

RISK ASSESSMENT: COST EFFECTIVE CLEANUP FOR BROWNFIELDS

BY JASON BOURGEOIS

Has the time finally arrived to give contaminated property (for instance, brownfields) a second look?

Brownfields — abandoned or underutilized commercial and industrial properties — have good potential for redevelopment once cleaned up. In the past, very few developers had the stomach for expensive cleanups that cost a fortune, were very disruptive to a work site, and went on for years. The result was that many pieces of prime real estate were ignored while development was forced to go elsewhere. Two things have recently changed that make contaminated property more attractive to purchasers and developers.

The first is that demand of development property is outpacing supply. Nowadays, with property so scarce, "brownfields" are being revisited for their redevelopment potential. We are simply running out of room and cannot afford to waste underutilized property in prime locations.

Second, there is a growing acceptance by the government for a technical tool called "risk assessment." The practical effect is that contaminated properties can be developed but cleanup costs can be kept down. In the past, property was considered contaminated if concentrations of substances in soil, surface water, groundwater or sediments exceeded rigid government set standards. This was a one size fits all approach and did not take into consideration the unique characteristics of a particular site. In order to obtain a certificate of compliance and development permit, you were forced to clean up your property to meet these standards. The traditional dig and dump was a common cleanup technique. The results were prohibitive financial costs, development delays and major disruption to a work site.

Risk-based standards have recently been added to the definition of "contaminated site" and are gaining acceptance as

a cleanup option. The rationale is that for some types of sites or substances, remediation may not be technically feasible or financially justified. In these cases, contamination may be left in place but only if it poses no threat to human health or the environment. The benefit is if you want to purchase and develop contaminated property, you can obtain your certificate of compliance and development permit without being automatically forced to cleanup the contamination.

A "risk assessment" is the actual tool used to apply risk-based standards to a contaminated site. It is a highly technical process and must be performed by specialized environmental consultants. A risk assessment is used to evaluate potential existing and future impacts from contamination remaining at your property. It is site-specific, which means that every risk assessment is unique to the site for which it was prepared.

The first part of a risk assessment is determining how bad the problem might be. The extent of any contamination present at your property must be determined through a site investigation. This site investigation stage is nothing new and was always the first step to be performed before cleanup could take place.

The next part of a risk assessment is to estimate the risk to human health and the environment. The mere presence of contamination does not necessarily constitute a risk. If the substances present are not toxic or hazardous, then there is no risk. A risk assessment must consider all the possible exposure pathways. Exposure pathways are the potential routes a substance may take to come in contact with any person, animal or plant. Substances may be ingested, inhaled or absorbed through the skin, or may accumulate in food such as crops grown. An example is that young children are known to eat exposed dirt. Another example is gardens where vegetables might accumulate contamination from the soil.

The final part of a risk assessment addresses measures that may be required to reduce the risk to human health and the environment. In other words, the risks from leaving contamination in place may be eliminated if certain practices are followed. Depending on your property, there are many options available. At one extreme is the expensive option of actually removing the contamination. Other cost-effective options include site capping/covering, which could include adding a clean layer of topsoil for grassy areas or gardens or adding concrete/asphalt to parking lots or walkways. Adding vapour barriers beneath buildings removes the indoor risk of a development proceeding on contaminated soil. Barrier or pile walls along property lines are also an acceptable way of eliminating the risk of contamination migrating offsite.

Quite often, the actual risk will be determined to be within acceptable limits without doing any active cleanup. However, a risk assessment does not automatically mean that no cleanup is required. Depending on your particular situation, a risk assessment may be used in combination with, or instead of, cleanup. Cleanup can also be something as simple as natural attenuation, which is entirely passive and has no cost besides simply monitoring. Quite often, after a risk assessment, cost-effective environmental monitoring and post-cleanup inspections are the only measures required to satisfy the government.

Because it requires minimal site work — saving both time and money — risk assessment may prove to be the answer to the development of a large portion of B.C.'s brownfield sites. ♦

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