



Well Completion Report

May 20, 2008

Customer: CNX Gas
Well Name: MC-43
Location: Marshall County, WV
Declination: 8.44° West, True

Nevis Energy Services, Inc.
327 E. Welch Court, Traverse City, MI 49686
(231) 995-0100



Nevis Energy
Survey Report

Company: CNX Gas Company, LLC
 Project: WEST VIRGINIA2
 Site: MARSHALL COUNTY3
 Well: MC-43
 Wellbore: WEST LEG
 Design: AD WEST LEG

Local Co-ordinate Reference: Well MC-43
 TVD Reference: WELL @ 0.00ft (Original Well Elev)
 MD Reference: WELL @ 0.00ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: EDM 2003.14 Single User Db

Project	WEST VIRGINIA2		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	West Virginia Northern Zone		

Site	MARSHALL COUNTY3					
Site Position:	From:	La/Long	Northing:	499,997.97 ft	Latitude:	39° 52' 2.130 N
			Easting:	1,651,076.94 ft	Longitude:	80° 37' 51.220 W
Position Uncertainty:	0.00 ft		Slot Radius:	"	Grid Convergence:	-0.72 °

Well	MC-43					
Well Position	+N/-S	0.00 ft	Northing:	499,997.97 ft	Latitude:	39° 52' 2.130 N
	+E/-W	0.00 ft	Easting:	1,651,076.94 ft	Longitude:	80° 37' 51.220 W
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	0.00 ft

Wellbore	WEST LEG				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	5/2/2008	-8.44	67.84	53,303

Design	AD WEST LEG				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	20.14	

Survey Program	Date 5/20/2008				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
50.00	3,659.00	AD WLEG (WEST LEG)			

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Buid Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.00	0.33	159.00	50.00	-0.13	0.05	-0.11	0.66	0.66	0.00
100.00	0.34	202.90	100.00	-0.41	0.05	-0.37	0.50	0.02	87.80
150.00	0.57	215.40	150.00	-0.74	-0.16	-0.75	0.50	0.46	25.00
200.00	0.62	209.00	199.99	-1.18	-0.43	-1.26	0.17	0.10	-12.80
250.00	0.67	214.90	249.99	-1.66	-0.73	-1.81	0.17	0.10	11.80
300.00	0.54	219.60	299.99	-2.08	-1.05	-2.32	0.28	-0.26	9.40
350.00	0.55	225.40	349.99	-2.43	-1.37	-2.75	0.11	0.02	11.60
400.00	0.46	203.90	399.98	-2.78	-1.62	-3.17	0.42	-0.18	-43.00
450.00	0.46	211.70	449.98	-3.14	-1.81	-3.57	0.13	0.00	15.60
500.00	0.55	227.10	499.98	-3.47	-2.09	-3.98	0.32	0.18	30.80
550.00	0.85	204.20	549.98	-3.97	-2.42	-4.56	0.81	0.60	-45.80
600.00	0.36	186.90	599.97	-4.47	-2.59	-5.09	1.03	-0.98	-34.60



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650.00	1.22	60.60	649.97	-4.36	-2.14	-4.83	2.92	1.72	-252.60
662.00	1.38	62.50	661.97	-4.23	-1.90	-4.63	1.38	1.33	15.83
672.00	3.50	47.40	671.96	-3.97	-1.57	-4.27	21.97	21.20	-151.00
687.00	9.70	44.90	686.85	-2.76	-0.34	-2.71	41.37	41.33	-16.67
703.00	16.30	45.80	702.43	-0.24	2.22	0.54	41.27	41.25	5.62
719.00	22.30	46.90	717.53	3.40	6.05	5.28	37.57	37.50	6.87
734.00	27.60	47.70	731.12	7.69	10.70	10.90	35.40	35.33	5.33
751.00	31.80	49.80	745.89	13.23	17.04	18.29	25.45	24.71	12.35
767.00	35.60	51.30	759.20	18.87	23.90	25.94	24.31	23.75	9.37
783.00	39.30	52.10	771.90	24.89	31.53	34.23	23.32	23.12	5.00
799.00	43.70	52.90	783.88	31.34	39.94	43.18	27.70	27.50	5.00
814.00	46.90	53.10	794.43	37.76	48.46	52.13	21.35	21.33	1.33
830.00	50.90	54.50	804.94	44.87	58.19	62.16	25.85	25.00	8.75
846.00	54.60	55.70	814.62	52.16	68.63	72.60	23.88	23.12	7.50
862.00	58.80	55.80	823.41	59.68	79.68	83.47	26.26	26.25	0.62
877.00	63.20	55.50	830.68	67.08	90.51	94.14	29.39	29.33	-2.00
893.00	67.30	55.50	837.37	75.31	102.49	105.99	25.62	25.62	0.00
909.00	70.30	55.90	843.16	83.71	114.81	118.13	18.89	18.75	2.50
925.00	71.10	56.00	848.45	92.17	127.32	130.37	5.03	5.00	0.62
935.00	72.40	56.60	851.58	97.44	135.22	138.04	14.19	13.00	6.00
941.00	73.30	56.50	853.35	100.60	140.00	142.65	15.08	15.00	-1.67
951.00	75.00	55.90	856.08	105.95	148.00	150.43	17.95	17.00	-6.00
961.00	76.10	54.70	858.58	111.46	155.96	158.35	16.00	11.00	-12.00
973.00	77.80	53.40	861.28	118.33	165.42	168.05	17.67	14.17	-10.83
983.00	79.40	52.90	863.26	124.20	173.26	176.27	16.73	16.00	-5.00
993.00	81.20	53.00	864.95	130.14	181.13	184.55	18.03	18.00	1.00
1,005.00	82.90	52.90	866.61	137.30	190.62	194.54	14.19	14.17	-0.83
1,015.00	85.00	52.70	867.66	143.32	198.54	202.91	21.09	21.00	-2.00
1,025.00	88.00	52.60	868.27	149.37	206.47	211.33	30.02	30.00	-1.00
1,036.00	90.90	52.50	868.38	156.06	215.20	220.61	26.38	26.36	-0.91
1,046.00	93.00	51.40	868.04	162.22	223.07	229.11	23.70	21.00	-11.00
1,058.00	93.40	49.60	867.37	169.84	232.32	239.44	15.34	3.33	-15.00
1,063.00	93.00	48.30	867.09	173.12	236.08	243.82	27.16	-8.00	-26.00
1,068.00	92.50	47.80	866.85	176.46	239.79	248.23	14.13	-10.00	-10.00
1,078.00	91.90	46.50	866.46	183.25	247.12	257.13	14.31	-6.00	-13.00
1,084.00	91.80	46.50	866.27	187.38	251.47	262.51	1.67	-1.67	0.00
1,104.00	91.10	48.90	865.76	200.83	266.26	280.23	12.50	-3.50	12.00
1,139.00	89.30	48.40	865.64	223.96	292.53	310.98	5.34	-5.14	-1.43
1,171.00	89.30	46.40	866.03	245.61	316.08	339.43	6.25	0.00	-6.25
1,202.00	87.50	40.90	866.90	268.03	337.46	367.83	18.66	-5.81	-17.74
1,234.00	89.20	38.40	867.82	292.65	357.87	397.98	9.44	5.31	-7.81
1,266.00	91.30	36.40	867.68	318.07	377.30	428.53	9.06	6.56	-6.25
1,297.00	91.60	32.70	866.90	343.59	394.88	458.54	11.97	0.97	-11.94
1,329.00	91.40	28.20	866.06	371.16	411.08	490.01	14.07	-0.62	-14.06
1,361.00	91.10	25.30	865.36	399.72	425.48	521.78	9.11	-0.94	-9.06
1,393.00	90.70	21.20	864.86	429.12	438.11	553.72	12.87	-1.25	-12.81
1,425.00	89.50	17.40	864.80	459.31	448.68	585.71	12.45	-3.75	-11.87
1,457.00	89.50	13.20	865.08	490.17	457.13	617.59	13.12	0.00	-13.12
1,488.00	90.00	9.80	865.21	520.54	463.31	648.24	11.09	1.61	-10.97
1,520.00	89.50	4.60	865.35	552.28	467.31	679.41	16.32	-1.56	-16.25
1,552.00	90.90	2.00	865.24	584.22	469.16	710.04	9.23	4.37	-8.12
1,583.00	90.70	1.00	864.81	615.21	469.97	739.41	3.29	-0.65	-3.23
1,615.00	89.90	1.20	864.64	647.20	470.58	769.66	2.58	-2.50	0.62
1,647.00	90.20	359.00	864.61	679.20	470.64	799.72	6.94	0.94	-6.87

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1,680.00	90.40	359.40	864.44	712.19	470.18	830.54	1.36	0.61	1.21
1,713.00	90.20	1.50	864.27	745.19	470.44	861.60	6.39	-0.61	6.36
1,744.00	90.10	4.60	864.19	776.14	472.09	891.23	10.01	-0.32	10.00
1,775.00	88.80	8.60	864.49	806.93	475.65	921.36	13.57	-4.19	12.90
1,807.00	89.20	8.80	865.04	838.56	480.49	952.72	1.40	1.25	0.62
1,838.00	87.50	8.50	865.94	869.19	485.15	983.09	5.57	-5.48	-0.97
1,870.00	90.60	10.30	866.47	900.75	490.37	1,014.52	11.20	9.69	5.62
1,902.00	89.60	12.00	866.41	932.15	496.56	1,046.12	6.16	-3.12	5.31
1,933.00	89.90	12.20	866.55	962.46	503.06	1,076.82	1.16	0.97	0.65
1,965.00	88.60	13.90	866.97	993.63	510.28	1,108.57	6.69	-4.06	5.31
1,997.00	91.90	16.80	866.83	1,024.48	518.75	1,140.45	13.73	10.31	9.06
2,028.00	91.50	16.60	865.91	1,054.16	527.66	1,171.38	1.44	-1.29	-0.65
2,060.00	91.10	16.70	865.18	1,084.81	536.82	1,203.31	1.29	-1.25	0.31
2,092.00	90.60	16.60	864.71	1,115.46	545.99	1,235.25	1.59	-1.56	-0.31
2,123.00	89.70	15.00	864.62	1,145.29	554.43	1,266.16	5.92	-2.90	-5.16
2,155.00	91.20	15.60	864.37	1,176.15	562.87	1,298.04	5.05	4.69	1.87
2,187.00	89.60	15.30	864.15	1,206.99	571.40	1,329.93	5.09	-5.00	-0.94
2,219.00	88.80	15.20	864.60	1,237.86	579.81	1,361.81	2.52	-2.50	-0.31
2,250.00	89.50	14.50	865.06	1,267.82	587.76	1,392.68	3.19	2.26	-2.26
2,282.00	89.90	14.70	865.22	1,298.79	595.82	1,424.53	1.40	1.25	0.62
2,313.00	90.00	14.50	865.25	1,328.79	603.64	1,455.38	0.72	0.32	-0.65
2,345.00	89.30	14.10	865.45	1,359.80	611.54	1,487.21	2.52	-2.19	-1.25
2,377.00	88.90	13.26	865.95	1,390.89	619.11	1,519.01	2.91	-1.25	-2.62
2,408.00	90.00	13.86	866.25	1,421.02	626.38	1,549.80	4.04	3.55	1.94
2,440.00	89.00	13.50	866.53	1,452.11	633.94	1,581.60	3.32	-3.12	-1.12
2,471.00	89.80	13.60	866.85	1,482.25	641.21	1,612.39	2.60	2.58	0.32
2,503.00	90.10	13.50	866.88	1,513.35	648.70	1,644.18	0.99	0.94	-0.31
2,534.00	90.50	12.80	866.72	1,543.54	655.76	1,674.95	2.60	1.29	-2.26
2,566.00	89.10	13.60	866.83	1,574.69	663.06	1,706.71	5.04	-4.37	2.50
2,598.00	92.70	16.50	866.32	1,605.58	671.37	1,738.57	14.44	11.25	9.06
2,629.00	92.60	16.80	864.89	1,635.25	680.24	1,769.48	1.02	-0.32	0.97
2,662.00	90.60	16.20	863.97	1,666.88	689.61	1,802.40	6.33	-6.06	-1.82
2,694.00	92.60	15.80	863.08	1,697.63	698.43	1,834.30	6.37	6.25	-1.25
2,726.00	94.30	15.60	861.15	1,728.38	707.07	1,866.15	5.35	5.31	-0.62
2,757.00	91.20	15.60	859.66	1,758.20	715.40	1,897.01	10.00	-10.00	0.00
2,788.00	89.50	14.60	859.47	1,788.12	723.47	1,927.89	6.36	-5.48	-3.23
2,820.00	87.40	14.40	860.34	1,819.09	731.48	1,959.72	6.59	-6.56	-0.62
2,851.00	88.50	14.00	861.45	1,849.12	739.08	1,990.53	3.78	3.55	-1.29
2,883.00	86.80	12.80	862.76	1,880.23	746.49	2,022.28	6.50	-5.31	-3.75
2,915.00	89.10	13.90	863.91	1,911.34	753.87	2,054.04	7.97	7.19	3.44
2,947.00	90.10	14.00	864.13	1,942.39	761.59	2,085.85	3.14	3.12	0.31
2,978.00	91.20	12.80	863.78	1,972.55	768.77	2,116.63	5.25	3.55	-3.87
3,010.00	89.90	12.30	863.47	2,003.78	775.72	2,148.35	4.35	-4.06	-1.56
3,041.00	90.40	13.40	863.39	2,034.00	782.62	2,179.10	3.90	1.61	3.55
3,073.00	89.00	13.60	863.56	2,065.12	790.09	2,210.88	4.42	-4.37	0.62
3,104.00	89.50	13.10	863.96	2,095.28	797.24	2,241.66	2.28	1.61	-1.61
3,136.00	88.70	14.90	864.47	2,126.32	804.98	2,273.47	6.15	-2.50	5.62
3,167.00	89.60	17.00	864.93	2,156.12	813.50	2,304.38	7.37	2.90	6.77
3,199.00	90.00	16.60	865.04	2,186.76	822.75	2,336.33	1.77	1.25	-1.25
3,230.00	89.60	16.30	865.15	2,216.49	831.53	2,367.27	1.61	-1.29	-0.97
3,262.00	89.60	16.80	865.37	2,247.16	840.64	2,399.20	1.56	0.00	1.56
3,294.00	91.50	18.00	865.06	2,277.69	850.21	2,431.16	7.02	5.94	3.75
3,325.00	91.20	17.40	864.33	2,307.22	859.63	2,462.12	2.16	-0.97	-1.94
3,357.00	90.00	17.06	864.00	2,337.78	869.11	2,494.08	3.90	-3.75	-1.06



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3,388.00	89.90	16.40	864.02	2,367.47	878.04	2,525.03	2.15	-0.32	-2.13	
3,420.00	89.80	16.40	864.11	2,398.16	887.07	2,556.96	0.31	-0.31	0.00	
3,451.00	90.10	15.70	864.13	2,427.96	895.64	2,587.88	2.46	0.97	-2.26	
3,483.00	90.10	14.90	864.08	2,458.82	904.09	2,619.76	2.50	0.00	-2.50	
3,515.00	90.80	15.20	863.83	2,489.72	912.39	2,651.64	2.38	2.19	0.94	
3,546.00	90.60	15.60	863.45	2,519.61	920.63	2,682.53	1.44	-0.65	1.29	
3,578.00	90.00	15.00	863.28	2,550.47	929.07	2,714.41	2.65	-1.87	-1.87	
3,610.00	90.30	13.90	863.20	2,581.46	937.05	2,746.26	3.56	0.94	-3.44	
3,630.00	90.50	13.80	863.06	2,600.88	941.84	2,766.13	1.12	1.00	-0.50	
3,659.00	90.50	13.80	862.80	2,629.04	948.76	2,794.96	0.00	0.00	0.00	

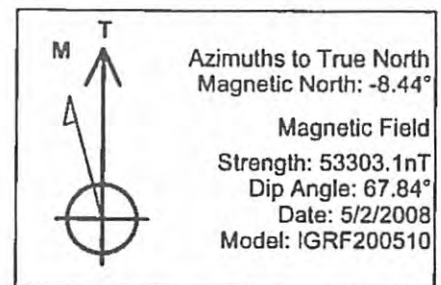
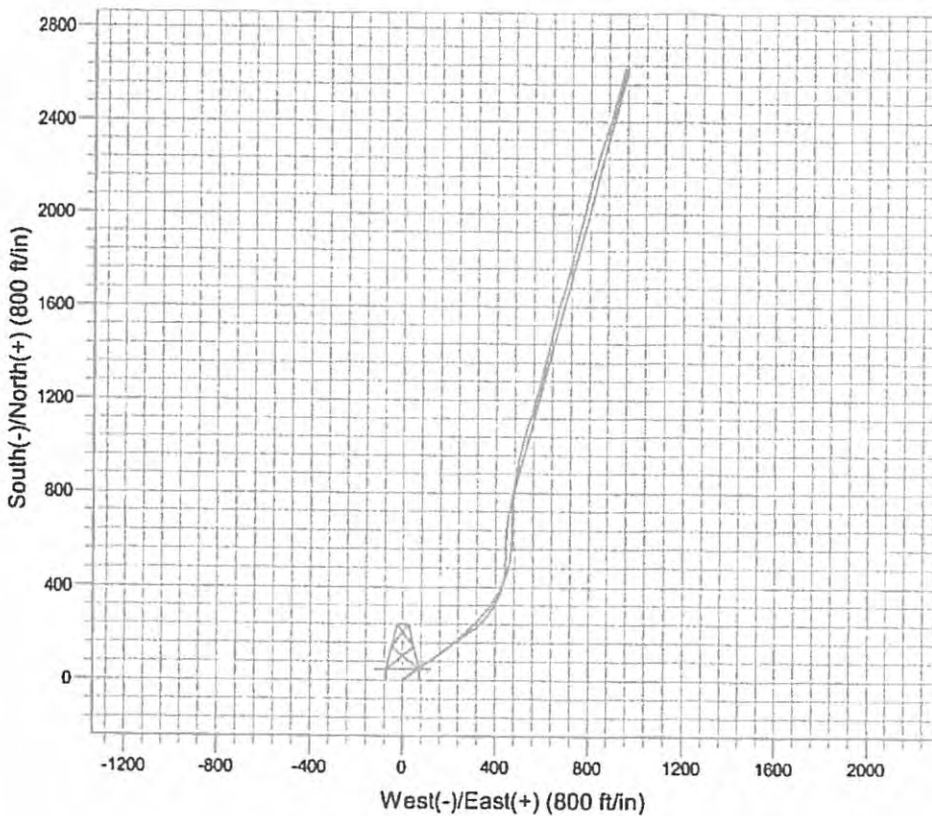
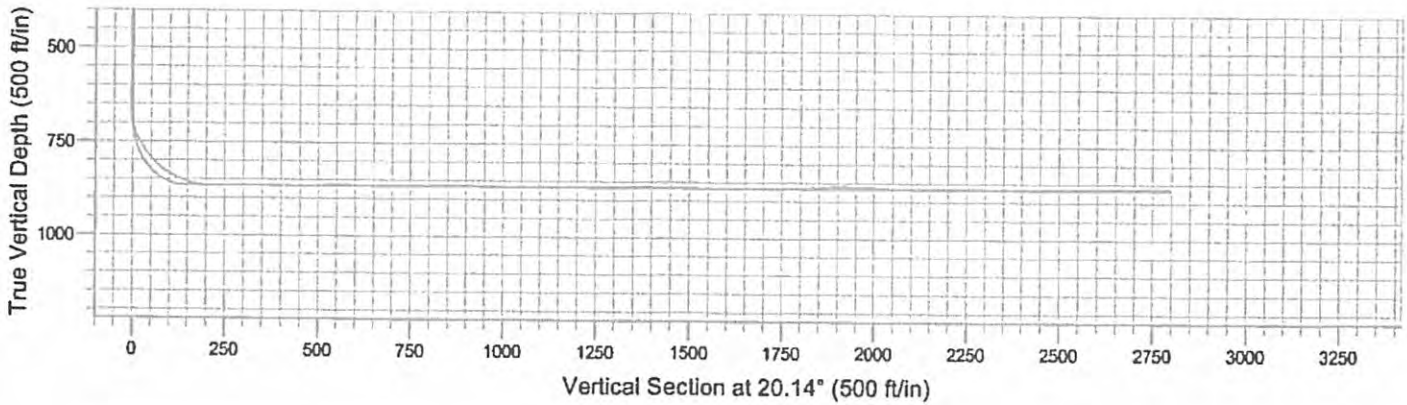
Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
GT1, MC-43 - hit/miss target - Shape - Point	0.00	0.00	867.00	589.51	443.61	500,581.85	1,651,527.94	39° 52' 7.956 N	80° 37' 45.530 W	
- survey misses by 254.51ft at 1292.86ft MD (867.00 TVD, 340.18 N, 392.53 E)										
WBHL, MC-43 - survey misses by 2354.80ft at 1292.86ft MD (867.00 TVD, 340.18 N, 392.53 E) - Point	0.00	0.00	867.00	2,624.88	962.83	502,610.52	1,652,072.74	39° 52' 28.072 N	80° 37' 38.870 W	
HZ, MC-43 - survey misses by 68.46ft at 1064.80ft MD (867.00 TVD, 174.32 N, 237.42 E) - Point	0.00	0.00	867.00	209.30	296.27	500,203.52	1,651,375.83	39° 52' 4.198 N	80° 37' 47.420 W	

Checked By: _____ Approved By: _____ Date: _____



CNX Gas Company, LLC

MC-43 - WEST LEG
MARSHALL COUNTY
WEST VIRGINIA



LEGEND

- MC-43, WEST LEG, AD WLEG
- PLANNED WELL

5101097P



Nevis Energy
Survey Report

Company: CNX Gas Company, LLC
 Project: WEST VIRGINIA2
 Site: MARSHALL COUNTY3
 Well: MC-43
 Wellbore: EAST LEG
 Design: AD EAST LEG

Local Co-ordinate Reference: Well MC-43
 TVD Reference: WELL @ 0.00ft (Original Well Elev)
 MD Reference: WELL @ 0.00ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: EDM 2003.14 Single User Db

Project	WEST VIRGINIA2		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	West Virginia Northern Zone		

Site	MARSHALL COUNTY3				
Site Position:		Northing:	499,997.97 ft	Latitude:	39° 52' 2.130 N
From:	Lat/Long	Easting:	1,651,076.94 ft	Longitude:	80° 37' 51.220 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	-0.72 °

Well	MC-43					
Well Position	+N/-S	0.00 ft	Northing:	499,997.97 ft	Latitude:	39° 52' 2.130 N
	+E/-W	0.00 ft	Easting:	1,651,076.94 ft	Longitude:	80° 37' 51.220 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	0.00 ft

Wellbore	EAST LEG				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	5/5/2008	-8.44	67.84	53,302

Design	AD EAST LEG				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	1,743.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	75.46	

Survey Program	Date 5/20/2008				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
50.00	1,743.00	AD WLEG (WEST LEG)			
1,743.00	3,696.00	AD ELEG (EAST LEG)			

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,743.00	90.37	75.44	866.77	273.36	894.25	934.24	0.00	0.00	0.00
1,777.00	89.50	83.50	866.80	279.57	927.65	968.13	23.84	-2.57	23.70
1,808.00	89.90	85.10	866.97	282.65	958.49	998.76	5.32	1.29	5.16
1,840.00	90.20	86.20	866.94	285.08	990.40	1,030.25	3.56	0.94	3.44
1,871.00	90.20	87.30	866.83	286.83	1,021.35	1,060.65	3.55	0.00	3.55
1,903.00	90.30	88.80	866.69	287.92	1,053.33	1,091.88	4.70	0.91	4.69
1,935.00	89.60	87.90	866.72	288.84	1,085.32	1,123.07	3.56	-2.19	2.81
1,966.00	89.70	88.40	866.91	289.84	1,116.30	1,153.32	1.64	0.32	1.61
1,998.00	89.30	86.90	867.19	291.16	1,148.27	1,184.59	4.85	-1.25	-4.69
2,030.00	88.50	86.80	867.80	292.91	1,180.22	1,215.96	2.52	-2.50	-0.31
2,062.00	89.10	88.00	868.47	294.36	1,212.18	1,247.26	4.79	1.87	3.75
2,093.00	90.10	89.00	868.69	295.18	1,243.16	1,277.45	4.56	0.00	3.23

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03/24/2017

5101097P



Nevis Energy

Survey Report

Company: CNX Gas Company, LLC
Project: WEST VIRGINIA2
Site: MARSHALL COUNTY3
Well: MC-43
Wellbore: EAST LEG
Design: AD EAST LEG

Local Co-ordinate Reference: Well MC-43
TVD Reference: WELL @ 0.00ft (Original Well Elev)
MD Reference: WELL @ 0.00ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.14 Single User Db

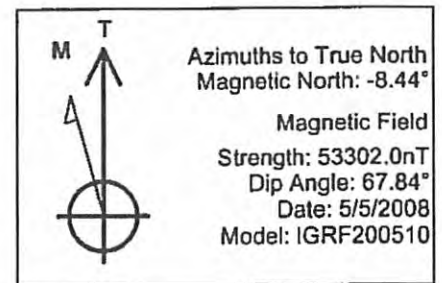
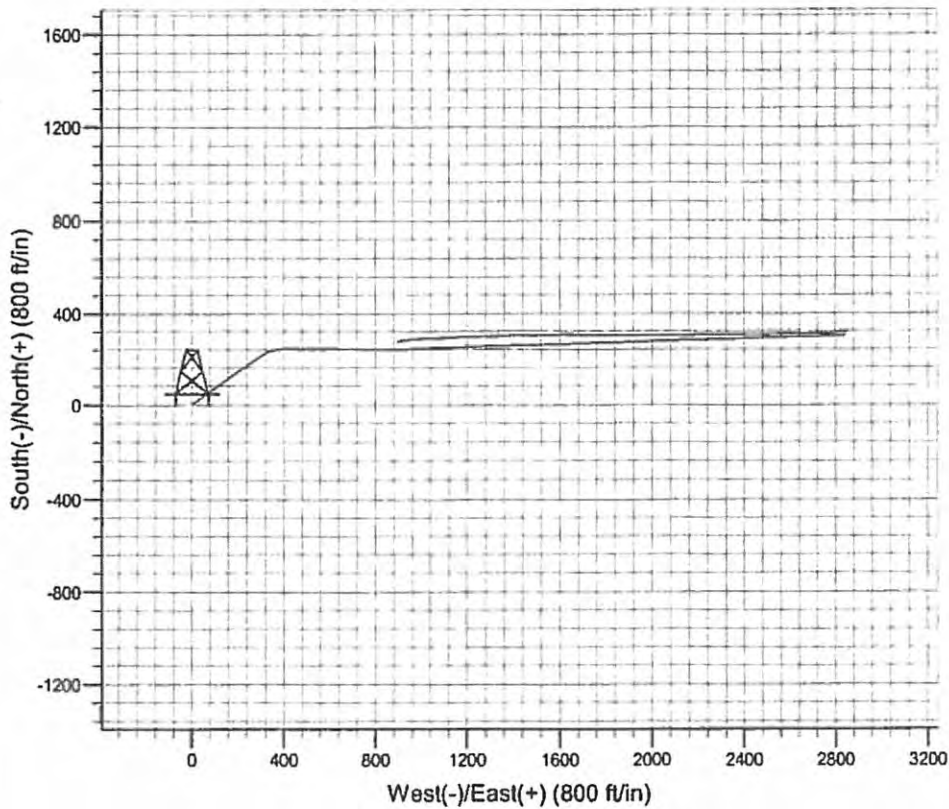
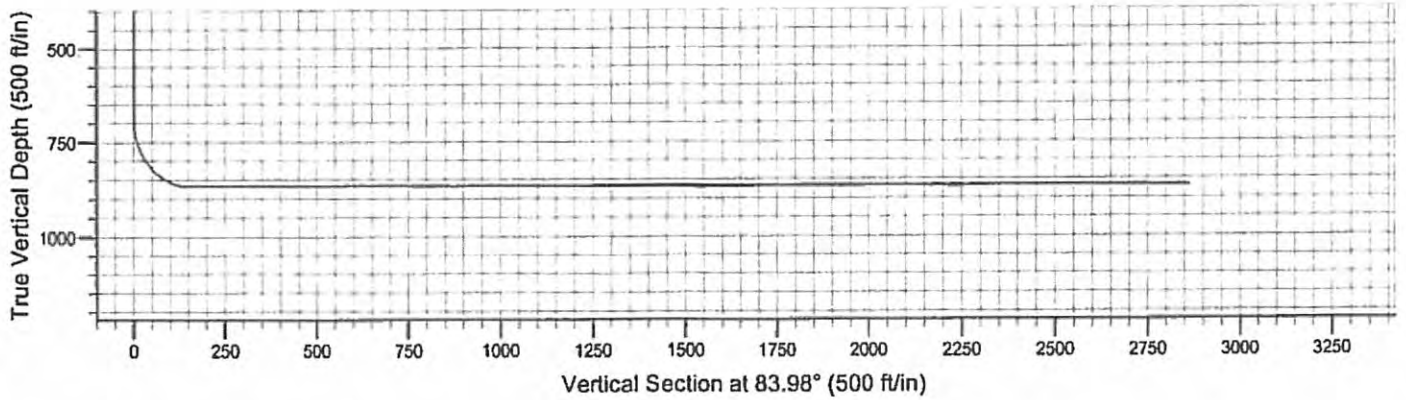
Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,125.00	90.10	90.40	868.63	295.34	1,275.16	1,308.47	4.37	0.00	4.37
2,157.00	90.20	87.90	868.55	295.82	1,307.16	1,339.56	7.82	0.31	-7.81
2,190.00	89.50	87.30	868.64	297.20	1,340.13	1,371.82	2.79	-2.12	-1.82
2,222.00	89.30	87.00	868.97	298.79	1,372.09	1,403.16	1.13	-0.62	-0.94
2,253.00	89.30	90.10	869.35	299.58	1,403.07	1,433.34	10.00	0.00	10.00
2,285.00	90.00	89.90	869.54	299.58	1,435.07	1,464.32	2.28	2.19	-0.62
2,316.00	89.20	89.30	869.76	299.79	1,466.07	1,494.38	3.23	-2.58	-1.94
2,348.00	90.40	89.30	869.87	300.18	1,498.06	1,525.45	3.75	3.75	0.00
2,382.00	90.60	88.60	869.58	300.81	1,532.06	1,558.51	2.14	0.59	-2.06
2,411.00	91.10	87.90	869.15	301.69	1,561.04	1,586.79	2.97	1.72	-2.41
2,443.00	90.40	87.90	868.73	302.86	1,593.02	1,618.03	2.19	-2.19	0.00
2,474.00	90.60	89.80	868.46	303.49	1,624.01	1,648.19	6.16	0.65	6.13
2,506.00	91.00	90.60	868.01	303.37	1,656.00	1,679.13	2.79	1.25	2.50
2,537.00	91.10	91.30	867.44	302.86	1,686.99	1,709.00	2.28	0.32	2.26
2,569.00	90.60	92.10	866.97	301.91	1,718.98	1,739.72	2.95	-1.56	2.50
2,601.00	89.90	90.50	866.83	301.19	1,750.97	1,770.50	5.46	-2.19	-5.00
2,632.00	88.80	90.50	867.18	300.91	1,781.96	1,800.44	3.55	-3.55	0.00
2,664.00	89.70	90.40	867.60	300.66	1,813.96	1,831.35	2.83	2.81	-0.31
2,695.00	88.50	90.40	868.08	300.45	1,844.95	1,861.29	3.87	-3.87	0.00
2,727.00	89.40	89.80	868.67	300.39	1,876.95	1,892.25	3.38	2.81	-1.87
2,758.00	91.20	91.20	868.51	300.12	1,907.94	1,922.18	7.36	5.81	4.52
2,790.00	90.50	90.80	868.03	299.56	1,939.93	1,953.01	2.52	-2.19	-1.25
2,821.00	91.50	90.10	867.49	299.32	1,970.93	1,982.95	3.94	3.23	-2.26
2,853.00	90.80	90.30	866.85	299.21	2,002.92	2,013.89	2.27	-2.19	0.62
2,885.00	89.50	89.70	866.77	299.21	2,034.92	2,044.87	4.47	-4.06	-1.87
2,916.00	89.90	90.00	866.93	299.29	2,066.92	2,074.89	1.61	1.29	0.97
2,948.00	89.90	89.00	866.99	299.57	2,097.92	2,105.94	3.12	0.00	-3.12
2,979.00	88.30	88.20	867.47	300.33	2,128.90	2,136.12	5.77	-5.16	-2.58
3,011.00	87.00	88.00	868.78	301.39	2,160.86	2,167.32	4.11	-4.06	-0.62
3,043.00	91.20	89.40	869.29	302.11	2,192.84	2,198.45	13.83	13.12	4.37
3,076.00	90.80	89.10	868.71	302.54	2,225.83	2,230.50	1.52	-1.21	-0.91
3,107.00	90.90	89.80	868.25	302.84	2,256.83	2,260.58	2.28	0.32	2.26
3,138.00	90.60	89.00	867.85	303.16	2,287.82	2,290.66	2.76	-0.97	-2.58
3,170.00	90.50	90.00	867.54	303.44	2,319.82	2,321.70	3.14	-0.31	3.12
3,202.00	89.50	89.50	867.54	303.58	2,351.82	2,352.71	3.49	-3.12	-1.56
3,233.00	90.70	89.60	867.48	303.83	2,382.82	2,382.78	3.88	3.87	0.32
3,265.00	90.20	89.70	867.23	304.02	2,414.81	2,413.80	1.59	-1.56	0.31
3,297.00	89.30	89.30	867.37	304.30	2,446.81	2,444.84	3.08	-2.81	-1.25
3,328.00	90.50	90.30	867.43	304.41	2,477.81	2,474.88	5.04	3.87	3.23
3,360.00	90.70	89.60	867.09	304.44	2,509.81	2,505.86	2.27	0.62	-2.19
3,391.00	90.90	89.00	866.66	304.82	2,540.80	2,535.95	2.04	0.65	-1.94
3,423.00	90.50	88.60	866.27	305.49	2,572.79	2,567.09	1.77	-1.25	-1.25
3,454.00	89.00	88.40	866.40	306.30	2,603.78	2,597.29	4.88	-4.84	-0.65
3,486.00	88.60	87.90	867.07	307.33	2,635.76	2,628.50	2.00	-1.25	-1.56
3,518.00	90.00	88.10	867.46	308.45	2,667.74	2,659.73	4.42	4.37	0.62
3,549.00	89.30	89.10	867.65	309.20	2,698.73	2,689.92	3.94	-2.26	3.23
3,581.00	89.20	89.40	868.07	309.62	2,730.72	2,720.99	0.99	-0.31	0.94
3,613.00	89.50	89.20	868.44	310.01	2,762.72	2,752.06	1.13	0.94	-0.62
3,645.00	90.00	88.80	868.57	310.57	2,794.71	2,783.17	2.00	1.56	-1.25
3,665.00	89.30	88.10	868.70	311.11	2,814.70	2,802.66	4.95	-3.50	-3.50
3,696.00	89.30	88.10	869.08	312.14	2,845.68	2,832.91	0.00	0.00	0.00



CNX Gas Company, LLC

MC-43 - EAST LEG
MARSHALL COUNTY
WEST VIRGINIA



LEGEND

- MC-43, EAST LEG, AD ELEG
- PLANNED WELL



Nevis Energy
Survey Report

Company: CNX Gas Company, LLC
 Project: WEST VIRGINIA2
 Site: MARSHALL COUNTY3
 Well: MC-43
 Wellbore: WEST CENTER LEG
 Design: AD WEST CENTER LEG

Local Co-ordinate Reference: Well MC-43
 TVD Reference: WELL @ 0.00ft (Original Well Elev)
 MD Reference: WELL @ 0.00ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: EDM 2003.14 Single User Db

Project	WEST VIRGINIA2		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	West Virginia Northern Zone		

Site	MARSHALL COUNTY3				
Site Position:		Northing:	499,997.97 ft	Latitude:	39° 52' 2.130 N
From:	Lat/Long	Easting:	1,651,076.94 ft	Longitude:	80° 37' 51.220 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	-0.72 °

Well	MC-43					
Well Position	+N/-S	0.00 ft	Northing:	499,997.97 ft	Latitude:	39° 52' 2.130 N
	+E/-W	0.00 ft	Easting:	1,651,076.94 ft	Longitude:	80° 37' 51.220 W
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft	Ground Level:	0.00 ft	

Wellbore	WEST CENTER LEG				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	5/5/2008	-8.44	67.84	53,302

Design	AD WEST CENTER LEG				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	1,615.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	39.58	

Survey Program	Date 5/20/2008			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
50.00	1,615.00	AD WLEG (WEST LEG)		
1,615.00	4,022.00	AD WCTR LEG (WEST CENTER LEG)		

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,615.00	89.90	1.20	864.64	647.20	470.58	798.65	0.00	0.00	0.00
1,644.00	90.17	359.21	864.62	676.20	470.68	821.07	6.92	0.93	-6.86
1,682.00	87.90	2.00	865.26	714.18	471.08	850.60	9.46	-5.97	7.34
1,713.00	88.10	4.60	866.34	745.11	472.87	875.57	8.41	0.65	8.39
1,745.00	89.50	7.80	867.01	776.91	476.32	902.29	10.91	4.37	10.00
1,777.00	90.40	11.90	867.04	808.43	481.80	930.07	13.12	2.81	12.81
1,808.00	90.50	15.00	866.80	838.58	489.01	957.89	10.00	0.32	10.00
1,840.00	90.80	20.10	866.44	869.08	498.65	987.55	15.96	0.94	15.94
1,871.00	89.40	24.10	866.38	897.79	510.31	1,017.11	13.67	-4.52	12.90
1,903.00	90.00	28.40	866.55	926.49	524.46	1,048.24	13.57	1.87	13.44
1,935.00	90.70	32.90	866.35	954.01	540.77	1,079.84	14.23	2.19	14.06
1,966.00	90.20	37.70	866.11	979.30	558.68	1,110.75	15.57	-1.61	15.48



Nevis Energy Survey Report

Company: CNX Gas Company,LLC
Project: WEST VIRGINIA2
Site: MARSHALL COUNTY3
Well: MC-43
Wellbore: WEST CENTER LEG
Design: AD WEST CENTER LEG

Local Co-ordinate Reference: Well MC-43
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MD Reference: WELL @ 0.00ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.14 Single User Db

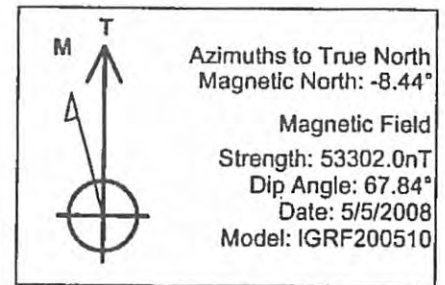
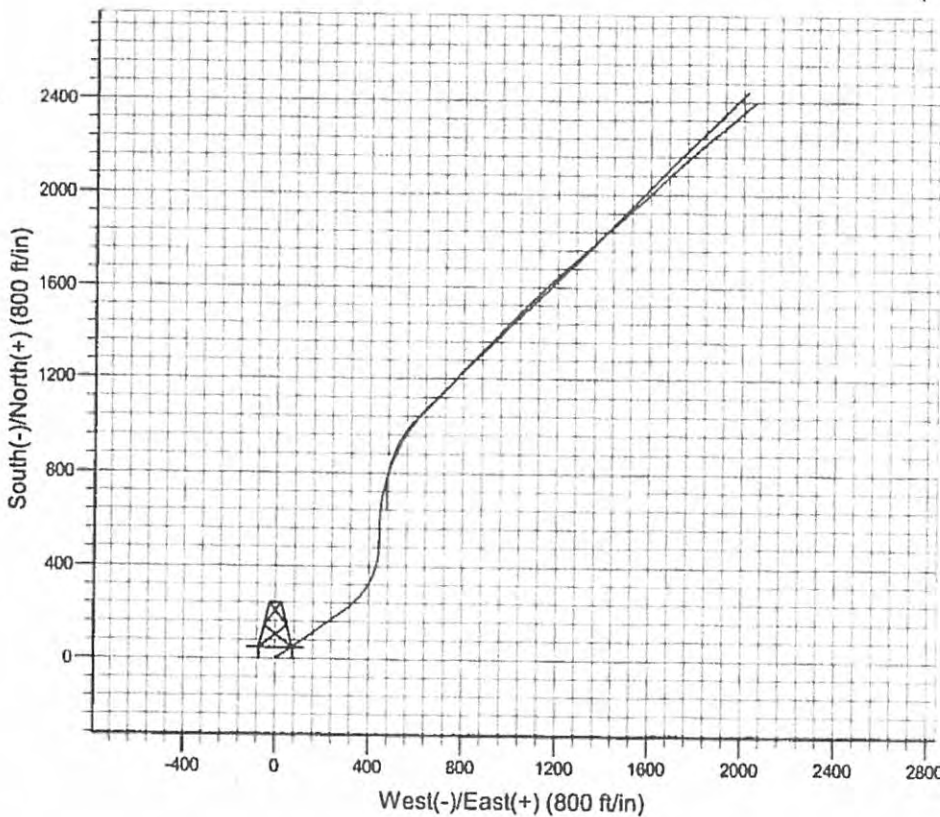
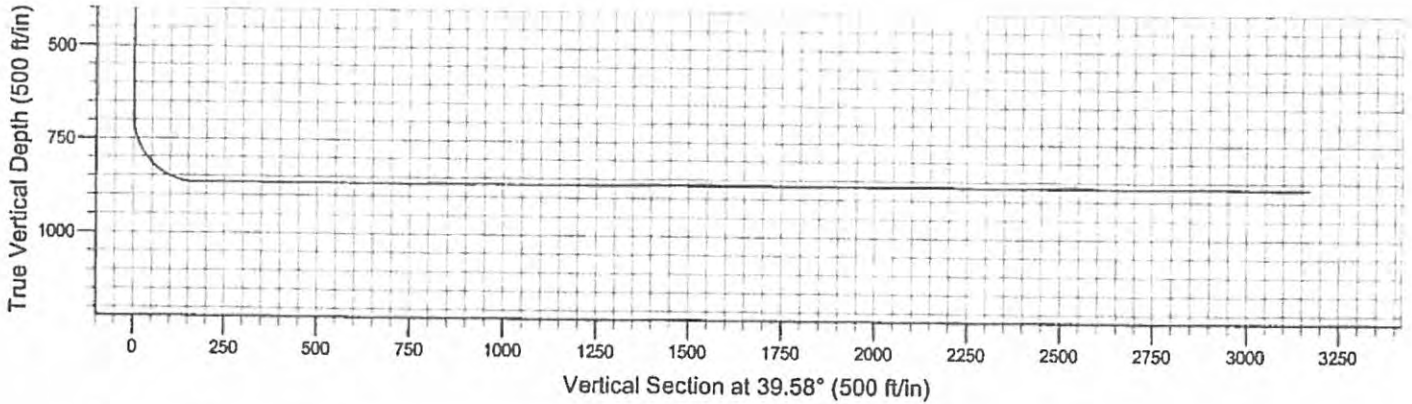
Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,998.00	89.30	41.60	866.25	1,003.93	579.09	1,142.74	12.51	-2.81	12.19
2,030.00	90.80	43.50	866.22	1,027.51	600.73	1,174.69	7.56	4.69	5.94
2,062.00	90.10	45.70	865.97	1,050.29	623.20	1,206.57	7.21	-2.19	6.87
2,093.00	90.40	46.00	865.84	1,071.88	645.44	1,237.38	1.37	0.97	0.97
2,125.00	90.50	45.10	865.58	1,094.29	668.28	1,269.21	2.83	0.31	-2.81
2,157.00	90.90	44.10	865.19	1,117.07	690.75	1,301.08	3.37	1.25	-3.12
2,188.00	89.80	44.80	865.00	1,139.20	712.46	1,331.97	4.21	-3.55	2.26
2,219.00	89.90	45.30	865.08	1,161.10	734.40	1,362.83	1.64	0.32	1.61
2,252.00	89.90	43.10	865.14	1,184.76	757.40	1,395.72	6.67	0.00	-6.67
2,283.00	90.20	42.30	865.12	1,207.54	778.42	1,426.67	2.76	0.97	-2.58
2,315.00	91.40	42.50	864.67	1,231.17	800.00	1,458.63	3.80	3.75	0.62
2,347.00	90.90	44.30	864.03	1,254.41	821.98	1,490.55	5.84	-1.56	5.62
2,378.00	91.40	43.70	863.40	1,276.71	843.51	1,521.45	2.52	1.61	-1.94
2,410.00	89.80	43.70	863.07	1,299.84	865.62	1,553.37	5.00	-5.00	0.00
2,441.00	89.70	43.00	863.20	1,322.38	886.90	1,584.30	2.28	-0.32	-2.26
2,473.00	89.00	42.10	863.57	1,345.95	908.53	1,616.25	3.56	-2.19	-2.81
2,504.00	89.10	43.86	864.08	1,368.63	929.66	1,647.19	5.69	0.32	5.68
2,536.00	89.70	43.40	864.42	1,391.79	951.74	1,679.11	2.36	1.87	-1.44
2,568.00	90.30	43.30	864.42	1,415.06	973.71	1,711.04	1.90	1.87	-0.31
2,599.00	89.20	43.50	864.55	1,437.58	995.01	1,741.97	3.61	-3.55	0.65
2,631.00	89.60	42.60	864.89	1,460.97	1,016.85	1,773.91	3.08	1.25	-2.81
2,662.00	90.40	43.40	864.89	1,483.64	1,037.99	1,804.85	3.65	2.58	2.58
2,694.00	89.80	43.60	864.83	1,506.85	1,060.02	1,836.78	1.98	-1.87	0.62
2,725.00	89.20	45.20	865.10	1,529.00	1,081.71	1,867.67	5.51	-1.94	5.16
2,757.00	89.60	45.60	865.44	1,551.46	1,104.49	1,899.50	1.77	1.25	1.25
2,788.00	89.60	45.00	865.65	1,573.27	1,126.53	1,930.35	1.94	0.00	-1.94
2,820.00	90.70	46.70	865.57	1,595.56	1,149.48	1,962.15	6.33	3.44	5.31
2,851.00	91.10	46.00	865.08	1,616.95	1,171.91	1,992.93	2.60	1.29	-2.26
2,883.00	89.40	45.60	864.94	1,639.26	1,194.85	2,024.74	5.46	-5.31	-1.25
2,915.00	90.10	48.20	865.08	1,661.12	1,218.22	2,056.48	8.41	2.19	8.12
2,946.00	92.00	48.30	864.51	1,681.76	1,241.34	2,087.12	6.14	6.13	0.32
2,978.00	91.40	47.60	863.56	1,703.18	1,265.09	2,118.76	2.88	-1.87	-2.19
3,010.00	91.10	48.00	862.87	1,724.67	1,288.79	2,150.43	1.56	-0.94	1.25
3,041.00	88.70	47.40	862.92	1,745.53	1,311.72	2,181.11	7.98	-7.74	-1.94
3,073.00	89.30	47.90	863.48	1,767.09	1,335.36	2,212.79	2.44	1.87	1.56
3,117.00	86.80	47.70	864.98	1,796.62	1,367.94	2,256.31	5.70	-5.68	-0.45
3,136.00	88.70	48.20	865.72	1,809.34	1,382.03	2,275.09	10.34	10.00	2.63
3,167.00	90.30	48.80	865.99	1,829.88	1,405.25	2,305.71	5.51	5.16	1.94
3,199.00	90.60	49.50	865.74	1,850.81	1,429.45	2,337.27	2.38	0.94	2.19
3,230.00	90.10	49.90	865.55	1,870.86	1,453.10	2,367.79	2.07	-1.61	1.29
3,262.00	91.00	49.10	865.25	1,891.64	1,477.43	2,399.30	3.76	2.81	-2.50
3,294.00	91.50	48.70	864.55	1,912.67	1,501.54	2,430.87	2.00	1.56	-1.25
3,325.00	91.30	49.10	863.79	1,933.04	1,524.89	2,461.46	1.44	-0.65	1.29
3,357.00	90.60	48.90	863.26	1,954.03	1,549.04	2,493.02	2.28	-2.19	-0.62
3,388.00	90.50	48.20	862.96	1,974.55	1,572.27	2,523.64	2.28	-0.32	-2.26
3,420.00	88.80	46.90	863.16	1,996.15	1,595.88	2,555.33	6.69	-5.31	-4.06
3,451.00	85.80	46.70	864.62	2,017.35	1,618.45	2,586.04	9.70	-9.68	-0.65
3,483.00	87.90	46.70	866.38	2,039.26	1,641.70	2,617.75	6.56	6.56	0.00
3,516.00	88.50	47.50	867.41	2,061.71	1,665.86	2,650.45	3.03	1.82	2.42
3,548.00	90.40	47.80	867.72	2,083.27	1,689.51	2,682.13	6.01	5.94	0.94
3,580.00	90.10	47.90	867.58	2,104.74	1,713.24	2,713.79	0.99	-0.94	0.31
3,612.00	90.90	48.50	867.30	2,126.07	1,737.09	2,745.43	3.12	2.50	1.87
3,643.00	90.80	48.20	866.84	2,146.67	1,760.25	2,776.07	1.02	-0.32	-0.97
3,675.00	91.30	49.50	866.25	2,167.72	1,784.34	2,807.64	4.35	1.56	4.06



CNX Gas Company, LLC

MC-43 - WEST CENTER LEG
MARSHALL COUNTY
WEST VIRGINIA



LEGEND

— MC-43, WEST CENTER LEG, AD WCTR LEG

⊠ PLANNED WELL

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03/24/2017

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Nevis Energy
Survey Report

Company:	CNX Gas Company,LLC	Local Co-ordinate Reference:	Well MC-43
Project:	WEST VIRGINIA2	TVD Reference:	WELL @ 0.00ft (Original Well Elev)
Site:	MARSHALL COUNTY3	MD Reference:	WELL @ 0.00ft (Original Well Elev)
Well:	MC-43	North Reference:	True
Wellbore:	EAST CENTER LEG	Survey Calculation Method:	Minimum Curvature
Design:	AD EAST CENTER LEG	Database:	EDM 2003.14 Single User Db

Project	WEST VIRGINIA2		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	West Virginia Northern Zone		

Site	MARSHALL COUNTY3				
Site Position:		Northing:	499,997.97 ft	Latitude:	39° 52' 2.130 N
From:	Lat/Long	Easting:	1,651,076.94 ft	Longitude:	80° 37' 51.220 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	-0.72 °

Well	MC-43					
Well Position	+N/-S	0.00 ft	Northing:	499,997.97 ft	Latitude:	39° 52' 2.130 N
	+E/-W	0.00 ft	Easting:	1,651,076.94 ft	Longitude:	80° 37' 51.220 W
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	0.00 ft

Wellbore	EAST CENTER LEG				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	5/5/2008	-8.44	67.84	53,302

Design	AD EAST CENTER LEG				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	1,069.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	57.49	

Survey Program	Date 5/20/2008				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
50.00	1,069.00	AD WLEG (WEST LEG)			
1,069.00	4,311.00	AD ECTR LEG (EAST CENTER LEG)			

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,069.00	92.44	47.67	866.80	177.13	240.53	298.04	0.00	0.00	0.00
1,076.00	92.70	51.70	866.49	181.65	245.86	304.96	57.63	3.71	57.57
1,108.00	91.00	56.40	865.46	200.42	271.74	336.88	15.61	-5.31	14.69
1,139.00	90.00	61.70	865.19	216.36	298.32	367.85	17.40	-3.23	17.10
1,172.00	88.90	68.10	865.50	230.35	328.19	400.56	19.68	-3.33	19.39
1,204.00	89.50	74.70	865.95	240.55	358.49	431.60	20.71	1.87	20.62
1,236.00	90.50	81.20	865.95	247.23	389.77	461.57	20.55	3.12	20.31
1,269.00	90.00	86.80	865.81	250.68	422.58	491.08	17.04	-1.52	16.97
1,301.00	89.10	89.90	866.06	251.60	454.56	518.55	10.09	-2.81	9.69
1,331.00	89.30	90.90	866.48	251.39	484.56	543.73	3.40	0.67	3.33
1,363.00	91.20	91.90	866.34	250.61	516.54	570.29	6.71	5.94	3.12
1,394.00	90.60	91.30	865.85	249.74	547.53	595.95	2.74	-1.94	-1.94



Nevis Energy Survey Report

Company: CNX Gas Company, LLC
 Project: WEST VIRGINIA2
 Site: MARSHALL COUNTY3
 Well: MC-43
 Wellbore: EAST CENTER LEG
 Design: AD EAST CENTER LEG

Local Co-ordinate Reference: Well MC-43
 TVD Reference: WELL @ 0.00ft (Original Well Elev)
 MD Reference: WELL @ 0.00ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: EDM 2003.14 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,426.00	91.40	90.30	865.29	249.29	579.52	622.69	4.00	2.50	-3.12
1,457.00	89.50	91.30	865.05	248.86	610.51	648.59	6.93	-6.13	3.23
1,490.00	87.80	91.90	865.82	247.94	643.49	675.91	5.46	-5.15	1.82
1,522.00	88.10	90.90	866.97	247.16	675.46	702.45	3.26	0.94	-3.12
1,553.00	90.30	88.20	867.40	247.40	706.45	728.71	11.23	7.10	-8.71
1,585.00	89.60	86.90	867.43	248.77	738.42	756.41	4.61	-2.19	-4.06
1,617.00	90.20	84.20	867.49	251.25	770.32	784.64	8.64	1.87	-8.44
1,650.00	90.90	81.70	867.17	255.30	803.07	814.44	7.87	2.12	-7.58
1,682.00	90.10	80.10	866.89	260.36	834.66	843.80	5.59	-2.50	-5.00
1,714.00	90.00	77.50	866.86	266.58	866.05	873.61	8.13	-0.31	-8.12
1,745.00	90.40	75.30	866.75	273.87	896.18	902.93	7.21	1.29	-7.10
1,777.00	91.60	74.40	866.20	282.23	927.06	933.47	4.69	3.75	-2.81
1,808.00	89.60	74.00	865.87	290.67	956.89	963.16	6.58	-6.45	-1.29
1,840.00	90.40	75.40	865.87	299.11	987.75	993.72	5.04	2.50	4.37
1,870.00	88.10	72.90	866.26	307.30	1,016.60	1,022.46	11.32	-7.67	-8.33
1,903.00	89.20	72.90	867.04	317.00	1,048.14	1,054.26	3.33	3.33	0.00
1,935.00	91.20	72.70	866.93	326.47	1,078.70	1,085.13	6.28	6.25	-0.62
1,966.00	91.90	71.90	866.09	335.89	1,108.22	1,115.08	3.43	2.26	-2.58
1,998.00	89.70	69.10	865.64	346.57	1,138.38	1,146.25	11.13	-6.87	-8.75
2,030.00	91.00	69.40	865.45	357.90	1,168.30	1,177.58	4.17	4.06	0.94
2,062.00	90.00	66.50	865.17	369.91	1,197.96	1,209.04	9.59	-3.12	-9.06
2,095.00	88.60	63.90	865.57	383.75	1,227.91	1,241.74	8.95	-4.24	-7.88
2,126.00	89.60	65.10	866.06	397.10	1,255.89	1,272.50	5.04	3.23	3.87
2,158.00	89.00	62.20	866.45	411.30	1,284.55	1,304.31	9.25	-1.87	-9.06
2,190.00	88.60	58.60	867.12	427.10	1,312.37	1,336.26	11.32	-1.25	-11.25
2,222.00	89.50	55.70	867.65	444.45	1,339.24	1,368.25	9.49	2.81	-9.06
2,253.00	90.40	54.00	867.68	462.30	1,364.59	1,399.22	6.20	2.90	-5.48
2,285.00	90.60	53.30	867.40	481.26	1,390.36	1,431.14	2.27	0.62	-2.19
2,316.00	89.90	49.90	867.26	500.52	1,414.65	1,461.97	11.20	-2.26	-10.97
2,348.00	87.70	47.60	867.93	521.61	1,438.70	1,493.59	9.94	-6.87	-7.19
2,380.00	88.10	46.20	869.11	543.46	1,462.05	1,525.02	4.55	1.25	-4.37
2,411.00	89.60	44.70	869.73	565.20	1,484.14	1,555.34	6.84	4.84	-4.84
2,443.00	91.20	44.60	869.51	587.96	1,506.63	1,586.53	5.01	5.00	-0.31
2,474.00	90.80	44.70	868.96	610.01	1,528.41	1,616.75	1.33	-1.29	0.32
2,506.00	89.80	43.80	868.80	632.94	1,550.74	1,647.90	4.20	-3.12	-2.81
2,537.00	90.50	44.80	868.72	655.12	1,572.39	1,678.08	3.94	2.26	3.23
2,569.00	90.40	45.50	868.46	677.69	1,595.07	1,709.34	2.21	-0.31	2.19
2,601.00	89.50	44.50	868.49	700.32	1,617.70	1,740.58	4.20	-2.81	-3.12
2,632.00	89.90	46.00	868.65	722.14	1,639.71	1,770.88	5.01	1.29	4.84
2,664.00	89.90	47.60	868.71	744.04	1,663.04	1,802.32	5.00	0.00	5.00
2,695.00	89.60	47.20	868.85	765.03	1,685.86	1,832.84	1.61	-0.97	-1.29
2,727.00	88.90	45.90	869.26	787.03	1,709.09	1,864.26	4.61	-2.19	-4.06
2,758.00	89.60	47.70	869.67	808.25	1,731.68	1,894.72	6.23	2.26	5.81
2,790.00	90.80	48.30	869.56	829.66	1,755.46	1,926.28	4.19	3.75	1.87
2,821.00	90.50	47.90	869.21	850.36	1,778.54	1,956.86	1.61	-0.97	-1.29
2,853.00	91.50	47.80	868.65	871.83	1,802.26	1,988.40	3.14	3.12	-0.31
2,885.00	91.80	48.20	867.73	893.24	1,826.03	2,019.95	1.56	0.94	1.25
2,916.00	89.80	48.50	867.29	913.84	1,849.19	2,050.55	6.57	-6.45	0.97
2,948.00	89.60	47.40	867.46	935.27	1,872.95	2,082.11	3.48	0.52	-3.44
2,979.00	89.10	46.60	867.81	956.41	1,895.62	2,112.59	3.04	0.94	-2.58
3,011.00	89.40	47.70	868.23	978.17	1,919.08	2,144.07	3.56	0.94	3.44
3,043.00	88.80	48.60	868.74	999.51	1,942.91	2,175.64	3.38	-1.87	2.81
3,076.00	90.40	48.80	868.97	1,021.29	1,967.70	2,208.25	4.89	4.89	0.61
3,107.00	90.80	48.30	868.64	1,041.81	1,990.93	2,238.87	2.07	1.29	-1.61

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WV Department of
 Environmental Protection
 COMPASS 2003.14 Build 57
 03/24/2017

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Nevis Energy

Survey Report

Company: CNX Gas Company, LLC
Project: WEST VIRGINIA2
Site: MARSHALL COUNTY3
Well: MC-43
Wellbore: EAST CENTER LEG
Design: AD EAST CENTER LEG

Local Co-ordinate Reference: Well MC-43
TVD Reference: WELL @ 0.00ft (Original Well Elev)
MD Reference: WELL @ 0.00ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.14 Single User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,139.00	89.80	47.70	868.47	1,063.23	2,014.71	2,270.43	3.64	-3.12	-1.87
3,170.00	91.00	46.20	868.26	1,084.39	2,037.37	2,300.91	6.20	3.87	-4.84
3,202.00	89.90	47.20	868.01	1,106.33	2,060.65	2,332.34	4.65	-3.44	3.12
3,233.00	91.10	48.00	867.74	1,127.23	2,083.54	2,362.87	4.65	3.87	2.58
3,265.00	90.10	48.40	867.40	1,148.56	2,107.40	2,394.45	3.37	-3.12	1.25
3,297.00	90.30	46.50	867.29	1,170.20	2,130.97	2,425.96	5.97	0.62	-5.94
3,328.00	89.10	47.80	867.45	1,191.28	2,153.70	2,456.46	5.71	-3.87	4.19
3,360.00	88.10	46.90	868.23	1,212.95	2,177.22	2,487.95	4.20	-3.12	-2.81
3,391.00	89.50	47.00	868.88	1,234.11	2,199.87	2,518.42	4.53	4.52	0.32
3,423.00	90.50	48.30	868.88	1,255.67	2,223.52	2,549.94	5.13	3.12	4.06
3,454.00	90.10	50.20	868.72	1,275.90	2,247.00	2,580.62	6.26	-1.29	6.13
3,486.00	89.10	49.40	868.94	1,296.55	2,271.44	2,612.33	4.00	-3.12	-2.50
3,518.00	90.90	50.40	868.94	1,317.16	2,295.92	2,644.05	6.43	5.62	3.12
3,549.00	90.80	50.40	868.48	1,336.92	2,319.80	2,674.81	0.32	-0.32	0.00
3,581.00	90.20	50.30	868.20	1,357.34	2,344.44	2,706.56	1.90	-1.87	-0.31
3,613.00	89.30	48.60	868.34	1,378.14	2,368.76	2,738.24	6.01	-2.81	-5.31
3,645.00	88.90	47.60	868.85	1,399.51	2,392.57	2,769.81	3.37	-1.25	-3.12
3,671.00	89.00	47.60	869.32	1,417.04	2,411.77	2,795.42	0.38	0.38	0.00
3,703.00	89.20	47.40	869.82	1,438.66	2,435.36	2,826.93	0.88	0.62	-0.62
3,735.00	90.90	48.70	869.80	1,460.05	2,459.15	2,858.50	6.69	5.31	4.06
3,767.00	89.80	46.20	869.60	1,481.68	2,482.73	2,890.00	8.54	-3.44	-7.81
3,798.00	90.60	46.00	869.49	1,503.18	2,505.06	2,920.39	2.66	2.58	-0.65
3,829.00	92.20	46.90	868.74	1,524.53	2,527.52	2,950.81	5.92	5.16	2.90
3,860.00	91.50	46.70	867.74	1,545.74	2,550.11	2,981.25	2.35	-2.26	-0.65
3,893.00	91.00	46.60	867.02	1,568.39	2,574.10	3,013.66	1.55	-1.52	-0.30
3,925.00	90.10	46.00	866.71	1,590.49	2,597.23	3,045.05	3.38	-2.81	-1.87
3,956.00	89.30	44.50	866.87	1,612.32	2,619.25	3,075.34	5.48	-2.58	-4.84
3,987.00	89.20	44.50	867.28	1,634.43	2,640.97	3,105.54	0.32	-0.32	0.00
4,019.00	89.20	45.00	867.72	1,657.15	2,663.50	3,136.75	1.56	0.00	1.56
4,051.00	90.60	43.80	867.78	1,680.01	2,685.89	3,167.92	5.76	4.37	-3.75
4,080.00	90.40	44.20	867.53	1,700.87	2,706.03	3,196.12	1.54	-0.69	1.38
4,106.00	89.40	42.90	867.57	1,719.72	2,723.95	3,221.35	6.31	-3.85	-5.00
4,136.00	89.10	43.30	867.96	1,741.62	2,744.44	3,250.41	1.67	-1.00	1.33
4,168.00	90.50	47.10	868.08	1,764.16	2,767.14	3,281.67	12.65	4.37	11.87
4,200.00	90.70	49.10	867.74	1,785.53	2,790.96	3,313.24	6.28	0.62	6.25
4,231.00	90.70	51.30	867.36	1,805.37	2,814.77	3,343.98	7.10	0.00	7.10
4,248.00	90.40	52.30	867.20	1,815.88	2,828.13	3,360.90	6.14	-1.76	5.88
4,280.00	89.30	55.30	867.28	1,834.78	2,853.95	3,392.83	9.99	-3.44	9.37
4,311.00	89.30	55.30	867.66	1,852.43	2,879.44	3,423.80	0.00	0.00	0.00

Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
ECTRBHL, MC-43	0.00	0.00	867.00	2,000.88	3,138.98	501,959.18	1,654,240.86	39° 52' 21.903 N	80° 37' 10.958 W
- survey misses by 638.69ft at 3966.36ft MD (867.00 TVD, 1619.70 N, 2626.51 E)									
- Point									

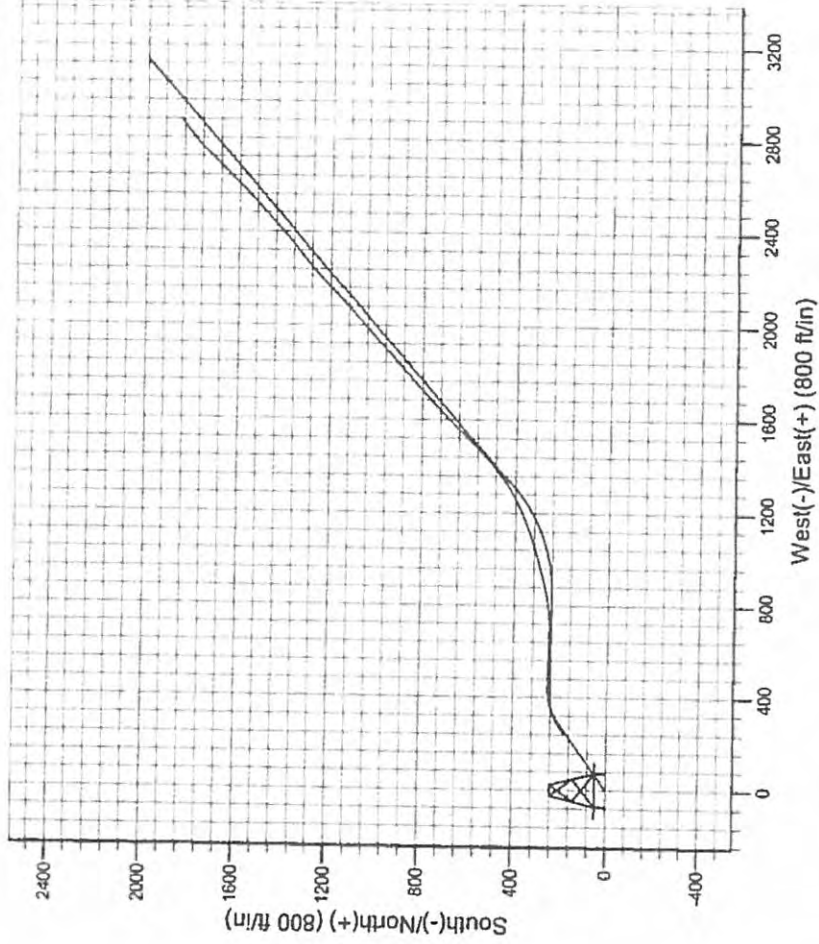
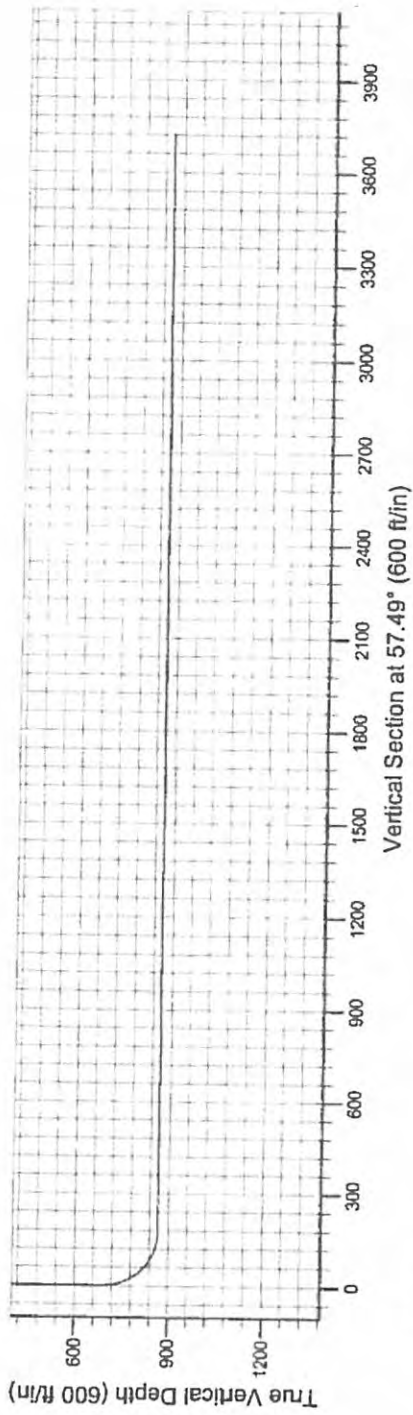
Checked By: _____ Approved By: _____ Date: _____

5101097P



CNX Gas Company, LLC

MC-43 - EAST CENTER LEG
MARSHALL COUNTY
WEST VIRGINIA



Azimuths to True North
Magnetic North: -8.44°

Magnetic Field
Strength: 53302.0nT
Dip Angle: 67.84°
Date: 5/5/2008
Model: IGRF200510

LEGEND

- MC-43, EAST CENTER LEG, AD ECTR LEG
- PLANNED WELL