

## 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 331-1-298	Wellbore No.	
Well Name	FEDERAL RGU 331-1-298	Common Name	RGU 331-1-298
Project	RG 01-02S-098W	Site	RGU 41-1-298 PAD
Vertical Section Azimuth	288.10 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	10/5/2011	UWI	RGU 331-1-298
Active Datum	KB @6,594.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	10/5/2011	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 (°)
10/5/2011	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/5/2011	NORMAL	247.0	2.00	302.20	246.95	2.30	-3.65	4.18	0.81	0.81	0.00	302.20
	NORMAL	340.0	3.40	287.00	339.85	3.97	-7.66	8.51	1.68	1.51	-16.34	325.18
	NORMAL	432.0	4.70	298.80	431.62	6.58	-13.57	14.94	1.67	1.41	12.83	38.64
	NORMAL	524.0	5.80	282.50	523.23	9.40	-21.41	23.27	2.00	1.20	-17.72	298.11
	NORMAL	616.0	7.80	285.40	614.58	12.07	-31.97	34.14	2.21	2.17	3.15	11.18
	NORMAL	709.0	9.70	284.70	706.49	15.73	-45.63	48.26	2.05	2.04	-0.75	356.45
	NORMAL	801.0	11.10	284.70	796.98	19.95	-61.70	64.84	1.52	1.52	0.00	0.00
	NORMAL	893.0	12.50	288.30	887.04	25.32	-79.72	83.64	1.72	1.52	3.91	29.51
	NORMAL	987.0	12.90	287.10	978.74	31.60	-99.41	104.30	0.51	0.43	-1.28	326.01
	NORMAL	1,082.0	13.20	284.90	1,071.28	37.51	-120.02	125.74	0.61	0.32	-2.32	300.05
	NORMAL	1,176.0	13.90	285.90	1,162.67	43.36	-141.25	147.73	0.79	0.74	1.06	18.99
	NORMAL	1,271.0	14.00	288.30	1,254.87	50.09	-163.14	170.63	0.62	0.11	2.53	81.36
	NORMAL	1,365.0	13.80	285.80	1,346.11	56.72	-184.72	193.20	0.67	-0.21	-2.66	250.37
	NORMAL	1,460.0	12.70	292.80	1,438.59	63.85	-205.25	214.93	2.05	-1.16	7.37	127.81
	NORMAL	1,555.0	12.20	294.60	1,531.36	72.08	-224.01	235.31	0.67	-0.53	1.89	143.06
	NORMAL	1,649.0	12.60	289.80	1,623.16	79.68	-242.68	255.43	1.18	0.43	-5.11	288.85
	NORMAL	1,743.0	12.80	289.60	1,714.86	86.65	-262.14	276.09	0.22	0.21	-0.21	347.50
	NORMAL	1,838.0	13.10	290.00	1,807.45	93.86	-282.17	297.37	0.33	0.32	0.42	16.83
10/6/2011	NORMAL	1,931.0	13.50	291.20	1,897.95	101.39	-302.20	318.74	0.52	0.43	1.29	35.20

## 2.1.2 Survey Stations (Continued)

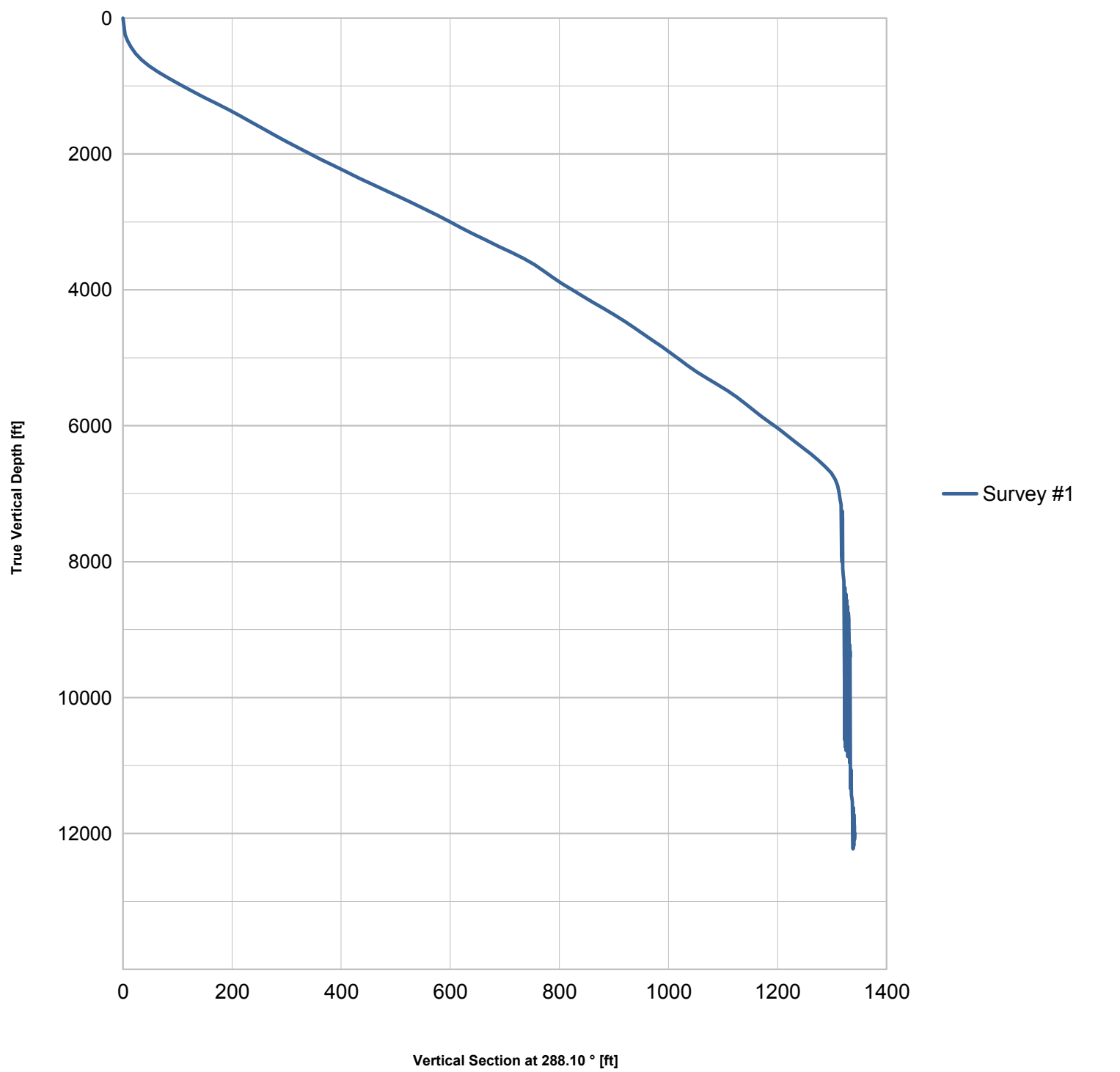
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
10/6/2011	NORMAL	2,026.0	13.70	288.00	1,990.29	108.88	-323.23	341.06	0.82	0.21	-3.37	283.33
	NORMAL	2,120.0	14.00	288.60	2,081.56	115.94	-344.60	363.56	0.35	0.32	0.64	25.87
	NORMAL	2,215.0	14.10	288.90	2,173.72	123.36	-366.43	386.63	0.13	0.11	0.32	36.21
	NORMAL	2,310.0	14.50	290.10	2,265.77	131.19	-388.55	410.08	0.52	0.42	1.26	37.12
	NORMAL	2,404.0	14.40	287.80	2,356.80	138.81	-410.73	433.53	0.62	-0.11	-2.45	259.00
	NORMAL	2,498.0	14.80	288.90	2,447.76	146.27	-433.22	457.23	0.52	0.43	1.17	35.26
	NORMAL	2,592.0	14.90	289.30	2,538.63	154.16	-455.98	481.31	0.15	0.11	0.43	45.91
	NORMAL	2,688.0	15.20	290.10	2,631.33	162.56	-479.45	506.23	0.38	0.31	0.83	35.09
	NORMAL	2,780.0	14.60	288.80	2,720.24	170.44	-501.75	529.88	0.75	-0.65	-1.41	208.50
	NORMAL	2,875.0	14.30	288.00	2,812.23	177.93	-524.25	553.58	0.38	-0.32	-0.84	213.25
	NORMAL	2,969.0	13.90	286.60	2,903.40	184.74	-546.11	576.48	0.56	-0.43	-1.49	219.78
	NORMAL	3,064.0	12.90	283.20	2,995.82	190.42	-567.37	598.45	1.34	-1.05	-3.58	216.59
	NORMAL	3,158.0	13.90	287.50	3,087.26	196.21	-588.35	620.20	1.50	1.06	4.57	47.01
	NORMAL	3,253.0	13.80	287.00	3,179.50	202.96	-610.07	642.94	0.16	-0.11	-0.53	229.88
	NORMAL	3,347.0	14.50	286.20	3,270.64	209.52	-632.09	665.91	0.77	0.74	-0.85	344.00
10/8/2011	NORMAL	3,441.0	14.50	285.10	3,361.65	215.87	-654.76	689.42	0.29	0.00	-1.17	269.47
	NORMAL	3,536.0	14.90	284.20	3,453.54	221.96	-678.08	713.48	0.48	0.42	-0.95	329.84
	NORMAL	3,623.0	13.80	281.00	3,537.83	226.68	-699.11	734.94	1.56	-1.26	-3.68	214.25
	NORMAL	3,718.0	10.50	281.80	3,630.68	230.62	-718.71	754.79	3.48	-3.47	0.84	177.47
	NORMAL	3,812.0	10.30	286.60	3,723.14	234.77	-735.15	771.71	0.95	-0.21	5.11	105.35
	NORMAL	3,908.0	9.40	291.00	3,817.73	240.03	-750.69	788.12	1.22	-0.94	4.58	142.25
	NORMAL	4,002.0	11.40	293.00	3,910.18	246.41	-766.41	805.04	2.16	2.13	2.13	11.22
	NORMAL	4,098.0	11.90	287.50	4,004.20	253.10	-784.59	824.39	1.27	0.52	-5.73	291.53
	NORMAL	4,192.0	11.20	285.20	4,096.30	258.40	-802.64	843.20	0.89	-0.74	-2.45	212.22
	NORMAL	4,287.0	12.80	290.50	4,189.22	264.51	-821.40	862.93	2.04	1.68	5.58	37.17
	NORMAL	4,381.0	11.80	289.60	4,281.07	271.38	-840.21	882.94	1.08	-1.06	-0.96	190.41
	NORMAL	4,476.0	11.80	289.50	4,374.06	277.88	-858.52	902.36	0.02	0.00	-0.11	269.95
	NORMAL	4,571.0	10.60	285.70	4,467.25	283.49	-876.08	920.81	1.48	-1.26	-4.00	209.74
	NORMAL	4,665.0	10.10	288.10	4,559.72	288.39	-892.24	937.69	0.70	-0.53	2.55	140.40
	NORMAL	4,759.0	10.50	289.20	4,652.20	293.77	-908.17	954.49	0.47	0.43	1.17	26.73
	NORMAL	4,854.0	10.10	285.90	4,745.67	298.90	-924.35	971.47	0.75	-0.42	-3.47	234.25
	NORMAL	4,947.0	10.40	283.60	4,837.19	303.10	-940.35	987.99	0.55	0.32	-2.47	305.11
	NORMAL	5,042.0	9.60	290.50	4,930.75	307.89	-956.11	1,004.45	1.52	-0.84	7.26	127.10
	NORMAL	5,137.0	9.50	290.30	5,024.43	313.39	-970.88	1,020.20	0.11	-0.11	-0.21	198.26
	NORMAL	5,231.0	9.80	291.70	5,117.10	319.04	-985.59	1,035.94	0.41	0.32	1.49	38.73
10/9/2011	NORMAL	5,325.0	10.60	288.70	5,209.62	324.77	-1,001.21	1,052.57	1.02	0.85	-3.19	324.93
	NORMAL	5,419.0	11.60	289.20	5,301.86	330.65	-1,018.33	1,070.66	1.07	1.06	0.53	5.74
	NORMAL	5,513.0	12.10	284.20	5,393.86	336.17	-1,036.80	1,089.94	1.21	0.53	-5.32	293.50
	NORMAL	5,608.0	10.60	290.40	5,487.00	341.66	-1,054.65	1,108.60	2.03	-1.58	6.53	143.89
	NORMAL	5,702.0	9.90	293.60	5,579.50	347.91	-1,070.16	1,125.29	0.96	-0.74	3.40	142.44
	NORMAL	5,796.0	8.70	293.20	5,672.26	353.95	-1,084.10	1,140.41	1.28	-1.28	-0.43	182.89
	NORMAL	5,891.0	9.00	289.10	5,766.13	359.21	-1,097.72	1,155.00	0.74	0.32	-4.32	293.40
	NORMAL	5,984.0	9.10	289.00	5,857.97	363.98	-1,111.55	1,169.63	0.11	0.11	-0.11	351.01
	NORMAL	6,079.0	10.40	292.50	5,951.60	369.71	-1,126.57	1,185.69	1.50	1.37	3.68	26.24
	NORMAL	6,173.0	9.60	289.70	6,044.17	375.60	-1,141.79	1,201.98	1.00	-0.85	-2.98	209.92
	NORMAL	6,267.0	8.40	287.60	6,137.01	380.32	-1,155.72	1,216.68	1.32	-1.28	-2.23	194.27
	NORMAL	6,362.0	8.80	290.30	6,230.95	384.94	-1,169.15	1,230.88	0.60	0.42	2.84	46.61
	NORMAL	6,456.0	9.70	284.00	6,323.72	389.35	-1,183.58	1,245.97	1.44	0.96	-6.70	308.49
	NORMAL	6,549.0	9.00	287.70	6,415.49	393.45	-1,198.11	1,261.06	0.99	-0.75	3.98	141.16
	NORMAL	6,642.0	8.10	287.10	6,507.45	397.59	-1,211.30	1,274.88	0.97	-0.97	-0.65	185.36
10/10/2011	NORMAL	6,736.0	7.20	280.80	6,600.62	400.64	-1,223.42	1,287.35	1.31	-0.96	-6.70	219.89
	NORMAL	6,831.0	6.20	282.00	6,694.97	402.83	-1,234.28	1,298.35	1.06	-1.05	1.26	172.63
	NORMAL	6,925.0	2.90	287.00	6,788.66	404.58	-1,241.52	1,305.78	3.53	-3.51	5.32	175.63
	NORMAL	7,017.0	2.40	278.80	6,880.56	405.55	-1,245.65	1,310.01	0.68	-0.54	-8.91	213.12
	NORMAL	7,111.0	1.10	301.10	6,974.52	406.32	-1,248.37	1,312.83	1.54	-1.38	23.72	163.20
	NORMAL	7,205.0	1.00	291.90	7,068.50	407.09	-1,249.90	1,314.53	0.21	-0.11	-9.79	234.78
	NORMAL	7,298.0	1.50	273.40	7,161.48	407.47	-1,251.87	1,316.51	0.68	0.54	-19.89	311.60

## 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 (°)
10/10/2011	NORMAL	7,392.0	1.10	277.40	7,255.45	407.66	-1,253.99	1,318.59	0.44	-0.43	4.26	169.21
	NORMAL	7,485.0	0.60	183.50	7,348.45	407.28	-1,254.91	1,319.35	1.39	-0.54	-100.97	207.69
	NORMAL	7,579.0	2.10	189.30	7,442.42	405.09	-1,255.22	1,318.96	1.60	1.60	6.17	8.11
	NORMAL	7,672.0	1.90	194.40	7,535.36	401.92	-1,255.88	1,318.60	0.29	-0.22	5.48	140.86
	NORMAL	7,766.0	0.30	228.40	7,629.34	400.25	-1,256.45	1,318.62	1.77	-1.70	36.17	174.20
	NORMAL	7,860.0	1.20	51.40	7,723.34	400.70	-1,255.86	1,318.20	1.60	0.96	-188.30	182.40
	NORMAL	7,954.0	1.10	25.00	7,817.32	402.13	-1,254.71	1,317.56	0.57	-0.11	-28.09	246.30
10/11/2011	NORMAL	8,047.0	0.40	353.90	7,910.31	403.26	-1,254.37	1,317.58	0.84	-0.75	-33.44	195.26
	NORMAL	8,141.0	0.80	309.50	8,004.30	404.00	-1,254.91	1,318.33	0.62	0.43	-47.23	287.04
	NORMAL	8,234.0	0.80	313.70	8,097.30	404.87	-1,255.88	1,319.52	0.06	0.00	4.52	92.10
	NORMAL	8,328.0	0.70	327.90	8,191.29	405.80	-1,256.66	1,320.55	0.22	-0.11	15.11	125.26
	NORMAL	8,422.0	1.10	320.10	8,285.28	406.98	-1,257.55	1,321.76	0.44	0.43	-8.30	339.05
10/12/2011	NORMAL	8,516.0	1.30	307.60	8,379.26	408.33	-1,258.97	1,323.53	0.35	0.21	-13.30	301.02
	NORMAL	8,610.0	0.90	292.20	8,473.24	409.26	-1,260.50	1,325.27	0.53	-0.43	-16.38	208.94
	NORMAL	8,704.0	1.10	252.70	8,567.22	409.27	-1,262.04	1,326.74	0.75	0.21	-42.02	265.82
	NORMAL	8,797.0	1.50	248.80	8,660.20	408.56	-1,264.03	1,328.41	0.44	0.43	-4.19	345.57
	NORMAL	8,891.0	1.50	218.30	8,754.17	407.15	-1,265.94	1,329.79	0.84	0.00	-32.45	254.75
	NORMAL	8,984.0	0.80	246.80	8,847.15	405.94	-1,267.29	1,330.69	0.95	-0.75	30.65	154.41
	NORMAL	9,078.0	0.50	147.80	8,941.15	405.33	-1,267.67	1,330.87	1.07	-0.32	-105.32	209.35
10/13/2011	NORMAL	9,264.0	1.40	223.50	9,127.13	403.00	-1,268.81	1,331.22	0.73	0.48	40.70	96.48
	NORMAL	9,358.0	1.10	237.00	9,221.10	401.67	-1,270.35	1,332.28	0.45	-0.32	14.36	142.15
	NORMAL	9,451.0	0.80	217.00	9,314.09	400.67	-1,271.49	1,333.05	0.48	-0.32	-21.51	218.16
	NORMAL	9,544.0	0.60	138.60	9,407.09	399.79	-1,271.56	1,332.84	0.97	-0.22	-84.30	220.87
	NORMAL	9,638.0	0.90	112.20	9,501.08	399.14	-1,270.55	1,331.68	0.48	0.32	-28.09	297.26
	NORMAL	9,732.0	1.50	123.70	9,595.06	398.18	-1,268.85	1,329.76	0.68	0.64	12.23	27.69
	NORMAL	9,825.0	1.30	138.30	9,688.03	396.71	-1,267.13	1,327.68	0.44	-0.22	15.70	126.44
10/14/2011	NORMAL	9,919.0	1.00	138.00	9,782.01	395.31	-1,265.87	1,326.04	0.32	-0.32	-0.32	181.00
	NORMAL	10,013.0	0.70	110.20	9,876.00	394.50	-1,264.78	1,324.76	0.53	-0.32	-29.57	220.61
	NORMAL	10,107.0	0.20	114.50	9,970.00	394.23	-1,264.10	1,324.02	0.53	-0.53	4.57	178.28
	NORMAL	10,201.0	0.20	296.70	10,064.00	394.24	-1,264.09	1,324.02	0.43	0.00	-189.15	181.10
	NORMAL	10,295.0	0.40	234.70	10,158.00	394.12	-1,264.51	1,324.38	0.38	0.21	-65.96	268.02
	NORMAL	10,389.0	0.30	238.60	10,251.99	393.81	-1,264.99	1,324.74	0.11	-0.11	4.15	168.54
	NORMAL	10,483.0	0.70	186.70	10,345.99	393.11	-1,265.26	1,324.78	0.60	0.43	-55.21	283.47
	NORMAL	10,577.0	0.70	154.60	10,439.98	392.02	-1,265.08	1,324.27	0.41	0.00	-34.15	253.95
10/15/2011	NORMAL	10,671.0	0.40	161.30	10,533.98	391.19	-1,264.73	1,323.68	0.33	-0.32	7.13	171.24
	NORMAL	10,765.0	0.70	19.50	10,627.98	391.42	-1,264.44	1,323.47	1.11	0.32	-150.85	204.50
	NORMAL	10,859.0	1.70	341.20	10,721.96	393.28	-1,264.69	1,324.29	1.31	1.06	-40.74	301.05
10/16/2011	NORMAL	10,915.0	2.00	332.20	10,777.93	394.93	-1,265.42	1,325.49	0.74	0.54	-16.07	311.36
	NORMAL	11,008.0	3.70	330.50	10,870.81	398.98	-1,267.65	1,328.88	1.83	1.83	-1.83	356.30
	NORMAL	11,103.0	4.00	359.10	10,965.60	404.96	-1,269.21	1,332.22	2.02	0.32	30.11	95.57
	NORMAL	11,197.0	3.60	353.40	11,059.40	411.17	-1,269.60	1,334.52	0.58	-0.43	-6.06	220.54
10/17/2011	NORMAL	11,291.0	2.80	39.10	11,153.26	415.88	-1,268.49	1,334.93	2.76	-0.85	48.62	129.35
	NORMAL	11,384.0	2.80	30.40	11,246.15	419.61	-1,265.91	1,333.63	0.46	0.00	-9.35	265.66
	NORMAL	11,478.0	2.60	6.30	11,340.05	423.71	-1,264.52	1,333.58	1.22	-0.21	-25.64	248.12
	NORMAL	11,571.0	3.60	353.00	11,432.92	428.70	-1,264.64	1,335.25	1.32	1.08	-14.30	317.51
	NORMAL	11,665.0	3.40	1.00	11,526.74	434.42	-1,264.95	1,337.32	0.56	-0.21	8.51	116.23
10/18/2011	NORMAL	11,759.0	2.70	0.70	11,620.61	439.42	-1,264.88	1,338.80	0.74	-0.74	-0.32	181.16
	NORMAL	11,853.0	1.10	4.70	11,714.55	442.53	-1,264.78	1,339.67	1.71	-1.70	4.26	177.26
	NORMAL	11,946.0	0.40	278.10	11,807.55	443.47	-1,265.02	1,340.20	1.23	-0.75	-93.12	200.36
	NORMAL	12,040.0	0.60	315.40	11,901.54	443.86	-1,265.69	1,340.96	0.40	0.21	39.68	78.00
	NORMAL	12,134.0	0.40	238.30	11,995.54	444.04	-1,266.32	1,341.61	0.68	-0.21	-82.02	217.36
10/19/2011	NORMAL	12,227.0	2.10	178.40	12,088.52	442.17	-1,266.55	1,341.24	2.08	1.83	-64.41	289.78
	NORMAL	12,320.0	3.40	174.60	12,181.41	437.72	-1,266.24	1,339.57	1.41	1.40	-4.09	350.12
	NORMAL	12,366.0	3.50	175.70	12,227.32	434.96	-1,266.01	1,338.49	0.26	0.22	2.39	34.05
	PROJECTION	12,456.0	3.50	175.70								

3 Charts

3.1 Vertical Section View



3.2 Plan View

