

## 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 42-25-198	Wellbore No.	
Well Name	FEDERAL RGU 42-25-198	Common Name	RGU 42-25-198
Project	RG 25-01S-098W	Site	RGU 32-25-198 Pad
Vertical Section Azimuth	55.32 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	2/6/2012	UWI	RGU 42-25-198
Active Datum	KB @6,691.0ft (above Mean Sea Level)		

## 2 Survey Name

### 2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	2/6/2012	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 (°)
2/6/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/6/2012	NORMAL	162.0	1.75	79.61	161.97	0.45	2.43	2.25	1.08	1.08	0.00	79.61
	NORMAL	255.0	3.29	57.75	254.88	2.13	6.09	6.22	1.92	1.66	-23.51	316.79
	NORMAL	347.0	4.66	59.87	346.66	5.41	11.55	12.58	1.50	1.49	2.30	7.18
	NORMAL	439.0	6.22	51.06	438.24	10.42	18.66	21.28	1.92	1.70	-9.58	327.40
	NORMAL	531.0	8.24	50.74	529.51	17.73	27.64	32.82	2.20	2.20	-0.35	358.70
	NORMAL	624.0	9.73	51.84	621.37	26.80	38.98	47.31	1.61	1.60	1.18	7.12
	NORMAL	716.0	10.60	59.53	711.92	35.89	52.39	63.51	1.75	0.95	8.36	61.16
	NORMAL	810.0	11.66	58.14	804.16	45.29	67.91	81.62	1.16	1.13	-1.48	345.11
	NORMAL	903.0	12.33	58.95	895.12	55.37	84.40	100.91	0.74	0.72	0.87	14.50
	NORMAL	995.0	12.14	55.04	985.04	65.98	100.74	120.39	0.92	-0.21	-4.25	255.18
	NORMAL	1,089.0	11.61	52.45	1,077.02	77.41	116.34	139.72	0.80	-0.56	-2.76	223.90
	NORMAL	1,182.0	10.84	52.86	1,168.24	88.40	130.73	157.81	0.83	-0.83	0.44	174.28
	NORMAL	1,276.0	10.46	58.12	1,260.63	98.24	145.03	175.16	1.11	-0.40	5.60	113.92
	NORMAL	1,370.0	11.06	58.06	1,352.97	107.52	159.92	192.69	0.64	0.64	-0.06	358.90
	NORMAL	1,464.0	10.24	57.44	1,445.35	116.78	174.62	210.04	0.88	-0.87	-0.66	187.65
	NORMAL	1,559.0	9.78	52.04	1,538.91	126.29	188.10	226.54	1.10	-0.48	-5.68	241.25
	NORMAL	1,652.0	10.02	49.02	1,630.53	136.46	200.43	242.47	0.61	0.26	-3.25	293.32
	NORMAL	1,746.0	8.65	51.84	1,723.28	146.19	212.16	257.65	1.54	-1.46	3.00	162.92
	NORMAL	1,839.0	7.74	58.47	1,815.33	153.78	223.00	270.88	1.41	-0.98	7.13	137.17

## 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 (°)
2/6/2012	NORMAL	1,933.0	8.97	56.89	1,908.33	161.10	234.54	284.53	1.33	1.31	-1.68	348.64
2/7/2012	NORMAL	2,026.0	11.86	56.04	1,999.79	170.40	248.54	301.34	3.11	3.11	-0.91	356.54
	NORMAL	2,120.0	13.01	57.94	2,091.58	181.41	265.52	321.57	1.30	1.22	2.02	20.51
	NORMAL	2,214.0	13.10	58.82	2,183.15	192.54	283.60	342.77	0.23	0.10	0.94	66.07
	NORMAL	2,307.0	13.01	57.41	2,273.75	203.64	301.44	363.75	0.36	-0.10	-1.52	253.54
	NORMAL	2,401.0	13.63	60.40	2,365.22	214.81	319.98	385.36	0.99	0.66	3.18	49.47
	NORMAL	2,495.0	13.89	61.81	2,456.52	225.61	339.56	407.60	0.45	0.28	1.50	52.90
	NORMAL	2,589.0	14.42	61.11	2,547.67	236.59	359.75	430.45	0.59	0.56	-0.74	341.76
	NORMAL	2,682.0	14.62	62.94	2,637.70	247.53	380.34	453.61	0.54	0.22	1.97	67.33
	NORMAL	2,776.0	14.95	62.95	2,728.59	258.44	401.70	477.38	0.35	0.35	0.01	0.45
	NORMAL	2,870.0	15.39	63.74	2,819.31	269.47	423.69	501.74	0.52	0.47	0.84	25.55
	NORMAL	2,964.0	15.73	63.60	2,909.87	280.65	446.29	526.69	0.36	0.36	-0.15	353.63
	NORMAL	3,058.0	16.41	62.52	3,000.19	292.45	469.48	552.47	0.79	0.72	-1.15	335.75
	NORMAL	3,151.0	12.93	52.76	3,090.16	304.81	489.43	575.91	4.58	-3.74	-10.49	210.73
	NORMAL	3,245.0	12.15	50.33	3,181.92	317.49	505.41	596.27	1.00	-0.83	-2.59	212.89
	NORMAL	3,339.0	11.43	49.50	3,273.94	329.85	520.11	615.39	0.79	-0.77	-0.88	192.85
	NORMAL	3,432.0	10.85	50.65	3,365.18	341.39	533.89	633.28	0.67	-0.62	1.24	159.60
	NORMAL	3,527.0	10.72	50.50	3,458.51	352.68	547.62	651.00	0.14	-0.14	-0.16	192.11
	NORMAL	3,621.0	10.66	54.15	3,550.87	363.33	561.41	668.40	0.72	-0.06	3.88	96.86
	NORMAL	3,715.0	10.87	54.05	3,643.22	373.63	575.63	685.96	0.22	0.22	-0.11	354.87
	NORMAL	3,808.0	11.09	55.11	3,734.52	383.89	590.07	703.67	0.32	0.24	1.14	43.06
	NORMAL	3,910.0	11.45	54.92	3,834.55	395.32	606.40	723.60	0.35	0.35	-0.19	354.02
2/9/2012	NORMAL	4,020.0	9.29	56.87	3,942.75	406.45	622.77	743.40	1.99	-1.96	1.77	171.73
	NORMAL	4,082.0	9.04	58.39	4,003.96	411.74	631.11	753.26	0.56	-0.40	2.45	136.67
	NORMAL	4,176.0	8.26	56.32	4,096.89	419.35	643.02	767.39	0.89	-0.83	-2.20	200.74
	NORMAL	4,270.0	7.18	51.51	4,190.03	426.75	653.24	780.00	1.34	-1.15	-5.12	208.52
	NORMAL	4,364.0	8.01	54.05	4,283.21	434.25	663.14	792.41	0.95	0.88	2.70	23.28
	NORMAL	4,457.0	9.17	57.03	4,375.17	442.09	674.60	806.30	1.34	1.25	3.20	22.47
	NORMAL	4,551.0	9.00	56.27	4,467.99	450.25	687.00	821.14	0.22	-0.18	-0.81	214.84
	NORMAL	4,645.0	9.52	56.57	4,560.76	458.61	699.60	836.26	0.56	0.55	0.32	5.45
	NORMAL	4,739.0	9.70	52.01	4,653.44	467.77	712.33	851.94	0.83	0.19	-4.85	281.05
	NORMAL	4,833.0	9.25	53.79	4,746.16	477.11	724.67	867.40	0.57	-0.48	1.89	147.81
	NORMAL	4,927.0	8.71	53.02	4,839.01	485.85	736.45	882.06	0.59	-0.57	-0.82	192.17
	NORMAL	5,021.0	10.89	51.53	4,931.63	495.66	749.09	898.03	2.33	2.32	-1.59	352.63
2/10/2012	NORMAL	5,114.0	11.13	52.72	5,022.92	506.56	763.11	915.77	0.36	0.26	1.28	44.02
	NORMAL	5,208.0	9.99	51.69	5,115.33	517.11	776.72	932.97	1.23	-1.21	-1.10	188.90
	NORMAL	5,302.0	10.02	51.67	5,207.90	527.24	789.54	949.26	0.03	0.03	-0.02	353.38
	NORMAL	5,395.0	10.68	50.83	5,299.38	537.70	802.56	965.93	0.73	0.71	-0.90	346.71
	NORMAL	5,489.0	11.19	50.19	5,391.68	549.04	816.32	983.70	0.56	0.54	-0.68	346.30
	NORMAL	5,583.0	9.77	50.54	5,484.11	559.95	829.49	1,000.73	1.51	-1.51	0.37	177.61
	NORMAL	5,677.0	11.09	54.40	5,576.55	570.28	843.00	1,017.72	1.59	1.40	4.11	29.80
	NORMAL	5,771.0	11.68	55.37	5,668.70	580.95	858.18	1,036.27	0.66	0.63	1.03	18.46
	NORMAL	5,865.0	11.15	51.46	5,760.84	592.02	873.12	1,054.86	1.00	-0.56	-4.16	233.69
	NORMAL	5,958.0	11.17	49.57	5,852.08	603.47	887.01	1,072.79	0.39	0.02	-2.03	272.20
	NORMAL	6,052.0	11.24	51.91	5,944.29	615.02	901.15	1,091.00	0.49	0.07	2.49	82.40
	NORMAL	6,145.0	10.44	55.19	6,035.63	625.42	915.20	1,108.47	1.09	-0.86	3.53	143.97
	NORMAL	6,239.0	10.34	51.06	6,128.09	635.59	928.75	1,125.40	0.80	-0.11	-4.39	260.33
	NORMAL	6,332.0	10.69	52.33	6,219.53	646.11	942.07	1,142.34	0.45	0.38	1.37	34.14
	NORMAL	6,426.0	9.30	51.46	6,312.10	656.17	954.92	1,158.62	1.49	-1.48	-0.93	185.77
	NORMAL	6,520.0	8.50	50.84	6,404.97	665.29	966.24	1,173.13	0.86	-0.85	-0.66	186.53
	NORMAL	6,614.0	7.45	48.79	6,498.06	673.69	976.22	1,186.11	1.16	-1.12	-2.18	194.14
	NORMAL	6,708.0	6.71	46.76	6,591.34	681.46	984.80	1,197.59	0.83	-0.79	-2.16	197.68
	NORMAL	6,802.0	6.65	50.15	6,684.71	688.71	992.98	1,208.44	0.42	-0.06	3.61	100.33
	NORMAL	6,896.0	5.73	49.84	6,778.16	695.23	1,000.75	1,218.54	0.98	-0.98	-0.33	181.93
	NORMAL	6,990.0	5.67	49.03	6,871.69	701.30	1,007.84	1,227.82	0.11	-0.06	-0.86	232.88
	NORMAL	7,085.0	5.36	52.44	6,966.25	707.08	1,014.90	1,236.92	0.47	-0.33	3.59	135.10
	NORMAL	7,179.0	5.20	51.67	7,059.85	712.40	1,021.72	1,245.55	0.19	-0.17	-0.82	203.50

## 2.1.2 Survey Stations (Continued)

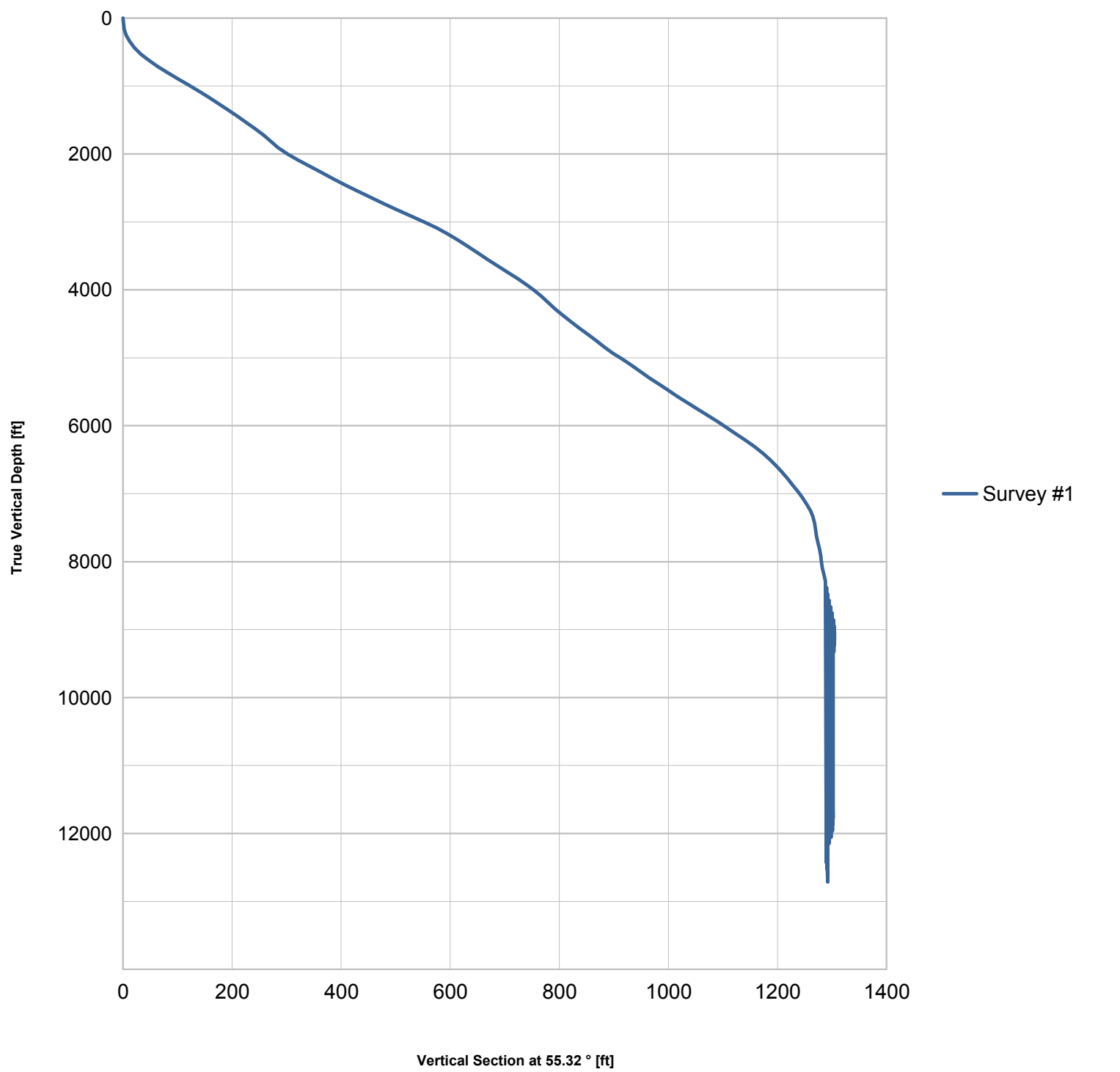
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
2/10/2012	NORMAL	7,274.0	4.45	64.25	7,154.52	716.67	1,028.42	1,253.49	1.36	-0.79	13.24	131.49
	NORMAL	7,368.0	3.95	75.19	7,248.27	719.08	1,034.83	1,260.14	1.00	-0.53	11.64	127.34
2/11/2012	NORMAL	7,462.0	2.47	73.90	7,342.12	720.47	1,039.91	1,265.10	1.58	-1.57	-1.37	182.15
	NORMAL	7,557.0	1.19	68.96	7,437.07	721.39	1,042.80	1,268.00	1.36	-1.35	-5.20	184.56
	NORMAL	7,651.0	0.99	49.74	7,531.05	722.27	1,044.33	1,269.76	0.44	-0.21	-20.45	231.94
	NORMAL	7,747.0	1.46	16.85	7,627.03	723.98	1,045.31	1,271.54	0.86	0.49	-34.26	286.58
	NORMAL	7,841.0	1.91	29.85	7,720.99	726.48	1,046.44	1,273.90	0.63	0.48	13.83	46.97
	NORMAL	7,936.0	2.08	39.08	7,815.93	729.19	1,048.32	1,276.98	0.38	0.18	9.72	66.78
	NORMAL	8,030.0	0.83	38.33	7,909.90	731.05	1,049.81	1,279.27	1.33	-1.33	-0.80	180.50
	NORMAL	8,124.0	0.79	28.17	8,003.89	732.16	1,050.54	1,280.50	0.16	-0.04	-10.81	249.40
	NORMAL	8,219.0	1.49	56.40	8,098.87	733.42	1,051.88	1,282.31	0.92	0.74	29.72	53.43
	NORMAL	8,313.0	1.84	65.36	8,192.83	734.72	1,054.27	1,285.02	0.46	0.37	9.53	41.18
	NORMAL	8,407.0	1.49	74.55	8,286.79	735.68	1,056.82	1,287.66	0.47	-0.37	9.78	147.19
	NORMAL	8,502.0	1.35	44.05	8,381.76	736.81	1,058.79	1,289.93	0.80	-0.15	-32.11	244.50
	NORMAL	8,595.0	1.55	27.12	8,474.73	738.72	1,060.12	1,292.11	0.51	0.22	-18.20	286.40
	NORMAL	8,690.0	1.85	34.03	8,569.69	741.13	1,061.57	1,294.67	0.38	0.32	7.27	37.83
	NORMAL	8,785.0	2.01	38.35	8,664.64	743.71	1,063.46	1,297.69	0.23	0.17	4.55	44.45
	NORMAL	8,879.0	1.26	57.81	8,758.60	745.55	1,065.36	1,300.30	0.98	-0.80	20.70	152.95
	NORMAL	8,974.0	1.14	67.96	8,853.58	746.46	1,067.12	1,302.27	0.26	-0.13	10.68	124.46
	NORMAL	9,069.0	1.39	103.48	8,948.56	746.55	1,069.11	1,303.96	0.85	0.26	37.39	90.61
2/12/2012	NORMAL	9,163.0	1.57	147.78	9,042.53	745.19	1,070.91	1,304.66	1.20	0.19	47.13	103.65
	NORMAL	9,258.0	1.38	156.26	9,137.50	743.05	1,072.06	1,304.39	0.30	-0.20	8.93	135.22
	NORMAL	9,352.0	1.15	157.79	9,231.48	741.14	1,072.87	1,303.97	0.25	-0.24	1.63	172.41
	NORMAL	9,445.0	1.08	189.73	9,324.46	739.41	1,073.08	1,303.16	0.66	-0.08	34.34	112.23
	NORMAL	9,540.0	1.10	183.51	9,419.44	737.62	1,072.87	1,301.97	0.13	0.02	-6.55	276.48
	NORMAL	9,634.0	1.35	177.41	9,513.42	735.61	1,072.87	1,300.82	0.30	0.27	-6.49	329.38
	NORMAL	9,729.0	0.91	218.74	9,608.40	733.90	1,072.45	1,299.50	0.94	-0.46	43.51	137.97
	NORMAL	9,823.0	0.61	251.03	9,702.39	733.16	1,071.50	1,298.31	0.54	-0.32	34.35	140.43
	NORMAL	9,917.0	0.55	267.06	9,796.39	732.97	1,070.58	1,297.44	0.18	-0.06	17.05	118.19
	NORMAL	10,011.0	0.26	283.64	9,890.39	733.00	1,069.92	1,296.91	0.33	-0.31	17.64	166.15
2/13/2012	NORMAL	10,107.0	0.14	253.10	9,986.39	733.02	1,069.60	1,296.66	0.16	-0.12	-31.81	207.03
	NORMAL	10,201.0	0.10	199.93	10,080.39	732.91	1,069.46	1,296.48	0.12	-0.04	-56.56	225.00
	NORMAL	10,295.0	0.24	159.79	10,174.39	732.64	1,069.50	1,296.37	0.19	0.15	-42.70	298.35
	NORMAL	10,388.0	0.47	198.01	10,267.38	732.10	1,069.45	1,296.01	0.34	0.25	41.10	66.03
	NORMAL	10,482.0	0.84	164.38	10,361.38	731.07	1,069.52	1,295.48	0.55	0.39	-35.78	296.25
	NORMAL	10,577.0	1.19	133.51	10,456.36	729.72	1,070.42	1,295.46	0.67	0.37	-32.49	286.55
	NORMAL	10,671.0	1.38	113.92	10,550.34	728.59	1,072.16	1,296.25	0.51	0.20	-20.84	283.39
	NORMAL	10,765.0	1.62	71.33	10,644.31	728.55	1,074.46	1,298.11	1.18	0.26	-45.31	260.31
	NORMAL	10,859.0	1.19	40.39	10,738.28	729.72	1,076.35	1,300.33	0.91	-0.46	-32.91	225.59
	NORMAL	10,954.0	1.56	319.00	10,833.26	731.45	1,076.14	1,301.14	1.91	0.39	-85.67	238.21
2/14/2012	NORMAL	11,048.0	1.58	313.00	10,927.23	733.30	1,074.35	1,300.73	0.18	0.02	-6.38	273.93
	NORMAL	11,140.0	1.48	306.72	11,019.20	734.88	1,072.47	1,300.08	0.21	-0.11	-6.83	236.08
	NORMAL	11,235.0	0.81	317.42	11,114.18	736.10	1,071.03	1,299.59	0.74	-0.71	11.26	167.60
	NORMAL	11,329.0	0.31	299.11	11,208.17	736.72	1,070.36	1,299.39	0.56	-0.53	-19.48	190.69
	NORMAL	11,425.0	0.59	117.98	11,304.17	736.61	1,070.57	1,299.50	0.94	0.29	186.32	179.26
	NORMAL	11,519.0	0.47	77.66	11,398.17	736.47	1,071.38	1,300.08	0.41	-0.13	-42.89	232.70
	NORMAL	11,614.0	0.31	57.25	11,493.17	736.69	1,071.97	1,300.70	0.22	-0.17	-21.48	211.06
	NORMAL	11,708.0	0.50	79.54	11,587.16	736.90	1,072.59	1,301.33	0.26	0.20	23.71	51.17
	NORMAL	11,802.0	0.81	122.23	11,681.16	736.62	1,073.55	1,301.96	0.59	0.33	45.41	80.15
	NORMAL	11,895.0	0.74	178.93	11,774.15	735.67	1,074.12	1,301.89	0.79	-0.08	60.97	123.13
	NORMAL	11,989.0	0.81	176.05	11,868.14	734.40	1,074.18	1,301.21	0.09	0.07	-3.06	329.46
	NORMAL	12,084.0	0.75	167.37	11,963.13	733.12	1,074.36	1,300.63	0.14	-0.06	-9.14	238.78
	NORMAL	12,178.0	2.73	237.30	12,057.09	731.31	1,072.61	1,298.17	2.74	2.11	74.39	85.82
2/15/2012	NORMAL	12,273.0	2.33	222.18	12,152.00	728.66	1,069.41	1,294.02	0.82	-0.42	-15.92	231.66
	NORMAL	12,368.0	1.72	189.05	12,246.94	725.82	1,067.89	1,291.16	1.36	-0.64	-34.87	226.58
	NORMAL	12,461.0	1.32	164.64	12,339.91	723.41	1,067.95	1,289.84	0.81	-0.43	-26.25	226.48
	NORMAL	12,556.0	1.14	140.73	12,434.89	721.62	1,068.84	1,289.55	0.57	-0.19	-25.17	238.98

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 (°)
2/15/2012	NORMAL	12,650.0	1.62	101.50	12,528.86	720.63	1,070.74	1,290.55	1.10	0.51	-41.73	276.40
	NORMAL	12,744.0	1.67	132.47	12,622.83	719.44	1,073.05	1,291.77	0.94	0.05	32.95	102.34
	NORMAL	12,778.0	1.32	141.52	12,656.82	718.80	1,073.66	1,291.91	1.24	-1.03	26.62	150.46
	NORMAL	12,833.0	1.32	141.52	12,711.80	717.81	1,074.45	1,291.99	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

