

Protecting the Environment from Dirty Dirt

There is a problem in Ontario with excess soil. Excess soil may come from greenfield sites excavated for new development but Ontario's Brownfield regulations allow old industrial sites contaminated with PHC's, arsenic, and other toxins to be cleaned up by "dig and dump". The dumping of clean soil is regulated by municipalities and the disposal of dirty soil is regulated by the Ministry of the Environment but it is very difficult to know what is clean soil and what is not. In addition, huge profits are to be made by collecting fat fees to dispose of contaminated soil and dumping it for low cost as clean soil. Greenbelt legislation intended to protect areas from development don't cover soil dumping. Most municipal by-laws deal with fill as a component of grading a property for a building while the commercial fill operations they attempt to regulate are huge operations covering many hectares and involve hundreds of truckloads a day for several years. The complexity becomes constitutional when some operators argue that because their dumping is to improve an aerodrome, they are under federal jurisdiction and thus exempt from any provincial or municipal regulation.

The Lakeridge Citizens for Clean Water formed in 2010 to protest the dumping of contaminated soil in a former gravel pit on Lakeridge Road. Since then LCCW and its senior researcher, Carmela Marshall, have investigated the situation in Ontario by speaking to officials and industry, reviewing legislation and regulations, and liaising with environmental and citizen groups. This report provides supporting documentation and lists required actions in the 5 main problem areas that were identified:

1. Brownfield Regulatory Gaps
2. Use of MOE Soil and Groundwater Tables
3. Jurisdiction over Aerodromes
4. Review of ORMCP and Site-Alteration
5. Municipal By-laws, Conservation Authority policy, and MOE Standards

Additional information can be requested by e-mail to info@lakeridgecitizens.ca

1. Brownfield Regulatory Gaps

The Brownfield Regulation, O. Reg. 153/04, as amended, contains a considerable regulatory gap. Although the regulation contains specific requirements regarding quality and testing of soils coming into Brownfield sites, it does not contain any direction on quality and testing of soils excavated from these Brownfield sites. (*Annex 1- Toronto staff report on testing soil leaving Toronto-area development sites*), (*Annex 2 - e-mail from MOE Brownfields/Contaminated Sites Program Specialist*).

A significant amount of excavated Brownfield soils are being deposited in “Greenfield” sites which the Brownfield Act and Regulation were meant to protect. However, there is a significant amount of evidence indicating that several receiving sites have had soils with unacceptable levels of contamination deposited on them. In many instances, reports of soil tests performed at the Brownfield source sites do not reconcile with reports of the soil quality later independently tested at the receiving site. (*Annex 3 - Engineering report to Pickering on dump site on Sideline 14*)

Action Required:

1. The Ministry of the Environment must amend O. Reg. 153 to include the following:
 - a) requirements for testing of excavated fill at specific minimum frequencies
 - b) documentation of where all excavated soils is transported must be included in the RSC
 - c) QP must sign off on the quality and quantity of soil excavated and removed from the brownfield site
 - d) documentation from the receiving site indicating acceptance of the soils must be included in the RSC documentation

In essence, a Material Management Plan (MMP), such as that detailed in the Residential and Civil Construction Alliance of Ontario’s,(RCCAO’s) BMP (*Annex 4 - Best Management Practices for Handling Excess Soils in Ontario - by RCCAO*) should be part of the RSC process for redevelopment of Brownfield sites.

2. A MMP should be incorporated into site-alterations by-laws, building, development and infrastructure project permits in the short term. The Ministry of Municipal Affairs and Housing (MMAH), through the planning act may also need to incorporate a MMP policy into their legislative framework, perhaps through the Planning Act, in order to attain a more consistent approach to soil management and in order to level the playing field among the various stakeholders.

2. Use of MOE Soil and Groundwater Tables

The MOE Soil and Groundwater Tables are continuously being used outside of their prescribed use in Reg. 153/04 as no other soil quality tables exist. The Tables are being used in many instances in a manner that is inconsistent and contrary to how they are normally applied. For example, in Reg. 153/04, uncontaminated sites are only permitted to accept Table 1 soils (*Annex 5 - Ontario Fact Sheet: Bringing Soil to an RSC Property*). As well, Environmentally Sensitive sites are only permitted to accept Table 1 soils. (*Annex 6 - Excerpts from MOE Reg.153 regarding environmentally sensitive areas*), (*Annex 7 - MOE Technical Update - Environmentally Sensitive Areas" Property within 30 m of a water body*) Risk assessments can be done in order to change these requirements. However, municipalities, consultants and MOE staff are advising Table 2 in these instances with no rational or risk assessment to accompany this direction. (*Annex 8 - GRCA Staff report Re: Morgans Road Application, Municipality of Clarington*) As well, there were many assumptions made when these Tables were formulated. (*Annex 9 - MOE Technical Update - Rationale for Site Condition Standards in O. Reg. 153/04*). For example, many of the assumptions may no longer be valid when the Tables are applied to large fill sites,. (*Annex 10 - excerpts from MOE Standards - How to read these tables*), (*Annex 11 - MOE Standards Development Branch - Rationale for the Development of Soil and Groundwater Standards for use at Contaminated Sites in Ontario*). As well, these tables are meant to be clean-down-to Tables and not pollute-up-to Tables as indicated by the CCME, Canadian Council of Ministers of the Environment (*Annex 12 - A Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines - CCME*)

There is an MNR policy regarding salt impacted soils-(*Annex 13 - MNR policy statement - Importation of Inert Fill for the Purpose of Rehabilitation*) whereby salt impacted soils testing high in SAR readings can be deposited 1.5 metres below grade so as not to adversely impact plant growth. This policy is currently being adopted by some large fill sites however, the impact of this policy on groundwater at MNR aggregate sites, add this comma as well as large fill sites, has not yet been determined. (*Annex 14 - e-mail discussion with MNR on impact of salty soils on groundwater*). Similarly, the stratified categories in the MOE Tables are for impact on plant growth but do not consider the impact on ground water.

Finally, many planning authorities define soil quality by using the term “inert fill”. This term is vaguely defined in the MOE regulations and therefore can be interpreted in many different ways resulting in an inconsistent application of this term. (*Annex 15 - excerpts on "Inert Fill" definitions from LCCW presentation to symposium*)

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Action required:

1. The Ministry of the Environment needs to develop clear standards through their BMP document and through new regulation regarding soil quality for soils deposited on sites outside of Reg. 153.
2. The MOE must currently determine if the continued use of Tables for large commercial fill operations are protective of human and ecological health when assumptions used in the creation of the tables are no longer valid.
3. The MOE must determine whether the MNR policy regarding the deposition of salt-impacted soils 1.5 metres below grade also considers impacts to groundwater.
4. The MOE needs to develop a clear definition of inert fill and how it relates to the MOE's Soil and Groundwater Tables.

3. Jurisdiction over Aerodromes

The law is quite clear that an aerodrome falls under federal jurisdiction and therefore a province (or municipality) can not prohibit the establishment of an aerodrome in a rural area. The reality that a private aerodrome can be located anywhere is problematic for a number of reasons. Various significant provincial policies such as the ORMCP and the Niagara Escarpment Plan can be undermined by allowing the placement of private aerodromes on sensitive lands in these areas, particularly if it is then declared that vast quantities of fill will be required to renovate or construct the aerodrome.

Aerodrome operators have argued that they are under federal regulation and thus exempt from municipal oversight. In terms of the MOE, if this happens in source water protection areas, and if more municipalities go the route of New Tecumseth and back away from regulating large fill operations at aerodromes due to litigious threats, (*Annex 16 - lawyer's letter to New Tecumseth on aerodrome exemption*) there is the risk of improperly regulated fill activities causing an adverse effect on groundwater supplies via the importation of contaminated fill. (*Annex 17 - LCCW letter to MOE - concerns on fill activities at Tottenham Airfield*)

Contaminated fill has been imported into various fill sites in Durham Region both in the presence and absence of regulatory oversight *T.(Annex 18 - MOE Order & Environmental Site Assessment on Earthworx)*, (*Annex 19 - MOE report Re: Sample Results from aylor's Road Fill Site*), (*Annex 20 - "Tainted soil lands on Pickering farm" - John Lorinc - Globe and Mail 2012-02-19*), (*Annex 21 - MOE on Morgans Rd, Clarington site - Orders and Reports*) Therefore, the chances of contaminated fill being imported into a site with absolutely no legislative oversight may be significant. Once contaminated fill is discovered above sensitive groundwater areas or in source water protection areas, the MOE will have to become involved. With the current trend in requiring large amounts of fill for airfield renovations such as the 2010 Earthworx fill operation in Scugog, the Tottenham Airfield fill operation in New Tecumseth, The Greenbank Airfield fill operation in Scugog (*Annex 22 - "Scugog issues long-awaited permit to Greenbank airport" - Chris Hall - durhamregion.com 2012-10-18*) and the anticipated Baldwin Airfield fill operation in Georgina which is not being made public at this time, the fear is that we will continue to see an increase in fill operations for aerodromes and the MOE will have to continue to spend resources to come in after the fact to ensure fill quality protocols are in place. This is not a sustainable approach.

Action Required:

1. Planning authorities along with the MOE and other relevant ministries such as the MMAH and the MNR, need to appeal to the Federal government so that provincial and municipal environmental plans are not undermined and sensitive groundwater resources are not threatened by private aerodrome construction. King Township passed a motion in

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November 2012 which could be used as a template in this regard. (*Annex 23 - Municipalities and the Aeronautics Act - King Township, Edmonton, Neuville, Federation of Canadian Municipalities*).

2. Municipalities must be given legal opinions (*Annex 24 - Lawyer's opinion - Fill-sites at Airports*) to support their right to regulate the quality of soil being brought into aerodromes and counter the claims of airport operators that they are exempt from municipal by-laws.

4. Review of ORMCP and Site-Alteration

The ORMCP does not consider large fill sites as development. Therefore, large fill sites could potentially be approved in areas of the moraine that would otherwise not permit that degree of development, such as in the Natural Core and Natural Linkage areas. (*Annex 25 - excerpts from Oak Ridges Moraine Conservation Plan*) As well, landform conservation requirements on the moraine (*Annex 26 - ORMCP Technical Paper 4 - Landform Conservation*) may not be given appropriate consideration as large site alterations with no development are not treated the same as large site-alterations with development. As well, high aquifer vulnerability areas (HAV Areas) on the Moraine are in need of protection from large fill operations where underlying aquifers are vulnerable to risky fill activities on land. The Moraine Can't Wait campaign put dirty dirt on the top of the list of threats to the moraine. Currently, specific land uses listed in the ORMCP, such as waste sites, are prohibited in HAV areas. However, considering current definitions of waste and the non-inert nature of much of the fill that is being deposited, it could be argued that Moraine lands are being used as waste stations contrary to HAV Area prohibitions and contrary to the EPA and MOE's waste regulation, O. REG. 347. (*Annex 27 - The case for Prohibiting Commercial Fill Operation on an Area of High Aquifer Vulnerability in the ORM*)

Large scale commercial fill operations are not considered a "use of land" in the municipal zoning and permitting processes, despite the industrial scale of the noise, traffic and profits and despite the potential of contamination altering the permissible future use of the land. The provincial Planning Act specifically defines extraction from a pit or quarry as a use of land but is silent on the equally significant but reverse process of a large scale dumping operation.

Action Required:

1. The 2015 MMAH review of the ORMCP should include:
 - a) Large fill projects should be considered as development and slotted as approved or prohibited in the four designated land use areas of the Moraine.
 - b) High Aquifer Vulnerability Areas and Significant Groundwater Recharge Areas on the Moraine should be protected from large commercial fill operations and the unacceptable threat they pose to precious groundwater resources.
2. The Planning Act should be amended to define a commercial fill operation as a "use of land".

5. Municipal By-laws, Conservation Authority policy, and MOE Standards

Strong and comprehensive by-laws are necessary when dealing with large scale commercial fill operations. A study of 56 by-laws revealed many by-law gaps when considering large fill operations (*Annex 28 - Review of Fill and Site Alteration By-laws - map & summary*). LCCW has given 28 deputations (*Annex 29 - List of deputations to municipalities by LCCW*) emphasizing necessary requirements for incorporation into local by-laws as well as conservation authority policies in order to mitigate the risks involved with commercial fill operations (*Annex 30 - Top 10 Risks of the "Clean Fill" Dump Site - LCCW*). It is important to note that while municipalities should have jurisdiction over site-alterations within their boundaries, soil standards should be determined by the MOE so as to allow a clear and consistent approach with regards to fill management in Ontario. The MOE's Soil Management: A Guide to Best Practices draft document is a good forum for this guidance, however the MOE's BMP is lacking in this respect. (*Annex 31 - LCCW comments to EBR posting of "Soil Management - A Guide for Best Management Practices"*)

Action Required:

1. Municipalities need to amend their site-alteration by-laws in order to incorporate necessary requirements with regards to large-scale fill operations.
2. The MOE's Standards Development Branch needs to determine soil quality guidelines for non-RSC (Brownfield) sites that can be incorporated into municipal by-laws and conservation authority policies to allow for a consistent approach, scientific approach throughout the province. Direction on soil quality requirements for specific sensitive sites is also required. When considering soil quality requirements, a more detailed and comprehensive Guideline, built on the MOE's current draft BMP, is necessary.
3. Coordinating bodies such as MMAH, Conservation Ontario, and Association of Municipalities Ontario should provide model by-laws to municipalities and conservation authorities to provide a consistent approach.

Annexes

Annex	Description
1	Toronto staff report on testing soil leaving Toronto-area development sites
2	e-mail from MOE Brownfields/Contaminated Sites Program Specialist
3	Engineering report to Pickering on dump site on Sideline 14
4	Best Management Practices for Handling Excess Soils in Ontario - by RCCAO
5	Ontario Fact Sheet: Bringing Soil to an RSC Property
6	Excerpts from MOE Reg.153 regarding environmentally sensitive areas
7	MOE Technical Update - Environmentally Sensitive Areas" Property within 30 m of a water body
8	GRCA Staff report Re: Morgans Road Application, Municipality of Clarington
9	MOE Technical Update - Rationale for Site Condition Standards in O. Reg. 153/04
10	excerpts from MOE Standards - How to read these tables
11	MOE Standards Development Branch - Rationale for the Development of Soil and Groundwater Standards for use at Contaminated Sites in Ontario
12	A Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines - CCME
13	MNR policy statement - Importation of Inert Fill for the Purpose of Rehabilitation
14	e-mail discussion with MNR on impact of salty soils on groundwater
15	excerpts on "Inert Fill" definitions from LCCW presentation to symposium
16	lawyer's letter to New Tecumseth on aerodrome exemption
17	LCCW letter to MOE - concerns on fill activities at Tottenham Airfield
18	MOE Order & Environmental Site Assessment on Earthworx
19	MOE report Re: Sample Results from Taylor's Road Fill Site
20	"Tainted soil lands on Pickering farm" - John Lorinc - Globe and Mail 2012-02-19
21	MOE on Morgans Rd, Clarington site - Orders and Reports
22	"Scugog issues long-awaited permit to Greenbank airport" - Chris Hall - durhamregion.com 2012-10-18
23	Municipalities and the Aeronautics Act - King Township, Edmonton, Neuville, Federation of Canadian Municipalities
24	Lawyer's opinion - Fill-sites at Airports
25	Excerpts from Oak Ridges Moraine Conservation Plan regulations
26	ORMCP Technical Paper 4 - Landform Conservation
27	The case for Prohibiting Commercial Fill Operation on an Area of High Aquifer Vulnerability in the Oak Ridges Moraine
28	Review of Fill and Site Alteration By-laws - map & summary
29	List of deputations to municipalities by LCCW
30	Top 10 Risks of the "Clean Fill" Dump Site - LCCW
31	LCCW comments to EBR posting of "Soil Management - A Guide for Best Management Practices"

Amendment-Draft

NOTE: The following two sections have been added to the report however were not included in time for presentation to the ECO. These sections are still in DRAFT.

6. Fill Issues and Conservation Authorities

A **2010 CIOCA Report** indicated the following, “there has been an apparent increase in demand for large fill sites within and adjacent to the Greater Toronto Area”, and “given the competitiveness of the trucking industry, haulers are being pressured to transport fill of any nature”.

Conservation Ontario recognized soil management as an important issue effecting Conservation Authorities and documented this in the **2012 Conservation Ontario Discussion Paper**.

By virtue of the **Municipal Act, Section 142**, site alteration by-laws can only be enforced by municipal staff in areas which are not subject to regulations made under Clause 28(1) of the Conservation Authorities Act.

CA’s issue “Development, Interference with Wetland, Alterations to Shoreline”, permits. They do not currently issue “fill permits” the way a municipality could with all the various considerations.

The CA may grant permission for “development”, which includes fill placement within Regulated Areas provided it has been determined that there will not be an adverse effect on the following five tests:

- Control of flooding;
- Erosion;
- Dynamic beaches;
- Pollution; or
- Conservation of land.

It can be argued that only two of these tests really allow for conditions of any consequence to be put on the CA permit that approves a large fill site-namely “pollution and conservation of land”.

There are concerns with some of the current definitions in CA regulations and how they are interpreted by various conservation authorities. Some CAs, like Ganaraska Region Conservation Authority, have indicated that they may only be able to impose permit conditions regarding “pollution” and “conservation of land” that effect the specific feature-ie. the wetland and not the land around the wetland-hence not the groundwater if the groundwater does not directly affect the wetland (**Ganaraska Conservation Authority Report 2011 – Morgan’s Rd. Application**). This is a serious concern.

For site-alterations with no development attached, the landform conservation category requirements of the ORMCP may be undermined if commercial fill applications only fall within Conservation Authority (CA) regulated areas. While municipalities can incorporate ORMCP requirements and compliance within their site-alteration by-laws and building or development applications, CAs cannot include certain ORMCP requirements, with confidence, unless they specifically impact on the “five tests” of CA regulations.

Action Required:

1. Conservation Authorities need to exercise their own due diligence and ensure the placement of fill within their regulated areas will not have an adverse impact on the environment.

CA's need to adopt Large Fill Policies similar to the policies adopted by the KRCA (*Kawartha Region Conservation Authority: Large Fill Procedural Guideline*) and CLOCA (*Central Lake Ontario Conservation Authority: Large Fill Policy*)

The fill policy should include necessary conditions as found in the CLOCA and KRCA fill policies, including those requirements listed below:

- Table 1 soils only on lands with no previous point source contamination-consistent with current KRCA and CLOCA policies
 - Frequent testing of incoming fill at the receiving site following MOE's protocol for soils coming into an RSC property, i.e. 1 sample for every 160 cubic metres of incoming fill (*MOE Fact Sheet: Bringing Soil to an RSC Property, April, 2011*)
 - Proponent paid audit tests of incoming fill by CA staff or a CA hired consultant
 - Mandatory QP (qualified person as defined by O. Reg. 153) reviewing and signing off on source site soil reports at the receiving site
 - Proponent paid CA consultant peer review of incoming soil reports
 - Mandatory securities obtained reflecting the size of the fill operation
2. The MNR needs to develop regulations that allow conservation authorities to go beyond the constraints of meeting the “five tests” so that social and various environmental issues such as groundwater contamination concerns and ORMCP requirements can be purposely considered when permits are issued by conservation authorities. Various key definitions in CA regulations are also lacking and need significant attention if CA's are going to be able to apply their regulations in a consistent manner across the province.

7. Fill and Aggregate Sites

A [2006 Golder and Blackport Study](#) regarding water quality issues and aggregate sites indicates that it is usually not the extraction process itself, but the **post extraction land use** applications that has the **potential** to impact groundwater quality.

LCCW has gathered some important evidence to consider regarding **fill quality concerns** and the **use** of former aggregate sites for large fill operations. The Earthworx Site in Scugog, previously showcased on the MNR website as a model rehabilitation result before it was surrendered and filled ([link to MNR website](#)), provides one example among several that illustrates the fact that large fill sites can result in the deposition of contaminated fill. The concern is that more aggregate sites may end up being used as **dumping grounds** for **vast** quantities of **questionable** fill, thereby posing an unacceptable risk to groundwater quality (Earthworx Supplementary Phase II Assessment). The contaminated soil results of a surrendered aggregate pit in the City of Kawartha Lakes legitimize this concern ([MOE Letter to the City of Kawartha Lakes re Contamination Issues at fill site -2012](#)).

We **also** feel there is the **potential** for the **business** of commercial fill operations to **undermine** various meaningful and innovative rehabilitation opportunities for **some** aggregate sites, opportunities such as those researched in [The Ontario Aggregate Resources Corporation, Best Practices Guideline for Aggregate Rehabilitation Projects](#).

A surrendered aggregate site in East Gwillimbury, operating under a municipal fill permit negotiated on the premise that the fill was needed to rehabilitate the land back to farmland, involved operators filling **beyond** the areas permitted by their site-plan resulting in a 3 story high **mountain** of fill being deposited on adjacent farmland. ([Neighbour objects to gigantic dirt pile in field – Globe and Mail, 2012](#))

As well, landform conservation category requirements are not being considered at all or in any kind of consistent manner for large fill applications on lands for which an Aggregate licence has been surrendered and lands rehabilitated. Municipalities on the Moraine have either not yet incorporated ORMCP requirements into their site-alteration by-laws or have not adopted site-alteration by-laws at all. After the exemplary rehabilitation of an aggregate pit and surrender of the licence for a site in Scugog, the Township issued a site-alteration permit to the landowner that permitted the filling and leveling of the entire property which also happens to be in a Landform Conservation Area Category 2 of the Moraine (no more than 50% of the property should have been disturbed according to Landform Conservation requirements). In Whitchurch-Stouffville, the Township issued a permit for a commercial fill application which resulted in the complete filling of the entire property. The property was in a Landform Conservation Category 2 Area, and in an ORM Wellhead Protection Area in the 2 year time of travel location.

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Action Required:

-Action Items are currently being reviewed and will be posted at a later date.-