



COLORADO REAL ESTATE JOURNAL

THE COMMUNICATION CHANNEL OF THE COMMERCIAL REAL ESTATE COMMUNITY

JUNE 18, 2014 – JULY 1, 2014

Asbestos-Contaminated Soil in Industrial Land

Asbestos has been used in thousands of building materials and is hazardous to human health when inhaled. Asbestos-contaminated soil (ACS) is a significant, potentially costly and evolving issue in Colorado urban land development projects. Tantamount to planning and executing projects that may encounter ACS is understanding the governing regulations and pending changes to the current rules, and resultant investigation and management considerations.

Under the ACS regulations, practically any commercial or urban redevelopment project must include consideration of the potential for ACS. Asbestos in soil is often sourced from buildings historically constructed or demolished or from historic infill/landfills, and is often encountered at previously developed sites. Where there is no route of exposure, ACS typically presents little risk to public health. It is the responsibility of site owners to ensure that appropriate due diligence and safety controls are in place so that ACS can be properly managed, if discovered.

■ **Regulatory Overview.** In 1989, the Colorado Air Quality Control Commission promulgated Regulation No. 8, Part B, The Control of Asbestos (Regulation No. 8), in order to protect public health during demolition or asbestos abatement projects for facilities (buildings). Regulation No. 8 establishes permitting and management practices for projects that exceed certain scope or quantity thresholds (reportable quantities) of Asbestos-Containing Materials (ACM), which are materials that contain greater than 1 percent asbestos.

To address ACS, the Colorado Department of Public Health and Environment (CDPHE)



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established specific requirements under Section 5.5 of the Regulations Pertaining to Solid Waste Disposal Sites and Facilities (6 CCR 1007-2). Revisions in 2007 were intended to address sites with known or presumed ACS that are below the Regulation No. 8 reportable quantities (e.g., any amount of asbestos) and when asbestos is present at very low levels (e.g. any detectable asbestos fibers in soil) and where the asbestos contamination is not a component of an existing facility.

The purpose of the Section 5.5 revision is to provide consistency regarding management practices and update the ACS regulation language based on experience gained since 2007. The current and pending regulatory changes are based on the presumption, in the absence of established site-specific human health risk data, that any measurable concentration of asbestos fibers in soil can cause unacceptably high asbestos air emissions if those soils are not properly managed.

In the CDPHE effort to provide property owners with management alternatives, there has been much stakeholder input and a concerted effort to comport the pending new regulations with existing regulatory framework and language. The rule making process is presently underway and some key potential changes may include highly prescriptive best management practices (BMPs) that vary based on the nature and extent of the ACS and the presence of nearby “receptors,” and several key new regulatory definitions that may be inconsistent with the meaning of existing regulatory language.

■ **Investigation Approach.** A proactive and sound technical approach to investigation of ACS can eliminate or reduce project delays and minimize unforeseen cost. Prior to excavation or earthwork it is required that an environmental professional with experience is conducting historical property use assessments and asbestos credentials review available historic site information to evaluate the potential to encounter ACS.

Prior to commencing land development activities where there is a “reason to believe” or a “reason to know” that there may be ACS, landowners are obligated to understand the nature and distribution of materials that may be encountered. Remediation is typically required only when ACS will be directly impacted during earthwork.

Techniques exist for both surface and subsurface investigation but knowledge, experience and planning can optimize your benefits relative to costs of the various investigation approaches. The level of investigative effort should be determined based on several factors, including the size of the

site, the potential distribution of asbestos and its likely source. In some cases it may be preferred to conduct only nominal research upfront and have contingency planning in place; in other cases conducting a more exhaustive upfront investigation may be warranted. The cost benefit analysis of possible alternatives should include the likelihood of ACS discovery, how extensive the planned earthwork will be and any contracting imperatives surrounding resolution of cost uncertainties.

■ **Management of Asbestos-Contaminated Soil.** Key steps in the management of ACS include proper and timely notification of CDPHE, the preparation of a practical Soil Characterization and Management Plan (SCMP) (including the careful selection of soil excavation and segregation methods), and competent execution of excavation, sampling and disposal activities. The SCMP should balance practical cost-effective soil removal design and logistics with overall goal of minimizing air emissions. Careful planning and contracting with transporters and disposal facilities can save substantial funds.

■ **Immediate Actions upon Unanticipated Discovery of ACM.** When suspect ACS are discovered during construction activities, the critical requirement is to avoid generating dust or being in direct contact the soil, thereby limiting potential exposure to asbestos fibers. Notify CDPHE as soon as possible, but no later than 24 hours after discovery of ACM in the soil or ACS. Finally, prepare and submit a SCMP that focuses on real-time observation, testing, and management of ACM in order to minimize construction downtime due to the unanticipated discovery.