

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 321-36-198	Wellbore No.	
Well Name	FEDERAL RGU 321-36-198	Common Name	RGU 321-36-198
Project	RG 25-01S-098W	Site	RGU 24-25-198 Pad
Vertical Section Azimuth	127.39 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	9/7/2012	UWI	RGU 321-36-198
Active Datum	KB @6,707.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SDI
Date Started	9/7/2012	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)	Buidl Rate (°/100ft)	Turn (°/100ft)	TFace (°)
9/7/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/7/2012	NORMAL	257.0	2.79	126.45	256.90	-3.72	5.03	6.26	1.09	1.09	0.00	126.45
	NORMAL	349.0	4.48	134.92	348.71	-7.58	9.38	12.06	1.92	1.84	9.21	21.89
	NORMAL	442.0	5.61	133.52	441.35	-13.28	15.25	20.18	1.22	1.22	-1.51	353.08
	NORMAL	534.0	6.20	130.55	532.86	-19.61	22.28	29.61	0.72	0.64	-3.23	331.14
	NORMAL	626.0	6.33	125.91	624.31	-25.81	30.16	39.64	0.57	0.14	-5.04	282.09
	NORMAL	718.0	6.42	126.00	715.74	-31.81	38.43	49.85	0.10	0.10	0.10	6.38
	NORMAL	811.0	6.54	128.06	808.15	-38.13	46.81	60.35	0.28	0.13	2.22	63.72
	NORMAL	903.0	6.95	128.63	899.51	-44.83	55.28	71.15	0.45	0.45	0.62	9.56
	NORMAL	995.0	6.42	126.88	990.89	-51.40	63.75	81.86	0.62	-0.58	-1.90	200.15
	NORMAL	1,089.0	5.98	123.62	1,084.34	-57.26	72.03	92.00	0.60	-0.47	-3.47	217.06
	NORMAL	1,184.0	6.24	126.26	1,178.80	-63.06	80.31	102.10	0.40	0.27	2.78	48.54
	NORMAL	1,277.0	6.60	128.46	1,271.21	-69.37	88.57	112.50	0.47	0.39	2.37	35.44
9/8/2012	NORMAL	1,371.0	5.45	120.11	1,364.69	-74.97	96.66	122.32	1.54	-1.22	-8.88	213.21
	NORMAL	1,465.0	4.90	116.94	1,458.31	-79.03	104.10	130.70	0.66	-0.59	-3.37	205.90
	NORMAL	1,558.0	5.45	121.16	1,550.93	-83.11	111.42	139.00	0.72	0.59	4.54	36.80
	NORMAL	1,652.0	5.45	121.69	1,644.51	-87.77	119.04	147.88	0.05	0.00	0.56	90.26
	NORMAL	1,747.0	5.46	123.51	1,739.08	-92.63	126.65	156.88	0.18	0.01	1.92	87.60
	NORMAL	1,842.0	6.77	128.98	1,833.54	-98.65	134.77	166.98	1.51	1.38	5.76	26.72
	NORMAL	1,937.0	6.60	129.60	1,927.89	-105.65	143.33	178.04	0.19	-0.18	0.65	157.30

2.1.2 Survey Stations (Continued)

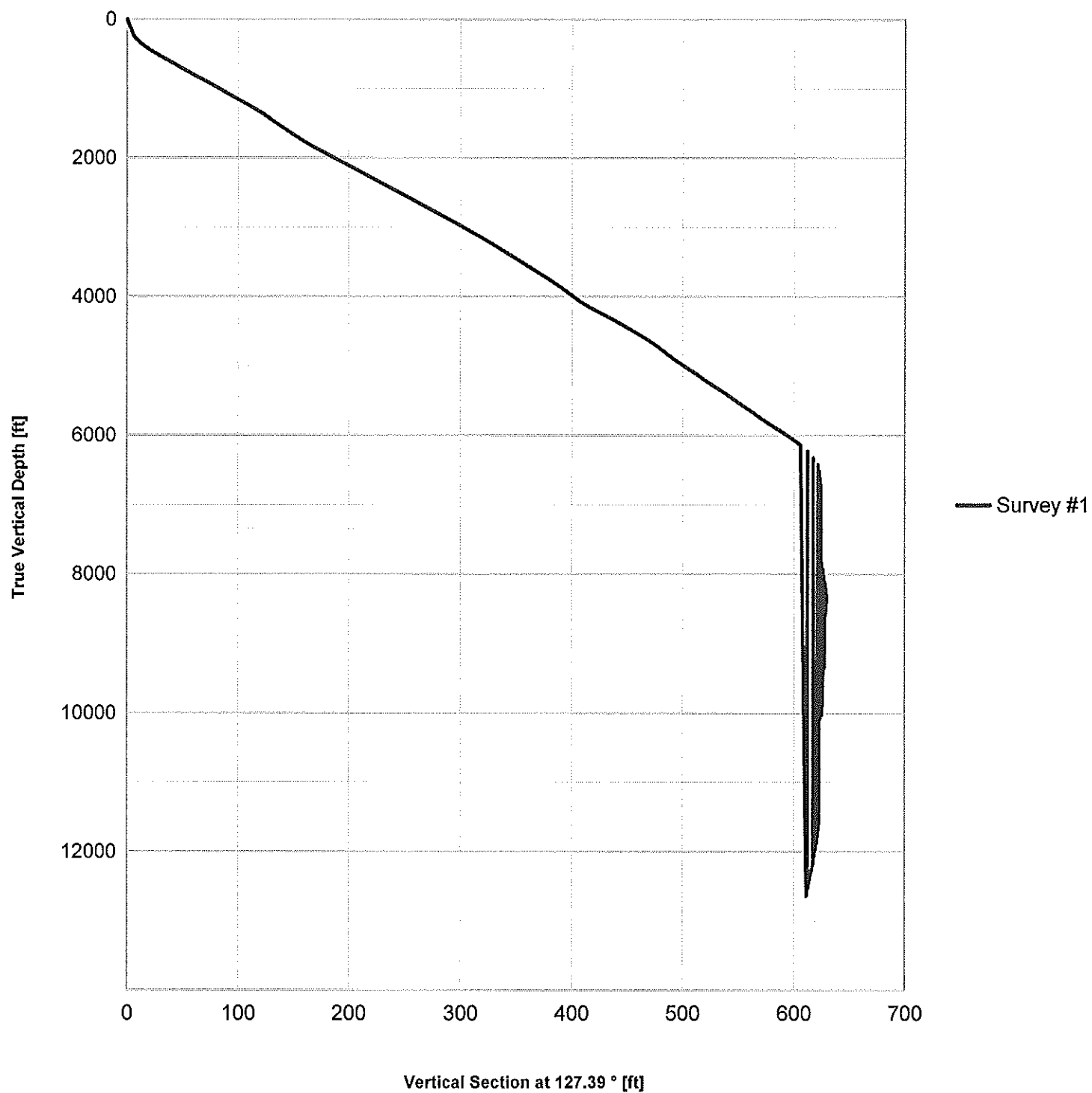
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
9/8/2012	NORMAL	2,031.0	6.86	131.36	2,021.24	-112.80	151.71	189.03	0.35	0.28	1.87	39.30
	NORMAL	2,125.0	6.68	131.45	2,114.59	-120.13	160.02	200.09	0.19	-0.19	0.10	176.67
	NORMAL	2,407.0	6.60	130.21	2,394.69	-141.45	184.69	232.63	0.06	-0.03	-0.44	240.23
	NORMAL	2,597.0	6.68	130.21	2,583.42	-155.64	201.47	254.58	0.04	0.04	0.00	0.00
	NORMAL	2,786.0	6.51	129.86	2,771.17	-169.60	218.09	276.26	0.09	-0.09	-0.19	193.13
	NORMAL	2,974.0	6.60	132.76	2,957.94	-183.77	234.20	297.67	0.18	0.05	1.54	76.23
	NORMAL	3,069.0	6.24	123.80	3,052.35	-190.34	242.50	308.25	1.12	-0.38	-9.43	245.82
	NORMAL	3,164.0	5.98	123.80	3,146.81	-195.97	250.90	318.35	0.27	-0.27	0.00	180.00
	NORMAL	3,257.0	5.89	126.70	3,239.31	-201.52	258.75	327.95	0.34	-0.10	3.12	108.15
	NORMAL	3,351.0	5.80	116.15	3,332.82	-206.49	266.88	337.43	1.15	-0.10	-11.22	259.98
	NORMAL	3,444.0	5.89	119.14	3,425.34	-210.89	275.27	346.77	0.34	0.10	3.22	75.02
9/9/2012	NORMAL	3,538.0	5.72	116.06	3,518.86	-215.29	283.69	356.13	0.38	-0.18	-3.28	239.85
	NORMAL	3,633.0	5.89	117.96	3,613.37	-219.66	292.25	365.58	0.27	0.18	2.00	49.45
	NORMAL	3,737.0	5.72	121.07	3,716.84	-224.84	301.40	376.00	0.34	-0.16	2.99	119.93
	NORMAL	3,821.0	5.53	120.15	3,800.43	-229.03	308.49	384.17	0.25	-0.23	-1.10	204.93
	NORMAL	3,914.0	4.95	119.47	3,893.04	-233.25	315.85	392.59	0.63	-0.62	-0.73	185.77
9/23/2012	NORMAL	3,998.0	4.53	117.89	3,976.76	-236.59	321.94	399.45	0.52	-0.50	-1.88	196.48
	NORMAL	4,092.0	5.54	118.42	4,070.39	-240.48	329.21	407.60	1.08	1.07	0.56	2.90
	NORMAL	4,187.0	6.10	126.06	4,164.90	-245.64	337.33	417.17	1.00	0.59	8.04	57.98
	NORMAL	4,281.0	7.39	130.37	4,258.25	-252.49	345.97	428.20	1.47	1.37	4.59	23.58
	NORMAL	4,376.0	6.60	128.79	4,352.54	-259.87	354.88	439.76	0.86	-0.83	-1.66	192.91
	NORMAL	4,471.0	5.65	124.24	4,447.00	-265.92	363.00	449.89	1.12	-1.00	-4.79	204.82
	NORMAL	4,565.0	6.53	126.40	4,540.47	-271.70	371.13	459.86	0.97	0.94	2.30	15.67
	NORMAL	4,660.0	5.63	127.03	4,634.94	-277.71	379.20	469.92	0.95	-0.95	0.66	176.07
	NORMAL	4,754.0	4.48	128.34	4,728.57	-282.76	385.76	478.20	1.23	-1.22	1.39	174.92
	NORMAL	4,848.0	4.48	130.28	4,822.28	-287.42	391.44	485.54	0.16	0.00	2.06	90.97
	NORMAL	4,942.0	5.28	123.34	4,915.94	-292.17	397.85	493.52	1.06	0.85	-7.38	320.08
	NORMAL	5,037.0	5.68	124.00	5,010.51	-297.20	405.40	502.57	0.43	0.42	0.69	9.28
	NORMAL	5,131.0	4.84	122.90	5,104.11	-301.95	412.59	511.17	0.90	-0.89	-1.17	186.30
	NORMAL	5,225.0	5.19	117.98	5,197.75	-306.10	419.67	519.31	0.59	0.37	-5.23	306.67
	NORMAL	5,320.0	5.80	127.21	5,292.31	-311.02	427.29	528.35	1.13	0.64	9.72	60.04
	NORMAL	5,414.0	5.28	124.22	5,385.88	-316.32	434.65	537.42	0.63	-0.55	-3.18	207.55
	NORMAL	5,509.0	4.75	126.77	5,480.51	-321.14	441.41	545.72	0.61	-0.56	2.68	158.46
	NORMAL	5,603.0	5.57	128.93	5,574.13	-326.33	448.08	554.17	0.90	0.87	2.30	14.41
	NORMAL	5,698.0	5.01	132.66	5,668.73	-332.04	454.72	562.91	0.69	-0.59	3.93	150.29
	NORMAL	5,791.0	4.82	131.45	5,761.38	-337.38	460.63	570.85	0.23	-0.20	-1.30	208.02
	NORMAL	5,885.0	5.98	125.98	5,854.97	-342.87	467.56	579.69	1.35	1.23	-5.82	333.33
	NORMAL	5,979.0	5.63	127.74	5,948.48	-348.57	475.16	589.19	0.42	-0.37	1.87	153.92
	NORMAL	6,074.0	5.01	128.79	6,043.07	-354.02	482.08	598.00	0.66	-0.65	1.11	171.60
	NORMAL	6,168.0	4.48	134.85	6,136.75	-359.18	487.88	605.74	0.78	-0.56	6.45	139.59
	NORMAL	6,263.0	3.34	124.57	6,231.53	-363.37	492.79	612.19	1.40	-1.20	-10.82	206.53
	NORMAL	6,357.0	2.90	122.46	6,325.39	-366.20	497.06	617.29	0.48	-0.47	-2.24	193.58
9/24/2012	NORMAL	6,452.0	1.93	130.99	6,420.31	-368.54	500.29	621.28	1.09	-1.02	8.98	163.89
	NORMAL	6,546.0	0.53	30.70	6,514.29	-369.20	501.71	622.81	2.22	-1.49	-106.69	194.45
	NORMAL	6,640.0	1.76	64.98	6,608.27	-368.22	503.24	623.43	1.44	1.31	36.47	47.00
	NORMAL	6,733.0	0.40	30.66	6,701.25	-367.34	504.70	624.05	1.56	-1.46	-36.90	188.97
	NORMAL	6,827.0	0.18	269.94	6,795.25	-367.05	504.72	623.90	0.55	-0.23	-128.43	197.46
	NORMAL	6,921.0	0.26	251.57	6,889.25	-367.12	504.37	623.66	0.11	0.09	-19.54	309.17
	NORMAL	7,016.0	0.62	228.55	6,984.24	-367.53	503.78	623.44	0.41	0.38	-24.23	322.03
	NORMAL	7,111.0	0.70	216.15	7,079.24	-368.34	503.05	623.35	0.17	0.08	-13.05	292.96
	NORMAL	7,206.0	0.47	16.29	7,174.24	-368.43	502.82	623.22	1.21	-0.24	168.57	172.04
	NORMAL	7,300.0	0.42	335.92	7,268.23	-367.75	502.78	622.78	0.33	-0.05	-42.95	241.13
	NORMAL	7,394.0	0.44	266.52	7,362.23	-367.46	502.28	622.21	0.52	0.02	-73.83	237.22
	NORMAL	7,488.0	0.62	35.45	7,456.23	-367.06	502.22	621.92	1.02	0.19	137.16	149.83
	NORMAL	7,583.0	0.97	65.16	7,551.22	-366.31	503.25	622.27	0.56	0.37	31.27	65.16
	NORMAL	7,677.0	1.58	52.06	7,645.20	-365.18	504.99	622.97	0.72	0.65	-13.94	327.81
	NORMAL	7,771.0	1.32	65.77	7,739.17	-363.93	507.00	623.82	0.46	-0.28	14.59	133.57

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 (°)
9/24/2012	NORMAL	7,859.0	0.62	103.98	7,827.16	-363.63	508.39	624.73	1.04	-0.80	43.42	155.27
	NORMAL	7,865.0	0.96	81.84	7,833.15	-363.38	508.77	624.88	0.51	-0.38	17.10	146.24
	NORMAL	7,959.0	0.62	103.98	7,927.14	-363.39	510.04	625.90	0.48	-0.36	23.55	148.79
	NORMAL	8,054.0	0.44	139.34	8,022.14	-363.79	510.78	626.73	0.38	-0.19	37.22	135.73
	NORMAL	8,149.0	0.79	112.44	8,117.13	-364.32	511.62	627.72	0.47	0.37	-28.32	306.51
9/25/2012	NORMAL	8,243.0	1.65	200.61	8,211.11	-365.83	511.74	628.74	1.92	0.91	93.80	114.08
	NORMAL	8,338.0	1.93	212.64	8,306.07	-368.46	510.40	629.26	0.49	0.29	12.66	59.42
	NORMAL	8,432.0	0.97	240.67	8,400.04	-370.18	508.85	629.08	1.24	-1.02	29.82	157.00
	NORMAL	8,526.0	1.14	223.27	8,494.02	-371.25	507.52	628.67	0.38	0.18	-18.51	289.07
	NORMAL	8,621.0	0.44	314.77	8,589.02	-371.68	506.61	628.21	1.30	-0.74	96.32	159.09
	NORMAL	8,715.0	0.97	305.45	8,683.01	-370.97	505.70	627.06	0.58	0.56	-9.91	343.11
	NORMAL	8,810.0	1.02	322.56	8,777.99	-369.83	504.53	625.44	0.32	0.05	18.01	89.07
	NORMAL	8,905.0	0.44	97.24	8,872.99	-369.20	504.38	624.94	1.44	-0.61	141.77	166.76
	NORMAL	9,000.0	0.44	103.30	8,967.99	-369.33	505.10	625.59	0.05	0.00	6.38	93.03
	NORMAL	9,093.0	0.41	140.53	9,060.98	-369.67	505.66	626.24	0.29	-0.03	40.03	114.60
9/26/2012	NORMAL	9,187.0	0.50	181.77	9,154.98	-370.34	505.86	626.80	0.35	0.10	43.87	95.89
	NORMAL	9,281.0	0.88	204.99	9,248.98	-371.41	505.54	627.20	0.49	0.40	24.70	48.34
	NORMAL	9,375.0	0.79	228.55	9,342.97	-372.49	504.75	627.23	0.37	-0.10	25.06	116.27
	NORMAL	9,470.0	1.14	297.98	9,437.95	-372.48	503.43	626.17	1.20	0.37	73.08	110.04
	NORMAL	9,565.0	1.23	16.29	9,532.94	-371.06	502.88	624.87	1.58	0.09	82.43	126.48
	NORMAL	9,644.0	1.41	56.98	9,611.92	-369.71	503.93	624.89	1.18	0.23	51.51	99.92
	NORMAL	9,739.0	1.49	41.78	9,706.89	-368.16	505.73	625.37	0.41	0.08	-16.00	274.08
	NORMAL	9,833.0	1.14	48.02	9,800.87	-366.62	507.24	625.64	0.40	-0.37	6.64	160.85
	NORMAL	9,928.0	0.79	9.00	9,895.85	-365.34	508.05	625.50	0.76	-0.37	-41.07	223.39
	NORMAL	10,023.0	0.62	320.04	9,990.85	-364.30	507.82	624.69	0.64	-0.18	-51.54	230.69
9/27/2012	NORMAL	10,117.0	1.06	297.63	10,084.84	-363.51	506.72	623.34	0.58	0.47	-23.84	311.69
	NORMAL	10,211.0	1.49	278.47	10,178.81	-362.92	504.74	621.41	0.64	0.46	-20.38	305.40
	NORMAL	10,306.0	0.44	254.74	10,273.80	-362.84	503.17	620.11	1.16	-1.11	-24.98	189.25
	NORMAL	10,059.0	1.58	85.64	10,026.86	-361.47	510.14	624.82	5.57	2.67	348.89	140.16
	NORMAL	10,400.0	0.18	17.17	10,367.80	-362.79	502.87	619.84	0.59	-0.28	130.24	164.19
	NORMAL	10,494.0	0.26	247.97	10,461.80	-362.73	502.71	619.68	0.42	0.09	-137.45	210.33
	NORMAL	10,588.0	0.53	234.08	10,555.80	-363.07	502.16	619.44	0.30	0.29	-14.78	333.44
	NORMAL	10,682.0	0.44	275.04	10,649.79	-363.29	501.45	619.01	0.37	-0.10	43.57	124.43
	NORMAL	10,777.0	0.18	194.36	10,744.79	-363.40	501.05	618.76	0.47	-0.27	-84.93	203.38
	NORMAL	10,870.0	1.06	220.20	10,837.78	-364.20	500.46	618.78	0.97	0.95	27.78	30.83
9/28/2012	NORMAL	10,965.0	0.70	90.38	10,932.78	-364.87	500.47	619.20	1.69	-0.38	-136.65	199.62
	NORMAL	11,059.0	1.58	85.64	11,026.76	-364.78	502.34	620.63	0.94	0.94	-5.04	351.51
	NORMAL	11,153.0	0.53	113.58	11,120.74	-364.86	504.03	622.01	1.21	-1.12	29.72	167.41
	NORMAL	11,248.0	0.26	66.74	11,215.74	-364.95	504.63	622.55	0.42	-0.28	-49.31	208.31
	NORMAL	11,342.0	0.26	214.66	11,309.74	-365.04	504.70	622.66	0.53	0.00	157.36	163.96
	NORMAL	11,436.0	0.70	229.42	11,403.74	-365.59	504.15	622.55	0.48	0.47	15.70	23.16
	NORMAL	11,531.0	0.62	215.98	11,498.73	-366.38	503.40	622.44	0.18	-0.08	-14.15	236.06
	NORMAL	11,625.0	0.62	218.97	11,592.73	-367.19	502.78	622.44	0.03	0.00	3.18	91.49
	NORMAL	11,719.0	1.14	250.17	11,686.71	-367.90	501.59	621.92	0.73	0.55	33.19	58.98
	NORMAL	11,813.0	0.97	240.94	11,780.70	-368.60	500.01	621.10	0.26	-0.18	-9.82	220.44
9/28/2012	NORMAL	11,907.0	0.97	252.45	11,874.68	-369.23	498.56	620.32	0.21	0.00	12.24	95.75
	NORMAL	12,002.0	1.14	257.64	11,969.67	-369.67	496.87	619.25	0.21	0.18	5.46	31.95
	NORMAL	12,096.0	1.32	240.67	12,063.65	-370.40	495.01	618.22	0.43	0.19	-18.05	287.65
	NORMAL	12,190.0	1.32	249.11	12,157.62	-371.32	493.05	617.22	0.21	0.00	8.98	94.22
	NORMAL	12,284.0	1.85	246.83	12,251.59	-372.30	490.65	615.91	0.57	0.56	-2.43	352.07
	NORMAL	12,378.0	1.32	251.75	12,345.55	-373.24	488.22	614.55	0.58	-0.56	5.23	168.05
	NORMAL	12,472.0	1.14	257.37	12,439.53	-373.78	486.28	613.34	0.23	-0.19	5.98	148.96
9/28/2012	NORMAL	12,567.0	1.49	239.80	12,534.50	-374.61	484.29	612.26	0.56	0.37	-18.49	301.95
	NORMAL	12,668.0	1.49	239.80	12,635.47	-375.93	482.02	611.26	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

