

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well Information

Well	RWF 311-32	Wellbore No.	
Well Name	RWF 311-32	Common Name	RWF 311-32
Project	RU 32-06S-094W	Site	RWF 11-32 Pad
Vertical Section Azimuth	293.20 (°)	North Reference	True
Origin N/S		Origin E/W	
Spud Date	1/12/2012	UWI	RWF 311-32
Active Datum	KB @5,565.2ft (above Mean Sea Level)		

2 Survey Name

2.1 Survey Name: Survey #1

Survey Name	Survey #1	Company	
Date Started	1/1/2012	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

5953

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 (°)
1/1/2012	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/1/2012	NORMAL	90.0	0.53	222.54	90.00	-0.31	-0.28	0.14	0.59	0.59	0.00	222.54
	NORMAL	174.0	1.23	291.27	173.99	-0.27	-1.38	1.17	1.37	0.83	81.82	94.18
	NORMAL	265.0	3.34	296.10	264.91	1.25	-4.68	4.79	2.33	2.32	5.31	7.63
	NORMAL	356.0	6.33	296.63	355.58	4.67	-11.54	12.45	3.29	3.29	0.58	1.12
	NORMAL	428.0	9.15	299.05	426.92	9.23	-20.10	22.11	3.94	3.92	3.36	7.79
	NORMAL	518.0	10.82	298.17	515.55	16.69	-33.80	37.64	1.86	1.86	-0.98	354.35
	NORMAL	608.0	11.78	292.90	603.81	24.26	-49.71	55.25	1.57	1.07	-5.86	310.31
	NORMAL	699.0	12.75	290.17	692.73	31.33	-67.69	74.56	1.24	1.07	-3.00	327.79
1/2/2012	NORMAL	789.0	13.63	289.12	780.35	38.23	-87.04	95.06	1.01	0.98	-1.17	344.26
	NORMAL	880.0	14.42	289.56	868.64	45.54	-107.84	117.06	0.88	0.87	0.48	7.90
	NORMAL	972.0	14.86	288.68	957.65	53.15	-129.81	140.25	0.54	0.48	-0.96	332.76
	NORMAL	1,066.0	15.74	291.23	1,048.32	61.63	-153.12	165.01	1.18	0.94	2.71	38.64
1/14/2012	NORMAL	1,157.0	16.62	294.04	1,135.72	71.40	-176.51	190.36	1.29	0.97	3.09	43.02
	NORMAL	1,252.0	17.15	293.42	1,226.62	82.50	-201.77	217.95	0.59	0.56	-0.65	340.94
	NORMAL	1,346.0	15.56	292.19	1,316.82	92.77	-226.16	244.42	1.73	-1.69	-1.31	191.70
	NORMAL	1,440.0	16.09	292.54	1,407.25	102.53	-249.87	270.05	0.57	0.56	0.37	10.38
	NORMAL	1,534.0	14.42	292.90	1,497.94	112.08	-272.68	294.78	1.78	-1.78	0.38	176.93
	NORMAL	1,629.0	14.60	293.78	1,589.91	121.51	-294.53	318.58	0.30	0.19	0.93	51.20
	NORMAL	1,722.0	14.89	293.84	1,679.84	131.06	-316.19	342.25	0.31	0.31	0.06	3.04
	NORMAL	1,816.0	15.30	293.69	1,770.60	140.93	-338.59	366.73	0.44	0.44	-0.16	354.49

2.1.2 Survey Stations (Continued)

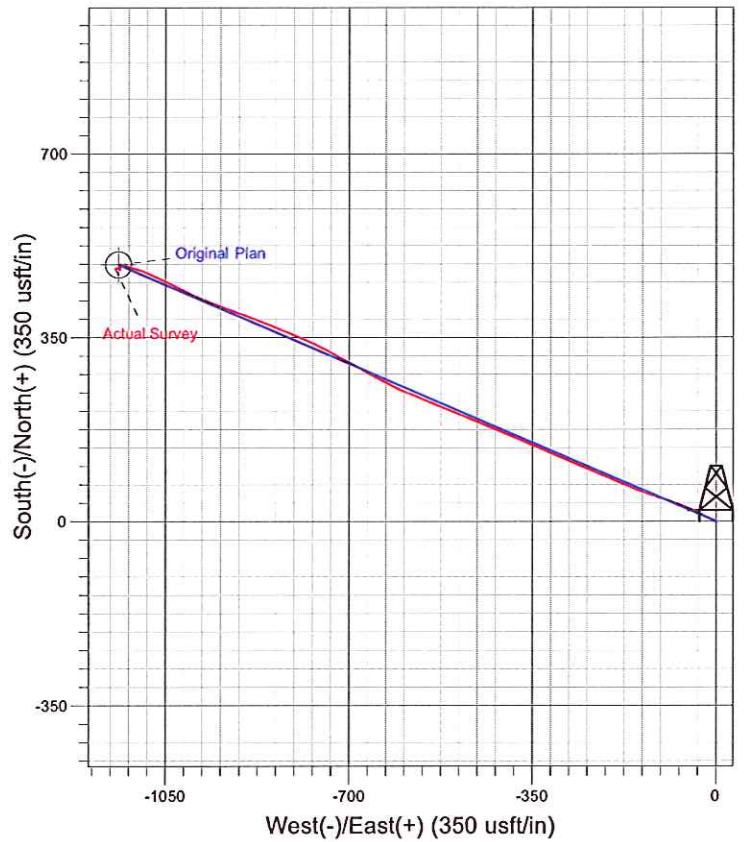
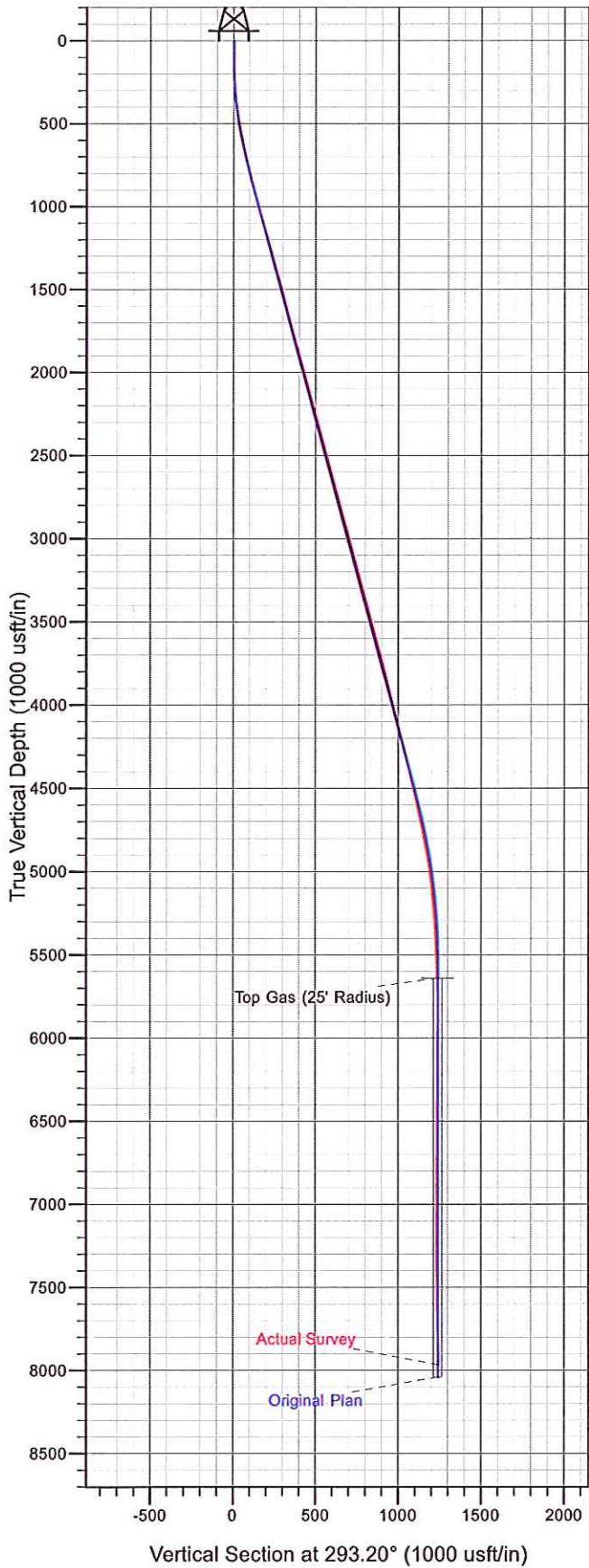
Date	Type	MD (ft)	Inc (")	Azi (")	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLS (%/100ft)	Build Rate (%/100ft)	Turn (%/100ft)	TFace (")
1/14/2012	NORMAL	1,909.0	15.83	292.98	1,860.19	150.81	-361.51	391.69	0.61	0.57	-0.76	339.89
	NORMAL	2,003.0	15.42	292.45	1,950.72	160.59	-384.86	417.00	0.46	-0.44	-0.56	198.94
	NORMAL	2,098.0	15.48	292.72	2,042.28	170.31	-408.23	442.31	0.10	0.06	0.28	50.30
	NORMAL	2,191.0	15.74	293.78	2,131.85	180.19	-431.22	467.33	0.41	0.28	1.14	48.16
	NORMAL	2,285.0	14.95	291.84	2,222.50	189.84	-454.14	492.20	1.00	-0.84	-2.06	212.09
	NORMAL	2,378.0	15.39	291.67	2,312.26	198.86	-476.75	516.53	0.48	0.47	-0.18	354.14
	NORMAL	2,472.0	15.92	291.58	2,402.77	208.21	-500.33	541.89	0.56	0.56	-0.10	357.33
	NORMAL	2,566.0	15.21	293.16	2,493.33	217.80	-523.65	567.11	0.88	-0.76	1.68	149.92
	NORMAL	2,660.0	15.21	293.16	2,584.03	227.50	-546.33	591.77	0.00	0.00	0.00	0.00
	NORMAL	2,754.0	15.04	291.75	2,674.78	236.87	-568.99	616.29	0.43	-0.18	-1.50	244.52
	NORMAL	2,849.0	14.68	291.49	2,766.60	245.84	-591.64	640.65	0.39	-0.38	-0.27	190.37
	NORMAL	2,943.0	15.21	297.82	2,857.43	255.96	-613.63	664.84	1.82	0.56	6.73	75.09
	NORMAL	3,037.0	15.30	297.20	2,948.11	267.39	-635.57	689.51	0.20	0.10	-0.66	298.59
	NORMAL	3,130.0	15.21	298.08	3,037.84	278.74	-657.24	713.90	0.27	-0.10	0.95	111.67
	NORMAL	3,224.0	15.56	298.87	3,128.47	290.63	-679.16	738.73	0.43	0.37	0.84	31.30
	NORMAL	3,319.0	15.57	298.31	3,219.98	302.83	-701.55	764.11	0.16	0.01	-0.59	273.54
	NORMAL	3,414.0	15.21	299.05	3,311.58	314.92	-723.67	789.21	0.43	-0.38	0.78	151.74
	NORMAL	3,508.0	15.30	300.37	3,402.27	327.18	-745.14	813.78	0.38	0.10	1.40	76.11
	NORMAL	3,602.0	15.21	293.78	3,492.96	338.43	-767.13	838.42	1.85	-0.10	-7.01	263.85
1/15/2012	NORMAL	3,695.0	14.95	292.46	3,582.76	347.93	-789.38	862.61	0.46	-0.28	-1.42	232.24
	NORMAL	3,789.0	14.68	293.16	3,673.63	357.24	-811.54	886.65	0.34	-0.29	0.74	146.80
	NORMAL	3,883.0	14.33	293.16	3,764.64	366.50	-833.18	910.19	0.37	-0.37	0.00	180.00
	NORMAL	3,977.0	13.89	291.05	3,855.80	375.13	-854.41	933.10	0.72	-0.47	-2.24	228.44
	NORMAL	4,070.0	13.63	290.35	3,946.13	382.95	-875.10	955.20	0.33	-0.28	-0.75	212.30
	NORMAL	4,164.0	13.98	290.61	4,037.42	390.80	-896.11	977.60	0.38	0.37	0.28	10.18
	NORMAL	4,258.0	14.51	291.40	4,128.53	399.09	-917.70	1,000.71	0.60	0.56	0.84	20.53
	NORMAL	4,351.0	14.77	290.35	4,218.51	407.47	-939.67	1,024.20	0.40	0.28	-1.13	313.90
	NORMAL	4,446.0	14.16	290.96	4,310.50	415.84	-961.87	1,047.90	0.66	-0.64	0.64	166.27
	NORMAL	4,539.0	13.19	293.25	4,400.86	424.09	-982.24	1,069.88	1.19	-1.04	2.46	151.94
	NORMAL	4,633.0	13.01	295.62	4,492.41	432.90	-1,001.64	1,091.18	0.60	-0.19	2.52	109.68
	NORMAL	4,727.0	13.28	296.76	4,583.95	442.34	-1,020.82	1,112.53	0.40	0.29	1.21	44.39
	NORMAL	4,822.0	11.61	296.15	4,676.71	451.46	-1,039.14	1,132.96	1.76	-1.76	-0.64	184.20
	NORMAL	4,916.0	11.34	296.41	4,768.84	459.74	-1,055.91	1,151.64	0.29	-0.29	0.28	169.28
	NORMAL	5,011.0	10.99	293.69	4,862.04	467.54	-1,072.57	1,170.02	0.67	-0.37	-2.86	235.07
	NORMAL	5,105.0	8.88	294.21	4,954.62	474.11	-1,087.39	1,186.23	2.25	-2.24	0.55	177.82
	NORMAL	5,199.0	7.21	286.04	5,047.70	478.72	-1,099.68	1,199.34	2.15	-1.78	-8.69	210.40
	NORMAL	5,293.0	5.55	282.23	5,141.11	481.31	-1,109.79	1,209.66	1.82	-1.77	-4.05	192.42
1/16/2012	NORMAL	5,385.0	3.96	287.53	5,232.79	483.21	-1,117.17	1,217.19	1.79	-1.73	5.76	167.18
	NORMAL	5,479.0	3.52	290.87	5,326.59	485.22	-1,122.96	1,223.30	0.52	-0.47	3.55	155.32
	NORMAL	5,573.0	2.46	288.85	5,420.46	486.90	-1,127.57	1,228.19	1.13	-1.13	-2.15	184.67
	NORMAL	5,666.0	2.46	283.32	5,513.38	488.00	-1,131.40	1,232.15	0.26	0.00	-5.95	267.24
	NORMAL	5,760.0	1.93	282.70	5,607.31	488.81	-1,134.90	1,235.70	0.56	-0.56	-0.66	182.26
	NORMAL	5,854.0	1.23	269.69	5,701.27	489.16	-1,137.46	1,238.18	0.83	-0.74	-13.84	200.73
	NORMAL	5,948.0	0.09	347.92	5,795.27	489.22	-1,138.48	1,239.14	1.29	-1.21	83.22	175.84
1/17/2012	NORMAL	6,042.0	0.18	97.69	5,889.27	489.28	-1,138.35	1,239.04	0.24	0.10	116.78	131.69
	NORMAL	6,136.0	0.44	112.46	5,983.26	489.12	-1,137.87	1,238.54	0.29	0.28	15.71	24.56
	NORMAL	6,230.0	0.44	95.85	6,077.26	488.94	-1,137.18	1,237.84	0.14	0.00	-17.67	261.70
	NORMAL	6,324.0	0.35	107.97	6,171.26	488.82	-1,136.55	1,237.21	0.13	-0.10	12.89	143.08
	NORMAL	6,418.0	0.26	137.24	6,265.26	488.57	-1,136.13	1,236.73	0.19	-0.10	31.14	134.10
	NORMAL	6,513.0	0.44	182.77	6,360.26	488.05	-1,136.00	1,236.40	0.33	0.19	47.93	81.27
1/18/2012	NORMAL	6,607.0	0.53	178.02	6,454.25	487.25	-1,136.00	1,236.09	0.10	0.10	-5.05	333.54
	NORMAL	6,700.0	0.70	189.27	6,547.25	486.26	-1,136.08	1,235.77	0.22	0.18	12.10	41.10
	NORMAL	6,792.0	1.06	182.68	6,639.24	484.86	-1,136.21	1,235.34	0.41	0.39	-7.16	340.99
	NORMAL	6,886.0	0.88	182.77	6,733.22	483.27	-1,136.28	1,234.78	0.19	-0.19	0.10	179.56
1/19/2012	NORMAL	6,980.0	1.06	206.32	6,827.21	481.77	-1,136.71	1,234.58	0.46	0.19	25.05	77.78
	NORMAL	7,074.0	0.80	191.93	6,921.20	480.35	-1,137.23	1,234.49	0.37	-0.28	-15.31	214.89
	NORMAL	7,168.0	0.26	118.35	7,015.19	479.60	-1,137.17	1,234.15	0.82	-0.57	-78.28	198.95



Well Name: RWF 311-32
 Surface Location: RWF 11-32 Pad
 North American Datum 1983 , US State Plane 1983. Colorado Central Zone
 Ground Elevation: 5539.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1610861.00	2318243.60	39.48570	-107.91579	A7

KELLY BUSHING @ 5561.00usft (Cyclone 17 (22' RKB) kjs)



Azimuths to True North
 Magnetic North: 10.24°

Magnetic Field
 Strength: 52201.2snT
 Dip Angle: 65.73°
 Date: 1/8/2012
 Model: IGRF2010