

Phase One Environmental Site Assessment 3368 Carling Avenue Ottawa, Ontario

Prepared For: Cardel Homes 301 Moodie Drive, Suite 100 Nepean, ON K2H 9C4

SPL Project No.:10000823-210 Report Date: August 29, 2014



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August 29, 2014

SPL Project No.: 10000823-210 Cardel Homes 301 Moodie Drive, Suite 100 Nepean, ON K2H 9C4

Attention: Ms. Lisa Dalla Rosa

Phase One Environmental Site Assessment 3368 Carling Avenue, Ottawa, Ontario

1. EXECUTIVE SUMMARY

SPL Consultants Limited (SPL) was retained by Ms. Lisa Dalla Rosa of Cardel Homes to conduct a Phase One Environmental Site Assessment (Phase One ESA) at the above noted property. It is our understanding that this Phase One ESA has been requested for due diligence purposes prior to the redevelopment of the property.

We are pleased to enclose a summary of the findings of this Phase One ESA:

- 1. The area under assessment is a rectangular shaped land parcel with an area of approximately 0.13 hectares (0.33 acres) and located on the southeast corner of Carling Avenue and Badale Drive, in the City of Ottawa. The Phase One Property is currently occupied by one (1) vacant building, with a paved area surrounding the property, used for parking purposes. The Phase One Property was recently utilized as a commercial show room and office space. According to interviews with site representatives, the building on the Phase One Property was constructed in the 1960s and was formerly used for commercial purposes prior to its use as a show room and office.
- 2. The Phase One Property generally slopes to the north. It is possible that some fill material was used in the construction of the building currently located on the Phase One Property. The 1965 aerial photograph depicts a second structure that was formerly located to the west of the current building on the Phase One Property; however, the structure appeared to be demolished by the 1976 aerial photo. It is possible that fill material was used following the demolition of this former structure. The environmental quality of the potential fill material is considered to be unknown.
- 3. One (1) aboveground fuel oil storage tank (AST) was observed in the basement of the building located on the Phase One Property. Vent/fill pipes for this tank were observed on the exterior of the Phase One Property. The AST appeared to be in good condition with no obvious leaks or cracks. No staining was observed around the base of the AST, however, no secondary containment was observed surrounding the AST. SPL was advised that the tank is no longer in

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use and has been disconnected. It is likely that the UST was formerly used to heat the building. Ms. Cooper informed SPL that the vent/fill pipes were repaired approximately two (2) years ago.

- 4. Historically, the adjacent and neighbouring properties to the south, east and west were generally used for residential purposes. Currently, the uses of the properties within the Phase One Study Area are predominantly residential and institutional.
- 5. The Phase One Property containing parking areas and is located adjoining to roadways which have been subject to de-icing activities. As a result, electrical conductivity (EC) and sodium adsorption ratio (SAR) impacts may exist in the subsurface soils in various degrees in the parking areas and near the roadways.

Based on the information gathered during the interviews and records review during this Phase One ESA it was determined that there are potentially contaminating activities (PCAs) contributing to areas of potential environmental concern (APECs) on the Phase One Property. PCAs on the Phase One Property and within the Phase One Study Area are as follows:

Phase One Property

- Importation of fill material of unknown environmental quality;
- > De-icing use in the parking area of the Phase One Property; and
- Gasoline and associated products storage in fixed tanks associated with the fuel oil AST.

Phase One Study Area

> De-icing use along roadways adjacent to the Phase One Property.

Based on the above-noted items, a Phase Two ESA is recommended to evaluate the environmental quality of the soil and groundwater on the Phase One Property.

It should be noted that general environmental management and housekeeping practices were reviewed as part of this assessment with respect to their impact on the environmental condition of the property; however; a detailed review of regulatory compliance issues was beyond the scope of our investigation. This Phase One ESA does not constitute an audit of environmental management practices, indicate geotechnical conditions or identify geologic hazards.

Information used in this report was reviewed based on proximity of potentially contaminating activities to the Phase One Property and on anticipated direction of local groundwater flow.

Based on the findings of this investigation, a Record of Site Condition (RSC) under O. Reg. 153/04 as amended cannot be filed based solely on the Phase One Environmental Assessment.



2. INTRODUCTION

SPL Consultants Limited (SPL) was retained by Ms. Lisa Dalla Rosa of Cardel Homes to conduct a Phase One Environmental Site Assessment (Phase One ESA) at the property on Carling Avenue, Ottawa, Ontario (the Phase One Property). It is our understanding that this Phase One ESA has been requested for due diligence purposes prior to potential redevelopment of the property.

Information used to prepare this report was gathered from the following sources: SPL's site visit, available regulatory information, maps, geological publications, information obtained from city directories and information provided to SPL by the client.

The scope of this Phase One ESA conforms to the requirements outlined in O. Reg 153/04 as amended.

The purpose of this Phase One ESA was to identify the presence or absence of potentially contaminating activities (PCAs) within the Phase One Study Area and based on this information; assess the requirements for additional investigation in the form of a Phase Two Environmental Site Assessment. This Phase One ESA does not include physical sampling or testing, and is based solely on visual observations and a review of available or supplied factual data.

2.a. Phase One Property Information

The area under assessment is a rectangular shaped land parcel with an area of approximately 0.13 hectares (0.33 acres) and located on the southeast corner of Carling Avenue and Badale Drive in the City of Ottawa. The Phase One Property is currently occupied by one (1) vacant structure, surrounded by a paved area used for parking. For the purpose of this report Badale Drive is assumed to be oriented in a north-south direction and Carling Avenue is assumed to be oriented in an east-west direction. The current municipal address assigned to the property is 3368 Carling Avenue, Ottawa, Ontario. A site location plan is presented in **Drawing 1.**

The legal description of the Phase One Property as provided by Cardel Homes is as follows:

Lot 5, Registered Plan 503, save and except Part 3, Plan R-60, City of Ottawa

The following table lists the current owner and the contact information of the persons interviewed as part of this investigation.

TABLE 1: SUMMARY OF CURRENT OWNERS AND PROPERTY USE

Property	Current Owner	Property Use
	Cardel Homes	
3368 Carling Avenue,	<u>Site Contact:</u>	Commercial building
Ottawa	Greg Graham	currently vacant
	Greg.graham@cardelhomes.ca	



3. SCOPE OF INVESTIGATION

The scope of the assessment included:

- (i) A site reconnaissance on August 13th, 2014;
- (ii) A review of municipal directories and Fire Insurance Plans (FIP) to determine previous occupants of the Phase One Property and adjoining properties and to determine the first developed use of the phase one properties;
- (iii) A search of available databases to determine potentially contaminating activities that may have taken place within the study area;
- (iv) Interpretation of available aerial photographs;
- (v) Interpretation of available topographic and geological maps;
- (vi) A search of MOE well records from the Environmental Monitoring and Reporting Branch of the MOE;
- (vii) An interview with a representative from the Phase One Property; and
- (viii) Conclusions based on information obtained during the investigation; regarding the need for a Phase Two ESA.

4. RECORDS REVIEW

4.a. GENERAL

4.a.i. Phase One Study Area Determination

The Phase One Study Area was determined by a 250 metre (m) offset from the Phase One Property boundaries, in accordance with O.Reg.153/04 as amended. PCAs were identified within the 250 m Phase One Study Area; it is unlikely that PCAs beyond 250 m of the Phase One Property would have a detrimental environmental impact on the Phase One Property. As such, the need to extend the boundary of the Phase One Study Area is not warranted.

Properties within the Phase One Study Area consist of residential and agricultural use. The properties within the Phase One Study Area were a part of the site reconnaissance and our historical review. PCAs identified during our review are discussed within this report. The approximate limits of the Phase One Study Area are shown on **Drawing 2**.

4.a.ii. First Developed Use Determination

Based on aerial photographs and interviews with the site representative, the first developed use of the Phase One Property is expected to be commercial. The 1879 Carleton County Atlas shows the Phase One Property as vacant.



4.a.iii. Fire Insurance Plans

A review of the Catalogue of Canadian Fire Insurance Plans (FIPs) 1875-1975 indicated several maps were created for the City of Ottawa; however, the Phase One Property was not covered by these FIPs.

4.a.iv. Occupancy Search

A search of the City Directories for the City of Ottawa was conducted on the Phase One Property and adjacent properties for the years 1993-1994, 1988-1989, 1984, 1979, 1974 and 1969. The Phase One Property was listed as commercial from 1974 to 1994. The adjacent properties on Carling Avenue were listed as residential with some commercial properties from 1974 to 1994. The remaining adjoining and neighbouring properties that are currently occupied by residential buildings were not listed in the city directories. The Phase One Property and Phase One Study Area were not listed in the directories prior to 1969. The results from the Occupancy Search are presented in **Appendix B**.

4.a.v. Environmental Reports

No previous reports were provided to SPL for review at this time.

4.b. ENVIRONMENTAL SOURCE INFORMATION

National Pollutant Release Inventory – Environment Canada (1994-2008)

A search of the National Pollutant Release Inventory, published by Environmental Canada, indicated that the Phase One Property and properties within the Phase One Study Area are not registered under the National Pollutant Release Inventory.

Ontario Inventory of PCB Storage Sites – Ontario MOE (1999, 2003)

A review of the Ontario MOE Inventory of PCB Storage Sites in Ontario (1999, 2003) indicated that the Phase One Property and properties within the Phase One Study Area were not registered as PCB storage sites.

Certificates of Approval – Ontario MOE (1985-2011)

A search for certificates of approval indicated that the Phase One Property is not registered with a Certificate of Approval (CoA). The southeast neighbouring property at 3304 Carling Avenue is registered with a CofA for a stormwater management facility serving eight (8) residential units.

Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario - Ontario MOE

A review of a Waste Disposal Site Inventory published by the MOE lists former coal gasification plants and industrial sites producing and using coal tar and related tars. None of these sites were located within the Phase One Study Area and all sites were located more than 1 km from the Phase One Property.



Dangerous Goods Accident Information System (DGAIS) Database 1988-2002

A review of the DGAIS Database indicated several incidents in which a spill occurred on railways located within the municipal limits of Ottawa. The nearest railway is located approximately 850 m south of the Phase One Property, and outside of the Phase One Study Area.

MOE Hazardous Waste Information System (HWIS) 1994, 1999, 2001, 2003, 2005, 2006, 2007, 2008 and 2009

The MOE HWIS database was search for the years of 1994, 1999, 2001, 2003 and 2005 to 2012. A review of the database indicated that the Phase One Property and properties within the Phase One Study Area were not registered for the generation, use and/or storage of hazardous wastes.

Ministry of Environment (MOE) Freedom of Information Request

A request was submitted to the MOE Freedom of Information and Protection of Privacy Office (Appendix A) to determine if there were any environmental incidents or violations associated with the subject property; whether any Control Orders have been issued; whether there have been any other environmental concerns associated with the property such as complaints, inspections, etc.; whether any environmental investigations have been carried out regarding the subject property; and, to determine if the Ministry's Spills Action Centre's (SAC's) files contain any reported spills that had occurred in the site vicinity. Note that the SAC's database dates back only to 1988 and many of the occurrences on file have only been reported voluntarily. In addition, the MOE was requested to search their files (all years) regarding the following parameters: air emissions, water, sewage, wastewater and pesticides.

Files pertinent to this investigation would include, though are not limited to: regulatory permits, records; material safety data sheets; underground utility drawings; inventories of chemicals, chemical usage and chemical storage areas; inventory of aboveground storage tanks and underground storage tanks; monitoring data, including that done at the request of the MOE; historical and current waste management, receiver and generator records; process, production and maintenance documents related to areas of potential environmental concern; spills/discharge records; emergency and contingency plans; environmental audit reports; site plan of facility showing areas of production and manufacturing.

A response has not yet been received by the MOE. The client will be made aware of any records identified by the MOE file search, when a response is received from the Ministry. Additional fees may be charged if a large volume of records are found.

Brownfields Environmental Site Registry

A search of this database indicated that the Phase One Property and properties within the Phase One Study Area were not registered with a Record of Site Condition (RSC) in the database.



Technical Standards and Safety Authority (TSSA)

The Technical Standards and Safety Authority (TSSA) was requested to review their computer database for the Phase One Property and adjoining properties with regard to registered underground storage tanks (USTs) and above ground storage tanks (ASTs) containing petroleum products. The TSSA reported that there are no records of active underground tanks located on the Phase One Property. It should be noted that the TSSA database only lists registered municipal addresses and those records updated between 1987 and present.

Environmental Registry – Government of Ontario

A search of this database indicated that the Phase One Property and properties within the Phase One Study Area were not listed in the database.

Areas of Natural Significance

The following databases were reviewed to determine if any Areas of Natural Significance are present on the Phase One Property or within the Phase One Study Area:

- Provincial Park Regulated Ontario Ministry of Natural Resources (2008)
- Areas of Natural and Scientific Interest (ANSI) Ontario Ministry of Natural Resources (2012)
- Wetlands Ontario Ministry of Natural Resources (2013)
- City of Ottawa Official Plan (2013)
- Niagara Escarpment Plan (2005)
- Provincially tracked species, plant communities and wildlife concentration areas data from the Natural Heritage Information Centre – Ontario Ministry of Natural Resources (2013)
- Oak Ridges Moraine Conservation Plan Land Use Designation Map Oak Ridges Moraine Conservation Act (2002)
- Wilderness Areas Ontario Ministry of Natural Resources (2006)

A review of these databases indicates that these areas are not located within the Phase One Study Area.

Waste Disposal Site Inventory - Ontario MOE (1991)

A review of a Waste Disposal Site Inventory published by the MOE indicated that the Phase One Property has no active or closed waste disposal sites within a 500 m radius.

4.c. Physical Stetting Sources

4.c.i. Aerial Photographs

Aerial photographs for the years 1958, 1965, 1976, 1991 and 2011 were obtained from the City of Ottawa Interactive Maps database. The Canadian County Atlas Maps for Carleton County was utilized to obtain the aerial photograph from 1879. Copies of these aerial photographs are presented in **Appendix C.**



TABLE 2: SUMMARY OF AERIAL PHOTOGRAPHS

Aerial Photos	Phase One Property	Adjoining Properties	Phase One Study Area
1879 Carleton County Atlas	- Phase One Property appears to be vacant with no structures present	- The adjacent properties to the north, south, east and west appear to be used for rural residential purposes; Carling Avenue appears to be constructed at this time	- Rural residential and agricultural properties to the south, east and west; Graham's Bay is located to the north; Stillwater Creek is visible to the south of the property
1958 Aerial Photo	- Phase One Property appears to be vacant of structures	- Adjacent properties to the east and west appear to be rural residential, adjacent properties to south appear to be agricultural or undeveloped; Carling Avenue is north adjacent followed by Graham Bay	- Residential and agricultural properties appear to be developed (south, east, and west); Graham Bay and Ottawa River are located to the north
1965 Aerial Photo	- Phase One Property appears to be developed with one (1) commercial sized building and one (1) small shed-sized structure located on the property	- The west adjacent property appears to be vacant; east and south adjacent properties appear to be residential; Graham Bay is located north adjacent; Badale Drive is constructed to the west of the Phase One Property	- Residential and institutional development is visible to the south, east and west of the Phase One Property
1976 Aerial Photo	- Phase One Property appears similar to present day, with one (1) commercial sized building of the same building footprint as current day	- South, east and west adjacent properties appear to be residential with similar building footprints as present day	- Neighbouring properties to the south, east and west appear to current configuration, north neighbouring is occupied by Graham Bay



Aerial Photos	Phase One Property	Adjoining Properties	Phase One Study Area
1991 Aerial Photo	- Phase One Property appears similar to the 1976 aerial photo	- Adjacent properties to the south, east and west appear similar to 1976 aerial photo; Graham Bay to the north appears to be back filled as is above sea level for the construction of what is currently Dick Bell Park	- Neighbouring properties to the south, east and west appear similar to 1976 aerial photo; Graham Bay to the north appears to be back filled as is above sea level for the construction of a harbour and what is currently The Nepean Sailing Club
2011 Aerial Photo	- The Phase One Property appears similar to present day	- Adjacent properties to the north, south, east and west appear to present day	- Neighbouring properties appear similar to present day

4.c.ii. Topography, Hydrology, Geology

According to Ontario Base Map – Topographic Map website, published by First Base Solutions Geospatial Experts, the Phase One Property appears to have a higher elevation on the south and central portion of the property in the vicinity of the building with a lower elevation on the north portion of the property. The elevation of the Phase One Property ranges from approximately 61 to 62 meters above sea level (masl). Local groundwater is anticipated to flow in a northerly direction toward The Ottawa River. A copy of this topographic map can be found in **Appendix D**.

According to bedrock maps provided by the OGS Earth website, published by the Ontario Ministry of Northern Development, Mines and Forestry, bedrock in the area of the Phase One Property is of the Oxford Formation, and generally consists of dolostone, minor shale and sandstone.

According to surficial geology maps provided by the OGS Earth website, published by the Ontario Ministry of Northern Development, Mines and Forestry, surficial soils on the Phase One Property are fine-textured glaciomarine deposits consisting of silt and clay, minor sand and gravel.

According to physiography maps provided by the OGS Earth website, published by the Ontario Ministry of Northern Development, Mines and Forestry, the Phase One Property is situated within clay plains.

4.c.iii. Fill Materials

The Phase One Property generally slopes to the north. It is possible that some fill material was used in the construction of the building currently located on the Phase One Property. The 1965 aerial photograph depicts a second structure that was formerly located to the west of the current building on the Phase One Property; however, the structure appeared to be demolished by the 1976 aerial photo. It is possible that fill material was used following the demolition of this former structure. The environmental quality of the potential fill material is considered to be unknown.



4.c.iv. Water Bodies and Area of Natural Significance

According to Ontario Base Map – Topographic Map website, published by First Base Solutions Geospatial Experts, Graham Bay and The Ottawa River are located approximately 90 m north of the Phase One Property, with Stillwater Creek located approximately 450 m south to southeast of the property.

4.c.v. Well Records

As part of this assessment, well records maintained by the Ministry of the Environment (MOE) were reviewed. A search of these records indicates that twelve (12) wells have been installed within 250 m of the Phase One Property. Information regarding the depth, date of drilling, use and materials encountered in these wells are provided in the table below. Shale or limestone bedrock was encountered between 27.4 meters below ground surface (mbgs) and 51.8 mbgs within the Phase One Study Area. The location of the water wells can be found on **Drawing 2**.

TABLE 3: SUMMARY OF MOE WELL RECORDS

Well ID	Depth (m)	Date Drilled	Use	Material Color	Material A	Material B	Material C	Depth (m)																	
				-	Clay	-	-	1.83																	
1503821	46.3296	27-June-57	Domestic	-	HPAN	-	-	15.24																	
				-	Limestone	-	-	46.3296																	
1503823	39.0144	06 Aug 50	Domestic	-	Clay	-	-	16.76																	
1503823	39.0144	06-Aug-59	Domestic	-	Limestone	-	-	39.0144																	
				Blue	Clay	-	-	10.67																	
1503818	26.52	19-June-53	Domestic	Brown	Medium Sand	-	-	14.63																	
				Blue	Limestone	-	-	26.52																	
1503816	28.35	10-Sept-52	Domestic	-	Clay	1	-	14.63																	
1503810	20.55	10-3ept-52	Domestic	-	Limestone	-	-	28.35																	
1503817	38.4048	38.4048	20 4040	20 4040	20.4040	20.4040	20.4040	20 4040	20 4040	20 4040	20 4040	20 4040	20 4040	20 4040	20 4040	20 4040	20 4040	20 1010	28-Oct-52	Domestic	-	Clay	-	=	12.19
1503817			28-001-32	Domestic	-	Limestone	ı	-	38.4048																
1503822	27.42	27.42	27.43	27.42	27.42	27.42	10-Dec-57	Domestic	-	Clay	-	=	14.63												
1505622	27.43	10-060-37	Domestic	-	Limestone	=	-	27.43																	
1530244	-	24-Sept-98	-	-	-	1	-	ı																	
1503814	19.81	06 July F1	Domestic	-	Clay	-	=	15.24																	
1503814	19.81	06-July-51	Domestic	-	Shale	=	-	19.81																	
7151450	-	19-Aug-10	-	-	-	1	-	ı																	
				Blue	Clay	=	=	9.75																	
1503831	34.4424	34.4424	15-May-51	Domestic	Brown	Gravel	Medium Sand	-	11.89																
				-	Limestone	-	-	34.4424																	
1503812	80.772	07-Apr-61	Municipal	Blue	Clay	-	-	12.50																	



Well ID	Depth (m)	Date Drilled	Use	Material Color	Material A	Material B	Material C	Depth (m)
				Grey	Limestone	-	=	51.816
				-	Sand	-	-	80.772
				Grey	Clay	-	-	12.19
1503830	30.7848	30.7848 14-Mar-51	Domestic	-	HPAN	-	-	13.72
				-	Limestone	-	-	30.7848

4.d. SITE OPERATING RECORDS

The Phase One Property is not an enhanced investigation property and therefore site operating records were not provided by the owners of the property.

5. INTERVIEWS

An interview was conducted via email on August 12, 2014 with Greg Graham, the owner representative of Cardel Homes and an in person interview was conducted with Sandra Cooper, office manager of Cardel Homes during the site reconnaissance on August 13, 2014. Information provided during the interview was generally consistent with information obtained during the records review competed as part of this report. Additional details can be found below within the information provided in the site reconnaissance.

6. SITE RECONNAISSANCE

6.a. GENERAL REQUIREMENTS

TABLE 4: SITE RECONNAISSANCE GENERAL REQUIREMENTS

Date and Time of Investigation	August 13 th , 2014
Weather Conditions	Sunny conditions, 25°C
Length of time of the Investigations	The Phase One Property – 2 hours Phase One Study Area – 1 hour
Facility Operating During Site Reconnaissance	Property was vacant during site reconnaissance
Qualifications of the Person Conducting Investigations	Principal Site Investigators: Daniel Wall Qualified Person: David Lewis, P.Eng.

Photographs documenting the Phase One Property and Phase One Study Area taken on the day of the site visit, along with written descriptions can be found in **Appendix E**.

6.b. Specific Observations at Phase One Property

The Phase One Property is currently vacant, and has been used as a Cardel Homes show room and office space for the past twelve (12) years. According to Ms. Cooper, the building was constructed in the 1960s



and was originally occupied by a MACs convenience store, a pizza shop and a beauty salon. SPL was advised that the building on the Phase One Property formerly consisted of three (3) separate units and renovations were completed during Cardel Homes' occupancy to combine the units into one. While occupied by Cardel Homes, the ground floor of the building was used as a show room as well as offices and storage rooms. The basement of the building is currently used for storage, and includes the electrical and mechanical operations for the building.

The building on the Phase One Property is a one (1) storey with basement building. Flooring of the ground floor of the building includes carpet, concrete and ceramic. Interior finishes of the ground floor include drywall and concrete block walls, metals slatted ceilings and acoustic ceiling tiles. Finishes of the basement floor include concrete floors, poured concrete and concrete block walls, metal and concrete ceilings with acoustic ceiling tiles.

The 1965 aerial photograph depicted a second structure to the west of the current building located on the Phase One Property; however, the structure appeared to be demolished in the 1976 aerial photograph. During the site reconnaissance, rectangular cuts in the asphalt were observed to the west of the current building on the Phase One Property. It is possible that these cuts are from the former structure.

Storage Tanks

One (1) aboveground fuel oil storage tank (AST) was observed in the basement of the building located on the Phase One Property. Vent/fill pipes for this tank were observed on the exterior of the Phase One Property. The AST appeared to be in good condition with no obvious leaks or cracks. No staining was observed around the base of the AST, however, no secondary containment was observed surrounding the AST. SPL was advised that the tank is no longer in use and has been disconnected. It is likely that the UST was formerly used to heat the building. Ms. Cooper informed SPL that the vent/fill pipes were repaired approximately two (2) years ago.

Rail Spurs

No indication of a former rail spur was observed on the Phase One Property.

Water Sources

The Phase One Property is currently serviced by the municipality for water.

Sewage Works

The Phase One Property is currently serviced by the municipality for waste water.

Underground Utilities

SPL was informed that underground utilities including gas, cable and water and waste water are present on the Phase One Property, however, the exact locations of these utilities is unknown.



Heating and Cooling Systems

The Phase One Property is currently heated via a natural gas-fired furnace distributed to the building through forced air. The Phase One Property was formerly heated by the fuel oil AST fired furnace located in the basement.

Asbestos Containing Materials (ACM)

The building on the Phase One Property is expected to have been constructed in the 1960s. Renovations and upgrades have occurred at various times over the lifetime of the building. Due to the age of the structure it is possible that asbestos containing materials (ACMs) are present in building materials such as mechanical insulation, plaster, cement parging, and drywall joint compound, etc. Ontario Regulation 278/05 of the Occupational Health & Safety Act requires that the owner of any building with the potential to contain ACM conduct an inventory of potential materials. All identified ACM must be managed and/or disposed of in accordance with the Act, and building tenants must be made aware of such materials that they may come into contact with.

Polychlorinated Biphenyls (PCBs)

Fluorescent lights were observed within the buildings on the Phase One Property. Installation and production of PCB-containing electrical equipment was banned in 1980. Since the building on the Phase One Property was constructed prior to 1980 it is possible that some fluorescent fixtures have PCB-containing ballasts if they have not been replaced, and some electrical equipment may contain PCB oil.

As a Best Management Practice SPL recommends that when the fluorescent fixtures from the site are to be removed during building renovation or demolition, the ballasts should be removed from the fluorescent fixtures prior to disposal of the fixture and the ballast labels examined. The ballasts without a label indicating that they do not contain PCBs should be separated, securely stored and the serial numbers or other markings reviewed to determine if the ballast likely contains PCB. If more than approximately 40 ballasts are found to likely contain PCBs, the ballasts should be handled in accordance with federal and provincial regulations governing PCB wastes.

Occupational Health and Safety Act - Designated Substances

A brief review of the site was conducted to assess the potential for designated substances identified in the *Occupational Health and Safety Act*, Article 18(a). Asbestos and PCB containing materials were addressed in Section 4.b. and Section 6.b., respectively. The following comments related to the potential for the presence of other designated substances on the property are offered:

acrylonitrile
Not observed

arsenic Could be present as an additive in paint

benzene Benzene is expected to be present as a component of gasoline products

stored on the Phase One Property associated with the AST



>	coke oven emissions	Not observed
>	ethylene oxide	Not observed
>	isocyanates	Not observed
>	UFFI	Urea Formaldehyde foam insulation known as UFFI was applied primarily to residential buildings during the 1970s, most extensively from 1975 to 1978. Its use was banned in December 1980, which was after the building is anticipated to have been constructed
>	Lead	Lead paint may have been used in interior and exterior building finishes. Lead may also be expected to be present within electrical components, and batteries within emergency lighting. Precautions should be taken to limit exposure of potential lead dust during renovations that involve grinding or sanding down of painted surfaces
>	mercury	Thermostats, caulkings, fluorescent light fixtures and smoke detectors in the building may contain mercury; thermostats, caulkings, fluorescent light fixtures and smoke detectors must be removed intact and mercury disposed of as a hazardous waste
>	silica	Any cementations materials could contain silica; analysis required to establish type.
>	vinyl chloride	Could be present within plastic components of the plumbing system, vinyl flooring and countertops, etc.
_		

Drains Pits & Sumps

No drains pits or sumps were observed on the Phase One Property at the time of the site reconnaissance.

Staining

No staining was observed on the Phase One Property at the time of the site reconnaissance.

Substance Containers

Commercial sized cleaning products and paint cans were observed on the Phase One Property at the time of the site reconnaissance.

Vegetation

As the exterior of the Phase One Property is paved, no vegetation exists on the Phase One Property.



Waste Management

As the Phase One Property is not currently in use, waste material is not generated at the Phase One Property. SPL was informed that Cardel Homes formerly handled its own waste removal during its occupancy.

Sodium Adsorption Ratio (SAR) and Electrical Conductivity (EC)

Parking areas are located on the Phase One Property and roadways adjoin the property to the north and west which have been subject to de-icing activities. As a result, electrical conductivity (EC) and sodium adsorption ratio (SAR) impacts may exist in the subsurface soils in various degrees in the areas within parking areas and areas near the roadways.

Potentially Contaminating Activities

Potentially contaminating activities (PCAs) observed on the Phase One Property during the site reconnaissance include gasoline and associated products storage in fixed tanks on the Phase One Property; the potential use of fill material of unknown environmental quality during construction of the Phase One Property and the use of de-icing salts.

6.b.i. Enhanced Investigation Property

For a Phase One Property to be classified as an enhanced investigation property, the property must be used or have been used in whole or in part for any of the following uses:

- any industrial use,
- as a garage,
- as a bulk liquid dispensing facility, including a gasoline outlet, or
- for the operation of dry cleaning equipment

As none of these criteria were found to apply to the Phase One Property, the Phase One Property is not an enhanced investigation property.

6.c. WRITTEN DESCRIPTION OF INVESTIGATION

A site reconnaissance was conducted on August 13, 2014 by SPL personnel in sunny conditions. Based on the site reconnaissance the following may be relevant to the existence of an area of potential environmental concern (APEC);

- Gasoline and associated products storage in fixed tanks associated;
- Importation of fill material of unknown environmental quality; and,
- Use of de-icing salts on parking areas on the Phase One Property and on roadways adjacent to the Phase One Property.



7. REVIEW AND EVALUATION OF INFORMATION

7.a.i. Current and Past Uses

A summary of the current and past uses are shown below. The current uses were obtained during site reconnaissance. The historical occupants were obtained from the interview with the former owners unless otherwise noted (e.g. FIPs and County Atlas). A complete list of the historical occupants can be found in **Appendix B**.

TABLE 5: CURRENT AND PAST USES OF THE PHASE ONE PROPERTY AND ADJOINING PROPERTIES

(Refer to Clause 16 (2)(b), Schedule D, O. Reg. 153/04)

Properties Which Make Up the Phase One Property	Year	Name of Owner/ Occupants	Description of Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, Etc.
	1879-1960s	Private Owner(s)	Vacant/ Undeveloped	1879 Ontario County Atlas and 1958 aerial shows the Phase One Property as undeveloped
3368 Carling Avenue	1960s-2002	Private Owner(s)	Commercial Use	The 1965, 1976 and 1991 aerial photos show a commercial sized property; consistent with the information obtained from the site interview as Mr. Graham stated the original use of the Property was commercial
	2002	Cardel Homes	Commercial/Office Use	According to site reconnaissance and interview, the Phase One Property has been owned by Cardel Homes since 2002 and has been used as a show room and office spaces

7.a.ii. Potentially Contaminating Activity

PCAs as defined in Table 2 of O.Reg.153/04 as amended that may be contributing to an APEC on the Phase One Property are as follows;

Phase One Property

- > Importation of fill material of unknown environmental quality;
- > De-icing use in the parking area of the Phase One Property; and
- > Gasoline and associated products storage in fixed tanks associated with the fuel oil AST.

Phase One Study Area

➤ De-icing use along roadways adjacent to the Phase One Property.



7.a.iii. Areas of Potential Environmental Concern

Based on the PCAs that were identified within the Phase One Study Area, the following APECs were established. The contaminants of potential concern were determined based on materials that are likely to be present as a result of these activities. The locations of the APECs are shown in **Drawing 2**.

TABLE 6: AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

(Refer to clause 16(2)(a), Schedule D, O.Reg. 153/04)

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activities ¹	Location of PCA (on or off- property)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC-1	Southeast area of Phase One Property	28. Gasoline and associated products storage in a fixed tank	On- property	PHCs, VOCs, Metals	Soil and Groundwater
APEC-2	Entire area of the Phase One Property	30. Fill Material of unknown quality	On- property	Metals and Inorganics, PHCs, PAHs, PCBs	Soil Groundwater
APEC-3	North, west and southern portion of the Phase One Property	Other. De-icing Activities	On- property	EC/SAR	Soil Groundwater

NOTES:

- 1. PCA contained in Table 2 of O. Reg. 153/04
- 2. PHC = Petroleum Hydrocarbons
- 3. VOC = Volatile Organic Compounds
- 4. PAH= Polycyclic Aromatic Hydrocarbons
- 5. PCB = Polychlorinated Biphenyls
- 6. EC = Electrical Conductivity
- 7. SAR = Sodium Adsorption Ratio

Information obtained through historical records and databases reviewed as part of this investigation are subject to the nature and accuracy of the records provided to SPL. As a result of changes or additional details within these records or databases, the conclusions of this Phase One ESA maybe affected.

Information used in this report was evaluated based on proximity to the Phase One Property, anticipated direction of local groundwater flow, and the potential environmental impact on the Phase One Property as a result of the property uses or activities.

7.a.iv. Phase One Conceptual Site Model

The Phase One Property currently has one (1) vacant structure located on the property, formerly used as a show room and office space for Cardel Homes since 2002. The Phase One Property has been used for commercial purposes since its development in the 1960s.



PCAs observed on the Phase One Property include the potential importation of fill material of unknown environmental quality, gasoline and associated products storage in a fixed tank associated with former heating activities on the Phase One Property and the use of de-icing salts within parking areas on the Phase One Property.

The surrounding properties are predominantly residential and institutional to the east, west and south with a harbour and Ottawa River to the north. Potentially contaminating activities within the Phase One Study Area include the application of de-icing salts on roadways south and west adjacent to the Phase One Property.

These potentially contaminating activities were determined though the site reconnaissance as well as a review of the City Directories and available databases. Contaminants of potential concern as a result of these activities include; metals and inorganics, petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs).

Based on topographical maps, the local groundwater flow direction is expected to be in a north to northeasterly direction toward the Ottawa River. Groundwater levels may be influenced by subsurface utility trenching and can only be confirmed with long term monitoring.

Information used in this report was evaluated based on proximity to the Phase One Property, anticipated direction of local groundwater flow, and the potential environmental impact on the Phase One Property as a result of the use or activity.

It is not expected that any uncertainty or absence of information would affect the validity of the Conceptual Site Model (CSM).



8. CONCLUSIONS

8.a.i. Whether Phase Two ESA Required Before Record of Site Condition Submitted

Based on the information gathered with interviews and records review it was determined that there are potentially contaminating activities associated with the current and historical use of the Phase One Property. As such, areas of potential environmental concern are present throughout the property. A Phase Two ESA is required to evaluate the environmental quality of the soil and groundwater on the Property prior to filing a Record of Site Condition (RSC).

Phase One Property information obtained through historical records and databases reviewed as part of this investigation are subject to the nature and accuracy of the records provided to SPL. As a result of changes or additional details within these records or databases the conclusions of this Phase One ESA may be affected.

Information used in this report was evaluated based on proximity to the Phase One Property, anticipated direction of local groundwater flow, and the potential environmental impact on the Phase One Property as a result of potentially contaminating activities.

Underground utilities are present on the Phase One Property. Subsurface utility trenching may influence the direction and extent of contamination if determined to exist as a result of areas of potentially contaminating activities.

8.a.ii. Record of Site Condition Based on Phase One Environmental Assessment Alone

Based on the findings of this investigation, a Record of Site Condition (RSC) under O.Reg153/04 as amended cannot be filed based solely on the Phase One Environmental Site Assessment.



8.a.iii. Signatures

This report was conducted under the supervision of Philip Romeril who is considered a Qualified Person with the Ministry of the Environment as defined under Ontario Regulation 153. Philip has reviewed and confirmed the findings and conclusions of this report.

The company SPL Consultants Limited (SPL) was incorporated in Ontario in April 2009. The firm consists of over 230 Engineers, Professional Geoscientists, Hydrogeologists, and Technicians in seven offices located in Toronto, Vaughan, Markham, Cambridge, Ottawa, Barrie and Collingwood. The principals and the team members bring many years of experience in geotechnical, pavement and environmental fields.

Michelle Locke is an Environmental Officer with SPL. Michelle has a Bachelor of Applied Science Degree from Queen's University and is a registered EIT with Professional Engineers of Ontario. She has worked on Phase One and Phase Two Environmental Site Assessments (ESAs), remediation work and Designated Substance Surveys/Asbestos Surveys since 2011.

Philip Romeril, P. Eng. is a Senior Environmental Engineer with SPL and has a Bachelor of Science Degree in Engineering Geology and a Master of Science Degree in Civil Engineering both from Queen's University. He has been a recognized Professional Engineer in Ontario since 1988. Philip has conducted and managed geoenvironmental and hydrogeological investigations including Phase One and Two ESAs in Manitoba, Alberta, Northwest Territories, and the Alaskan and Canadian Beaufort Seas and remediation projects utilizing such technologies as dual phase vacuum extraction, in situ chemical oxidation, and monitored natural attenuation in a variety of geological settings in Ontario.

SPL Consultants Limited

1. Locke

Prepared by:

Michelle Locke, EIT
Environmental Officer

Reviewed by:

Philip Romeril, P.Eng.

Senior Engineer – Environmental Services





9. LIMITATIONS

SPL has performed this site assessment in accordance with local generally accepted professional practices and procedures at the time of the assessment within the scope of Phase One Environmental Site Assessments under O. Reg 153/04 as amended. As such, the assessment update does not include any sampling or testing for potential contaminants such as asbestos, PCBs, radon gas, or airborne pollutants, etc. Occupancy use, codes, rules, and procedures change rapidly with time in the environmental engineering field and the reader is advised to update the findings and recommendations on a regular basis. The report herein comprises a statement of professional opinion based on visual observation only and the reader is advised that visual observation is not effective in determining all conditions that affect environmental compliance. These services are not subject to any express or implied warranties and none should be inferred.

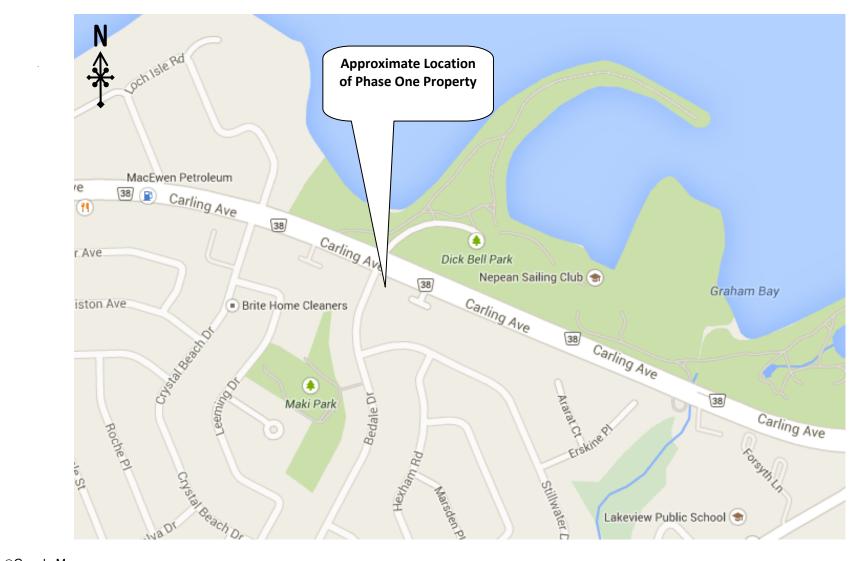
This report was prepared for the account of Cardel Homes. The material in this report reflects SPL's judgment in light of the information available to it at the time of preparation. Any use, which a Third Party not noted above makes of this report, or any reliance on decisions to be made based on it, are the responsibility of such Third Parties. SPL Consultants Limited accepts no responsibility for damages, if any, suffered by any Third Party as a result of decisions made or actions based on this report.

10.REFERENCES

- 1. Topographic Maps Ontario Base Map Series
- 2. The Canadian County Atlas 1878
- 3. Library and Archives Canada
- 4. Catalogue of Canadian Fire Insurance Plans 1875-1975
- 5. Dangerous Goods Accident Information System
- 6. Google Earth
- 7. Government of Ontario Environmental Registry
- 8. Metropolitan Toronto City Directories
- 9. Ministry of Natural Resources Biodiversity Explorer
- 10. MOE Certificates of Approval Database
- 11. MOE Environmental Monitoring and Reporting Branch Well Records
- 12. MOE Hazardous Waste Information System 1994, 1999, 2001, 2003 and 2005 2012
- 13. MOE PCB Database 1999, 2003
- 14. National Pollutant Release Inventory (NPRI)
- 15. Niagara Escarpment Plan Maps
- 16. Oak Ridges Moraine Conservation Plan Land Use Designation Map
- 17. Occupational Health and Safety Act
- 18. O.Reg. 153/04, as amended
- 19. Technical Standards and Safety Authority
- 20. Waste Disposal Site Inventory



Drawings



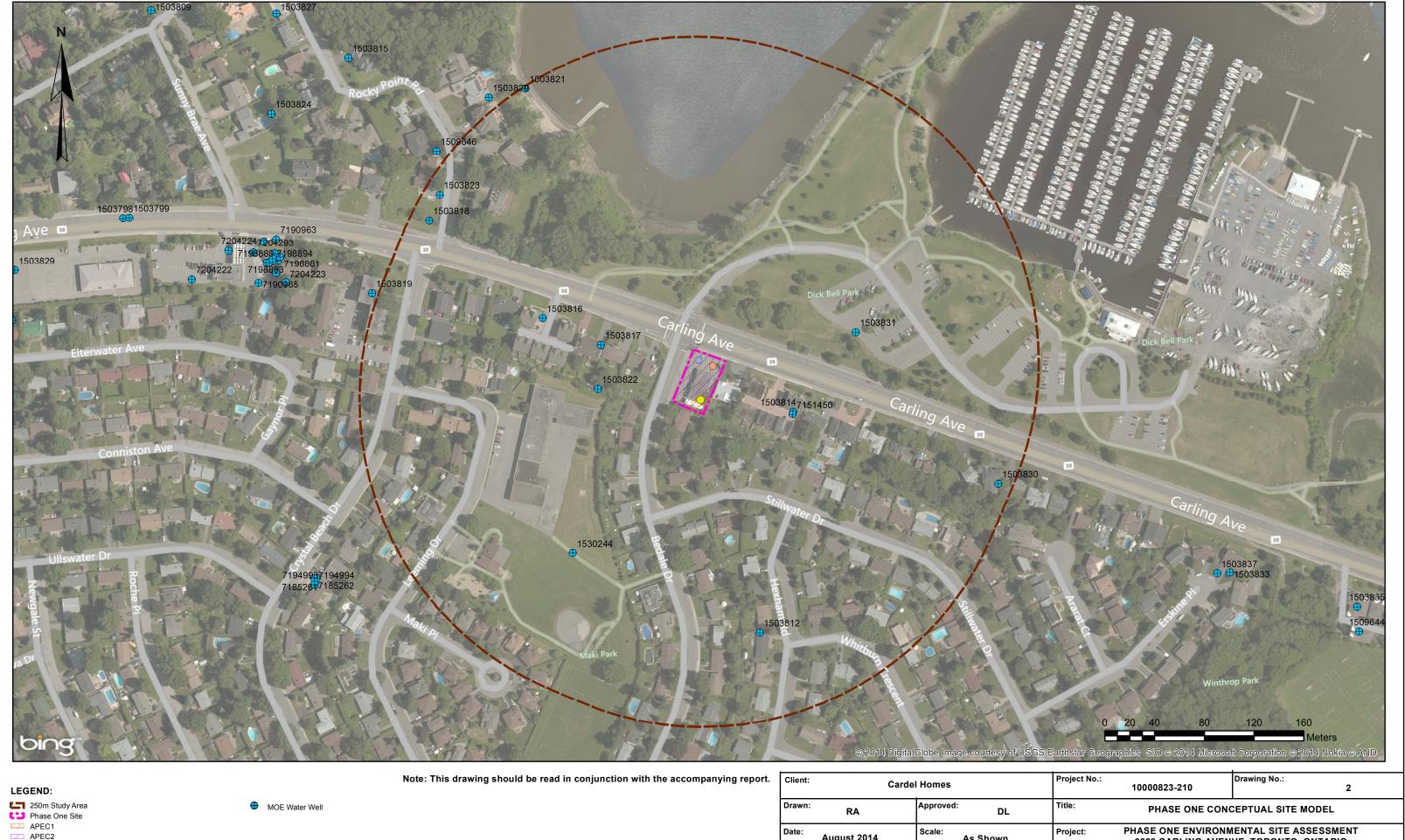
©Google Maps



51 Constellation Court
Toronto, ON M9W 1K4
T: 416-798-0065 F: 416-798-0518

SITE LOCATION PLAN

0112 20 07 (1101(1 27 (1)						
Scale: 1:6,100	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT	Prepared By: ML				
Date: August 2014	3368 CARLING AVENUE, OTTAWA, ONTARIO	Reviewed By: DL				
Project: 10000823-210	Prepared For: Cardel Homes	Drawing No. 1				



250m Study Area
Phase One Site
Phase One Site
APEC1
APEC2
APEC3
PCA28 - Gasoline & Associated Products Storage In Fixed Tanks
PCA30 - Importation of Fill Material of Unknown Quality
PCA Other - Application De-Icing Salts

Drawn: RA
Approved: DL
Title: PHASE ONE CONCEPTUAL SITE MODEL

Date: August 2014
Date: August 2014

Scale: As Shown
Original Size:
PCA30 - Importation of Fill Material of Unknown Quality
PCA Other - Application De-Icing Salts

Source: Golden Horseshoe GIS Database 2002

Tabloid

Drawn: RA
Approved: DL
Title: PHASE ONE CONCEPTUAL SITE MODEL

Project: PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
3368 CARLING AVENUE, TORONTO, ONTARIO

Original Size:
PCA Other - Application De-Icing Salts

Source: Golden Horseshoe GIS Database 2002



APPENDIX A Regulatory Inquiries



Freedom of Information Request

This form is for requesting documents which are in the Ministry's files on environmental concerns related to properties. Please refer to the guide on the completion and use of this form. Our fax no. is (416) 314-4285.

R	equester Data	For Ministry Use Only				
Michelle Locke SPL Consultants Limited 51 Constellation Court Toronto, ON M9W 1K4		Fee Paid \$ ~ ACCT ~ CHQ		Date Request Received A/MC ~ CASH		
Email Address: mlocke@splconsultants.ca Telephone/Fax Nos.					R	
Request Paramet Municipal Address / Lot, Concession, Ge		al address essential for cities,	towns or regions)			
3368 Carling Avenue, Otta	wa. Ontario					
Present Property Owner(s) and Date(s) of	of Ownership					
Cardel Homes (2002 - pre	esent day)					
Previous Property Owner(s) and Date(s) of C	Ownership					
Present/Previous Tenant(s),(if applicable	9)					
Search Paramete	rs			Specify Year(s)		
Files older than 2 years may request. There is no guarantee that record					Requested	
Environmental concerns			ce reports, abateme	ent)	all years	
Orders	(- (/	all years	
Spills					all years	
Investigations/prosecutions	ons • Owner an	d tenant informati	on must be provid	led	all years	
Waste Generator numb			•		all years	
Certificates of Approval ➤ Proponent information must be provided 1987 and prior records are searched manually. Search fees in excess of \$300.00 could be incurred, depending on the types and years to be searched. Specify Certificates of Approval number (s) (if known). If supporting documents are also required, mark SD box and specify type e.g. maps, plans, reports, etc. SD Specify Year(s) Requested						
air - emissions X				all years		
water - mains, treatment, ground level, standpipes & elevated storage, pumping stations (local & booster) x				all years		
sewage - sanitary, storm, treatment, stormwater, leachate & leachate treatment & sewage pump stations X					all years	
waste water - industrial discharge X					all years	
waste sites - disposal, landfill sites, transfer stations, processing sites, incinerator sites					all years	
waste systems - haulers:		us & hazardous waste, mo		Х	all years	
pesticides - licenses X					all years	

A \$5.00 non-refundable application fee, payable to the Minister of Finance, is mandatory. The cost of locating on-site and/or preparing any record is \$30.00/hour and 20 cents/page for photocopying and you will be contacted for approval for fees in excess of \$30.00.

0026 (02/00) Page 1 of 1



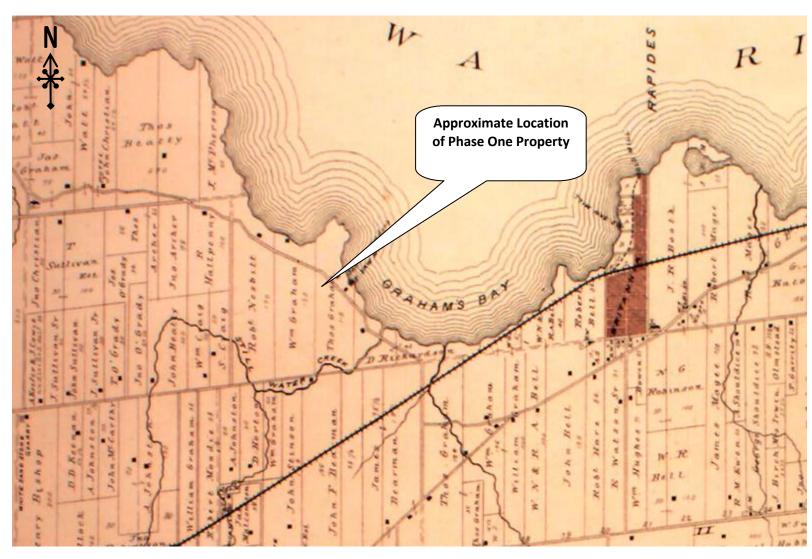
APPENDIX B Occupancy Search



Address	Direction From Phase One Property	Current Use & Observations	Historical Occupants
3368 Carling Avenue	Phase One Property	Commercial	- Paul's Supermarket (1974) - Becker Milk Co. Ltd. (1979, 1984, 1988-1989, 1993-1994) - Not Listed (1969)
3340-3400 Carling Avenue	East and West Adjacent and Neighbouring	Residential/ Commercial	- Residential (1974, 1979, 1984, 1988-1989, 1993-1994) - Commercial (1974, 1979, 1984) - Not Listed (1969)
Badale Drive	South Adjacent	Residential	- Not Listed (1969, 1974, 1979, 1984, 1988-1989, 1993-1994)
Stillwater Drive	South Adjacent	Residential	- Not Listed (1969, 1974, 1979, 1984, 1988-1989, 1993-1994)
Lemming Drive	West Neighbouring	Residential	- Not Listed (1969, 1974, 1979, 1984, 1988-1989, 1993-1994)
Connemara (Private)	East Neighbouring	Residential	- Not Listed (1969, 1974, 1979, 1984, 1988-1989, 1993-1994)
Harbour Landing (Private)	West Neighbouring	Residential	- Not Listed (1969, 1974, 1979, 1984, 1988-1989, 1993-1994)



APPENDIX C Aerial Photographs



©Canadian County Atlas



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Toronto, ON M9W 1K4
T: 416-798-0065 F: 416-798-0518

Scale: 1:42,000	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT	Prepared By: ML
Date: August 2014	3368 CARLING AVENUE, OTTAWA, ONTARIO	Reviewed By: DL
Project: 10000823-210	Prepared For: Cardel Homes	Drawing No. C-1





51 Constellation Court
Toronto, ON M9W 1K4
T: 416-798-0065 F: 416-798-0518

Scale: 1:3,200	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT	Prepared By: ML
Date: August 2014	3368 CARLING AVENUE, OTTAWA, ONTARIO	Reviewed By: DL
Project: 10000823-210	Prepared For: Cardel Homes	Drawing No. C-2





51 Constellation Court
Toronto, ON M9W 1K4
T: 416-798-0065 F: 416-798-0518

Scale: 1:1,500	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT	Prepared By: ML
Date: August 2014	3368 CARLING AVENUE, OTTAWA, ONTARIO	Reviewed By: DL
Project: 10000823-210	Prepared For: Cardel Homes	Drawing No. C-3





51 Constellation Court
Toronto, ON M9W 1K4
T: 416-798-0065 F: 416-798-0518

Scale: 1:3,400	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT	Prepared By: ML
Date: August 2014	3368 CARLING AVENUE, OTTAWA, ONTARIO	Reviewed By: DL
Project: 10000823-210	Prepared For: Cardel Homes	Drawing No. C-4





51 Constellation Court
Toronto, ON M9W 1K4
T: 416-798-0065 F: 416-798-0518

Scale: 1:3,300	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT	Prepared By: ML
Date: August 2014	3368 CARLING AVENUE, OTTAWA, ONTARIO	Reviewed By: DL
Project: 10000823-210	Prepared For: Cardel Homes	Drawing No. C-5





51 Constellation Court
Toronto, ON M9W 1K4
T: 416-798-0065 F: 416-798-0518

Scale: 1:1,700	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT	Prepared By: ML
Date: August 2014	3368 CARLING AVENUE, OTTAWA, ONTARIO	Reviewed By: DL
Project: 10000823-210	Prepared For: Cardel Homes	Drawing No. C-6



APPENDIX D Topographic Map



250m Study Area
Phase One Site Contour Line

10000823-210 D-1 Drawn: Approved: TOPOGRAPHIC MAP DL RA PHASE ONE ENVIRONMENTAL SITE ASSESSMENT 3368 CARLING AVENUE, TORONTO, ONTARIO August 2014 As Shown Original Size: Rev: Consultants Limited | ENGINEERING SOLUTIONS

Source: Golden Horseshoe GIS Database 2002

Tabloid



APPENDIX E Site Photographs





1. View of the exterior of the Phase One Property facing northeast.



3. View of the storage located in the basement of the Phase One Property.



5. View of the natural gas fired furnace located in the basement of the Phase One Property.



2. View of the ground floor interior of the ground floor of the building on the Phase One Property.



4. View of the fuel oil AST located in the basement of the Phase One Property.



6. View of the vent/fill pipes associated with the fuel oil AST on the southeast exterior of the Phase One Property.