

1 General

1.1 Customer Information

Company	PICEANCE VLY
Representative	
Address	

1.2 Well/Wellbore Information

Well	NER 524-32	Wellbore No.	00
Wellbore Legal Name	NER 524-32	Common Wellbore Name	NER 524-32
Project	RU 05-07S-093W	Site	RU 23-5 Pad
Vertical Section Azimuth	311.48 (°)	North reference	True
Origin N/S		Origin E/W	
Spud date	6/7/2014	UWI	NER 524-32
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	6/7/2014	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 (°)
6/7/2014	Tie On	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/7/2014	NORMAL	92.0	0.88	317.99	92.00	0.52	-0.47	0.70	0.96	0.96	0.00	317.99
	NORMAL	177.0	2.11	302.34	176.97	1.85	-2.23	2.90	1.51	1.45	-18.41	333.71
	NORMAL	267.0	3.26	303.57	266.87	4.15	-5.76	7.07	1.28	1.28	1.37	3.48
	NORMAL	359.0	5.37	315.18	358.60	8.65	-10.98	13.95	2.47	2.29	12.62	28.35
	NORMAL	451.0	7.39	313.24	450.03	15.76	-18.32	24.16	2.21	2.20	-2.11	352.94
	NORMAL	525.0	8.43	307.69	523.32	22.33	-26.08	34.33	1.74	1.41	-7.50	320.94
	NORMAL	617.0	9.85	304.34	614.15	30.90	-37.92	48.87	1.65	1.54	-3.64	337.80
	NORMAL	709.0	8.69	309.66	704.95	39.77	-49.77	63.63	1.57	-1.26	5.78	146.15
	NORMAL	800.0	9.15	306.24	794.85	48.44	-60.90	77.70	0.77	0.51	-3.76	309.24
	NORMAL	892.0	7.97	310.78	885.83	56.93	-71.63	91.37	1.48	-1.28	4.93	152.43
	NORMAL	982.0	7.41	316.47	975.02	65.21	-80.35	103.39	1.05	-0.62	6.32	129.13
	NORMAL	1,073.0	8.53	315.56	1,065.14	74.28	-89.11	115.97	1.24	1.23	-1.00	353.12
	NORMAL	1,123.0	8.53	313.95	1,114.58	79.50	-94.38	123.37	0.48	0.00	-3.22	269.20
6/8/2014	NORMAL	1,263.0	8.67	312.90	1,253.01	93.89	-109.59	144.29	0.15	0.10	-0.75	311.20
	NORMAL	1,358.0	8.68	312.40	1,346.92	103.60	-120.12	158.62	0.08	0.01	-0.53	277.31
	NORMAL	1,453.0	8.66	313.58	1,440.84	113.37	-130.60	172.93	0.19	-0.02	1.24	97.00
	NORMAL	1,548.0	7.39	310.38	1,534.91	122.25	-140.43	186.19	1.42	-1.34	-3.37	197.80
	NORMAL	1,643.0	8.38	317.19	1,629.01	131.29	-149.79	199.19	1.43	1.04	7.17	46.75
	NORMAL	1,738.0	8.24	315.60	1,723.01	141.23	-159.26	212.86	0.28	-0.15	-1.67	237.86
	NORMAL	1,834.0	7.85	312.08	1,818.07	150.54	-168.94	226.28	0.65	-0.41	-3.67	229.90

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 (°)
6/8/2014	NORMAL	1,929.0	7.66	307.39	1,912.20	158.74	-178.79	239.08	0.70	-0.20	-4.94	250.97
	NORMAL	2,025.0	9.11	313.77	2,007.17	167.88	-189.36	253.06	1.79	1.51	6.65	35.87
	NORMAL	2,120.0	9.14	311.70	2,100.97	178.10	-200.42	268.12	0.35	0.03	-2.18	274.20
	NORMAL	2,215.0	8.79	311.59	2,194.81	187.94	-211.49	282.92	0.37	-0.37	-0.12	182.75
	NORMAL	2,310.0	8.44	313.22	2,288.74	197.53	-221.99	297.15	0.45	-0.37	1.72	145.90
	NORMAL	2,405.0	8.16	311.33	2,382.74	206.76	-232.14	310.86	0.41	-0.29	-1.99	223.32
	NORMAL	2,501.0	7.74	311.33	2,477.82	215.53	-242.11	324.14	0.44	-0.44	0.00	180.00
6/9/2014	NORMAL	2,596.0	9.24	314.98	2,571.78	225.14	-252.31	338.15	1.68	1.58	3.84	21.57
	NORMAL	2,692.0	9.19	315.78	2,666.54	236.08	-263.11	353.49	0.14	-0.05	0.83	111.71
	NORMAL	2,787.0	8.67	314.36	2,760.39	246.53	-273.52	368.20	0.59	-0.55	-1.49	202.27
	NORMAL	2,883.0	8.49	314.90	2,855.31	256.59	-283.71	382.50	0.21	-0.19	0.56	156.15
	NORMAL	2,978.0	8.25	312.35	2,949.30	266.13	-293.71	396.32	0.47	-0.25	-2.68	235.86
	NORMAL	3,074.0	8.17	314.46	3,044.32	275.55	-303.67	410.02	0.32	-0.08	2.20	105.91
	NORMAL	3,170.0	9.05	310.00	3,139.24	285.18	-314.33	424.38	1.15	0.92	-4.65	320.59
	NORMAL	3,265.0	8.53	306.91	3,233.12	294.21	-325.68	438.87	0.74	-0.55	-3.25	220.72
	NORMAL	3,360.0	9.64	310.47	3,326.93	303.61	-337.37	453.85	1.31	1.17	3.75	28.62
	NORMAL	3,455.0	9.21	310.52	3,420.64	313.71	-349.20	469.40	0.45	-0.45	0.05	178.93
	NORMAL	3,550.0	8.98	310.99	3,514.45	323.51	-360.57	484.42	0.25	-0.24	0.49	162.33
	NORMAL	3,645.0	9.06	310.46	3,608.28	333.23	-371.86	499.31	0.12	0.08	-0.56	313.65
	NORMAL	3,738.0	8.53	311.87	3,700.18	342.58	-382.57	513.53	0.62	-0.57	1.52	158.56
	NORMAL	3,834.0	9.31	311.38	3,795.02	352.47	-393.70	528.41	0.82	0.81	-0.51	354.19
	NORMAL	3,928.0	9.37	308.98	3,887.77	362.31	-405.35	543.66	0.42	0.06	-2.55	277.57
	NORMAL	4,023.0	9.20	307.44	3,981.53	371.79	-417.39	558.98	0.32	-0.18	-1.62	234.86
	NORMAL	4,118.0	8.34	306.74	4,075.42	380.53	-428.94	573.41	0.91	-0.91	-0.74	186.73
	NORMAL	4,214.0	9.36	310.00	4,170.27	389.71	-440.50	588.15	1.18	1.06	3.40	27.80
	NORMAL	4,308.0	8.70	309.51	4,263.11	399.15	-451.84	602.90	0.71	-0.70	-0.52	186.40
	NORMAL	4,403.0	9.56	314.85	4,356.91	409.28	-462.98	617.95	1.27	0.91	5.62	47.23
	NORMAL	4,498.0	9.23	313.85	4,450.63	420.13	-474.07	633.44	0.39	-0.35	-1.05	205.83
	NORMAL	4,593.0	8.84	311.95	4,544.45	430.28	-484.99	648.35	0.52	-0.41	-2.00	216.48
	NORMAL	4,688.0	8.48	311.80	4,638.37	439.83	-495.64	662.66	0.38	-0.38	-0.16	183.52
	NORMAL	4,784.0	7.86	311.26	4,733.40	448.88	-505.85	676.30	0.65	-0.65	-0.56	186.79
	NORMAL	4,879.0	8.73	316.01	4,827.40	458.35	-515.74	689.98	1.17	0.92	5.00	40.59
	NORMAL	4,975.0	8.77	316.25	4,922.28	468.88	-525.86	704.54	0.06	0.04	0.25	42.51
	NORMAL	5,070.0	8.60	317.33	5,016.19	479.33	-535.69	718.82	0.25	-0.18	1.14	136.72
	NORMAL	5,166.0	8.44	316.43	5,111.14	489.71	-545.41	732.98	0.22	-0.17	-0.94	219.36
	NORMAL	5,261.0	7.89	315.27	5,205.17	499.40	-554.80	746.43	0.60	-0.58	-1.22	196.10
	NORMAL	5,357.0	8.33	314.62	5,300.21	508.96	-564.39	759.95	0.47	0.46	-0.68	347.91
	NORMAL	5,453.0	8.07	313.51	5,395.23	518.49	-574.23	773.63	0.32	-0.27	-1.16	210.79
	NORMAL	5,548.0	8.67	316.53	5,489.22	528.28	-583.99	787.42	0.78	0.63	3.18	37.73
	NORMAL	5,643.0	8.59	316.82	5,583.14	538.65	-593.77	801.62	0.10	-0.08	0.31	151.60
	NORMAL	5,738.0	8.49	316.25	5,677.09	548.88	-603.47	815.67	0.14	-0.11	-0.60	219.96
	NORMAL	5,834.0	8.45	317.34	5,772.04	559.19	-613.15	829.75	0.17	-0.04	1.14	104.53
	NORMAL	5,930.0	8.25	314.96	5,867.03	569.24	-622.81	843.64	0.42	-0.21	-2.48	238.77
	NORMAL	6,025.0	8.00	317.14	5,961.07	578.91	-632.13	857.02	0.42	-0.26	2.29	130.13
	NORMAL	6,120.0	8.10	317.08	6,055.14	588.65	-641.18	870.26	0.11	0.11	-0.06	355.17
6/11/2014	NORMAL	6,216.0	6.77	315.64	6,150.33	597.65	-649.74	882.64	1.40	-1.39	-1.50	187.26
	NORMAL	6,312.0	7.01	315.94	6,245.63	605.91	-657.77	894.12	0.25	0.25	0.31	8.68
	NORMAL	6,407.0	6.33	320.67	6,339.99	614.12	-665.12	905.07	0.92	-0.72	4.98	143.40
	NORMAL	6,503.0	5.67	324.85	6,435.46	622.10	-671.21	914.91	0.82	-0.69	4.35	148.56
	NORMAL	6,599.0	4.60	323.81	6,531.08	629.08	-676.21	923.29	1.12	-1.11	-1.08	184.45
	NORMAL	6,694.0	3.09	308.51	6,625.86	633.75	-680.46	929.56	1.91	-1.59	-16.11	206.72
	NORMAL	6,790.0	2.64	307.11	6,721.74	636.69	-684.25	934.35	0.47	-0.47	-1.46	188.14
	NORMAL	6,885.0	2.41	285.22	6,816.65	638.54	-687.92	938.33	1.04	-0.24	-23.04	245.81
	NORMAL	6,980.0	2.57	308.77	6,911.57	640.40	-691.51	942.24	1.08	0.17	24.79	93.00
	NORMAL	7,076.0	1.98	348.38	7,007.50	643.37	-693.52	945.72	1.71	-0.61	41.26	129.60
6/12/2014	NORMAL	7,172.0	0.60	331.39	7,103.47	645.44	-694.10	947.52	1.48	-1.44	-17.70	187.11

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 (°)
6/12/2014	NORMAL	7,266.0	0.77	270.32	7,197.46	645.87	-694.97	948.46	0.76	0.18	-64.97	251.35
	NORMAL	7,362.0	0.87	296.17	7,293.45	646.20	-696.27	949.65	0.40	0.10	26.93	88.04
	NORMAL	7,457.0	0.83	285.83	7,388.44	646.70	-697.58	950.96	0.17	-0.04	-10.88	250.25
	NORMAL	7,553.0	1.01	291.36	7,484.43	647.20	-699.03	952.38	0.21	0.19	5.76	29.04
6/13/2014	NORMAL	7,648.0	1.34	344.87	7,579.41	648.58	-700.10	954.10	1.16	0.35	56.33	101.18
	NORMAL	7,744.0	0.86	350.81	7,675.40	650.37	-700.51	955.59	0.51	-0.50	6.19	169.59
	NORMAL	7,839.0	0.77	13.56	7,770.39	651.70	-700.47	956.44	0.35	-0.09	23.95	116.72
	NORMAL	7,933.0	1.01	3.03	7,864.38	653.14	-700.28	957.25	0.31	0.26	-11.20	320.39
	NORMAL	8,029.0	0.30	349.60	7,960.37	654.23	-700.28	957.98	0.75	-0.74	-13.99	185.54
	NORMAL	8,124.0	0.78	2.13	8,055.36	655.12	-700.30	958.58	0.52	0.51	13.19	20.14
	NORMAL	8,219.0	0.24	348.94	8,150.36	655.96	-700.32	959.15	0.58	-0.57	-13.88	185.72
	NORMAL	8,315.0	0.59	352.22	8,246.36	656.65	-700.42	959.69	0.37	0.36	3.42	5.52
	NORMAL	8,411.0	1.05	70.01	8,342.35	657.44	-699.66	959.64	1.14	0.48	81.03	109.72
	NORMAL	8,507.0	0.99	88.23	8,438.33	657.77	-698.01	958.62	0.34	-0.06	18.98	109.50
	NORMAL	8,602.0	0.44	139.78	8,533.33	657.51	-696.95	957.66	0.84	-0.58	54.26	154.31
	NORMAL	8,695.0	0.46	125.18	8,626.32	657.02	-696.42	956.93	0.12	0.02	-15.70	272.54
6/14/2014	NORMAL	8,788.0	0.38	167.80	8,719.32	658.51	-696.05	956.31	0.34	-0.09	45.83	125.03
6/16/2014	NORMAL	8,883.0	0.58	156.06	8,814.32	655.76	-695.78	955.62	0.23	0.21	-12.36	327.86
	NORMAL	8,978.0	0.80	164.41	8,909.31	654.68	-695.41	954.63	0.25	0.23	8.79	28.78
	NORMAL	9,073.0	1.01	207.39	9,004.30	653.30	-695.62	953.87	0.73	0.22	45.24	95.07
	NORMAL	9,167.0	0.94	203.01	9,098.29	651.85	-696.30	953.42	0.11	-0.07	-4.66	224.62
	NORMAL	9,262.0	1.14	204.55	9,193.27	650.28	-697.00	952.90	0.21	0.21	1.62	8.73
	NORMAL	9,357.0	1.50	225.52	9,288.25	648.55	-698.28	952.71	0.63	0.38	22.07	64.10
	NORMAL	9,453.0	1.58	226.44	9,384.21	646.75	-700.13	952.91	0.09	0.08	0.96	17.63
	NORMAL	9,548.0	1.23	212.37	9,479.18	644.99	-701.63	952.87	0.51	-0.37	-14.81	217.70
	NORMAL	9,643.0	1.49	226.70	9,574.16	643.28	-703.07	952.82	0.45	0.27	15.08	59.91
	NORMAL	9,738.0	1.50	202.64	9,669.13	641.29	-704.45	952.53	0.66	0.01	-25.33	258.87
	NORMAL	9,832.0	1.28	198.19	9,763.10	639.16	-705.25	951.72	0.26	-0.23	-4.73	203.92
	NORMAL	9,927.0	1.85	210.70	9,858.06	636.83	-706.37	951.01	0.70	0.60	13.17	37.29
	NORMAL	10,022.0	2.09	217.16	9,953.01	634.13	-708.20	950.59	0.34	0.25	6.80	46.04
	NORMAL	10,093.0	2.09	217.16	10,023.96	632.07	-709.76	950.40	0.00	0.00	0.00	0.00