



Weatherford

Directional Drilling Services

Job Number: WTX0804D040
 Company: Arrinhton Oil & Gas
 Lease/Well: Deep Sparkle Muddler 15-2
 Location: Lea County, NM.
 Rig Name: Patterson #624
 RKB:
 G.L. or M.S.L.

State/Country: TNM.
 Declination: 8.5° North
 Grid:
 Date/Time: 9-Aug-04

SUR: O-15-17s-36e, 650/S & 1981/E
 BHL: O-15-17s-36e, 661/S & 2090/E
 API 30-025-22194

SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Referenced to Wellhead

Rectangular Coordinated Referenced to Wellhead

SVY #	Measured Depth	Inc Angle Deg	Drift Azimuth Deg	TRUE Vertical Depth	Vertical Section	Dogleg Severity 100	Actual BUR	NORTH(+) SOUTH(-)	EAST(+) WEST(-)	CLOSURE Direction Deg	Distance Ft
TIE	3000	0.84	271.20	2999.8	-12.9	0.8	0.0	-12.9	-18.5	235.1	22.57
1	3023	1.00	247.20	3022.8	-13.0	1.8	0.7	-13.0	-18.9	235.4	22.91
2	3055	0.90	210.10	3054.8	-13.3	1.9	-0.3	-13.3	-19.2	235.3	23.41
3	3073	0.60	228.90	3072.8	-13.5	2.1	-1.7	-13.5	-19.4	235.1	23.63
4	3086	1.10	182.90	3085.8	-13.7	6.2	3.8	-13.7	-19.4	234.9	23.77
5	3117	2.20	138.60	3116.8	-14.4	5.2	3.5	-14.4	-19.1	232.9	23.90
6	3182	3.60	102.20	3181.7	-15.8	3.5	2.2	-15.8	-16.2	225.8	22.65
7	3273	2.70	92.20	3272.6	-16.5	1.2	-1.0	-16.5	-11.3	214.5	19.98
8	3333	2.70	92.10	3332.5	-16.6	0.0	0.0	-16.6	-8.5	207.1	18.62
9	3432	3.00	90.20	3431.4	-16.7	0.3	0.3	-16.7	-3.6	192.1	17.05
10	3495	3.20	85.00	3494.3	-16.5	0.5	0.3	-16.5	-0.2	180.6	16.52
11	3558	2.10	85.30	3557.3	-16.3	1.7	-1.7	-16.3	2.7	170.5	16.50
12	3616	1.80	83.80	3615.2	-16.1	0.5	-0.5	-16.1	4.7	163.7	16.76
13	3716	2.10	72.30	3715.2	-15.4	0.5	0.3	-15.4	8.0	152.5	17.32
14	3810	1.90	82.10	3809.1	-14.6	0.4	-0.2	-14.6	11.2	142.6	18.42
15	3903	1.80	89.50	3902.1	-14.4	0.3	-0.1	-14.4	14.2	135.4	20.21
16	4027	1.70	85.90	4026.0	-14.3	0.1	-0.1	-14.3	18.0	128.4	22.93
17	4152	1.70	87.70	4150.9	-14.0	0.0	0.0	-14.0	21.7	123.0	25.82
18	4278	1.70	99.80	4276.9	-14.3	0.3	0.0	-14.3	25.4	119.4	29.12
19	4405	1.90	91.70	4403.8	-14.7	0.3	0.2	-14.7	29.3	116.6	32.80
20	4499	1.90	96.00	4497.8	-14.9	0.2	0.0	-14.9	32.4	114.6	35.69
21	4625	1.80	99.30	4623.7	-15.4	0.1	-0.1	-15.4	36.5	112.9	39.59
22	4752	1.30	111.00	4750.7	-16.3	0.5	-0.4	-16.3	39.8	112.2	42.98
23	4907	1.70	104.40	4905.6	-17.5	0.3	0.3	-17.5	43.7	111.8	47.01
24	5065	2.00	116.60	5063.5	-19.3	0.3	0.2	-19.3	48.4	111.7	52.08
25	5163	2.20	121.70	5161.5	-21.0	0.3	0.2	-21.0	51.5	112.2	55.64
26	5302	1.80	116.20	5300.4	-23.4	0.3	-0.3	-23.4	55.7	112.8	60.45
27	5365	1.60	112.50	5363.3	-24.2	0.4	-0.3	-24.2	57.4	112.8	62.32
28	5522	1.90	110.40	5520.3	-25.9	0.2	0.2	-25.9	61.9	112.7	67.11
29	5583	1.9	102.6	5581.2	-26.5	0.4	0.0	-26.5	63.8	112.5	69.12
30	5708	0.8	82.4	5706.2	-26.8	0.9	-0.9	-26.8	66.7	111.9	71.92
31	5883	0.7	80.0	5881.2	-26.5	0.1	-0.1	-26.5	69.0	111.0	73.90
32	6020	0.8	85.0	6018.2	-26.2	0.1	0.1	-26.2	70.8	110.4	75.48
33	6205	0.9	97.0	6203.2	-26.3	0.1	0.1	-26.3	73.5	109.7	78.07
34	6391	1.1	90.3	6389.1	-26.5	0.1	0.1	-26.5	76.7	109.1	81.18
35	6575	1.0	80.5	6573.1	-26.2	0.1	-0.1	-26.2	80.1	108.1	84.28
36	6760	1.0	71.0	6758.1	-25.5	0.1	0.0	-25.5	83.2	107.0	87.01
37	6945	1.1	67.1	6943.0	-24.2	0.1	0.1	-24.2	86.4	105.7	89.70
38	7130	1.1	60.5	7128.0	-22.7	0.1	0.0	-22.7	89.5	104.2	92.37
39	7315	1.0	57.0	7313.0	-20.9	0.1	-0.1	-20.9	92.4	102.7	94.78
40	7500	1.2	52.4	7497.9	-18.9	0.1	0.1	-18.9	95.3	101.2	97.18
41	7685	1.1	52.1	7682.9	-16.6	0.1	-0.1	-16.6	98.3	99.6	99.66
42	7870	1.0	51.0	7867.9	-14.5	0.1	-0.1	-14.5	100.9	98.2	101.96
43	8055	1.1	53.2	8052.8	-12.4	0.1	0.1	-12.4	103.6	96.8	104.34
44	8240	1.5	31.6	8237.8	-9.3	0.3	0.2	-9.3	106.3	95.0	106.70
45	8425	2.0	5.9	8422.7	-4.0	0.5	0.3	-4.0	107.9	92.1	107.97
46	8589	2.5	356.2	8586.6	2.4	0.4	0.3	2.4	108.0	88.7	107.98
47	8778	1.4	248.8	8775.5	5.7	1.7	-0.6	5.7	105.5	86.9	105.68



Weatherford

Directional Drilling Services

Job Number: WTX0804D040
 Company: Arrinhton Oil & Gas
 Lease/Well: Deep Sparkle Muddler 15-2
 Location: Lea County, NM.
 Rig Name: Patterson #624
 RKB:
 G.L. or M.S.L.

State/Country: TNM.
 Declination: 8.5° North
 Grid:
 Date/Time: 9-Aug-04

SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Referenced to Wellhead

Rectangular Coordinated Referenced to Wellhead

SVY #	Measured Depth	Inc Angle Deg	Drift Azimuth Deg	TRUE Vertical Depth	Vertical Section	Dogleg Severity 100	Actual BUR	NORTH(+)		EAST(+)		CLOSURE	
								SOUTH(-)	WEST(-)	Direction Deg	Distance Ft		
48	8873	1.5	254.2	8870.5	4.9	0.2	0.1	4.9	103.2	87.3	103.37		
49	8999	0.9	275.2	8996.5	4.6	0.6	-0.5	4.6	100.7	87.4	100.78		
50	9156	0.9	253.9	9153.4	4.3	0.2	0.0	4.3	98.3	87.5	98.36		
51	9219	1.4	261.5	9216.4	4.1	0.8	0.8	4.1	97.0	87.6	97.11		
52	9282	1.3	274.9	9279.4	4.0	0.5	-0.2	4.0	95.6	87.6	95.64		
53	9440	1.9	270.5	9437.3	4.2	0.4	0.4	4.2	91.1	87.3	91.25		
54	9502	1.8	265.8	9499.3	4.2	0.3	-0.2	4.2	89.1	87.3	89.25		
55	9565	1.9	273.1	9562.3	4.1	0.4	0.2	4.1	87.1	87.3	87.22		
56	9690	1.5	254.3	9687.2	3.8	0.5	-0.3	3.8	83.5	87.4	83.56		
57	9784	2.1	277.5	9781.2	3.7	1.0	0.6	3.7	80.6	87.4	80.67		
58	9846	2.3	276.9	9843.1	4.0	0.3	0.3	4.0	78.2	87.1	78.32		
59	9909	2.7	282.3	9906.1	4.5	0.7	0.6	4.5	75.5	86.6	75.65		
60	10003	4.0	272.1	9999.9	5.1	1.5	1.4	5.1	70.1	85.9	70.26		
61	10066	4.0	272.8	10062.8	5.2	0.1	0.0	5.2	65.7	85.4	65.90		
62	10121	4.1	269.00	10117.6	5.3	0.5	0.2	5.3	61.8	85.1	62.03		
63	10185	4.3	266.5	10181.4	5.1	0.4	0.3	5.1	57.1	84.9	57.35		
64	10248	3.9	261.9	10244.3	4.7	0.8	-0.6	4.7	52.6	84.9	52.85		
65	10311	4.7	256.8	10307.1	3.8	1.4	1.3	3.8	48.0	85.5	48.16		
66	10374	3.5	257.0	10369.9	2.8	1.9	-1.9	2.8	43.6	86.4	43.71		
67	10498	2.7	270.0	10493.8	1.9	0.9	-0.6	1.9	37.0	87.0	37.06		
68	10562	2.1	271.4	10557.7	1.9	0.9	-0.9	1.9	34.3	86.8	34.39		
69	10625	2.0	270.0	10620.7	2.0	0.2	-0.2	2.0	32.1	86.5	32.14		
70	10687	1.6	253.2	10682.6	1.7	1.1	-0.6	1.7	30.2	86.7	30.22		
71	10781	1.2	249.2	10776.6	1.0	0.4	-0.4	1.0	28.0	88.0	28.01		
72	10906	1.2	253.3	10901.6	0.1	0.1	0.0	0.1	25.5	89.7	25.52		
73	10969	1.2	246.4	10964.6	-0.3	0.2	0.0	-0.3	24.3	90.7	24.28		
74	11030	1.1	255.0	11025.6	-0.7	0.3	-0.2	-0.7	23.1	91.8	23.14		
75	11092	0.7	266.6	11087.6	-0.9	0.7	-0.6	-0.9	22.2	92.3	22.19		
76	11155	0.6	243.8	11150.5	-1.1	0.4	-0.2	-1.1	21.5	92.8	21.52		
77	11218	0.7	267.5	11213.5	-1.2	0.5	0.2	-1.2	20.8	93.4	20.85		
78	11280	0.7	274.2	11275.5	-1.2	0.1	0.0	-1.2	20.1	93.4	20.10		
79	11310	0.3	291.2	11305.5	-1.2	1.4	-1.3	-1.2	19.8	93.4	19.84		
80	11398	0.6	290.5	11393.5	-0.9	0.3	0.3	-0.9	19.2	92.8	19.18		
81	11529	0.7	264.9	11524.5	-0.8	0.2	0.1	-0.8	17.7	92.4	17.73		
82	11622	1.3	292.1	11617.5	-0.4	0.8	0.6	-0.4	16.2	91.4	16.18		
83	11654	1.3	295.7	11649.5	-0.1	0.3	0.0	-0.1	15.5	90.4	15.51		
84	11718	1.6	303.1	11713.5	0.7	0.6	0.5	0.7	14.1	87.2	14.13		
85	11781	1	312.3	11776.5	1.5	1.0	-1.0	1.5	13.0	83.2	13.06		
86	11812	0.9	315.3	11807.5	1.9	0.4	-0.3	1.9	12.6	81.4	12.74		
87	11875	1.5	308.9	11870.4	2.8	1.0	1.0	2.8	11.6	76.6	11.93		
88	11907	1.3	305.2	11902.4	3.2	0.7	-0.6	3.2	11.0	73.6	11.45		
89	11968	1.3	317.6	11963.4	4.1	0.5	0.0	4.1	9.9	67.4	10.78		
90	12031	1.7	309.8	12026.4	5.3	0.7	0.6	5.3	8.7	58.9	10.22		
91	12140	1.6	313.6	12135.4	7.4	0.1	-0.1	7.4	6.4	41.0	9.75		
92	12252	1.4	319.3	12247.3	9.5	0.2	-0.2	9.5	4.4	24.8	10.44		
93	12344	1.7	338.9	12339.3	11.6	0.7	0.3	11.6	3.2	15.2	12.02		
94	12375	1.5	329.8	12370.3	12.4	1.0	-0.6	12.4	2.8	12.7	12.69		
95	12438	0.8	273.7	12433.3	13.1	2.0	-1.1	13.1	1.9	8.4	13.26		

**Weatherford**

Directional Drilling Services

Job Number: WTX0804D040
Company: Arrington Oil & Gas
Lease/Well: Deep Sparkle Muddler 15-2
Location: Lea County, NM.
Rig Name: Patterson #624
RKB:
G.L. or M.S.L.

State/Country: TNM.
Declination: 8.5° North
Grid:
Date/Time: 9-Aug-04

SURVEY CALCULATIONS

*Minimum Curvature Method**Vertical Section Referenced to Wellhead**Rectangular Coordinated Referenced to Wellhead*

SVY #	Measured Depth	Inc Angle Deg	Drift Azimuth Deg	TRUE Vertical Depth	Vertical Section	Dogleg Severity 100	Actual BUR	NORTH(+) SOUTH(-)	EAST(+) WEST(-)	CLOSURE	
										Direction Deg	Distance Ft
96	12500	0.8	259.9	12495.3	13.1	0.3	0.0	13.1	1.1	4.7	13.11
97	12600	0.7	263.8	12595.2	12.9	0.1	-0.1	12.9	-0.2	359.0	12.88
98	12690	0.4	273.7	12685.2	12.8	0.3	-0.3	12.8	-1.1	355.2	12.89
99	12783	1.2	253.4	12778.2	12.6	0.9	0.9	12.6	-2.3	349.5	12.80
100	12845	1.5	269.5	12840.2	12.4	0.8	0.5	12.4	-3.8	343.1	12.95
101.0	12937.0	3.7	263.9	12932.1	7.9	2.4	2.4	12.1	-7.9	326.85	14.43
102.0	13064.0	4.8	270.0	13058.7	17.3	0.9	0.9	11.6	-17.3	303.98	20.84
103.0	13095.0	6.0	264.6	13089.6	20.2	4.2	3.9	11.5	-20.2	299.65	23.23
104.0	13158.0	8.3	265.9	13152.1	28.0	3.7	3.7	10.9	-28.0	291.19	30.03
105.0	13251.0	10.0	268.2	13243.9	42.8	1.9	1.8	10.1	-42.8	283.32	43.95
106.0	13345.0	9.6	267.6	13336.5	58.8	0.4	-0.4	9.5	-58.8	279.22	59.53
107.0	13400.0	9.2	268.6	13390.8	67.7	0.8	-0.7	9.2	-67.7	277.77	68.36
108.0	13503.0	8.0	272.2	13492.6	83.1	1.3	-1.2	9.3	-83.1	276.39	83.65
109.0	13650.0	7.6	273.2	13638.3	103.1	0.3	-0.3	10.3	-103.1	275.68	103.57
PRO	13695.0	7.6	273.2	13682.9	109.0	0.0	0.0	10.6	-109.0	275.55	109.51

