Appendix 5 contains the results and discussion of this study.

APPENDIX 3

NITROSAMINES IN CIGARETTE SMOKE

The objective of the examination of cigarette smoke for the presence of dimethyl nitrosamine (DMNA) is to determine if this compound is present in fresh cigarette smoke or if it forms in the trap during the collection of the smoke.

Cellulose powder traps are presently used for the collection of cigarette smoke TPM with back-up cold traps or short columns of silica gel to collect the gases.

The cellulose powder trap was tested for the trapping of dimethyl-nitrosamine by vaporising DMNA in a stream of nitrogen which passed through the trap. Subsequent removal of the DMNA from the cellulose by vacuum distillation resulted in a 70% recovery of the DMNA as determined by gas chromatography. Silica gel trapping of dimethylamine proved to be successful as evidenced by the formation of DMNA after passing oxides of nitrogen through the silica gel.

No evidence of DMNA was found in the vacuum distillate from the smoke of all burley cigarettes when it was collected on cellulose powder. Acetone washings of the liquid nitrogen backup trap did give a peak on the gas chromatogram with a retention time near that for a standard sample of DMNA.

Marlboro monitor #9 filters from smoked cigarettes were vacuum distilled and the distillate analyzed by gas chromatography. A peak was recorded on the gas chromatogram with a retention time very close to that for DMNA.