



## **FILL MANAGEMENT PLAN**

**233, 237, 241 and 245 Dunlop Street West, Barrie, ON**

Prepared for:  
**Muskoka D and M Corp.**  
190 Hotchkiss Street  
Gravenhurst, ON P1P 1H6

Prepared by:  
**Trinity Consultants Ontario Inc.**  
885 Don Mills Road, Suite 106  
Toronto, ON M3C 1V9

**Trinity 197205.0023**

December 19, 2019



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Mr. Luke Wilson  
**Muskoka D and M Corp.**  
190 Hotchkiss Street  
Gravenhurst, ON P1P 1H6

**Re: Fill Management Plan, Proposed Residential Development  
233, 237, 241 and 245 Dunlop Street West, Barrie, ON  
Trinity Project 197205.0023**

Dear Mr. Wilson;

**Trinity Consultants Ontario Inc. (Trinity)** is pleased to present our Fill Management Plan for the proposed residential development to be located at 233, 237, 241 and 245 Dunlop Street West in Barrie, Ontario.

Yours very truly  
**Trinity Consultants Ontario Inc.**

Brian J. Schuyler, C.E.T.  
Senior Consultant.

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## 1 Introduction

The primary purpose for this Plan is to establish best management practices for managing excess soil in a manner that promotes sustainability and protects the natural environment (surface water and ground water).

This Plan has been prepared by a Qualified Person (QP) under the City of Barrie Site Alteration By-Law 2014-100.

The property is located in an area overlying a highly vulnerable aquifer. In areas of high aquifer vulnerability, an owner must take reasonable actions to protect the quality of the surface water and groundwater. To reduce the risk for surface water and groundwater to be negatively impacted, preventative measures may be required to be implemented for proposed developments. In particular, an owner must ensure that all soil and groundwater at the site is in compliance with applicable Ministry of the Environment, Conservation and Parks (MECP) Site Condition Standards.

## 2 Purpose and Objectives

Soil is an important resource. The protection and conservation of soil in Ontario is a valuable component of maintaining the environment for present and future generations. The MECP and the City of Barrie encourages the beneficial reuse of excess soil in a manner promoting sustainability and the protection of the natural environment. The actions described within this Plan are intended to reduce and/or eliminate potential risk to the natural environment when handling excavated soil, soil imported to the site and in particular, any soil that may be elevated above the applicable MECP Site Condition Standards.

## 3 Regulatory Authority

The *Environmental Protection Act*, R.S.O 1990, c. E.19 (*EPA*) provides the MECP with the authority to address the discharge of a contaminant into the natural environment that is causing or may cause an "adverse effect", a term that is defined under the *EPA*. Where environmental concerns are identified at a site, the MECP may assess all activities related to soil management, including those occurring at the excavation site, during transportation or at sites where the soil is received, and may take appropriate actions within the MECP's legislative mandate. This may include issuing orders arising from actual or potential adverse effects associated with improper soil management.

Those managing excavated soil or excess soil must ensure that the management does not result in the discharge of a contaminant into the natural environment that causes or may cause an adverse effect, and when required, must provide notice of the discharge of the contaminant(s) into the natural environment in accordance with the provisions of the *EPA*.

If, at any time, the management of excavated soil or excess soil causes an adverse effect, such as odour, litter, dust, noise, or other impacts to the natural environment or water quality, appropriate preventive and remedial actions must be immediately be taken to alleviate the adverse effect or impact. Until these

issues are appropriately addressed, the owner/operator may need to suspend all soil management activities, including soil excavating, transporting or receiving.

## 4 Sources of Excess Soil That Will Require Management

The proposed development includes construction of one (1) multi-level residential building. A basement level and/or underground parking is not proposed. Therefore, it is anticipated that excess soil will be generated during construction of the building foundation, construction of the building footings, trenching for underground services and utilities and other general site grading operations.

Additionally, a small area of shallow soils (less than 0.6 m deep) has been identified through laboratory analyses of representative samples with concentrations for selected metal parameters that exceed the applicable MECP Table 9 Standards. This area will be fully delineated, excavated and the excavated material will be disposed at an approved off – site facility.

Other than importation of engineered granular subgrade materials for general construction purposes (footings, weeping tile, pavement subgrade, underground services and utilities) from commercial sources, no soil is anticipated to be imported to the site.

## 5 Qualified Persons

A Qualified Person (QP) within the meaning of section 5 of *Ontario Regulation 153/04*. QPs are professional geoscientists and professional engineers. A QP who is retained should be someone who can exercise professional judgment based on his or her experience in order to advise on appropriate reuse options for the excavated soil or excess soil, and make these decisions based on appropriate analysis and characterization of the soil. The QP should use a risk-based approach and take into consideration the effects of loading associated with the concentrations of individual contaminants in soil and the impacts on the pre-existing, ambient conditions at the site. This will likely require a QP who is qualified to prepare or supervise a risk assessment, as set out section 6 of *Ontario Regulation 153/04*. Depending upon the intended beneficial reuse of the excess soil, the QP may need to consult with others to make decisions on the appropriateness of the excess soil for reuse.

Mr. Luciano Locatelli, P. Geo., QP<sub>ESA</sub> will serve as QP for the development and implementation of this Fill Management Plan.

## 6 Fill Management Plan

### 6.1 Importation of Fill

The proposed site development will not require importation of soil fill from off- site sources. Engineered granular material will be brought to the site and will be used primarily as bedding placed at the base of the building footings and as subgrade for pavement areas. Granular material will be sourced from local commercial pits.

Prior to placement, the material will be visually inspected by the owner for evidence of potential environmental concerns such as odour, staining or presence of putrescible materials. Any load found with objectionable materials will be rejected and the supplier will be required to immediately remove the material from the site.

Additionally, random confirmatory soil samples will be collected and analyzed for quality control purposes.

## **6.2 Soil and Groundwater Assessment**

A Phase II Environmental Site Assessment and Geotechnical Investigation was conducted at the site in July 2017. The results are provided in a technical report entitled "Phase II Environmental Site Assessment and Geotechnical Investigation, 233, 237 and 241 Dunlop Street West, Barrie, Ontario" Project 177201.0127, dated July 27, 2017.

The soil and groundwater quality at the site was assessed and the results confirmed that all soil samples analyzed met the applicable MECP Table 9 Site Condition Standards, with only one exception (BH5 at a depth of 0.00 – 0.60 m marginally exceeded the MECP for lead, 123 µg/g vs the Site Condition Standard of 500 µg/g).

The owner proposes to fully delineate the impacted area and remove all soil with lead for disposal to an approved off-site location. Confirmatory soil samples will be collected of the remaining soil and submitted for chemical analyses once the impacted soil has been removed.

Appropriate silt screens will be installed down-gradient of the proposed areas of excavation to prevent potential off-site impacts during soil erosion resulting from the excavation activities.

No actual groundwater impacts were detected or reported.

## **6.3 Assessment of Fill Source Sites**

The importation and use of fill will not be required at the site. Therefore, the owner is not anticipating the need for assessment of fill source sites at this time.

## **6.4 Dust and Noise Controls**

Dust and noise controls will be developed and implemented as part of the general construction operations. The importation and use of fill will not be required at the site. Therefore, the owner is not anticipating the need for development and implementation of dust and noise controls associated with importation and placement of fill at the site.

## **6.5 Traffic and Transportation Management**

Truck traffic to and from the site will primarily be associated with limited soil excavation and transportation off-site, importation of engineered granular materials, building materials and removal of waste materials generated during construction.

The number and frequency of trucks will be very limited and is not anticipated to create a concern for the traffic flow in the area of the site. Traffic controls will be developed and implemented as part of the site preparation and general construction operations. Controls may include, limiting the hours of operation to non- peak traffic flow hours, using flag persons, staging site activities to minimize the need for trucks in order to limit the number of trucks used at the site at any given time. Other actions may also be taken in order to manage potential concerns (e.g. associated with weather conditions).

## **6.6 Visual Inspection of Imported Material**

All materials imported to the site will be visually inspected for evidence of potential and/or actual environmental concerns. As appropriate, the material supplier will be requested to provide confirmation of the quality of the materials (laboratory analytical results) that will be evaluated by the QP prior to acceptance and placement at the site. Any loads identified with environmental concern will be rejected and immediately removed from the site by the materials supplier. No exceptions will be granted by the owner.

## **6.7 Record Keeping**

The owner will maintain records for all fill materials, if any, that may be imported to the site. The owner will document the following information and keep a record at the site:

- Date and Time of Arrival to the Site;
- Name and Location of the Source Site;
- Quantity of Fill Received;
- Confirmation of Fill Quality; and
- Rejection of Unacceptable Materials

The owner proposes to maintain records for a minimum of 7 years after completion of site development and construction activities.

## **6.8 Imported Fill Placement Location Map**

The owner will maintain a map showing the location, quantity and nature of any fill material imported and placed at the site.

## **6.9 On-Site Storage of Fill Awaiting Placement**

On-site storage of fill material is not anticipated. However, should storage of fill materials become necessary it will be stored in a secure manor to eliminate potential concerns such as leaching, or erosion. The owner will ensure that all fill materials are tarped as necessary to prevent off-site migration due heavy rain, or general site operations.

## 6.10 Invasive Species

Soil management activities can contribute to the introduction and spread of invasive species. Examples of species that can be moved to new areas through the movement of excess soil include European fire ants, Japanese knotweed, Phragmites, Giant hogweed, Garlic mustard and Dog strangling vine. Soil may contain plant parts, seeds, and invertebrates (e.g. European fire ants). Once introduced into a new area, these species can spread rapidly and often cause issues and concerns for land owners, and can have a significant impact on biodiversity. Disturbance and exposure of un-vegetated soil can also contribute to the establishment of invasive plants.

The introduction and spread of invasive species is not considered to be a concern as the proposed development does not require importation of soil from unknown off-site sources such as other construction sites.

The risk associated with importation of granular material from known commercial sources is very low and therefore not a concern.

Report Prepared By:  
**Trinity Consultants Ontario Inc.**



Brian J. Schuyler, C.E.T.  
Senior Consultant

Report Reviewed By:



Lou Locatelli, C.E.T., P. Geo., QP<sub>ESA</sub>  
Principal Consultant