

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	RU 341-5	Wellbore No.	00
Wellbore Legal Name	RU 341-5	Common Wellbore Name	RU 341-5
Project	RU 05-07S-093W	Site	RU 23-5 Pad
Vertical Section Azimuth	107.21 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	10/29/2013	UWI	RU 341-5
Active datum	KB @7,627.0ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	10/29/2013	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 (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
10/29/2013	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/29/2013	NORMAL	96.0	0.70	100.37	96.00	-0.11	0.58	0.58	0.73	0.73	0.00	100.37
	NORMAL	176.0	4.05	113.12	175.92	-1.30	3.66	3.88	4.21	4.19	15.94	15.37
	NORMAL	268.0	6.42	103.89	267.53	-3.81	11.64	12.25	2.73	2.58	-10.03	335.80
	NORMAL	360.0	8.89	106.26	358.70	-7.04	23.46	24.49	2.71	2.68	2.58	8.46
10/30/2013	NORMAL	452.0	11.52	105.91	449.24	-11.55	39.12	40.79	2.86	2.86	-0.38	358.48
	NORMAL	544.0	15.04	103.97	538.77	-16.95	59.55	61.89	3.86	3.83	-2.11	351.84
	NORMAL	635.0	17.33	105.82	626.15	-23.50	84.05	87.24	2.58	2.52	2.03	13.58
	NORMAL	707.0	18.05	103.92	694.75	-29.10	105.19	109.09	1.28	1.00	-2.64	320.37
	NORMAL	800.0	19.66	102.83	782.76	-36.04	134.43	139.08	1.77	1.73	-1.17	347.14
	NORMAL	892.0	20.55	107.26	869.16	-44.27	164.94	170.66	1.92	0.97	4.82	61.79
	NORMAL	984.0	21.10	109.71	955.15	-54.65	195.95	203.35	1.12	0.60	2.66	58.88
	NORMAL	1,075.0	19.59	110.25	1,040.47	-65.45	225.69	234.95	1.67	-1.66	0.59	173.17
	NORMAL	1,103.0	19.96	110.76	1,066.82	-68.77	234.56	244.41	1.46	1.32	1.82	25.24
10/31/2013	NORMAL	1,170.0	20.75	110.67	1,129.63	-77.02	256.36	267.67	1.18	1.18	-0.13	357.69
	NORMAL	1,266.0	20.93	111.64	1,219.35	-89.34	288.21	301.74	0.41	0.19	1.01	62.91
	NORMAL	1,361.0	21.28	111.55	1,307.98	-101.93	320.02	335.85	0.37	0.37	-0.09	354.67
	NORMAL	1,456.0	21.28	111.38	1,396.50	-114.55	352.10	370.23	0.06	0.00	-0.18	269.92
	NORMAL	1,551.0	20.05	107.68	1,485.39	-125.78	383.67	403.71	1.89	-1.29	-3.89	224.99
	NORMAL	1,646.0	20.13	106.88	1,574.61	-135.47	414.83	436.34	0.30	0.08	-0.84	285.86
	NORMAL	1,741.0	18.82	103.99	1,664.18	-143.92	445.35	467.99	1.71	-1.38	-3.04	214.98

2.1.2 Survey Stations (Continued)

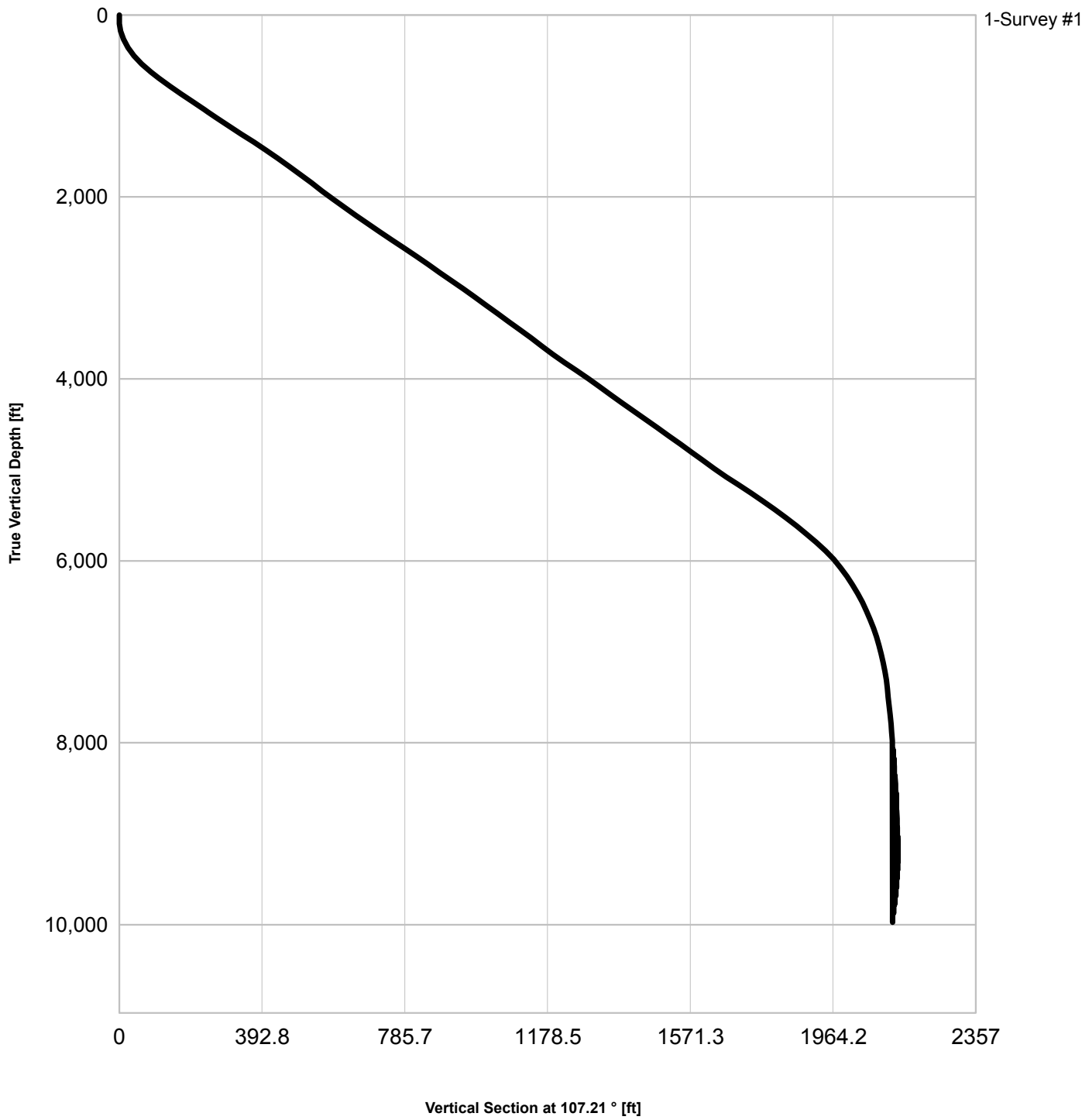
Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
10/31/2013	NORMAL	1,836.0	18.74	104.06	1,754.12	-151.34	475.02	498.53	0.09	-0.08	0.07	164.30
	NORMAL	1,931.0	18.41	104.87	1,844.17	-158.89	504.32	528.75	0.44	-0.35	0.85	142.36
	NORMAL	2,027.0	17.94	105.41	1,935.38	-166.71	533.23	558.68	0.52	-0.49	0.56	160.54
	NORMAL	2,123.0	18.91	104.78	2,026.46	-174.61	562.52	589.00	1.03	1.01	-0.66	348.10
	NORMAL	2,218.0	19.70	106.28	2,116.12	-183.03	592.78	620.39	0.98	0.83	1.58	32.83
	NORMAL	2,312.0	19.61	106.98	2,204.64	-192.07	623.07	652.00	0.27	-0.10	0.74	111.25
	NORMAL	2,408.0	19.52	106.75	2,295.10	-201.40	653.84	684.15	0.12	-0.09	-0.24	220.45
	NORMAL	2,504.0	20.85	105.81	2,385.20	-210.68	685.63	717.27	1.43	1.39	-0.98	345.85
11/1/2013	NORMAL	2,598.0	20.87	105.16	2,473.04	-219.61	717.89	750.73	0.25	0.02	-0.69	274.63
	NORMAL	2,694.0	20.77	106.03	2,562.77	-228.79	750.76	784.83	0.34	-0.10	0.91	108.33
	NORMAL	2,790.0	20.06	105.51	2,652.74	-237.89	782.98	818.31	0.76	-0.74	-0.54	194.09
	NORMAL	2,885.0	19.68	106.26	2,742.09	-246.73	814.04	850.59	0.48	-0.40	0.79	146.50
	NORMAL	2,980.0	19.16	106.04	2,831.68	-255.51	844.38	882.17	0.55	-0.55	-0.23	187.90
	NORMAL	3,076.0	20.22	105.68	2,922.07	-264.35	875.49	914.51	1.11	1.10	-0.38	353.30
	NORMAL	3,172.0	19.61	106.72	3,012.33	-273.47	906.89	947.20	0.73	-0.64	1.08	150.34
	NORMAL	3,267.0	19.26	106.54	3,101.91	-282.51	937.18	978.81	0.37	-0.37	-0.19	189.63
	NORMAL	3,362.0	18.76	105.81	3,191.73	-291.14	966.90	1,009.75	0.58	-0.53	-0.77	205.09
	NORMAL	3,457.0	19.30	110.46	3,281.55	-300.79	996.31	1,040.70	1.69	0.57	4.89	72.60
	NORMAL	3,553.0	19.15	111.10	3,372.19	-312.00	1,025.86	1,072.24	0.27	-0.16	0.67	125.74
	NORMAL	3,648.0	18.94	110.16	3,461.99	-322.92	1,054.87	1,103.19	0.39	-0.22	-0.99	235.16
	NORMAL	3,741.0	18.73	110.85	3,550.01	-333.44	1,083.00	1,133.16	0.33	-0.23	0.74	133.64
	NORMAL	3,837.0	18.20	110.23	3,641.07	-344.11	1,111.47	1,163.52	0.59	-0.55	-0.65	200.04
	NORMAL	3,931.0	19.07	109.76	3,730.14	-354.38	1,139.69	1,193.52	0.94	0.93	-0.50	349.98
	NORMAL	4,026.0	20.43	106.36	3,819.55	-364.30	1,170.21	1,225.60	1.87	1.43	-3.58	318.20
	NORMAL	4,121.0	20.04	106.23	3,908.69	-373.52	1,201.75	1,258.46	0.41	-0.41	-0.14	186.52
	NORMAL	4,216.0	19.47	106.73	3,998.10	-382.62	1,232.54	1,290.56	0.63	-0.60	0.53	163.72
	NORMAL	4,311.0	19.06	107.87	4,087.78	-391.94	1,262.46	1,321.91	0.59	-0.43	1.20	138.00
	NORMAL	4,406.0	18.92	107.40	4,177.61	-401.31	1,291.93	1,352.82	0.22	-0.15	-0.49	227.31
	NORMAL	4,501.0	19.95	108.24	4,267.20	-410.98	1,322.02	1,384.42	1.12	1.08	0.88	15.58
	NORMAL	4,596.0	19.61	107.77	4,356.59	-420.92	1,352.59	1,416.57	0.40	-0.36	-0.49	204.85
	NORMAL	4,691.0	19.70	106.72	4,446.06	-430.39	1,383.11	1,448.52	0.38	0.09	-1.11	283.80
	NORMAL	4,786.0	19.08	107.68	4,535.67	-439.72	1,413.24	1,480.06	0.73	-0.65	1.01	153.25
	NORMAL	4,882.0	19.99	106.29	4,626.14	-449.09	1,443.94	1,512.16	1.06	0.95	-1.45	332.29
11/2/2013	NORMAL	4,977.0	19.35	106.45	4,715.60	-458.10	1,474.62	1,544.13	0.68	-0.67	0.17	175.27
	NORMAL	5,073.0	18.53	105.60	4,806.40	-466.70	1,504.56	1,575.28	0.90	-0.85	-0.89	198.19
	NORMAL	5,168.0	19.41	107.18	4,896.24	-475.43	1,534.18	1,606.16	1.07	0.93	1.66	31.02
	NORMAL	5,262.0	19.16	107.47	4,984.97	-484.67	1,563.82	1,637.21	0.28	-0.27	0.31	159.17
	NORMAL	5,360.0	20.75	106.59	5,077.08	-494.46	1,595.80	1,670.65	1.65	1.62	-0.90	348.89
	NORMAL	5,455.0	20.92	107.42	5,165.87	-504.34	1,628.11	1,704.44	0.36	0.18	0.87	60.45
	NORMAL	5,551.0	20.57	107.25	5,255.64	-514.47	1,660.57	1,738.44	0.37	-0.36	-0.18	189.68
	NORMAL	5,645.0	19.79	107.42	5,343.87	-524.13	1,691.53	1,770.87	0.83	-0.83	0.18	175.78
	NORMAL	5,741.0	19.69	104.31	5,434.23	-532.99	1,722.70	1,803.27	1.10	-0.10	-3.24	263.10
	NORMAL	5,837.0	18.73	103.82	5,524.89	-540.67	1,753.34	1,834.81	1.01	-1.00	-0.51	189.30
11/3/2013	NORMAL	5,932.0	17.23	101.27	5,615.25	-547.07	1,781.96	1,864.03	1.78	-1.58	-2.68	206.48
	NORMAL	6,028.0	16.34	100.44	5,707.16	-552.29	1,809.18	1,891.59	0.96	-0.93	-0.86	194.68
	NORMAL	6,123.0	16.63	100.87	5,798.25	-557.28	1,835.67	1,918.37	0.33	0.31	0.45	23.03
	NORMAL	6,218.0	14.16	100.83	5,889.84	-562.03	1,860.44	1,943.43	2.60	-2.60	-0.04	180.23
	NORMAL	6,314.0	13.10	100.13	5,983.13	-566.15	1,882.68	1,965.90	1.12	-1.10	-0.73	188.51
	NORMAL	6,410.0	10.66	98.44	6,077.07	-569.36	1,902.18	1,985.47	2.57	-2.54	-1.76	187.29
	NORMAL	6,506.0	10.11	101.88	6,171.50	-572.40	1,919.21	2,002.64	0.86	-0.57	3.58	133.25
	NORMAL	6,601.0	8.53	98.63	6,265.24	-575.17	1,934.33	2,017.91	1.75	-1.66	-3.42	196.83
	NORMAL	6,697.0	8.53	98.28	6,360.18	-577.27	1,948.42	2,031.98	0.05	0.00	-0.36	269.83
	NORMAL	6,793.0	7.16	98.77	6,455.28	-579.21	1,961.38	2,044.93	1.43	-1.43	0.51	177.45
	NORMAL	6,888.0	6.30	101.48	6,549.62	-581.15	1,972.34	2,055.98	0.96	-0.91	2.85	161.07
	NORMAL	6,983.0	5.89	105.05	6,644.09	-583.45	1,982.15	2,066.03	0.59	-0.43	3.76	139.01
	NORMAL	7,079.0	5.57	110.01	6,739.61	-586.32	1,991.29	2,075.61	0.61	-0.33	5.17	125.32

2.1.2 Survey Stations (Continued)

Date	Type	MD (ft)	Inc. (°)	Azi. (°)	TVD (ft)	N/S (ft)	E/W (ft)	V. sec. (ft)	DLS (°/100usft)	Build Rate (°/100usft)	Turn (°/100usft)	Tface (°)
11/4/2013	NORMAL	7,174.0	4.48	106.94	6,834.24	-588.98	1,999.17	2,083.92	1.18	-1.15	-3.23	192.33
	NORMAL	7,269.0	3.87	107.07	6,928.99	-591.00	2,005.78	2,090.84	0.64	-0.64	0.14	179.18
	NORMAL	7,365.0	3.61	101.62	7,024.79	-592.56	2,011.84	2,097.09	0.46	-0.27	-5.68	231.12
	NORMAL	7,460.0	2.89	97.64	7,119.63	-593.48	2,017.14	2,102.43	0.79	-0.76	-4.19	195.42
	NORMAL	7,555.0	2.91	103.34	7,214.51	-594.36	2,021.86	2,107.19	0.30	0.02	6.00	88.88
11/5/2013	NORMAL	7,651.0	1.91	75.81	7,310.43	-594.53	2,025.79	2,110.99	1.57	-1.04	-28.68	215.98
	NORMAL	7,746.0	1.85	72.26	7,405.38	-593.67	2,028.78	2,113.60	0.14	-0.06	-3.74	240.98
	NORMAL	7,841.0	1.85	79.97	7,500.33	-592.94	2,031.75	2,116.22	0.26	0.00	8.12	93.85
	NORMAL	7,936.0	1.67	99.77	7,595.28	-592.91	2,034.63	2,118.96	0.66	-0.19	20.84	116.23
	NORMAL	8,031.0	1.68	105.52	7,690.24	-593.51	2,037.33	2,121.72	0.18	0.01	6.05	89.47
	NORMAL	8,137.0	1.58	56.53	7,796.21	-593.12	2,040.05	2,124.20	1.28	-0.09	-46.22	241.66
11/6/2013	NORMAL	8,222.0	1.41	70.51	7,881.18	-592.13	2,042.01	2,125.78	0.47	-0.20	16.45	121.87
	NORMAL	8,318.0	1.38	71.18	7,977.15	-591.36	2,044.22	2,127.66	0.04	-0.03	0.70	151.80
	NORMAL	8,414.0	1.25	100.26	8,073.13	-591.18	2,046.34	2,129.64	0.70	-0.14	30.29	115.33
11/7/2013	NORMAL	8,509.0	0.97	115.42	8,168.11	-591.71	2,048.09	2,131.46	0.42	-0.29	15.96	141.05
	NORMAL	8,604.0	1.14	139.06	8,263.09	-592.76	2,049.44	2,133.06	0.49	0.18	24.88	80.76
	NORMAL	8,699.0	1.16	139.51	8,358.07	-594.21	2,050.68	2,134.68	0.02	0.02	0.47	24.53
	NORMAL	8,794.0	1.14	148.64	8,453.05	-595.75	2,051.80	2,136.20	0.19	-0.02	9.61	100.78
	NORMAL	8,889.0	1.02	148.23	8,548.04	-597.27	2,052.73	2,137.54	0.13	-0.13	-0.43	183.48
	NORMAL	8,984.0	1.31	177.30	8,643.02	-599.08	2,053.23	2,138.55	0.68	0.31	30.60	78.89
	NORMAL	9,079.0	1.23	170.70	8,738.00	-601.17	2,053.44	2,139.38	0.18	-0.08	-6.95	238.05
	NORMAL	9,174.0	1.32	172.72	8,832.97	-603.26	2,053.75	2,140.28	0.11	0.09	2.13	27.55
	NORMAL	9,269.0	1.40	177.94	8,927.95	-605.51	2,053.93	2,141.12	0.16	0.08	5.49	59.78
	NORMAL	9,364.0	1.63	186.29	9,022.91	-608.01	2,053.82	2,141.76	0.33	0.24	8.79	48.05
	NORMAL	9,459.0	1.27	181.24	9,117.88	-610.40	2,053.65	2,142.31	0.40	-0.38	-5.32	197.03
	NORMAL	9,554.0	1.60	196.72	9,212.85	-612.73	2,053.25	2,142.61	0.53	0.35	16.29	57.50
	NORMAL	9,649.0	1.84	208.16	9,307.81	-615.34	2,052.15	2,142.33	0.44	0.25	12.04	60.86
	NORMAL	9,744.0	2.16	212.44	9,402.75	-618.20	2,050.47	2,141.57	0.37	0.34	4.51	27.17
11/8/2013	NORMAL	9,838.0	2.67	210.34	9,496.67	-621.58	2,048.41	2,140.61	0.55	0.54	-2.23	349.11
	NORMAL	9,933.0	3.17	219.26	9,591.55	-625.52	2,045.63	2,139.12	0.71	0.53	9.39	46.78
	NORMAL	10,028.0	4.22	219.30	9,686.35	-630.26	2,041.75	2,136.82	1.11	1.11	0.04	0.16
	NORMAL	10,123.0	4.75	221.45	9,781.06	-635.92	2,036.94	2,133.89	0.59	0.56	2.26	18.67
	NORMAL	10,218.0	4.63	217.95	9,875.74	-641.89	2,031.97	2,130.91	0.33	-0.13	-3.68	245.51
	NORMAL	10,316.0	4.63	217.95	9,973.42	-648.13	2,027.11	2,128.11	0.00	0.00	0.00	0.00

3 Charts

3.1 Vertical Section View



3.2 Plan View

