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100 NUGGET AVENUE, TORONTO, ONTARIO M1S 3A7 • TEL: (416) 754-8515 • FAX: (416) 754-8516

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 TEL: (705) 721-7863
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 TEL: (705) 684-4242
 TEL: (905) 440-2040
 TEL: (905) 777-7956

 FAX: (705) 721-7864
 FAX: (905) 542-2769
 FAX: (905) 725-1315
 FAX: (416) 754-8516
 FAX: (705) 684-8522
 FAX: (905) 725-1315
 FAX: (905) 542-2769

#### A REPORT TO 1361605 ONTARIO LIMITED C/O CALDER ENGINEERING LTD.

#### PHASE I ENVIRONMENTAL SITE ASSESSMENT CSA STANDARD

#### PROPOSED RESIDENTIAL DEVELOPMENT

EAST OF JACK KENNY COURT, NORTH OF GRAPEVINE ROAD TOWN OF CALEDON

Reference No. 1305-E166

July 9, 2013

#### DISTRIBUTION

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1.0

#### EXECUTIVE SUMMARY

Soil Engineers Ltd. was retained by 1361605 Ontario Limited on May 24, 2013, to carry out a Phase I Environmental Site Assessment (hereinafter referred to as "ESA") in accordance with CSA Standard Z768-01, for a parcel of land located on the east side of Jack Kenny Court, north of Grapevine Road, in the Town of Caledon.

The purpose of the study is to identify any potential environmental concern associated with the subject site. The findings from our research of documents pertaining to the subject site, an environmental site reconnaissance and interview with persons knowledgeable of the subject site, together with our assessment, are presented in this report.

Throughout the years, the subject site was mainly used for agricultural purposes, and is currently vacant. The neighbouring properties consist mainly of residential developments in all directions.

Our Phase I ESA has revealed that there is a low potential for environmental concern attendant to the subject site associated with the past and current activities at the subject site and the neighbouring lands. Therefore, no further environmental investigation is warranted at this time.



#### 2.0 INTRODUCTION

#### 2.1 General

In accordance with our proposal dated May 1, 2013, as approved by Mr. Peter Halmos, a representative of 1361605 Ontario Limited, on May 24, 2013, Soil Engineers Ltd. has carried out a Phase I Environmental Site Assessment (ESA) for a parcel of land located on the east side of Jack Kenny Court, north of Grapevine Road, in the Town of Caledon.

The study is conducted in general conformance with the November 2001 CSA Standard Z768-01, partially updated in April 2003.

The purpose of this study is to identify any potential environmental concern associated with the subject site in support of a proposed residential development.

#### 2.2 Scope of Work

This Phase I ESA consists of the following:

- Review of records to assess past activities that may have potential impacts on the environmental quality of the subject site.
- A site reconnaissance and building inspection for identification of any potential on-site environmental concern.
- Observation of adjacent properties and their potential impacts on the subject site.
- An interview with person knowledgeable of the subject site.
- Preparation of this report containing our findings, relevant research documents and our assessment.



#### 2.3 Site Description

The location of the site is shown in the Site Location Plan, Drawing No. 1. The Property Identification Numbers (PIN) of the subject site is 0124, 1784, and 0728, as shown on the Property Index Map (Block 14326), Drawing No. 2.

The subject site is formerly a Part of E ½ of Lot 8 and NE ½ of Lot 9, Concession 5, Township of Albion. The PIN, property descriptions from the Parcel Registers, and UTM coordinates for the property are listed in the table below:

PIN and Assessment Roll number	Property Description from Parcel Register	UTM Coordinates (1983 NAD)
14326-0124 (LT) 2424010003226900000	PT LT 8 CON 5 ALBION PT 4, 43R22926; T/W RO1172919; CALEDON. S/T EASEMENT IN GROSS OVER PT 6, 43R30591 AS IN PR1120472	
14326-1784 (LT) 2124010003226000000	PT LT 8 CON 5 ALBION AS IN RO1081508, SAVE AND EXCEPT PTS 7, 8 PL 43R-30591; S/T RO1181750; S/T EASEMENT IN GROSS OVER PT 9 PL 43R-30591, AS IN PR1127310; T/W ROW OVER PT LT 8 CON 5 ALB DES PTS 7, 8 PL 43R-30591, AS IN PR1127360.; TOWN OF CALEDON	17 T 600414 m E 4858237 m N
14326-0728 (LT) n/a	BLK 307 PL 43M1324 SAVE & EXCEPT PTS 5,6,9 PL 43R24051 CALEDON S/T EASEMENT IN GROSS OVER PT 1 PL 43R29898 AS IN PR1186931.	

The subject site is irregular in shape and encompasses an approximate area of 0.373 ha (0.922 ac).

Based on the Ministry of Environmental (MOE)'s Well Help Desk database, the subject site and its surrounding area is underlain by stratigraphy of silty clay, and silty sand till layers.



#### 3.0 RECORD REVIEW

#### 3.1 Land Title Search

A land title search was conducted for the subject site at the Peel Land Registry Office on June 12, 2013.

The earliest records indicate that the subject site is formerly a Part of E ½ of Lot 8, and NE ½ of Lot 9, Concession 5, within the Township of Albion, in the Regional Municipality of Peel. The E ½ of Lot 8 (100 acres) was patented to L. Kogg by the Crown in 1851, and the NE ½ of Lot 9 (100 acres) was patented to J. Machlem by the Crown in 1824.

A Historical Map drafted in 1877 was located at McGill University Canadian County Atlas Digital Project website on June 12, 2013. A copy of the map is presented in Drawing No. 3, showing the subject site was part of a vacant lot at that time. Based on the map, a roadway is located northeast of the subject site, and a railway track is located south of the subject site. Based on the size and shape of the land, the subject site was likely used for agricultural purposes at that time.

Throughout the years, the estate was further subdivided with the ownerships of the properties changing several times between private individuals and businesses. The latest transfers of the subject site are listed in the following table:

PIN	Instrument No.	Year	Party From	Party To
14326-0124	PR431949	2003	James Kelly Gay	1361605 Ontario Limited
14326-1784	PR2149957	2012	Kevin Halmos	Peter Halmos
14326-0728	LT1930865	1999	Papertious Investments Inc.	The Corporation of the Town of Caledon



#### 3.2 Previous Environmental Report

Chemical Analysis of topsoil samples by Soil Engineers Ltd.

On June 30, 2013, a soil sampling program was conducted by Soil Engineers Ltd. Three (3) topsoil samples from the former agricultural land were retrieved and submitted to the lab. The topsoil samples were analyzed for Organo-Chlorinated Pesticides (OCPs). In the review of the chemical analysis results, the concentration of the tested parameters fall within Table 1, Full Depth Background Site Condition Standards for All Property Uses, in accordance with the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), April 15, 2011.

The results of the analyses were presented in our Letter Report, Reference No. 1305-E166, dated July 8, 2013, is listed in Appendix 'A'.

#### 3.3 Area Mapping

Maps of the area were located at the Soil Engineers Ltd. Library and the Ministry of Natural Resource Canada website on June 12, 2013. Ontario Base Maps of year 1984 and 2003, and Topographic Map of year 2010 are available, showing the land features at those dates. Copies of the maps are presented in Drawing Nos. 4, 5 and 6, respectively.

The 1984 and 2003 Ontario Base Maps indicate that the subject site was located in an agricultural area in Town of Caledon. A creek is shown adjacent to the northeast of the subject site. In the 2010 Topographic Map, a new roadway (i.e. Jack Kenny Court) is observed adjacent to the southwest of the subject site, and a creek is located 90 m northeast of the subject site. In all these maps, a railway track (i.e. Canadian Pacific Railway) is located approximately 90 m south of the subject site, and three structures are adjacent to the northeast of the subject site. All these maps indicate that the subject site was primarily used for agricultural purposes.



Based on the topography of the area, precipitation runoff is expected to flow in a northerly direction.

#### 3.4 Aerial Photography

Aerial photographs of the area were found at the Toronto Robarts Library, National Air Photo Library and County of Peel Interactive Mapping. A review of the aerial photographs dated 1954, 1964, 1978, 1988 and 2010 indicate that the subject site was mainly used for agricultural purposes.

The 1954, 1964, 1978, and 1988 aerial photographs show the subject site was part of a large agricultural land. In the 2010 aerial photograph, the subject site is vacant and is surrounded by residential developments in all directions, with a new roadway (i.e. Jack Kenny Court) bordering the western section of the subject site. A new storm water management pond is observed northwest of the subject site. In all these aerial photographs, a railway track (i.e. Canadian Pacific Railway) is located approximately 90 m south of the subject site. Copies of the aerial photographs are presented in Appendix 'B'.

#### 3.5 Ministry of the Environment (MOE) Records and Databases

#### Waste Disposal Sites

Active and closed landfill sites located in excess of 1 km from the subject site are considered to have no significant potential for environmental impact on the subject site. On June 20, 2013, Soil Engineers Ltd. reviewed the Ontario Ministry of the Environment (MOE) "Waste Disposal Site Inventory", dated June 1991. There is no record of any active or closed waste disposal site located within 1 km of the subject site.



#### Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario

On June 20, 2013, Soil Engineers Ltd. reviewed the MOE "Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario", dated November 1988, and the "Inventory of Coal Gasification Plant Waste Sites in Ontario", dated April 1987.

There is no record of any coal gasification plant, coal tar distillation plant, creosote plant, etc., at or within the vicinity of the subject site. All facilities of this nature are located in excess of 1 km from the subject site and are considered to have no potential environmental impact on the subject site.

#### Polychlorinated Biphenyls (PCBs) Waste Storage Sites

The MOE "Ontario Inventory of PCB Storage Sites", dated 2000, was reviewed on June 20, 2013. The subject site was not registered as a PCB waste storage site. Furthermore, there is no PCB Waste Storage Site registered within a 250 m radius of the subject site.

#### **MOE** Waste Generator

On June 20, 2013, the MOE Waste Generator Registration database files, dated 2000, 2008, and 2013, were reviewed. The subject site is not registered as a waste generator within Regulation 558 of the Environmental Protection Act. Furthermore, there is no MOE Waste Generator within 250 m of the subject site.



#### **MOE Freedom of Information (FOI)**

On June 21, 2013, Soil Engineers Ltd. sent an inquiry letter to the MOE Freedom of Information Office for documented environmental concerns and citations on the subject property. No response has been received at the time of writing this report. In the event that their response suggests cause for concern, it will be forwarded along with our assessment of its significance.

#### Well Records

The MOE's help desk at Water Well Ontario was contacted on June 24, 2013, regarding the subject site and the adjacent properties within a radius of 250 m. The MOE Well Records indicate that no well is located at the subject site. However, there are six (6) wells located within 250 m of the subject site. According to the well record, three (3) of the wells are classified for domestic use, two (2) wells are not in use, and one (1) well is not classified.

#### 3.6 Other Sources

#### CGI Information System and Management Consultant Inc.

During the years which were researched, the subject site has been mainly used for agricultural purposes. Plans and Fire Insurance Maps, which were published by CGI Information Systems and Management Consultants Inc., did not cover agricultural lands. Therefore, no information pertaining to the subject site has been requested.



#### **Municipal Freedom of Information**

Soil Engineers Ltd. sent an inquiry letter on June 21, 2013, to the Town of Caledon Freedom of Information Office for documented environmental concerns and citations on the subject property. No response has been received at the time of writing this report. In the event that their response suggests cause for concern, it will be forwarded together with an assessment of its significance.

#### Technical Standards & Safety Authority (TSSA)

The use of underground storage tank (UST) containing petroleum products in Ontario is regulated by the Ministry of Consumer and Commercial Relations (MCCR) under various legislative instruments, including the Gasoline Handling Act and Energy Act. The Technical Standards & Safety Authority (TSSA) is responsible for keeping records of all USTs and aboveground storage tanks (ASTs) containing petroleum products that are required by law to be registered with the MCCR. Customer Services of the TSSA was contacted on June 21, 2013, regarding possible registration, size and age of USTs on the subject site. They informed us on the same date that no UST was registered for the subject site. It should be noted that TSSA records are reliable only from 1987 to the present.

# 3.7 Occupancy Search

An occupancy search for the subject site and the neighbouring properties within 250 m of the subject site was conducted at the Toronto Reference Library on May 30, 2013, using the Peel Region directories from 1958 to 2000.

For the periods researched, the subject site and the neighbouring properties within 250 m of the subject site have been used primarily for residential and agricultural purposes within all the researched years. Up till May 30, 2013, no business is located at the subject site or within 250 m of the subject site.



#### 3.8 Results of Record Review

The record review indicates that the subject site was used for agricultural purposes, and is currently vacant. The review of records has noted the following items that require further consideration:

- A railway track (i.e. Canadian Pacific Railway) is located approximately 90 m south of the subject site. (Sources: Historical Maps, and Aerial Photographs)
- The subject site was formerly used for agricultural purposes. It is possible that pesticide
  may be present. (Sources: Historical Maps and Aerial Photographs)
- The subject site is adjacent to a roadway (i.e. Jack Kenny Court) (Sources: Topographic Map, and Aerial Photographs)
- Six (6) wells are located within 250 m of the subject site. (Source: MOE Well Records)
- A creek is observed approximately 90 m northeast of the subject site (Source: Topographic Map)



#### 4.0 ENVIRONMENTAL SITE RECONNAISSANCE

#### 4.1 Site Inspection

A visual inspection of the readily accessible areas of the subject site was conducted by our representatives, Ms. Jenny Park, Environmental Technician, on June 21, 2013, to determine the general environmental condition of the subject site and within 250 m of the subject site. The following table outlines the conditions and timing of the site visit:

Date	Weather Condition	Temperature	Duration of Visit	Precipitation Conditions	
June 21, 2013	Cloudy	22° C	0.5 Hours 11:00 pm - 11:45 pm	No Precipitation	

Site photographs taken during the inspection are presented in Appendix 'C'.

At the time of the inspection, the subject site consists of a tree house and a collapsed barn. The entire subject site is grass-covered, with a wooded area located in the northern section of the subject site. The southern, western, and northern limits of the subject site are chain-link fenced. A storm water management pond is observed north of the subject site, and the neighbouring properties consist of residential developments in all directions. A roadway (i.e. Jack Kenny Court) is adjacent to the west of the subject site.

The ground surface is relatively flat with minor undulations, and the grade at the site descends towards the north. There was no visual sign of any underground tank or excavated pit on the subject site. In addition, there was no noticeable nuisance odour, stained soil or stressed vegetation observed in any area of the subject site. There was no evidence to suggest that material of environmental concern are used, stored or disposed on the subject site.



#### 4.2 Building Inspection

One (1) tree house and one (1) collapsed barn located in the northern section of the subject site were inspected. Both structures are not insulated, and are not supplied with any services (i.e. hydro utilities and sewer systems).

#### Tree House

The tree house is a single-storey structure, and is built with a wooden framed. The exterior of the tree house is painted, and is constructed of wood sidings with tiled flooring.

#### Collapsed Barn

The collapsed barn is formerly a single-storey structure, and is built with a wooden framed.

#### 4.3 Storage Tanks

### **Underground Storage Tank (UST)**

There is no vent or filler pipe visible to indicate the presence of any underground storage tank (UST) on the subject site.

# Above-Ground Storage Tank (AST)

At the time of inspection, there is no visible above-ground storage tank on the subject site.



#### 4.4 Hazardous Materials

#### Asbestos-Containing Materials (ACM)

Asbestos-containing materials (ACMs) were widely used in building construction until the midto late 1970s, primarily for the good insulation and fire retardant properties of asbestos. The health risks associated with asbestos occur when asbestos fibres are released from various materials into the ambient air.

As the tree house and the collapsed barn are not insulated, it is unlikely that ACMs were used in the construction.

#### Polychlorinated Biphenyls (PCBs)

PCBs commonly exist in electrical equipment such as transformers, capacitors, and in the ballasts of fluorescent and high-intensity discharge (HID) light fixtures. The use of PCBs in newly manufactured electrical equipment was discontinued in 1979.

As the tree house and the collapsed barn are not serviced with electricity, it is unlikely that PCBs are present on the subject site.

#### Urea-Formaldehyde Foam Insulation

Urea-formaldehyde foam insulation (UFFI) was commonly used in the mid-1970s for insulation in buildings and was discontinued in 1980.

As the tree house and the collapsed barn are not insulated, it is unlikely that UFFI were used in the construction.



#### Ozone-Depleting Substances (ODSs)

Sources of ozone-depleting substances (ODSs) are found in the form of chlorofluorocarbons (CFCs) used in air-conditioning units and refrigeration systems.

As the tree house and the collapsed barn are not serviced with electricity, it is unlikely that ODSs are present on the subject site.

#### Lead-Based Paints, Plumbing Pipes and Plumbing Solder

Lead was commonly used in paints, plumbing pipes and plumbing solder as a drying agent and for pigmentation. The use of lead has been reduced, and was phased-out of use in plumbing solder during the 1980s and from pipes during the 1990s.

As the exterior of the tree house is painted, it is possible that lead based materials may be present on the subject site.

#### Mercury

Mercury is generally a component of thermometers, thermostats and fluorescent lighting tubes. As the tree house and the collapsed barn are not serviced with electricity, it is unlikely that Mercury is present on the subject site.

#### Silica

Silica is a natural material found in rocks and masonry units. As the tree house and the collapsed barn were built with wooden material, it is unlikely that Silica is present on the subject site.



#### 4.5 Substance Containers

Our representative checked for the presence of substance containers such as oil drums, used oil containers, gasoline jerry cans, paint cans, etc. At the time of our inspection, empty plastic drums were observed within the collapsed barn premises.

#### 4.6 Waste Management and Maintenance Practices

Currently, no waste is generated on the subject site. However, domestic debris such as empty plastic drums was observed within the collapsed barn premises.

#### 4.7 Air Quality and Noise

During our inspection, there was no offensive odour or detectable source of air emissions that may impact the ambient air quality at the subject site. Ambient noise includes the noise of traffic along Jack Kenny Court adjacent to the southwest of the subject site.

#### 4.8 Adjacent Properties

The neighbouring properties consist of residential developments in all directions. No unexpected noise or odour was noted emanating from these properties during our inspection.



#### 4.9 Results of Environmental Site Reconnaissance

Our site reconnaissance has revealed the following items of note pertaining to the subject site:

- Based on the site inspection, certain hazardous materials (i.e. lead paint) may be present.
- The subject site is adjacent to roadway (i.e. Jack Kenny Court).
- Domestic debris with collapsed barn is observed in the central section of the subject site.



#### 5.0 INTERVIEW

#### 5.1 Person Knowledgeable of the Site

Mr. Antino Todiello, the owner of the neighbouring property of the subject site, was interviewed on June 21, 2013 regarding the subject site. As part of the interview he filled out an Environmental Questionnaire which is presented in Appendix 'D'. The following is the result of our interview:

 The neighbouring properties were converted from agricultural use to residential use approximately 13 years ago.

#### 5.2 Results of Interview

Our interview did not disclose any noteworthy item, other than the subject site was used for agricultural purposes.



#### 6.0 DISCUSSION AND RECOMMENDATIONS

Soil Engineers Ltd. was retained by 1361605 Ontario Limited on May 24, 2013, to carry out a Phase I Environmental Site Assessment (hereinafter referred to as "ESA") in accordance with CSA Standard Z768-01, at a property located on the east side of Jack Kenny Court, north of Grapevine Road, in the Town of Caledon.

Throughout the years, the subject site was mainly used for agricultural purposes, and is currently vacant. The neighbouring properties consist mainly of residential developments in all directions.

Based on the information obtained through our review of records, the visual observations recorded during our site reconnaissance and interview, as of June 24, 2013, the Phase I ESA has revealed the following items that require further consideration:

- A railway track (i.e. Canadian Pacific Railway) is located approximately 90 m south of the subject site. (Sources: Historical Map, Aerial Photographs, and Site Inspection)
- The subject site was formerly used for agricultural purposes. It is possible that pesticide
  may be present. (Sources: Historical Map, Aerial Photographs, Site Inspection and
  Interview)
- Based on the site inspection, certain hazardous materials (i.e. lead paint) may be present on the subject site.
- The subject site is adjacent to a roadway (i.e. Jack Kenny Court) (Source: Topographic Map, Aerial Photographs, and Site Inspection)
- Six (6) wells are located within 250 m of the subject site. (Source: MOE Well Records)
- A creek is observed approximately 90 m northeast of the subject site (Source: Topographic Map)
- Domestic debris with collapsed barn is observed in the central section of the subject site.
   (Source: Site Inspection)



An evaluation of each of these activities and their effect on the subject site are as follows:

#### 1) Railway

Generally, railway lines are noted due to the chemicals used in their construction and maintenance. Since the subject site is located approximately 90 m north of the railway lines, outside of the potential impact zone of the railway line; it is unlikely leached chemical will be brought onto the subject site. As such, the railway lines are not considered an environmental concern in this report.

#### 2) Former Agricultural Activities

Based on the Historical Maps and the 1954 to 1988 aerial photographs, site inspection, and interview, the subject site was mainly used for agricultural purposes. Due to the former agricultural use of the subject site and surrounding areas, pesticides may have been used. Pesticides are noted due to the chemicals and heavy metals being in their composition.

Soil Engineers Ltd. conducted environmental investigation on June 30, 2013 to determine the environmental quality of the topsoil. The results of the analysis meet the Table 1 Soil Standard for all property uses, in accordance with O. Reg. 153/04, as amended by O. Reg. 511/09, April 15, 2011. Therefore, no further environmental investigation for the topsoil is required.

#### Designated Substances

It should be noted that certain hazardous materials (i.e. lead paint) may be present on the subject site. Since the structures are not part of the development plan, the designated substances will normally be dealt with by the builders or constructors, prior to any demolition of the structures, through the Occupational Health and Safety Act. This is not considered as an environmental concern in this report.

#### 4) Roadway

Roadway is generally a concern due to the deicing chemicals used during the winter seasons. Therefore, one can expect unusually high levels of SAR and EC adjacent to the roadway. If the soils remain in-situ, they are considered to meet standards through clause 48(3) of O. Reg. 153/04. However, should the material be displaced, they no longer qualify for this exemption and must be managed accordingly. Hence, until displacement occurs, this item is not considered an environmental concern in this report.

#### 5) Water Wells

Based on MOE well record, six (6) wells are located within 250 m of the subject site. Any well found and not in use must be properly decommissioned. A copy of the work order should be retained for future reference as wells are noted for reference, they are not considered as an environmental concern in this report.

#### 6) Water bodies

A creek traverses approximately 90 m northwest of the subject site. It is noted because of potential restriction on development, and is not considered as an environmental concern.

#### 7) Domestic Debris

Debris from the remained of the collapsed barn are founded at the central section of the subject site. As no material of concern was noted during our site reconnaissance, debris items are considered more of a nuisance than a hazard. It is recommended that during construction, any deleterious debris found on the surface or buried on the subject site must be removed and disposed off properly.



Our Phase I ESA has revealed that there is low potential for environmental concern attendant to the subject site associated with the past and current activities at the subject site and on the neighbouring lands. Therefore, no further environmental investigation is recommended at this time.

#### 7.0 QUALIFICATIONS

Soil Engineers Ltd., formerly known as Soil-Eng Limited (founded in 1976), offers to its clients a range of specialized engineering services. Our company is staffed with both engineers and scientists who draw upon their combined experience to provide a team approach to problem solving and are trained to understand the MOE regulations. We play an integral role in the development of industrial, commercial, institutional and residential subdivisions, complexes, structures, and their related infrastructures, by providing our clients with the needed expertise for their projects.

The review of records and the site visit for this assessment were conducted by Mr. Kelvin Lee. Mr. Lee has a Bachelor of Engineering from McMaster University, and is currently enrolled as an Engineer in Training. He has been trained to conduct Phase I and Phase II ESAs in accordance with the CSA Standards.

Mr. Anthony C.K. Ching is the Senior Environmental Manager of Soil Engineers Ltd. He has a Bachelor Degree in Civil Engineering from the University of Waterloo and is licensed to practice in Ontario (PEO Licence No. 8064115). He has over 13 years of experience in the review and approval of land development and Environmental Site Assessment (ESA). He manages the environmental department, oversees the projects and is involved in the technical review of the ESA reports.

One must understand that the mandate of Soil Engineers Ltd. is to obtain readily available past and present information pertinent to the subject site for a Phase I Environmental Site Assessment only. No other warranty or representation, expressed or implied, as to the accuracy of the information is included or intended by this assessment.



It should be noted that the information supplied in this report may not be sufficient to obtain approval for disposal of excess soil or materials generated during construction, and chemical testing of soil samples may be necessary to obtain such approval.

This report was prepared by Soil Engineers Ltd. for the account of 1361605 Ontario Limited and for review by their designed agents and financial institutions. The material in it reflects the judgement of Kelvin Lee, B.Eng., E.I.T. and Anthony C.K. Ching, P.Eng., QP<sub>ESA</sub>, in light of the information available at the time of preparation at this report. Any use, which a Third Party makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such Third Parties. Soil Engineers Ltd. accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

#### SOIL ENGINEERS LTD.

Kelvin Lee, B.Eng., E.I.T.

Anthony C. K. Ching, P.Eng., QPESA

KL/ACKC



#### 8.0 REFERENCES

#### Information in the Public Domain

Environment Canada. National PCB Inventory (1994).

Environment Canada. National Pollutant Release Inventory (2006-2008).

Environmental Protection Act (EPA). Part VII of Ontario Regulation 511/09. The Ontario Ministry of the Environment (MOE) (Amended 2009).

MOE. Brownfields Environmental Site Registry (February 1, 2012).

MOE. Inventory of Coal Gasification Plant Waste Sites in Ontario (April 1987).

MOE. Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario (November 1988).

MOE. Ontario Inventory of PCB Storage Sites (2000).

MOE. Waste Disposal Site Inventory (June 1991).

MOE. Waste Generator Registration Database Files (2000 and 2008).

MOE. Water Well Ontario (June 24, 2013).

Ontario Ministry of Natural Resources. Ontario Ministry of Natural Resources Heritage Information Centre (NHIC) (2010).

Service Ontario, Land Registry Office #43. Historical Land Titles Search (1824 – 1994).

Service Ontario, Land Registry Office #43. Parcel Registries for Property Identifiers 14326-0124 (LT), 14326-1784 (LT), and 14326-0728 (LT). Land Titles Act (2008).

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#### References of Plans and Drawings

County of Peel Interactive Maps, 2012. The Regional Municipality of Peel

Property Index Map Block 14326, 2012 Regional Municipality of Peel

Illustrated historical atlas of County of Peel, Toronto: Walkers & Miles., 1877 McGill University, Rare Books Division

Ministry of Natural Resources, 1983 Queens Printer for Ontario., Soil Engineers Ltd Reference Library

Ministry of Natural Resources, Toporama Map

1954 Digital Aerial Photographs, Southern Ontario, Toronto Robarts Library

1979 Norwest Survey Corporation Limited, National Air Photograph Library







Site Location Plan

Proposed Residential Development east of Jack Kenny Court, north of Grapevine Road Town of Caledon Project

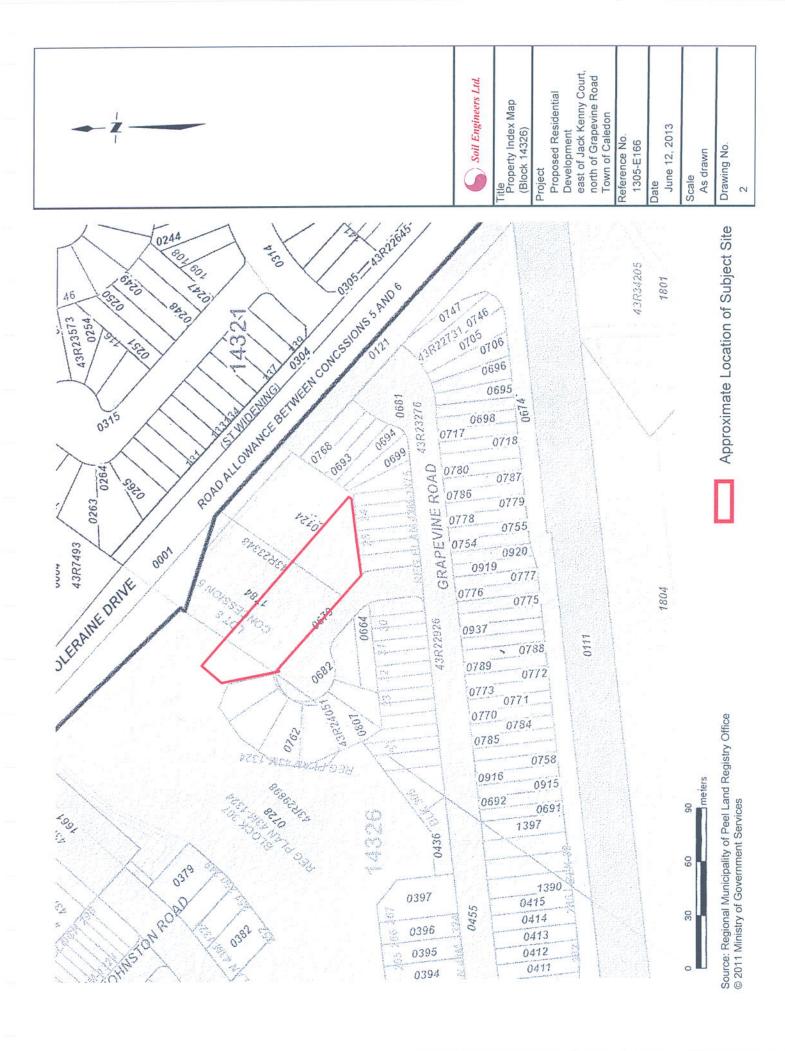
Reference No. 1305-E166

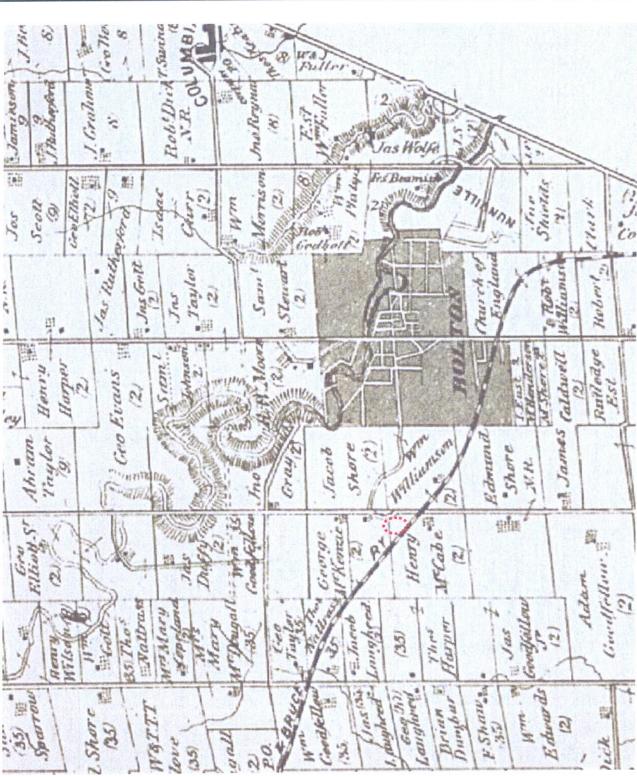
June 12, 2013

Scale As drawn

Drawing No.

Approximate Location of Subject Site







# Soil Engineers Ltd.

1877 Historical Map

east of Jack Kenny Court. north of Grapevine Road Proposed Residential Town of Caledon Development

Reference No. 1305-E166

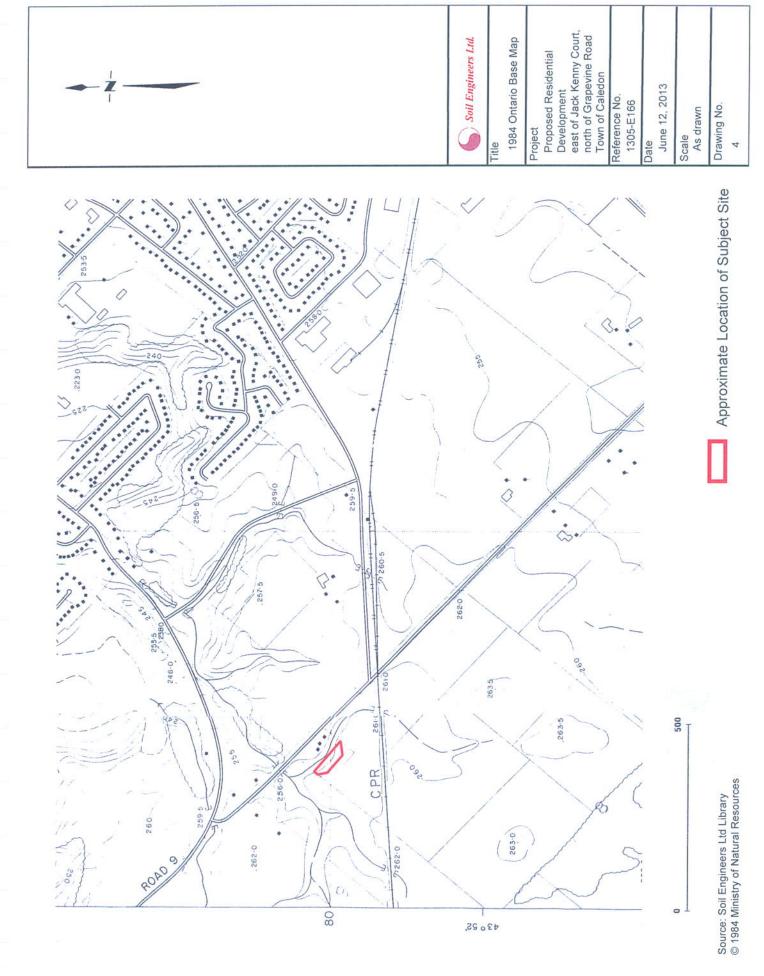
Not to scale Scale

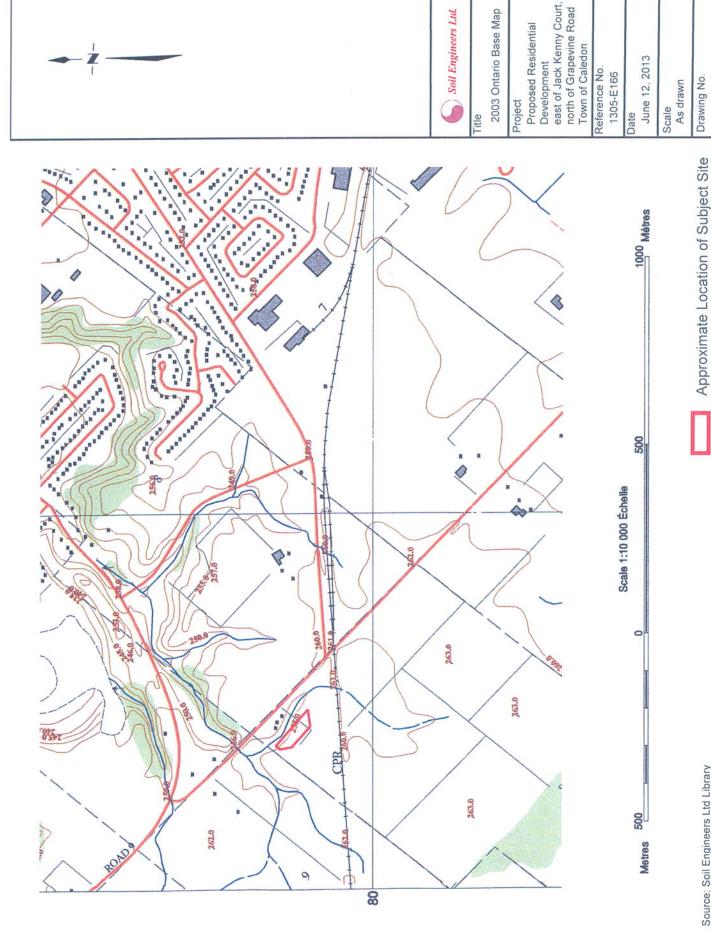
June 12, 2013

Drawing No.

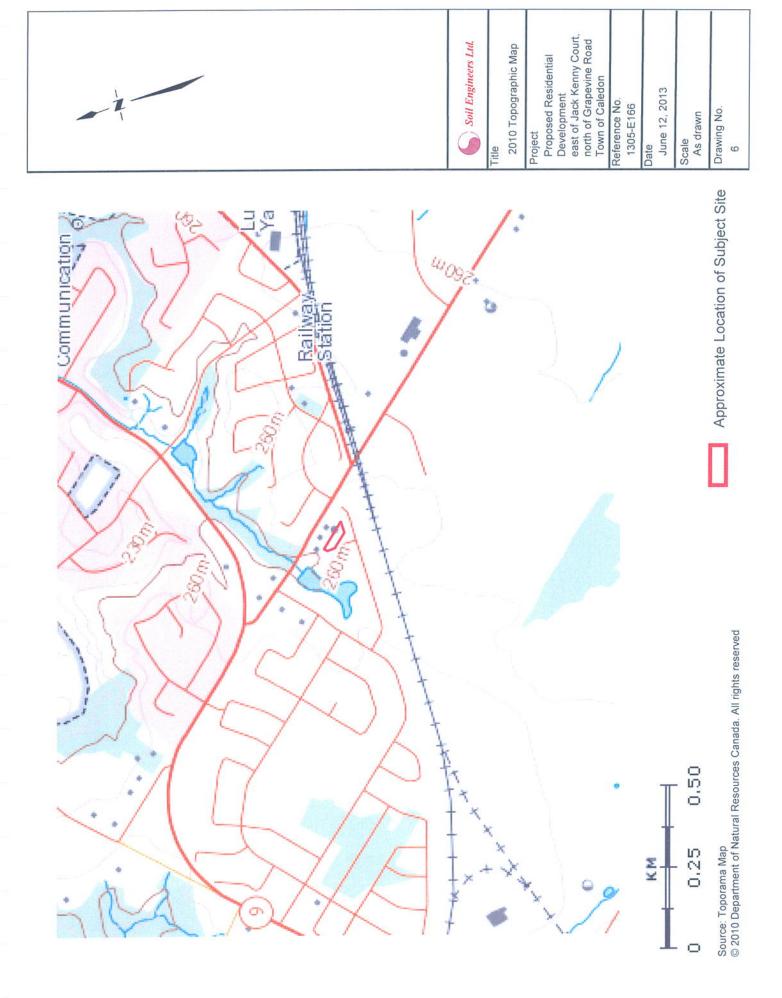
Approximate Location of Subject Site

Source: Illustrated historical atlas of the county of York. Toronto: Miles & Co. © 1881. McGill University, Rare Books Division





Source: Soil Engineers Ltd Library © 2003 Ministry of Natural Resources





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FAX: (705) 721-7864	FAX: (905) 542-2769	FAX: (905) 725-1315	FAX: (416) 754-8516	FAX: (705) 684-8522	FAX: (905) 725-1315	FAX: (905) 542-2769

#### APPENDIX 'A'

PREVIOUS ENVIRONMENTAL REPORT

REFERENCE NO. 1305-E166



# Soil Engineers Ltd.

CONSULTING ENGINEERS

#### GEOTECHNICAL • ENVIRONMENTAL • HYDROGEOLOGICAL • BUILDING SCIENCE

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July 8, 2013

Reference No. 1305-E166 Page 1 of 2

Calder Engineering Ltd. 12246 Albion Vaughan Road Kleinburg, Ontario L0J 1C0

Attention: Mr. Robert Whyte, M.Sc., P.Eng.

Re:

Chemical Analysis of Soil Samples Proposed Residential Development

East of Jack Kenny Court, north of Grapevine Road

**Town of Caledon** 

Dear Sir:

As requested, our representative collected three (3) composite soil samples from the captioned site on June 30, 2013 for chemical testing to determine the environmental quality of the soil material.

Three (3) composite soil samples were obtained from hand-dug test pits advanced in the surface topsoil. The locations of the samples are shown on the Sampling Location Plan, Drawing No. 1.

There was no visible stain or odour emitted from the soil samples during the collection for chemical testing.

The samples were sent to Caduceon Environmental Laboratories, accredited by the Canadian Association for Laboratory Accreditation Inc., for analysis of Organochlorine Pesticides under Table 1, Full Depth Background Site Condition Standards for Agricultural or Other Property Use, in accordance with the "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (EPA), April 15, 2011 (hereinafter referred to as "Table 1 Standards"). The results of this testing, together with the permissible levels, are enclosed within.

This letter/report/certification was prepared by Soil Engineers Ltd. for the account of the captioned clients and may be relied upon by regulatory agencies. The material in it reflects the writer's best judgement in light of the information available to it at the time of preparation. Any use which a third party makes of this letter/report/certification, or any reliance on or decisions to be made based upon it, are the responsibility of such third parties. Soil Engineers Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this letter/report/certification.



The sampling program is as follows:

Sample Name	Laboratory ID	Sample Depth (mbgs)*	Soil Type	Test Conducted
TP 1	B13-16409-1			
TP 2	B13-16409-2	0 – 0.2 m	Topsoil	Organochlorine Pesticides
TP 3	B13-16409-3			

Note: (mbgs)\* is equivalent to meters below ground surface

In reviewing the results of the analysis for the soil samples, the tested parameters are either below the reportable detection limits or fall within the Table 1 Standards.

Please be aware that the surface soil conditions may vary between sampling locations.

Should any queries arise, please feel free to contact this office.

Yours very truly,

SOIL ENGINEERS LTD.

Kelvin Lee, B.Eng., E.I.T.

Viktor Kopetskyy, P.Eng.

KL/VK Encls.





Title Sample Location Plan

Project
Proposed Residential
Development
East of Jack Kenny Court,
north of Grapevine Road,
Town of Caledon

Reference No. 1305-E166

Date July 8, 2013

Scale

See drawing

Drawing No.

Approximate Location of Subject Site

Approximate sampling location



# **CERTIFICATE OF ANALYSIS**

Final Report

C.O.C.: G19860

**REPORT No. B13-16409** 

Report To:

Soil Engineers

100 Nugget Ave,

Toronto ON M1S 3A7

Attention: Kelvin Lee

DATE RECEIVED: 02-Jul-13

DATE REPORTED: 08-Jul-13

SAMPLE MATRIX: Soil

Caduceon Environmental Laboratories

110 West Beaver Creek Rd Unit 14

Richmond Hill ON L4B 1J9

Tel: 289-475-5442

Fax: 289-562-1963

JOB/PROJECT NO.:

P.O. NUMBER:

1305-E166

WATERWORKS NO.

			Client I.D.		SA 1	SA 2	SA 3	
			Sample I.D.		B13-16409-1	B13-16409-2	B13-16409-3	
			Date Collect	ed	30-Jun-13	30-Jun-13	30-Jun-13	
Parameter	Units	M.D.L.	Reference Method	Date/Site Analyzed				
Aldrin	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
Dieldrin	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
Chlordane (Total)	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	Lancier Control
Chlordane (Alpha)	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
Chlordane (Gamma)	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
Chlordane, Oxy-	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
DDD, 2,4-	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
DDD, 4,4-	µg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
DDE, 2,4-	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
DDE, 4,4-	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
DDT, 2,4-	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
DDT, 4,4-	µg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	l
Endosulfan (Total)	µg/g	0.03	EPA 8080	08-Jul-13/K	< 0.03	< 0.03	< 0.03	
Endosulfan I	μg/g	0.02	EPA 8080	08-Jul-13/K	< 0.02	< 0.02	< 0.02	
Endosulfan II	µg/g	0.02	EPA 8080	08-Jul-13/K	< 0.02	< 0.02	< 0.02	
Endosulfan Sulfate	µg/g	0.02	EPA 8080	08-Jul-13/K	< 0.02	< 0.02	< 0.02	
Endrin	μg/g	0.04	EPA 8080	08-Jul-13/K	< 0.04	< 0.04	< 0.04	
Heptachlor + Heptachlor Epoxide	μg/g	0.01	EPA 8080	08-Jul-13/K	< 0.01	< 0.01	< 0.01	
Heptachlor	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
Heptachlor Epoxide	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	
Hexachlorobenzene	μg/g	0.01	EPA 8080	08-Jul-13/K	< 0.01	< 0.01	< 0.01	
Lindane (Hexachlorocyclohexane, Gamma)	μg/g	0.01	EPA 8080	08-Jul-13/K	< 0.01	< 0.01	< 0.01	
Methoxychlor	μg/g	0.05	EPA 8080	08-Jul-13/K	< 0.05	< 0.05	< 0.05	

M.D.L. = Method Detection Limit

Site Analyzed=K-Kingston, W-Windsor, O-Ottawa, R-Richmond Hill

Christine Burke

Lab Supervisor



# Quality Assurance Report

Report No: B13-16409

Soil Engineers  100 Nugget Ave Toronto, ON M1S 3A7  Attention:  Date Submitted:  Samples Submitted By: Kelvin Lee Samples Received By: Joseph Munford Date Reported:  Sample Matrix:  Soil Temperature Unon Receipt (%C):  Soil Engineers	Donout Tree				
Soil Engineers  100 Nugget Ave  Toronto, ON MIS 3A7  Attention:  Date Submitted:  Samples Submitted By: Kelvin Lee Samples Received By: Joseph Munford Date Reported:  Sample Matrix:  Soil  Temperature Unon Receipt (C):  On Number Sample Matrix:  Soil	Nepolt 10:			Cadireeon Environ	Caduceon Environmental Lahoratories
100 Nugget Ave Toronto, ON MIS 3A7  Attention: Kelvin Lee  Date Submitted: 2013/07/02 Samples Submitted By: Kelvin Lee Samples Received By: Joseph Munford Date Reported: 2013/07/08 Sample Matrix: Soil Temperature Unon Receipt (*C):	Soil Engineers				minement Labor atollics
100 Nugget Ave  Toronto, ON M1S 3A7  Attention:  Date Submitted:  Samples Submitted By: Kelvin Lee Samples Received By: Joseph Munford Date Reported:  Sample Matrix:  Soil  Temperature Unon Receipt (%C):	SOII EIIBIIICEIS				110 West Beaver Creek Rd
Attention: Kelvin Lee  Date Submitted: 2013/07/02 Samples Submitted By: Kelvin Lee Samples Received By: Joseph Munford Date Reported: 2013/07/08 Sample Matrix: Soil Temperature Unon Receipt (%C).	100 Nijoget Ave				THE PERSON INC.
Attention: Kelvin Lee  Date Submitted: 2013/07/02  Samples Submitted By: Kelvin Lee Samples Received By: Joseph Munford Date Reported: 2013/07/08  Sample Matrix: Soil Temperature Unon Receive Co.	100 1108801 110			Ric	Richmond Hill, ON I 4B 119
Attention: Kelvin Lee  Date Submitted: 2013/07/02  Samples Submitted By: Kelvin Lee  Samples Received By: Joseph Munford  Date Reported: 2013/07/08  Sample Matrix: Soil  Temperature Unon Receipt (%C): 0	Toronto, ON M1S 3A7				10000
Samples Received By: Joseph Munford Date Reported: 2013/07/08 Sample Matrix: Soil		7-1-1-1			Iel: (289) 4/5-5442
Date Submitted: 2013/07/02 Samples Submitted By: Kelvin Lee Samples Received By: Joseph Munford Date Reported: 2013/07/08 Sample Matrix: Soil		vervin Lee			Fax: (866) 562-1963
Samples Submitted By: Kelvin Lee Samples Received By: Joseph Munford Date Reported: 2013/07/08 Sample Matrix: Soil Temperature Unon Receipt (%).		013/07/02		Tok/Draisest No.	
Samples Submitted by: Retvin Lee Samples Received By: Joseph Munford Date Reported: 2013/07/08 Sample Matrix: Soil Temperature Unon Receipt (%).	Complex Culturing D.	7-1-1-1		300/110000	
Samples Received By: Joseph Munford  Date Reported: 2013/07/08  Sample Matrix: Soil  Temperature Unon Receipt PCV.	Samples Submitted By: R	velvin Lee		· ON COC	C10860
Date Reported: 2013/07/08 Sample Matrix: Soil Temperature Unon Receipt (*C).	Samples Received By: Lo	osenh Munford			013800
on Receir		and		P.O. Number:	1305-E166
Sample Matrix: Soil Temperature Unon Receipt (%).		:013/07/08		Waterworks No.	
Sample Math. Soll Temperature Unon Receipt (9C).		1-31		THE WOLKS INC.	
Temperature Unon Receipt (9C).		1100		Onote No .	Soil Fnoineare FDD
	Temperature Unon Deceint	(00)			CONTENIE TILL DISCO
	remperature opon receipt	( ).	0	Invoice To:	Kelvin Lee

Method	Reference
Laboratory	Method
Date	Approved
Time	Analyzed
Date	Analyzed
Date	Extracted
Analyst	Initials
Site	Analyzed
	Qty.
	Analyses

BM 2013/07/03 2013/07/08 09:47 2013/07/08

Kingston

OCP

EPA 8080

C-PESTCL-01 K

NA = Not Applicable

GENERAL COMMENTS

Christine Burke Lab Supervisor

# ENVIRONMENTAL LABORATORIES Client committed. Quality assured.

# Quality Assurance Report

Report No: B13-16409

						QC Data				
Parameters	MDL	MDL LCS Sample (% Rec.)	e (% Rec.)		Duplicate	ate		Lab	Matrix Spike (% Rec.	te (% Rec.)
		Found	Limits	Result 1	Result 2	R.P.D. Limits (%)	its (%)	Blank	Found	Limits
Aldrin	0.05	87	50-140	< MDL	< MDL	NC	50	< MDL	114	50-140
Chlordane (Alpha)	0.05	101	50-140	< MDL	< MDL	NC	50	< MDL	126	50-140
Chlordane (Gamma)	0.05	100	50-140	< MDL	< MDL	NC	50	< MDL	123	50-140
Chlordane, Oxy-	0.05	91	50-140	< MDL	< MDL	NC	50	< MDL	114	50-140
DDD, 2,4-	0.05		50-140	< MDL	< MDL	NC	50	< MDL	1	50-140
DDD, 4,4-	0.05	117	50-140	< MDL	< MDL	NC	50	< MDL	127	50-140
DDE, 2,4-	0.05		50-140	< MDL	< MDL	NC	50	< MDL		50-140
DDE, 4,4-	0.05	103	50-140	< MDL	< MDL	NC	50	< MDL	129	50-140
DDT, 2,4-	0.05	108	50-140	< MDL	< MDL	NC	50	< MDL	126	50-140
DDT, 4,4-	0.05	115	50-140	< MDL	< MDL	NC	50	< MDL	129	50-140
Dieldrin	0.05	116	50-140	< MDL	< MDL	NC	50	< MDL	128	50-140
Endosulfan I	0.02	106	50-140	< MDL	< MDL	NC	50	< MDL	120	50-140
Endosulfan II	0.02	120	50-140	< MDL	< MDL	NC	50	< MDL	126	50-140
Endosulfan Sulfate	0.02	122	50-140	< MDL	< MDL	NC	50	< MDL	132	50-140
Heptachlor	0.05	68	50-140	< MDL	< MDL	NC	50	< MDL	114	50-140
Heptachlor Epoxide	0.05	108	50-140	< MDL	< MDL	NC	50	< MDL	122	50-140
Endrin	0.04		50-140	< MDL	< MDL	NC	50	< MDL		50-140
Hexachlorobenzene	0.01	82	50-140	< MDL	< MDL	NC	50	< MDL	100	50-140
Lindane (Hexachlorocyclohexane, Gamma)	0.01	98	50-140	< MDL	< MDL	NC	50	< MDL	112	50-140
Methoxychlor	0.05	129	50-140	< MDL	< MDL	NC	50	< MDL	139	50-140

Soil results are expressed in µg/g unless otherwise stated

Water results are expressed in mg/L, except SVOC and VOC are in µg/L, unless otherwise stated

NC = Not Calculated
- = Not Requested/Analyzed
NA = Not Applicable

LCS = Laboratory Control Standard

R.P.D. = Relative Percent Difference of Duplicate Pairs at > 10x M.D.L.

SS = Surrogate Standard

MDL = Method Detection Limit



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# APPENDIX 'B'

**AERIAL PHOTOGRAPHS** 

REFERENCE NO. 1305-E166





Title 1954 Aerial Photograph

Proposed Residential
Development
east of Jack Kenny Court,
north of Grapevine Road,
Town of Caledon

Reference No. 1305-E166

Date

June 12, 2013 Scale

As drawn

Appendix 'B'

Approximate Location of Subject Site

1 of 5

Source: Toronto Robarts Library © 1954 Digital Aerial Photographs, Southern Ontario

metres

200



metres 200 Approximate Location of Subject Site



Title 1964 Aerial Photograph

Proposed Residential Development east of Jack Kenny Court, north of Grapevine Road, Town of Caledon Project

Reference No.

1305-E166 Date June 12, 2013

Scale

Appendix 'B' As drawn

2 of 5

Source: York Interactive Map © 2012 The Municipality Region of York



Title 1978 Aerial Photograph

Project

Proposed Residential
Development
east of Jack Kenny Court,
north of Grapevine Road,
Town of Caledon

Reference No.

1305-E166 Date

June 12, 2013

Scale

Appendix 'B' As drawn

Approximate Location of Subject Site

3 of 5

Source: National Air Photograph Library © 1979 Norwest Survey Corporation Limited

= metres





itle 2010 Aerial Photograph

Proposed Residential
Development
east of Jack Kenny Court,
north of Grapevine Road,
Town of Caledon

Reference No. 1305-E166

Date

June 12, 2013

Scale

As drawn

Appendix 'B'

Approximate Location of Subject Site

5 of 5

metres



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OSHAWA

NEWMARKET TEL: (905) 542-7605 TEL: (905) 440-2040 TEL: (905) 853-0647 FAX: (705) 721-7864 FAX: (905) 542-2769 FAX: (905) 725-1315 FAX: (416) 754-8516 FAX: (705) 684-8522 FAX: (905) 725-1315

GRAVENHURST TEL: (705) 684-4242

PETERBOROUGH TEL: (905) 440-2040

HAMILTON TEL: (905) 777-7956 FAX: (905) 542-2769

# APPENDIX 'C'

SITE PHOTOGRAPHS

REFERENCE NO. 1305-E166

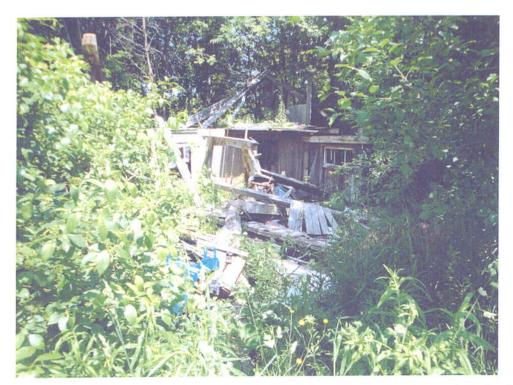


General view of the subject site (viewing north)



General view of the subject site and residential development adjacent to the south of the subject site (viewing south)

	Title	Project	Reference No.	Date	Appendix 'C'
Soil Engineers Ltd.	Site Photographs	Proposed Residential Development East of Jack Kenny Court, north of Grapevine Road,Town of Caledon	1305-E166	June 24, 2013	Page 1 of 4



View of the collapsed barn located in the northern section of the subject site (viewing north)



View of rhe tree house located in the northern section of the subject site (viewing west)

	Title	Project	Reference No.	Date	Appendix 'C'
Soil Engineers Ltd.	Site Photographs	Proposed Residential Development East of Jack Kenny Court, north of Grapevine Road,Town of Caledon	1305-E166	June 24, 2013	Page 2 of 4



View of the storm management pond located north of the subject site(viewing north)



View of the existing buildings adjacent to the east of subject site (viewing south)

	Title	Project	Reference No.	Date	Appendix 'C'
Soil Engineers Ltd.	Site Photographs	Proposed Residential Development East of Jack Kenny Court, north of Grapevine Road,Town of Caledon	1305-E166	June 24, 2013	Page 3 of 4



View of the residential properties to the south of the subject site (viewing north)



View of the residential properties to the west of the subject site (viewing north)

	Title	Project	Reference No.	Date	Appendix 'C'
Soil Engineers Ltd.	Site Photographs	Proposed Residential Development East of Jack Kenny Court, north of Grapevine Road,Town of Caledon	1305-E166	June 24, 2013	Page 4 of 4



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 FAX: (905) 725-1315
 FAX: (416) 754-8516
 FAX: (705) 684-8522
 FAX: (905) 725-1315
 FAX: (905) 542-2769

# APPENDIX 'D'

INTERVIEW QUESTIONNAIRE

REFERENCE NO. 1305-E166

# PHASE I: ENVIRONMENTAL SITE ASSESSMENT Landowner/Tenant/Occupant Questionnaire

# PHASE I: ENVIRONMENTAL SITE ASSESSMENT Landowner/Tenant/Occupant Questionnaire

10.		Landowner/Tenant/Occuj		
	Dumping of hazardous s parts, household garbag	substances or petroleum prod le, mixed municipal refuse, de	ucts, unidentified v emolition debris, fill	vaste materials, automotive I material from an unknown site?
		2.4	1.9	No.
				No.
11.	facility, commercial print	erties are or have been previous ing facility, dry cleaners, junk facility or photo developing later.	yard or landfill, was	ste treatment, storage, disposal,
				No.
2	Do you know of others y	vho may have knowledge of t	he property?	
2.	Do you know of others v	vilo may have knowledge or t	no property.	No.
				,
		EXDIANAUONS		
		Explanations		
		Explanations	7	
		Explanations		
		Expianations		
		Explanations		
		Expianations		
		-xpianations		
		Explanations		
			tatements and fact	is are true and correct, pased or

Signature of person completing questionnaire

Date Completed (YY-MM-DD)