



CNX



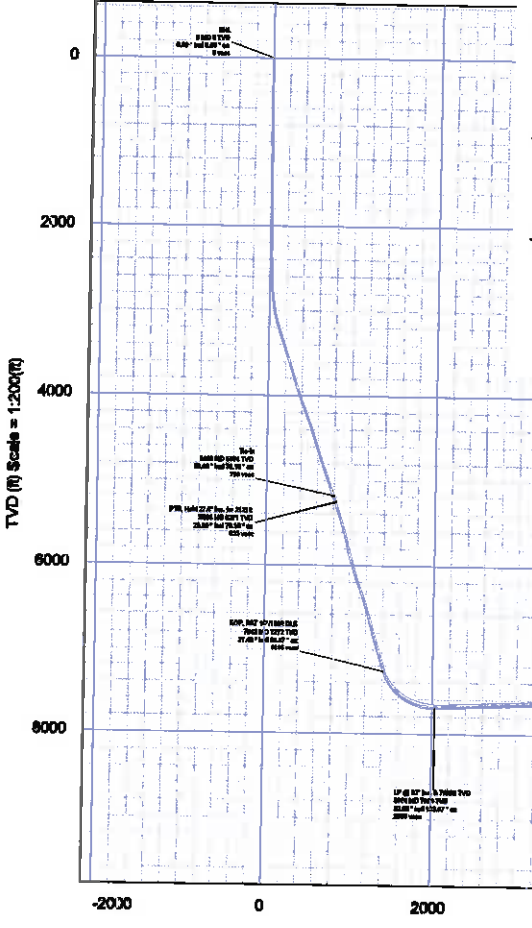
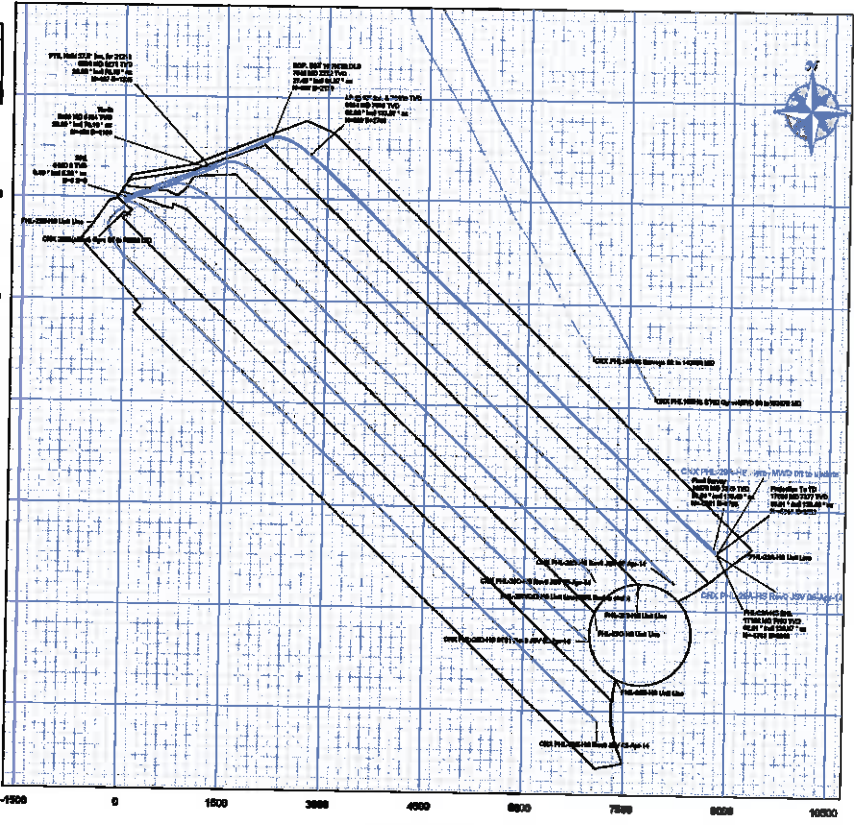
Borehole: Original Borehole	Well: PHL-29A-HS	Field: WV Barbour County (NAD27)	Structure: Patterson 278
Gravity & Magnetic Parameters: Model: 6500-2P13 Dip: 04.200° Strike: 05-Apr-2014 MagDec: -4.520° FC: 02194.25mT Gravity FC: 000.200mGal (0.20000 EmuG)	Section Location: Lat: N 30 10 0.00 Lon: W 08 0 00.00	WELL Head Uplift Data Point, Northern Area, US Feet: Heading: 20000.00000 Well Geom: -4.250° Scale Fact: 0.2000000	Wellbore Data: Stat: PHL-29A-HS TVD Stat: 1001400.000 (above BML) Plan: 0201 PHL-29A-HS (type=HSD) 01 to update

Interval	SP	SSL	ASL	TVD	1000'	2000'	3000'	SP/1000'	SSL/1000'	ASL/1000'
PHL	6.81	6.89	6.99	6.05	6.81	6.69	6.59	6.81	6.89	6.99
Prod Bore	1407.28	01.81	100.49	2754.79	1402.28	100.49	000.00	1407.28	01.81	100.49
Produced To TD	1766.08	01.81	135.48	2277.24	1761.08	135.48	000.00	1766.08	01.81	135.48

Well ID	Survey Name	Interval	Start Date	End Date	Start TVD	End TVD	Start Depth	End Depth	Start Azim	End Azim	Start Dip	End Dip	Start Curv	End Curv	Start Mag	End Mag	Start Dec	End Dec
1	PHL-29A-HS-01	01	2011	2011	0	300	0	300	0	0	0	0	0	0	0	0	0	0
2	PHL-29A-HS-02	02	2011	2011	300	600	300	600	0	0	0	0	0	0	0	0	0	0
3	PHL-29A-HS-03	03	2011	2011	600	900	600	900	0	0	0	0	0	0	0	0	0	0
4	PHL-29A-HS-04	04	2011	2011	900	1200	900	1200	0	0	0	0	0	0	0	0	0	0

Well ID	Survey Name	Interval	Start Date	End Date	Start TVD	End TVD	Start Depth	End Depth	Start Azim	End Azim	Start Dip	End Dip	Start Curv	End Curv	Start Mag	End Mag	Start Dec	End Dec
1	PHL-29A-HS-01	01	2011	2011	0	300	0	300	0	0	0	0	0	0	0	0	0	0
2	PHL-29A-HS-02	02	2011	2011	300	600	300	600	0	0	0	0	0	0	0	0	0	0
3	PHL-29A-HS-03	03	2011	2011	600	900	600	900	0	0	0	0	0	0	0	0	0	0
4	PHL-29A-HS-04	04	2011	2011	900	1200	900	1200	0	0	0	0	0	0	0	0	0	0

Grid
Mag True
Grid North
Tel Corr (M-G -0.174°)
Mag Dec (-0.520°)
Grid Conv (-0.354°)



Well ID	Survey Name	Interval	Start Date	End Date	Start TVD	End TVD	Start Depth	End Depth	Start Azim	End Azim	Start Dip	End Dip	Start Curv	End Curv	Start Mag	End Mag	Start Dec	End Dec
PHL-29A-HS-01	PHL-29A-HS-01	01	2011	2011	0	300	0	300	0	0	0	0	0	0	0	0	0	0
PHL-29A-HS-02	PHL-29A-HS-02	02	2011	2011	300	600	300	600	0	0	0	0	0	0	0	0	0	0
PHL-29A-HS-03	PHL-29A-HS-03	03	2011	2011	600	900	600	900	0	0	0	0	0	0	0	0	0	0
PHL-29A-HS-04	PHL-29A-HS-04	04	2011	2011	900	1200	900	1200	0	0	0	0	0	0	0	0	0	0

Received
Office of Oil & Gas
JUN 01 2015

Vertical Section (ft) Azim = 120.288° Scale = 1:200(ft) Origin = ON-S, OEA-W



CNX PHL-29A-HS Survey Off to 17066ft MD Survey Report



(Def Survey)

Report Date: May 02, 2014 - 11:39 AM
Client: CNX
Field: WV Barbour County (NA227)
Structure / Blot: CNX PHL-29 Pad / PHL-29A-HS
Well: PHL-29A-HS
Borehole: Original Borehole
UWI / APBR: Unknown / Unknown
Survey Name: CNX PHL-29A-HS Survey Off to 17066ft MD
Survey Date: April 06, 2014
Tort / AND / DD / ERD Ratio: 257.107' / 11430.874 ft / 6.815 / 1.490
Coordinate Reference System: NAD27 West Virginia State Plane, Northern Zone, US Feet
Location Lat / Long: N 39° 12' 5.48500", W 80° 3' 18.08298"
Location Grid N/E Y/D: N 255995.521 RUG, E 1842709.100 MUS
CRS Grid Convergence Angle: -0.3540°
Grid Scale Factor: 0.99996801
Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 120.268° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB
TVD Reference Elevation: 1433.990 ft above MSL
Seahed / Ground Elevation: 1435.480 ft above MSL
Magnetic Declination: -9.528°
Total Gravity Field Strength: 898.284mgm (S.80885 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 62193.236 nT
Magnetic Dip Angle: 66.393°
Declination Date: April 06, 2014
Magnetic Declination Model: HDGM 2013
North Reference: Grid North
Grid Convergence Used: -0.3540°
Total Corr Mag North->Grid North: -9.1743°
Local Coord Reference To: Well Head

Table with columns: Comments, MD (ft), Incl (°), Azim Grid (°), TVD (ft), TVDSS (ft), VSEC (ft), NS (ft), EW (ft), DLS (ft/100ft), BR (ft/100ft), TR (ft/100ft), Northing (ft), Easting (ft), Latitude (N/S), Longitude (E/W). Rows list survey data points from 0.00 to 5101.00 MD.

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	TVD98 (ft)	W8EC (m)	NS (ft)	EW (ft)	DLS (ft/100ft)	BR (ft/100ft)	TR (ft/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ° ' '')	Longitude (E/W ° ° ' '')
	5146.00	28.20	67.60	4896.75	3462.77	680.57	368.75	1026.76	1.56	-1.56	-0.22	26394.26	1843735.85	N 38 12 0.39 W	80 3 5.07
	5160.00	28.50	67.00	4925.06	3491.10	703.57	397.08	1046.71	1.13	0.81	-1.36	26392.96	1843735.77	N 38 12 3.48 W	80 3 4.82
	5233.00	30.30	67.80	4962.34	3526.36	716.49	405.37	1068.51	1.77	1.83	1.40	26400.67	1843775.56	N 38 12 8.66 W	80 3 4.57
	5278.00	28.60	67.20	5001.33	3567.36	730.05	414.00	1087.26	1.62	-1.56	-0.89	26409.61	1843798.32	N 38 12 8.65 W	80 3 4.30
	5323.00	28.80	66.70	5040.61	3608.63	743.16	422.99	1107.46	1.86	-1.78	-1.11	26418.10	1843816.52	N 38 12 9.73 W	80 3 4.05
	5368.00	28.80	67.60	5080.04	3646.06	756.16	431.01	1127.43	0.96	0.00	2.00	26426.62	1843836.50	N 38 12 9.82 W	80 3 3.80
	5411.00	28.40	70.10	5117.71	3683.73	769.09	436.50	1146.76	2.81	0.23	0.26	26434.00	1843855.84	N 38 12 9.88 W	80 3 3.55
	5463.00	28.40	69.50	5156.32	3722.34	782.52	445.78	1166.56	1.81	-1.14	-1.36	26441.38	1843875.84	N 38 12 9.97 W	80 3 3.30
	5496.00	28.20	70.10	5194.11	3760.13	795.57	452.66	1185.83	0.61	0.47	1.40	26448.76	1843894.89	N 38 12 10.04 W	80 3 3.05
	5612.00	28.60	69.82	5234.39	3800.41	808.22	471.40	1206.78	0.36	-0.35	-0.16	26456.90	1843914.85	N 38 12 10.22 W	80 3 2.41
	5707.00	30.37	66.86	5377.25	3943.27	858.88	488.54	1270.96	2.75	2.28	-3.13	26464.02	1843938.03	N 38 12 10.40 W	80 3 1.86
	5801.00	30.61	65.10	5468.25	4024.27	866.73	507.89	1323.86	1.03	0.26	-1.97	26471.30	1844032.61	N 38 12 10.69 W	80 3 1.31
	5884.00	27.09	64.42	5536.01	4102.03	811.24	626.33	1382.70	3.41	-3.39	0.78	26478.57	1844071.78	N 38 12 10.77 W	80 3 0.81
	5984.00	27.56	61.81	5618.30	4185.32	834.80	546.11	1401.53	1.39	0.07	-2.99	26485.81	1844110.59	N 38 12 10.97 W	80 3 0.32
	6078.00	27.88	55.07	5702.49	4268.61	859.36	569.07	1436.75	3.26	0.23	-8.96	26492.94	1844147.81	N 38 12 11.20 W	80 2 59.65
	6171.00	27.03	54.70	5784.83	4350.85	873.35	603.94	1474.12	0.42	-0.38	-0.40	26499.44	1844183.17	N 38 12 11.45 W	80 2 59.40
	6273.00	26.78	62.65	5876.61	4441.63	905.40	618.13	1513.66	3.83	-0.74	7.79	26506.13	1844222.83	N 38 12 11.69 W	80 2 59.50
	6367.00	25.87	69.49	5969.96	4525.96	1019.81	635.00	1551.67	0.40	-1.18	7.28	26513.00	1844260.72	N 38 12 11.86 W	80 2 59.40
	6461.00	27.92	71.26	6043.86	4609.88	1046.91	648.21	1591.59	2.54	2.54	1.87	26520.70	1844300.63	N 38 12 12.00 W	80 2 57.92
	6555.00	27.84	70.21	6126.85	4692.97	1075.43	663.71	1633.06	0.52	-0.09	-1.11	26528.21	1844342.12	N 38 12 12.15 W	80 2 57.32
	6649.00	27.87	68.00	6210.02	4776.04	1103.00	679.40	1674.17	1.11	0.14	-2.35	26535.70	1844383.22	N 38 12 12.31 W	80 2 56.67
	6743.00	26.83	69.97	6292.79	4859.81	1130.66	695.37	1715.77	1.22	0.70	2.10	26543.20	1844424.81	N 38 12 12.47 W	80 2 56.34
	6836.00	27.49	66.17	6374.86	4940.88	1157.67	711.89	1759.34	2.28	-1.23	-4.09	26550.77	1844465.38	N 38 12 12.63 W	80 2 56.63
	6930.00	27.76	63.62	6458.15	5024.17	1182.42	730.17	1802.99	0.29	-2.71	1.13	26557.87	1844505.84	N 38 12 12.81 W	80 2 56.63
	7024.00	28.51	64.68	6541.04	5107.06	1207.12	749.49	1859.69	0.98	0.80	1.13	26564.99	1844544.99	N 38 12 13.01 W	80 2 56.82
	7118.00	27.98	67.78	6623.85	5189.87	1233.00	767.67	1876.28	1.30	-0.56	2.65	26572.37	1844585.32	N 38 12 13.19 W	80 2 54.31
	7236.00	28.00	66.91	6709.25	5274.07	1258.71	789.76	1927.06	0.47	0.02	-0.89	26579.25	1844638.10	N 38 12 13.41 W	80 2 54.31
	7330.00	27.62	65.52	6811.19	5377.21	1291.25	807.96	1987.10	0.40	-0.40	0.01	26586.25	1844676.13	N 38 12 13.69 W	80 2 53.16
	7423.00	26.87	66.81	6895.84	5459.86	1318.38	824.76	2046.22	0.83	-0.70	0.96	26593.20	1844715.20	N 38 12 13.76 W	80 2 52.66
	7517.00	26.82	67.50	6977.74	5543.76	1341.79	841.21	2105.22	0.50	-0.37	0.73	26600.25	1844754.26	N 38 12 13.89 W	80 2 52.17
	7611.00	27.14	66.67	7061.59	5627.81	1367.24	857.76	2084.36	0.88	0.85	-0.88	26607.25	1844793.38	N 38 12 14.09 W	80 2 51.67
	7705.00	24.98	71.46	7146.03	5712.05	1391.64	874.22	2122.23	2.30	-2.30	-0.35	26614.25	1844832.50	N 38 12 14.29 W	80 2 51.19
	7799.00	24.85	67.24	7231.26	5797.30	1415.20	889.83	2158.63	0.43	-0.14	0.86	26621.25	1844871.61	N 38 12 14.41 W	80 2 51.73
	7846.00	27.96	70.64	7273.37	5880.43	1438.27	897.30	2178.13	7.36	6.62	7.23	26628.25	1844910.73	N 38 12 14.49 W	80 2 50.48
	7893.00	30.45	78.62	7314.41	5960.43	1444.30	903.36	2200.21	8.74	5.30	16.77	26635.25	1844949.24	N 38 12 14.65 W	80 2 50.21
	7934.00	33.55	84.29	7349.18	5915.20	1461.22	906.52	2221.58	10.81	7.58	14.07	26642.01	1844987.70	N 38 12 14.68 W	80 2 49.83
	7996.00	37.86	90.10	7381.41	5957.43	1486.66	907.99	2252.95	10.64	8.23	11.17	26648.76	1845026.21	N 38 12 14.80 W	80 2 49.55
	8030.00	43.01	93.52	7425.16	5981.17	1511.71	906.48	2280.13	12.30	9.43	12.32	26655.76	1845064.71	N 38 12 14.91 W	80 2 49.18
	8080.00	45.98	101.66	7461.13	6027.15	1543.97	901.24	2314.42	11.85	7.84	12.26	26662.76	1845103.44	N 38 12 14.54 W	80 2 48.75
	8127.00	48.56	106.20	7493.03	6058.05	1577.08	882.80	2347.91	6.97	5.48	9.66	26669.76	1845142.63	N 38 12 14.66 W	80 2 48.33
	8174.00	51.09	107.42	7528.35	6089.37	1612.01	882.51	2382.28	5.74	5.38	2.80	26676.76	1845181.30	N 38 12 14.96 W	80 2 47.89
	8221.00	55.61	111.47	7561.40	6117.42	1648.03	889.93	2417.80	11.84	9.62	4.23	26683.76	1845220.38	N 38 12 15.23 W	80 2 47.46
	8289.00	60.53	114.87	7597.26	6142.28	1688.59	854.21	2454.44	12.13	10.47	9.52	26690.76	1845259.42	N 38 12 15.43 W	80 2 47.44
	8315.00	64.58	116.08	7637.82	6163.94	1730.18	835.61	2487.75	10.63	8.82	6.83	26697.76	1845298.41	N 38 12 15.69 W	80 2 46.97
	8362.00	68.46	120.42	7676.65	6182.67	1773.28	814.64	2529.34	9.41	8.23	4.98	26704.76	1845337.44	N 38 12 15.90 W	80 2 46.50
	8410.00	73.16	122.45	7832.43	6198.45	1818.59	790.90	2568.00	10.59	9.81	4.23	26711.76	1845376.38	N 38 12 16.13 W	80 2 45.52
	8465.00	76.58	124.38	7844.17	6210.19	1851.85	785.97	2608.00	8.85	7.80	4.29	26718.76	1845415.26	N 38 12 16.42 W	80 2 45.06
	8502.00	79.08	127.30	7854.08	6220.10	1907.87	740.07	2641.49	8.07	6.32	8.21	26725.76	1845454.00	N 38 12 16.96 W	80 2 44.59
	8549.00	81.41	129.80	7862.05	6228.07	1953.50	711.18	2677.86	7.37	5.42	6.83	26732.76	1845492.76	N 38 12 17.26 W	80 2 44.13
	8596.00	83.49	130.17	7869.22	6234.24	1989.42	691.21	2712.36	4.46	4.43	0.57	26739.76	1845531.52	N 38 12 17.69 W	80 2 43.67
	8643.00	86.97	131.11	7872.13	6238.15	2046.48	650.71	2748.98	7.67	7.40	2.00	26746.76	1845570.21	N 38 12 18.09 W	80 2 43.22
	8690.00	88.93	130.72	7873.40	6238.42	2081.86	619.94	2784.38	6.35	6.30	-0.83	26753.76	1845608.96	N 38 12 18.59 W	80 2 42.76
	8737.00	92.85	130.79	7872.26	6238.28	2137.85	589.27	2819.87	6.21	6.20	0.15	26760.76	1845647.71	N 38 12 19.09 W	80 2 42.31
	8791.00	93.12	130.08	7868.93	6234.95	2200.77	547.82	2868.62	0.42	0.42	-1.11	26767.76	1845686.46	N 38 12 19.59 W	80 2 41.85
	8855.00	92.51	130.47	7864.31	6230.33	2280.23	487.12	2940.25	0.77	-0.85	0.41	26774.76	1845725.21	N 38 12 20.09 W	80 2 41.39
	8888.00	91.98	131.10	7860.63	6226.65	2385.68	425.77	3011.37	0.88	0.88	0.87	26781.76	1845764.00	N 38 12 20.59 W	80 2 39.86
	9063.00	92.59	133.37	7857.98	6222.80	2477.47	362.84	3080.90	0.90	0.90	2.41	26788.76	1845802.76	N 38 12 21.09 W	80 2 39.86
	9177.00	92.94	133.34	7852.62	6218.94	2572.47	296.16	3149.19	0.97	0.97	-0.03	26795.76	1845841.52	N 38 12 21.59 W	80 2 39.31
	9270.00	92.81	133.21	7848.07	6215.08	2659.50	238.77	3216.84	0.92	0.92	-0.14	26802.76	1845880.28	N 38 12 22.09 W	80 2 38.76
	9364.00	92.07	133.06	7845.31	6211.33	2761.07	170.24	3265.37	0.47	-0.14	-1.14	26809.76	1845919.04	N 38 12 22.59 W	80 2 38.24
	9460.00	92.33	133.29	7841.63	6207.65	2844.58	104.89	3305.94	0.90	0.90	-0.22	26816.76	1845957.79	N 38 12 23.09 W	80 2 37.76
	9554.00	92.59	135.34	7837.59	6203.81	2935.88	38.88	3422.51	0.90	0.90	2.18	26823.76	1846004.31	N 38 12 23.59 W	80 2 37.41
	9648.00	92.24	134.21	7833.63	6199.65	3026.61	-27.16	3488.18	1.26	-0.37	1.20	26830.76	1846050.84	N 38 12 24.09 W	80 2 36.97
	9742.00	92.15	135.14	7830.03	6195.05	3117.60	-83.21	3553.99	0.90	-0.10	0.89	26837.76	1846097.38	N 38 12 24.59 W	80 2 36.52
	9836.00	92.42	134.85	7826.28	6190.30	3206.44	-15								

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVD2s (ft)	VBEC (ft)	NS (ft)	EW (ft)	DL8 (ft/100ft)	BR (ft/100ft)	TR (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	13988.00	88.69	135.23	7441.58	6007.60	7216.12	-3022.22	6591.63	0.51	0.47	-1.14	252873.40	1849300.80	N 39 11 36.01	W 80 1 54.13
	14080.00	88.69	134.16	7442.09	6008.11	7307.17	-3088.33	6658.44	1.14	0.00		252907.28	1849367.32	N 39 11 35.38	W 80 1 53.27
	14153.00	88.37	131.99	7443.65	6008.88	7397.84	-3151.83	6726.36	2.73	-1.42	-2.33	252943.80	1849435.23	N 39 11 34.74	W 80 1 52.41
	14247.00	88.86	132.81	7445.03	6011.05	7488.73	-3215.21	6795.77	1.90	1.69	0.87	252980.42	1849504.64	N 39 11 34.12	W 80 1 51.52
	14341.00	88.89	131.63	7445.32	6011.34	7581.72	-3278.31	6865.43	1.39	-0.29	-1.38	253017.32	1849574.30	N 39 11 33.50	W 80 1 50.63
	14435.00	88.87	132.37	7445.88	6011.70	7673.77	-3341.15	6935.34	0.91	0.19	0.89	253054.48	1849644.21	N 39 11 32.88	W 80 1 49.74
	14529.00	80.04	132.18	7445.78	6011.78	7765.72	-3404.38	7004.90	0.27	0.18	-0.20	253091.28	1849713.76	N 39 11 32.26	W 80 1 48.85
	14623.00	88.86	132.29	7445.78	6011.78	7857.89	-3467.56	7074.49	0.14	-0.09	0.12	253128.07	1849783.35	N 39 11 31.64	W 80 1 47.96
	14717.00	88.80	133.61	7448.12	6012.14	7949.42	-3531.55	7143.36	1.35	-0.36	1.30	253164.69	1849852.21	N 39 11 31.01	W 80 1 47.08
	14808.00	80.22	134.16	7448.26	6012.28	8038.86	-3595.27	7209.71	0.98	0.87	0.71	253200.38	1849921.57	N 39 11 30.38	W 80 1 46.23
	14901.00	88.82	134.38	7448.47	6012.49	8128.13	-3658.48	7275.99	0.80	-0.78	0.24	253238.16	1849994.44	N 39 11 29.76	W 80 1 45.39
	14993.00	88.16	134.41	7447.53	6013.55	8217.35	-3722.85	7341.32	0.39	-0.39	0.03	253271.80	1850060.17	N 39 11 29.12	W 80 1 44.55
	15086.00	88.89	134.12	7449.03	6015.05	8307.58	-3788.75	7407.91	0.36	-0.18	-0.31	253306.90	1850126.76	N 39 11 28.48	W 80 1 43.70
	15178.00	88.87	133.61	7449.85	6015.97	8396.88	-3852.89	7473.88	0.97	0.86	0.18	253342.78	1850192.70	N 39 11 27.85	W 80 1 42.86
	15272.00	88.87	133.60	7450.16	6018.18	8486.22	-3918.12	7541.54	0.73	0.00	-0.73	253377.53	1850258.38	N 39 11 27.21	W 80 1 42.02
	15366.00	80.75	133.65	7450.42	6015.67	8578.85	-3983.08	7609.47	0.87	0.84	0.26	253412.57	1850324.16	N 39 11 26.57	W 80 1 41.18
	15459.00	81.36	133.63	7447.84	6013.96	8670.08	-4047.37	7678.68	0.69	0.86	-0.23	253448.29	1850390.50	N 39 11 25.94	W 80 1 40.27
	15553.00	82.51	133.62	7444.76	6010.78	8761.49	-4112.19	7744.66	1.22	1.22	-0.01	253483.48	1850456.50	N 39 11 25.31	W 80 1 39.40
	15647.00	82.77	133.46	7440.43	6006.45	8852.89	-4178.87	7812.73	0.32	0.26	-0.17	253518.79	1850522.21	N 39 11 24.67	W 80 1 38.53
	15741.00	83.21	133.15	7436.53	6001.55	8944.36	-4241.25	7881.04	0.57	0.47	-0.32	253554.41	1850588.87	N 39 11 24.04	W 80 1 37.66
	15835.00	83.03	133.65	7430.42	5988.44	9035.96	-4305.09	7949.85	0.87	-0.19	-0.64	253589.89	1850655.69	N 39 11 23.41	W 80 1 36.79
	15929.00	83.30	133.08	7425.23	5981.25	9127.88	-4369.87	8018.70	0.83	0.28	0.56	253625.80	1850722.53	N 39 11 22.78	W 80 1 35.90
	16023.00	82.77	133.31	7420.25	5986.27	9219.08	-4433.13	8087.13	0.61	-0.56	0.24	253661.55	1850789.88	N 39 11 22.15	W 80 1 35.03
	16117.00	83.56	132.59	7415.06	5981.06	9310.85	-4497.07	8155.83	1.14	0.84	-0.77	253697.28	1850856.65	N 39 11 21.53	W 80 1 34.15
	16210.00	82.88	132.61	7409.85	5975.87	9401.34	-4560.04	8224.07	0.79	-0.75	0.24	253732.16	1850923.88	N 39 11 20.91	W 80 1 33.28
	16304.00	82.51	132.26	7405.45	5971.47	9493.10	-4623.52	8293.26	0.69	-0.37	-0.92	253767.16	1850991.31	N 39 11 20.28	W 80 1 32.40
	16398.00	82.88	133.10	7401.19	5967.21	9584.81	-4687.18	8362.29	0.91	0.18	0.89	253802.35	1851058.31	N 39 11 19.66	W 80 1 31.51
	16492.00	82.95	132.37	7396.57	5962.59	9676.49	-4750.89	8431.25	0.83	0.28	-0.78	253837.99	1851125.80	N 39 11 19.03	W 80 1 30.63
	16586.00	82.77	132.24	7391.88	5957.90	9768.32	-4814.08	8500.65	0.24	-0.18	-0.14	253873.40	1851193.40	N 39 11 18.41	W 80 1 29.75
	16680.00	82.77	132.61	7387.34	5953.38	9860.11	-4877.42	8569.99	0.39	0.00	0.29	253908.81	1851261.30	N 39 11 17.79	W 80 1 28.86
	16774.00	81.89	132.87	7383.52	5949.54	9951.82	-4941.16	8638.97	0.98	-0.94	0.28	253944.41	1851329.40	N 39 11 17.17	W 80 1 27.97
	16868.00	81.10	133.28	7381.07	5947.09	10043.46	-5005.34	8707.61	0.85	-0.84	0.44	253979.80	1851397.40	N 39 11 16.53	W 80 1 27.10
	16961.00	81.29	133.27	7379.14	5945.16	10134.06	-5069.08	8776.30	0.19	0.19	-0.01	254015.27	1851464.11	N 39 11 15.91	W 80 1 26.24
Final Survey	16979.00	81.01	133.40	7378.78	5944.80	10151.69	-5081.43	8788.39	1.66	-1.50	0.72	254050.72	1851531.20	N 39 11 15.29	W 80 1 25.37
Projection To TD	17066.00	81.01	133.40	7377.24	5943.28	10236.31	-5141.19	8851.60	0.00	0.00	0.00	254086.50	1851598.40	N 39 11 15.20	W 80 1 25.27

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 85.000% Confidence 2.7855 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EDU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.00	28.500	Act Sns	30.000	30.000	SLB_NSG+MSHOT-Depth Only	Original Borehole / CNX PHL-29A-HS Survey DR to 170668 MD
	1	28.500	2331.000	Act Sns	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / CNX PHL-29A-HS Survey DR to 170668 MD
	1	2331.000	16879.000	Act Sns	30.000	30.000	SLB_MWD-STD	Original Borehole / CNX PHL-29A-HS Survey DR to 170668 MD
	1	16879.000	17068.000	Act Sns	30.000	30.000	SLB_BLIND-TREND	Original Borehole / CNX PHL-29A-HS Survey DR to 170668 MD

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