>Project</b>	Marshall County, WV		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	West Virginia Northern Zone		

<b>Site</b>	Conner Pad				
<b>Site Position:</b>		<b>Northing:</b>	505,327.06 usft	<b>Latitude:</b>	39° 52' 50.394 N
<b>From:</b>	Map	<b>Easting:</b>	1,617,496.30 usft	<b>Longitude:</b>	80° 45' 2.819 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.80 °

<b>Well</b>	Conner 6H					
<b>Well Position</b>	+N/-S	0.00 ft	<b>Northing:</b>	505,336.87 usft	<b>Latitude:</b>	39° 52' 50.495 N
	+E/-W	0.00 ft	<b>Easting:</b>	1,617,524.50 usft	<b>Longitude:</b>	80° 45' 2.459 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	1,220.00 ft

<b>Wellbore</b>	Lateral				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2013	9/5/2013	-8.63	67.37	52,640

<b>Design</b>	Lateral				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	10,093.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	136.03	

<b>Survey Program</b>	<b>Date</b>	12/5/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
25.00	300.00	Gyro Survey #1 (Pilot)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
411.00	2,543.00	MWD Survey #2 (Pilot)	MWD	MWD - Standard	
2,636.00	10,093.00	SDI MWD Survey #3 (Pilot)	SDI MWD	SDI MWD - Standard ver 1.0.1	
10,120.00	17,433.00	SDI MWD Survey #1 (Lateral)	SDI MWD	SDI MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	0.15	140.00	25.00	-0.03	0.02	0.03	0.60	0.60	0.00	
50.00	0.30	140.00	50.00	-0.10	0.08	0.13	0.60	0.60	0.00	
75.00	0.33	145.54	75.00	-0.21	0.17	0.27	0.17	0.12	22.16	
100.00	0.36	150.39	100.00	-0.34	0.25	0.41	0.17	0.12	19.40	
125.00	0.38	147.44	125.00	-0.48	0.33	0.57	0.11	0.08	-11.80	
150.00	0.40	144.61	150.00	-0.62	0.43	0.74	0.11	0.08	-11.32	
175.00	0.39	142.24	175.00	-0.75	0.53	0.91	0.08	-0.04	-9.48	



# Scientific Drilling International

## Survey Report



<b>Company:</b>	Chevron Appalachia, LLC	<b>Local Co-ordinate Reference:</b>	Well Conner 6H
<b>Project:</b>	Marshall County, WV	<b>TVD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Site:</b>	Conner Pad	<b>MD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Well:</b>	Conner 6H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Lateral	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Lateral	<b>Database:</b>	Northeast District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
200.00	0.39	139.79	200.00	-0.89	0.63	1.08	0.07	0.00	-9.80
225.00	0.49	130.74	225.00	-1.02	0.77	1.27	0.49	0.40	-36.20
250.00	0.60	124.89	249.99	-1.17	0.96	1.51	0.49	0.44	-23.40
275.00	0.72	130.83	274.99	-1.34	1.19	1.79	0.55	0.48	23.76
300.00	0.85	135.11	299.99	-1.58	1.43	2.13	0.57	0.52	17.12
411.00	1.19	146.45	410.97	-3.12	2.65	4.09	0.35	0.31	10.22
443.00	1.01	137.97	442.97	-3.61	3.03	4.70	0.76	-0.56	-26.50
475.00	0.79	133.05	474.96	-3.97	3.38	5.20	0.73	-0.69	-15.38
505.00	0.48	119.25	504.96	-4.17	3.64	5.53	1.14	-1.03	-46.00
536.00	0.48	142.45	535.96	-4.34	3.83	5.78	0.62	0.00	74.84
567.00	0.62	150.36	566.96	-4.59	3.99	6.07	0.51	0.45	25.52
599.00	0.48	143.16	598.96	-4.84	4.16	6.37	0.49	-0.44	-22.50
630.00	0.31	125.75	629.96	-5.00	4.30	6.58	0.67	-0.55	-56.16
661.00	0.09	67.88	660.96	-5.04	4.39	6.68	0.88	-0.71	-186.68
693.00	0.09	268.05	692.96	-5.03	4.39	6.67	0.55	0.00	-499.47
724.00	0.09	218.08	723.96	-5.05	4.35	6.65	0.25	0.00	-161.19
787.00	0.22	311.78	786.96	-5.01	4.23	6.54	0.39	0.21	148.73
869.00	0.48	324.48	868.95	-4.62	3.91	6.04	0.33	0.32	15.49
939.00	0.62	314.59	938.95	-4.12	3.47	5.38	0.24	0.20	-14.13
972.00	0.79	321.97	971.95	-3.81	3.21	4.97	0.58	0.52	22.36
1,066.00	0.79	318.37	1,065.94	-2.82	2.38	3.68	0.05	0.00	-3.83
1,160.00	0.40	320.39	1,159.93	-2.08	1.74	2.70	0.42	-0.41	2.15
1,254.00	0.22	310.46	1,253.93	-1.71	1.39	2.20	0.20	-0.19	-10.56
1,348.00	0.22	296.79	1,347.93	-1.51	1.09	1.85	0.06	0.00	-14.54
1,442.00	0.22	271.39	1,441.93	-1.43	0.75	1.55	0.10	0.00	-27.02
1,537.00	0.09	289.28	1,536.93	-1.40	0.50	1.35	0.14	-0.14	18.83
1,631.00	0.09	268.66	1,630.93	-1.38	0.36	1.24	0.03	0.00	-21.94
1,725.00	0.31	40.37	1,724.93	-1.18	0.45	1.16	0.40	0.23	140.12
1,820.00	0.48	65.55	1,819.93	-0.82	0.97	1.27	0.25	0.18	26.51
1,914.00	0.62	99.56	1,913.92	-0.74	1.83	1.81	0.37	0.15	36.18
2,009.00	1.01	106.86	2,008.92	-1.07	3.14	2.95	0.42	0.41	7.68
2,103.00	1.58	101.76	2,102.89	-1.58	5.20	4.75	0.62	0.61	-5.43
2,197.00	2.29	96.49	2,196.84	-2.05	8.34	7.27	0.78	0.76	-5.61
2,322.00	2.99	95.87	2,321.70	-2.67	14.06	11.68	0.56	0.56	-0.50
2,417.00	3.30	98.07	2,416.56	-3.31	19.24	15.73	0.35	0.33	2.32
2,511.00	3.12	100.88	2,510.41	-4.17	24.43	19.96	0.25	-0.19	2.99
2,543.00	3.12	103.63	2,542.37	-4.54	26.13	21.40	0.47	-0.01	8.59
2,636.00	2.69	106.89	2,635.25	-5.77	30.67	25.45	0.49	-0.46	3.51
2,731.00	1.70	102.07	2,730.17	-6.71	34.18	28.56	1.06	-1.04	-5.07
2,825.00	1.30	76.46	2,824.14	-6.75	36.58	30.26	0.82	-0.43	-27.24
2,919.00	1.64	58.88	2,918.11	-5.81	38.77	31.10	0.60	0.36	-18.70
3,014.00	0.78	40.27	3,013.09	-4.61	40.35	31.33	0.98	-0.91	-19.59
3,109.00	0.31	32.24	3,108.09	-3.86	40.79	31.09	0.59	-0.49	-38.98



# Scientific Drilling International

## Survey Report



<b>Company:</b>	Chevron Appalachia, LLC	<b>Local Co-ordinate Reference:</b>	Well Conner 6H
<b>Project:</b>	Marshall County, WV	<b>TVD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Site:</b>	Conner Pad	<b>MD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Well:</b>	Conner 6H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Lateral	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Lateral	<b>Database:</b>	Northeast District

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,203.00	1.34	312.99	3,202.08	-2.86	40.00	29.82	1.24	1.10	-53.46	
3,298.00	2.47	315.68	3,297.02	-0.64	37.75	26.67	1.19	1.19	2.83	
3,392.00	3.58	302.11	3,390.89	2.37	33.85	21.79	1.40	1.18	-14.44	
3,487.00	4.74	290.71	3,485.64	5.34	27.67	15.37	1.49	1.22	-12.00	
3,581.00	6.21	285.77	3,579.21	8.09	19.14	7.46	1.64	1.56	-5.26	
3,675.00	7.10	279.90	3,672.58	10.47	8.53	-1.62	1.19	0.95	-6.24	
3,769.00	7.89	278.76	3,765.77	12.46	-3.57	-11.45	0.86	0.84	-1.21	
3,863.00	7.76	277.60	3,858.90	14.28	-16.24	-21.55	0.22	-0.14	-1.23	
3,957.00	6.53	276.58	3,952.17	15.73	-27.84	-30.65	1.32	-1.31	-1.09	
4,051.00	4.80	269.96	4,045.70	16.34	-37.08	-37.51	1.96	-1.84	-7.04	
4,144.00	4.99	261.31	4,138.37	15.73	-44.97	-42.54	0.82	0.20	-9.30	
4,238.00	6.23	257.11	4,231.91	13.97	-53.99	-47.53	1.39	1.32	-4.47	
4,332.00	5.95	248.45	4,325.39	11.04	-63.49	-52.03	1.02	-0.30	-9.21	
4,426.00	4.77	240.01	4,418.98	7.30	-71.41	-54.83	1.51	-1.26	-8.98	
4,520.00	2.65	235.87	4,512.77	4.13	-76.59	-56.14	2.27	-2.26	-4.40	
4,615.00	2.03	228.31	4,607.69	1.77	-79.67	-56.58	0.73	-0.65	-7.96	
4,709.00	2.08	230.70	4,701.63	-0.41	-82.23	-56.79	0.11	0.05	2.54	
4,804.00	2.28	232.31	4,796.56	-2.66	-85.06	-57.14	0.22	0.21	1.69	
4,899.00	2.65	226.80	4,891.48	-5.32	-88.16	-57.37	0.46	0.39	-5.80	
4,993.00	1.79	215.09	4,985.41	-8.01	-90.58	-57.12	1.03	-0.91	-12.46	
5,088.00	1.44	95.31	5,080.39	-9.33	-90.25	-55.94	2.95	-0.37	-126.08	
5,182.00	2.05	80.03	5,174.34	-9.15	-87.42	-54.10	0.81	0.65	-16.26	
5,276.00	2.35	74.38	5,268.27	-8.34	-83.90	-52.25	0.39	0.32	-6.01	
5,370.00	3.13	72.83	5,362.17	-7.06	-79.60	-50.17	0.83	0.83	-1.65	
5,464.00	2.68	68.79	5,456.04	-5.51	-75.10	-48.17	0.53	-0.48	-4.30	
5,559.00	3.08	70.83	5,550.92	-3.87	-70.61	-46.24	0.43	0.42	2.15	
5,653.00	1.73	68.64	5,644.84	-2.52	-66.91	-44.63	1.44	-1.44	-2.33	
5,748.00	1.30	88.99	5,739.81	-1.98	-64.49	-43.35	0.72	-0.45	21.42	
5,843.00	1.28	82.80	5,834.78	-1.83	-62.36	-41.98	0.15	-0.02	-6.52	
5,937.00	1.30	92.08	5,928.76	-1.74	-60.26	-40.58	0.22	0.02	9.87	
6,031.00	1.48	70.03	6,022.73	-1.36	-58.05	-39.32	0.60	0.19	-23.46	
6,060.00	1.53	86.26	6,051.72	-1.21	-57.31	-38.92	1.47	0.17	55.97	
6,126.00	1.79	74.41	6,117.69	-0.87	-55.44	-37.86	0.65	0.39	-17.95	
6,221.00	1.62	67.54	6,212.65	0.04	-52.77	-36.66	0.28	-0.18	-7.23	
6,316.00	1.16	62.16	6,307.62	1.00	-50.68	-35.90	0.50	-0.48	-5.66	
6,410.00	0.69	57.63	6,401.61	1.75	-49.36	-35.52	0.51	-0.50	-4.82	
6,504.00	0.68	40.88	6,495.60	2.47	-48.52	-35.46	0.21	-0.01	-17.82	
6,598.00	0.73	50.74	6,589.60	3.27	-47.69	-35.46	0.14	0.05	10.49	
6,692.00	0.53	47.50	6,683.59	3.94	-46.90	-35.40	0.22	-0.21	-3.45	
6,786.00	0.64	47.30	6,777.59	4.59	-46.20	-35.38	0.12	0.12	-0.21	
6,973.00	0.40	47.02	6,964.58	5.75	-44.95	-35.34	0.13	-0.13	-0.15	
7,067.00	0.24	319.24	7,058.58	6.12	-44.84	-35.54	0.49	-0.17	-93.38	
7,161.00	0.29	248.50	7,152.58	6.18	-45.19	-35.82	0.33	0.05	-75.26	
7,255.00	1.26	283.41	7,246.57	6.33	-46.42	-36.78	1.10	1.03	37.14	



# Scientific Drilling International

## Survey Report



<b>Company:</b>	Chevron Appalachia, LLC	<b>Local Co-ordinate Reference:</b>	Well Conner 6H
<b>Project:</b>	Marshall County, WV	<b>TVD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Site:</b>	Conner Pad	<b>MD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Well:</b>	Conner 6H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Lateral	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Lateral	<b>Database:</b>	Northeast District

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7,349.00	1.85	282.12	7,340.53	6.89	-48.91	-38.91	0.63	0.63	-1.37	
7,444.00	2.18	278.30	7,435.47	7.48	-52.19	-41.62	0.37	0.35	-4.02	
7,538.00	2.44	278.93	7,529.40	8.04	-55.94	-44.62	0.28	0.28	0.67	
7,633.00	2.50	279.14	7,624.31	8.69	-59.98	-47.89	0.06	0.06	0.22	
7,727.00	3.09	271.87	7,718.20	9.10	-64.54	-51.35	0.73	0.63	-7.73	
7,822.00	3.35	267.92	7,813.05	9.08	-69.87	-55.04	0.36	0.27	-4.16	
7,917.00	4.00	268.11	7,907.85	8.87	-75.96	-59.12	0.68	0.68	0.20	
8,010.00	3.11	268.66	8,000.67	8.70	-81.72	-63.00	0.96	-0.96	0.59	
8,104.00	3.04	266.37	8,094.54	8.49	-86.76	-66.34	0.15	-0.07	-2.44	
8,198.00	3.25	261.97	8,188.39	7.96	-91.88	-69.52	0.34	0.22	-4.68	
8,293.00	2.85	256.70	8,283.26	7.04	-96.85	-72.30	0.51	-0.42	-5.55	
8,388.00	2.90	259.41	8,378.14	6.05	-101.51	-74.83	0.15	0.05	2.85	
8,439.00	2.96	251.03	8,429.07	5.39	-104.02	-76.09	0.85	0.12	-16.43	
8,550.00	2.00	258.70	8,539.97	4.07	-108.63	-78.35	0.91	-0.86	6.91	
8,645.00	1.64	268.54	8,634.92	3.72	-111.62	-80.16	0.50	-0.38	10.36	
8,739.00	1.45	243.06	8,728.89	3.14	-114.02	-81.42	0.75	-0.20	-27.11	
8,832.00	0.92	252.06	8,821.87	2.38	-115.78	-82.09	0.60	-0.57	9.68	
8,927.00	0.72	240.24	8,916.86	1.85	-117.03	-82.57	0.27	-0.21	-12.44	
9,022.00	0.93	234.18	9,011.85	1.10	-118.17	-82.83	0.24	0.22	-6.38	
9,117.00	1.52	245.95	9,106.83	0.14	-119.94	-83.37	0.67	0.62	12.39	
9,212.00	0.77	233.67	9,201.81	-0.76	-121.61	-83.88	0.83	-0.79	-12.93	
9,306.00	0.57	267.88	9,295.80	-1.15	-122.59	-84.28	0.47	-0.21	36.39	
9,401.00	0.94	271.35	9,390.79	-1.15	-123.84	-85.15	0.39	0.39	3.65	
9,496.00	0.48	292.35	9,485.79	-0.98	-124.98	-86.07	0.55	-0.48	22.11	
9,621.00	0.29	248.85	9,610.78	-0.89	-125.76	-86.67	0.27	-0.15	-34.80	
9,716.00	0.27	239.62	9,705.78	-1.09	-126.18	-86.81	0.05	-0.02	-9.72	
9,811.00	0.57	234.17	9,800.78	-1.48	-126.76	-86.93	0.32	0.32	-5.74	
9,905.00	0.50	282.78	9,894.78	-1.66	-127.54	-87.34	0.47	-0.07	51.71	
10,000.00	0.72	296.01	9,989.77	-1.31	-128.48	-88.25	0.27	0.23	13.93	
10,093.00	0.86	297.27	10,082.76	-0.74	-129.62	-89.46	0.15	0.15	1.35	
10,120.00	0.76	287.13	10,109.76	-0.59	-129.97	-89.81	0.65	-0.37	-37.56	
<b>First SDI MWD Survey</b>										
10,214.00	4.58	119.50	10,203.67	-2.26	-127.30	-86.75	5.66	4.06	-178.33	
10,303.00	3.80	116.76	10,292.43	-5.33	-121.57	-80.56	0.90	-0.88	-3.08	
10,335.00	4.30	115.19	10,324.35	-6.32	-119.54	-78.44	1.60	1.56	-4.91	
10,366.00	7.89	115.44	10,355.17	-7.73	-116.57	-75.36	11.58	11.58	0.81	
10,398.00	10.15	124.13	10,386.78	-10.26	-112.25	-70.55	8.23	7.06	27.16	
10,429.00	12.65	123.49	10,417.16	-13.66	-107.16	-64.56	8.07	8.06	-2.06	
10,461.00	14.79	124.51	10,448.25	-17.91	-100.87	-57.14	6.73	6.69	3.19	
10,493.00	16.81	125.76	10,479.04	-22.93	-93.75	-48.58	6.40	6.31	3.91	
10,524.00	17.23	126.40	10,508.68	-28.27	-86.41	-39.64	1.48	1.35	2.06	
10,556.00	17.09	128.73	10,539.26	-34.03	-78.93	-30.31	2.19	-0.44	7.28	
10,587.00	17.48	132.77	10,568.86	-40.04	-71.96	-21.14	4.07	1.26	13.03	



# Scientific Drilling International

## Survey Report



<b>Company:</b>	Chevron Appalachia, LLC	<b>Local Co-ordinate Reference:</b>	Well Conner 6H
<b>Project:</b>	Marshall County, WV	<b>TVD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Site:</b>	Conner Pad	<b>MD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Well:</b>	Conner 6H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Lateral	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Lateral	<b>Database:</b>	Northeast District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,619.00	16.96	138.95	10,599.42	-46.82	-65.37	-11.68	5.94	-1.63	19.31
10,651.00	18.11	141.41	10,629.94	-54.23	-59.20	-2.07	4.27	3.59	7.69
10,682.00	18.71	139.10	10,659.35	-61.75	-52.94	7.70	3.05	1.94	-7.45
10,714.00	20.09	135.34	10,689.53	-69.54	-45.71	18.32	5.81	4.31	-11.75
10,740.00	22.09	132.83	10,713.79	-76.04	-38.99	27.67	8.44	7.69	-9.65
10,772.00	25.29	131.81	10,743.09	-84.69	-29.48	40.49	10.08	10.00	-3.19
10,803.00	29.84	134.39	10,770.57	-94.51	-19.03	54.81	15.17	14.68	8.32
10,835.00	34.99	134.74	10,797.57	-106.54	-6.81	71.96	16.10	16.09	1.09
10,866.00	40.03	134.93	10,822.15	-119.85	6.57	90.82	16.26	16.26	0.61
10,898.00	42.06	133.41	10,846.29	-134.49	21.64	111.82	7.07	6.34	-4.75
10,930.00	42.95	131.82	10,869.88	-149.12	37.55	133.40	4.36	2.78	-4.97
10,961.00	44.74	130.92	10,892.24	-163.31	53.67	154.80	6.11	5.77	-2.90
10,993.00	47.48	133.59	10,914.42	-178.82	70.73	177.81	10.46	8.56	8.34
11,024.00	51.65	135.31	10,934.52	-195.35	87.56	201.39	14.10	13.45	5.55
11,056.00	54.36	136.13	10,953.78	-213.65	105.40	226.94	8.71	8.47	2.56
11,087.00	56.56	136.79	10,971.35	-232.16	122.99	252.48	7.31	7.10	2.13
11,119.00	56.22	136.92	10,989.07	-251.60	141.21	279.12	1.12	-1.06	0.41
11,151.00	58.17	136.52	11,006.40	-271.18	159.65	306.02	6.18	6.09	-1.25
11,182.00	62.16	135.53	11,021.82	-290.53	178.32	332.90	13.17	12.87	-3.19
11,214.00	65.99	132.58	11,035.81	-310.52	199.00	361.66	14.56	11.97	-9.22
11,245.00	69.92	133.95	11,047.45	-330.22	219.92	390.35	13.32	12.68	4.42
11,277.00	72.59	134.45	11,057.73	-351.34	241.64	420.63	8.47	8.34	1.56
11,308.00	76.68	135.24	11,065.94	-372.42	262.83	450.51	13.42	13.19	2.55
11,340.00	80.40	137.27	11,072.30	-395.07	284.51	481.87	13.18	11.63	6.34
11,434.00	89.40	136.48	11,080.65	-463.33	348.45	575.39	9.61	9.57	-0.84
11,529.00	90.90	136.75	11,080.40	-532.37	413.70	670.38	1.60	1.58	0.28
11,623.00	89.56	136.82	11,080.02	-600.88	478.06	764.37	1.43	-1.43	0.07
11,717.00	89.97	137.88	11,080.41	-670.01	541.75	858.34	1.21	0.44	1.13
11,812.00	89.93	138.20	11,080.49	-740.66	605.27	953.28	0.34	-0.04	0.34
11,906.00	89.66	138.26	11,080.83	-810.76	667.88	1,047.21	0.29	-0.29	0.06
12,000.00	89.16	137.86	11,081.79	-880.68	730.71	1,141.15	0.68	-0.53	-0.43
12,095.00	89.06	137.07	11,083.27	-950.67	794.92	1,236.11	0.84	-0.11	-0.83
12,190.00	88.15	137.05	11,085.58	-1,020.20	859.62	1,331.06	0.96	-0.96	-0.02
12,284.00	90.24	137.32	11,086.90	-1,089.14	923.49	1,425.03	2.24	2.22	0.29
12,379.00	89.90	136.45	11,086.79	-1,158.49	988.42	1,520.02	0.98	-0.36	-0.92
12,478.00	89.60	136.13	11,087.22	-1,230.05	1,056.83	1,619.02	0.44	-0.30	-0.32
12,572.00	89.33	136.82	11,088.10	-1,298.20	1,121.56	1,713.01	0.79	-0.29	0.73
12,667.00	88.89	136.02	11,089.57	-1,367.01	1,187.04	1,807.99	0.96	-0.46	-0.84
12,762.00	90.07	134.19	11,090.43	-1,434.31	1,254.09	1,902.97	2.29	1.24	-1.93
12,856.00	89.40	134.84	11,090.87	-1,500.21	1,321.12	1,996.94	0.99	-0.71	0.69
12,950.00	89.23	134.32	11,091.99	-1,566.18	1,388.06	2,090.90	0.58	-0.18	-0.55
13,045.00	88.79	134.61	11,093.63	-1,632.72	1,455.85	2,185.85	0.55	-0.46	0.31
13,139.00	88.83	135.33	11,095.59	-1,699.13	1,522.34	2,279.81	0.77	0.04	0.77



# Scientific Drilling International

## Survey Report



<b>Company:</b>	Chevron Appalachia, LLC	<b>Local Co-ordinate Reference:</b>	Well Conner 6H
<b>Project:</b>	Marshall County, WV	<b>TVD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Site:</b>	Conner Pad	<b>MD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Well:</b>	Conner 6H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Lateral	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Lateral	<b>Database:</b>	Northeast District

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,234.00	88.52	136.93	11,097.78	-1,767.60	1,588.16	2,374.78	1.72	-0.33	1.68	
13,328.00	88.42	137.01	11,100.29	-1,836.29	1,652.28	2,468.74	0.14	-0.11	0.09	
13,422.00	88.05	136.35	11,103.19	-1,904.64	1,716.74	2,562.69	0.80	-0.39	-0.70	
13,517.00	87.28	136.50	11,107.06	-1,973.41	1,782.17	2,657.60	0.83	-0.81	0.16	
13,612.00	88.89	135.38	11,110.23	-2,041.64	1,848.19	2,752.55	2.06	1.69	-1.18	
13,706.00	88.62	135.94	11,112.28	-2,108.85	1,913.88	2,846.52	0.66	-0.29	0.60	
13,800.00	88.49	136.33	11,114.65	-2,176.60	1,978.99	2,940.49	0.44	-0.14	0.41	
13,895.00	89.43	132.85	11,116.37	-2,243.27	2,046.63	3,035.43	3.79	0.99	-3.66	
13,989.00	89.06	132.86	11,117.61	-2,307.20	2,115.53	3,129.28	0.39	-0.39	0.01	
14,082.00	88.99	133.55	11,119.19	-2,370.86	2,183.31	3,222.15	0.75	-0.08	0.74	
14,177.00	88.69	134.49	11,121.12	-2,436.86	2,251.61	3,317.07	1.04	-0.32	0.99	
14,272.00	88.96	135.92	11,123.06	-2,504.26	2,318.52	3,412.04	1.53	0.28	1.51	
14,367.00	88.69	136.75	11,125.01	-2,572.97	2,384.10	3,507.02	0.92	-0.28	0.87	
14,462.00	88.53	138.08	11,127.32	-2,642.89	2,448.37	3,601.96	1.41	-0.17	1.40	
14,556.00	88.16	137.27	11,130.03	-2,712.36	2,511.63	3,695.88	0.95	-0.39	-0.86	
14,651.00	87.79	137.06	11,133.39	-2,781.98	2,576.18	3,790.80	0.45	-0.39	-0.22	
14,746.00	88.15	139.37	11,136.75	-2,852.77	2,639.44	3,885.67	2.46	0.38	2.43	
14,841.00	87.35	137.70	11,140.48	-2,923.90	2,702.29	3,980.50	1.95	-0.84	-1.76	
14,936.00	87.35	138.72	11,144.88	-2,994.65	2,765.53	4,075.33	1.07	0.00	1.07	
15,030.00	87.05	138.50	11,149.47	-3,065.09	2,827.61	4,169.12	0.40	-0.32	-0.23	
15,125.00	86.71	138.95	11,154.64	-3,136.38	2,890.19	4,263.87	0.59	-0.36	0.47	
15,219.00	86.58	138.33	11,160.14	-3,206.81	2,952.19	4,357.61	0.67	-0.14	-0.66	
15,313.00	85.74	137.98	11,166.43	-3,276.68	3,014.76	4,451.34	0.97	-0.89	-0.37	
15,407.00	88.66	135.99	11,171.03	-3,345.32	3,078.80	4,545.20	3.76	3.11	-2.12	
15,501.00	91.04	133.40	11,171.27	-3,411.42	3,145.61	4,639.16	3.74	2.53	-2.76	
15,595.00	91.48	131.75	11,169.21	-3,475.00	3,214.81	4,732.96	1.82	0.47	-1.76	
15,688.00	91.14	131.34	11,167.08	-3,536.66	3,284.40	4,825.65	0.57	-0.37	-0.44	
15,782.00	90.91	130.92	11,165.40	-3,598.48	3,355.19	4,919.29	0.51	-0.24	-0.45	
15,876.00	92.05	132.40	11,162.97	-3,660.94	3,425.39	5,012.98	1.99	1.21	1.57	
15,970.00	91.61	132.68	11,159.97	-3,724.46	3,494.62	5,106.76	0.55	-0.47	0.30	
16,064.00	91.07	132.76	11,157.77	-3,788.22	3,563.66	5,200.58	0.58	-0.57	0.09	
16,158.00	89.66	132.05	11,157.17	-3,851.60	3,633.06	5,294.38	1.68	-1.50	-0.76	
16,253.00	88.83	130.31	11,158.42	-3,914.14	3,704.55	5,389.03	2.03	-0.87	-1.83	
16,347.00	88.12	130.44	11,160.92	-3,975.01	3,776.14	5,482.54	0.77	-0.76	0.14	
16,442.00	87.79	130.15	11,164.31	-4,036.41	3,848.55	5,577.00	0.46	-0.35	-0.31	
16,536.00	88.79	132.11	11,167.12	-4,098.21	3,919.32	5,670.61	2.34	1.06	2.09	
16,631.00	88.83	132.35	11,169.09	-4,162.05	3,989.65	5,765.38	0.26	0.04	0.25	
16,726.00	88.86	132.91	11,171.01	-4,226.38	4,059.53	5,860.19	0.59	0.03	0.59	
16,820.00	88.76	133.09	11,172.96	-4,290.47	4,128.26	5,954.04	0.22	-0.11	0.19	
16,914.00	88.73	133.04	11,175.02	-4,354.64	4,196.92	6,047.89	0.06	-0.03	-0.05	
17,008.00	89.30	135.80	11,176.63	-4,420.42	4,264.04	6,141.83	3.00	0.61	2.94	
17,103.00	88.59	135.52	11,178.38	-4,488.35	4,330.42	6,236.81	0.80	-0.75	-0.29	
17,197.00	88.83	135.88	11,180.50	-4,555.61	4,396.06	6,330.79	0.46	0.26	0.38	
17,291.00	88.93	135.77	11,182.34	-4,623.01	4,461.55	6,424.77	0.16	0.11	-0.12	





**Scientific Drilling International**  
Survey Report



<b>Company:</b>	Chevron Appalachia, LLC	<b>Local Co-ordinate Reference:</b>	Well Conner 6H
<b>Project:</b>	Marshall County, WV	<b>TVD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Site:</b>	Conner Pad	<b>MD Reference:</b>	GL 1220' & 32' KB @ 1252.00ft (Nabors X7)
<b>Well:</b>	Conner 6H	<b>North Reference:</b>	True
<b>Wellbore:</b>	Lateral	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Lateral	<b>Database:</b>	Northeast District

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,376.00	89.06	137.12	11,183.83	-4,684.60	4,520.11	6,509.75	1.60	0.15	1.59
Last SDI MWD Survey									
17,433.00	89.06	137.12	11,184.76	-4,726.36	4,558.89	6,566.73	0.00	0.00	0.00
Projection to Bit									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
10,120.00	10,109.76	-0.59	-129.97	First SDI MWD Survey	
17,376.00	11,183.83	-4,684.60	4,520.11	Last SDI MWD Survey	
17,433.00	11,184.76	-4,726.36	4,558.89	Projection to Bit	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_