

**Epping Forest District Council
Planning & Economic Development Directorate**

FARMS - Potential Contaminants.

As well as obtaining information from the property's planning file, it is essential that local enquiries are made with previous farmers and farm workers in order to ascertain the types and locations of the various farming practices that have taken place at the site. This will enable the necessary site specific information to be obtained on which to base any necessary sampling strategy and avoid the need for an unnecessarily wide range of parameters to be analysed on a large number of samples.

The following list of potential contaminants is for general guidance only and does not form part of any definitive list. Further information may be obtained from the DEFRA Code of Good Agricultural Practice 2009.

Asbestos.

Asbestos, mainly in the form of cement sheeting and drainage pipes, has been used extensively in farmyard buildings for over a hundred years. It is very common for the asbestos from old demolished buildings to be found in the hardcore used in farmyards, on farm tracks and in other made ground across the site.

Fuels

Coke, coal, wood & rubbish may have been used on farms in the District for fuelling threshing machines, traction engines and boilers used in milking parlours, piggeries and at poultry farms. Metals may have leached from areas where coal was stored and significant quantities of coal dust and fragments may remain in soils in the vicinity of storage & use areas. Large quantities of ash & clinker would have been produced from the combustion of these fuels over the centuries and may have been used on site as a base for farm tracks, farmyards and other made ground. Ash may present a risk, mainly from metals and PAHs.

In the first half of the 20th century petrol, followed in the second half of the century by diesel and Tractor Vapourising Oil (paraffin / petrol mix), replaced coal for fuelling farm machinery and in the 1960s fuel oil increasingly replaced coal for both agricultural and domestic heating. Most large farmyards had diesel and TVO tanks for fuelling tractors etc, some had fuel oil tanks for heating grain dryers and most had workshops for the storage and maintenance of farm machinery. Petrol, diesel, fuel oil & paraffin and their degradation products (eg PAHs & BTEX) as well as metals from waste oil and various VOCs from degreasers etc may be present in the vicinity of workshops and areas on the farm used for waste disposal.

Gases (CH₄ & CO₂)

There is the potential on larger farms that have housed livestock for gas to be produced from accumulations of slurry.

The volumes of muck & slurry produced from livestock could have been quite considerable. For example a 62 cow dairy herd could have produced about 2.8 tonnes of slurry each day and a 58 sow pig unit about 0.86 tonnes per day. Most mixed farms in the district, where there was plenty of arable land available for the disposal of muck & slurry via spreading, have disappeared since the 1950s and

those rearing only intensive livestock are the most likely to have stored large quantities. Slurry pits may be capable of holding 4 months storage and it is not uncommon for 'sacrificial sites', for example in unused areas of fields, to have been used for disposal. Pig slurry may also contain elevated concentrations of copper and zinc from the use of copper sulphate and zinc oxide growth promoters in feed.

Industrial Units

With the continuing absorption of land by the expansion of large arable farms in the district, many buildings in the remaining redundant farmyards have been converted to industrial uses such as engineering, car repairing and electronics works. See the relevant DoE Industry Profile for information on potential contaminants.

Metals

As well as the potential for metal contamination from the storage and uses of fuels, ash and growth promoters, elevated concentrations of metals can also arise from the use, storage and disposal of inorganic pesticides such as lead arsenate, mercurous chloride, triphenyltin and copper sulphate, sewage sludge (eg Cd, Pb, Hg, Cr, Ni, Cu & Zn) and to a lesser extent from fertilisers and lime containing trace contaminants (eg Cd, Zn, Cu, As & Ni).

Pesticides

Along with the metal based fungicides & seed dressings mentioned above, there is the potential for a wide range of synthetic pesticides and veterinary medicines to have been stored, mixed, used & disposed of on farms over the past 70 years.

These may include various types of **insecticides**, eg organochlorines, organophosphates, carbamates, pyrethroids, phenols; **herbicides**, eg chlorophenoxy compounds, bipyridylum compounds, triazines, thiocarbamates; **fungicides**, eg organometallic compounds, antibiotics, chloroalkylthio compounds, quinones, dithiocarbamates; **rodenticides**, eg fluoracetate compounds, thioureas, anticoagulants); **acaricides**; **molluscicides**; **nematocides, etc or fumigants** eg hydrocyanic acid, carbon disulphide.

Local enquiries should be made and research carried out concerning the types of crops & livestock raised in the past, the types of pesticides potentially employed, their likely areas of usage and their likely environmental fate. The Environment Agency has published 'A Review of Veterinary Medicines in the Environment' in 2002.

Waste Disposal

As well as pesticide and slurry disposal areas, general farm & domestic rubbish (crop residues, pesticide containers, household refuse etc) may also have been burnt, buried or soaked away on site. There is also the potential for diseased or decomposed animal carcasses to have been buried.

Acids & Alkalis

Lime or sulphate may have been stockpiled on site and resulted in high or low pH in soils beneath the stockpiles.