

much higher than those obtained from the laboratory which show very little volatile organic compound (VOC) is present.

Vapour monitoring wells were installed on the golf course as part of the detailed inspection (Atkins 2007) and were located between the waste mass and the receptor groups (i.e. people within on-site and off-site buildings - the club house, Jubilee Villas, Mount Croft area and Fountains Cottages) to see if any of the contaminants in the waste mass were moving in the vapour phase towards the receptors and if so whether the contaminant concentrations in the sub-surface were likely to pose a risk to the receptors.

Based on the current understanding, the waste mass on the golf course appears to contain a variety of different contaminants - some of the contaminants are volatile and as such will give rise to contaminants in the vapour phase within the 'soil' matrix (and above the water table) of the waste mass.

Sub-surface contaminants in the vapour phase generally move (migrate) through the soil via two processes: pressure gradients (advection) or diffusion although, there are also a number of mechanisms within the soil which can slow down or prevent the movement of vapours.

As a result of these processes, vapours therefore tend to migrate vertically through the soil towards the ground surface or through the soil matrix in any direction on-site and off-site, particularly through horizons in the soil which are more permeable, e.g. sands or granular made ground rather than clays and silty soils.

In addition to this, vapours can also travel via underground structures such as drainage systems and/or the permeable materials/channels associated with the structures - these are generally referred to as preferential pathways as it is considered 'easier' for the vapours to move through the ground via these pathways. However, there will be some migration from these structures to the surrounding soils.