



SURVEY CALCULATION PROGRAM

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

v1.00.02

OPERATOR:	ARRINGTON OIL & GAS	Supervisors:	
WELL:	PASCHAL Lamb # 1H	Kenny George	
LOCATION:	EDDY COUNTY, NEW MEXICO	Chad Zamazal	
JOB NUMBER:	MI-06134	Ritske J. Tibbertsma	
COMMENTS		Thomas Mason	
TIE IN TO DRILLED PILOT HOLE		MAG DEC.(-/+)	8.71
		GRID CORR.(-/+)	0.14
		TOTAL CORR.(-/+)	8.85
DATE: 08/28/06		TIME: 1:51 PM	TRUE TO GRID ☐

TARGET DIP		0.00	ANGLE		75.00	LINE	4620.0	DIRECTION	359.98	TARGET TRACKING TO CENTER	
TEMP.	SUR #	MD	INC	TRUE AZM	TVD	SECT	N-S	E-W	DLS/100	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)
	TIE	4165	2.40	84.70	4164.20	-40.82	-40.80	52.60	n/a	455.8	52.6
91	1	4172	2.30	80.60	4171.2	-40.8	-40.8	52.9	2.8	448.8	52.9
91	2	4203	2.5	85.1	4202.2	-40.6	-40.6	54.2	0.9	417.8	54.2
91	3	4234	3.7	59.5	4233.1	-40.1	-40.0	55.7	5.8	386.9	55.7
93	4	4266	7.6	21.1	4265.0	-37.6	-37.5	57.4	16.3	355.0	57.3
96	5	4298	12.5	10.3	4296.5	-32.2	-32.2	58.7	16.3	323.5	58.7
98	6	4329	17.2	8.8	4326.4	-24.3	-24.3	60.0	15.2	293.6	60.0
98	7	4361	22.5	9.9	4356.5	-13.6	-13.6	61.8	16.6	263.5	61.8
98	8	4392	28.2	10.6	4384.5	-0.6	-0.6	64.2	18.4	235.5	64.2
100	9	4424	34.0	9.2	4411.9	15.7	15.7	67.0	18.3	208.1	67.0
100	10	4456	38.9	7.1	4437.6	34.5	34.5	69.7	15.8	182.4	69.7
100	11	4488	44.2	5.3	4461.6	55.6	55.6	72.0	17.0	158.4	72.0
102	12	4519	49.3	3.6	4482.8	78.1	78.1	73.7	16.9	137.2	73.7
102	13	4551	53.8	1.8	4502.7	103.1	103.2	74.9	14.7	117.3	74.9
104	14	4583	58.9	0.4	4520.4	129.8	129.8	75.4	16.3	99.6	75.4
104	15	4614	64.2	359.0	4535.2	157.0	157.0	75.2	17.6	84.8	75.3
105	16	4645	69.9	357.9	4547.3	185.5	185.6	74.4	18.7	72.7	74.5
104	17	4675	71.4	358.6	4557.2	213.8	213.8	73.6	5.5	62.8	73.7
105	18	4705	71.1	358.6	4566.9	242.2	242.2	72.9	1.0	53.1	73.0
106	19	4736	70.6	358.6	4577.0	271.5	271.5	72.2	1.6	43.0	72.3
104	20	4766	70.4	358.6	4587.1	299.8	299.8	71.5	0.7	32.9	71.6
105	21	4796	72.0	358.3	4596.7	328.2	328.2	70.7	5.4	23.3	70.8
105	22	4825	72.7	357.9	4605.5	355.8	355.8	69.8	2.7	14.5	69.9
104	23	4856	72.5	357.6	4614.8	385.3	385.4	68.6	1.1	5.2	68.8
104	24	4885	72.0	357.6	4623.6	412.9	413.0	67.5	1.7	-3.6	67.6
104	25	4915	71.8	357.6	4632.9	441.4	441.4	66.3	0.7	-12.9	66.4
105	26	4945	71.4	357.6	4642.4	469.9	469.9	65.1	1.3	-22.4	65.3
105	27	4977	71.6	357.6	4652.6	500.2	500.2	63.8	0.6	-32.6	64.0
107	28	5006	71.3	357.9	4661.8	527.7	527.7	62.7	1.4	-41.8	62.9
109	29	5036	71.1	357.2	4671.5	556.0	556.1	61.5	2.3	-51.5	61.7
95	30	5066	70.7	357.2	4681.3	584.3	584.4	60.1	1.3	-61.3	60.3
96	31	5096	70.4	357.6	4691.3	612.6	612.6	58.9	1.6	-71.3	59.1
98	32	5127	71.6	357.2	4701.4	641.9	641.9	57.5	4.1	-81.4	57.7

Horizontal



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LOCATION:	EDDY COUNTY, NEW MEXICO	Chad Zamazal	
JOB NUMBER:	MI-06134	Ritske J. Tibbertsma	
COMMENTS		Thomas Mason	
TIE IN TO DRILLED PILOT HOLE		MAG DEC.(-/+)	8.71
		GRID CORR.(-/+)	0.14
		TOTAL CORR.(-/+)	8.85
DATE: 08/28/06		TIME: 1:51 PM	TRUE TO GRID ☐

TARGET DIP		0.00	ANGLE	75.00	LINE	4620.0	DIRECTION	359.98	TARGET TRACKING TO CENTER		
TEMP.	SUR #	MD	INC	TRUE AZM	TVD	SECT	N-S	E-W	DLS/ 100	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)
98	33	5158	75.7	357.9	4710.1	671.6	671.6	56.3	13.4	-90.1	56.5
98	34	5188	79.0	356.9	4716.7	700.8	700.9	54.9	11.5	-96.7	55.2
100	35	5218	83.4	356.9	4721.2	730.4	730.5	53.3	14.7	-101.2	53.6
100	36	5248	84.6	357.6	4724.4	760.2	760.3	51.9	4.6	-104.4	52.2
102	37	5279	84.5	357.6	4727.3	791.1	791.1	50.6	0.3	-107.3	50.9
102	38	5310	86.4	357.9	4729.8	821.9	822.0	49.4	6.2	-109.8	49.7
104	39	5340	91.0	357.9	4730.5	851.9	851.9	48.3	15.3	-110.5	48.6
104	40	5370	91.0	357.9	4729.9	881.9	881.9	47.2	0.0	-109.9	47.5
105	41	5400	90.8	357.6	4729.5	911.9	911.9	46.0	1.2	-109.5	46.3
105	42	5431	90.6	357.9	4729.1	942.8	942.8	44.8	1.2	-109.1	45.1
105	43	5462	90.8	358.3	4728.7	973.8	973.8	43.8	1.4	-108.7	44.1
105	44	5491	90.6	358.6	4728.4	1002.8	1002.8	43.0	1.2	-108.4	43.3
107	45	5522	90.4	358.6	4728.1	1033.8	1033.8	42.2	0.6	-108.1	42.6
107	46	5552	90.3	357.9	4727.9	1063.8	1063.8	41.3	2.4	-107.9	41.7
107	47	5582	90.3	357.9	4727.7	1093.8	1093.8	40.2	0.0	-107.7	40.6
107	48	5612	90.3	357.9	4727.6	1123.7	1123.7	39.1	0.0	-107.6	39.5
107	49	5642	90.1	357.9	4727.5	1153.7	1153.7	38.0	0.7	-107.5	38.4
107	50	5673	90.3	357.6	4727.4	1184.7	1184.7	36.8	1.2	-107.4	37.2
107	51	5705	90.1	357.2	4727.3	1216.7	1216.7	35.3	1.4	-107.3	35.8
107	52	5736	90.3	357.6	4727.2	1247.6	1247.6	33.9	1.4	-107.2	34.4
109	53	5766	89.9	357.2	4727.1	1277.6	1277.6	32.6	1.9	-107.1	33.0
109	54	5797	89.6	356.9	4727.2	1308.6	1308.6	31.0	1.4	-107.2	31.4
109	55	5828	89.4	356.9	4727.5	1339.5	1339.5	29.3	0.6	-107.5	29.8
107	56	5859	89.4	356.9	4727.8	1370.5	1370.5	27.6	0.0	-107.8	28.1
109	57	5891	90.6	357.6	4727.8	1402.4	1402.4	26.1	4.3	-107.8	26.6
109	58	5922	91.5	357.9	4727.3	1433.4	1433.4	24.9	3.1	-107.3	25.4
109	59	5953	91.5	358.3	4726.5	1464.4	1464.4	23.8	1.3	-106.5	24.4
109	60	5985	91.1	357.9	4725.7	1496.3	1496.4	22.8	1.8	-105.7	23.3
109	61	6016	91.3	357.9	4725.1	1527.3	1527.3	21.7	0.6	-105.1	22.2
109	62	6048	91.0	357.0	4724.4	1559.3	1559.3	20.2	3.0	-104.4	20.8
107	63	6079	90.8	356.5	4723.9	1590.2	1590.2	18.5	1.7	-103.9	19.0
109	64	6111	92.0	357.9	4723.2	1622.2	1622.2	16.9	5.8	-103.2	17.5
109	65	6143	92.4	358.3	4721.9	1654.1	1654.1	15.8	1.8	-101.9	16.4

Horizontal



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JOB NUMBER:		MI-06134				Ritske J. Tibbertsma											
COMMENTS						Thomas Mason											
TIE IN TO DRILLED PILOT HOLE				MAG DEC.(-/+)		8.71											
				GRID CORR.(-/+)		0.14											
				TOTAL CORR.(-/+)		8.85											
DATE: 08/28/06				TIME: 1:51 PM		TRUE TO GRID		▼									
TARGET DIP		0.00		ANGLE		75.00		LINE		4620.0		DIRECTION		359.98		TARGET TRACKING	
																TO CENTER	
SUR				TRUE				DLS/		ABOVE(+)		RIGHT(+)					
TEMP.		#		AZM		TVD		100		BELOW(-)		LEFT(-)					
MD		INC		SECT		N-S		E-W									
109	66	6174	91.8	357.6	4720.8	1685.1	1685.1	14.7	3.0	-100.8	15.3						
109	67	6206	91.7	357.2	4719.8	1717.0	1717.1	13.3	1.3	-99.8	13.9						
109	68	6237	91.8	357.6	4718.9	1748.0	1748.0	11.9	1.3	-98.9	12.5						
109	69	6269	92.0	357.2	4717.8	1780.0	1780.0	10.4	1.4	-97.8	11.1						
109	70	6300	91.7	357.2	4716.8	1810.9	1810.9	8.9	1.0	-96.8	9.6						
109	71	6332	91.8	356.9	4715.8	1842.8	1842.8	7.3	1.0	-95.8	7.9						
109	72	6363	91.7	356.9	4714.9	1873.8	1873.8	5.6	0.3	-94.9	6.3						
109	73	6394	91.7	356.9	4714.0	1904.7	1904.7	3.9	0.0	-94.0	4.6						
111	74	6425	91.7	356.9	4713.1	1935.7	1935.7	2.2	0.0	-93.1	2.9						
109	75	6457	91.8	356.5	4712.1	1967.6	1967.6	0.4	1.3	-92.1	1.1						
109	76	6488	91.7	356.2	4711.1	1998.5	1998.5	-1.6	1.0	-91.1	-0.9						
109	77	6519	91.7	355.8	4710.2	2029.4	2029.4	-3.7	1.3	-90.2	-3.0						
109	78	6550	91.8	355.8	4709.3	2060.3	2060.3	-6.0	0.3	-89.3	-5.3						
107	79	6581	91.0	358.3	4708.5	2091.3	2091.3	-7.6	8.5	-88.5	-6.9						
109	80	6612	91.0	358.3	4708.0	2122.3	2122.3	-8.5	0.0	-88.0	-7.8						
109	81	6644	91.0	358.3	4707.4	2154.2	2154.2	-9.5	0.0	-87.4	-8.7						
109	82	6676	90.6	358.3	4707.0	2186.2	2186.2	-10.4	1.3	-87.0	-9.6						
109	83	6707	90.3	357.9	4706.7	2217.2	2217.2	-11.4	1.6	-86.7	-10.7						
109	84	6737	90.1	357.9	4706.6	2247.2	2247.2	-12.5	0.7	-86.6	-11.8						
109	85	6769	90.1	357.9	4706.6	2279.2	2279.2	-13.7	0.0	-86.6	-12.9						
109	86	6800	89.7	357.2	4706.6	2310.1	2310.1	-15.0	2.6	-86.6	-14.2						
109	87	6832	89.6	357.2	4706.8	2342.1	2342.1	-16.6	0.3	-86.8	-15.8						
109	88	6863	90.1	359.4	4706.9	2373.1	2373.1	-17.5	7.3	-86.9	-16.7						
109	89	6896	90.1	0.4	4706.8	2406.1	2406.1	-17.6	3.0	-86.8	-16.7						
109	90	6926	90.3	0.4	4706.7	2436.1	2436.1	-17.4	0.7	-86.7	-16.5						
111	91	6958	90.1	0.1	4706.6	2468.1	2468.1	-17.2	1.1	-86.6	-16.4						
109	92	6988	90.3	0.4	4706.5	2498.1	2498.1	-17.1	1.2	-86.5	-16.2						
109	93	7020	91.7	1.5	4705.9	2530.1	2530.1	-16.6	5.6	-85.9	-15.7						
109	94	7050	91.7	1.5	4705.1	2560.1	2560.0	-15.8	0.0	-85.1	-14.9						
109	95	7082	91.3	0.8	4704.2	2592.0	2592.0	-15.1	2.5	-84.2	-14.2						
109	96	7113	91.1	0.4	4703.6	2623.0	2623.0	-14.8	1.4	-83.6	-13.9						
109	97	7145	90.8	0.4	4703.0	2655.0	2655.0	-14.6	0.9	-83.0	-13.7						
109	98	7176	90.6	0.1	4702.7	2686.0	2686.0	-14.5	1.2	-82.7	-13.5						

Horizontal



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LOCATION:		EDDY COUNTY, NEW MEXICO				Chad Zamazal											
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COMMENTS						Thomas Mason											
TIE IN TO DRILLED PILOT HOLE						MAG DEC.(-/+)		8.71									
						GRID CORR.(-/+)		0.14									
						TOTAL CORR.(-/+)		8.85									
DATE: 08/28/06				TIME: 1:51 PM		TRUE TO GRID		▼									
TARGET DIP		0.00		ANGLE		75.00		LINE		4620.0		DIRECTION		359.98		TARGET TRACKING TO CENTER	
SUR				TRUE				DLS/				ABOVE(+)		RIGHT(+)			
TEMP.	#	MD	INC	AZM	TVD	SECT	N-S	E-W	100	BELOW(-)	LEFT(-)						
109	99	7207	90.4	0.1	4702.4	2717.0	2717.0	-14.4	0.6	-82.4	-13.5						
109	100	7238	89.9	0.1	4702.3	2748.0	2748.0	-14.3	1.6	-82.3	-13.4						
109	101	7270	91.1	1.1	4702.0	2780.0	2780.0	-14.0	4.9	-82.0	-13.0						
109	102	7301	91.3	1.5	4701.4	2811.0	2811.0	-13.3	1.4	-81.4	-12.3						
109	103	7332	91.3	1.8	4700.7	2842.0	2842.0	-12.4	1.0	-80.7	-11.4						
109	104	7363	91.1	1.8	4700.0	2873.0	2873.0	-11.4	0.6	-80.0	-10.4						
111	105	7395	91.0	1.8	4699.4	2904.9	2904.9	-10.4	0.3	-79.4	-9.4						
111	106	7426	90.8	1.5	4699.0	2935.9	2935.9	-9.5	1.2	-79.0	-8.5						
111	107	7457	90.8	1.8	4698.5	2966.9	2966.9	-8.7	1.0	-78.5	-7.6						
111	108	7489	90.8	1.5	4698.1	2998.9	2998.9	-7.7	0.9	-78.1	-6.7						
111	109	7520	90.4	1.5	4697.8	3029.9	3029.9	-6.9	1.3	-77.8	-5.9						
111	110	7551	90.4	1.1	4697.5	3060.9	3060.9	-6.2	1.3	-77.5	-5.1						
111	111	7582	90.4	1.5	4697.3	3091.9	3091.9	-5.5	1.3	-77.3	-4.4						
111	112	7613	90.4	1.1	4697.1	3122.8	3122.8	-4.8	1.3	-77.1	-3.7						
109	113	7645	90.3	1.1	4696.9	3154.8	3154.8	-4.2	0.3	-76.9	-3.1						
109	114	7676	91.5	1.8	4696.4	3185.8	3185.8	-3.4	4.5	-76.4	-2.3						
109	115	7707	91.1	1.1	4695.7	3216.8	3216.8	-2.6	2.6	-75.7	-1.5						
109	116	7739	90.1	359.4	4695.4	3248.8	3248.8	-2.5	6.2	-75.4	-1.4						
109	117	7770	89.2	357.9	4695.6	3279.8	3279.8	-3.2	5.6	-75.6	-2.1						
107	118	7802	88.9	356.9	4696.1	3311.8	3311.8	-4.7	3.3	-76.1	-3.5						
109	119	7833	90.8	357.9	4696.2	3342.7	3342.7	-6.1	6.9	-76.2	-4.9						
107	120	7864	89.7	356.9	4696.0	3373.7	3373.7	-7.5	4.8	-76.0	-6.3						
107	121	7895	90.3	355.5	4696.0	3404.6	3404.6	-9.5	4.9	-76.0	-8.3						
109	122	7926	90.3	357.6	4695.9	3435.6	3435.6	-11.4	6.8	-75.9	-10.2						
109	123	7958	89.7	0.1	4695.9	3467.6	3467.5	-12.0	8.0	-75.9	-10.8						
107	124	7990	89.6	0.8	4696.1	3499.5	3499.5	-11.8	2.2	-76.1	-10.6						
109	125	8021	91.3	1.8	4695.8	3530.5	3530.5	-11.1	6.4	-75.8	-9.9						
109	126	8053	91.7	2.2	4695.0	3562.5	3562.5	-10.0	1.8	-75.0	-8.7						
111	127	8084	91.7	1.8	4694.1	3593.5	3593.5	-8.9	1.3	-74.1	-7.6						
111	128	8115	91.5	1.5	4693.2	3624.4	3624.4	-8.0	1.2	-73.2	-6.7						
111	129	8147	91.3	1.1	4692.4	3656.4	3656.4	-7.3	1.4	-72.4	-6.0						
111	130	8179	91.1	1.5	4691.8	3688.4	3688.4	-6.5	1.4	-71.8	-5.3						
109	131	8210	91.3	2.2	4691.1	3719.4	3719.4	-5.5	2.3	-71.1	-4.3						

Horizontal



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TIE IN TO DRILLED PILOT HOLE		MAG DEC.(-/+)	8.71
		GRID CORR.(-/+)	0.14
		TOTAL CORR.(-/+)	8.85
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TARGET DIP 0.00 ANGLE 75.00 LINE 4620.0 DIRECTION 359.98										TARGET TRACKING TO CENTER	
TEMP.	SUR #	MD	INC	TRUE AZM	TVD	SECT	N-S	E-W	DLS/100	ABOVE(+) BELOW(-)	RIGHT(+) LEFT(-)
111	132	8241	92.6	1.5	4690.1	3750.4	3750.4	-4.5	4.8	-70.1	-3.2
111	133	8272	92.6	1.1	4688.7	3781.3	3781.3	-3.8	1.3	-68.7	-2.5
111	134	8304	92.5	1.1	4687.2	3813.3	3813.3	-3.2	0.3	-67.2	-1.9
111	135	8335	91.3	1.1	4686.2	3844.3	3844.3	-2.6	3.9	-66.2	-1.3
113	136	8367	90.8	0.4	4685.6	3876.2	3876.2	-2.2	2.7	-65.6	-0.9
113	137	8399	90.6	359.7	4685.2	3908.2	3908.2	-2.2	2.3	-65.2	-0.8
111	138	8430	90.4	359.7	4685.0	3939.2	3939.2	-2.4	0.6	-65.0	-1.0
111	139	8462	91.0	359.7	4684.6	3971.2	3971.2	-2.5	1.9	-64.6	-1.1
113	140	8492	91.3	0.1	4684.0	4001.2	4001.2	-2.6	1.7	-64.0	-1.2
113	141	8523	91.3	359.7	4683.3	4032.2	4032.2	-2.6	1.3	-63.3	-1.2
113	142	8555	91.0	357.7	4682.6	4064.2	4064.2	-3.4	6.3	-62.6	-1.9
113	143	8587	90.6	357.7	4682.2	4096.2	4096.2	-4.6	1.3	-62.2	-3.2
109	144	8619	90.4	359.4	4681.9	4128.2	4128.2	-5.4	5.3	-61.9	-4.0
111	145	8651	91.5	359.0	4681.4	4160.2	4160.2	-5.9	3.7	-61.4	-4.4
	bit	8715	91.5	359.0	4679.7	4224.1	4224.1	-7.0	0.0	-59.7	-5.5

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