

1 General

1.1 Customer Information

Company	PICEANCE HL
Representative	Eric Kolstad
Address	1515 Arapahoe St., Suite 1000 Denver, CO 80202

1.2 Well Information

Well	RGU 11-36-198	Wellbore No.	OH
Well Name	FEDERAL RGU 11-36-198	Common Name	RGU 11-36-198
Project	RG 25-01S-098W	Site	RGU 24-25-198 Pad
Vertical Section Azimuth	243.40 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	12/4/2011	UWI	RGU 11-36-198
Active Datum	KB @6,707.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	CATHEDRAL
Date Started	12/4/2011	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 (°)
12/4/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/4/2011	NORMAL	245.0	2.80	265.10	244.90	-0.51	-5.96	5.56	1.14	1.14	0.00	265.10
	NORMAL	337.0	4.00	255.40	336.74	-1.51	-11.31	10.79	1.44	1.30	-10.54	329.49
	NORMAL	428.0	5.60	251.90	427.42	-3.69	-18.60	18.28	1.79	1.76	-3.85	347.88
12/5/2011	NORMAL	523.0	6.90	249.60	521.85	-7.12	-28.35	28.54	1.39	1.37	-2.42	347.95
	NORMAL	612.0	7.60	239.30	610.14	-11.99	-38.43	39.73	1.66	0.79	-11.57	293.13
	NORMAL	704.0	7.60	239.20	701.33	-18.21	-48.88	51.86	0.01	0.00	-0.11	269.95
	NORMAL	795.0	8.40	237.40	791.45	-24.87	-59.65	64.48	0.92	0.88	-1.98	341.72
	NORMAL	891.0	9.40	234.90	886.29	-33.16	-71.97	79.20	1.12	1.04	-2.60	337.62
	NORMAL	986.0	7.80	241.20	980.22	-40.73	-83.97	93.32	1.95	-1.68	6.63	152.60
	NORMAL	1,080.0	8.00	235.20	1,073.33	-47.53	-94.93	106.17	0.90	0.21	-6.38	280.65
	NORMAL	1,176.0	7.00	248.00	1,168.52	-53.54	-105.84	118.61	2.02	-1.04	13.33	127.14
	NORMAL	1,270.0	7.40	242.00	1,261.78	-58.52	-116.50	130.37	0.91	0.43	-6.38	295.01
	NORMAL	1,366.0	7.70	243.20	1,356.94	-64.33	-127.70	142.98	0.35	0.31	1.25	28.32
	NORMAL	1,459.0	6.10	246.30	1,449.27	-69.12	-137.78	154.15	1.77	-1.72	3.33	168.43
	NORMAL	1,555.0	6.20	244.40	1,544.72	-73.41	-147.13	164.43	0.24	0.10	-1.98	295.22
	NORMAL	1,650.0	6.50	242.30	1,639.13	-78.13	-156.52	174.93	0.40	0.32	-2.21	321.21
	NORMAL	1,713.0	6.80	242.40	1,701.71	-81.51	-162.98	182.23	0.48	0.48	0.16	2.26
	NORMAL	1,744.0	6.80	248.00	1,732.49	-83.05	-166.31	185.89	2.14	0.00	18.06	92.78
	NORMAL	1,839.0	6.50	244.50	1,826.85	-87.47	-176.38	196.87	0.53	-0.32	-3.68	231.76

2.1.2 Survey Stations (Continued)

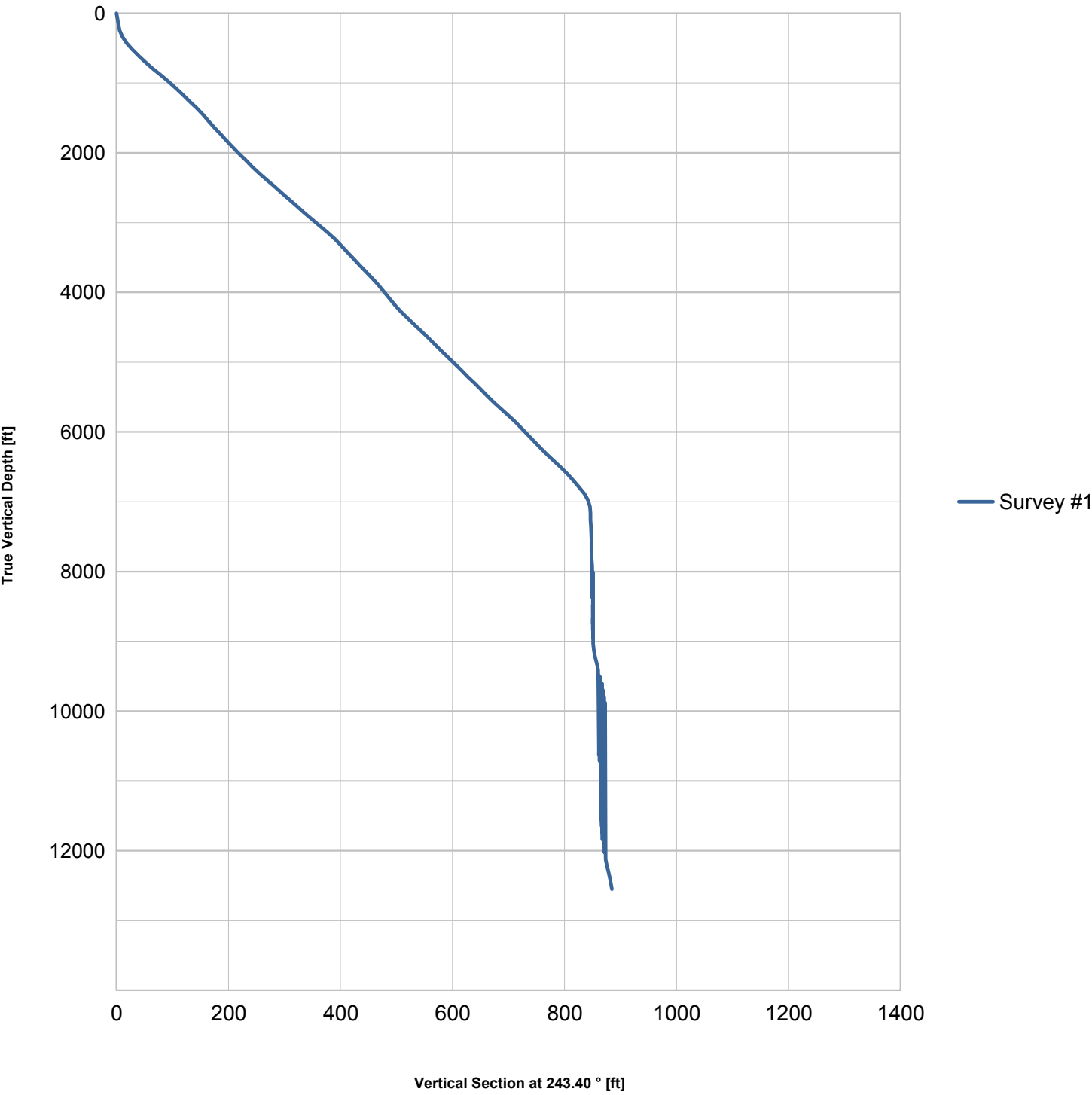
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
12/5/2011	NORMAL	1,935.0	6.70	246.10	1,922.22	-92.08	-186.40	207.90	0.28	0.21	1.67	43.40
	NORMAL	2,030.0	7.20	235.40	2,016.52	-97.71	-196.37	219.33	1.46	0.53	-11.26	285.75
12/6/2011	NORMAL	2,123.0	7.40	234.30	2,108.77	-104.51	-206.03	231.02	0.26	0.22	-1.18	324.51
	NORMAL	2,217.0	7.20	240.20	2,202.01	-110.97	-216.06	242.88	0.83	-0.21	6.28	107.85
	NORMAL	2,312.0	7.80	240.70	2,296.19	-117.09	-226.84	255.26	0.64	0.63	0.53	6.46
	NORMAL	2,407.0	8.30	250.50	2,390.26	-122.53	-238.93	268.50	1.54	0.53	10.32	74.88
	NORMAL	2,501.0	8.40	250.10	2,483.27	-127.13	-251.78	282.06	0.12	0.11	-0.43	329.65
	NORMAL	2,596.0	8.00	249.70	2,577.29	-131.79	-264.51	295.52	0.43	-0.42	-0.42	187.92
	NORMAL	2,691.0	8.10	246.40	2,671.36	-136.76	-276.84	308.77	0.50	0.11	-3.47	280.57
	NORMAL	2,785.0	8.10	251.90	2,764.42	-141.47	-289.20	321.94	0.82	0.00	5.85	92.72
	NORMAL	2,881.0	8.00	248.30	2,859.48	-146.04	-301.84	335.28	0.54	-0.10	-3.75	257.00
	NORMAL	2,976.0	8.70	242.50	2,953.47	-151.80	-314.35	349.05	1.15	0.74	-6.11	306.84
	NORMAL	3,071.0	8.30	245.80	3,047.43	-157.93	-326.98	363.09	0.66	-0.42	3.47	130.98
	NORMAL	3,165.0	8.50	240.20	3,140.42	-164.16	-339.20	376.80	0.90	0.21	-5.96	280.96
	NORMAL	3,260.0	7.40	231.70	3,234.51	-171.45	-350.09	389.80	1.69	-1.16	-8.95	222.75
	NORMAL	3,355.0	6.80	232.40	3,328.78	-178.67	-359.35	401.32	0.64	-0.63	0.74	172.14
	NORMAL	3,450.0	6.90	228.50	3,423.10	-185.88	-368.08	412.35	0.50	0.11	-4.11	280.19
	NORMAL	3,545.0	6.90	232.30	3,517.42	-193.15	-376.87	423.47	0.48	0.00	4.00	91.89
	NORMAL	3,638.0	6.60	242.90	3,609.77	-199.00	-386.05	434.29	1.38	-0.32	11.40	108.76
	NORMAL	3,733.0	6.90	243.50	3,704.12	-204.04	-396.01	445.46	0.32	0.32	0.63	13.53
12/7/2011	NORMAL	3,828.0	6.80	240.30	3,798.44	-209.37	-406.01	456.78	0.42	-0.11	-3.37	253.73
12/9/2011	NORMAL	3,921.0	6.20	234.10	3,890.84	-215.04	-414.86	467.23	0.99	-0.65	-6.67	226.42
	NORMAL	4,016.0	5.90	238.10	3,985.31	-220.63	-423.16	477.16	0.54	-0.32	4.21	127.41
	NORMAL	4,111.0	5.60	239.00	4,079.83	-225.60	-431.28	486.64	0.33	-0.32	0.95	163.72
	NORMAL	4,207.0	6.20	244.40	4,175.33	-230.25	-439.97	496.50	0.85	0.63	5.62	45.48
	NORMAL	4,303.0	6.70	241.40	4,270.72	-235.17	-449.56	507.28	0.63	0.52	-3.13	324.52
	NORMAL	4,398.0	7.60	250.00	4,364.98	-239.97	-460.33	519.06	1.47	0.95	9.05	54.26
	NORMAL	4,493.0	7.60	242.50	4,459.15	-245.02	-471.80	531.58	1.04	0.00	-7.89	266.28
	NORMAL	4,589.0	7.70	249.70	4,554.30	-250.19	-483.47	544.32	1.00	0.10	7.50	87.62
	NORMAL	4,683.0	6.90	246.70	4,647.53	-254.60	-494.56	556.21	0.94	-0.85	-3.19	203.99
	NORMAL	4,777.0	7.20	252.00	4,740.82	-258.66	-505.35	567.68	0.76	0.32	5.64	67.89
	NORMAL	4,873.0	7.30	250.40	4,836.06	-262.56	-516.82	579.68	0.23	0.10	-1.67	295.55
	NORMAL	4,967.0	7.50	248.30	4,929.27	-266.83	-528.14	591.72	0.36	0.21	-2.23	305.44
	NORMAL	5,061.0	7.50	244.30	5,022.47	-271.76	-539.37	603.96	0.56	0.00	-4.26	268.02
	NORMAL	5,155.0	6.90	242.80	5,115.73	-277.00	-549.92	615.74	0.67	-0.64	-1.60	196.65
	NORMAL	5,250.0	7.30	248.50	5,210.00	-281.83	-560.61	627.46	0.85	0.42	6.00	63.26
	NORMAL	5,345.0	7.70	257.60	5,304.19	-285.40	-572.44	639.64	1.32	0.42	9.58	75.94
	NORMAL	5,439.0	7.20	258.50	5,397.40	-287.93	-584.37	651.44	0.55	-0.53	0.96	167.31
	NORMAL	5,533.0	7.00	251.30	5,490.68	-290.94	-595.56	662.80	0.97	-0.21	-7.66	253.78
	NORMAL	5,628.0	8.10	250.80	5,584.85	-295.00	-607.37	675.17	1.16	1.16	-0.53	356.33
	NORMAL	5,723.0	7.60	250.00	5,678.96	-299.35	-619.59	688.05	0.54	-0.53	-0.84	191.93
	NORMAL	5,817.0	7.90	250.00	5,772.11	-303.68	-631.50	700.64	0.32	0.32	0.00	0.00
	NORMAL	5,911.0	7.40	235.90	5,865.28	-309.29	-642.59	713.06	2.06	-0.53	-15.00	248.17
	NORMAL	6,004.0	6.80	237.40	5,957.56	-315.61	-652.19	724.47	0.68	-0.65	1.61	163.57
	NORMAL	6,097.0	7.00	239.60	6,049.89	-321.45	-661.71	735.60	0.36	0.22	2.37	53.98
12/10/2011	NORMAL	6,191.0	7.00	233.20	6,143.19	-327.78	-671.24	746.96	0.83	0.00	-6.81	266.82
	NORMAL	6,284.0	6.80	234.40	6,235.52	-334.37	-680.25	757.97	0.27	-0.22	1.29	144.81
	NORMAL	6,378.0	7.50	236.90	6,328.79	-340.96	-689.92	769.56	0.81	0.74	2.66	25.21
	NORMAL	6,472.0	7.60	248.70	6,421.98	-346.57	-700.85	781.85	1.65	0.11	12.55	92.17
	NORMAL	6,566.0	7.90	252.10	6,515.12	-350.82	-712.79	794.42	0.58	0.32	3.62	58.49
	NORMAL	6,660.0	6.20	244.70	6,608.41	-354.97	-723.52	805.88	2.05	-1.81	-7.87	204.48
	NORMAL	6,754.0	6.30	241.50	6,701.85	-359.60	-732.65	816.11	0.39	0.11	-3.40	284.42
	NORMAL	6,847.0	6.20	245.50	6,794.30	-364.12	-741.70	826.23	0.48	-0.11	4.30	104.92
	NORMAL	6,941.0	5.20	242.20	6,887.83	-368.21	-750.09	835.56	1.12	-1.06	-3.51	196.51
12/11/2011	NORMAL	7,034.0	3.10	258.80	6,980.58	-370.67	-756.28	842.20	2.58	-2.26	17.85	158.33
	NORMAL	7,127.0	1.10	237.10	7,073.52	-371.64	-759.50	845.51	2.28	-2.15	-23.33	191.08
	NORMAL	7,220.0	0.30	356.80	7,166.51	-371.88	-760.26	846.31	1.37	-0.86	128.71	168.21

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 (°)
12/11/2011	NORMAL	7,314.0	0.40	295.50	7,260.51	-371.49	-760.57	846.41	0.39	0.11	-65.21	252.90
	NORMAL	7,408.0	0.70	275.90	7,354.51	-371.29	-761.44	847.10	0.37	0.32	-20.85	317.85
	NORMAL	7,502.0	0.30	247.00	7,448.50	-371.33	-762.24	847.82	0.49	-0.43	-30.74	198.34
	NORMAL	7,595.0	0.30	186.70	7,541.50	-371.67	-762.49	848.20	0.32	0.00	-64.84	239.85
	NORMAL	7,688.0	0.40	135.80	7,634.50	-372.14	-762.29	848.24	0.34	0.11	-54.73	261.26
	NORMAL	7,781.0	0.30	196.80	7,727.50	-372.61	-762.14	848.31	0.39	-0.11	65.59	134.13
	NORMAL	7,875.0	0.30	206.10	7,821.50	-373.06	-762.32	848.67	0.05	0.00	9.89	94.65
	NORMAL	7,968.0	0.80	216.70	7,914.49	-373.80	-762.81	849.44	0.55	0.54	11.40	16.83
	NORMAL	8,062.0	0.70	265.70	8,008.49	-374.37	-763.78	850.56	0.67	-0.11	52.13	122.82
12/12/2011	NORMAL	8,156.0	0.90	335.40	8,102.48	-373.74	-764.66	851.07	0.99	0.21	74.15	114.67
	NORMAL	8,249.0	0.20	343.20	8,195.47	-372.93	-765.01	851.01	0.76	-0.75	8.39	177.79
	NORMAL	8,343.0	0.70	19.20	8,289.47	-372.23	-764.87	850.58	0.59	0.53	38.30	48.32
	NORMAL	8,436.0	0.00	256.00	8,382.47	-371.69	-764.68	850.17	0.75	-0.75	0.00	180.00
	NORMAL	8,530.0	0.90	274.80	8,476.46	-371.63	-765.41	850.80	0.96	0.96	0.00	274.80
	NORMAL	8,623.0	0.50	59.70	8,569.46	-371.36	-765.79	851.02	1.44	-0.43	155.81	167.61
	NORMAL	8,714.0	0.00	100.50	8,660.46	-371.16	-765.45	850.62	0.55	-0.55	0.00	180.00
	NORMAL	8,808.0	0.30	150.00	8,754.46	-371.37	-765.33	850.61	0.32	0.32	0.00	150.00
	NORMAL	8,901.0	0.50	169.40	8,847.46	-371.98	-765.13	850.70	0.26	0.22	20.86	44.06
12/13/2011	NORMAL	8,995.0	1.00	159.90	8,941.45	-373.16	-764.77	850.91	0.55	0.53	-10.11	341.25
	NORMAL	9,088.0	0.90	171.80	9,034.44	-374.64	-764.39	851.23	0.24	-0.11	12.80	122.74
	NORMAL	9,181.0	1.80	198.60	9,127.41	-376.75	-764.75	852.50	1.16	0.97	28.82	48.95
	NORMAL	9,276.0	1.60	214.50	9,222.37	-379.26	-765.98	854.72	0.54	-0.21	16.74	120.79
	NORMAL	9,370.0	2.00	225.20	9,316.32	-381.49	-767.88	857.43	0.55	0.43	11.38	45.47
	NORMAL	9,463.0	1.80	225.80	9,409.27	-383.66	-770.08	860.36	0.22	-0.22	0.65	174.62
	NORMAL	9,557.0	2.00	246.20	9,503.22	-385.35	-772.64	863.40	0.75	0.21	21.70	83.89
12/14/2011	NORMAL	9,651.0	1.90	253.40	9,597.17	-386.45	-775.64	866.58	0.28	-0.11	7.66	115.78
12/15/2011	NORMAL	9,747.0	0.40	280.40	9,693.14	-386.85	-777.49	868.41	1.62	-1.56	28.13	173.29
	NORMAL	9,841.0	3.60	185.20	9,787.08	-389.73	-778.08	870.23	3.89	3.40	-101.28	258.56
	NORMAL	9,935.0	1.10	199.70	9,881.00	-393.52	-778.65	872.44	2.71	-2.66	15.43	173.80
	NORMAL	10,028.0	1.80	84.70	9,973.98	-394.22	-777.50	871.72	2.66	0.75	-123.66	221.25
	NORMAL	10,121.0	0.70	140.80	10,066.96	-394.53	-775.69	870.24	1.64	-1.18	60.32	157.60
	NORMAL	10,215.0	2.50	65.20	10,160.92	-394.11	-773.46	868.06	2.58	1.91	-80.43	268.16
12/16/2011	NORMAL	10,308.0	1.30	72.60	10,253.87	-392.95	-770.61	864.99	1.31	-1.29	7.96	172.13
	NORMAL	10,402.0	1.10	14.50	10,347.85	-391.76	-769.37	863.35	1.25	-0.21	-61.81	232.42
	NORMAL	10,495.0	0.70	44.80	10,440.84	-390.49	-768.75	862.22	0.65	-0.43	32.58	144.53
	NORMAL	10,589.0	0.40	33.40	10,534.84	-389.81	-768.16	861.39	0.34	-0.32	-12.13	194.40
	NORMAL	10,682.0	0.60	199.30	10,627.84	-390.00	-768.14	861.46	1.07	0.22	178.39	171.53
	NORMAL	10,775.0	1.20	198.20	10,720.83	-391.38	-768.61	862.50	0.65	0.65	-1.18	357.80
	NORMAL	10,869.0	4.00	201.20	10,814.72	-395.37	-770.10	865.62	2.98	2.98	3.19	4.28
	NORMAL	10,963.0	2.50	200.70	10,908.57	-400.35	-772.01	869.56	1.60	-1.60	-0.53	180.83
	NORMAL	11,055.0	0.70	111.30	11,000.53	-402.43	-772.20	870.66	2.81	-1.96	-97.17	195.69
	NORMAL	11,148.0	0.70	141.80	11,093.53	-403.08	-771.32	870.16	0.40	0.00	32.80	105.25
12/17/2011	NORMAL	11,240.0	1.40	156.30	11,185.51	-404.55	-770.52	870.10	0.81	0.76	15.76	28.14
	NORMAL	11,334.0	2.20	121.40	11,279.47	-406.54	-768.52	869.21	1.41	0.85	-37.13	287.82
	NORMAL	11,428.0	3.30	130.60	11,373.36	-409.25	-764.92	867.20	1.26	1.17	9.79	26.50
12/18/2011	NORMAL	11,521.0	4.00	153.90	11,466.17	-413.90	-761.46	866.19	1.75	0.75	25.05	76.67
	NORMAL	11,615.0	2.80	149.30	11,560.01	-418.82	-758.85	866.06	1.31	-1.28	-4.89	190.52
	NORMAL	11,709.0	0.80	198.10	11,653.96	-421.42	-757.88	866.36	2.50	-2.13	51.91	165.16
12/19/2011	NORMAL	11,803.0	0.40	295.50	11,747.96	-421.90	-758.38	867.02	1.00	-0.43	103.62	155.02
	NORMAL	11,897.0	2.80	315.30	11,841.91	-420.13	-760.29	867.93	2.58	2.55	21.06	23.00
	NORMAL	11,988.0	2.30	288.40	11,932.83	-417.97	-763.59	869.91	1.41	-0.55	-29.56	234.27
	NORMAL	12,081.0	2.10	313.40	12,025.76	-416.21	-766.60	871.82	1.05	-0.22	26.88	114.08
	NORMAL	12,175.0	2.50	302.00	12,119.68	-413.94	-769.59	873.47	0.64	0.43	-12.13	305.37
12/20/2011	NORMAL	12,269.0	2.90	302.00	12,213.58	-411.59	-773.34	875.78	0.43	0.43	0.00	0.00
	NORMAL	12,362.0	3.20	299.90	12,306.45	-409.05	-777.59	878.44	0.34	0.32	-2.26	338.52
	NORMAL	12,456.0	3.00	301.30	12,400.31	-406.47	-781.96	881.20	0.23	-0.21	1.49	159.96
	NORMAL	12,605.0	2.50	310.00	12,549.14	-402.35	-787.78	884.56	0.44	-0.34	5.84	144.43

3 Charts

3.1 Vertical Section View



3.2 Plan View

