

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 413-25-198	Wellbore No.	
Well Name	FEDERAL RGU 413-25-198	Common Name	RGU 413-25-198
Project	RG 25-01S-098W	Site	RGU 24-25-198 Pad
Vertical Section Azimuth	333.54 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	7/30/2012	UWI	RGU 413-25-198
Active Datum	KB @6,706.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	7/30/2012	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 (°)
7/30/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/30/2012	NORMAL	249.0	4.16	340.05	248.78	8.49	-3.08	8.98	1.67	1.67	0.00	340.05
	NORMAL	310.0	4.53	341.68	309.61	12.86	-4.59	13.56	0.64	0.61	2.67	19.27
	NORMAL	402.0	6.08	336.32	401.21	20.77	-7.69	22.02	1.77	1.68	-5.83	339.59
	NORMAL	495.0	8.11	330.94	493.49	31.02	-12.86	33.50	2.29	2.18	-5.78	339.19
	NORMAL	587.0	8.84	326.23	584.49	42.57	-19.94	46.99	1.09	0.79	-5.12	314.10
	NORMAL	679.0	7.56	331.75	675.55	53.77	-26.73	60.05	1.63	-1.39	6.00	151.12
	NORMAL	771.0	8.00	331.33	766.70	64.72	-32.67	72.50	0.48	0.48	-0.46	352.43
	NORMAL	865.0	8.00	334.28	859.79	76.35	-38.65	85.58	0.44	0.00	3.14	91.46
	NORMAL	960.0	8.29	333.30	953.83	88.43	-44.59	99.04	0.34	0.31	-1.03	333.93
7/31/2012	NORMAL	1,053.0	8.41	332.48	1,045.84	100.45	-50.75	112.54	0.18	0.13	-0.88	314.81
	NORMAL	1,147.0	8.75	330.65	1,138.79	112.78	-57.43	126.55	0.46	0.36	-1.95	320.33
	NORMAL	1,241.0	7.92	337.26	1,231.80	124.98	-63.44	140.16	1.35	-0.88	7.03	134.14
	NORMAL	1,335.0	7.74	333.07	1,324.92	136.60	-68.81	152.95	0.64	-0.19	-4.46	250.43
	NORMAL	1,429.0	8.00	332.01	1,418.04	148.02	-74.74	165.82	0.32	0.28	-1.13	330.30
	NORMAL	1,524.0	7.47	327.53	1,512.17	159.07	-81.16	178.57	0.84	-0.56	-4.72	226.48
	NORMAL	1,619.0	7.02	328.73	1,606.42	169.24	-87.49	190.49	0.50	-0.47	1.26	162.01
	NORMAL	1,713.0	7.79	331.39	1,699.63	179.74	-93.52	202.58	0.90	0.82	2.83	25.32
	NORMAL	1,807.0	9.01	337.06	1,792.62	192.11	-99.44	216.30	1.57	1.30	6.03	37.00
	NORMAL	1,901.0	8.48	337.79	1,885.53	205.31	-104.93	230.56	0.58	-0.56	0.78	168.53

2.1.2 Survey Stations (Continued)

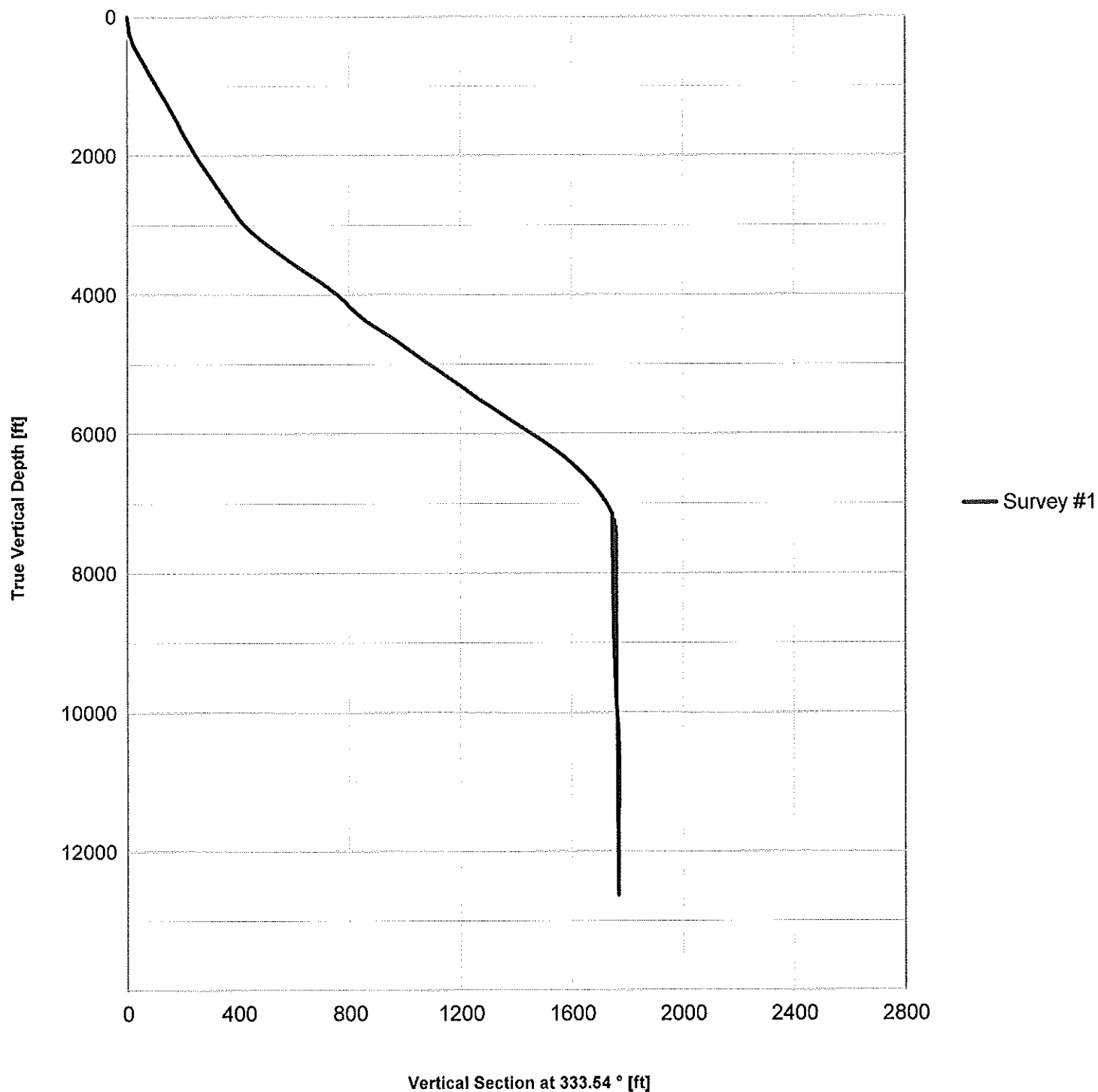
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (%/100ft)	Build Rate (%/100ft)	Turn (%/100ft)	TFace (°)
7/31/2012	NORMAL	1,995.0	8.60	336.61	1,978.49	218.18	-110.34	244.49	0.23	0.13	-1.26	303.82
	NORMAL	2,089.0	8.67	338.01	2,071.42	231.20	-115.78	258.57	0.24	0.07	1.49	72.27
	NORMAL	2,940.0	11.08	344.14	2,909.78	369.35	-162.16	402.92	0.31	0.28	0.72	26.61
8/1/2012	NORMAL	3,034.0	13.01	339.83	3,001.70	387.98	-168.28	422.31	2.26	2.05	-4.59	332.89
	NORMAL	3,128.0	15.65	335.88	3,092.77	409.48	-177.11	445.50	2.99	2.81	-4.20	337.76
	NORMAL	3,220.0	17.15	330.25	3,181.03	432.59	-188.91	471.45	2.37	1.63	-6.12	310.61
	NORMAL	3,314.0	18.45	327.29	3,270.53	457.14	-203.83	500.07	1.68	1.38	-3.15	323.74
	NORMAL	3,409.0	18.28	325.31	3,360.70	482.04	-220.43	529.76	0.68	-0.18	-2.08	253.82
	NORMAL	3,504.0	19.45	327.11	3,450.59	507.57	-237.50	560.22	1.38	1.23	1.89	27.30
	NORMAL	3,598.0	19.44	326.48	3,539.23	533.75	-254.63	591.30	0.22	-0.01	-0.67	266.97
	NORMAL	3,692.0	20.75	328.58	3,627.51	561.01	-271.95	623.41	1.59	1.39	2.23	29.83
	NORMAL	3,787.0	20.75	328.67	3,716.34	589.74	-289.48	656.95	0.03	0.00	0.09	90.04
	NORMAL	3,881.0	21.02	327.49	3,804.17	618.18	-307.20	690.31	0.53	0.29	-1.26	302.14
8/2/2012	NORMAL	3,923.0	20.84	327.35	3,843.40	630.83	-315.28	705.22	0.44	-0.43	-0.33	195.46
	NORMAL	4,093.0	16.27	321.39	4,004.53	674.92	-346.47	758.60	2.91	-2.69	-3.51	199.73
8/3/2012	NORMAL	4,188.0	14.10	321.05	4,096.21	694.32	-362.05	782.91	2.29	-2.28	-0.36	182.19
	NORMAL	4,282.0	13.72	330.08	4,187.46	712.89	-374.81	805.22	2.34	-0.40	9.61	104.29
	NORMAL	4,377.0	15.83	338.16	4,279.33	734.69	-385.25	829.39	3.10	2.22	8.51	48.28
	NORMAL	4,472.0	18.64	333.42	4,370.06	760.30	-396.87	857.49	3.30	2.96	-4.99	331.16
	NORMAL	4,566.0	21.28	334.82	4,458.40	789.18	-410.85	889.57	2.85	2.81	1.49	10.92
	NORMAL	4,661.0	22.69	335.09	4,546.49	821.40	-425.90	925.12	1.49	1.48	0.28	4.23
	NORMAL	4,755.0	19.87	334.12	4,634.08	852.22	-440.51	959.23	3.02	-3.00	-1.03	186.66
	NORMAL	4,849.0	19.26	335.53	4,722.65	880.70	-453.91	990.70	0.82	-0.65	1.50	142.92
	NORMAL	4,943.0	18.91	333.07	4,811.48	908.39	-467.23	1,021.42	0.93	-0.37	-2.62	245.33
	NORMAL	5,038.0	18.47	331.92	4,901.47	935.40	-481.29	1,051.86	0.60	-0.46	-1.21	219.40
	NORMAL	5,132.0	20.21	334.80	4,990.17	963.23	-495.21	1,082.98	2.11	1.85	3.06	30.09
	NORMAL	5,226.0	20.58	335.44	5,078.27	992.95	-508.99	1,115.72	0.46	0.39	0.68	31.38
	NORMAL	5,321.0	19.35	333.33	5,167.57	1,022.20	-522.99	1,148.15	1.50	-1.29	-2.22	209.37
	NORMAL	5,415.0	20.84	334.53	5,255.84	1,051.21	-537.18	1,180.44	1.64	1.59	1.28	16.03
	NORMAL	5,510.0	18.18	334.65	5,345.38	1,079.87	-550.79	1,212.16	2.80	-2.80	0.13	179.19
	NORMAL	5,604.0	18.67	331.33	5,434.56	1,106.32	-564.29	1,241.86	1.23	0.52	-3.53	293.45
	NORMAL	5,699.0	20.87	332.85	5,523.96	1,134.72	-579.31	1,273.98	2.38	2.32	1.60	13.87
	NORMAL	5,792.0	21.72	338.69	5,610.62	1,165.50	-593.12	1,307.69	2.46	0.91	6.28	70.90
	NORMAL	5,886.0	20.33	338.48	5,698.36	1,196.89	-605.43	1,341.28	1.48	-1.48	-0.22	183.00
	NORMAL	5,980.0	20.75	334.74	5,786.38	1,227.15	-618.53	1,374.20	1.47	0.45	-3.98	285.99
	NORMAL	6,075.0	21.81	335.09	5,874.91	1,258.37	-633.14	1,408.66	1.12	1.12	0.37	7.00
	NORMAL	6,169.0	20.66	335.44	5,962.52	1,289.29	-647.39	1,442.69	1.23	-1.22	0.37	173.87
	NORMAL	6,264.0	20.22	333.33	6,051.54	1,319.21	-661.73	1,475.86	0.90	-0.46	-2.22	238.17
	NORMAL	6,358.0	19.69	333.09	6,139.90	1,347.85	-676.18	1,507.94	0.57	-0.56	-0.26	188.67
	NORMAL	6,453.0	19.09	332.68	6,229.51	1,375.92	-690.56	1,539.48	0.65	-0.63	-0.43	192.59
	NORMAL	6,547.0	17.59	333.24	6,318.73	1,402.26	-704.01	1,569.05	1.61	-1.60	0.60	173.57
	NORMAL	6,641.0	15.30	332.28	6,408.88	1,425.92	-716.17	1,595.66	2.45	-2.44	-1.02	186.31
8/4/2012	NORMAL	6,734.0	14.86	333.42	6,498.68	1,447.45	-727.22	1,619.85	0.57	-0.47	1.23	146.57
	NORMAL	6,828.0	14.60	334.56	6,589.59	1,468.93	-737.70	1,643.75	0.41	-0.28	1.21	132.44
	NORMAL	6,922.0	12.40	334.21	6,680.99	1,488.72	-747.18	1,665.69	2.34	-2.34	-0.37	181.96
	NORMAL	7,017.0	11.87	341.15	6,773.87	1,507.15	-754.78	1,685.58	1.63	-0.56	7.31	113.34
	NORMAL	7,112.0	10.82	340.63	6,867.01	1,524.81	-760.89	1,704.11	1.11	-1.11	-0.55	185.31
	NORMAL	7,207.0	9.25	340.04	6,960.55	1,540.40	-766.46	1,720.55	1.66	-1.65	-0.62	183.46
	NORMAL	7,301.0	7.65	336.32	7,053.53	1,553.23	-771.55	1,734.30	1.80	-1.70	-3.96	197.03
	NORMAL	7,395.0	5.67	338.37	7,146.89	1,563.28	-775.77	1,745.18	2.12	-2.11	2.18	174.17
	NORMAL	7,489.0	3.61	337.64	7,240.58	1,570.33	-778.61	1,752.76	2.19	-2.19	-0.78	181.28
	NORMAL	7,584.0	2.73	346.69	7,335.43	1,575.30	-780.27	1,757.95	1.06	-0.93	9.53	154.84
	NORMAL	7,678.0	0.18	81.61	7,429.40	1,577.50	-780.64	1,760.08	2.93	-2.71	100.98	176.26
	NORMAL	7,772.0	0.62	175.30	7,523.40	1,577.01	-780.45	1,759.56	0.70	0.47	99.67	109.57
	NORMAL	7,866.0	0.81	179.30	7,617.39	1,575.84	-780.40	1,758.49	0.21	0.20	4.26	16.73
	NORMAL	7,960.0	1.00	176.29	7,711.38	1,574.36	-780.34	1,757.14	0.21	0.20	-3.20	344.44
	NORMAL	8,055.0	1.23	157.64	7,806.36	1,572.59	-779.90	1,755.36	0.45	0.24	-19.63	292.81

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 (°)
8/4/2012	NORMAL	8,150.0	0.44	263.19	7,901.35	1,571.60	-779.87	1,754.46	1.49	-0.83	111.11	162.54
	NORMAL	8,244.0	0.79	261.61	7,995.35	1,571.47	-780.87	1,754.78	0.37	0.37	-1.68	356.44
8/5/2012	NORMAL	8,339.0	1.32	254.49	8,090.33	1,571.08	-782.57	1,755.19	0.57	0.56	-7.49	342.53
	NORMAL	8,433.0	0.79	244.39	8,184.31	1,570.51	-784.20	1,755.41	0.60	-0.56	-10.74	194.33
	NORMAL	8,527.0	0.62	141.03	8,278.31	1,569.83	-784.47	1,754.92	1.18	-0.18	-109.96	212.88
	NORMAL	8,622.0	0.79	141.90	8,373.30	1,568.92	-783.74	1,753.78	0.18	0.18	0.92	4.04
	NORMAL	8,716.0	1.06	172.93	8,467.29	1,567.54	-783.23	1,752.32	0.59	0.29	33.01	77.78
	NORMAL	8,811.0	0.44	68.43	8,562.28	1,566.81	-782.78	1,751.46	1.31	-0.65	-110.00	200.00
	NORMAL	8,906.0	0.26	8.22	8,657.28	1,567.15	-782.41	1,751.61	0.40	-0.19	-63.38	215.98
	NORMAL	9,001.0	0.44	235.24	8,752.28	1,567.16	-782.68	1,751.74	0.68	0.19	-139.98	209.89
	NORMAL	9,094.0	0.97	234.45	8,845.27	1,566.50	-783.62	1,751.56	0.57	0.57	-0.85	358.55
	NORMAL	9,188.0	0.62	237.09	8,939.27	1,565.76	-784.69	1,751.38	0.37	-0.37	2.81	175.34
	NORMAL	9,282.0	0.62	282.97	9,033.26	1,565.60	-785.61	1,751.64	0.51	0.00	48.81	112.94
	NORMAL	9,376.0	0.79	15.78	9,127.26	1,566.33	-785.93	1,752.45	1.09	0.18	98.73	129.85
8/6/2012	NORMAL	9,471.0	0.88	3.83	9,222.25	1,567.69	-785.71	1,753.56	0.21	0.09	-12.58	291.27
	NORMAL	9,566.0	0.79	19.03	9,317.24	1,569.04	-785.44	1,754.65	0.25	-0.09	16.00	119.59
	NORMAL	9,660.0	0.70	355.74	9,411.23	1,570.23	-785.28	1,755.63	0.33	-0.10	-24.78	242.02
	NORMAL	9,755.0	0.62	290.00	9,506.22	1,570.98	-785.80	1,756.54	0.76	-0.08	-69.20	231.77
	NORMAL	9,850.0	0.97	261.79	9,601.21	1,571.04	-787.08	1,757.17	0.54	0.37	-29.69	297.12
	NORMAL	9,945.0	1.67	259.94	9,696.19	1,570.68	-789.24	1,757.81	0.74	0.74	-1.95	355.59
8/7/2012	NORMAL	10,039.0	0.53	339.66	9,790.17	1,570.85	-790.74	1,758.63	1.77	-1.21	84.81	161.68
	NORMAL	10,134.0	2.02	17.54	9,885.15	1,572.86	-790.39	1,760.27	1.72	1.57	39.87	49.36
	NORMAL	10,227.0	1.67	13.23	9,978.10	1,575.74	-789.58	1,762.49	0.40	-0.38	-4.63	199.48
	NORMAL	10,322.0	2.43	35.15	10,073.04	1,578.74	-788.11	1,764.52	1.14	0.80	23.07	57.20
	NORMAL	10,416.0	2.02	33.45	10,166.97	1,581.75	-786.05	1,766.30	0.44	-0.44	-1.81	188.30
	NORMAL	10,510.0	1.58	35.91	10,260.92	1,584.18	-784.37	1,767.73	0.48	-0.47	2.62	171.27
	NORMAL	10,604.0	1.23	48.48	10,354.89	1,585.90	-782.86	1,768.59	0.49	-0.37	13.37	144.80
	NORMAL	10,699.0	0.53	68.16	10,449.88	1,586.74	-781.69	1,768.82	0.79	-0.74	20.72	166.28
	NORMAL	10,793.0	0.62	265.92	10,543.88	1,586.86	-781.79	1,768.98	1.21	0.10	-172.60	189.58
	NORMAL	10,887.0	0.93	17.82	10,637.88	1,587.55	-782.06	1,769.72	1.38	0.33	119.04	138.25
	NORMAL	10,981.0	0.62	32.74	10,731.87	1,588.71	-781.56	1,770.52	0.39	-0.33	15.87	154.25
	NORMAL	11,075.0	0.09	35.91	10,825.86	1,589.20	-781.24	1,770.82	0.56	-0.56	3.37	179.46
8/8/2012	NORMAL	11,170.0	0.44	237.71	10,920.86	1,589.06	-781.50	1,770.82	0.55	0.37	-166.53	198.15
	NORMAL	11,264.0	0.70	257.39	11,014.86	1,588.74	-782.37	1,770.92	0.34	0.28	20.94	47.09
	NORMAL	11,358.0	1.41	242.28	11,108.84	1,588.08	-783.95	1,771.03	0.80	0.76	-16.07	330.94
	NORMAL	11,440.0	1.67	253.35	11,190.81	1,587.27	-785.99	1,771.21	0.48	0.32	13.50	54.47
	NORMAL	11,534.0	1.76	222.50	11,284.77	1,585.81	-788.28	1,770.93	0.97	0.10	-32.82	260.01
8/9/2012	NORMAL	11,628.0	2.20	216.96	11,378.72	1,583.31	-790.34	1,769.60	0.51	0.47	-5.89	333.71
	NORMAL	11,722.0	1.32	226.19	11,472.67	1,581.11	-792.20	1,768.47	0.98	-0.94	9.82	166.72
	NORMAL	11,817.0	0.70	162.56	11,567.66	1,579.80	-792.82	1,767.57	1.25	-0.65	-66.98	211.86
	NORMAL	11,911.0	0.44	190.00	11,661.65	1,578.90	-792.71	1,766.71	0.39	-0.28	29.19	146.77
	NORMAL	12,005.0	0.62	218.02	11,755.65	1,578.14	-793.09	1,766.20	0.33	0.19	29.81	69.77
	NORMAL	12,099.0	0.70	246.14	11,849.64	1,577.51	-793.92	1,766.01	0.35	0.09	29.91	90.45
	NORMAL	12,193.0	1.14	235.07	11,943.63	1,576.74	-795.22	1,765.90	0.50	0.47	-11.78	332.41
	NORMAL	12,287.0	0.26	177.32	12,037.63	1,575.99	-795.97	1,765.57	1.09	-0.94	-61.44	192.39
8/10/2012	NORMAL	12,382.0	0.70	69.48	12,132.62	1,575.98	-795.42	1,765.31	0.86	0.46	-113.52	234.55
	NORMAL	12,476.0	0.26	327.62	12,226.62	1,576.36	-795.00	1,765.46	0.85	-0.47	-108.36	198.66
	NORMAL	12,570.0	0.88	239.02	12,320.62	1,576.17	-795.73	1,765.62	0.97	0.66	-94.26	254.83
	NORMAL	12,664.0	1.06	250.36	12,414.60	1,575.51	-797.17	1,765.66	0.28	0.19	12.06	52.61
	NORMAL	12,759.0	1.49	262.23	12,509.58	1,575.05	-799.22	1,766.16	0.53	0.45	12.49	37.59
	NORMAL	12,814.0	1.76	256.95	12,564.56	1,574.76	-800.75	1,766.59	0.56	0.49	-9.60	328.33
	NORMAL	12,878.0	1.76	256.95	12,628.53	1,574.32	-802.66	1,767.04	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

