

JOB NO.: GMS-JR-113-001

for

DATE: 11/23/84

WELL NO.: 88-11A

Steam Reserve Corporate

SURVEYOR: J. Rankin

LOCATION: Fish Lake Valley

method of calculation

SURVEY TYPE: Gyro Multishot

LEASE: \_\_\_\_\_

Average Angle

PROPOSAL: N 250

MEASURED DEPTH	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEV.	INC.		BEARING		COORDINATES				DOG-LEG PER 100'		
				D	M	D	M	LATITUDE	N/S	DEPARTURE	E/W			
100.	100.	.08		0	10	N	80	05	E	.03	N	.14	E	.17
200.	200	.21		0	15	S	72	18	E	—		.51	E	.13
300.	300	.31		0	15	S	82	41	E	.09	S	.93	E	.05
400.	400.	.52		0	30	S	84	34	E	.17	S	1.58	E	.25
500.	499.99	.61		0	15	S	62	27	E	.35	S	2.21	E	.28
600.	599.99	.57		0	20	S	57	21	E	.57	S	2.65	E	.09
700.	699.99	.44		0	40	S	56	14	E	1.09	S	3.38	E	.33
800.	799.99	.38		0	50	S	65	07	E	1.51	S	4.14	E	.34
900.	899.98	.30		0	15	S	46	26	E	1.80	S	4.56	E	.13
1000.	999.98	-.05		0	25	S	16	19	E	2.31	S	4.84	E	.26
1100.	1099.98	-.85		0	30	S	51	48	W	3.06	S	4.56	E	.48
1200.	1199.97	-1.66		0	40	S	71	55	W	3.54	S	3.16	E	.26
1300.	1299.96	-2.76		1	00	S	60	02	W	4.13	S	2.33	E	.37
1320.	1329.96	-3.18		1	00	S	64	39	W	4.37	S	1.87	E	.27
1340.	1359.95	-3.10		1	05	S	64	46	W	4.61	S	1.37	E	.28
1380.	1289.95	-3.99		0	55	S	68	22	W	4.82	S	.89	E	.59
1400.	1419.95	-4.33		0	55	S	69	29	W	4.99	S	.44	E	.06
1450.	1449.94	-4.67		0	55	S	70	06	W	5.15	S	.01	W	.03
1465.	1464.94	-4.86		1	00	S	61	73	W	5.26	S	.23	W	1.13
				-			-							

THE HORIZONTAL DISPLACEMENT AT THE DEPTH

WHITE - CUSTOMER FILE  
YELLOW - DISTRICT FILE

EASTMAN WHIPSTOCK, INC.

COMPANY STEAM RESERVE CORP. FIELD FISH LAKE JOB NO. \_\_\_\_\_  
 LEASE \_\_\_\_\_ WELL NO. 88-11-A DISTRICT \_\_\_\_\_  
 TYPE OF SURVEY Single Shot COMPUTATIONS Radius Curve DATE \_\_\_\_\_  
 ENGINEER \_\_\_\_\_ OBJECTIVE \_\_\_\_\_ SHEET 1 OF \_\_\_\_\_

Declination 15° + EAST

OBS. ANGLE	OBS. DIRECTION	MEASURED DEPTH	COURSE LENGTH	AVG. DRIFT ANGLE	VERTICAL DEPTH	TRUE VERTICAL DEPTH	VERTICAL SECTION	SECT'N DIFF.	COURSE DEVIAT'N	AVG. DRIFT DIRECTION	DIRECT'L DIFF.	COORDINATE DIFFERENCES				RECTANGULAR COORDINATES				
												NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	
(By 20 Multi Shot Tie in)																				
1 <sup>00</sup>	S61W	1465		1 <sup>00</sup>		1464.94	5.26		S 61.1W							5.26			0.23	
0 <sup>45</sup>	N56E	1535	70	.87	69.99	1534.93	4.37		1.06 N 31.5W		0.90			0.55			4.36		0.78	
2 <sup>15</sup>	N65E	1566	31	1.50	80.98	1565.91	3.97		0.81 N 60.5E		0.39		0.70				3.97		0.78	
4 <sup>00</sup>	N71E	1599	33	3.12	32.95	1598.86	3.31		1.79 N 68E		0.67		1.65				3.30	1.57		
7 <sup>15</sup>	N70E	1694	95	5.62	94.54	1693.40	10.33		9.30 N 70.5E		3.10		8.76				0.20	10.33		
7 <sup>45</sup>	N65E	1786	92	7.50	91.21	1784.61	21.85		12.00 N 67.5E		4.59		11.08			4.39		21.41		
8 <sup>15</sup>	N65E	1878	92	8.00	91.10	1875.71	33.01		12.80 N 65E		6.40		11.60			9.79		33.01		
9 <sup>00</sup>	N63E	1973	95	8.62	93.92	1969.63	48.51		14.23 N 64E		6.23		12.98			16.02		48.51		
9 <sup>00</sup>	N58E	2008	35	9.00	34.56	2004.19	53.90		5.47 N 60.5E		2.69		4.76			18.71		50.55		
8 <sup>30</sup>	N51E	2039	31	8.75	30.63	2034.82	58.45		4.71 N 54.5E		2.73		3.83			21.44		54.38		
8 <sup>45</sup>	N43E	2070	31	8.62	30.64	2065.46	62.78		4.64 N 47E		3.16		3.39			24.60		57.77		
10 <sup>15</sup>	N40E	2145	75	9.50	73.97	2139.43	74.62		12.37 N 41.5E		8.19		9.26			32.79		67.03		
12 <sup>00</sup>	N40E	2240	95	11.12	93.21	2232.64	91.65		18.32 N 40.0E		14.03		11.77			46.82		78.80		
13 <sup>00</sup>	N39E	2330	90	12.50	87.86	2320.50	110.17		19.47 N 39.5E		15.02		12.38			61.84		91.18		
13 <sup>45</sup>	N37E	2393	63	13.37	61.29	2381.79	124.10		14.56 N 38.0E		11.47		8.96			73.31		100.14		
13 <sup>45</sup>	N35E	2507	114	13.75	110.73	2492.52	150.12		27.09 N 36.0E		21.91		15.92			95.22		116.06		
14 <sup>00</sup>	N36E	2629	122	13.87	118.44	2610.96	178.50		29.24 N 35.5E		23.80		16.97			119.02		133.03		
14 <sup>00</sup>	N36E	2750	121	14.00	117.40	2728.36	207.19		29.27 N 36.0E		23.67		17.20			142.69		150.23		
14 <sup>15</sup>	N37E	2879	129	14.12	125.10	2853.46	238.23		31.47 N 36.5E		25.29		18.71			167.98		168.94		

EASTMAN WHIPSTOCK, INC.

COMPANY STEAM RESERVE CORP. FIELD FISH LAKE V. 114 JOB NO. \_\_\_\_\_  
 LEASE \_\_\_\_\_ WELL NO. 88-11-A DISTRICT \_\_\_\_\_  
 TYPE OF SURVEY S/SHOT COMPUTATIONS RADIUS CURVE DATE \_\_\_\_\_  
 ENGINEER \_\_\_\_\_ OBJECTIVE \_\_\_\_\_ SHEET 2 OF \_\_\_\_\_

Declination 15° EAST

OBS. ANGLE	OBS. DIRECTION	MEASURED DEPTH	COURSE LENGTH	AVG. DRIFT ANGLE	VERTICAL DEPTH	TRUE VERTICAL DEPTH	VERTICAL SECTION	SECT'N DIFF.	COURSE DEVIAT'N	AVG. DRIFT DIRECTION	DIRECT'L DIFF.	COORDINATE DIFFERENCES				RECTANGULAR COORDINATES			
												NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
14 <sup>15</sup>	N36E	2999	120	14.25	116.30	2969.76	267.46		29.53	N 36.5E		23.73		17.56		191.71		186.50	
14 <sup>15</sup>	N35E	3127	128	14.25	124.06	3093.82	298.63		31.50	N 35.5E		25.64		18.29		217.35		204.79	
13 <sup>45</sup>	N37E	3250	123	14.00	119.34	3213.16	328.18		29.75	N 36 E		24.06		17.48		241.41		222.27	
14 <sup>00</sup>	N37E	3366	110	13.87	106.79	3219.95	354.38		26.36	N 37 E		21.05		15.86		262.46		238.13	
13 <sup>45</sup>	N37E	3495	129	13.87	125.23	3445.18	385.18		30.92	N 37 E		24.69		18.60		287.15		256.73	
14 <sup>00</sup>	N36E	3619	124	13.87	120.38	3565.56	414.77		29.72	N 36.5E		23.89		17.67		311.04		274.40	
14 <sup>00</sup>	N35E	3742	123	14.00	119.34	3684.90	447.06		29.75	N 35.5E		24.21		17.27		335.25		291.67	
13 <sup>45</sup>	N34E	3867	125	13.87	121.35	3806.25	479.98		29.96	N 34.5E		24.69		16.96		359.94		308.63	
13 <sup>45</sup>	N34E	3991	124	13.75	120.44	3926.69	503.41		29.47	N 34 E		24.43		16.47		384.37		325.10	
13 <sup>45</sup>	N35E	4113	122	13.75	118.50	4045.19	532.27		28.99	N 34.5E		23.89		16.42		408.26		341.52	
13 <sup>15</sup>	N31E	4237	124	13.50	120.57	4165.76	563.91		28.94	N 33 E		24.27		15.76		432.53		357.28	
13 <sup>00</sup>	N30E	4361	124	13.12	120.76	4286.52	588.80		28.14	N 30.5E		24.24		14.28		456.77		371.56	
14 <sup>30</sup>	N34E	4485	124	13.75	120.44	4406.96	621.02		29.47	N 32 E		24.99		15.61		481.76		387.17	
15 <sup>15</sup>	N35E	4547	62	14.87	59.92	4466.88	637.92		15.91	N 34.5E		13.11		9.01		494.87		396.18	
15 <sup>15</sup>	N32E	4630	83	15.25	80.07	4546.95	655.65		21.83	N 33.5E		18.20		12.04		513.07		408.22	
15 <sup>00</sup>	N31E	4753	123	15.12	118.74	4665.69	690.60		32.08	N 31.5E		27.35		16.76		540.42		424.98	
15 <sup>00</sup>	N30E	4888	135	15.00	130.39	4796.08	722.13		34.94	N 30.5E		30.10		17.73		570.52		442.71	
15 <sup>30</sup>	N32E	5013	125	15.25	120.59	4916.67	754.77		32.87	N 31 E		28.17		16.92		598.69		459.63	
15 <sup>15</sup>	N32E	5135	122	15.12	117.77	5034.44	788.79		31.82	N 32 E		26.98		16.86		625.67		476.49	
15 <sup>15</sup>	N31E	5250	115	15.25	110.95	5145.39	816.53		30.24	N 31.5E		25.78		15.80		651.45		492.29	

EASTMAN WHIPSTOCK, INC.

COMPANY STEAM RESERVE CORP. FIELD ASH HOLE UNIT JOB NO. \_\_\_\_\_  
 LEASE \_\_\_\_\_ WELL NO. 88-11-A DISTRICT \_\_\_\_\_  
 TYPE OF SURVEY SLOT COMPUTATIONS RADIUS CURVE DATE \_\_\_\_\_  
 ENGINEER \_\_\_\_\_ OBJECTIVE \_\_\_\_\_ SHEET 3 OF \_\_\_\_\_

Declination \_\_\_\_\_

OBS. ANGLE	OBS. DIRECTION	MEASURED DEPTH	COURSE LENGTH	AVG. DRIFT ANGLE	VERTICAL DEPTH	TRUE VERTICAL DEPTH	VERTICAL SECTION	SECT'N DIFF.	COURSE DEVIAT'N	AVG. DRIFT DIRECTION	DIRECT'L DIFF.	COORDINATE DIFFERENCES				RECTANGULAR COORDINATES			
												NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
15 <sup>00</sup>	N30E	5333	83 -	15.12	80.12	5225.51	838.03		21.64	N 30.5 E		18.64		10.98		670.09		503.27	
14 <sup>45</sup>	N26E	5507	174 -	14.87	168.17	5393.68	882.16		44.65	N 28 E		39.42		20.96		709.51		524.23	
14 <sup>15</sup>	N26E	5657	150 -	14.50	145.22	5538.90	919.11		37.55	N 26 E		33.74		16.46		743.25		540.69	
13 <sup>00</sup>	N26E	5755	98 -	13.62	95.24	5634.14	944.74		23.07	N 26 E		20.73		10.11		763.98		550.80	
13 <sup>00</sup>	N20E	5880	125 -	13.00	121.79	5755.93	969.25		28.11	N 23 E		25.87		10.98		789.85		561.78	
11 <sup>00</sup>	N19E	5942	62 -	12.00	60.64	5816.57	981.65		12.89	N 19.5 E		12.15		4.30		802 -		566.08	
10 <sup>45</sup>	N19E	6000	58 -	10.87	56.95	5873.52	992.14		10.93	N 19 E		10.33		3.55		812.33		569.63	
12 <sup>00</sup>	N15E	6060	60 -	11.37	58.82	5932.34	1003.38		11.82	N 17 E		11.30		3.45		823.63		573.08	
13 <sup>15</sup>	N11E	6125	65 -	12.62	63.42	5995.76	1016.57		14.20	N 13 E		13.83		3.19		837.46		576.27	
14 <sup>00</sup>	N09E	6188	63 -	13.62	61.72	6056.98	1030.07		14.83	N 10 E		14.60		2.57		852.06		578.84	
14 <sup>15</sup>	N08E	6249	61 -	14.12	59.15	6116.13	1047.86		14.88	N 8.5 E		14.71		2.19		866.77		581.03	
16 <sup>00</sup>	N03E	6311	62 -	15.12	59.85	6175.98	1057.74		16.17	N 5.5 E		16.09		1.54		882.86		582.57	
16 <sup>15</sup>	N01E	6373	62 -	16.12	59.56	6235.54	1072.46		17.21	N 02 E		17.19		0.60		900.05		583.17	
16 <sup>30</sup>	North	6528	155 -	16.37	148.71	6384.25	1109.57		43.69	N 0.5 E		43.68		0.38		943.73		583.55	
16 <sup>30</sup>	N07W	6622	94 -	16.50	90.12	6474.38	1131.48		26.69	N 3.5 W		26.64		1.62		970.37		581.93	
16 <sup>30</sup>	N10W	6747	125 -	16.50	119.85	6594.23	1159.12		35.50	N 8.5 W		35.11		5.24		1005.48		576.69	
14 <sup>45</sup>	N15W	6869	122 -	15.62	117.49	6711.72	1190.51		32.85	N 12.5 W		32.07		7.11		1037.55		569.58	
14 <sup>00</sup>	N20W	6994	125 -	14.37	121.08	6832.80	1205.26		31.03	N 17.5 W		29.59		9.33		1067.14		560.25	
13 <sup>15</sup>	N22W	7087	93 -	13.62	90.38	6923.18	1219.83		21.90	N 21 W		20.44		7.84		1087.58		552.41	
12 <sup>15</sup>	N23W	7179	92 -	12.75	89.73	7012.91	1233.13		20.30	N 22.5 W		18.75		7.76		1106.33		544.65	

EASTMAN WHIPSTOCK, INC.

COMPANY STEAM RESERVE CORP. FIELD Fish Lake Valley JOB NO. \_\_\_\_\_  
 LEASE \_\_\_\_\_ WELL NO. 88-11-A. DISTRICT \_\_\_\_\_  
 TYPE OF SURVEY S/SLOT COMPUTATIONS Radius Curve DATE 12/20/84  
 ENGINEER \_\_\_\_\_ OBJECTIVE \_\_\_\_\_ SHEET 4 OF \_\_\_\_\_

Declination \_\_\_\_\_

OBS. ANGLE	OBS. DIRECTION	MEASURED DEPTH	COURSE LENGTH	AVG. DRIFT ANGLE	VERTICAL DEPTH	TRUE VERTICAL DEPTH	VERTICAL SECTION	SECT'N DIFF.	COURSE DEVIAT'N	AVG. DRIFT DIRECTION	DIRECT'L DRIFT	COORDINATE DIFFERENCES				RECTANGULAR COORDINATES				
												NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	
11 <sup>45</sup>	N26W	7272	- 93	- 12.0	90.96	7103.87	1244.66		19.33	N 275 W	006160	17.14			8.92	1123.47			535.73	
10 <sup>45</sup>	N31W	7334	- 62	- 11.25	60.80	7164.67	1251.87		12.09	N 285 W		10.62			5.76	1134.09			529.97	
12 <sup>00</sup>	N39W	7442	- 108	- 11.37	105.88	7270.65	1262.41		21.29	N 355 W		14.33			12.36	1151.42			517.61	
13 <sup>45</sup>	N40W	7535	- 93	- 12.87	90.66	7361.21	1271.28		20.71	N 395 W		15.98			13.17	1167.40			504.44	
15 <sup>30</sup>	N45W	7628	- 93	- 14.62	89.98	7451.19	1281.50		23.48	N 425 W		17.31			15.86	1184.71			488.58	
15 <sup>45</sup>	N50W	7789	- 161	- 15.62	155.05	7606.24	1297.03		43.36	N 475 W		29.29			31.96	1214.00			456.62	
16 <sup>45</sup>	N50W	8031	- 242	- 16.45		7838.57	1352.92					0.41				1257.53			404.74	
16 <sup>15</sup>	N55W	8315	- 284	- 16.15		8110.87	1418.13					0.53				1306.63			340.75	
16 <sup>00</sup>	N57W	8589	- 274	-		8374.09	1476.64					0.22				1349.18			277.66	