



Chesapeake Operating Inc.

Eddy County, New Mexico (NAD27)

Crow Flats 14-16-28 USA 2H

Job # 1210325

Rig: Cactus 120

Survey: Phoenix MWD Surveys

Chesapeake Energy, Survey Report

07 May, 2012



15-39945



Chesapeake Energy, Survey Report



Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Job # 1210325
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3598.00usft (Cactus 120)
Site:	Crow Flats 14-16-28 USA 2H	MD Reference:	WELL @ 3598.00usft (Cactus 120)
Well:	Job # 1210325	North Reference:	Grid
Wellbore:	Rig Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig Cactus 120	Database:	Compass5000

Project	Eddy County, New Mexico (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Crow Flats 14-16-28 USA 2H		
Site Position:		Northing:	700,396.00 usft
From:	Map	Easting:	554,795.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 55' 31.2146 N
		Longitude:	104° 9' 17.1207 W
		Grid Convergence:	0.10 °

Well		Job # 1210325				
Well Position	+N/-S	0.00 usft	Northing:	700,396.00 usft	Latitude:	32° 55' 31.2146 N
	+E/-W	0.00 usft	Easting:	554,795.00 usft	Longitude:	104° 9' 17.1207 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	3,598.00 usft	Ground Level:	3,575.00 usft	

Wellbore		Rig Cactus 120			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	04/17/12	7.81	60.71	48,888

Design		Rig Cactus 120		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	89.98

Survey Program		Date 05/07/12		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
205.00	11,100.00	Phoenix MWD Surveys (Rig Cactus 120)	MWD	MWD - Standard



Chesapeake Energy, Survey Report



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Site:	Crow Flats 14-16-28 USA 2H	MD Reference:	WELL @ 3598.00usft (Cactus 120)
Well:	Job # 1210325	North Reference:	Grid
Wellbore:	Rig Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig Cactus 120	Database:	Compass5000

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	3,598.00	0.00	0.00	0.00	0.00	0.00	700,396.00	554,795.00
205.00	1.60	269.90	3,393.03	204.97	0.00	-2.86	-2.86	0.78	700,396.00	554,792.14
First Phoenix MWD Surveys @ 205' MD										
281.00	1.00	93.60	3,317.03	280.97	-0.05	-3.26	-3.26	3.42	700,395.95	554,791.74
408.00	3.60	92.10	3,190.15	407.85	-0.26	1.83	1.83	2.05	700,395.74	554,796.83
603.00	3.90	88.30	2,995.56	602.44	-0.29	14.58	14.58	0.20	700,395.71	554,809.58
794.00	3.20	96.10	2,804.93	793.07	-0.67	26.37	26.37	0.44	700,395.33	554,821.37
985.00	2.90	88.00	2,614.20	983.80	-1.06	36.50	36.50	0.27	700,394.94	554,831.50
1,176.00	1.70	89.70	2,423.36	1,174.64	-0.88	44.16	44.16	0.63	700,395.12	554,839.16
1,367.00	1.20	75.40	2,232.42	1,365.58	-0.36	48.93	48.93	0.32	700,395.64	554,843.93
1,558.00	0.60	84.70	2,041.44	1,556.56	0.24	51.86	51.86	0.32	700,396.24	554,846.86
1,749.00	0.70	63.30	1,850.46	1,747.54	0.85	53.90	53.90	0.14	700,396.85	554,848.90
1,916.00	0.50	62.40	1,683.47	1,914.53	1.65	55.46	55.46	0.12	700,397.65	554,850.46
2,115.00	0.30	95.70	1,484.47	2,113.53	2.00	56.74	56.75	0.15	700,398.00	554,851.74
2,307.00	0.20	36.40	1,292.47	2,305.53	2.22	57.44	57.44	0.14	700,398.22	554,852.44
2,498.00	0.50	16.60	1,101.48	2,496.52	3.29	57.88	57.88	0.17	700,399.29	554,852.88
2,688.00	0.80	26.60	911.49	2,686.51	5.27	58.71	58.71	0.17	700,401.27	554,853.71
2,879.00	0.90	31.20	720.51	2,877.49	7.74	60.08	60.09	0.06	700,403.74	554,855.08
3,070.00	1.00	20.80	529.53	3,068.47	10.58	61.45	61.46	0.10	700,406.58	554,856.45
3,260.00	1.00	24.00	339.56	3,258.44	13.65	62.72	62.72	0.03	700,409.65	554,857.72
3,452.00	1.10	20.50	147.60	3,450.40	16.90	64.04	64.05	0.06	700,412.90	554,859.04
3,643.00	1.00	14.30	-43.37	3,641.37	20.24	65.10	65.10	0.08	700,416.24	554,860.10
3,835.00	0.90	0.90	-235.35	3,833.35	23.37	65.53	65.54	0.13	700,419.37	554,860.53
4,026.00	1.00	6.70	-426.32	4,024.32	26.52	65.75	65.76	0.07	700,422.52	554,860.75
4,217.00	0.80	1.40	-617.30	4,215.30	29.51	65.98	65.99	0.11	700,425.51	554,860.98
4,407.00	0.70	358.20	-807.28	4,405.28	32.00	65.98	65.99	0.06	700,428.00	554,860.98
4,598.00	0.80	359.80	-998.26	4,596.26	34.50	65.93	65.95	0.05	700,430.50	554,860.93



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Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3598.00usft (Cactus 120)
Site:	Crow Flats 14-16-28 USA 2H	MD Reference:	WELL @ 3598.00usft (Cactus 120)
Well:	Job # 1210325	North Reference:	Grid
Wellbore:	Rig: Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Cactus 120	Database:	Compass5000

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,789.00	0.60	348.90	-1,189.25	4,787.25	36.81	65.74	65.75	0.13	700,432.81	554,860.74	
4,980.00	0.40	344.20	-1,380.24	4,978.24	38.43	65.36	65.38	0.11	700,434.43	554,860.36	
5,171.00	0.50	357.10	-1,571.24	5,169.24	39.91	65.14	65.15	0.07	700,435.91	554,860.14	
5,362.00	1.30	80.50	-1,762.22	5,360.22	41.10	67.23	67.25	0.70	700,437.10	554,862.23	
5,554.00	2.30	92.00	-1,954.12	5,552.12	41.32	73.23	73.25	0.55	700,437.32	554,868.23	
5,745.00	4.00	94.80	-2,144.82	5,742.82	40.63	83.70	83.72	0.89	700,436.63	554,878.70	
5,937.00	4.10	95.30	-2,336.34	5,934.34	39.44	97.21	97.22	0.06	700,435.44	554,892.21	
6,045.00	4.80	93.60	-2,444.02	6,042.02	38.80	105.56	105.58	0.66	700,434.80	554,900.56	
6,077.00	5.30	95.10	-2,475.89	6,073.89	38.58	108.37	108.39	1.62	700,434.58	554,903.37	
6,109.00	7.20	97.40	-2,507.70	6,105.70	38.19	111.83	111.85	5.99	700,434.19	554,906.83	
6,141.00	10.20	98.50	-2,539.33	6,137.33	37.51	116.63	116.64	9.39	700,433.51	554,911.63	
6,173.00	13.70	98.30	-2,570.63	6,168.63	36.55	123.18	123.19	10.94	700,432.55	554,918.18	
6,205.00	18.10	98.00	-2,601.40	6,199.40	35.31	131.86	131.87	13.75	700,431.31	554,926.86	
6,237.00	22.50	97.80	-2,631.41	6,229.41	33.79	142.85	142.86	13.75	700,429.79	554,937.85	
6,269.00	26.20	97.50	-2,660.55	6,258.55	32.03	155.92	155.94	11.57	700,428.03	554,950.92	
6,300.00	29.50	97.30	-2,687.96	6,285.96	30.17	170.28	170.29	10.65	700,426.17	554,965.28	
6,332.00	32.50	96.90	-2,715.39	6,313.39	28.13	186.64	186.65	9.40	700,424.13	554,981.64	
6,364.00	36.00	96.60	-2,741.83	6,339.83	26.02	204.52	204.53	10.95	700,422.02	554,999.52	
6,396.00	39.40	96.30	-2,767.15	6,365.15	23.82	223.96	223.97	10.64	700,419.82	555,018.96	
6,428.00	42.30	95.90	-2,791.35	6,389.35	21.60	244.77	244.78	9.10	700,417.60	555,039.77	
6,460.00	44.80	95.30	-2,814.54	6,412.54	19.45	266.71	266.72	7.92	700,415.45	555,061.71	
6,492.00	47.30	94.80	-2,836.75	6,434.75	17.43	289.66	289.67	7.89	700,413.43	555,084.66	
6,523.00	50.10	95.00	-2,857.21	6,455.21	15.44	312.86	312.87	9.05	700,411.44	555,107.86	
6,555.00	54.30	94.90	-2,876.82	6,474.82	13.26	338.05	338.05	13.13	700,409.26	555,133.05	
6,587.00	58.40	94.70	-2,894.54	6,492.54	11.03	364.59	364.59	12.82	700,407.03	555,159.59	
6,619.00	60.70	94.70	-2,910.76	6,508.76	8.77	392.08	392.08	7.19	700,404.77	555,187.08	
6,651.00	64.10	94.40	-2,925.58	6,523.58	6.52	420.34	420.34	10.66	700,402.52	555,215.34	



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Well:	Job # 1210325	North Reference:	Grid
Wellbore:	Rig Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig Cactus 120	Database:	Compass5000

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
6,682.00	68.30	93.80	-2,938.09	6,536.09	4.50	448.63	448.63	13.66	700,400.50	555,243.63	
6,714.00	73.50	93.20	-2,948.56	6,546.56	2.65	478.80	478.80	16.35	700,398.65	555,273.80	
6,746.00	76.60	93.20	-2,956.81	6,554.81	0.93	509.66	509.66	9.69	700,396.93	555,304.66	
6,778.00	79.50	93.10	-2,963.44	6,561.44	-0.79	540.92	540.92	9.07	700,395.21	555,335.92	
6,810.00	81.60	93.10	-2,968.69	6,566.69	-2.50	572.44	572.44	6.56	700,393.50	555,367.44	
6,842.00	84.80	92.30	-2,972.48	6,570.48	-4.00	604.17	604.17	10.30	700,392.00	555,399.17	
6,876.00	89.50	90.90	-2,974.17	6,572.17	-4.94	638.11	638.10	14.42	700,391.06	555,433.11	
6,908.00	91.00	91.00	-2,974.03	6,572.03	-5.47	670.10	670.10	4.70	700,390.53	555,465.10	
6,939.00	91.10	91.60	-2,973.46	6,571.46	-6.18	701.09	701.09	1.96	700,389.82	555,496.09	
7,035.00	91.20	90.50	-2,971.54	6,569.54	-7.94	797.05	797.05	1.15	700,388.06	555,592.05	
7,130.00	91.50	89.40	-2,969.30	6,567.30	-7.85	892.02	892.02	1.20	700,388.15	555,687.02	
7,226.00	90.30	89.80	-2,967.79	6,565.79	-7.18	988.01	988.00	1.32	700,388.82	555,783.01	
7,321.00	91.10	90.30	-2,966.63	6,564.63	-7.27	1,083.00	1,083.00	0.99	700,388.73	555,878.00	
7,416.00	90.50	90.00	-2,965.30	6,563.30	-7.51	1,177.99	1,177.99	0.71	700,388.49	555,972.99	
7,512.00	89.40	88.80	-2,965.39	6,563.39	-6.51	1,273.98	1,273.98	1.70	700,389.49	556,068.98	
7,607.00	89.80	88.60	-2,966.05	6,564.05	-4.35	1,368.95	1,368.95	0.47	700,391.65	556,163.95	
7,703.00	89.30	88.60	-2,966.80	6,564.80	-2.01	1,464.92	1,464.92	0.52	700,393.99	556,259.92	
7,798.00	90.30	89.30	-2,967.13	6,565.13	-0.27	1,559.90	1,559.90	1.28	700,395.73	556,354.90	
7,894.00	90.50	89.10	-2,966.46	6,564.46	1.07	1,655.89	1,655.89	0.29	700,397.07	556,450.89	
7,989.00	87.80	87.20	-2,967.87	6,565.87	4.14	1,750.82	1,750.82	3.48	700,400.14	556,545.82	
8,084.00	91.00	90.30	-2,968.87	6,566.87	6.21	1,845.77	1,845.77	4.69	700,402.21	556,640.77	
8,180.00	91.10	92.00	-2,967.11	6,565.11	4.28	1,941.73	1,941.73	1.77	700,400.28	556,736.73	
8,275.00	87.70	88.20	-2,968.10	6,566.10	4.12	2,036.69	2,036.69	5.37	700,400.12	556,831.69	
8,371.00	88.60	88.50	-2,971.20	6,569.20	6.88	2,132.60	2,132.60	0.99	700,402.88	556,927.60	
8,466.00	89.60	90.00	-2,972.70	6,570.70	8.12	2,227.58	2,227.58	1.90	700,404.12	557,022.58	
8,561.00	89.30	90.30	-2,973.61	6,571.61	7.87	2,322.57	2,322.57	0.45	700,403.87	557,117.57	
8,657.00	90.20	92.10	-2,974.03	6,572.03	5.86	2,418.54	2,418.55	2.10	700,401.86	557,213.54	



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Survey											
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8,752.00	89.20	92.00	-2,974.52	6,572.52	2.47	2,513.48	2,513.48	1.06	700,398.47	557,308.48	
8,847.00	88.40	90.10	-2,976.51	6,574.51	0.72	2,608.44	2,608.44	2.17	700,396.72	557,403.44	
8,943.00	88.60	89.10	-2,979.03	6,577.03	1.39	2,704.40	2,704.40	1.06	700,397.39	557,499.40	
9,038.00	89.30	90.00	-2,980.77	6,578.77	2.14	2,799.38	2,799.38	1.20	700,398.14	557,594.38	
9,134.00	89.00	88.00	-2,982.19	6,580.19	3.82	2,895.35	2,895.35	2.11	700,399.82	557,690.35	
9,230.00	88.90	88.80	-2,983.95	6,581.95	6.50	2,991.30	2,991.30	0.84	700,402.50	557,786.30	
9,325.00	89.40	89.50	-2,985.36	6,583.36	7.90	3,086.28	3,086.28	0.91	700,403.90	557,881.28	
9,420.00	90.40	90.20	-2,985.53	6,583.53	8.15	3,181.27	3,181.28	1.28	700,404.15	557,976.27	
9,516.00	91.90	91.60	-2,983.60	6,581.60	6.65	3,277.24	3,277.24	2.14	700,402.65	558,072.24	
9,611.00	92.00	91.70	-2,980.37	6,578.37	3.91	3,372.14	3,372.14	0.15	700,399.91	558,167.14	
9,706.00	92.40	93.10	-2,976.72	6,574.72	-0.06	3,466.99	3,466.99	1.53	700,395.94	558,261.99	
9,802.00	91.30	92.20	-2,973.62	6,571.62	-4.50	3,562.83	3,562.83	1.48	700,391.50	558,357.83	
9,897.00	89.80	90.10	-2,972.71	6,570.71	-6.40	3,657.80	3,657.80	2.72	700,389.60	558,452.80	
9,993.00	88.60	88.20	-2,974.05	6,572.05	-4.98	3,753.77	3,753.77	2.34	700,391.02	558,548.77	
10,088.00	88.40	87.80	-2,976.54	6,574.54	-1.67	3,848.68	3,848.68	0.47	700,394.33	558,643.68	
10,184.00	88.40	87.40	-2,979.22	6,577.22	2.35	3,944.56	3,944.56	0.42	700,398.35	558,739.56	
10,279.00	87.70	86.40	-2,982.45	6,580.45	7.49	4,039.37	4,039.37	1.28	700,403.49	558,834.37	
10,375.00	88.00	87.30	-2,986.05	6,584.05	12.76	4,135.15	4,135.16	0.99	700,408.76	558,930.15	
10,470.00	87.90	88.90	-2,989.45	6,587.45	15.91	4,230.04	4,230.04	1.69	700,411.91	559,025.04	
10,566.00	87.60	89.20	-2,993.22	6,591.22	17.50	4,325.95	4,325.95	0.44	700,413.50	559,120.95	
10,661.00	88.20	89.90	-2,996.70	6,594.70	18.24	4,420.88	4,420.89	0.97	700,414.24	559,215.88	
10,757.00	88.40	90.20	-2,999.55	6,597.55	18.16	4,516.84	4,516.84	0.38	700,414.16	559,311.84	
10,852.00	88.70	90.50	-3,001.95	6,599.95	17.58	4,611.81	4,611.81	0.45	700,413.58	559,406.81	
10,948.00	89.00	90.10	-3,003.88	6,601.88	17.07	4,707.78	4,707.79	0.52	700,413.07	559,502.78	
11,036.00	88.70	89.70	-3,005.64	6,603.64	17.23	4,795.77	4,795.77	0.57	700,413.23	559,590.77	
Last Phoenix MWD Surveys @ 11036' MD											



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Company:	Chesapeake Operating Inc.	Local Co-ordinate Reference:	Well Job # 1210325
Project:	Eddy County, New Mexico (NAD27)	TVD Reference:	WELL @ 3598.00usft (Cactus 120)
Site:	Crow Flats 14-16-28 USA 2H	MD Reference:	WELL @ 3598.00usft (Cactus 120)
Well:	Job # 1210325	North Reference:	Grid
Wellbore:	Rig: Cactus 120	Survey Calculation Method:	Minimum Curvature
Design:	Rig: Cactus 120	Database:	Compass5000

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
11,100.00	88.70	89.70	-3,007.10	6,605.10	17.56	4,859.75	4,859.75	0.00	700,413.56	559,654.75
Projection to TD @ 11100' MD										

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
205.00	204.97	0.00	-2.86	First Phoenix MWD Surveys @ 205' MD
11,036.00	6,603.64	17.23	4,795.77	Last Phoenix MWD Surveys @ 11036' MD
11,100.00	6,605.10	17.56	4,859.75	Projection to TD @ 11100' MD

Checked By: _____	Approved By: _____	Date: _____
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MD	Inc	AZ	TVDSS	TVD	N/S	E/W
0	0	0	-3598	0	0 N	0 E
205	1.6	269.9	-3393.03	204.97	0 S	2.86 W
281	1	93.6	-3317.03	280.97	0.05 S	3.26 W
408	3.6	92.1	-3190.15	407.85	0.26 S	1.83 E
603	3.9	88.3	-2995.56	602.44	0.29 S	14.58 E
794	3.2	96.1	-2804.93	793.07	0.67 S	26.37 E
985	2.9	88	-2614.2	983.8	1.06 S	36.5 E
1176	1.7	89.7	-2423.36	1174.64	0.88 S	44.16 E
1367	1.2	75.4	-2232.42	1365.58	0.36 S	48.93 E
1558	0.6	84.7	-2041.44	1556.56	0.24 N	51.86 E
1749	0.7	63.3	-1850.46	1747.54	0.85 N	53.9 E
1916	0.5	62.4	-1683.47	1914.53	1.65 N	55.46 E
2115	0.3	95.7	-1484.47	2113.53	2 N	56.74 E
2307	0.2	36.4	-1292.47	2305.53	2.22 N	57.44 E
2498	0.5	16.6	-1101.48	2496.52	3.29 N	57.88 E
2688	0.8	26.6	-911.49	2686.51	5.27 N	58.71 E
2879	0.9	31.2	-720.51	2877.49	7.74 N	60.08 E
3070	1	20.8	-529.53	3068.47	10.58 N	61.45 E
3260	1	24	-339.56	3258.44	13.65 N	62.72 E
3452	1.1	20.5	-147.6	3450.4	16.9 N	64.04 E
3643	1	14.3	43.37	3641.37	20.24 N	65.1 E
3835	0.9	0.9	235.35	3833.35	23.37 N	65.53 E
4026	1	6.7	426.32	4024.32	26.52 N	65.75 E
4217	0.8	1.4	617.3	4215.3	29.51 N	65.98 E
4407	0.7	358.2	807.28	4405.28	32 N	65.98 E
4598	0.8	359.8	998.26	4596.26	34.5 N	65.93 E
4789	0.6	348.9	1189.25	4787.25	36.81 N	65.74 E
4980	0.4	344.2	1380.24	4978.24	38.43 N	65.36 E
5171	0.5	357.1	1571.24	5169.24	39.91 N	65.14 E
5362	1.3	80.5	1762.22	5360.22	41.1 N	67.23 E
5554	2.3	92	1954.12	5552.12	41.32 N	73.23 E
5745	4	94.8	2144.82	5742.82	40.63 N	83.7 E
5937	4.1	95.3	2336.34	5934.34	39.44 N	97.21 E
6045	4.8	93.6	2444.02	6042.02	38.8 N	105.56 E
6077	5.3	95.1	2475.89	6073.89	38.58 N	108.37 E
6109	7.2	97.4	2507.7	6105.7	38.19 N	111.83 E
6141	10.2	98.5	2539.33	6137.33	37.51 N	116.63 E
6173	13.7	98.3	2570.63	6168.63	36.55 N	123.18 E
6205	18.1	98	2601.4	6199.4	35.31 N	131.86 E
6237	22.5	97.8	2631.41	6229.41	33.79 N	142.85 E
6269	26.2	97.5	2660.55	6258.55	32.03 N	155.92 E
6300	29.5	97.3	2687.96	6285.96	30.17 N	170.28 E
6332	32.5	96.9	2715.39	6313.39	28.13 N	186.64 E
6364	36	96.6	2741.83	6339.83	26.02 N	204.52 E
6396	39.4	96.3	2767.15	6365.15	23.82 N	223.96 E
6428	42.3	95.9	2791.35	6389.35	21.6 N	244.77 E

6460	44.8	95.3	2814.54	6412.54	19.45 N	266.71 E
6492	47.3	94.8	2836.75	6434.75	17.43 N	289.66 E
6523	50.1	95	2857.21	6455.21	15.44 N	312.86 E
6555	54.3	94.9	2876.82	6474.82	13.26 N	338.05 E
6587	58.4	94.7	2894.54	6492.54	11.03 N	364.59 E
6619	60.7	94.7	2910.76	6508.76	8.77 N	392.08 E
6651	64.1	94.4	2925.58	6523.58	6.52 N	420.34 E
6682	68.3	93.8	2938.09	6536.09	4.5 N	448.63 E
6714	73.5	93.2	2948.56	6546.56	2.65 N	478.8 E
6746	76.6	93.2	2956.81	6554.81	0.93 N	509.66 E
6778	79.5	93.1	2963.44	6561.44	0.79 S	540.92 E
6810	81.6	93.1	2968.69	6566.69	2.5 S	572.44 E
6842	84.8	92.3	2972.48	6570.48	4 S	604.17 E
6876	89.5	90.9	2974.17	6572.17	4.94 S	638.11 E
6908	91	91	2974.03	6572.03	5.47 S	670.1 E
6939	91.1	91.6	2973.46	6571.46	6.18 S	701.09 E
7035	91.2	90.5	2971.54	6569.54	7.94 S	797.05 E
7130	91.5	89.4	2969.3	6567.3	7.85 S	892.02 E
7226	90.3	89.8	2967.79	6565.79	7.18 S	988.01 E
7321	91.1	90.3	2966.63	6564.63	7.27 S	1083 E
7416	90.5	90	2965.3	6563.3	7.51 S	1177.99 E
7512	89.4	88.8	2965.39	6563.39	6.51 S	1273.98 E
7607	89.8	88.6	2966.05	6564.05	4.35 S	1368.95 E
7703	89.3	88.6	2966.8	6564.8	2.01 S	1464.92 E
7798	90.3	89.3	2967.13	6565.13	0.27 S	1559.9 E
7894	90.5	89.1	2966.46	6564.46	1.07 N	1655.89 E
7989	87.8	87.2	2967.87	6565.87	4.14 N	1750.82 E
8084	91	90.3	2968.87	6566.87	6.21 N	1845.77 E
8180	91.1	92	2967.11	6565.11	4.28 N	1941.73 E
8275	87.7	88.2	2968.1	6566.1	4.12 N	2036.69 E
8371	88.6	88.5	2971.2	6569.2	6.88 N	2132.6 E
8466	89.6	90	2972.7	6570.7	8.12 N	2227.58 E
8561	89.3	90.3	2973.61	6571.61	7.87 N	2322.57 E
8657	90.2	92.1	2974.03	6572.03	5.86 N	2418.54 E
8752	89.2	92	2974.52	6572.52	2.47 N	2513.48 E
8847	88.4	90.1	2976.51	6574.51	0.72 N	2608.44 E
8943	88.6	89.1	2979.03	6577.03	1.39 N	2704.4 E
9038	89.3	90	2980.77	6578.77	2.14 N	2799.38 E
9134	89	88	2982.19	6580.19	3.82 N	2895.35 E
9230	88.9	88.8	2983.95	6581.95	6.5 N	2991.3 E
9325	89.4	89.5	2985.36	6583.36	7.9 N	3086.28 E
9420	90.4	90.2	2985.53	6583.53	8.15 N	3181.27 E
9516	91.9	91.6	2983.6	6581.6	6.65 N	3277.24 E
9611	92	91.7	2980.37	6578.37	3.91 N	3372.14 E
9706	92.4	93.1	2976.72	6574.72	0.06 S	3466.99 E
9802	91.3	92.2	2973.62	6571.62	4.5 S	3562.83 E
9897	89.8	90.1	2972.71	6570.71	6.4 S	3657.8 E

9993	88.6	88.2	2974.05	6572.05	4.98 S	3753.77 E
10088	88.4	87.8	2976.54	6574.54	1.67 S	3848.68 E
10184	88.4	87.4	2979.22	6577.22	2.35 N	3944.56 E
10279	87.7	86.4	2982.45	6580.45	7.49 N	4039.37 E
10375	88	87.3	2986.05	6584.05	12.76 N	4135.15 E
10470	87.9	88.9	2989.45	6587.45	15.91 N	4230.04 E
10566	87.6	89.2	2993.22	6591.22	17.5 N	4325.95 E
10661	88.2	89.9	2996.7	6594.7	18.24 N	4420.88 E
10757	88.4	90.2	2999.55	6597.55	18.16 N	4516.84 E
10852	88.7	90.5	3001.95	6599.95	17.58 N	4611.81 E
10948	89	90.1	3003.88	6601.88	17.07 N	4707.78 E
11036	88.7	89.7	3005.64	6603.64	17.23 N	4795.77 E
11100	88.7	89.7	3007.1	6605.1	17.56 N	4859.75 E

Northing	Easting	V Sec	D Leg
		0	0
700396 N	554795 E	-2.86	0.78
700396 N	554792.1 E	-3.26	3.42
700396 N	554791.7 E	1.83	2.05
700395.7 N	554796.8 E	14.58	0.2
700395.7 N	554809.6 E	26.37	0.44
700395.3 N	554821.4 E	36.5	0.27
700394.9 N	554831.5 E	44.16	0.63
700395.1 N	554839.2 E	48.93	0.32
700395.6 N	554843.9 E	51.86	0.32
700396.2 N	554846.9 E	53.9	0.14
700396.9 N	554848.9 E	55.46	0.12
700397.6 N	554850.5 E	56.75	0.15
700398 N	554851.7 E	57.44	0.14
700398.2 N	554852.4 E	57.88	0.17
700399.3 N	554852.9 E	58.71	0.17
700401.3 N	554853.7 E	60.09	0.06
700403.7 N	554855.1 E	61.46	0.1
700406.6 N	554856.5 E	62.72	0.03
700409.6 N	554857.7 E	64.05	0.06
700412.9 N	554859 E	65.1	0.08
700416.2 N	554860.1 E	65.54	0.13
700419.4 N	554860.5 E	65.76	0.07
700422.5 N	554860.8 E	65.99	0.11
700425.5 N	554861 E	65.99	0.06
700428 N	554861 E	65.95	0.05
700430.5 N	554860.9 E	65.75	0.13
700432.8 N	554860.7 E	65.38	0.11
700434.4 N	554860.4 E	65.15	0.07
700435.9 N	554860.1 E	67.25	0.7
700437.1 N	554862.2 E	73.25	0.55
700437.3 N	554868.2 E	83.72	0.89
700436.6 N	554878.7 E	97.22	0.06
700435.4 N	554892.2 E	105.58	0.66
700434.8 N	554900.6 E	108.39	1.62
700434.6 N	554903.4 E	111.85	5.99
700434.2 N	554906.8 E	116.64	9.39
700433.5 N	554911.6 E	123.19	10.94
700432.5 N	554918.2 E	131.87	13.75
700431.3 N	554926.9 E	142.86	13.75
700429.8 N	554937.9 E	155.94	11.57
700428 N	554950.9 E	170.29	10.65
700426.2 N	554965.3 E	186.65	9.4
700424.1 N	554981.6 E	204.53	10.95
700422 N	554999.5 E	223.97	10.64
700419.8 N	555019 E	244.78	9.1
700417.6 N	555039.8 E		

700415.5 N	555061.7 E	266.72	7.92
700413.4 N	555084.7 E	289.67	7.89
700411.4 N	555107.9 E	312.87	9.05
700409.3 N	555133 E	338.05	13.13
700407 N	555159.6 E	364.59	12.82
700404.8 N	555187.1 E	392.08	7.19
700402.5 N	555215.3 E	420.34	10.66
700400.5 N	555243.6 E	448.63	13.66
700398.7 N	555273.8 E	478.8	16.35
700396.9 N	555304.7 E	509.66	9.69
700395.2 N	555335.9 E	540.92	9.07
700393.5 N	555367.4 E	572.44	6.56
700392 N	555399.2 E	604.17	10.3
700391.1 N	555433.1 E	638.1	14.42
700390.5 N	555465.1 E	670.1	4.7
700389.8 N	555496.1 E	701.09	1.96
700388.1 N	555592.1 E	797.05	1.15
700388.1 N	555687 E	892.02	1.2
700388.8 N	555783 E	988	1.32
700388.7 N	555878 E	1083	0.99
700388.5 N	555973 E	1177.99	0.71
700389.5 N	556069 E	1273.98	1.7
700391.6 N	556164 E	1368.95	0.47
700394 N	556259.9 E	1464.92	0.52
700395.7 N	556354.9 E	1559.9	1.28
700397.1 N	556450.9 E	1655.89	0.29
700400.1 N	556545.8 E	1750.82	3.48
700402.2 N	556640.8 E	1845.77	4.69
700400.3 N	556736.7 E	1941.73	1.77
700400.1 N	556831.7 E	2036.69	5.37
700402.9 N	556927.6 E	2132.6	0.99
700404.1 N	557022.6 E	2227.58	1.9
700403.9 N	557117.6 E	2322.57	0.45
700401.9 N	557213.5 E	2418.55	2.1
700398.5 N	557308.5 E	2513.48	1.06
700396.7 N	557403.4 E	2608.44	2.17
700397.4 N	557499.4 E	2704.4	1.06
700398.1 N	557594.4 E	2799.38	1.2
700399.8 N	557690.4 E	2895.35	2.11
700402.5 N	557786.3 E	2991.3	0.84
700403.9 N	557881.3 E	3086.28	0.91
700404.2 N	557976.3 E	3181.28	1.28
700402.6 N	558072.2 E	3277.24	2.14
700399.9 N	558167.1 E	3372.14	0.15
700395.9 N	558262 E	3466.99	1.53
700391.5 N	558357.8 E	3562.83	1.48
700389.6 N	558452.8 E	3657.8	2.72

700391 N	558548.8 E	3753.77	2.34
700394.3 N	558643.7 E	3848.68	0.47
700398.4 N	558739.6 E	3944.56	0.42
700403.5 N	558834.4 E	4039.37	1.28
700408.8 N	558930.2 E	4135.16	0.99
700411.9 N	559025 E	4230.04	1.69
700413.5 N	559120.9 E	4325.95	0.44
700414.2 N	559215.9 E	4420.89	0.97
700414.2 N	559311.8 E	4516.84	0.38
700413.6 N	559406.8 E	4611.81	0.45
700413.1 N	559502.8 E	4707.79	0.52
700413.2 N	559590.8 E	4795.77	0.57
700413.6 N	559654.7 E	4859.75	0