

**Frank J. E. Zechner Professional Corporation**  
**Barrister & Solicitor**

24 Beresford Avenue,  
Toronto, Ontario, Canada M6S 3A8

phone: 416 319 2004  
fax: 416 987 6877

email: [frankzechner@sympatico.ca](mailto:frankzechner@sympatico.ca)

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April 21, 2010  
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RESIDENTIAL AND CIVIL CONSTRUCTION  
ALLIANCE OF ONTARIO  
25 North Rivermede Road, Unit #13  
Vaughan, Ontario  
L4K 5V4

**Attention: Andy Manahan, Executive Director**

Dear Andy:

**Re: Ontario Regulation 511/09  
Impact on Management of Surplus Construction Site Soils and Fill**

Further to your request for a review of the impact of Ontario Regulation 511/09 on the management, characterization and handling of surplus soils and fill originating at Ontario residential and civil construction sites, I have prepared the comments and recommendations noted below. In addition, I have prepared a short summary of impacts for any discussions you may have with government representatives and other stakeholders.

**1. Introduction**

On December 29, 2009 the Ontario government created more than 100 pages of regulatory changes to the characterization and management of soils through Regulation 511/09. The new regulation followed more than a year of consultations with key stakeholders by the Ministry of the Environment to determine the best methods to encourage the effective clean up and development of brownfield sites (sites with historical soil and ground water contamination from primarily industrial activities over the past century or more).

The general scheme in Ontario to protect purchasers and developers from future soil and groundwater contamination liabilities is through the registration of a document referred to as a Record of Site Condition (RSC). If an RSC has been filed with the Ministry and other appropriate authorities identifying the extent of contamination and clean up of the

subject property, the owner/developer filing the RSC will not be held responsible for future site clean up costs, even if environmental standards become more stringent.

There are generally two tiers or sets of standards for site clean up. One tier set of standards is the clean up of soils and ground waters to a specified standard, e.g. Table 1, 2 or 3, with Table 1 being the most stringent for agricultural and sensitive uses, while Table 3 is more appropriate for industrial uses. The second or alternative tier is a mixed 'risk assessment' standard that is specific to that property, its uses and the uses of neighbouring properties.

The Ministry of the Environment believes that the two-tiered approach allows people to use the programming that's out there to determine what levels of decontamination are required. In some cases, this will reduce processes that used to take a year and a half to a few months.

Most of the changes from Ontario Regulation 511/09 will come into force on July 1, 2011, including new soil, ground water and sediment standards. The concern however is that landowners, particularly owners of sites that might otherwise receive surplus fill and soils from construction sites, will immediately apply the new stricter soil standards to any intended deliveries to their sites.

## **2. The pre-2010 Rules for Soil Characterization and Management**

Since the 1980's the term "inert fill" has been defined as earth or rock fill or waste of a similar nature that contains no putrescible materials or soluble or decomposable chemical substances. Arguably any soil that was not an 'inert fill' could be regarded as either a hazardous or non-hazardous solid waste. A literal interpretation of that definition would have been unmanageable from an industry perspective as construction soil movement in Ontario is estimated as exceeding 170 million tonnes per year.<sup>1</sup>

In 2004, the Ministry of the Environment published a guideline document that includes a series of tables pursuant to Part XV.1 of the Environmental Protection Act (*Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act*, dated March 9, 2004). Under that guideline, the term "inert fill" is generally regarded by the environmental management and consulting community as soil meeting Table 1 criteria. The current table is accessible via the internet at <http://www.ene.gov.on.ca/envision/gp/4697e.htm> .

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<sup>1</sup> The word "fill" is not defined in the Environmental Protection Act or its regulations. Nothing is completely insoluble, non-putrescible, and non-decomposable. Over a long enough period of time, everything will dissolve or decompose to some extent. Soil is frequently contaminated with chemicals deposited as a result of human activity, and earth and rock also contain naturally occurring contaminants such as metals. The use of the term "chemical" is puzzling as everything in the world is made up of chemicals, including water, which is the chemical H<sub>2</sub>O.

It is generally accepted by most stakeholders that if soil exceeds the criteria for any contaminant listed in Table 3 of the Guideline, then the soil is deemed to be a waste under Part V of the Environmental Protection Act. If soil is deemed to be a “waste” then Contractors must use licensed waste management carriers to remove soil from a construction site to any other site, and that other destination site must be licensed to receive the specific type of waste for disposal purposes.

As to the environmental characterization of the soil, either as a waste or a determination of the contaminants that would deem it to be a Table 2 or Table 3 or higher table material, that duty falls upon the ‘generator’ of the soil. If the soil meets the criteria set out in Table 1 of the March 9, 2004 Guideline, it can, with the consent of the owner of the intended destination site, be reused at any other site, whether or not that other site is a construction site. If the Soil meets the criteria in Table 2, but not Table 1 of the Guideline, it can be used at only specific types of agricultural, residential or parkland sites and most industrial, commercial or community sites. If the Soil meets the criteria in Table 3 but not Table 2, it can only be used at a limited number of industrial or commercial sites and very limited residential or community sites.

### **3. Changes to Soil Rules by Ontario Regulation 511/09**

Regulation 511/09 brought about a number of changes related to the assessment, sampling, testing and movement of soils including, but not limited to, the changes listed below. The new contaminant standards for Tables 1, 2 and 3 are dated July 27, 2009 and can be accessed via the internet at <http://www.ene.gov.on.ca/publications/7382e.pdf>.

#### **New Contaminants.**

The list of contaminants in the new soil standards has been expanded to 120 contaminants and now includes substances such as dichlorodifluoromethane, hexane, trichlorofluoromethane and uranium. A soil might have met Table 1 criteria before 2010 if it had 40 parts per million of uranium, but under the new regime, that concentration would now exceed the maximum allowable concentration for Table 3, rendering the soil as a waste that would likely be unacceptable to most sites across the Province.

#### **Tighter Limits for Contaminants.**

About half of the substances listed in the 2010 soil standards have lower tolerances for contaminants than were in place in 2004, including new substances added to the 2010 list of contaminants that had no specific limits in 2004. There are also a few substances for which the Table 3 levels (industrial soil) in 2010 are lower than the Table 1 (inert fill – Agricultural or other sensitive property use) from 2004, as shown below.

<b>Contaminant</b>	<b>Table 1 threshold in 2004 (µg/g)</b>	<b>Table 3 threshold in 2010 (µg/g)</b>
Cyanide	0.12	0.051
Endrin	0.05	0.04
Vanadium	91	86

**Sampling criteria.**

Generally speaking, the new rules require more rigorous sampling procedures. Analytical samples must comply with prescribed chain of custody requirements and the laboratory cannot be instructed to exclude any unfavourable parameters that were analyzed.

**Section 55.**

A new section is being added to the regulation that restricts the conditions under which soil can be brought from another site to a site that is already subject to a Record of Site Condition under the Act. Specifically, section 55 states that soil may only be brought to a site that is the subject of a RSC if it meets the requirements of Schedule E to the regulation and, even if it meets the Schedule E requirements, can only be used at the RSC site to backfill an excavation or for final grading.

Schedule E (section 32) states that the concentration of each contaminant in the soil that originated offsite, must be equal to or lesser than the standard that would be the applicable site condition standard for that contaminant. The specific language in Schedule E may further limit the soils that can be brought onsite to a RSC property, if for instance the RSC property meets Table 3 and has a zinc concentration 100 ppm. Soil from a construction site having a zinc concentration of 250 ppm, which is still within the Table 3 limit of 340 ppm, might not be permitted because the zinc concentration at the destination site is lower than the zinc concentration of the soil from the construction site.

As indicated previously in this document, the measures set out in Ontario Regulation 511/09 are generally expected to come into force as of July 1, 2011. As owners and lenders are very concerned about potential liability for future clean up costs, they are expected to become unwilling to allow the deposit on their lands of soils that might in any way restrict the potential future uses of the land. It is therefore expected that many owners of sites that would otherwise have accepted surplus construction soils for future development, alterations or elevation changes will no longer accept surplus construction soils without written confirmation from accredited analytical consultants that the surplus soils will comply with Table 1 under the new rules.

As the new rules have more stringent sampling and custody requirements for soil samples, and the soil has to be tested for a larger number of contaminants and lower maximum limits, the costs of soil sampling and analysis are expected to increase.

#### **4. Summary of Impact on Construction Excavation and Surplus Soils**

##### **The Nature of Construction Fill**

A large portion of surplus construction fill originates from municipal and provincial highway right of ways, as that is the site for the construction of roads, bridges, sewer, water and transit services and facilities. When excavation from a roadbed occurs, the soil that had been compressed by decades, if not centuries of load bearing, expands as it is no longer under pressure from the roadbed and other structural layers. Most native soils require considerable time and energy to re-compact to the condition in which it was originally situated. Consequently engineered materials, primarily stone and aggregate, which are more stable and easily compressed, are used to backfill right of way excavations. The soil that was excavated is no longer used and owners and contractors must find an alternate site for those excavated soils.

##### **Impact of new analytical requirements**

Few, if any sites receiving surplus fill from construction sites will accept such soils for placement without an analytical report confirming whether the soil meets Table 1, Table 2 or other criteria. The more stringent sampling protocols, coupled with more analytical testing for smaller concentrations of a larger number of contaminants will increase the costs and turnaround time for the management of surplus construction fill.

##### **Impact of new Table 1 criteria on Pits and Quarries**

Ontario's pits and quarries have not only provided Ontario construction industries with vital aggregates, but also have been able to accommodate excess soils from construction sites for remediation of pits and quarries. In recent years, quarry operators would only accept Table 1 soils at their sites. The reduced tolerances for up to 120 contaminants is likely to further reduce the opportunities to use pits and quarries as a placement site for surplus construction fill.

##### **Impact of new Table 1, 2 and 3 criteria on potential soil disposal sites**

Owners of potential soil disposal sites, such as properties in need of clean fill to raise their grade elevations or to construct soil berms will try to ensure that their properties can be developed to their highest and best use, in light of local zoning requirements and official plans. Rezoning and subdivision development often takes years and sometimes decades to get all of the necessary approvals to proceed with a rezoning and registration of a plan of subdivision.

To the extent that lands currently zoned industrial or agricultural are the subject of a rezoning application or application for registration of a plan of subdivision, one of the documents that is often required is written confirmation that the soils meet the applicable Table requirements under the Ministry of Environment guidelines. The new tables have tightened the tolerances of several contaminants to the point that the contaminant level that would have satisfied Table 1 under the 2004 guidelines now exceeds the 2009 Table 3 guidelines. Consequently an analytical

report after the new Tables become law may trigger a requirement for soil removal or in situ treatment of existing soils in order to allow the property to be developed for residential or recreational purposes.

While there is limited data on annual quantities of excess construction fill across the Province, it is conservatively estimated that for every tonne of aggregates produced in Ontario, there is a corresponding ½ tonne of excess construction fill that must be moved offsite. Aggregate production in Ontario has been about 172 million tonnes per year for the last 15 years. Even if the impact of the new sampling and testing protocols under Ontario Regulation 511/09 is as low as \$1.00 per tonne, that means the construction industry will be paying at least \$86 million more per year to comply with the new standards. On top of those costs, the construction industry will face longer delays to complete the more stringent testing of more potential contaminants. The impact of O.Reg 511/09 appears to be significant and far reaching despite the Province's statements that the new regulations are focused on facilitating brownfield development.

Yours truly,

A handwritten signature in black ink, appearing to read 'F. J. E. Zechner', written over a horizontal line.

Frank J. E. Zechner