EAM
ENVIRONMENTAL CONSULTANTS

Recently some property owners throughout Hawke's Bay received a letter from the Hawke's Bay Regional Council informing them that their property is listed on the Hazardous Activities and Industries List (HAIL). EAM has put together information explaining what it means to be on the list including appropriate courses of action for current and prospective property owners.

Frequently Asked Questions

What is Contaminated Land and what are Hazardous Substances?

Contaminated Land as defined in the Resource Management Act 1991 is land of one of the following kinds:

a) if there is an applicable national environmental standard on contaminants in soil, the land is more contaminated than the standard allows; or
b) if there is no applicable national environmental standard on contaminants in soil, the land has a hazardous substance in or on it that;
   (i) has significant adverse effects on the environment; or
   (ii) is reasonably likely to have significant adverse effects on the environment.

Land can be classified as contaminated if it has undergone investigation and it is confirmed that hazardous substances are present on the site. Hazardous substances are defined by section 2 of the Hazardous Substances and New Organisms Act 1996 as any substance:

a) With one or more of the following intrinsic properties;
   i) explosiveness
   ii) flammability
   iii) a capacity to oxidize
   iv) corrosiveness
   v) toxicity (including chronic toxicity)
   vi) ecotoxicity, with or without bioaccumulation; or
b) Which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any one or more of the properties specified in paragraph (a) of the definition.

How is Contaminated Land Identified?

Potentially contaminated land is identified in the first instance on the basis of land use information "the HAIL list" (Hazardous Activities and Industries List). This includes historical and current land uses where potentially harmful substances are stored, used or disposed.

What happens following initial identification?

If a land use identifies a risk then further assessment and soil or water sampling is usually required to confirm the presence, or absence, of potentially contaminating substances. This will help to determine the magnitude of effect and the areas most affected.

How are soil / groundwater samples collected?

The method of sampling is dependant on the nature of the site and the type of contamination suspected during the initial assessment. If it is a small area or the nature of the contaminant type is thought most likely to affect shallow soils then soil samples are collected using a trowel, spade or hand auger. If it is a large site then a mechanical excavator (digger) may be used. If access is limited or greater depth is required then borehole construction may be undertaken. These are particularly useful for groundwater monitoring.

How is the contaminant testing carried out?

Once collected the soil and water samples are sent to an accredited testing laboratory.

What is a "Due Diligence" assessment and who should have one?

Due diligence is an information gathering exercise - "Buyer Beware". When purchasing a new property the buyer should carry out a property information search. This search should include information about the potential for contamination resulting from current or former site activities.

If the site is identified on the HAIL list, is on a Council contamination database or potentially contaminating activities are suspected and no independent site assessment reports exist then one should be requested or commissioned.

What levels of contamination are considered acceptable - the National Environmental Standards?

There are no NZ specific national environmental standards for soil contamination. These are currently under development. However there are two principal NZ based documents referred to for contaminated site assessment. These deal specifically with timber treatment and petroleum hydrocarbon contaminated sites. If the chemicals are not detailed within these documents then sometimes other NZ documents can provide guidance. Otherwise reference is made to other published international standards. The nature of the land use (or proposed use) is important with industrial being the least sensitive and residential the most sensitive. For each site investigated the most appropriate published values are adopted.

If sample results exceed the site specific adopted values then this indicates the presence of a hazardous substance.

Assessment is then made in terms of the Hazard-Pathway-Receptor model. For a site to be considered contaminated all three elements are required. The hazard is the chemical of concern. The pathway is a way for that chemical to reach the receptor such as direct contact, inhalation, ingestion or through the ground in solution. Receptors are at risk of being harmed and include human health, the environment, site workers, adjacent sites or water resources.

How is a contaminated site cleaned-up (remediated)?

If significant contamination is identified, further sampling will be required to improve the understanding of the distribution or further assess concerns identified during the initial assessment.

The clean-up plan is usually site specific and depends on factors such as the nature of the hazardous substance, soil types, presence of nearby water courses and the use of the land ie industrial, commercial, agricultural or residential.

The solution adopted should centre around the previously identified Hazard-Pathway-Receptor Model and involve breaking a link in this chain. Removal of the hazard could include "dig and dump", a popular but also generally expensive solution. Options may be available to treat the affected soil or water reducing the chemicals of concern back down to acceptable levels. The pathway can be removed ie. cover affected areas with hard landscaping, building platforms or suitable thickness of clean soil. The receptor can be modified by restricting the land use to a less sensitive option. A combination of options may be appropriate.

What are the likely effects on my family or business?

There will be costs for a site investigation. This will depend on the size of the site, the nature of the chemicals of concern and the sampling method. The costs are split into fieldwork, laboratory analysis, results assessment and reporting.

In terms of physical disruption, in most cases the effects will be minimal and limited to disruption during the collection of soil or water samples. Dependant on the scale of the site this may take a few hours and leave a number of small back filled holes in the garden or it may take a few days and result in some larger back filled holes. If the level of disturbance is an issue, the drilling of boreholes is often the best option.

The adopted chemical hazard levels are by nature conservative. If a well planned site investigation does not identify any hazards then the risk of potentially adverse effects is considered low.

If potential hazards, pathways and receptors are identified then additional costs could be incurred. Also further disruption may result from additional sampling or remedial works. However, many investigations are undertaken following a change of ownership and are also associated with a change in land use. In these instances potential costs can be accounted for within the land transaction and some minor site soil disturbance is not usually an issue.

How will contamination affect the value of my property?

A site investigation site can have positive benefits just as it may have negative repercussions.

If a site investigation finds a low risk of potentially adverse affects or details of the completion of remedial activities are reported then this information can be stored on a Council property search database. Potential purchasers can access the information and the value of the property should hold or may increase as uncertainties are reduced and risks are lowered.

If a site investigation was undertaken that identified contamination risks and outlines potential remedial options then the costs of implementing these options can be considered during the property transaction.

If there is no site investigation information or the information is poor then the uncertainties around the true site condition can result in the loss of a sale or overly conservative assumption might be made around the costs for remediation.

EAM - Environment Consultants, Level 1, Bowman Building, 3 Market Street, PO Box 1154, Napier 4140
Tel: 06 835 0248, Fax: 06 835 0247, info@eam.co.nz