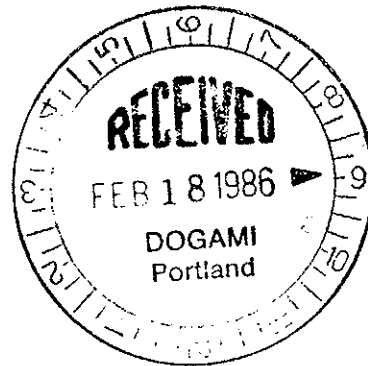


REPORT of SUB-SURFACE SURVEY

Arco Oil & Gas Company

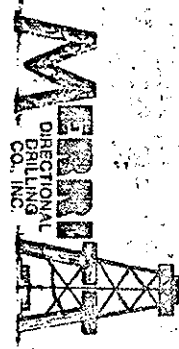
CFL ~~CZ-08~~ 23-15
Mist, Oregon



JOB NO. 2151 DATE 12-10-85



2830 WEAR STREET
BAKERSFIELD, CALIFORNIA
93308
(805) 589-5264



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 BAKERSFIELD, CALIFORNIA 93308
 (805) 589-5264

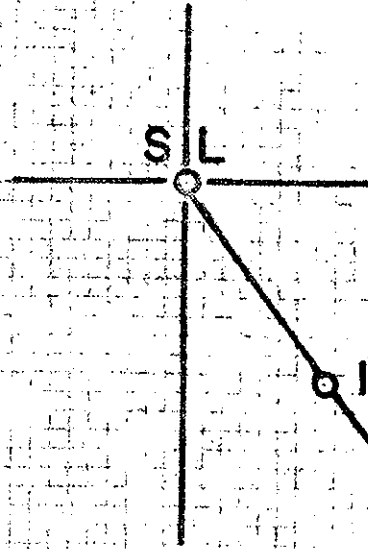
DATE 12-10-85
 CALCULATED BY MN
 COMPANY Arco Oil & Gas Company

ADDRESS P.O. Box 147, Bakersfield, Ca. 93302
 COUNTY Columbia STATE Oregon

WELL NO. 23-15 LEASE CC FIELD Mist

SHEET NO. 1 of 2
 JOB NO. 2151

MEASURED DEPTH	COURSE LENGTH	TERMINAL DRIFT ANGLE	TERMINAL DIRECTION OF DEVIATION	AVERAGE DRIFT ANGLE	VERTICAL DEPTH		COURSE DEVIATION	AVERAGE DIRECTION OF DEVIATION	COURSE COORDINATES				TOTAL COORDINATES				SECT.		
					COURSE	TOTAL			NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST			
393		0°15'	N 13 W			393.00							.84					.19	
460		0°30'	N 64 W			460.00							1.18					.47	
		1°30'	S 20 E			573.98								.15				1.94	
667		4°15'	S 20 E			666.86								4.54					.35
792		8°	S 32 E			791.15								16.52				5.50	
881		10°45'	S 40 E			878.96								28.25				14.02	
975		13°	S 44 E			970.95								42.63				26.96	
1038		14°15'	S 49 E			1032.18								52.35				37.73	
1101		15°15'	S 43 E			1093.10								63.99				49.26	
1132		15°15'	S 40 E			1123.01								70.09				54.67	
1253		16°45'	S 36 E			1239.32								96.38				75.20	
1370		17°15'	S 35 E			1351.21								124.23				95.06	
1496		18°	S 35 E			1471.30								155.48				116.95	
1722		19°	S 36 E			1685.00								179.08				133.47	
1813		19°30'	S 36 E			1771.47								214.14				158.48	
1894		18°	S 37 E			1848.17								238.42				176.12	
1988		17°45'	S 38 E			1937.67								259.35				191.61	
2081		15°30'	S 39 E			2026.74								282.24				209.17	
2174		14°30'	S 39 E			2116.58								303.06				225.73	
2298		12°45'	S 39 E			2237.09								321.77				240.88	
2481		10°30'	S 39 E			2446.33								344.47				259.26	
2645		8°30'	S 34 E			2578.08								373.92				281.45	
														396.22				296.79	



CLOSURE 511.66' S 36°42' E
410.18' SOUTH
30586' EAST

1038

1496

1894

2290

2761 TD

SCALE 1"=50'