

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	BCU 43-36-199	Wellbore No.	
Well Name	FEDERAL BCU 43-36-199	Common Name	BCU 43-36-199
Project	BC 31-01N-098W	Site	BCU 12-31-198 PAD
Vertical Section Azimuth	228.31 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	7/6/2012	UWI	BCU 43-36-199
Active Datum	KB @6,864.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	SCIENTIFIC
Date Started	7/6/2012	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 (°)
7/6/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/6/2012	NORMAL	163.0	2.20	227.30	162.96	-2.12	-2.30	3.13	1.35	1.35	0.00	227.30
	NORMAL	256.0	4.31	240.58	255.76	-4.73	-8.38	9.40	1.68	1.68	0.00	240.58
	NORMAL	348.0	6.06	236.03	347.38	-9.14	-15.42	17.59	1.95	1.90	-4.95	344.50
	NORMAL	440.0	7.79	240.03	438.70	-14.97	-24.85	28.51	1.95	1.88	4.35	17.57
	NORMAL	532.0	9.50	233.55	529.66	-22.59	-36.36	42.18	2.14	1.86	-7.04	327.10
	NORMAL	624.0	11.17	229.33	620.16	-32.91	-49.23	58.65	1.99	1.82	-4.59	333.53
	NORMAL	716.0	12.75	227.66	710.16	-45.56	-63.49	77.71	1.76	1.72	-1.82	346.83
	NORMAL	808.0	14.60	230.65	799.55	-59.75	-79.96	99.45	2.15	2.01	3.25	22.37
	NORMAL	900.0	16.44	229.50	888.20	-75.56	-98.83	124.06	2.03	2.00	-1.25	349.95
	NORMAL	994.0	18.55	225.20	977.85	-94.74	-119.56	152.29	2.63	2.24	-4.57	326.44
	NORMAL	1,087.0	18.82	222.65	1,065.95	-116.19	-140.22	181.99	0.93	0.29	-2.74	287.08
7/7/2012	NORMAL	1,182.0	19.52	225.02	1,155.68	-138.68	-161.83	213.08	1.10	0.74	2.49	49.15
	NORMAL	1,276.0	19.35	222.21	1,244.32	-161.32	-183.40	244.25	1.01	-0.18	-2.99	258.37
	NORMAL	1,371.0	18.82	224.85	1,334.10	-183.84	-204.78	275.19	1.07	-0.56	2.78	122.79
	NORMAL	1,465.0	19.87	226.43	1,422.80	-205.60	-227.05	306.30	1.25	1.12	1.68	27.24
	NORMAL	1,560.0	20.14	228.71	1,512.07	-227.52	-251.04	338.79	0.87	0.28	2.40	71.98
	NORMAL	1,654.0	20.40	228.10	1,600.24	-249.14	-275.39	371.35	0.36	0.28	-0.65	320.61
	NORMAL	1,749.0	19.52	230.47	1,689.54	-270.30	-299.96	403.77	1.26	-0.93	2.49	138.52
	NORMAL	1,842.0	19.52	231.61	1,777.19	-289.84	-324.12	434.81	0.41	0.00	1.23	90.54

2.1.2 Survey Stations (Continued)

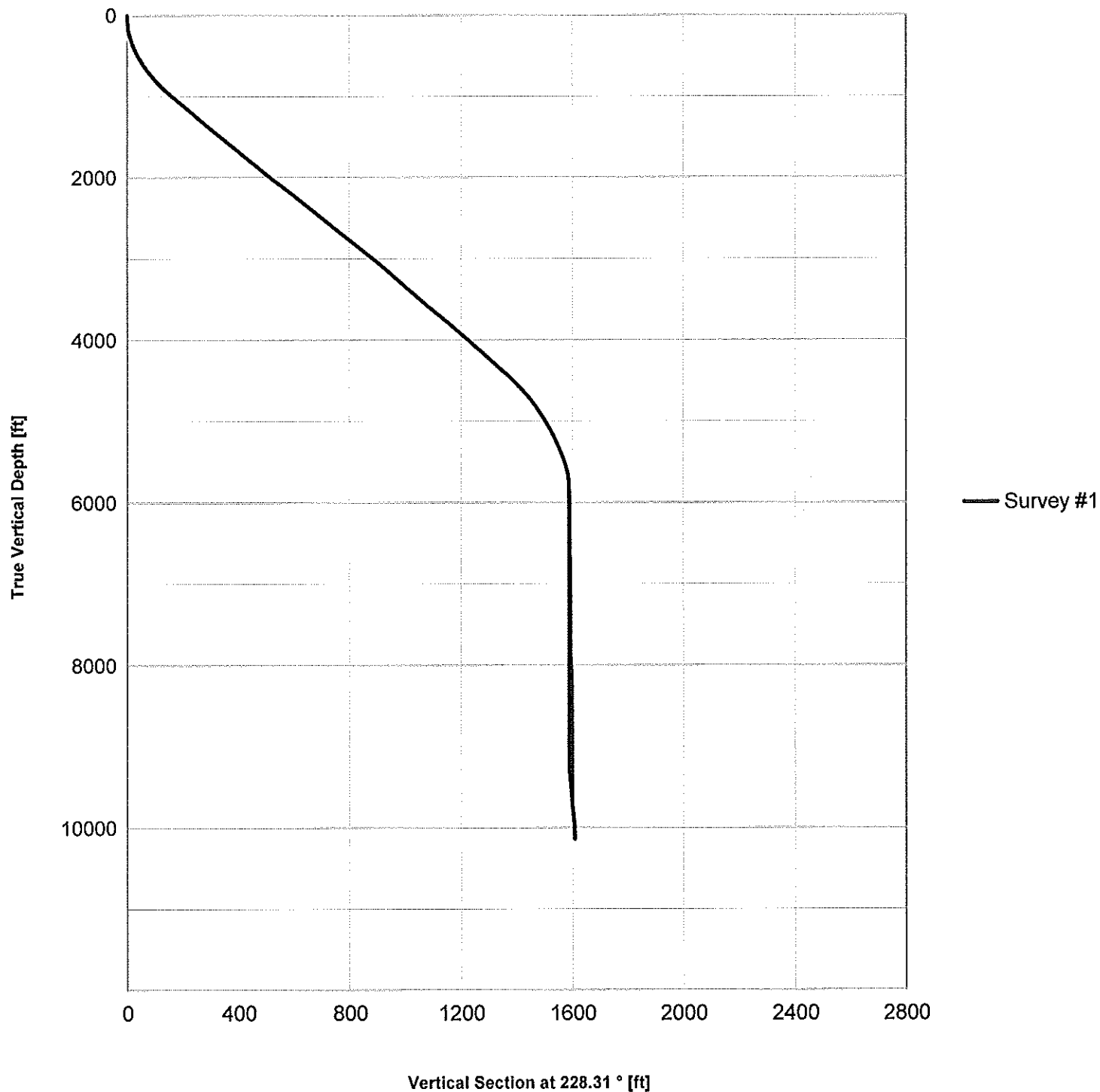
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (%/100ft)	Build Rate (%/100ft)	Turn (%/100ft)	TFace (°)
7/7/2012	NORMAL	1,936.0	19.70	232.32	1,865.74	-309.28	-348.97	466.29	0.32	0.19	0.76	53.27
	NORMAL	2,031.0	19.61	232.84	1,955.21	-328.69	-374.34	498.16	0.21	-0.09	0.55	117.47
	NORMAL	2,126.0	20.84	231.44	2,044.35	-348.86	-400.26	530.92	1.39	1.29	-1.47	337.86
	NORMAL	2,219.0	21.28	231.26	2,131.14	-369.73	-426.36	564.29	0.48	0.47	-0.19	351.55
	NORMAL	2,313.0	20.58	228.45	2,218.93	-391.36	-452.03	597.85	1.30	-0.74	-2.99	233.80
	NORMAL	2,408.0	20.14	227.22	2,308.00	-413.55	-476.53	630.90	0.65	-0.46	-1.29	223.63
	NORMAL	2,502.0	20.05	226.16	2,396.28	-435.70	-500.03	663.18	0.40	-0.10	-1.13	255.62
	NORMAL	2,598.0	20.05	228.10	2,486.46	-458.09	-524.15	696.08	0.69	0.00	2.02	90.91
	NORMAL	2,692.0	20.05	227.57	2,574.76	-479.72	-548.04	728.31	0.19	0.00	-0.56	269.75
	NORMAL	2,787.0	20.10	226.09	2,663.99	-502.03	-571.82	760.91	0.54	0.05	-1.56	274.93
	NORMAL	2,880.0	19.79	225.32	2,751.41	-524.18	-594.52	792.60	0.44	-0.33	-0.83	219.91
	NORMAL	2,974.0	20.31	228.27	2,839.72	-546.23	-618.01	824.80	1.21	0.55	3.14	64.18
	NORMAL	3,069.0	20.49	231.79	2,928.76	-567.49	-643.38	857.89	1.31	0.19	3.71	83.31
	NORMAL	3,164.0	19.79	232.32	3,017.96	-587.60	-669.18	890.53	0.76	-0.74	0.56	165.64
	NORMAL	3,239.0	19.35	230.56	3,088.62	-603.26	-688.82	915.61	0.98	-0.59	-2.35	232.44
7/9/2012	NORMAL	3,342.0	18.20	230.82	3,186.14	-624.26	-714.47	948.73	1.12	-1.12	0.25	175.96
	NORMAL	3,437.0	17.94	232.93	3,276.46	-642.45	-737.65	978.13	0.74	-0.27	2.22	112.67
	NORMAL	3,531.0	18.29	230.12	3,365.80	-660.64	-760.52	1,007.31	1.00	0.37	-2.99	290.49
	NORMAL	3,626.0	18.91	228.10	3,455.84	-680.48	-783.41	1,037.60	0.94	0.65	-2.13	312.94
	NORMAL	3,720.0	17.76	228.89	3,545.06	-700.08	-805.55	1,067.17	1.25	-1.22	0.84	168.18
	NORMAL	3,815.0	19.52	229.68	3,635.08	-719.87	-828.57	1,097.53	1.87	1.85	0.83	8.54
	NORMAL	3,909.0	20.05	229.77	3,723.53	-740.44	-852.85	1,129.34	0.56	0.56	0.10	3.33
	NORMAL	4,003.0	19.43	224.93	3,812.01	-761.92	-876.19	1,161.05	1.86	-0.66	-5.15	246.96
	NORMAL	4,097.0	17.59	231.61	3,901.15	-781.81	-898.37	1,190.85	2.98	-1.96	7.11	134.08
	NORMAL	4,190.0	19.34	228.61	3,989.36	-800.72	-920.94	1,220.28	2.14	1.88	-3.23	330.07
	NORMAL	4,285.0	17.94	227.66	4,079.38	-820.98	-943.56	1,250.64	1.51	-1.47	-1.00	191.79
	NORMAL	4,380.0	18.78	229.23	4,169.54	-840.82	-965.96	1,280.56	1.03	0.88	1.65	31.23
	NORMAL	4,475.0	17.03	227.46	4,259.94	-860.21	-987.79	1,309.76	1.93	-1.84	-1.86	196.43
	NORMAL	4,570.0	18.47	228.45	4,350.41	-879.60	-1,009.30	1,338.72	1.55	1.52	1.04	12.31
	NORMAL	4,664.0	17.50	228.01	4,439.82	-898.93	-1,030.95	1,367.75	1.04	-1.03	-0.47	187.76
	NORMAL	4,758.0	16.00	225.81	4,529.83	-917.42	-1,050.75	1,394.83	1.73	-1.60	-2.34	201.86
	NORMAL	4,853.0	15.01	227.58	4,621.37	-934.85	-1,069.22	1,420.21	1.15	-1.04	1.86	155.31
	NORMAL	4,947.0	13.54	222.21	4,712.47	-951.21	-1,085.60	1,443.32	2.10	-1.56	-5.71	219.43
	NORMAL	5,039.0	12.49	221.24	4,802.11	-966.67	-1,099.39	1,463.90	1.17	-1.14	-1.05	191.28
	NORMAL	5,133.0	10.95	219.26	4,894.14	-981.22	-1,111.74	1,482.81	1.69	-1.64	-2.11	193.67
	NORMAL	5,227.0	10.11	223.91	4,986.56	-994.08	-1,123.11	1,499.85	1.27	-0.89	4.95	136.94
	NORMAL	5,321.0	9.44	222.71	5,079.20	-1,005.69	-1,134.07	1,515.75	0.74	-0.71	-1.28	196.32
	NORMAL	5,416.0	8.53	225.81	5,173.03	-1,016.32	-1,144.40	1,530.54	1.08	-0.96	3.26	153.51
	NORMAL	5,508.0	7.79	222.33	5,264.10	-1,025.69	-1,153.49	1,543.56	0.97	-0.80	-3.78	212.01
	NORMAL	5,602.0	7.12	222.47	5,357.30	-1,034.70	-1,161.72	1,555.69	0.71	-0.71	0.15	178.52
	NORMAL	5,697.0	6.42	221.51	5,451.64	-1,043.02	-1,169.21	1,566.82	0.75	-0.74	-1.01	188.71
	NORMAL	5,790.0	5.10	224.85	5,544.17	-1,049.84	-1,175.57	1,576.11	1.46	-1.42	3.59	167.41
	NORMAL	5,885.0	3.69	218.34	5,638.89	-1,055.23	-1,180.45	1,583.34	1.57	-1.48	-6.85	196.26
	NORMAL	5,980.0	1.49	276.79	5,733.80	-1,057.49	-1,183.57	1,587.17	3.34	-2.32	61.53	156.42
	NORMAL	6,075.0	1.47	201.60	5,828.78	-1,058.47	-1,185.25	1,589.08	1.90	-0.02	-79.15	231.91
	NORMAL	6,170.0	0.97	67.52	5,923.76	-1,059.30	-1,184.95	1,589.41	2.37	-0.53	-141.14	198.00
	NORMAL	6,264.0	0.26	83.34	6,017.76	-1,058.97	-1,184.01	1,588.48	0.77	-0.76	16.83	174.38
	NORMAL	6,359.0	1.41	231.09	6,112.75	-1,059.68	-1,184.70	1,589.47	1.72	1.21	155.53	152.61
7/10/2012	NORMAL	6,453.0	0.60	58.31	6,206.74	-1,060.15	-1,185.18	1,590.14	2.13	-0.86	-183.81	182.15
	NORMAL	6,548.0	0.47	62.18	6,301.74	-1,059.70	-1,184.41	1,589.28	0.14	-0.14	4.07	166.40
	NORMAL	6,643.0	0.18	208.32	6,396.74	-1,059.65	-1,184.14	1,589.04	0.66	-0.31	153.83	170.80
	NORMAL	6,738.0	0.44	206.45	6,491.74	-1,060.11	-1,184.37	1,589.52	0.27	0.27	-1.97	356.84
	NORMAL	6,832.0	1.06	217.02	6,585.73	-1,061.13	-1,185.06	1,590.70	0.67	0.66	11.24	17.90
	NORMAL	6,927.0	0.35	85.63	6,680.72	-1,061.81	-1,185.30	1,591.33	1.39	-0.75	-138.31	191.49
	NORMAL	7,020.0	0.24	151.43	6,773.72	-1,061.96	-1,184.92	1,591.15	0.36	-0.12	70.75	138.98
	NORMAL	7,115.0	0.35	270.90	6,868.72	-1,062.13	-1,185.12	1,591.41	0.54	0.12	125.76	143.53
	NORMAL	7,209.0	0.35	190.13	6,962.72	-1,062.41	-1,185.45	1,591.85	0.48	0.00	-85.93	229.62

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 (°)
7/10/2012	NORMAL	7,303.0	0.79	201.55	7,056.72	-1,063.29	-1,185.74	1,592.65	0.48	0.47	12.15	20.23
	NORMAL	7,398.0	0.88	5.38	7,151.71	-1,063.17	-1,185.91	1,592.70	1.74	0.09	172.45	171.48
	NORMAL	7,492.0	0.88	341.13	7,245.70	-1,061.77	-1,186.08	1,591.90	0.39	0.00	-25.80	257.88
	NORMAL	7,586.0	0.79	317.22	7,339.69	-1,060.61	-1,186.75	1,591.63	0.38	-0.10	-25.44	243.77
	NORMAL	7,681.0	0.79	273.40	7,434.68	-1,060.09	-1,187.85	1,592.10	0.62	0.00	-46.13	248.09
	NORMAL	7,775.0	0.35	80.03	7,528.68	-1,060.01	-1,188.22	1,592.32	1.21	-0.47	177.27	175.90
	NORMAL	7,869.0	0.26	118.76	7,622.68	-1,060.06	-1,187.75	1,592.00	0.23	-0.10	41.20	132.14
	NORMAL	7,963.0	0.35	198.83	7,716.68	-1,060.43	-1,187.65	1,592.18	0.42	0.10	85.18	120.07
	NORMAL	8,058.0	0.79	210.08	7,811.67	-1,061.27	-1,188.07	1,593.05	0.48	0.46	11.84	19.94
	NORMAL	8,152.0	1.14	237.33	7,905.66	-1,062.34	-1,189.19	1,594.59	0.60	0.37	28.99	66.82
	NORMAL	8,246.0	0.88	202.70	7,999.65	-1,063.51	-1,190.25	1,596.17	0.69	-0.28	-36.84	230.25
	NORMAL	8,340.0	0.09	187.67	8,093.64	-1,064.25	-1,190.54	1,596.87	0.84	-0.84	-15.99	181.69
	NORMAL	8,435.0	0.97	234.43	8,188.64	-1,064.79	-1,191.20	1,597.73	0.96	0.93	49.22	50.89
7/11/2012	NORMAL	8,534.0	0.44	31.31	8,287.63	-1,064.95	-1,191.69	1,598.20	1.40	-0.54	158.46	172.84
	NORMAL	8,628.0	0.44	9.86	8,381.63	-1,064.29	-1,191.44	1,597.57	0.17	0.00	-22.82	259.28
	NORMAL	8,723.0	0.97	290.24	8,476.63	-1,063.65	-1,192.13	1,597.66	1.04	0.56	-83.81	254.47
	NORMAL	8,817.0	1.58	345.08	8,570.61	-1,062.12	-1,193.21	1,597.45	1.38	0.65	58.34	92.66
	NORMAL	8,911.0	2.17	29.57	8,664.56	-1,059.32	-1,192.67	1,595.19	1.62	0.63	47.33	91.19
	NORMAL	9,006.0	1.76		8,759.51	-1,056.30	-1,191.78	1,592.51	1.13	-0.43	-31.13	233.65
	NORMAL	9,100.0	0.97	73.85	8,853.48	-1,054.64	-1,191.01	1,590.83	1.87	-0.84	78.56	147.98
7/12/2012	NORMAL	9,194.0	0.44	98.99	8,947.48	-1,054.47	-1,189.89	1,589.89	0.64	-0.56	26.74	161.89
	NORMAL	9,288.0	0.26	81.32	9,041.48	-1,054.50	-1,189.33	1,589.48	0.22	-0.19	-18.80	202.32
	NORMAL	9,382.0	0.26	73.06	9,135.47	-1,054.40	-1,188.91	1,589.11	0.04	0.00	-8.79	265.87
	NORMAL	9,477.0	0.18	278.28	9,230.47	-1,054.32	-1,188.85	1,589.01	0.45	-0.08	-162.93	190.28
	NORMAL	9,571.0	0.79	239.26	9,324.47	-1,054.63	-1,189.56	1,589.74	0.70	0.65	-41.51	311.09
	NORMAL	9,665.0	1.49	253.94	9,418.45	-1,055.30	-1,191.29	1,591.48	0.80	0.74	15.62	30.10
	NORMAL	9,759.0	1.49	255.08	9,512.42	-1,055.95	-1,193.64	1,593.67	0.03	0.00	1.21	90.57
	NORMAL	9,854.0	1.93	258.51	9,607.38	-1,056.59	-1,196.40	1,596.15	0.48	0.46	3.61	14.81
	NORMAL	9,948.0	1.49	251.56	9,701.34	-1,057.29	-1,199.11	1,598.65	0.52	-0.47	-7.39	201.79
	NORMAL	10,042.0	2.20	255.96	9,795.29	-1,058.11	-1,202.02	1,601.37	0.77	0.76	4.68	13.49
	NORMAL	10,136.0	2.02	248.93	9,889.22	-1,059.14	-1,205.32	1,604.52	0.34	-0.19	-7.48	231.71
	NORMAL	10,230.0	0.68	238.08	9,983.19	-1,060.04	-1,207.34	1,606.62	1.44	-1.43	-11.54	185.41
	NORMAL	10,324.0	0.62	229.50	10,077.19	-1,060.66	-1,208.20	1,607.67	0.12	-0.06	-9.13	234.11
	NORMAL	10,384.0	0.00	50.47	10,137.19	-1,060.87	-1,208.45	1,608.00	1.03	-1.03	0.00	180.00
	NORMAL	10,431.0	0.00	50.47	10,184.19	-1,060.87	-1,208.45	1,608.00	0.00	0.00	0.00	50.47

3 Charts

3.1 Vertical Section View



3.2 Plan View

