

1 General

1.1 Customer Information

| | |
|----------------|--------------|
| Company | PICEANCE VLY |
| Representative | |
| Address | |

1.2 Well Information

| | | | |
|--------------------------|--------------------------------------|-----------------|--------------|
| Well | PA 312-11 | Wellbore No. | 1 |
| Well Name | PA 312-11 | Common Name | PA 312-11 |
| Project | PA 11-07S-095W | Site | PA 22-11 Pad |
| Vertical Section Azimuth | 293.65 (°) | North Reference | True |
| Origin N/S | | Origin E/W | |
| Spud Date | 4/16/2013 | UWI | PA 312-11 |
| Active Datum | KB @6,295.0ft (above Mean Sea Level) | | |

2 Survey Name

2.1 Survey Name: Survey #1

| | | | |
|--------------|-----------|----------|---------------------|
| Survey Name | Survey #1 | Company | Scientific Drilling |
| Date Started | 4/9/2013 | Ended | |
| Tool Name | MWD | Engineer | |

2.1.1 Tie On Point

| MD (ft) | Inc (°) | Azi (°) | TVD (ft) | N/S (ft) | E/W (ft) |
|---------|---------|---------|----------|----------|----------|
| 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

2.1.2 Survey Stations

| Date | Type | MD (ft) | Inc (°) | Azi (°) | TVD (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLS (°/100ft) | Build Rate (°/100ft) | Turn (°/100ft) | TFace (°) |
|-----------|--------|---------|---------|---------|----------|----------|----------|-------------|---------------|----------------------|----------------|-----------|
| 4/9/2013 | Tie On | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4/9/2013 | NORMAL | 75.0 | 0.53 | 328.45 | 75.00 | 0.30 | -0.18 | 0.28 | 0.71 | 0.71 | 0.00 | 328.45 |
| 4/17/2013 | NORMAL | 166.0 | 2.02 | 304.01 | 165.97 | 1.55 | -1.73 | 2.21 | 1.71 | 1.64 | -26.86 | 327.45 |
| | NORMAL | 257.0 | 3.78 | 301.99 | 256.85 | 4.04 | -5.61 | 6.75 | 1.94 | 1.93 | -2.22 | 355.67 |
| | NORMAL | 347.0 | 5.98 | 299.18 | 346.52 | 7.90 | -12.22 | 14.36 | 2.46 | 2.44 | -3.12 | 352.40 |
| | NORMAL | 438.0 | 8.89 | 289.60 | 436.75 | 12.57 | -22.98 | 26.09 | 3.47 | 3.20 | -10.53 | 332.12 |
| | NORMAL | 528.0 | 12.32 | 293.03 | 525.20 | 18.66 | -38.37 | 42.63 | 3.87 | 3.81 | 3.81 | 12.12 |
| | NORMAL | 619.0 | 15.92 | 293.91 | 613.44 | 27.52 | -58.72 | 64.83 | 3.96 | 3.96 | 0.97 | 3.84 |
| | NORMAL | 709.0 | 18.91 | 290.92 | 699.30 | 37.73 | -83.64 | 91.75 | 3.47 | 3.32 | -3.32 | 341.91 |
| | NORMAL | 782.0 | 19.79 | 291.32 | 768.18 | 46.45 | -106.20 | 115.91 | 1.22 | 1.21 | 0.55 | 8.75 |
| | NORMAL | 885.0 | 19.18 | 291.37 | 865.28 | 58.95 | -138.20 | 150.24 | 0.59 | -0.59 | 0.05 | 178.46 |
| 4/18/2013 | NORMAL | 961.0 | 19.25 | 293.91 | 937.05 | 68.58 | -161.28 | 175.24 | 1.10 | 0.09 | 3.34 | 86.41 |
| | NORMAL | 1,055.0 | 19.43 | 293.99 | 1,025.74 | 81.22 | -189.73 | 206.37 | 0.19 | 0.19 | 0.09 | 8.41 |
| | NORMAL | 1,149.0 | 18.73 | 294.43 | 1,114.58 | 93.81 | -217.75 | 237.10 | 0.76 | -0.74 | 0.47 | 168.60 |
| | NORMAL | 1,241.0 | 19.96 | 293.81 | 1,201.38 | 106.26 | -245.57 | 267.57 | 1.36 | 1.34 | -0.67 | 350.23 |
| | NORMAL | 1,336.0 | 19.43 | 294.25 | 1,290.83 | 119.30 | -274.81 | 299.59 | 0.58 | -0.56 | 0.46 | 164.58 |
| | NORMAL | 1,430.0 | 19.98 | 293.66 | 1,379.32 | 132.17 | -303.78 | 331.28 | 0.62 | 0.59 | -0.63 | 339.84 |
| | NORMAL | 1,525.0 | 19.75 | 293.36 | 1,468.67 | 145.04 | -333.38 | 363.56 | 0.26 | -0.24 | -0.32 | 203.76 |
| | NORMAL | 1,619.0 | 19.67 | 294.02 | 1,557.16 | 157.78 | -362.41 | 395.26 | 0.25 | -0.09 | 0.70 | 110.08 |
| | NORMAL | 1,713.0 | 20.49 | 293.02 | 1,645.45 | 170.65 | -392.00 | 427.54 | 0.95 | 0.87 | -1.06 | 336.81 |
| | NORMAL | 1,806.0 | 20.30 | 291.61 | 1,732.62 | 182.96 | -421.98 | 459.93 | 0.57 | -0.20 | -1.52 | 248.20 |

2.1.2 Survey Stations (Continued)

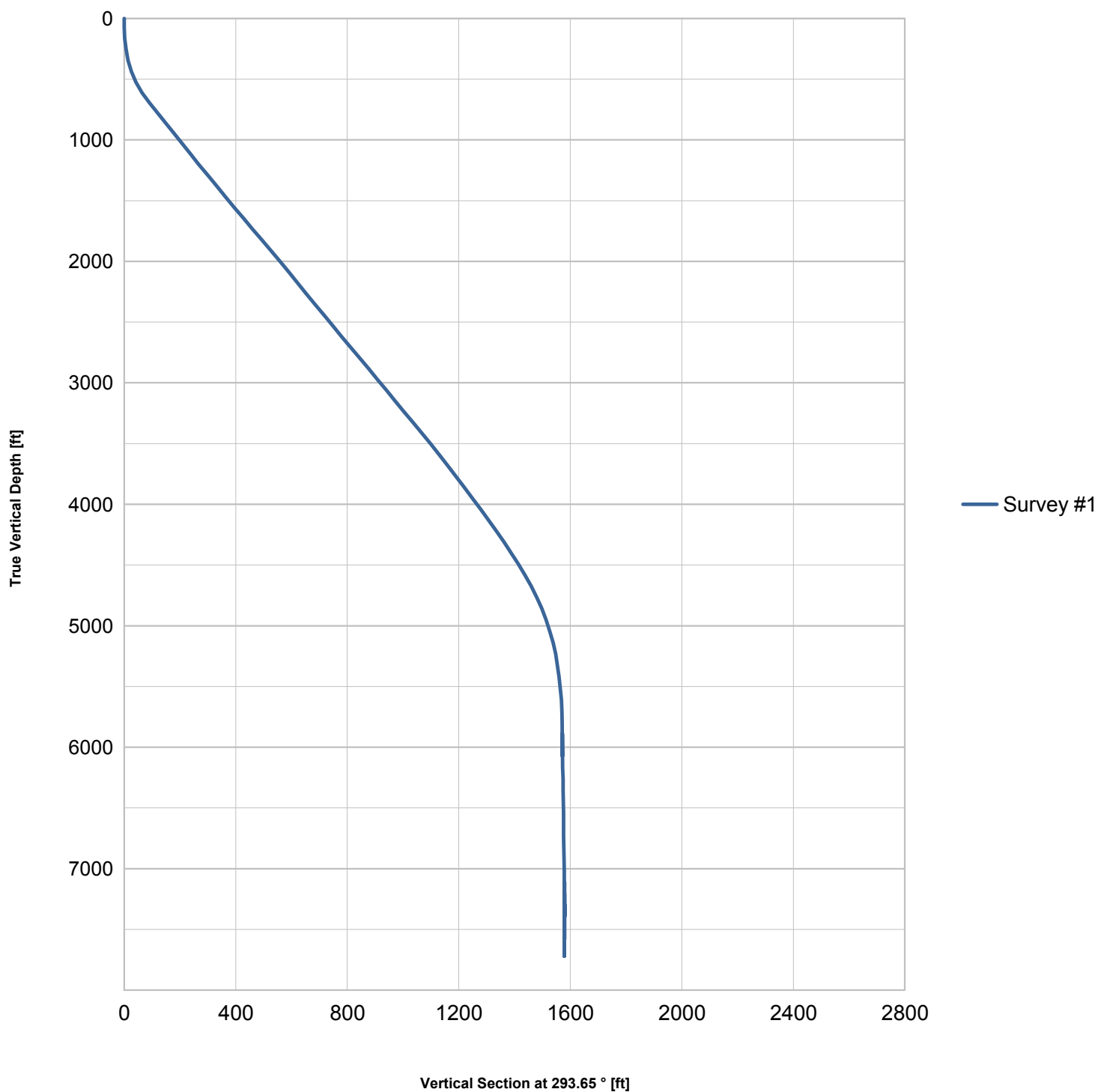
| Date | Type | MD (ft) | Inc (°) | Azi (°) | TVD (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLS (°/100ft) | Build Rate (°/100ft) | Turn (°/100ft) | TFace (°) |
|-----------|--------|------------|------------|------------|-------------|-------------|-------------|----------------|------------------|-------------------------|-------------------|--------------|
| 4/18/2013 | NORMAL | 1,901.0 | 20.63 | 292.62 | 1,821.62 | 195.47 | -452.75 | 493.14 | 0.51 | 0.35 | 1.06 | 47.41 |
| | NORMAL | 1,995.0 | 20.51 | 295.03 | 1,909.63 | 208.80 | -482.96 | 526.16 | 0.91 | -0.13 | 2.56 | 99.19 |
| | NORMAL | 2,089.0 | 19.70 | 293.64 | 1,997.90 | 222.12 | -512.39 | 558.46 | 1.00 | -0.86 | -1.48 | 209.88 |
| | NORMAL | 2,183.0 | 19.23 | 291.40 | 2,086.53 | 234.13 | -541.32 | 589.78 | 0.94 | -0.50 | -2.38 | 236.75 |
| | NORMAL | 2,277.0 | 19.57 | 295.37 | 2,175.20 | 246.52 | -569.96 | 620.98 | 1.45 | 0.36 | 4.22 | 77.42 |
| | NORMAL | 2,371.0 | 19.03 | 292.72 | 2,263.92 | 259.18 | -598.32 | 652.04 | 1.09 | -0.57 | -2.82 | 237.10 |
| 4/19/2013 | NORMAL | 2,465.0 | 20.45 | 296.30 | 2,352.39 | 272.38 | -627.18 | 683.77 | 1.98 | 1.51 | 3.81 | 42.11 |
| | NORMAL | 2,557.0 | 20.22 | 296.36 | 2,438.66 | 286.56 | -655.83 | 715.71 | 0.25 | -0.25 | 0.07 | 174.85 |
| | NORMAL | 2,651.0 | 19.26 | 296.71 | 2,527.13 | 300.74 | -684.24 | 747.41 | 1.03 | -1.02 | 0.37 | 173.14 |
| | NORMAL | 2,746.0 | 19.44 | 293.27 | 2,616.77 | 314.03 | -712.76 | 778.87 | 1.21 | 0.19 | -3.62 | 277.35 |
| | NORMAL | 2,840.0 | 20.33 | 292.49 | 2,705.16 | 326.46 | -742.22 | 810.84 | 0.99 | 0.95 | -0.83 | 343.03 |
| | NORMAL | 2,935.0 | 20.58 | 293.28 | 2,794.17 | 339.37 | -772.80 | 844.03 | 0.39 | 0.26 | 0.83 | 48.21 |
| | NORMAL | 3,028.0 | 19.52 | 291.44 | 2,881.54 | 351.51 | -802.28 | 875.91 | 1.33 | -1.14 | -1.98 | 209.90 |
| | NORMAL | 3,123.0 | 20.14 | 295.22 | 2,970.91 | 364.28 | -831.85 | 908.12 | 1.50 | 0.65 | 3.98 | 65.98 |
| | NORMAL | 3,217.0 | 19.80 | 295.01 | 3,059.26 | 377.91 | -860.92 | 940.21 | 0.37 | -0.36 | -0.22 | 191.81 |
| | NORMAL | 3,311.0 | 18.91 | 293.64 | 3,147.94 | 390.74 | -889.30 | 971.36 | 1.06 | -0.95 | -1.46 | 206.38 |
| | NORMAL | 3,404.0 | 20.09 | 292.83 | 3,235.61 | 402.99 | -917.83 | 1,002.40 | 1.30 | 1.27 | -0.87 | 346.71 |
| | NORMAL | 3,500.0 | 20.33 | 294.55 | 3,325.70 | 416.31 | -948.19 | 1,035.56 | 0.67 | 0.25 | 1.79 | 68.81 |
| | NORMAL | 3,594.0 | 19.73 | 292.32 | 3,414.01 | 429.12 | -977.73 | 1,067.75 | 1.03 | -0.64 | -2.37 | 230.80 |
| | NORMAL | 3,689.0 | 19.21 | 292.53 | 3,503.58 | 441.20 | -1,007.00 | 1,099.41 | 0.55 | -0.55 | 0.22 | 172.43 |
| | NORMAL | 3,783.0 | 18.98 | 291.70 | 3,592.41 | 452.78 | -1,035.48 | 1,130.15 | 0.38 | -0.24 | -0.88 | 229.34 |
| | NORMAL | 3,877.0 | 18.69 | 291.55 | 3,681.37 | 463.96 | -1,063.69 | 1,160.48 | 0.31 | -0.31 | -0.16 | 189.41 |
| | NORMAL | 3,972.0 | 18.34 | 291.55 | 3,771.46 | 475.04 | -1,091.75 | 1,190.62 | 0.37 | -0.37 | 0.00 | 180.00 |
| | NORMAL | 4,068.0 | 18.25 | 290.82 | 3,862.60 | 485.93 | -1,119.85 | 1,220.73 | 0.26 | -0.09 | -0.76 | 248.21 |
| | NORMAL | 4,162.0 | 17.94 | 294.05 | 3,951.96 | 497.07 | -1,146.83 | 1,249.91 | 1.12 | -0.33 | 3.44 | 108.70 |
| | NORMAL | 4,256.0 | 17.96 | 294.76 | 4,041.38 | 509.03 | -1,173.21 | 1,278.87 | 0.23 | 0.02 | 0.76 | 85.12 |
| | NORMAL | 4,351.0 | 17.25 | 294.83 | 4,131.93 | 521.08 | -1,199.30 | 1,307.60 | 0.75 | -0.75 | 0.07 | 178.33 |
| | NORMAL | 4,445.0 | 16.97 | 291.83 | 4,221.77 | 532.04 | -1,224.68 | 1,335.25 | 0.98 | -0.30 | -3.19 | 250.97 |
| | NORMAL | 4,540.0 | 16.51 | 295.15 | 4,312.75 | 542.93 | -1,249.77 | 1,362.60 | 1.12 | -0.48 | 3.49 | 117.27 |
| | NORMAL | 4,633.0 | 15.48 | 296.71 | 4,402.15 | 554.13 | -1,272.82 | 1,388.20 | 1.20 | -1.11 | 1.68 | 158.10 |
| | NORMAL | 4,727.0 | 15.92 | 294.69 | 4,492.64 | 565.15 | -1,295.74 | 1,413.62 | 0.75 | 0.47 | -2.15 | 307.86 |
| | NORMAL | 4,821.0 | 14.07 | 296.27 | 4,583.44 | 575.59 | -1,317.70 | 1,437.93 | 2.02 | -1.97 | 1.68 | 168.30 |
| | NORMAL | 4,915.0 | 12.80 | 296.16 | 4,674.86 | 585.24 | -1,337.29 | 1,459.74 | 1.35 | -1.35 | -0.12 | 181.10 |
| | NORMAL | 5,009.0 | 11.80 | 296.87 | 4,766.70 | 594.18 | -1,355.21 | 1,479.74 | 1.08 | -1.06 | 0.76 | 171.75 |
| | NORMAL | 5,102.0 | 10.46 | 298.12 | 4,857.95 | 602.45 | -1,371.14 | 1,497.66 | 1.46 | -1.44 | 1.34 | 170.40 |
| | NORMAL | 5,196.0 | 8.46 | 300.28 | 4,950.67 | 609.96 | -1,384.64 | 1,513.03 | 2.16 | -2.13 | 2.30 | 171.00 |
| | NORMAL | 5,290.0 | 7.71 | 298.04 | 5,043.74 | 616.41 | -1,396.17 | 1,526.19 | 0.87 | -0.80 | -2.38 | 201.68 |
| | NORMAL | 5,384.0 | 6.58 | 299.42 | 5,137.00 | 622.02 | -1,406.43 | 1,537.83 | 1.22 | -1.20 | 1.47 | 172.05 |
| | NORMAL | 5,479.0 | 4.98 | 304.73 | 5,231.52 | 627.05 | -1,414.56 | 1,547.30 | 1.77 | -1.68 | 5.59 | 164.15 |
| | NORMAL | 5,573.0 | 3.47 | 295.34 | 5,325.26 | 630.59 | -1,420.49 | 1,554.14 | 1.76 | -1.61 | -9.99 | 199.98 |
| | NORMAL | 5,667.0 | 3.13 | 296.39 | 5,419.11 | 632.95 | -1,425.36 | 1,559.55 | 0.37 | -0.36 | 1.12 | 170.44 |
| | NORMAL | 5,762.0 | 2.81 | 315.10 | 5,513.98 | 635.75 | -1,429.32 | 1,564.31 | 1.07 | -0.34 | 19.69 | 117.46 |
| | NORMAL | 5,855.0 | 1.88 | 306.45 | 5,606.90 | 638.27 | -1,432.16 | 1,567.92 | 1.07 | -1.00 | -9.30 | 196.55 |
| | NORMAL | 5,949.0 | 0.68 | 344.38 | 5,700.88 | 639.72 | -1,433.55 | 1,569.77 | 1.50 | -1.28 | 40.35 | 162.72 |
| 4/21/2013 | NORMAL | 6,042.0 | 1.06 | 320.71 | 5,793.87 | 640.92 | -1,434.24 | 1,570.89 | 0.55 | 0.41 | -25.45 | 304.35 |
| | NORMAL | 6,136.0 | 0.09 | 53.25 | 5,887.86 | 641.64 | -1,434.74 | 1,571.63 | 1.14 | -1.03 | 98.45 | 175.17 |
| | NORMAL | 6,229.0 | 0.53 | 157.76 | 5,980.86 | 641.28 | -1,434.51 | 1,571.28 | 0.60 | 0.47 | 112.38 | 113.47 |
| | NORMAL | 6,323.0 | 0.53 | 240.29 | 6,074.86 | 640.66 | -1,434.73 | 1,571.23 | 0.74 | 0.00 | 87.80 | 131.26 |
| | NORMAL | 6,417.0 | 1.93 | 233.87 | 6,168.83 | 639.52 | -1,436.38 | 1,572.29 | 1.49 | 1.49 | -6.83 | 351.16 |
| | NORMAL | 6,511.0 | 1.06 | 282.65 | 6,262.80 | 638.77 | -1,438.51 | 1,573.94 | 1.56 | -0.93 | 51.89 | 147.08 |
| | NORMAL | 6,604.0 | 0.14 | 175.00 | 6,355.80 | 638.85 | -1,439.34 | 1,574.73 | 1.19 | -0.99 | -115.75 | 186.90 |
| | NORMAL | 6,698.0 | 0.54 | 237.12 | 6,449.80 | 638.49 | -1,439.70 | 1,574.92 | 0.52 | 0.43 | 66.09 | 76.74 |
| | NORMAL | 6,793.0 | 0.88 | 318.07 | 6,544.79 | 638.79 | -1,440.57 | 1,575.83 | 1.01 | 0.36 | 85.21 | 114.80 |
| | NORMAL | 6,887.0 | 0.88 | 64.94 | 6,638.79 | 639.64 | -1,440.39 | 1,576.01 | 1.50 | 0.00 | 113.69 | 143.43 |
| | NORMAL | 6,981.0 | 0.92 | 312.83 | 6,732.78 | 640.45 | -1,440.29 | 1,576.24 | 1.59 | 0.04 | -119.27 | 214.81 |
| | NORMAL | 7,076.0 | 0.13 | 21.91 | 6,827.78 | 641.07 | -1,440.81 | 1,576.97 | 0.93 | -0.83 | 72.72 | 172.09 |
| | NORMAL | 7,170.0 | 0.81 | 290.73 | 6,921.77 | 641.41 | -1,441.39 | 1,577.64 | 0.88 | 0.72 | -97.00 | 259.73 |

2.1.2 Survey Stations (Continued)

| Date | Type | MD (ft) | Inc (°) | Azi (°) | TVD (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLS (°/100ft) | Build Rate (°/100ft) | Turn (°/100ft) | TFace (°) |
|-----------|--------|------------|------------|------------|-------------|-------------|-------------|----------------|------------------|-------------------------|-------------------|--------------|
| 4/21/2013 | NORMAL | 7,264.0 | 0.40 | 232.47 | 7,015.77 | 641.44 | -1,442.28 | 1,578.46 | 0.73 | -0.44 | -61.98 | 209.57 |
| | NORMAL | 7,358.0 | 0.88 | 345.58 | 7,109.76 | 641.94 | -1,442.72 | 1,579.06 | 1.17 | 0.51 | 120.33 | 132.64 |
| | NORMAL | 7,452.0 | 0.35 | 255.93 | 7,203.76 | 642.57 | -1,443.17 | 1,579.73 | 1.01 | -0.56 | -95.37 | 201.74 |
| | NORMAL | 7,546.0 | 0.44 | 349.09 | 7,297.76 | 642.86 | -1,443.52 | 1,580.16 | 0.61 | 0.10 | 99.11 | 130.43 |
| | NORMAL | 7,641.0 | 0.56 | 151.35 | 7,392.76 | 642.81 | -1,443.37 | 1,580.00 | 1.04 | 0.13 | 170.80 | 170.06 |
| | NORMAL | 7,735.0 | 0.71 | 174.74 | 7,486.75 | 641.82 | -1,443.09 | 1,579.36 | 0.32 | 0.16 | 24.88 | 71.99 |
| 4/22/2013 | NORMAL | 7,828.0 | 1.19 | 205.62 | 7,579.74 | 640.38 | -1,443.46 | 1,579.11 | 0.74 | 0.52 | 33.20 | 62.99 |
| | NORMAL | 7,903.0 | 0.69 | 184.49 | 7,654.73 | 639.23 | -1,443.83 | 1,578.99 | 0.80 | -0.67 | -28.17 | 204.48 |
| | NORMAL | 7,968.0 | 0.69 | 184.49 | 7,719.72 | 638.45 | -1,443.89 | 1,578.74 | 0.00 | 0.00 | 0.00 | 0.00 |

3 Charts

3.1 Vertical Section View



3.2 Plan View

