

Handling excess soil – how we got to where we are and where things are going

By A.J. (Al) Durand

Properly handling and managing the movement of excess construction soils or “clean” dirt has been a concern over the past 20-25 years in Ontario. Given the increased scrutiny on this subject over the past few years, the requirements and approaches involved in moving excess soil, in particular, are rapidly changing for the better.

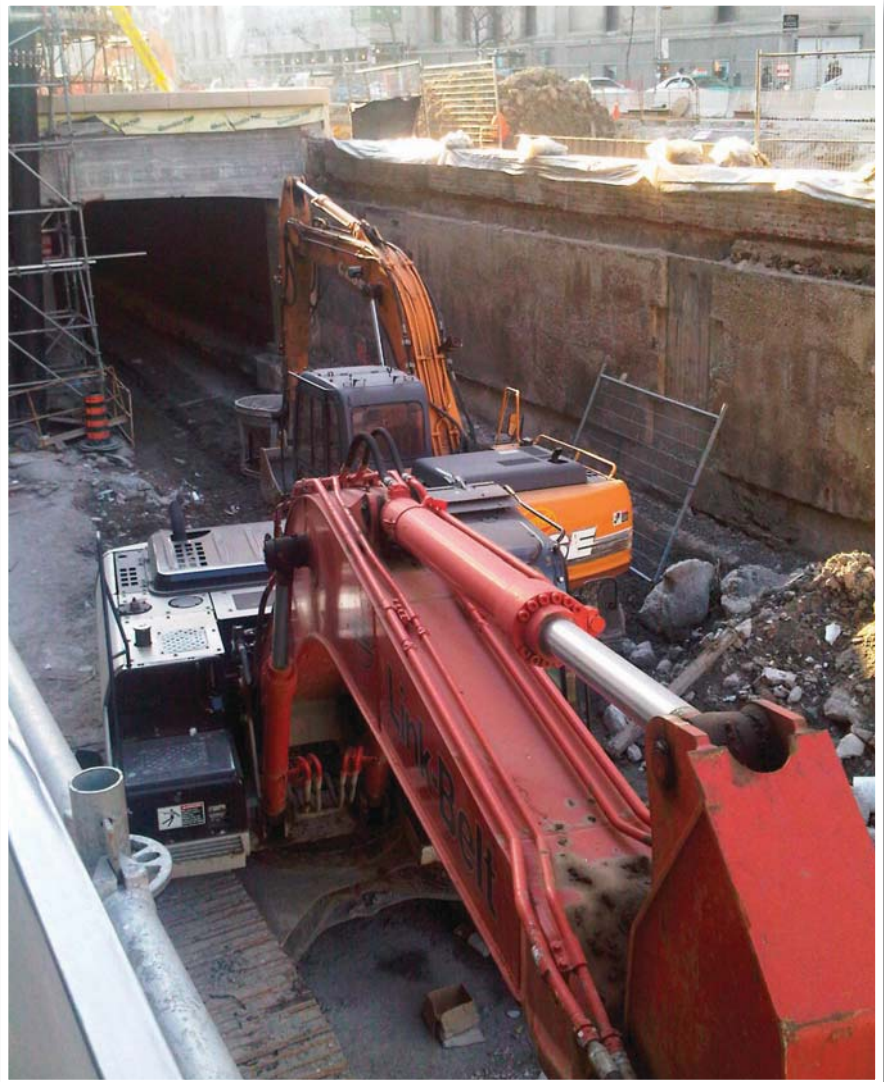
To understand where we are in Ontario with respect to clean soil, it is important to understand some historical perspectives. The old adage, if you don't learn from history, you are doomed to repeat it, certainly applies.

Some of the current issues or problems in handling excess soils in Ontario go back to the late 1980s and early 1990s. During this period, the emerging focus was shifting from health and safety driven concerns to broader, longer-term environmental concerns with respect to soil, air and water contamination.

With respect to soil there were no recognized “standards” or rules, beyond accepted past practices typically used by industry. To fill this gap for contaminated properties, the Ontario Ministry of the Environment worked with industry and other jurisdictions to develop practices to address contamination levels. For soils, this initially involved adopting the original Dutch ABC criteria and a focus on hydrocarbon contamination, the most pervasive one.

In the mid-1990s, the MOE introduced the “*Guidelines for Contaminated Sites in Ontario*”, along with other protocols and approval processes for dealing with impacted soils. As knowledge, understanding and technical capabilities improved, industry and government realised there was a need to move away from a focus on “contamination” to one of encouraging site cleanups, property remediation and reuse. The practice of brownfield remediation evolved out of this new way of thinking.

Through the efforts of the National Roundtable on the Environment and the Economy (NRTEE) and, at the provin-



Toronto's Union Station expansion project has meant moving large volumes of soil.

cial level, through industry, government and stakeholder consultation, meaningful brownfield policy and legislation emerged in the early 2000s. These approaches fundamentally recognized the need for technically sound, science-based soil quality standards to be matched with protocols and incentives to encourage the responsible redevelopment of brownfield properties.

In Ontario, this evolution resulted in the *Brownfield Statute Law Amendment Act, 2001*. In 2004, the adoption of the Records of Site Condition Regula-

tion (O.Reg.153/04) incorporated new, made-in-Ontario, soil quality reference tables with contaminant threshold levels based on future land use.

The regulation further defined soil sampling and testing protocols and the application of site-specific risk assessment approaches. O.Reg.153/04, among other things, also identified the need to file a Record of Site Condition (RSC) report, attesting to the environmental quality of the soil and water at a remediated property. During this period, there

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was a general reference made to “inert fill” which by default became known as “clean soil.” Today, this generally means Ontario Table 1 soil quality standards.

Table 1 soil criteria are based on background soil quality data referred to as the Ontario Typical Range criteria. These numbers are conservative and not risk-based. In the absence of clear direction for clean soil handling there has been a common understanding that anything that was not Table 1 should by default go to landfill sites. This has been the geotechnical equivalent of throwing out the baby with the bath water, with clean soil being the baby.

In the past five years, particularly in large urbanized areas such as the Greater Toronto Area, we have seen a lot of development work, infrastructure and construction projects generating much needed jobs and an expanded requirement to find “good homes” for excess soils.

This has raised significant concerns, particularly in communities surrounding the GTA, where large volumes of excess soils are moved to commercial, private

and municipal receiving sites. These include legal and property rights issues, the quality of the relocated soils in some cases, and the health, safety and environmental impacts associated with trucking.

Without an appropriate policy framework, the result of these concerns was the continued disposal of excess soils

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at landfills. This was largely driven by legal liability concerns under a pollutant-pay regime.

Regulatory concerns and soil disposal enforcement actions are currently triggered by issues that, under the *Environmental Protection Act*, may cause an adverse effect at the receiving site area. This after-the-fact regulation misses the opportunity to effectively plan, manage and ensure that excess “clean” soil is handled in a sustainable manner.

The old practice of “dig and dump” is no longer an acceptable approach. Filling limited and dwindling landfills is a legitimate concern as it is not sustainable in the long term. It is clear that an effective process, supported by industry, government and the local community, is needed to responsibly manage and beneficially reuse excess “clean” soil.

Recently, there has been an increasing call for regulation of the movement and handling of excess soil in Ontario. At the same time, there has been growing recognition that both excess soils and marginally impacted soils should be seen as a resource. Their beneficial reuse instead of disposal in landfills, should be encouraged.

Ontario’s Ministry of the Environment and industry have been examining how other jurisdictions have addressed soil movement and practices to encourage the responsible handling and beneficial reuse of excess soils. They have conducted ongoing stakeholder consultations with respect to all aspects involved in defining soil quality and rec-



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ommended practices to beneficially and sustainably reuse excess soils.

As with the contaminated soil developments in the 1990s, the MOE has looked to other jurisdictions and worked with the Netherlands under a memorandum of understanding, to share brownfield remediation technology, including soil handling approaches and best practices.

In 2012, MOE released a draft document called “*Soil Management – A Guide for Best Management Practices.*” The document outlined a framework for moving soil from non-RSC properties to receiving sites. Associations such as the Ontario Environmental Industry Association, the Canadian Brownfields Network, the Residential and Civil Construction Alliance of Ontario (RCCAO) and others, provided further recommendations and reports on the identification of issues. Also, they identified opportunities to support the introduction of environmentally responsible practices for dealing with clean excess soil in Ontario.

RCCAO released several reports covering soil management related issues, including “*Best Management Practices for Handling Excess Construction Soil in Ontario (Version 1)*” in November 2012 and an updated “*Survey of Municipal Soil By-laws*” in March 2013.

The “*Best Management Practices*” are based on a successful approach developed in the United Kingdom by an organization called Contaminated Land: Applications in Real Environments (CL:AIRE). The U.K. model is referenced as a Definition of Waste – Code of Practice (COP). It encourages the beneficial reuse of excess soil once it is deemed to have an acceptable beneficial reuse and is then accordingly not a waste by definition. This then permits application of formal handling protocols under the COP, including the required oversight to be applied.

Other U.K. and Dutch practices include the need to develop local soil recycling and soil storage depots to facilitate the timely movement of soil from and to projects.

In November 2012, the MOE posted the draft Soil Management Guide on the environmental registry for external review. Following stakeholder consultations, it released the final, revised “*Management of Excess Soil – A Guide for Best Management Practices*” in January 2014.

This document expands on the original draft and provides broader information associated with handling excess soil.

The Ministry has committed to provide further outreach and training covering the main elements of the new guide. Key areas include further technical guidance on new parameters like invasive species, the role and training of Qualified Professionals, the timely approval of required temporary soil storage sites, support to municipalities and conservation

authorities in terms of their role in developing appropriate, consistent supporting soil handling by-laws, and planning approvals for receiving sites.

It has become apparent that, because of local community concerns, significant further outreach, training and capacity building is required at the municipal level. One recommendation under development is to create a “model soil use by-law” that could assist municipalities and

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become the framework for implementing the new Soil Management Best Management Practices (BMPs).

Another municipal area to be pursued is the standardization and inclusion of excess soil BMP requirements in the municipal procurement process, as a responsible soil handling approach and due diligence practice.

Another application learned from the CL:AIRE approach is something called “soil matching” to facilitate the environmentally responsible, safe and cost-effective movement of excess soils. This involves soil screening requirements, professional oversight, and the tracking of soil shipments. During a CL:AIRE / RCCAO workshop, held in Toronto in September 2012, it was clear there was overwhelming support for the concept.

In October 2013, RCCAO launched a new soil matching or soil dating web site and service called SOiIL – Supporting Ontario Infrastructure Investments and Lands (www.soiil.com). It allows those involved in soil handling projects to post excess soil disposal or receiving needs for potential matching with oth-

er entities. The electronic database is in the process of being populated with soil volume information and is intended to be a resource for excess soil related information, news and developments in Ontario and internationally.

Going forward, there are a number of recent excess soil handling activities being launched. MOE has announced that it will be conducting a review of fill disposal policies in Ontario over the next 18 months. This will cross over into other ministries within the provincial government.

In December 2013, the City of Toronto’s planning and growth management committee adopted eight recommendations involving the management of excess soil from large redevelopment and construction projects. Within the recommendations are strategies to encourage creation of soil banks and to examine requirements for QPs to prepare soil management plans, including material management for city projects generating excess soil.

New initiatives can significantly and positively impact the way we responsibly manage excess soil in Ontario. What

is required is strong leadership and responsible policy development, supporting sound, proven risk-based approaches to beneficially reuse excess soils.

In the absence of clear soil policy, municipalities, and local community groups, must all work together with industry and the appropriate provincial ministries involved, to implement innovative best management approaches. An overarching framework needs to be put in place that identifies and positions the different soil handling players and respective issues. Ongoing outreach and stakeholder appropriate training is further required to communicate these new approaches and continuously share and improve developing practices.

If these conditions for success in dealing with clean excess soil can be implemented in a timely fashion, we can vastly improve on the more than 20 years it took to put in place the practices and regulations we now have to handle impacted dirt.

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