

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	PA 323-4	Wellbore No.	OH
Well Name	PA 323-4	Common Name	PA 323-4
Project	PA 04-07S-095W	Site	GV 80-4 Pad
Vertical Section Azimuth	18.42 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	2/7/2013	UWI	PA 323-4
Active Datum	KB @5,612.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	2/7/2013	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

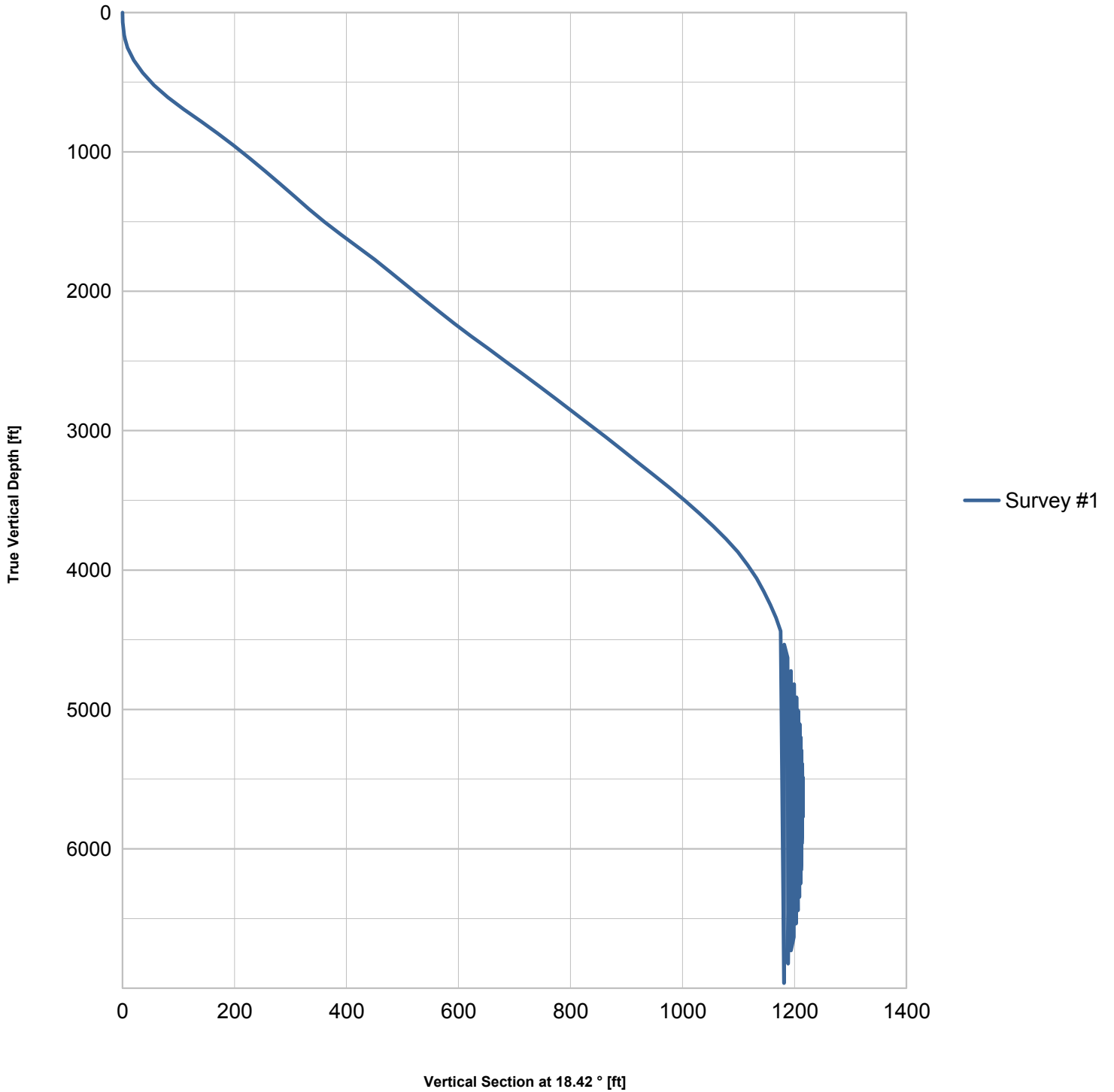
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
2/7/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/7/2013	NORMAL	72.0	0.88	10.11	72.00	0.54	0.10	0.55	1.22	1.22	0.00	10.11
	NORMAL	162.0	2.46	16.63	161.96	3.08	0.77	3.16	1.77	1.76	7.24	10.12
	NORMAL	193.0	3.34	21.09	192.92	4.56	1.29	4.73	2.93	2.84	14.39	16.62
	NORMAL	253.0	5.45	17.25	252.74	8.91	2.76	9.32	3.55	3.52	-6.40	350.14
	NORMAL	344.0	8.45	19.86	343.06	19.33	6.31	20.33	3.31	3.30	2.87	7.31
	NORMAL	435.0	11.61	19.16	432.66	34.27	11.59	36.17	3.48	3.47	-0.77	357.45
	NORMAL	526.0	14.16	21.27	521.36	53.29	18.64	56.45	2.85	2.80	2.32	11.49
	NORMAL	616.0	17.16	21.17	608.01	75.94	27.43	80.71	3.33	3.33	-0.11	359.44
	NORMAL	707.0	19.35	18.54	694.42	102.75	37.07	109.20	2.57	2.41	-2.89	338.13
2/8/2013	NORMAL	800.0	19.82	19.60	782.04	132.21	47.26	140.37	0.63	0.51	1.14	37.59
	NORMAL	890.0	18.86	18.72	866.96	160.37	57.05	170.17	1.11	-1.07	-0.98	196.47
	NORMAL	982.0	17.23	19.07	954.44	187.33	66.27	198.67	1.78	-1.77	0.38	176.36
	NORMAL	1,077.0	17.23	17.93	1,045.17	214.01	75.20	226.81	0.36	0.00	-1.20	269.46
	NORMAL	1,173.0	16.44	19.07	1,137.06	240.38	84.01	254.61	0.89	-0.82	1.19	157.86
	NORMAL	1,268.0	16.22	19.51	1,228.22	265.59	92.84	281.32	0.27	-0.23	0.46	150.86
	NORMAL	1,363.0	15.69	18.55	1,319.57	290.28	101.36	307.43	0.62	-0.56	-1.01	206.01
	NORMAL	1,458.0	16.13	22.50	1,410.93	314.65	110.49	333.44	1.23	0.46	4.16	69.79
	NORMAL	1,553.0	17.50	21.10	1,501.86	340.17	120.68	360.87	1.50	1.44	-1.47	342.86
	NORMAL	1,649.0	18.33	22.85	1,593.21	367.54	131.74	390.34	1.03	0.86	1.82	33.80
	NORMAL	1,744.0	18.90	19.95	1,683.24	395.77	142.79	420.62	1.14	0.60	-3.05	300.24

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 (°)
2/8/2013	NORMAL	1,839.0	17.80	17.14	1,773.41	424.11	152.32	450.51	1.49	-1.16	-2.96	217.48
	NORMAL	1,935.0	17.10	18.99	1,864.99	451.48	161.24	479.30	0.93	-0.73	1.93	142.48
	NORMAL	2,031.0	16.66	17.49	1,956.86	477.95	169.97	507.17	0.64	-0.46	-1.56	223.99
	NORMAL	2,126.0	17.58	20.31	2,047.65	504.40	179.04	535.13	1.30	0.97	2.97	43.41
	NORMAL	2,222.0	16.97	19.60	2,139.32	531.19	188.77	563.62	0.67	-0.64	-0.74	198.73
	NORMAL	2,317.0	17.93	20.83	2,229.95	557.92	198.62	592.10	1.08	1.01	1.29	21.61
	NORMAL	2,413.0	18.90	20.92	2,321.03	586.25	209.43	622.39	1.01	1.01	0.09	1.72
2/9/2013	NORMAL	2,508.0	18.77	22.50	2,410.94	614.75	220.77	653.01	0.55	-0.14	1.66	105.04
	NORMAL	2,604.0	18.68	19.51	2,501.86	643.51	231.82	683.79	1.00	-0.09	-3.11	263.23
	NORMAL	2,699.0	18.64	21.45	2,591.87	671.98	242.45	714.16	0.65	-0.04	2.04	94.61
	NORMAL	2,795.0	18.42	17.32	2,682.90	700.74	252.58	744.65	1.39	-0.23	-4.30	258.53
	NORMAL	2,891.0	18.24	18.99	2,774.03	729.42	261.98	774.83	0.58	-0.19	1.74	109.71
	NORMAL	2,986.0	18.02	17.76	2,864.31	757.48	271.30	804.39	0.46	-0.23	-1.29	239.53
	NORMAL	3,082.0	17.85	17.84	2,955.65	785.62	280.34	833.95	0.18	-0.18	0.08	171.79
	NORMAL	3,177.0	17.80	15.91	3,046.09	813.45	288.78	863.02	0.62	-0.05	-2.03	264.24
	NORMAL	3,273.0	17.19	16.00	3,137.64	841.20	296.71	891.85	0.64	-0.64	0.09	177.50
	NORMAL	3,368.0	17.58	17.41	3,228.31	868.38	304.88	920.22	0.60	0.41	1.48	47.88
	NORMAL	3,463.0	17.50	18.99	3,318.89	895.58	313.82	948.85	0.51	-0.08	1.66	100.29
	NORMAL	3,559.0	16.97	17.05	3,410.58	922.62	322.62	977.29	0.81	-0.55	-2.02	226.40
	NORMAL	3,654.0	16.18	19.16	3,501.63	948.38	331.03	1,004.39	1.05	-0.83	2.22	143.70
	NORMAL	3,750.0	15.56	22.50	3,593.97	972.91	340.35	1,030.60	1.15	-0.65	3.48	125.77
	NORMAL	3,845.0	14.42	22.15	3,685.74	995.64	349.68	1,055.12	1.20	-1.20	-0.37	184.37
	NORMAL	3,939.0	13.54	18.90	3,776.96	1,016.89	357.66	1,077.80	1.25	-0.94	-3.46	220.17
	NORMAL	4,035.0	11.60	19.25	3,870.65	1,036.63	364.48	1,098.69	2.02	-2.02	0.36	177.92
	NORMAL	4,130.0	10.20	21.45	3,963.93	1,053.48	370.71	1,116.64	1.54	-1.47	2.32	164.53
	NORMAL	4,226.0	8.40	19.60	4,058.67	1,068.00	376.17	1,132.14	1.90	-1.88	-1.93	188.52
	NORMAL	4,322.0	7.30	19.60	4,153.77	1,080.35	380.57	1,145.25	1.15	-1.15	0.00	180.00
	NORMAL	4,417.0	6.64	21.01	4,248.07	1,091.16	384.56	1,156.77	0.72	-0.69	1.48	166.17
	NORMAL	4,512.0	5.89	16.44	4,342.50	1,100.97	387.91	1,167.13	0.95	-0.79	-4.81	211.36
	NORMAL	4,608.0	3.91	16.17	4,438.14	1,108.84	390.22	1,175.33	2.06	-2.06	-0.28	180.53
	NORMAL	4,704.0	3.69	13.71	4,533.93	1,114.98	391.86	1,181.68	0.29	-0.23	-2.56	215.32
	NORMAL	4,799.0	3.56	13.63	4,628.74	1,120.82	393.28	1,187.66	0.14	-0.14	-0.08	182.19
2/10/2013	NORMAL	4,894.0	3.60	13.45	4,723.56	1,126.58	394.67	1,193.57	0.04	0.04	-0.19	344.22
	NORMAL	4,989.0	3.17	12.75	4,818.39	1,132.05	395.94	1,199.16	0.45	-0.45	-0.74	185.14
	NORMAL	5,084.0	2.02	24.17	4,913.29	1,136.14	397.21	1,203.44	1.32	-1.21	12.02	161.42
	NORMAL	5,179.0	1.67	25.31	5,008.24	1,138.92	398.49	1,206.48	0.37	-0.37	1.20	174.58
	NORMAL	5,275.0	1.58	18.90	5,104.20	1,141.43	399.51	1,209.19	0.21	-0.09	-6.68	240.48
	NORMAL	5,370.0	1.10	50.10	5,199.18	1,143.26	400.64	1,211.28	0.90	-0.51	32.84	138.28
	NORMAL	5,465.0	0.79	26.11	5,294.17	1,144.43	401.62	1,212.70	0.52	-0.33	-25.25	220.34
	NORMAL	5,561.0	0.83	31.29	5,390.16	1,145.62	402.28	1,214.03	0.09	0.04	5.40	63.96
	NORMAL	5,656.0	0.18	6.07	5,485.15	1,146.35	402.65	1,214.85	0.71	-0.68	-26.55	186.56
2/11/2013	NORMAL	5,753.0	0.31	89.92	5,582.15	1,146.51	402.93	1,215.08	0.35	0.13	86.44	115.47
	NORMAL	5,848.0	0.31	133.07	5,677.15	1,146.33	403.37	1,215.06	0.24	0.00	45.42	111.57
	NORMAL	5,944.0	0.44	187.21	5,773.15	1,145.79	403.52	1,214.59	0.38	0.14	56.40	98.33
	NORMAL	6,039.0	0.44	195.30	5,868.15	1,145.07	403.37	1,213.86	0.07	0.00	8.52	94.04
	NORMAL	6,135.0	0.31	219.46	5,964.14	1,144.52	403.11	1,213.25	0.21	-0.14	25.17	141.08
	NORMAL	6,231.0	0.44	189.06	6,060.14	1,143.95	402.89	1,212.65	0.24	0.14	-31.67	287.34
	NORMAL	6,326.0	0.57	185.01	6,155.14	1,143.12	402.79	1,211.83	0.14	0.14	-4.26	342.61
	NORMAL	6,421.0	0.70	207.51	6,250.13	1,142.14	402.48	1,210.80	0.29	0.14	23.68	74.02
	NORMAL	6,517.0	1.54	187.30	6,346.11	1,140.34	402.05	1,208.95	0.95	0.88	-21.05	324.48
	NORMAL	6,613.0	1.80	199.95	6,442.07	1,137.64	401.37	1,206.18	0.47	0.27	13.18	61.24
	NORMAL	6,708.0	2.15	206.46	6,537.02	1,134.64	400.06	1,202.92	0.44	0.37	6.85	35.94
	NORMAL	6,804.0	2.77	205.58	6,632.93	1,130.94	398.26	1,198.84	0.65	0.65	-0.92	356.07
	NORMAL	6,900.0	3.12	202.85	6,728.80	1,126.44	396.24	1,193.93	0.39	0.36	-2.84	336.79
	NORMAL	6,995.0	3.17	206.81	6,823.66	1,121.71	394.06	1,188.76	0.23	0.05	4.17	79.02
	NORMAL	7,135.0	3.17	206.81	6,963.44	1,114.80	390.56	1,181.10	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

