

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	PA 11-27	Wellbore No.	OH
Well Name	PA 11-27	Common Name	PA 11-27
Project	PA 27-06S-095W	Site	DOE 1-W-27 Pad
Vertical Section Azimuth	339.88 (°)	North Reference	
Origin N/S		Origin E/W	
Spud Date	9/12/2013	UWI	PA 11-27
Active Datum	KB @5,866.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	MOSTAR
Date Started	9/12/2013	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 (°)
9/12/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/12/2013	NORMAL	104.0	1.14	340.58	103.99	0.98	-0.34	1.03	1.10	1.10	0.00	340.58
	NORMAL	135.0	1.50	334.69	134.98	1.63	-0.62	1.75	1.24	1.16	-19.00	336.39
	NORMAL	165.0	2.02	325.37	164.97	2.42	-1.09	2.65	1.97	1.73	-31.07	326.46
	NORMAL	195.0	1.76	4.22	194.96	3.32	-1.35	3.58	4.27	-0.87	129.50	120.45
	NORMAL	225.0	1.50	5.27	224.94	4.17	-1.28	4.36	0.87	-0.87	3.50	173.97
	NORMAL	256.0	2.46	11.43	255.92	5.22	-1.12	5.29	3.17	3.10	19.87	15.59
	NORMAL	286.0	3.34	353.50	285.89	6.72	-1.09	6.69	4.18	2.93	-59.77	304.94
	NORMAL	316.0	4.31	355.61	315.82	8.72	-1.27	8.62	3.27	3.23	7.03	9.31
	NORMAL	346.0	5.63	348.75	345.71	11.28	-1.65	11.16	4.82	4.40	-22.87	332.32
	NORMAL	376.0	6.60	343.21	375.54	14.38	-2.43	14.34	3.78	3.23	-18.47	325.91
	NORMAL	406.0	8.01	339.17	405.29	17.98	-3.67	18.15	5.00	4.70	-13.47	337.97
	NORMAL	437.0	9.24	337.94	435.94	22.31	-5.38	22.80	4.01	3.97	-3.97	350.86
	NORMAL	498.0	11.44	336.36	495.95	32.39	-9.64	33.73	3.64	3.61	-2.59	351.88
	NORMAL	528.0	12.32	335.57	525.30	38.03	-12.16	39.89	2.98	2.93	-2.63	349.14
	NORMAL	619.0	15.48	337.50	613.63	58.09	-20.82	61.71	3.51	3.47	2.12	9.29
9/13/2013	NORMAL	709.0	16.98	341.54	700.04	81.66	-29.58	86.85	2.09	1.67	4.49	38.92
	NORMAL	800.0	21.03	342.07	786.06	109.81	-38.82	116.46	4.45	4.45	0.58	2.69
	NORMAL	890.0	22.52	340.40	869.64	141.41	-49.57	149.83	1.79	1.66	-1.86	336.65
	NORMAL	980.0	21.73	334.78	953.02	172.72	-62.45	183.67	2.51	-0.88	-6.24	246.94
	NORMAL	1,060.0	22.59	333.76	1,027.11	199.90	-75.56	213.70	1.18	1.08	-1.28	335.42

2.1.2 Survey Stations (Continued)

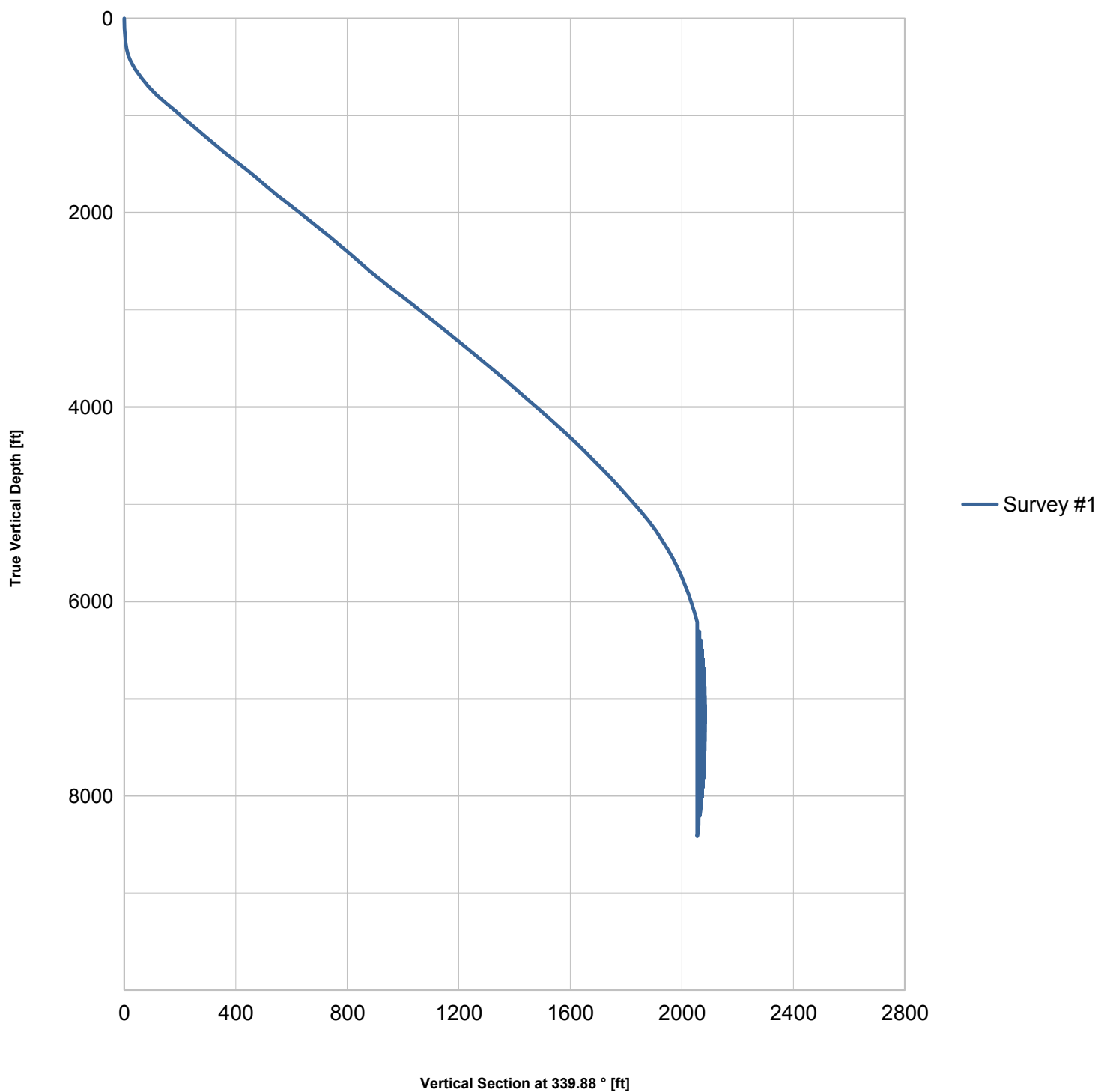
Date	Type	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (°/100ft)	Build Rate (°/100ft)	Turn (°/100ft)	TFace (°)
9/13/2013	NORMAL	1,155.0	22.68	338.86	1,114.80	233.36	-90.23	250.15	2.07	0.09	5.37	89.73
	NORMAL	1,250.0	22.15	342.55	1,202.63	267.53	-102.21	286.36	1.58	-0.56	3.88	112.34
	NORMAL	1,346.0	22.73	342.46	1,291.36	302.47	-113.23	322.96	0.61	0.60	-0.09	356.57
	NORMAL	1,441.0	23.60	342.99	1,378.70	338.16	-124.32	360.29	0.94	0.92	0.56	13.72
	NORMAL	1,536.0	23.82	341.32	1,465.68	374.52	-136.03	398.45	0.74	0.23	-1.76	287.37
	NORMAL	1,631.0	24.22	340.88	1,552.46	411.10	-148.55	437.12	0.46	0.42	-0.46	335.68
	NORMAL	1,727.0	22.02	337.98	1,640.74	446.40	-161.75	474.80	2.58	-2.29	-3.02	206.04
	NORMAL	1,822.0	22.37	339.83	1,728.70	479.88	-174.66	510.68	0.82	0.37	1.95	64.26
	NORMAL	1,917.0	23.43	338.60	1,816.22	514.43	-187.79	547.64	1.22	1.12	-1.29	335.13
	NORMAL	2,013.0	25.10	339.74	1,903.73	551.31	-201.81	587.08	1.81	1.74	1.19	16.19
	NORMAL	2,109.0	22.95	338.60	1,991.41	587.84	-215.69	626.16	2.29	-2.24	-1.19	191.66
9/14/2013	NORMAL	2,204.0	23.34	338.95	2,078.76	622.65	-229.21	663.49	0.44	0.41	0.37	19.59
	NORMAL	2,299.0	24.61	341.85	2,165.57	659.01	-242.13	702.08	1.82	1.34	3.05	44.19
	NORMAL	2,394.0	22.33	339.83	2,252.71	694.75	-254.51	739.90	2.54	-2.40	-2.13	198.51
	NORMAL	2,488.0	22.77	339.83	2,339.52	728.59	-266.94	775.95	0.47	0.47	0.00	0.00
	NORMAL	2,583.0	21.23	340.26	2,427.60	762.04	-279.09	811.54	1.63	-1.62	0.45	174.23
	NORMAL	2,678.0	22.07	340.44	2,515.90	795.05	-290.88	846.59	0.89	0.88	0.19	4.60
	NORMAL	2,773.0	22.42	341.23	2,603.83	829.02	-302.68	882.54	0.48	0.37	0.83	40.88
	NORMAL	2,869.0	24.00	339.56	2,692.05	864.65	-315.39	920.37	1.78	1.65	-1.74	336.62
9/16/2013	NORMAL	2,965.0	24.40	340.09	2,779.62	901.59	-328.96	959.72	0.47	0.42	0.55	28.75
	NORMAL	3,061.0	24.79	338.95	2,866.91	939.01	-342.94	999.68	0.64	0.41	-1.19	308.90
	NORMAL	3,156.0	23.91	337.98	2,953.46	975.45	-357.32	1,038.83	1.02	-0.93	-1.02	204.00
	NORMAL	3,251.0	23.74	338.51	3,040.36	1,011.09	-371.54	1,077.19	0.29	-0.18	0.56	128.69
	NORMAL	3,346.0	23.30	340.79	3,127.47	1,046.63	-384.73	1,115.10	1.06	-0.46	2.40	116.85
	NORMAL	3,442.0	23.52	341.67	3,215.57	1,082.74	-397.00	1,153.23	0.43	0.23	0.92	58.22
	NORMAL	3,538.0	23.12	338.07	3,303.73	1,118.41	-410.06	1,191.21	1.54	-0.42	-3.75	252.67
	NORMAL	3,633.0	23.03	336.93	3,391.13	1,152.81	-424.31	1,228.41	0.48	-0.09	-1.20	258.09
	NORMAL	3,728.0	23.16	336.75	3,478.52	1,187.07	-438.97	1,265.62	0.16	0.14	-0.19	331.41
	NORMAL	3,824.0	23.03	334.99	3,566.82	1,221.43	-454.36	1,303.18	0.73	-0.14	-1.83	258.53
	NORMAL	3,919.0	22.24	337.63	3,654.51	1,254.90	-469.06	1,339.67	1.35	-0.83	2.78	129.08
	NORMAL	4,014.0	21.85	339.65	3,742.56	1,288.10	-482.05	1,375.31	0.90	-0.41	2.13	118.15
	NORMAL	4,110.0	21.80	338.68	3,831.68	1,321.45	-494.74	1,411.00	0.38	-0.05	-1.01	261.66
	NORMAL	4,205.0	21.93	342.43	3,919.85	1,354.80	-506.51	1,446.36	1.48	0.14	3.95	86.42
	NORMAL	4,301.0	21.80	341.32	4,008.95	1,388.78	-517.63	1,482.08	0.45	-0.14	-1.16	252.03
	NORMAL	4,396.0	21.67	340.35	4,097.19	1,422.01	-529.18	1,517.26	0.40	-0.14	-1.02	249.65
	NORMAL	4,492.0	21.06	339.30	4,186.60	1,454.83	-541.24	1,552.23	0.75	-0.64	-1.09	211.60
	NORMAL	4,587.0	20.84	337.80	4,275.32	1,486.45	-553.65	1,586.19	0.61	-0.23	-1.58	247.00
	NORMAL	4,682.0	19.96	337.63	4,364.36	1,517.09	-566.21	1,619.28	0.93	-0.93	-0.18	183.77
	NORMAL	4,778.0	19.16	335.69	4,454.82	1,546.60	-578.93	1,651.36	1.07	-0.83	-2.02	218.16
	NORMAL	4,873.0	19.16	339.74	4,544.56	1,575.43	-590.75	1,682.50	1.40	0.00	4.26	91.91
	NORMAL	4,968.0	19.08	338.95	4,634.32	1,604.55	-601.73	1,713.62	0.29	-0.08	-0.83	252.45
	NORMAL	5,063.0	18.24	337.19	4,724.33	1,632.75	-613.07	1,743.99	1.06	-0.88	-1.85	213.01
	NORMAL	5,158.0	17.54	334.90	4,814.73	1,659.41	-624.90	1,773.11	1.04	-0.74	-2.41	224.06
	NORMAL	5,254.0	17.45	342.11	4,906.30	1,686.22	-635.46	1,801.90	2.26	-0.09	7.51	95.81
	NORMAL	5,349.0	17.54	340.44	4,996.91	1,713.26	-644.63	1,830.45	0.54	0.09	-1.76	279.37
9/17/2013	NORMAL	5,444.0	15.74	342.37	5,087.93	1,739.03	-653.33	1,857.64	1.98	-1.89	2.03	163.85
	NORMAL	5,539.0	15.52	340.44	5,179.42	1,763.29	-661.48	1,883.22	0.59	-0.23	-2.03	246.14
	NORMAL	5,635.0	13.23	339.39	5,272.40	1,785.68	-669.65	1,907.06	2.40	-2.39	-1.09	185.99
	NORMAL	5,730.0	12.31	337.54	5,365.05	1,805.21	-677.35	1,928.05	1.06	-0.97	-1.95	203.06
	NORMAL	5,825.0	11.60	336.49	5,457.99	1,823.33	-685.03	1,947.70	0.78	-0.75	-1.11	196.52
	NORMAL	5,920.0	11.03	333.58	5,551.15	1,840.23	-692.88	1,966.27	0.85	-0.60	-3.06	223.63
	NORMAL	6,015.0	9.58	334.64	5,644.61	1,855.51	-700.31	1,983.17	1.54	-1.53	1.12	173.07
	NORMAL	6,111.0	8.40	336.13	5,739.43	1,869.14	-706.57	1,998.13	1.25	-1.23	1.55	169.57
	NORMAL	6,206.0	8.13	347.56	5,833.45	1,882.05	-710.83	2,011.71	1.75	-0.28	12.03	104.96
	NORMAL	6,301.0	7.12	344.48	5,927.61	1,894.28	-713.85	2,024.23	1.15	-1.06	-3.24	200.51
	NORMAL	6,396.0	6.37	339.39	6,021.95	1,904.88	-717.28	2,035.37	1.01	-0.79	-5.36	216.05
	NORMAL	6,491.0	6.07	346.42	6,116.39	1,914.70	-720.31	2,045.63	0.86	-0.32	7.40	114.97

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 (°)
9/17/2013	NORMAL	6,587.0	5.32	353.27	6,211.92	1,924.05	-722.03	2,055.00	1.05	-0.78	7.14	141.19
	NORMAL	6,682.0	4.92	8.13	6,306.55	1,932.46	-721.97	2,062.88	1.45	-0.42	15.64	114.10
9/18/2013	NORMAL	6,777.0	3.74	12.17	6,401.27	1,939.52	-720.74	2,069.09	1.28	-1.24	4.25	167.51
	NORMAL	6,872.0	3.12	36.25	6,496.11	1,944.64	-718.56	2,073.14	1.64	-0.65	25.35	125.00
	NORMAL	6,967.0	2.64	30.89	6,590.99	1,948.60	-715.90	2,075.95	0.58	-0.51	-5.64	206.64
	NORMAL	7,062.0	3.08	35.81	6,685.87	1,952.55	-713.29	2,078.75	0.53	0.46	5.18	31.63
9/19/2013	NORMAL	7,157.0	3.52	54.62	6,780.71	1,956.30	-709.42	2,080.95	1.22	0.46	19.80	77.45
	NORMAL	7,253.0	2.77	65.69	6,876.57	1,958.97	-704.90	2,081.89	1.00	-0.78	11.53	146.44
	NORMAL	7,345.0	2.46	70.09	6,968.47	1,960.55	-701.02	2,082.05	0.40	-0.34	4.78	149.26
	NORMAL	7,440.0	2.07	80.11	7,063.40	1,961.54	-697.41	2,081.74	0.58	-0.41	10.55	139.50
	NORMAL	7,535.0	1.98	67.54	7,158.34	1,962.46	-694.20	2,081.50	0.48	-0.09	-13.23	252.31
	NORMAL	7,630.0	2.42	61.48	7,253.27	1,964.05	-690.92	2,081.86	0.52	0.46	-6.38	329.08
	NORMAL	7,725.0	1.71	68.51	7,348.21	1,965.53	-687.84	2,082.19	0.79	-0.75	7.40	163.85
	NORMAL	7,821.0	1.41	79.14	7,444.17	1,966.27	-685.35	2,082.03	0.43	-0.31	11.07	141.26
	NORMAL	7,916.0	0.92	94.44	7,539.15	1,966.43	-683.44	2,081.53	0.61	-0.52	16.11	155.08
	NORMAL	8,011.0	0.88	134.60	7,634.14	1,965.86	-682.16	2,080.55	0.65	-0.04	42.27	113.56
9/20/2013	NORMAL	8,106.0	0.97	160.35	7,729.13	1,964.59	-681.37	2,079.09	0.44	0.09	27.11	90.86
	NORMAL	8,202.0	1.14	183.56	7,825.11	1,962.87	-681.16	2,077.40	0.47	0.18	24.18	80.18
	NORMAL	8,297.0	2.02	187.60	7,920.08	1,960.27	-681.44	2,075.05	0.93	0.93	4.25	9.24
	NORMAL	8,392.0	2.20	193.31	8,015.01	1,956.84	-682.08	2,072.05	0.29	0.19	6.01	52.31
	NORMAL	8,488.0	2.50	191.38	8,110.93	1,952.99	-682.92	2,068.72	0.32	0.31	-2.01	344.26
	NORMAL	8,583.0	3.21	196.48	8,205.81	1,948.41	-684.08	2,064.82	0.79	0.75	5.37	22.25
9/21/2013	NORMAL	8,678.0	3.60	205.71	8,300.65	1,943.17	-686.13	2,060.61	0.71	0.41	9.72	59.24
	NORMAL	8,750.0	3.87	207.11	8,372.49	1,938.97	-688.22	2,057.38	0.40	0.38	1.94	19.36
	NORMAL	8,795.0	3.87	207.11	8,417.39	1,936.27	-689.60	2,055.32	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

