

Results of Directional Survey

30-025-37129

**CHESAPEAKE OPERATING INC
KF 4 STATE #1**

	MD	N/S	E/W	VD
		31.42	-623.99	
TOP PERFS/OH		31.11	-632.03	
		30.76	-641.15	
		30.40	-659.31	
BOT PERFS/OH		30.36	-674.22	
		30.35	-677.66	

NEXT TO LAST		47.88	-866.34	
LAST READING		48.38	-872.08	
TD		50.68	-898.48	

Surface Location	660	FS	990	FE
Projected BHL	711	FS	1888	FE
Location of				
Top Perfs/OH	691	FS	1622	FE
Bottom Perfs/OH	690	FS	1664	FE

SUMMARY of Subsurface Locations

Surface Location	X-4-21S-35E	660	FS	990	FE	Vert. Depth
Top Perfs/OH	W-4-21S-35E	691	FS	1622	FE	
Bottom Perfs/OH	W-4-21S-35E	690	FS	1664	FE	
Projected TD	W-4-21S-35E	711	FS	1888	FE	

Data from confidential C-105
Confidential release date 11/18/2005