Phase One Environmental Site Assessment

Lots 37, 38 and 39
Ottawa, Ontario

Prepared for:

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Attn: Mr. Doug Munro

November 12, 2019

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1.0 EXECUTIVE SUMMARY

Pinchin Ltd. (Pinchin) was retained by Tordar Investments Ltd. (Client) to complete a Phase One Environmental Site Assessment (Phase One ESA) of the property located at Lots 37, 38 and 39 in Ottawa, Ontario (hereafter referred to as the Site or Phase One Property). The Phase One Property consists of a 17.38-acre parcel of vacant land, free of any permanent structures and/or buildings.

Pinchin conducted this Phase One ESA in accordance with Part VII and Schedule D of the Province of Ontario's *Environmental Protection Act R.S.O. 1990, c. E.19* and *Ontario Regulation 153/04: Records of Site Condition – Part XV.1 of the Act*, and last amended by Ontario Regulation 312/17 on July 28, 2017 (O. Reg. 153/04). The purpose of the Phase One ESA was to assess the potential presence of environmental impacts at the Phase One Property due to activities at and near the Phase One Property.

This Phase One ESA was conducted at the request of the Client for the purpose of filing a Site Plan Approval application with the City of Ottawa.

The scope of work for this Phase One ESA was consistent with O. Reg. 153/04 in support of filing an RSC and was comprised of the following:

- A Records Review: Reviewed available current and historical information sources pertaining to the Phase One Property and Phase One Study Area including the use of, but not limited to, aerial photographs, city directories and historical environmental assessments relevant to the Phase One Property. Regulatory agencies were also contacted to identify if any records of environmental non-compliance or other information associated with the environmental condition of the Phase One Property exists, including searches of the Ministry of the Environment, Conservation and Parks (MECP) Freedom of Information and water well records;
- Interviews: Conducted interviews with a Site Representative (see Section 5.0) to determine if any current or historical operations have caused a concern with respect to the environmental condition of the Phase One Property and the surrounding properties within the Phase One Study Area;
- Site Reconnaissance: Completed a visual assessment of the Phase One Property and the surrounding properties within the Phase One Study Area (from publicly-accessible areas) including any associated buildings and/or facilities for the purpose of identifying the presence of potentially contaminating activities (PCAs);
- Evaluation: Evaluated the information gathered from the records review, interviews and Site reconnaissance;
- Reporting: Prepared a Phase One ESA report; and

- Submission: Submitted the Phase One ESA report to the Client.

The Phase One Property consists of Lots 37, 38 and 39, Ottawa, Ontario, which is currently owned by West Ottawa Land Holdings (2) Inc. The Phase One Property is located on the north side of Campeau Drive approximately 415 metres (m) southwest of the intersection of Campeau Drive and Palladium Drive. The following table provides a summary of the current and past land uses of the Phase One Property:

Year	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, etc.
Prior to 1991.	Unknown.	Assumed vacant/ agricultural/ forested land.	N/A.	The Site appeared to consist of vacant undeveloped land on all aerial photographs reviewed by Pinchin.
1991 to present.	West Ottawa Land Holdings (2) Inc.	Assumed vacant undeveloped land with areas of fill material storage.	N/A, and storage of nearby native excavated soil.	The Site appeared to consist of vacant undeveloped land on all aerial photographs reviewed by Pinchin, with the exception of fill piles located throughout the Phase One Property on the 2017 aerial photograph. Based on information provided by the Site Representative and the fact that nearby properties appeared to be under development, the Phase One Property was likely utilized for storage of excavated native fill material that was derived from the Site and the surrounding area that were under development.

To the best of Pinchin's knowledge, no building or structure has been constructed on the Phase One Property to date.

No other historical records were available to Pinchin that provided information for determining the date of first developed use of the Phase One Property.

The review of information obtained from historical records, interviews and a Site reconnaissance completed by Pinchin for the Phase One ESA did not identify any PCAs at the Phase One Property or within the Phase One Study Area outside of the Phase One Property (i.e., off-Site) that are considered to result in areas of potential environmental concern (APECs) to the Phase One Property. One off-Site PCA was identified, but this PCA is not considered to result in APECs at the Phase One Property given the distance from the Phase One Property and the downgradient location with respect to the inferred groundwater flow direction at the Phase One Property. Based on these findings, nothing was identified that is likely to have resulted in impacts to the soil and groundwater at the Phase One Property and would require the completion of a Phase Two ESA. As such, it is Pinchin's opinion that the Phase One Property is suitable for the intended future commercial land use and a Site Plan Approval can be filed based only on the completion of this Phase One ESA report.

This Executive Summary is subject to the same standard limitations as contained in the report and must be read in conjunction with the entire report.
This report has been issued without having received a response from the MECP regarding Pinchin's Freedom of Information request. Once a response from this regulatory body is received, the information will be incorporated into a revised version of this report. Our conclusions and recommendations may be amended based on this information.

2.0 INTRODUCTION

A Phase One ESA is defined as a systematic qualitative process to determine whether a particular property is, or may be subject to, actual or potential contamination. Under the Province of Ontario's *Environmental Protection Act R.S.O. 1990, c. E.19* (EPA) and *Ontario Regulation 153/04: Records of Site Condition – Part XV.1 of the Act*, and last amended by Ontario Regulation 312/17 on July 28, 2017 (O. Reg. 153/04), the purpose of a Phase One ESA is two-fold:

- To obtain and review records that relate to the Phase One Property, and to the current and past uses of and activities at or affecting the Phase One Property, in order to determine if an area of potential environmental concern (APEC) exists and to interpret any APEC; and
- To obtain and review records that relate to properties in the Phase One Study Area, other than the Phase One Property, in order to determine if a potentially contaminating activity (PCA) exists and interpret whether any such PCA represents on APEC for the Phase One Property.

This Phase One ESA was conducted at the request of the Client for the purpose of filing a Site Plan Approval application with the City of Ottawa.

2.1 Phase One Property Information

The Phase One Property consists of three legal lots (i.e., lots 37, 38 and 39), in Ottawa, Ontario, which is currently owned by Ottawa Land Holdings (2) Inc. The Phase One Property is located on the north side of Campeau Drive, approximately 415 metres (m) southwest of the intersection of Campeau Drive and Palladium Drive, as shown on Figure 1 (all Figures are provided in Appendix A and all appendices are provided in Section 10.0). A plan showing the Phase One Property is provided as Figure 2, and the Phase One Study Area for which this Phase One ESA applies to is outlined on Figure 3. Photographs of the Phase One Property and surrounding properties are presented in Appendix B. A current legal survey of the Phase One Property is included in Appendix C.

Pertinent details of the Phase One Property are provided in the following table:

Detail	Source / Reference	Information
Legal Description	http://maps.ottawa.ca/geoottawa/ City of Ottawa	HUNTLEY CON 1 PT LOT 4 RP4R28637 PT PART 1 (Lots 37, 38 and 39)
Municipal Address	None	Not applicable.
Parcel Identification Number (PIN)	None	Not applicable.
Current Owner	Site Representative	West Ottawa Land Holdings (2) Inc.
Current Occupant(s)	None	Vacant undeveloped/forested land
Client	Authorization to Proceed Form	Tordar Investments Ltd.
Client Contact Information	Authorization to Proceed Form	Mr. Doug Munro Tordar Investments Ltd. 1 Maritime Boulevard Brampton, ON L65 6G4 Phone: 905-792-6134 dmunro@m-o.com
Site Area	Site Plan Drawing provided by the Client	70,334 m^2 (17.38 acres)
Current Zoning	http://maps.ottawa.ca/geoottawa/ City of Ottawa	IP-13 – Business Park Industrial Zone

3.0 SCOPE OF INVESTIGATION

Pinchin conducted this Phase One ESA in accordance with O. Reg. 153/04, in particular Part VII and Schedule D of O. Reg. 153/04. The Phase One ESA scope of work was comprised of the following:

- A Records Review: Pinchin reviewed available current and historical information sources pertaining to the Phase One Property and surrounding properties within the Phase One Study Area including the use of, but not limited to, aerial photographs, city directories, Fire Insurance Plans (FIPs), Property Underwriters' Reports (PURs), Property Underwriters' Plans (PUPs), available Site operating records, a regulatory data base search and Ministry of the Environment, Conservation and Parks (MECP) water well records. Regulatory agencies were also contacted to identify if any records of environmental non-compliance or other information associated with the environmental condition of the Phase One Property exist, including the MECP's Freedom of Information and Protection of Privacy Office;
- Interviews: Pinchin conducted interviews with a Site Representative (see Section 5.0) to determine if any current or historical operations have caused a concern with respect to the environmental condition of the Phase One Property and the surrounding properties within the Phase One Study Area;
- Site Reconnaissance: Pinchin completed a visual assessment of the Phase One Property and the surrounding properties within the Phase One Study Area (from publicly-accessible areas) including any associated buildings and/or facilities for the purpose of identifying the presence of significant environmental contaminants of concern;
- Evaluation: Pinchin evaluated the information gathered from the records review, interviews and Site reconnaissance;
- Reporting: Pinchin prepared a Phase One ESA report summarizing the findings of the Phase One ESA; and
- Submission: Pinchin submitted the Phase One ESA report to the Client.

4.0 RECORDS REVIEW

4.1 General

A Phase One ESA does not include sampling or testing of environmental media or building materials. The study period for this assessment was from August 2019 to October 2019, which included the records review, Site reconnaissance, interviews and reporting. A Site reconnaissance was completed on August 21, 2019, by a Pinchin representative under the direct supervision of a Qualified Person (QP). During the Site reconnaissance, Pinchin accessed all areas of the Phase One Property. Pinchin did not access any areas within the surrounding Phase One Study Area with the exception of publicly-accessible roads and sidewalks. Select photographs taken during the Site reconnaissance of the Phase One Property and the surrounding properties within the Phase One Study Area are presented in Appendix B.

4.1.1 Phase One Study Area Determination

Based on a review of the available historical information and observations made during the Site reconnaissance for the properties greater than 250 m, but less than 1 kilometre (km), from the Phase One Property boundary, Pinchin did not note or observe any significant potentially contaminating properties that should be included as part of this assessment (e.g., landfills, large industrial manufacturers, etc.). As such, the Phase One Study Area consisted of the Phase One Property, as well as all properties situated wholly, or partly, within 250 m from the nearest point of a boundary of the Phase One Property, in order to meet the minimum requirements set forth in O. Reg. 153/04. A map of the Phase One Study Area and the surrounding land use is presented in Figure 3.

4.1.2 First Developed Use Determination

The first developed land use of the Phase One Property is defined by O. Reg. 153/04 to be:

a. the first use of a Phase One Property in or after 1875 that resulted in the development of a building or structure on the property; and
b. the first potentially contaminating use or activity on the Phase One Property.

To the best of Pinchin's knowledge, no building or structure has been constructed on the Phase One Property to date.

The date of the first developed use of the Phase One Property was determined through a review of aerial photographs, previous reports and information provided by the Site Representative. No other information was reviewed by Pinchin during the records review, or obtained during the Site reconnaissance or interviews which would have resulted in a different interpretation of the date of first developed use of the Phase One Property.

4.1.3 Fire Insurance Plans

Pinchin contacted Opta Information Intelligence (Opta) to obtain FIPs related to the Phase One Property and the Phase One Study Area. A response was received from Opta dated August 20, 2019, which indicated that no FIPs for the Phase One Property and Phase One Study Area were available. The Opta response is provided in Appendix D.

4.1.4 Environmental Reports

The following previous environmental reports for the Phase One Property and properties located within the Phase One Study Area provided by the Client were reviewed by Pinchin:

- Report entitled "*Phase I Environmental Site Assessment, Vacant and Agricultural Property, 405-425 Huntmar Drive and 3001 Palladium Drive, Ottawa, Ontario*", prepared

by Paterson Group Inc. (Paterson), and dated January 8, 2014 (2014 Paterson Phase I ESA Report); and

- Report entitled "*Geotechnical Investigation, Proposed Commercial Development, West Ottawa Land Holdings 1 and 2, Huntmar Drive at Campeau Drive, Ottawa, Ontario*", prepared by Paterson, and dated January 16, 2014 (2014 Paterson Geotechnical Investigation Report).

2014 Paterson Phase I ESA Report

The 2014 Paterson Phase I ESA Report consisted of historical reviews, a review of surrounding properties, a regulatory database search, and interviews as well as an exterior assessment of the Phase One Property, as well as properties located east and south of the Phase One Property.

The results of the 2014 Paterson Phase I ESA Report indicated that there were no significant potential environmental concerns associated with the current and historical use of the Phase One Property and adjacent properties and as such, no further environmental assessment work was recommended.

2014 Paterson Geotechnical Report

The 2014 Paterson Geotechnical Report was completed for the Phase One property and surrounding properties, located to the east and south of the Phase One Property. The scope of work included the advancement of 26 boreholes in the study area, of which six boreholes were advanced at the Phase One Property, which were also instrumented with groundwater monitoring wells.

The results of the 2014 Paterson Geotechnical Report indicated that subsurface soils at the Phase One Property consisted of silty sand to approximately 2.9 m below ground surface (mbgs) overlying silty sand and gravel to approximately 8.6 mbgs. In addition, groundwater depth ranged between approximately between 1.5 and 3.0 mbgs.

4.1.4.1 Previous Environmental Report Summary

Based on Pinchin's review of the above-referenced previous environmental reports, nothing was identified that is likely to result in potential subsurface impacts at the Phase One Property.

4.2 Environmental Source Information

Pinchin reviewed the historical use of the Phase One Study Area through the use of publicly available archives and databases, as well as through requesting information from regulatory agencies. The following provides a summary of the information obtained from these sources.

4.2.1 Environmental Database Search – ERIS

Pinchin retained Environmental Risk Information Services (ERIS) to search all available federal, provincial and private source databases for information pertaining to the Phase One Study Area. A copy of the ERIS report is provided in Appendix E and the results of the database search are described in the following subsections.

4.2.1.1 National Pollutant Release Inventory

ERIS completed a search of the federal databases for information regarding the National Pollutant Release Inventory (NPRI). This database contains comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances and identifies information such as the approximate location, type and quantity of contaminant, date of release, and media impacted.

Pinchin reviewed the ERIS report for NPRI information and found no records regarding the Phase One Study Area.

4.2.1.2 Ontario Inventory of PCB Storage Sites

The MECP's Waste Management Branch maintains an inventory of PCB storage sites within Ontario. Ontario Regulation 11/82 and Ontario Regulation 347 (O. Reg. 347), made under the EPA, require the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the MECP. This database contains information on waste quantities, major and minor sites storing liquid or solid waste, and a waste storage inventory.

ERIS completed a search of the Ontario Inventory of PCB Storage Sites for information regarding PCB storage and found no information regarding the Phase One Study Area.

4.2.1.3 National PCB Inventory

Environment Canada maintains an inventory of in-use PCB-containing equipment at federal, provincial and private facilities in Canada, and of out-of-service PCB-containing equipment and PCB waste owned by the federal government or federally regulated industries.

ERIS completed a search of the National PCB Inventory and found no information regarding the Phase One Study Area.

4.2.1.4 Certificates of Approval

ERIS completed a search of the MECP database for information regarding Certificates of Approval (Cs-of-A). The MECP maintains a database of approved Cs-of-A for Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. Prior to November 1,

2011, the MECP mandated that any facility that released emissions to the atmosphere, discharged contaminants to ground or surface water, provided potable water supplies, or stored, transported or disposed of waste, must have a C-of-A before it could operate lawfully. The MECP no longer issues Cs-of-A, which were replaced by Environmental Compliance Approvals (ECAs) as of November 1, 2011.

The ERIS search of the C-of-A database identified no information regarding Cs-of-A for the Phase One Study Area.

4.2.1.5 Environmental Compliance Approvals, Permits To Take Water and Certificates of Property Use

ERIS completed a search of the MECP database for information regarding ECAs, permits including Permits To Take Water (PTTWs) and Certificates of Property Use (CPUs). Details regarding these databases are provided in the ERIS report in Appendix E.

The ERIS search of the ECA database did not identify any ECAs for the Phase One Property; however, three ECAs were identified for other properties within the Phase One Study Area. All of these ECAs were for sewage works and no ECAs were identified for discharge to groundwater, which is considered the primary pathway of concern for contaminant impacts on the Phase One Property. As such, Pinchin does not consider the activities related to ECAs at surrounding properties within the Phase One Study Area to represent an environmental concern to the Phase One Property.

The ERIS search of the PTTW database identified one property within the Phase One Study Area (i.e., 425 Huntmar Drive) regarding PTTWs. Pinchin does not consider the activities related to PTTW at the surrounding property within the Phase One Study Area to represent an environmental concern to the Phase One Property.

4.2.1.6 Inventory of Coal Gasification Plants

ERIS searched the following publications prepared for the MECP by Intera Technologies Inc. (Intera) for information on industrial sites that formerly operated as coal gasification plants, and industrial sites that produced or used coal tar and other related tars:

- "*Inventory of Coal Gasification Plant Waste Sites in Ontario*", dated April 1987; and
- "*Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario*", dated November 1988.

The ERIS search yielded no records of former coal gasification plants or the production or use of coal tar and related tars within the Phase One Study Area.

4.2.1.7 Environmental Incidents, Orders, Offences and Spills

ERIS completed a search of the various provincial and federal databases for information regarding environmental incidents, orders, offences and spills. Details regarding the searched databases are provided in the ERIS report in Appendix E.

The ERIS database search of records of environmental incidents, orders, offences or spills revealed the following for the Phase One Study Area:

- No records were found of environmental incidents, orders, offences or spills for the Phase One Property; and
- No records were found of environmental incidents, orders, offences or spills for the Phase One Study Area except for the following:
    - One spill of an unknown quantity of sediment occurred at the 3001 Palladium Drive and into Feedmill Creek on April 5, 2016. This property is located approximately 190 m southeast of the Phase One Property. Based on the distance between this property and the Site and the nature of spill (i.e., sediment), it is Pinchin's opinion that this discharge is unlikely to result in potential subsurface impacts at the Phase One Property.

4.2.1.8 Waste Management Records

Waste Generators

ERIS completed a search of the O. Reg. 347 Waste Generators database for information regarding waste generation. O. Reg. 347 defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution, etc. The database search results provide a summary of available waste generation information for the registered sites for all years from 1986 to the present.

The ERIS search of the O. Reg. 347 Waste Generators database found no information regarding the Phase One Study Area.

Two properties located within the Phase One Study Area were listed within the database search results as waste generators. Based on the short duration of operation, and/or their location and distance relative to the Phase One Property (i.e., greater than 100 m and situated hydraulically transgradient of the Site),

and the types and relatively small quantities of hazardous wastes generated at these properties, it is Pinchin's opinion that the hazardous waste generation at these properties is not considered an environmental concern for the Phase One Property.

Waste Receivers

ERIS completed a search of the O. Reg. 347 Waste Receivers database for information regarding waste receivers. O. Reg. 347 defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database contains registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants.

The ERIS search of the O. Reg. 347 Waste Receivers database found no information regarding the Phase One Study Area.

4.2.1.9 Fuel Storage Tanks

ERIS completed a search of various private, provincial and federal databases for information regarding chemical storage tanks, as well as private and retail fuel storage tanks. Details regarding the searched databases are provided in the ERIS report in Appendix E.

The ERIS search of the chemical or fuel storage tank databases found no information regarding the Phase One Study Area.

4.2.1.10 Notices and Instruments

ERIS completed a search of the provincial Environmental Registry for records pertaining to proposals, decisions, and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. ERIS also searched the Record of Site Condition database for filed Record of Site Condition (RSCs).

The ERIS search of the Environmental Registry and RSC database found no information regarding the Phase One Study Area.

4.2.1.11 Areas of Natural Significance

ERIS reviewed available databases and records to assess whether any parks, wetlands, conservation areas, or other areas of natural significance, are located within the Phase One Study Area. The Area of Natural & Scientific Interest map included in the ERIS report in Appendix E did not identify any areas of natural significance within the Phase One Study Area.

4.2.1.12 Landfill Information

ERIS reviewed available private and provincial databases for records of any current or inactive landfills and waste disposal sites within the Phase One Study Area. Details regarding the searched databases are provided in the ERIS report in Appendix E.

The ERIS search of the landfill and waste disposal sites databases found no information regarding the Phase One Study Area.

4.2.2 Ministry of the Environment, Conservation and Parks Freedom of Information Search

The MECP Freedom of Information and Protection of Privacy Office in Toronto, Ontario was contacted to determine if records exist for environmental matters such as orders, spills, previous investigations, prosecutions, registered PCB waste storage sites, waste generators, waste receivers, Cs-of-A and ECAs associated with the Phase One Property.

The search was requested on September 24, 2019. At the time of writing this report, no response had been received from the MECP. When a formal response is received, it will be reviewed by Pinchin. If there is any information that represents a potential issue of environmental concern, a copy of the response will be forwarded to the Client under separate cover. Our conclusions and recommendations may be amended based on this information. A copy of Pinchin's request submitted to the MECP is provided in Appendix F of this report.

4.2.3 Local and Municipal Government

Pinchin reviewed the "Mapping and Assessment of Former Industrial Sites" report that was prepared by Intera for the City of Ottawa. The Intera report consists of a study that lists former industrial sites that may have potentially impacted the soil and/or groundwater at their respective locations. The sites identified within the study are categorized as Group I, Group II or Group III. Low priority sites are identified as Group III as it is unlikely that significant waste quantities remain present at these properties today and, therefore, the potential for environmental impact is low. Medium priority sites are identified as Group II as they are presently likely to have waste quantities remaining; however, the sites' location with respect to surface waste is such that significant environmental impacts are not likely to occur. High priority sites are

identified as Group I as there is documentation demonstrating that wastes are present at these sites, and that the potential for environmental impact is high.

The 1988 Intera report was consulted and the Site and surrounding properties were not included as part of the study area.

4.2.4 Property Underwriters' Reports and Plans

PURs provide detailed information on a site-specific basis, including descriptions of building construction, heating sources, production processes, and the presence of any hazardous chemicals or materials which may have been historically stored on the Phase One Property. They also indicate the presence of environmental hazards such as electrical rooms, transformers, boilers and storage tanks. Information provided on PUPs includes the location, capacity, and contents of aboveground storage tanks (ASTs), underground storage tanks (USTs), chemical storage and other forms of environmental hazards.

Pinchin contacted Opta to obtain copies of PURs and PUPs related to the Phase One Property and Study Area. Opta provided a written response dated August 20, 2019, indicating there were no records on-file for the Phase One Property and Study Area. A copy of Opta's response is provided in Appendix D.

4.2.5 City Directories

City directories for 2011 were reviewed by Pinchin at the Library and Archives of Canada in Ottawa, Ontario. It should be noted that no city directories were available for the Phase One Property and surrounding properties subsequent to 2011. In addition, it should also be noted that the Phase One Property and surrounding properties were not listed in the 2011 city directories.

4.3 Physical Setting Sources

4.3.1 Aerial Photographs

Pinchin reviewed aerial photographs of the Phase One Property and surrounding properties within the Phase One Study Area to assess the potential for historical PCAs. Copies of aerial photographs dated 1945, 1956, 1960 and 1984 were obtained from the National Air Photo Library in Ottawa, Ontario and reviewed by Pinchin. In addition, digital aerial photographs dated 1976, 1991, 2002, 2008, 2011, 2014 and 2017 were reviewed on the City of Ottawa e-map website (http://maps.ottawa.ca/geoOttawa/) by Pinchin. The 1945 aerial photograph was the earliest available aerial photograph of the Phase One Study Area.

Efforts were made by Pinchin to obtain aerial photographs that:

- Illustrated the period between initial development of the Phase One Property to the present;
- Identified buildings and structures present on the Phase One Property since initial development;
- Identified PCAs within the Phase One Study Area; and
- Identified APECs on the Phase One Property.

It should be noted that accurate details could not be determined from the some of the aerial photographs due to the large reference scale and the low resolution of the photographs.

A summary of information obtained with respect to the Phase One Property from a review of the available aerial photography is provided in the following table:

Year of Photograph	Phase One Property
1946-2014.	The Phase One Property appeared to consist of vacant undeveloped grassed land with trees located sporadically throughout the Phase One Property. In addition, an access road oriented in an east-west direction was evident on the central portion of the Phase One Property.
2017.	The Phase One Property appeared to consist of land under development.

A summary of information obtained with respect to the surrounding properties within the Phase One Study Area is provided in the following table:

Year of Photograph	North	East	South	West
1946-1991.	Vacant undeveloped, agricultural and forested land to beyond 250 m from the Phase One Property, similar to the current configuration.	Vacant undeveloped, agricultural and forested land to beyond 250 m from the Phase One Property.		
1999.	Similar to 1945.			Similar to 1945-1991; however, land under development was evident.

Year of Photograph	North	East	South	West
2002-2014.	Similar to 1945-1999.			Similar to 1999; however, a quarry was evident, similar to the current configuration.
2017.	Similar to 1945-2014.	Similar to 1945-2014; however, land under development was evident.	Similar to 1945-2014; however, present-day Campeau Drive was evident.	Similar to 2002-2014.

Based on the aerial photographs reviewed for the Phase One Property and the surrounding area, it appears that the Phase One Property has always consisted of vacant undeveloped, agricultural and/or forested land.

The aerial photograph review did not identify any PCAs within the Phase One Study Area or APECs on the Phase One Property.

4.3.2 Topography, Hydrology and Geology

The elevation of the Phase One Property, based on information obtained from the Ontario Base Map series, is approximately 105 m above mean sea level (mamsl). The general topography in the local and surrounding area is generally flat with a slight grade downwards in elevation to the northeast. No bedrock outcrops were observed on-Site or in the surrounding area.

A review of the available physiographical data indicates that the Phase One Property and the surrounding properties located within the Phase One Study Area are located within alluvial deposits consisting of stratified gravel, sand, silt and clay. Bedrock is expected to consist of sedimentary rocks consisting of limestone, dolomite, shale, argillite, sandstone, quartzite, and/or grit. The topography is considered to be mainly flat to rolling low local relief with dry surface water drainage conditions.

Based on general hydrogeological principles and Pinchin's familiarity with subsurface conditions at and near the Phase One Property and the surrounding properties within the Phase One Study Area, the unconfined groundwater beneath the Phase One Property is expected to flow in a north-easterly direction. No water bodies are located within the Phase One Study Area, and the nearest surface water body is the Carp River located approximately 1.6 km northeast of the Phase One Property at an elevation of approximately 102 mamsl. The nearest major water body is the Ottawa River, located approximately 8.9 km northeast of the Phase One Property at an elevation of approximately 60 mamsl.

Copies of pertinent maps, illustrating local topographical, hydrogeological and drainage features are provided in Appendix G.

4.3.3 Fill Materials

Fill piles were observed throughout the Phase One Property during Pinchin's Site reconnaissance. However, based on information provided by the Site Representative and the fact that nearby properties appeared to be under development, the Phase One Property has likely been utilized for storage of excavated native fill material that was derived from nearby properties that are under development. Based on the above-noted information and the inferred nature of former operations at these nearby properties (i.e., vacant land, as per Pinchin's review of aerial photographs), it is Pinchin's opinion that the observed fill material on-Site is unlikely to result in potential subsurface impacts at the Phase One Property.

4.3.4 Water Bodies and Areas of Natural Significance

No water bodies were identified on the Phase One Property or on surrounding properties within the Phase One Study Area.

4.3.5 Well Records

A search of the Water Well Information System database by EcoLog ERIS identified no water well records for the Phase One Property and no water well records within 200 m of the Phase One Study Area.

4.4 Site Operating Records

There are no current land uses or records of historical land use that would classify the Phase One Property as an enhanced investigation property (see Section 6.3). As such, Site operating records were not reviewed as part of the Phase One ESA.

5.0 INTERVIEWS

Pinchin interviewed individuals knowledgeable of the Phase One Property and its history to obtain or confirm information regarding the environmental condition of the Phase One Property. The following individuals provided information regarding the history of the Phase One Property and the surrounding properties within the Phase One Study Area to the best of their knowledge:

Person Interviewed	Relationship to Phase One Property	Date and Place of Interview	Interview Method
Mr. David Plumb.	Broker for the Phase One Property.	September 23, 2019 (by email).	Email interview.

Mr. Plumb was chosen to be interviewed given that he is familiar with the recent operational history of the Phase One Property. Mr. Plumb is referred to herein as the "Site Representative". The Pinchin representative (Mr. Dave Labelle) completed the Site reconnaissance on August 21, 2019, and was unaccompanied.

Pinchin compared the information obtained from the interviews with information obtained from the historical records. The information provided by the interviewee was corroborated by the available historical records. As such, Pinchin has no concerns regarding the validity of the information provided by the individual interviewed for the Phase One ESA.

6.0 SITE RECONNAISSANCE

6.1 General Requirements

A visual assessment of the Phase One Property and the surrounding properties within the Phase One Study Area was conducted for the purpose of identifying the presence of possible PCAs and associated APECs.

The Site reconnaissance was completed on August 21, 2019, by a Pinchin representative (i.e., Mr. Dave Labelle), under the direct supervision of Pinchin's QP overseeing this project. Mr. Labelle is an Environmental Project Technologist with more than two years of environmental consulting experience. Pinchin visited the Phase One Property and surrounding properties within the Phase One Study Area to document environmental conditions. During the Site reconnaissance, Pinchin viewed all accessible areas within the Phase One Property and viewed publicly-accessible portions of the adjacent lands for the presence of actual or potential issues of environmental concern.

The Site reconnaissance was conducted between the hours of 2:00 PM and 3:00 PM. During the Site reconnaissance, the weather was clear and sunny, and the ambient temperature was approximately 27° Celsius with a slight breeze from the east. The Phase One Property reconnaissance was conducted on foot and consisted of a full walk-through of the Phase One Property. There were no access restrictions for Pinchin for the Phase One Property. At the time of the Site reconnaissance, the Phase One Property was vacant undeveloped land with various fill piles located throughout the Phase One Property.

Photographs taken during the Site reconnaissance that illustrate the Phase One Property and Phase One Study Area are provided in Appendix B.

6.2 Specific Observations at Phase One Property

6.2.1 Description of Buildings and Structures

There were no buildings or structures present on the Phase One Property at the time of the Site reconnaissance.

6.2.2 Description of Below-Ground Structures

There were no below-ground structures present on the Phase One Property at the time of the Site reconnaissance.

6.2.3 Description of Tanks

During the Site reconnaissance, Pinchin did not observe any tanks on the Phase One Property for the purpose of either fuel dispensing or storage, or other unidentified substance storage.

6.2.4 Potable and Non-Potable Water Sources

During the Site reconnaissance, Pinchin did not observe potable or non-potable water sources on the Phase One Property. It is Pinchin's understanding that the Phase One Property is currently not serviced by a municipal water supply.

6.2.5 Description and Location of Underground Utilities

The Phase One Property has remained undeveloped and there are no known underground utilities.

6.2.6 Entry and Exit Points

The Phase One Property is presently vacant and undeveloped and as such, has no entry/exit points at this time.

6.2.7 Details of Heating System

The Phase One Property is presently vacant and undeveloped and as such, no heating systems are present on-Site.

6.2.8 Details of Cooling System

The Phase One Property is presently vacant and undeveloped and as such, no cooling systems are present on-Site.

6.2.9 Details of Drains, Pits and Sumps

No pits or sumps were observed at the Phase One Property.

6.2.10 Unidentified Substances within Buildings and Structures

During the Site reconnaissance, Pinchin did not observe any unidentified substances or storage containers holding unidentified substances at the Phase One Property. No bulk liquid storage was observed on-Site.

6.2.11 Details of Staining and Corrosion

During the Site reconnaissance, Pinchin did not observe any areas of staining or corrosion.

6.2.12 Details of On-Site Wells

No water supply or groundwater monitoring wells were observed to be on or within the Phase One Property. No water supply or groundwater monitoring wells were reported by the Site Representative to have been on-Site, prior to, or during their occupancy.

6.2.13 Details of Sewage Works

During the Site reconnaissance, Pinchin did not observe any sewage works or evidence of sewage disposal on the Phase One Property.

6.2.14 Details of Ground Cover

During the Site reconnaissance, Pinchin visually inspected the Phase One Property ground cover. Any areas of the Phase One Property was not covered by any permanent buildings/structure and was covered by gravel, grass and vegetated areas.

6.2.15 Details of Current or Former Railways

No current or former railway infrastructure was observed on the Phase One Property.

6.2.16 Areas of Stained Soil, Vegetation and Pavement

During the Site reconnaissance, Pinchin did not observe any areas of stained soil, vegetation or pavement on the Phase One Property.

6.2.17 Areas of Stressed Vegetation

During the Site reconnaissance, Pinchin did not observe any areas of stressed vegetation on the Phase One Property.

6.2.18 Areas of Fill and Debris Materials

Fill piles were observed throughout the Phase One Property during Pinchin's Site reconnaissance. However, based on information provided by the Site Representative and the fact that nearby properties appeared to be under development, the Phase One Property has likely been utilized for storage of excavated native fill material that was derived from nearby properties that are under development. Based

on the above-noted information and the inferred nature of operations at these nearby properties (i.e., quarry), it is Pinchin's opinion that the observed fill material on-Site is unlikely to result in potential subsurface impacts at the Phase One Property.

6.2.19 Potentially Contaminating Activities

A PCA is defined by O. Reg. 153/04 as a "use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a Phase One Study Area" including the Phase One Property. Pinchin did not identify any current PCAs at the Phase One Property during the Site reconnaissance.

6.2.20 Unidentified Substances Outside Buildings and Structures

During the Site reconnaissance, Pinchin did not observe any unidentified substances or storage containers holding unidentified substances on the exterior of the Phase One Property.

6.3 Enhanced Investigation Property

O. Reg. 153/04 defines an "enhanced investigation property" as a property that is being used or has been used, in whole or in part, in the following manner:

- For an industrial use or;
- For any of the following commercial uses:
  - As a garage;
  - As a bulk liquid dispensing facility, including a gasoline outlet; or
  - For the operation of dry cleaning equipment.

The findings of this Phase One ESA have not documented any of the above land uses as occurring at the Phase One Property, and the Phase One Property is therefore not an enhanced investigation property.

6.4 Written Description of Investigation

The Phase One ESA completed by Pinchin included investigations of the Phase One Property and the Phase One Study Area outside of the Phase One Property pursuant to Sections 13 and 14 of Schedule D of O. Reg.153/04. The main objective of these investigations was to identify PCAs at the Phase One Property or within the Phase One Study Area outside of the Phase One Property that could have resulted in APECs at the Phase One Property.

6.4.1 Phase One Property

The investigation of the Phase One Property consisted of the following components:

- Review of available historical records, including FIPs, chain of title search, previous environmental reports, ERIS regulatory search, information obtained through MECP Freedom of Information (FOI), PURs, PUPs, city directories, aerial photographs and well records;
- A Site reconnaissance completed on August 21, 2019, by Mr. Dave Labelle of Pinchin that included an assessment of the Phase One Property;
- Interviews with individuals knowledgeable of the history and operations at the Phase One Property; and
- Review of mapping provided by ERIS for the presence of areas of natural significance.

Pinchin's investigation of the Phase One Property did not identify any PCAs.

6.4.2 Phase One Study Area Outside of Phase One Property

The investigation of the Phase One Study Area outside of the Phase One Property consisted of the following components:

- Review of available historical records, including ERIS regulatory search, city directories and aerial photographs;
- Visual inspection of properties from publicly-accessible areas for evidence of PCAs and water bodies; and
- Review of mapping provided by ERIS for the presence of areas of natural significance.

The following PCA was identified within the Phase One Study Area outside of the Phase One Property:

PCA	PCA Item No.	Description of PCA	Location of PCA
PCA #1	Item 28 - Gasoline and Associated Products Storage in Fixed Tanks	Gasoline stored in an AST	60 m southeast of the Phase One Property

This PCA is not considered to represent an APEC at the Phase One Property given the distance of the PCA to the Phase One Property and the short duration of operation.

No areas of natural significance were identified within the Phase One Study Area outside of the Phase One Property.

Based on a cursory review of the properties greater than 250 m (i.e., outside of the Phase One Study Area), but less than 1 km, from the Phase One Study Area, Pinchin did not note or observe any significant contaminating properties that should be included as part of this assessment (i.e., landfills, large industrial manufacturers, etc.).

7.0 REVIEW AND EVALUATION OF INFORMATION

7.1 Current and Past Uses

The following table is a summary of the current and past land uses of the Phase One Property:

Year	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, etc.
Prior to 1991.	Unknown.	Assumed vacant/ agricultural/ forested land.	N/A.	The Site appeared to consist of vacant undeveloped land on all aerial photographs reviewed by Pinchin.
1991 to present.	West Ottawa Land Holdings (2) Inc.	Assumed vacant undeveloped land with areas of fill material storage.	N/A, and storage of nearby native excavated soil.	The Site appeared to consist of vacant undeveloped land on all aerial photographs reviewed by Pinchin, with the exception of fill piles located throughout the Phase One Property on the 2017 aerial photograph. Based on information provided by the Site Representative and the fact that nearby properties appeared to be under development, the Phase One Property was likely utilized for storage of excavated native fill material that was derived from the Site and nearby properties that were under development.

To the best of Pinchin's knowledge, no building or structure has been constructed on the Phase One Property to date.

No other historical records were available to Pinchin that provided information for determining the date of first developed use of the Phase One Property.

7.2 Potentially Contaminating Activities

No PCAs were identified within the Phase One Property.

The following PCA as defined by O. Reg. 153/04 was documented by Pinchin to have occurred within the Phase One Study Area outside of the Phase One Property:

PCA	PCA Item No.	Description of PCA	Location of PCA
PCA #1	Item 28 - Gasoline and Associated Products Storage in Fixed Tanks	Gasoline stored in an aboveground storage tank.	60 m southeast of the Phase One Property

7.3 Areas of Potential Environmental Concern

No APECs were identified at the Phase One Property and within the Phase One Study Area.

7.4 Phase One Conceptual Site Model

A conceptual site model (CSM) has been created to provide a summary of the findings of the Phase One ESA. The Phase One CSM is summarized in Figures 1 through Figure 3, which illustrate the following features within the Phase One Study Area, where present:

- Existing buildings and structures;
- Water bodies located in whole or in part within the Phase One Study Area;
- Areas of natural significance located in whole or in part within the Phase One Study Area;
- Drinking water wells located at the Phase One Property;
- Land use of adjacent properties;
- Roads within the Phase One Study Area;
- PCAs within the Phase One Study Area, including the locations of tanks; and
- APECs at the Phase One Property.

The following provides a narrative summary of the Phase One CSM:

- The Phase One Property is a rectangular-shaped parcel of land approximately 17.38 acres (7.03 hectares) in size located on the north side of Campeau Drive, approximately 415 m southwest of the intersection of Campeau Drive and Palladium Drive, in the City of Ottawa. The Phase One Property consists of vacant undeveloped land and is inferred/reported to be utilized for the storage of excavated native fill material from the Site and nearby properties that are under development. There is no record of industrial use or of a commercial use (e.g., garage, bulk liquid dispensing facility or dry cleaner) that would require classifying the Phase One Property as an enhanced investigation property;
- No water bodies were identified within the Phase One Study Area. The nearest water body is the Carp River, which is located approximately 1.6 km northeast of the Phase One Property;
- No areas of natural significance were identified within the Phase One Study Area;
- No drinking water wells were located on the Phase One Property;
- The properties within the Phase One Study Area consist of vacant and commercial land uses. The properties located north of the Phase One Property consist of vacant undeveloped land to beyond 250 m from the Phase One Property. The properties located south of the Phase One Property consist of Campeau Drive followed by a commercial building (i.e., distribution centre) to beyond 250 m from the Phase One Property. The properties located east of the Phase One Property consist of vacant undeveloped land/land under development to beyond 250 m from the Phase One Property. The properties located west of the Phase One Property consist of areas of a quarry to beyond 250 m from the Phase One Property;
- No PCAs were identified at the Phase One Property and one PCAs was identified within the Phase One study, outside of the Phase One Property. As shown on Figure 4, the off-Site PCA is an AST located approximately 60 m southeast of the Phase One Property (8825 Campeau Drive). Groundwater flow within the Phase One Study Area is interpreted to be to the northeast towards the Carp River. Given that the PCA is located approximately 60 m from the Phase One Property, the off-Site PCAs is not considered to result in APECs at the Phase One Property;
- The Phase One Property is currently not serviced by city services, as no buildings or permanent structures are present at the Phase One Property;

- The Phase One Property and the surrounding properties located within the Phase One Study Area are located within alluvial deposits consisting of stratified gravel, sand, silt and clay. Bedrock is expected to consist of sedimentary rocks consisting of limestone, dolomite, shale, argillite, sandstone, quartzite, and/or grit; and
- The Phase One Property is relatively flat with a slight slope to the northeast. Local groundwater flow is inferred to be to the northeast, based on topography and the location of the Carp River.

There were no deviations from the Phase One ESA requirements specified in O. Reg. 153/04 or absence of information that have resulted in uncertainty that would affect the validity of the Phase One CSM.

8.0 CONCLUSIONS

Pinchin conducted this Phase One ESA in accordance with Part VII and Schedule D of O. Reg. 153/04. The purpose of the Phase One ESA was to assess the potential presence of environmental impacts at the Phase One Property due to activities at and near the Phase One Property in support of filing a Site Plan Approval with the City of Ottawa.

The review of information obtained from historical records, interviews and a Site reconnaissance completed by Pinchin for the Phase One ESA did not identify any PCAs at the Phase One Property or within the Phase One Study Area outside of the Phase One Property (i.e., off-Site) that are considered to result in APECs to Phase One Property. One off-Site PCAs were identified but this PCA is not considered to result in APECs at the Phase One Property given their distance from the Phase One Property. Based on these findings, nothing was identified that is likely to have resulted in impacts to the soil and groundwater at the Phase One Property and would require the completion of a Phase Two ESA. As such, it is Pinchin's opinion that the Phase One Property is suitable for the intended future commercial land use and an RSC can be filed based only on the completion of a Site Plan Approval application with the City of Ottawa based only on the completion of this Phase One ESA report.

It should be noted that the references and sources for the information used in evaluating the Phase One Property are provided in the relevant sections of this report. Furthermore, specific references are also summarized in Section 9.0.

8.1 Signatures

This Phase One ESA was undertaken under the supervision of Scott Mather. P. Eng., QP_{ESA} in accordance with the requirements of a Site Plan Approval application with the City of Ottawa based only on the completion of this Phase One ESA report. for the Phase One Property. The conclusions and recommendations provided in this report represent the best judgement of the assessor based on the Site

conditions observed on August 21, 2019, and a review of available historical information and information obtained from interviews.

This report has been issued without having received a response to a request for information from the MECP. Pinchin reserves the right to amend our conclusions and recommendations based on information obtained from the regulatory agency.

We trust that the information provided in this report meets your current requirements.

8.2 Terms and Limitations

This Phase One ESA was performed in order to identify potential issues of environmental concern associated with the property located at Lots 37, 38 and 39, Ottawa, Ontario (Site), at the time of the Site reconnaissance. This Phase One ESA was performed in general compliance with currently acceptable practices for environmental site investigations, and specific Client requests, as applicable to this Site. This report was prepared for the exclusive use of Tordar Investments Ltd. (Client) subject to the terms, conditions and limitations contained within the duly authorized work plan for this project. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted.

If additional parties require reliance on this report, written authorization from Pinchin will be required. Such reliance will only be provided by Pinchin following written authorization from the Client. Pinchin disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No other warranties are implied or expressed. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law.

The information provided in this report is based upon analysis of available documents, records and drawings, and personal interviews. In evaluating the Site, Pinchin has relied in good faith on information provided by other individuals noted in this report. Pinchin has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the current owner/occupant. Pinchin accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted, or contained in reports that were reviewed. The scope of work for this Phase One ESA did not include a visual or intrusive investigation for designated substances (e.g., asbestos, mould, PCB-containing electrical equipment, etc.) and, therefore, these materials may be present at the Site.

Pinchin makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time.

Ontario Regulation 153/04 does not apply to environmental auditing or environmental management systems. Therefore, with respect to Site operations and conditions, compliance with applicable federal, provincial or municipal acts, regulations, laws and/or statutes was not evaluated as part of the Phase One ESA.

9.0 REFERENCES

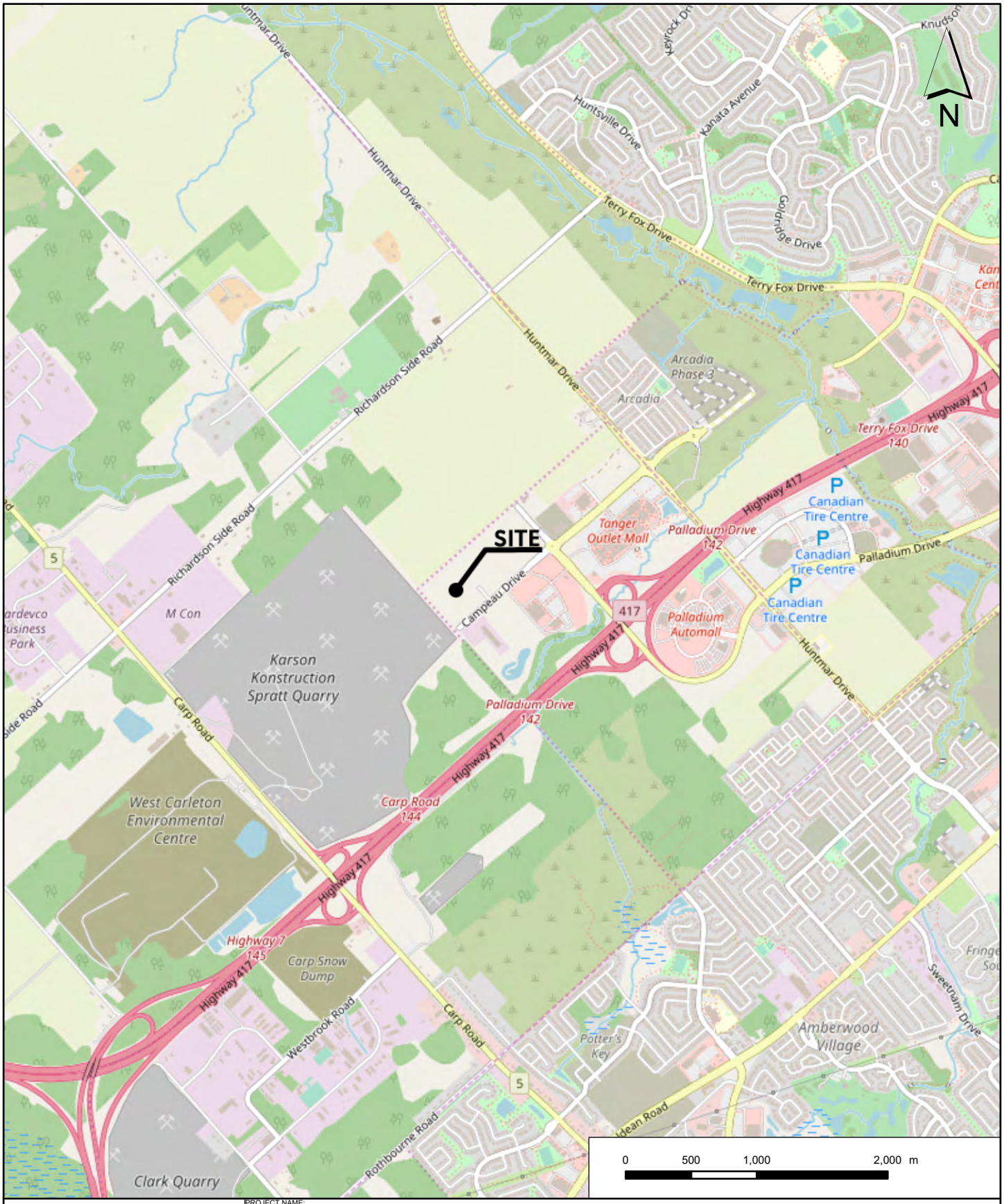
The following documents, persons or organizations provided information used in this report:

- Mr. Derek Howe, VP of Development with the current owner of the Phase One Property and associated with the Phase One Property for approximately six years (Site Representative).
- EcoLog ERIS report entitled “Part of Lots 3 and 4, Concession 1, Blocks 26, 27, 30 and 33, Geographic Township of Huntley, Ottawa”, and dated October 25, 2018 (ERIS Project # 20181019048).
- Opta Information Intelligence “Part of Lots 3 and 4, Concession 1, Blocks 26, Ottawa, ON”, and dated October 25, 2018 (Opta Order ID: 54540).
- The Atlas of Canada – Surficial Materials: http://atlas.nrcan.gc.ca/site/english/maps/environment/land/surficialmaterials/1
- The Atlas of Canada – Bedrock Geology: http://atlas.gc.ca/site/english/maps/archives/3rdedition/environment/land/016?w=4&h=4&l=6&r=4&c=12.
- Toporama – Topographic Maps: http://atlas.gc.ca/site/english/maps/topo/map.
- Province of Ontario. Environmental Protection Act R.S.O. 1990, c. E.19 and Ontario Regulation 153/04: Records of Site Condition – Part XV.1 of the Act. Last amended by Ontario Regulation 333/13 on December 13, 2013.
- Canadian Standards Association (CSA) Standard. CSA Z768-01, Phase I Environmental Site Assessment, Canadian Standards Association International, November 2001, reaffirmed in 2012.

- National Air Photo Library, Ottawa, Ontario.
- Library and Archives of Canada, Ottawa, Ontario.
- The City of Ottawa.
- Ministry of the Environment, Conservation and Parks.
- MECP Brownfields Environmental Site Registry.
- Google Earth™ Satellite Imagery.
- Intera Technologies Inc. *Inventory of Coal Gasification Plant Waste Sites in Ontario.* April 1987.
- Intera Technologies Inc. *Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario*. November 1988.
- "*Phase I Environmental Site Assessment, Vacant and Agricultural Property, 405-425 Huntmar Drive and 3001 Palladium Drive, Ottawa, Ontario*", prepared by Paterson Group Inc., and dated January 8, 2014.
- "*Geotechnical Investigation, Proposed Commercial Development, West Ottawa Land Holdings 1 and 2, Huntmar Drive at Campeau Drive, Ottawa, Ontario*", prepared by Paterson Group Inc., and dated January 16, 2014.

10.0 APPENDICES

APPENDIX A
Figures



PINCHIN	PROJECT NAME:	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT				
	CLIENT NAME:	TORDAR INVESTMENTS LTD.				
	PROJECT LOCATION:	LOT 37, 38 AND 39, OTTAWA, ONTARIO				
	FIGURE NAME:	KEY MAP				FIGURE NUMBER 1
	PROJECT NUMBER: 247211	SCALE: 1:40,000	DRAWN BY: MC	REVIEWED BY: DL	DATE: NOVEMBER 2019	

N

LEGEND

- SITE BOUNDARY
- COM COMMERCIAL
- AST ABOVEGROUND STORAGE TANK
- PCA POTENTIAL CONTAMINATING ACTIVITY
- POTENTIAL CONTAMINATING ACTIVITY
- ROADS

INFERRED GROUNDWATER FLOW DIRECTION

0 25 50 100m

LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

PINCHIN

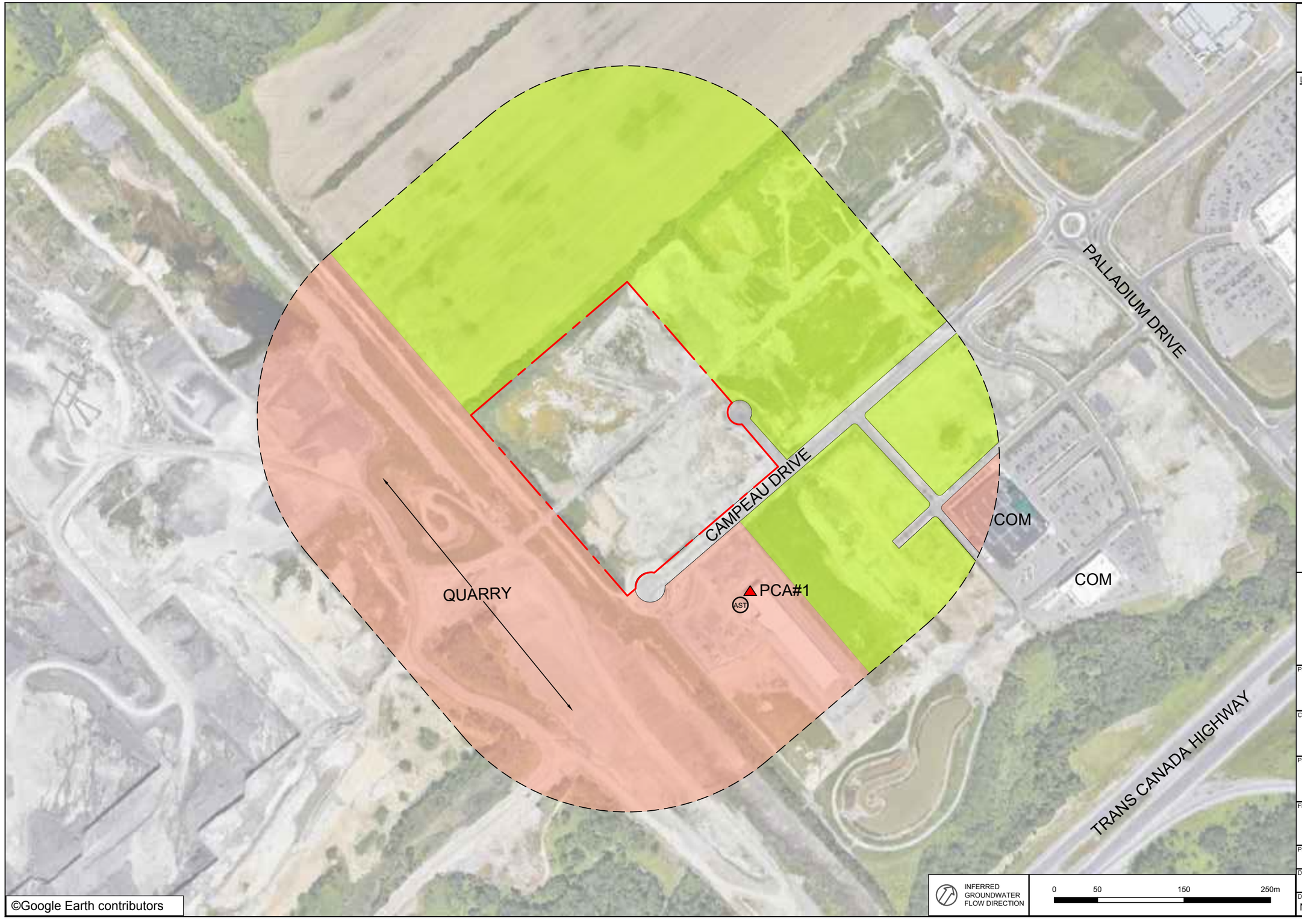
PROJECT NAME:
PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

CLIENT NAME:
TORDAR INVESTMENTS LTD.

PROJECT LOCATION:
LOT 37, 38 AND 39, OTTAWA ONTARIO

FIGURE NAME:
PHASE ONE SITE PLAN

PROJECT NUMBER:	SCALE:
247211	AS SHOWN
DRAWN BY: MC	REVIEWED BY: DL
DATE: NOVEMBER 2019	FIGURE NUMBER: 2



LEGEND IS COLOUR DEPENDENT. NON-COLOUR COPIES MAY ALTER INTERPRETATION.

PINCHIN

PROJECT NAME:	PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
CLIENT NAME:	TORDAR INVESTMENTS LTD.
PROJECT LOCATION:	LOT 37, 38 AND 39, OTTAWA ONTARIO
FIGURE NAME:	PHASE ONE STUDY AREA
PROJECT NUMBER: 247211	SCALE: AS SHOWN
DRAWN BY: MC	REVIEWED BY: DL
DATE: NOVEMBER 2019	FIGURE NUMBER: 3

APPENDIX B

Photographs

Photo 1 – Northeast portion of the Phase One Property, looking north.

Photo 2 – Northwest portion of the Phase One Property, looking southwest.

Photo 3 – Southeast portion of the Phase One Property, looking east.

Photo 4 – Southwest portion of the Phase One Property, looking north.

Photo 5 – Property located north of the Phase One Property.

Photo 6 – Property located south of the Phase One Property.

Photo 7 – Property located east of the Phase One Property.

Photo 8 – Property located west of the Phase One Property.

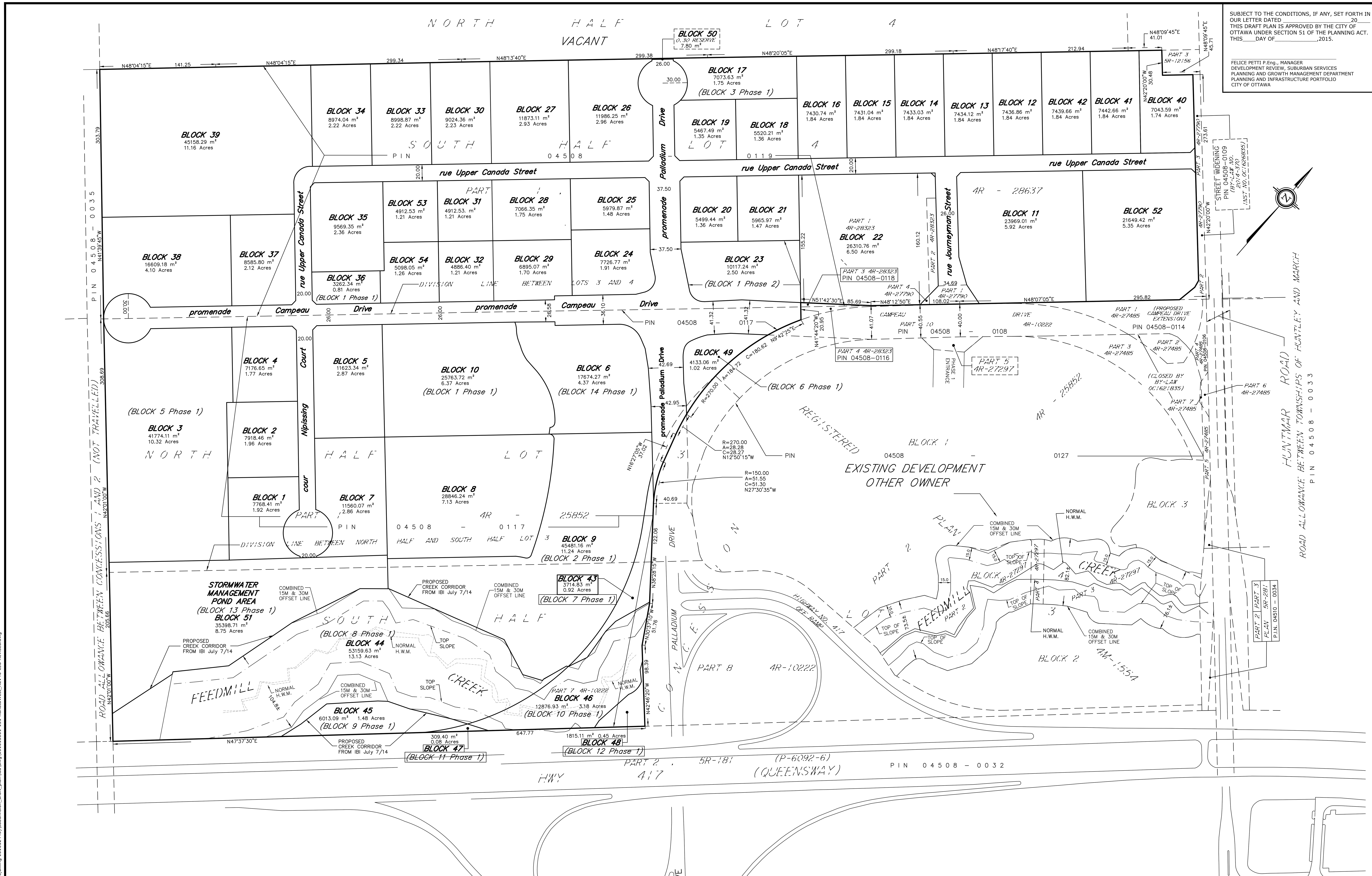
APPENDIX C

Survey Plan

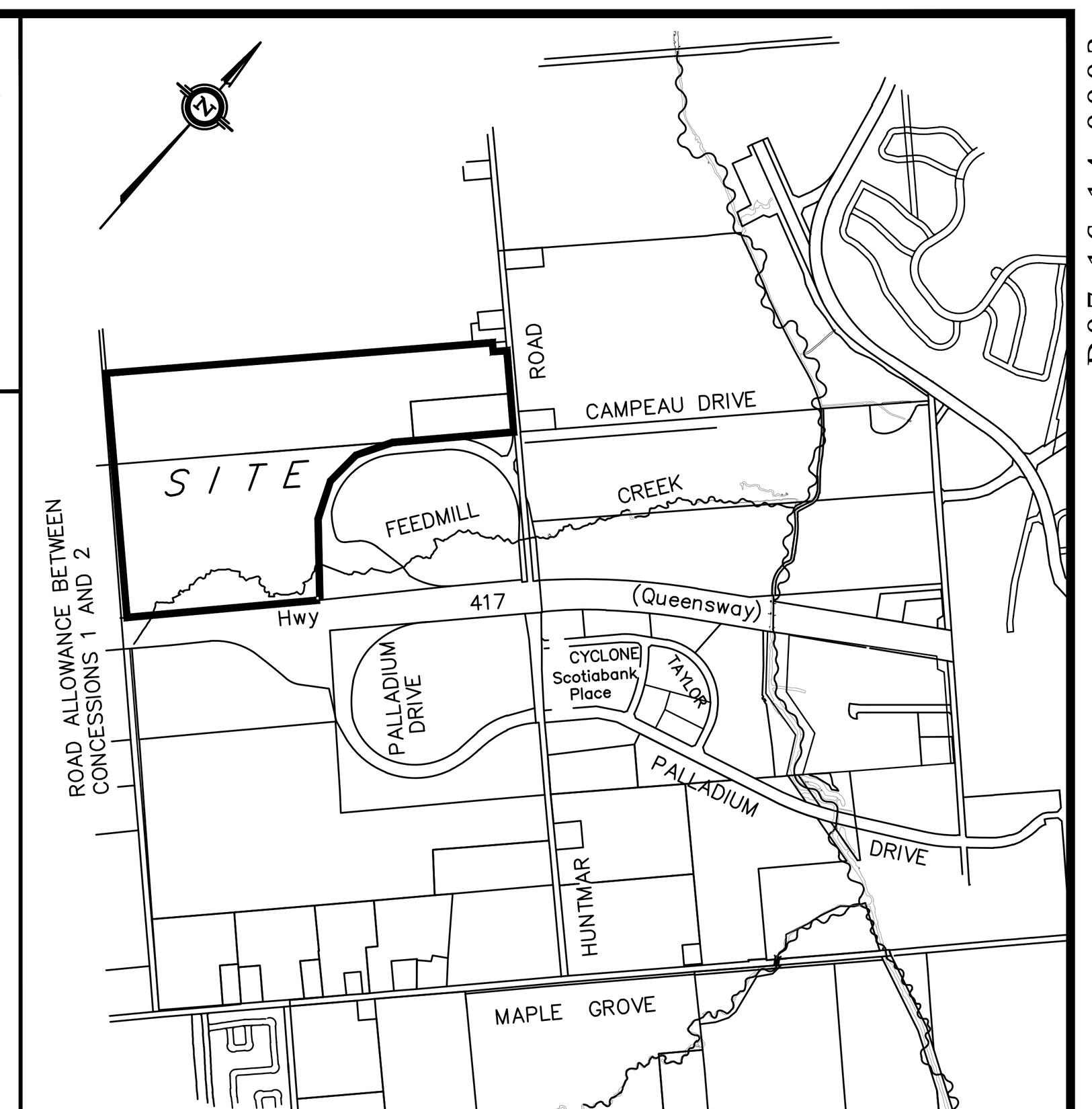
SUBJECT TO THE CONDITIONS, IF ANY, SET FORTH IN OUR LETTER DATED ____________________20____
THIS DRAFT PLAN IS APPROVED BY THE CITY OF OTTAWA UNDER SECTION 51 OF THE PLANNING ACT.
THIS____DAY OF______________,2015.

____
FELICE PETTI P.Eng., MANAGER
DEVELOPMENT REVIEW, SUBURBAN SERVICES
PLANNING AND GROWTH MANAGEMENT DEPARTMENT
PLANNING AND INFRASTRUCTURE PORTFOLIO
CITY OF OTTAWA

D07-16-14-0003



STREET AREA	REV. 40
STREET	AREA m²/ac
NIPISSING COURT	7318.69 / 1.81
JOURNEYMAN STREET	4963.53 / 1.23
UPPER CANADA STREET	24314.61 / 6.01
PALLADIUM DRIVE	17354.42 / 4.28
CAMPEAU DR.	27270.35 / 6.74
TOTAL STREET AREA	81221.60 / 20.07



KEY PLAN

DRAFT PLAN OF SUBDIVISION of

PART OF LOTS 3 AND 4 CONCESSION 1 GEOGRAPHIC TOWNSHIP OF HUNTLEY CITY OF OTTAWA

Scale 1 : 2000

80 60 40 20 0 40 80 Metres

METRIC CONVERSION

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

NOTES:

Phase 1 DENOTES REGISTERED PLAN 4M-1566
Phase 2 " REGISTERED PLAN 4M-XXXX

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE SUBJECT LANDS AND THEIR RELATIONSHIP TO ADJOINING LANDS HAVE BEEN ACCURATELY SHOWN.

DATE

BRIAN J. WEBSTER
ONTARIO LAND SURVEYOR

OWNER'S CERTIFICATE

I HEREBY AUTHORIZE THIS DRAFT PLAN OF SUBDIVISION TO BE SUBMITTED ON MY BEHALF.

DATED : ______________

JEFF PARKES
PRESIDENT
WEST OTTAWA LAND HOLDING INC.
WEST OTTAWA LAND HOLDING(2) INC.
I HAVE THE AUTHORITY
TO BIND THE CORPORATION

DATED : ______________

KEVIN McCRANN
VICE PRESIDENT
WEST OTTAWA LAND HOLDING INC.
WEST OTTAWA LAND HOLDING(2) INC.
I HAVE THE AUTHORITY
TO BIND THE CORPORATION

ADDITIONAL INFORMATION:

a. SEE PLAN
b. SEE PLAN
c. SEE PLAN
d. COMMERCIAL \ RESIDENTIAL
e. SEE PLAN
f. SEE PLAN
g. SEE PLAN
h. CITY WATER AVAILABLE \ WELL
i. SEE SOIL REPORT
j. SEE TOPOGRAPHICAL INFORMATION
k. ALL CITY SERVICES AVAILABLE
l. NO EASEMENTS REGISTERED ON TITLE \ SUBJECT TO

NOTE:
THE PLAN DATA IS COMPILED FROM OFFICE RECORDS OF STANTEC GEOMATICS LTD. AND HAS NOT BEEN VERIFIED BY FIELD MEASUREMENTS. ALL DISTANCES ARE APPROXIMATE, TO BE VERIFIED BY FINAL REGISTERED PLAN(S).

Stantec Geomatics Ltd.
Ontario Land Surveyors
Canada Lands Surveyors
1331 CLYDE AVENUE, SUITE 400, OTTAWA, ON. K2C 3G4
PHONE (613)722-4420 FAX (613)722-2799
brian.webster@stantec.com
stantec.com

DRAWN BY:CEC	CHECKED BY: *	PM: BW	FIELD: *	PROJECT No.: 161612445-131

APPENDIX D

Opta Records

opta
INFORMATION INTELLIGENCE

enviroscan

An SCM Company

175 Commerce Valley Drive W
Markham, Ontario L3T 7Z3

T: 905-882-6300
W: www.optaintel.ca

Report Completed By:

Sunita

Site Address:

Palladium Drive Ottawa Ont

Project No:

20190815063

Opta Order ID:

64700

Requested by:

Eleanor Goolab
ERIS

Date Completed:

8/20/2019 11:17:49 AM

Project Name: Lots 37 38 39
Ottawa ON

Project #: 20190815063
P.O. #: 247211

ENVIROSCAN Report

Search Area: Palladium Drive Ottawa Ont

Requested by:
Eleanor Goolab
Date Completed: 08/20/2019 11:17:49

enviroscan
OPTA INFORMATION INTELLIGENCE

Opta Historical Environmental Services Enviroscan™ Terms and Conditions

Report

The documents (hereinafter referred to as the "Documents") to be released as part of the report (hereinafter referred to as the "Report") to be delivered to the purchaser as set out above are documents in Opta's records relating to the described property (hereinafter referred to as the "Property"). Opta makes no representations or warranties respecting the Documents whatsoever, including, without limitation, with respect to the completeness, accuracy or usefulness of the Documents, and does not represent or warrant that these are the only plans and reports prepared in association with the Property or in Opta's possession at the time of Report delivery to the purchaser. The Documents are current as of the date(s) indicated on them. Interpretation of the Documents, if any, is by inference based upon the information which is apparent and obvious on the face of the Documents only. Opta does not represent, warrant or guarantee that interpretations other than those referred to do not exist from other sources. The Report will be prepared for use by the purchaser of the services as shown above hereof only.

Disclaimer

Opta disclaims responsibility for any losses or damages of any kind whatsoever, whether consequential or other, however caused, incurred or suffered, arising directly or indirectly as a result of the services (which services include, but are not limited to, the preparation of the Report provided hereunder), including but not limited to, any losses or damages arising directly or indirectly from any breach of contract, fundamental or otherwise, from reliance on Opta Reports or from any tortious acts or omissions of Opta's agents, employees or representatives.

Entire Agreement

The parties hereto acknowledge and agree to be bound by the terms and conditions hereof. The request form constitutes the entire agreement between the parties pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, negotiations and discussions, whether oral or written, and there are no representations or warranties, or other agreements between the parties in connection with the subject matter hereof except as specifically set forth herein. No supplement, modification, waiver, or termination of the request shall be binding, unless confirmed in writing by the parties hereto.

Governing Document

In the event of any conflicts or inconsistencies between the provisions hereof and the Reports, the rights and obligations of the parties shall be deemed to be governed by the request form, which shall be the paramount document.

Law

This agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

Project Name: Lots 37 38 39 Ottawa ON

Project #: 20190815063
P.O. #: 247211

ENVIROSCAN Report

No Records Found

Requested by:
Eleanor Goolab
Date Completed: 08/20/2019 11:17:49

OPTA INFORMATION INTELLIGENCE

No Records Found

N
W E
S

APPENDIX E

ERIS Report

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*Lots 37, 38, 39, Ottawa, ON* *Palladium Dr* *Ottawa ON*
Project No:	*247211*
Report Type:	*RSC Report - Quote*
Order No:	*20190815063*
Requested by:	*Pinchin Ltd.*
Date Completed:	*August 20, 2019*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Table of Contents

Executive Summary

Property Information:

Project Property:	*Lots 37, 38, 39, Ottawa, ON* *Palladium Dr Ottawa ON*
Project No:	*247211*

Order Information:

Order No:	*20190815063*
Date Requested:	*August 15, 2019*
Requested by:	*Pinchin Ltd.*
Report Type:	*RSC Report - Quote*

Historical/Products:

Insurance Products	*Fire Insurance Maps/Inspection Reports/Site Plans*
Topographic Map	*RSC Maps*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
AAGR	*Abandoned Aggregate Inventory*	Y	0	0	0
AGR	*Aggregate Inventory*	Y	0	0	0
AMIS	*Abandoned Mine Information System*	Y	0	0	0
ANDR	*Anderson's Waste Disposal Sites*	Y	0	0	0
AUWR	*Automobile Wrecking & Supplies*	Y	0	0	0
BORE	*Borehole*	Y	0	0	0
CA	*Certificates of Approval*	Y	0	0	0
CDRY	*Dry Cleaning Facilities*	Y	0	0	0
CFOT	*Commercial Fuel Oil Tanks*	Y	0	0	0
CHEM	*Chemical Register*	Y	0	0	0
CNG	*Compressed Natural Gas Stations*	Y	0	0	0
COAL	*Inventory of Coal Gasification Plants and Coal Tar Sites*	Y	0	0	0
CONV	*Compliance and Convictions*	Y	0	0	0
CPU	*Certificates of Property Use*	Y	0	0	0
DRL	*Drill Hole Database*	Y	0	0	0
EASR	*Environmental Activity and Sector Registry*	Y	0	0	0
EBR	*Environmental Registry*	Y	0	1	1
ECA	*Environmental Compliance Approval*	Y	0	3	3
EEM	*Environmental Effects Monitoring*	Y	0	0	0
EHS	*ERIS Historical Searches*	Y	0	1	1
EIIS	*Environmental Issues Inventory System*	Y	0	0	0
EMHE	*Emergency Management Historical Event*	Y	0	0	0
EPAR	*Environmental Penalty Annual Report*	Y	0	0	0
EXP	*List of TSSA Expired Facilities*	Y	0	0	0
FCON	*Federal Convictions*	Y	0	0	0
FCS	*Contaminated Sites on Federal Land*	Y	0	0	0
FOFT	*Fisheries & Oceans Fuel Tanks*	Y	0	0	0
FST	*Fuel Storage Tank*	Y	0	0	0
FSTH	*Fuel Storage Tank - Historic*	Y	0	0	0
GEN	*Ontario Regulation 347 Waste Generators Summary*	Y	0	4	4
GHG	*Greenhouse Gas Emissions from Large Facilities*	Y	0	0	0
HINC	*TSSA Historic Incidents*	Y	0	0	0
IAFT	*Indian & Northern Affairs Fuel Tanks*	Y	0	0	0
INC	*TSSA Incidents*	Y	0	0	0
LIMO	*Landfill Inventory Management Ontario*	Y	0	0	0
MINE	*Canadian Mine Locations*	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
MNR	Mineral Occurrences	Y	0	0	0
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0
NCPL	Non-Compliance Reports	Y	0	0	0
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBI	National Energy Board Pipeline Incidents	Y	0	0	0
NEBP	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OGWE	Oil and Gas Wells	Y	0	0	0
OOGW	Ontario Oil and Gas Wells	Y	0	0	0
OPCB	Inventory of PCB Storage Sites	Y	0	0	0
ORD	Orders	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PES	Pesticide Register	Y	0	0	0
PINC	TSSA Pipeline Incidents	Y	0	0	0
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	Y	0	1	1
REC	Ontario Regulation 347 Waste Receivers Summary	Y	0	0	0
RSC	Record of Site Condition	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	0	0
SCT	Scott's Manufacturing Directory	Y	0	0	0
SPL	Ontario Spills	Y	0	1	1
SRDS	Wastewater Discharger Registration Database	Y	0	0	0
TANK	Anderson's Storage Tanks	Y	0	0	0
TCFT	Transport Canada Fuel Storage Tanks	Y	0	0	0
VAR	TSSA Variances for Abandonment of Underground Storage Tanks	Y	0	0	0
WDS	Waste Disposal Sites - MOE CA Inventory	Y	0	0	0
WDSH	Waste Disposal Sites - MOE 1991 Historical Approval Inventory	Y	0	0	0
WWIS	Water Well Information System	Y	0	0	0
	Total:		0	11	11

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
1	EBR	United Parcel Service Canada Ltd.	8825 Campeau Drive Ottawa CITY OF OTTAWA ON	SSE/69.7	0.00	13
1	ECA	United Parcel Service Canada Ltd.	8825 Campeau Dr Ottawa ON L7L 0C2	SSE/69.7	0.00	13
1	GEN	United Parcel Service Canada Ltd.	8825 Campeau Drive Ottawa ON K2T 0N8	SSE/69.7	0.00	13
1	GEN	United Parcel Service Canada Ltd.	8825 Campeau Drive Ottawa ON K2T 0N8	SSE/69.7	0.00	14
2	EHS		Part of Lots 3 and 4 Concession 1 Blocks 26 Ottawa ON	NE/200.8	-2.08	14
3	PTTW	West Ottawa Land Holdings Inc.	425 Huntmar Drive, City of Ottawa, Ontario CITY OF OTTAWA ON	NE/245.7	-2.00	14
4	ECA	West Ottawa Land Holdings Inc., and Cabela's Retail Canada Inc.	3001 Palladium Dr Part of Lots 3 and 4 Concession 1 Ottawa ON K1V 8Y3	ESE/280.9	0.00	15
4	ECA	West Ottawa Land Holdings Inc.	3001 Palladium Dr Part of Lots 3 and 4 Concession 1 Ottawa ON K1V 8Y3	ESE/280.9	0.00	15
4	SPL		3001 Palladium Dr Part of Lots 3 and 4 Concession 1 Ottawa ON NA	ESE/280.9	0.00	16
5	GEN	Princess Auto Ltd.	3055 Palladium Drive Kanata ON K2K 0C1	ESE/300.0	-1.00	16
5	GEN	Princess Auto Ltd.	3055 Palladium Drive Kanata ON K2K 0C1	ESE/300.0	-1.00	17

Executive Summary: Summary By Data Source

EBR - Environmental Registry

A search of the EBR database, dated 1994-Jul 31, 2019 has found that there are 1 EBR site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
United Parcel Service Canada Ltd.	8825 Campeau Drive Ottawa CITY OF OTTAWA ON	69.7	1

ECA - Environmental Compliance Approval

A search of the ECA database, dated Oct 2011-Jul 30, 2019 has found that there are 3 ECA site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
United Parcel Service Canada Ltd.	8825 Campeau Dr Ottawa ON L7L 0C2	69.7	1
West Ottawa Land Holdings Inc.	3001 Palladium Dr Part of Lots 3 and 4 Concession 1 Ottawa ON K1V 8Y3	280.9	4
West Ottawa Land Holdings Inc., and Cabela's Retail Canada Inc.	3001 Palladium Dr Part of Lots 3 and 4 Concession 1 Ottawa ON K1V 8Y3	280.9	4

EHS - ERIS Historical Searches

A search of the EHS database, dated 1999-Apr 30, 2019 has found that there are 1 EHS site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	Part of Lots 3 and 4 Concession 1 Blocks 26 Ottawa ON	200.8	2

GEN - Ontario Regulation 347 Waste Generators Summary

A search of the GEN database, dated 1986-Jul 31, 2019 has found that there are 4 GEN site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
United Parcel Service Canada Ltd.	8825 Campeau Drive Ottawa ON K2T 0N8	69.7	1
United Parcel Service Canada Ltd.	8825 Campeau Drive Ottawa ON K2T 0N8	69.7	1
Princess Auto Ltd.	3055 Palladium Drive Kanata ON K2K 0C1	300.0	5
Princess Auto Ltd.	3055 Palladium Drive Kanata ON K2K 0C1	300.0	5

PTTW - Permit to Take Water

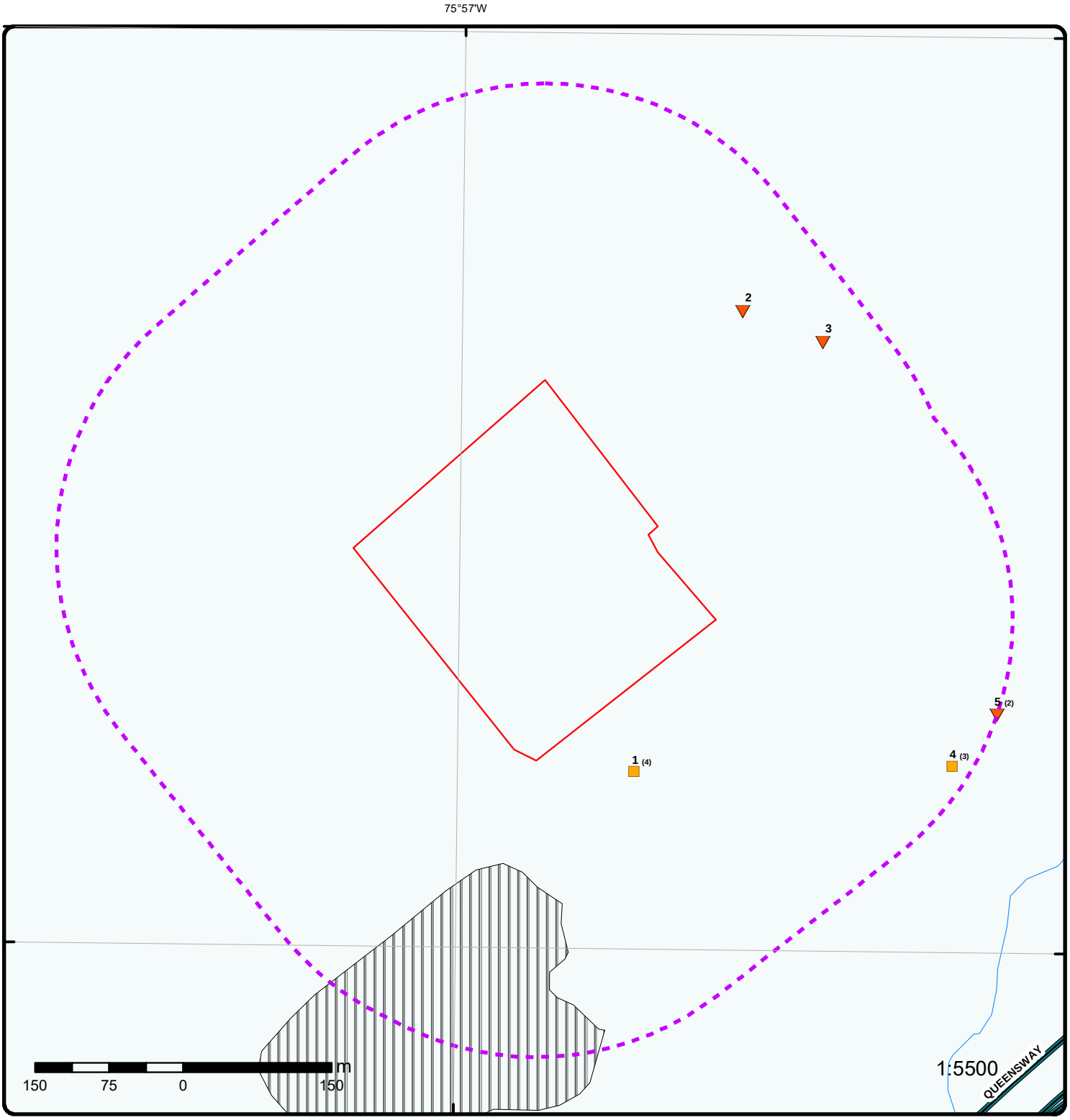
A search of the PTTW database, dated 1994-Jul 31, 2019 has found that there are 1 PTTW site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
West Ottawa Land Holdings Inc.	425 Huntmar Drive, City of Ottawa, Ontario CITY OF OTTAWA ON	245.7	3

SPL - Ontario Spills

A search of the SPL database, dated 1988-Feb 2019 has found that there are 1 SPL site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	3001 Palladium Dr Part of Lots 3 and 4 Concession 1 Ottawa ON NA	280.9	4



Map : 0.3 Kilometer Radius

Order No: 20190815063
Address: Palladium Dr, Ottawa, ON

ENVIRONMENTAL RISK INFORMATION SERVICES

- Expressway
- Principal Highway
- Secondary Highway
- Major Road
- Local road
- Trail
- Proposed Road
- Ferry Route/Ice Road
- Industrial and Resource - Regions
- Main Line
- Sidetrack
- Transit Line
- Abandoned Line
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

Source: © 2015 DMTI Spatial Inc.

75°57'W

45°18'N

45°18'N

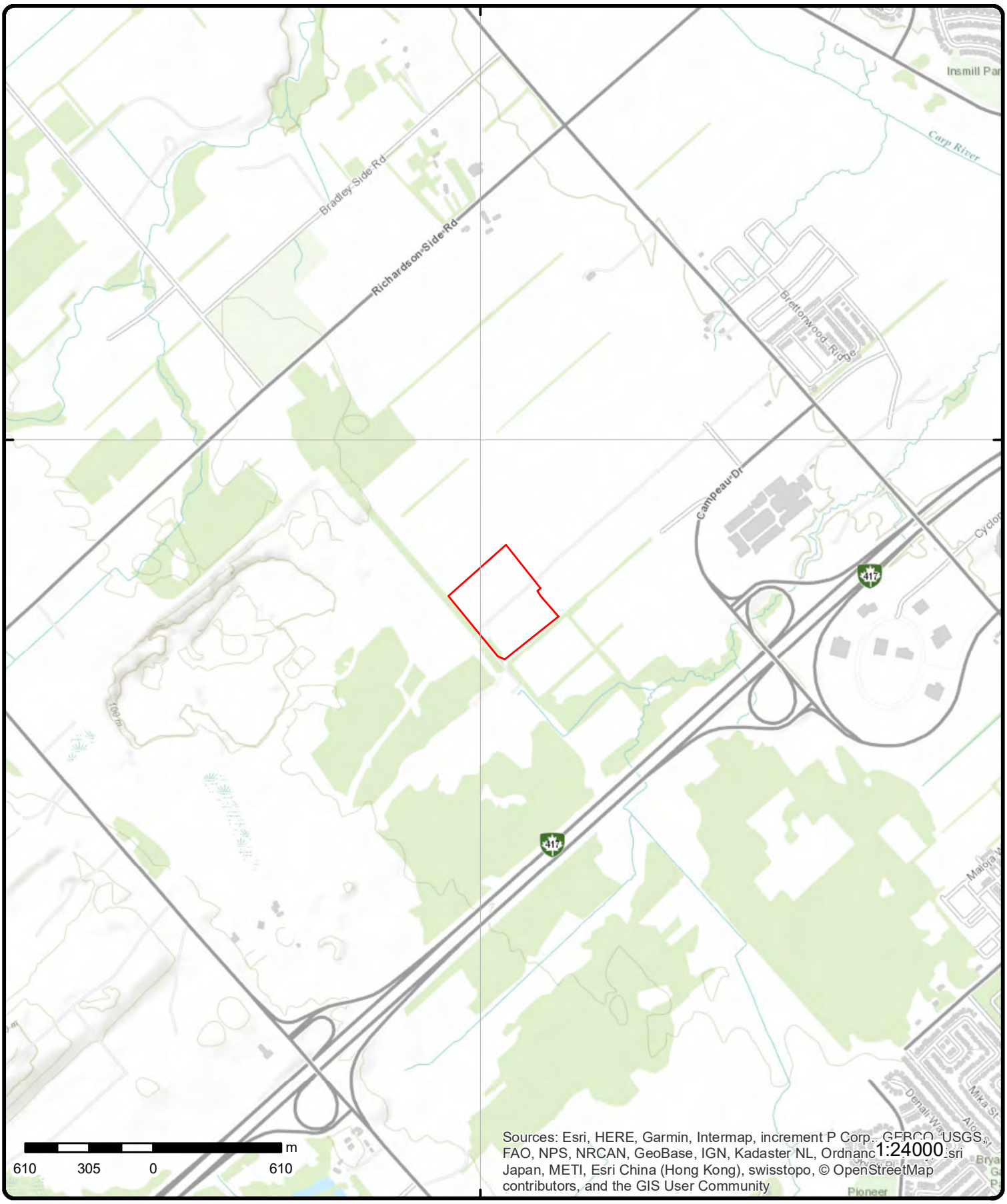
Aerial (2017)

Address: Palladium Dr, Ottawa, ON

Source: ESRI World Imagery

Order No: 20190815063

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES



Topographic Map

Address: Palladium Dr, Ottawa, ON

Source: ESRI World Topographic Map

Order No: 20190815063

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	1 of 4	SSE/69.7	103.9 / 0.00	United Parcel Service Canada Ltd. 8825 Campeau Drive Ottawa CITY OF OTTAWA ON	EBR

EBR Registry No: 013-0086
Ministry Ref No: 3076-AJLLMP
Notice Type: Instrument Decision
Notice Stage: 859663635
Notice Date: June 08, 2017
Proposal Date: March 15, 2017
Decision Posted:
Posted By:
Company Name: United Parcel Service Canada Ltd.
Off Instrument Name:
Instrument Type: (EPA Part II.1-sewage) - Environmental Compliance Approval (project type: sewage)
Proponent Name:
Proponent Address: 1022 Champlain avenue, Burlington Ontario, Canada L7L 0C2
Site Address:
Location Other:
URL:

Year: 2017
Act 1:
Act 2:
Comment Period:
Section:
Site Location Map:

Site Location Details:

8825 Campeau Drive Ottawa CITY OF OTTAWA

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	2 of 4	SSE/69.7	103.9 / 0.00	United Parcel Service Canada Ltd. 8825 Campeau Dr Ottawa ON L7L 0C2	ECA

Approval No: 0955-ALZP8B
Approval Date: 2017-05-31
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name:
Approval Type: ECA-INDUSTRIAL SEWAGE WORKS
Project Type: INDUSTRIAL SEWAGE WORKS
Address: 8825 Campeau Dr
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/3076-AJLLMP-14.pdf

MOE District:
City:
Longitude:
Latitude:
Geometry X:
Geometry Y:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	3 of 4	SSE/69.7	103.9 / 0.00	United Parcel Service Canada Ltd. 8825 Campeau Drive Ottawa ON K2T 0N8	GEN

Generator No: ON3935434
Status: Registered
Approval Years: As of Dec 2018
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Detail(s)

Waste Class: 212 L
Waste Class Desc: Aliphatic solvents and residues

Waste Class: 213 I
Waste Class Desc: Petroleum distillates

Waste Class: 213 T
Waste Class Desc: Petroleum distillates

Waste Class: 252 L
Waste Class Desc: Waste crankcase oils and lubricants

Waste Class: 331 I
Waste Class Desc: Waste compressed gases including cylinders

---

1 | ***4 of 4*** | ***SSE/69.7*** | ***103.9 / 0.00*** | ***United Parcel Service Canada Ltd.***
8825 Campeau Drive
Ottawa ON K2T 0N8 | ***GEN***

Generator No: ON3935434
Status: Registered
Approval Years: As of Jul 2019
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 213 I
Waste Class Desc: Petroleum distillates

Waste Class: 252 L
Waste Class Desc: Waste crankcase oils and lubricants

Waste Class: 331 I
Waste Class Desc: Waste compressed gases including cylinders

Waste Class: 212 L
Waste Class Desc: Aliphatic solvents and residues

Waste Class: 213 T
Waste Class Desc: Petroleum distillates

---

2 | ***1 of 1*** | ***NE/200.8*** | ***101.8 / -2.08*** | ***Part of Lots 3 and 4 Concession 1 Blocks 26***
Ottawa ON | ***EHS***

Order No: 20181019048
Status: C
Report Type: RSC Report - Quote
Report Date: 25-OCT-18
Date Received: 19-OCT-18
Previous Site Name:
Lot/Building Size:
Additional Info Ordered: Fire Insur. Maps and/or Site Plans

Nearest Intersection:
Municipality:
Client Prov/State: ON
Search Radius (km): .3
X: -75.946378
Y: 45.297482

---

3 | ***1 of 1*** | ***NE/245.7*** | ***101.9 / -2.00*** | ***West Ottawa Land Holdings Inc.***
425 Huntmar Drive, City of Ottawa, Ontario CITY | ***PTTW***

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
				OF OTTAWA ON	

EBR Registry No: 012-3736
Ministry Ref No: 1437-9UFSWW
Notice Type: Instrument Decision
Notice Stage:
Notice Date: May 27, 2015
Proposal Date: March 12, 2015
Decision Posted:
Posted By:
Company Name: West Ottawa Land Holdings Inc.
Off Instrument Name:
Instrument Type: (OWRA s. 34) - Permit to Take Water
Proponent Name:
Proponent Address: 225 Metcalfe Street , Suite 708, Ottawa Ontario, Canada K2P 1P9
Site Address:
Location Other:
URL:

Year: 2015
Act 1:
Act 2:
Comment Period:
Section:
Site Location Map:

Site Location Details:

425 Huntmar Drive, City of Ottawa, Ontario CITY OF OTTAWA

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4 | **1 of 3** | **ESE/280.9** | **103.9 / 0.00** | **West Ottawa Land Holdings Inc., and Cabela's Retail Canada Inc.**
3001 Palladium Dr Part of Lots 3 and 4 Concession 1
Ottawa ON K1V 8Y3 | **ECA**

Approval No: 2468-A2GQJS
Approval Date: 2015-09-28
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name: Mississippi Valley
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address: 3001 Palladium Dr Part of Lots 3 and 4 Concession 1
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/8771-9YLPQA-14.pdf

MOE District: Ottawa
City:
Longitude: -75.93982
Latitude: 45.295198
Geometry X:
Geometry Y:

---

4 | **2 of 3** | **ESE/280.9** | **103.9 / 0.00** | **West Ottawa Land Holdings Inc.**
3001 Palladium Dr Part of Lots 3 and 4 Concession 1
Ottawa ON K1V 8Y3 | **ECA**

Approval No: 9924-A2EQJJ
Approval Date: 2015-10-02
Status: Approved
Record Type: ECA
Link Source: IDS
SWP Area Name:
Approval Type: ECA-MUNICIPAL AND PRIVATE SEWAGE WORKS
Project Type: MUNICIPAL AND PRIVATE SEWAGE WORKS
Address: 3001 Palladium Dr Part of Lots 3 and 4 Concession 1
Full Address:
Full PDF Link: https://www.accessenvironment.ene.gov.on.ca/instruments/5526-9YFMFK-14.pdf

MOE District:
City:
Longitude:
Latitude:
Geometry X:
Geometry Y:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
4	3 of 3	ESE/280.9	103.9 / 0.00	3001 Palladium Dr Part of Lots 3 and 4 Concession 1 Ottawa ON NA	SPL

Ref No:	3417-A8QNK8	**Discharger Report:**	
Site No:	3996-9YFMEV	**Material Group:**	
Incident Dt:	2016/03/31	**Health/Env Conseq:**	
Year:		**Client Type:**	
Incident Cause:		**Sector Type:**	Miscellaneous Industrial
Incident Event:	Leak/Break	**Agency Involved:**	
Contaminant Code:	43	**Nearest Watercourse:**	
Contaminant Name:	SEDIMENT(SUSPENDED SOLIDS/ SAND/ SILT)	**Site Address:**	3001 Palladium Dr Part of Lots 3 and 4 Concession 1
Contaminant Limit 1:		**Site District Office:**	
Contam Limit Freq 1:		**Site Postal Code:**	NA
Contaminant UN No 1:		**Site Region:**	
Environment Impact:		**Site Municipality:**	Ottawa
Nature of Impact:		**Site Lot:**	
Receiving Medium:		**Site Conc:**	
Receiving Env:	Surface Water	**Northing:**	NA
MOE Response:	No	**Easting:**	NA
Dt MOE Arvl on Scn:		**Site Geo Ref Accu:**	NA
MOE Reported Dt:	2016/04/05	**Site Map Datum:**	NA
Dt Document Closed:		**SAC Action Class:**	Watercourse Spills
Incident Reason:	Weather Conditions	**Source Type:**	
Site Name:	3001 Palladium Drive		
Site County/District:			
Site Geo Ref Meth:	NA		
Incident Summary:	Target Construction: Sediment to Feedmill Creek		
Contaminant Qty:	0 other - see incident description		

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
5	1 of 2	ESE/300.0	102.9 / -1.00	Princess Auto Ltd. 3055 Palladium Drive Kanata ON K2K 0C1	GEN

Generator No:	ON5498052	**PO Box No:**	
Status:	Registered	**Country:**	Canada
Approval Years:	As of Dec 2018	**Choice of Contact:**	
Contam. Facility:		**Co Admin:**	
MHSW Facility:		**Phone No Admin:**	
SIC Code:			
SIC Description:			

Detail(s)

Waste Class:	145 I
Waste Class Desc:	Wastes from the use of pigments, coatings and paints
Waste Class:	146 T
Waste Class Desc:	Other specified inorganic sludges, slurries or solids
Waste Class:	148 A
Waste Class Desc:	Misc. wastes and inorganic chemicals
Waste Class:	212 I
Waste Class Desc:	Aliphatic solvents and residues
Waste Class:	242 T
Waste Class Desc:	Halogenated pesticides and herbicides
Waste Class:	252 L
Waste Class Desc:	Waste crankcase oils and lubricants

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Waste Class: 261 I
Waste Class Desc: Pharmaceuticals

Waste Class: 263 A
Waste Class Desc: Misc. waste organic chemicals

Waste Class: 263 L
Waste Class Desc: Misc. waste organic chemicals

Waste Class: 269 T
Waste Class Desc: Organic non-halogenated pesticide and herbicide wastes

Waste Class: 331 I
Waste Class Desc: Waste compressed gases including cylinders

Waste Class: 331 L
Waste Class Desc: Waste compressed gases including cylinders

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5 | **2 of 2** | **ESE/300.0** | **102.9 / -1.00** | **Princess Auto Ltd.**
3055 Palladium Drive
Kanata ON K2K 0C1 | **GEN**

Generator No: ON5498052
Status: Registered
Approval Years: As of Jul 2019
Contam. Facility:
MHSW Facility:
SIC Code:
SIC Description:

PO Box No:
Country: Canada
Choice of Contact:
Co Admin:
Phone No Admin:

Detail(s)

Waste Class: 263 A
Waste Class Desc: Misc. waste organic chemicals

Waste Class: 269 T
Waste Class Desc: Organic non-halogenated pesticide and herbicide wastes

Waste Class: 146 T
Waste Class Desc: Other specified inorganic sludges, slurries or solids

Waste Class: 145 I
Waste Class Desc: Wastes from the use of pigments, coatings and paints

Waste Class: 331 I
Waste Class Desc: Waste compressed gases including cylinders

Waste Class: 252 L
Waste Class Desc: Waste crankcase oils and lubricants

Waste Class: 148 A
Waste Class Desc: Misc. wastes and inorganic chemicals

Waste Class: 263 L
Waste Class Desc: Misc. waste organic chemicals

Waste Class: 331 L
Waste Class Desc: Waste compressed gases including cylinders

Waste Class: 212 I
Waste Class Desc: Aliphatic solvents and residues

Waste Class: 261 I
Waste Class Desc: Pharmaceuticals

Waste Class: 242 T
Waste Class Desc: Halogenated pesticides and herbicides

Unplottable Summary

Total: 14 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
AGR	368178 Ontario Limited	Lot 3, 4 & 5, Con II Lot 3, 4 & 5, Con II	HUNTLEY ON	
CA	City of Ottawa	Huntmar Dr Carp River Bridge to Old Carp Road, Kanata Ward and West Carleton War	Ottawa ON	
PTTW	Mattamy (Fairwinds) Limited	Area 1- Fairwinds Phase 1,2,3 North - North of Maple Grove Road and West of Huntmar Drive Address: Lot: 1, Concession: 1, Ottawa District Office: Ottawa	HUNTLEY ON	
WWIS		lot 4	ON	
WWIS		lot 3	ON	
WWIS		lot 4	ON	
WWIS		lot 4	ON	
WWIS		lot 4	ON	
WWIS		lot 3	ON	
WWIS		lot 4	ON	
WWIS		lot 3	ON	
WWIS		lot 3 con 2	ON	
WWIS		con 1	ON	
WWIS		lot 3	ON	

Unplottable Report

Site: ***368178 Ontario Limited***
Lot 3, 4 & 5, Con II Lot 3, 4 & 5, Con II HUNTLEY ON

Database: ***AGR***

ID:	4079	***Location Name:***	
Current Status:		***Licenced Area (ha):***	131.3
Status Date:		***Extraction Area:***	
Effective Date:		***Authority Type:***	
Approval Type:	CLASS A LICENCE > 20000 TONNES	***Section:***	
Operation Type:	BOTH PIT AND QUARRY	***Municipality:***	OTTAWA
Max Annual Tonnage:	1800000	***County:***	OTTAWA-CARLETON R
Unlimited Tonnage:	No	***District:***	Kemptville District

Site: ***City of Ottawa***
Huntmar Dr Carp River Bridge to Old Carp Road, Kanata Ward and West Carleton War Ottawa ON

Database: ***CA***

Certificate #:	0586-6T6PLK
Application Year:	2006
Issue Date:	9/1/2006
Approval Type:	Municipal and Private Sewage Works
Status:	Approved
Application Type:	
Client Name:	
Client Address:	
Client City:	
Client Postal Code:	
Project Description:	
Contaminants:	
Emission Control:	

Site: ***Mattamy (Fairwinds) Limited***
Area 1- Fairwinds Phase 1,2,3 North - North of Maple Grove Road and West of Huntmar Drive Address: Lot: 1, Concession: 1, Ottawa District Office: Ottawa HUNTLEY ON

Database: ***PTTW***

EBR Registry No:	011-3719	***Year:***	2011
Ministry Ref No:	3640-8HCJ8K	***Act 1:***	
Notice Type:	Instrument Decision	***Act 2:***	
Notice Stage:		***Comment Period:***	
Notice Date:	June 14, 2011	***Section:***	
Proposal Date:	May 30, 2011	***Site Location Map:***	
Decision Posted:			
Posted By:			
Company Name:	Mattamy (Fairwinds) Limited		
Off Instrument Name:			
Instrument Type:	(OWRA s. 34) - Permit to Take Water		
Proponent Name:			
Proponent Address:	123 Huntmar Drive, Kanata Ontario, Canada K2S 1B9		
Site Address:			
Location Other:			
URL:			

Site Location Details:

Area 1- Fairwinds Phase 1,2,3 North - North of Maple Grove Road and West of Huntmar Drive Address: Lot: 1, Concession: 1, Ottawa District Office: Ottawa HUNTLEY

Site:

lot 4 ON

Database:
WWIS

Well ID:	1525684	***Data Entry Status:***	
Construction Date:		***Data Src:***	1
Primary Water Use:	Domestic	***Date Received:***	10/21/1991
Sec. Water Use:		***Selected Flag:***	Yes
Final Well Status:	Water Supply	***Abandonment Rec:***	
Water Type:		***Contractor:***	3644
Casing Material:		***Form Version:***	1
Audit No:	92101	***Owner:***	
Tag:		***Street Name:***	
Construction Method:		***County:***	OTTAWA-CARLETON
Elevation (m):		***Municipality:***	HUNTLEY TOWNSHIP
Elevation Reliability:		***Site Info:***	
Depth to Bedrock:		***Lot:***	004
Well Depth:		***Concession:***	
Overburden/Bedrock:		***Concession Name:***	
Pump Rate:		***Easting NAD83:***	
Static Water Level:		***Northing NAD83:***	
Flowing (Y/N):		***Zone:***	
Flow Rate:		***UTM Reliability:***	
Clear/Cloudy:			

Bore Hole Information

Bore Hole ID:	10047419	***Elevation:***	
DP2BR:	8	***Elevrc:***	
Spatial Status:		***Zone:***	18
Code OB:	r	***East83:***	
Code OB Desc:	Bedrock	***North83:***	
Open Hole:		***Org CS:***	
Cluster Kind:		***UTMRC:***	9
Date Completed:	9/26/1991	***UTMRC Desc:***	unknown UTM
Remarks:		***Location Method:***	na
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	931062009
Layer:	2
Color:	1
General Color:	WHITE
Mat1:	15
Most Common Material:	LIMESTONE
Mat2:	
Other Materials:	
Mat3:	
Other Materials:	
Formation Top Depth:	8
Formation End Depth:	325
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931062008
Layer:	1
Color:	2

General Color: GREY
Mat1: 28
Most Common Material: SAND
Mat2: 11
Other Materials: GRAVEL
Mat3:
Other Materials:
Formation Top Depth: 0
Formation End Depth: 8
Formation End Depth UOM: ft

Method of Construction & Well Use

Method Construction ID:
Method Construction Code: 5
Method Construction: Air Percussion
Other Method Construction:

Pipe Information

Pipe ID: 10595989
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930083005
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 44
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930083006
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 325
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 991525684
Pump Set At:
Static Level: 30
Final Level After Pumping: 315
Recommended Pump Depth: 315
Pumping Rate: 1
Flowing Rate:
Recommended Pump Rate: 5
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 1

Pumping Duration HR: 1
Pumping Duration MIN: 0
Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934906436
Test Type:
Test Duration: 60
Test Level: 315
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934388718
Test Type:
Test Duration: 30
Test Level: 315
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934105059
Test Type:
Test Duration: 15
Test Level: 315
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934649256
Test Type:
Test Duration: 45
Test Level: 315
Test Level UOM: ft

Water Details

Water ID: 933484739
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 280
Water Found Depth UOM: ft

Site:
lot 3 ON

Database: ***WWIS***

Well ID: 1524835
Construction Date:
Primary Water Use: Domestic
Sec. Water Use:
Final Well Status: Water Supply
Water Type:
Casing Material:
Audit No: 49776
Tag:
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:

Data Entry Status:
Data Src: 1
Date Received: 9/17/1990
Selected Flag: Yes
Abandonment Rec:
Contractor: 3644
Form Version: 1
Owner:
Street Name:
County: OTTAWA-CARLETON
Municipality: HUNTLEY TOWNSHIP
Site Info:
Lot: 003
Concession:
Concession Name:
Easting NAD83:

Static Water Level:
Flowing (Y/N):
Flow Rate:
Clear/Cloudy:

Northing NAD83:
Zone:
UTM Reliability:

Bore Hole Information

Bore Hole ID: 10046581
DP2BR: 25
Spatial Status:
Code OB: r
Code OB Desc: Bedrock
Open Hole:
Cluster Kind:
Date Completed: 6/26/1990
Remarks:
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Elevation:
Elevrc:
Zone: 18
East83:
North83:
Org CS:
UTMRC: 9
UTMRC Desc: unknown UTM
Location Method: na

Overburden and Bedrock Materials Interval

Formation ID: 931059246
Layer: 2
Color: 2
General Color: GREY
Mat1: 14
Most Common Material: HARDPAN
Mat2:
Other Materials:
Mat3:
Other Materials:
Formation Top Depth: 15
Formation End Depth: 25
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931059245
Layer: 1
Color: 2
General Color: GREY
Mat1: 05
Most Common Material: CLAY
Mat2: 11
Other Materials: GRAVEL
Mat3:
Other Materials:
Formation Top Depth: 0
Formation End Depth: 15
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931059247
Layer: 3
Color: 2
General Color: GREY
Mat1: 15

Most Common Material: LIMESTONE
Mat2: 82
Other Materials: SHALY
Mat3:
Other Materials:
Formation Top Depth: 25
Formation End Depth: 203
Formation End Depth UOM: ft

Method of Construction & Well Use

Method Construction ID:
Method Construction Code: 5
Method Construction: Air Percussion
Other Method Construction:

Pipe Information

Pipe ID: 10595151
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930081551
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 203
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930081550
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 28
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 991524835
Pump Set At:
Static Level: 20
Final Level After Pumping: 195
Recommended Pump Depth: 195
Pumping Rate: 1
Flowing Rate:
Recommended Pump Rate: 5
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 2
Water State After Test: CLOUDY
Pumping Test Method: 1
Pumping Duration HR: 1
Pumping Duration MIN: 0

Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934903581
Test Type:
Test Duration: 60
Test Level: 195
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934385426
Test Type:
Test Duration: 30
Test Level: 195
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934655204
Test Type:
Test Duration: 45
Test Level: 195
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934110017
Test Type:
Test Duration: 15
Test Level: 195
Test Level UOM: ft

Water Details

Water ID: 933483597
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 140
Water Found Depth UOM: ft

Site:
lot 4 ON

Database: ***WWIS***

Well ID: 1520966
Construction Date:
Primary Water Use: Domestic
Sec. Water Use:
Final Well Status: Water Supply
Water Type:
Casing Material:
Audit No: 02024
Tag:
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:
Static Water Level:
Flowing (Y/N):

Data Entry Status:
Data Src: 1
Date Received: 11/19/1986
Selected Flag: Yes
Abandonment Rec:
Contractor: 5222
Form Version: 1
Owner:
Street Name:
County: OTTAWA-CARLETON
Municipality: HUNTLEY TOWNSHIP
Site Info:
Lot: 004
Concession:
Concession Name:
Easting NAD83:
Northing NAD83:
Zone:

Flow Rate:
Clear/Cloudy:

UTM Reliability:

Bore Hole Information

Bore Hole ID: 10042807
DP2BR:
Spatial Status:
Code OB: o
Code OB Desc: Overburden
Open Hole:
Cluster Kind:
Date Completed: 10/28/1986
Remarks:
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Elevation:
Elevrc:
Zone: 18
East83:
North83:
Org CS:
UTMRC: 9
UTMRC Desc: unknown UTM
Location Method: na

Overburden and Bedrock Materials Interval

Formation ID: 931046421
Layer: 1
Color:
General Color:
Mat1: 05
Most Common Material: CLAY
Mat2:
Other Materials:
Mat3:
Other Materials:
Formation Top Depth: 0
Formation End Depth: 35
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931046423
Layer: 3
Color: 6
General Color: BROWN
Mat1: 08
Most Common Material: FINE SAND
Mat2: 06
Other Materials: SILT
Mat3:
Other Materials:
Formation Top Depth: 60
Formation End Depth: 95
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931046425
Layer: 5
Color: 6
General Color: BROWN
Mat1: 10
Most Common Material: COARSE SAND
Mat2: 31

Other Materials: COARSE GRAVEL
Mat3:
Other Materials:
Formation Top Depth: 107
Formation End Depth: 115
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931046424
Layer: 4
Color: 6
General Color: BROWN
Mat1: 08
Most Common Material: FINE SAND
Mat2: 30
Other Materials: MEDIUM GRAVEL
Mat3: 74
Other Materials: LAYERED
Formation Top Depth: 95
Formation End Depth: 107
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931046422
Layer: 2
Color: 6
General Color: BROWN
Mat1: 08
Most Common Material: FINE SAND
Mat2: 05
Other Materials: CLAY
Mat3:
Other Materials:
Formation Top Depth: 35
Formation End Depth: 60
Formation End Depth UOM: ft

Annular Space/Abandonment Sealing Record

Plug ID: 933109293
Layer: 1
Plug From: 0
Plug To: 35
Plug Depth UOM: ft

Method of Construction & Well Use

Method Construction ID:
Method Construction Code: 4
Method Construction: Rotary (Air)
Other Method Construction:

Pipe Information

Pipe ID: 10591377
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID:	930074714
Layer:	1
Material:	1
Open Hole or Material:	STEEL
Depth From:	
Depth To:	115
Casing Diameter:	6
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Results of Well Yield Testing

Pump Test ID:	991520966
Pump Set At:	
Static Level:	30
Final Level After Pumping:	75
Recommended Pump Depth:	75
Pumping Rate:	40
Flowing Rate:	
Recommended Pump Rate:	10
Levels UOM:	ft
Rate UOM:	GPM
Water State After Test Code:	1
Water State After Test:	CLEAR
Pumping Test Method:	1
Pumping Duration HR:	3
Pumping Duration MIN:	0
Flowing:	N

Draw Down & Recovery

Pump Test Detail ID:	934650107
Test Type:	Draw Down
Test Duration:	45
Test Level:	75
Test Level UOM:	ft

Draw Down & Recovery

Pump Test Detail ID:	934907752
Test Type:	Draw Down
Test Duration:	60
Test Level:	75
Test Level UOM:	ft

Draw Down & Recovery

Pump Test Detail ID:	934389512
Test Type:	Draw Down
Test Duration:	30
Test Level:	75
Test Level UOM:	ft

Draw Down & Recovery

Pump Test Detail ID:	934104295
Test Type:	Draw Down
Test Duration:	15
Test Level:	75
Test Level UOM:	ft

Water Details

Water ID:	933478388
Layer:	1
Kind Code:	1
Kind:	FRESH
Water Found Depth:	115
Water Found Depth UOM:	ft

Site:

lot 4 ON

Database:
WWIS

Well ID:	1522755	***Data Entry Status:***	
Construction Date:		***Data Src:***	1
Primary Water Use:	Domestic	***Date Received:***	10/26/1988
Sec. Water Use:		***Selected Flag:***	Yes
Final Well Status:	Water Supply	***Abandonment Rec:***	
Water Type:		***Contractor:***	3644
Casing Material:		***Form Version:***	1
Audit No:	27038	***Owner:***	
Tag:		***Street Name:***	
Construction Method:		***County:***	OTTAWA-CARLETON
Elevation (m):		***Municipality:***	HUNTLEY TOWNSHIP
Elevation Reliability:		***Site Info:***	
Depth to Bedrock:		***Lot:***	004
Well Depth:		***Concession:***	
Overburden/Bedrock:		***Concession Name:***	
Pump Rate:		***Easting NAD83:***	
Static Water Level:		***Northing NAD83:***	
Flowing (Y/N):		***Zone:***	
Flow Rate:		***UTM Reliability:***	
Clear/Cloudy:			

Bore Hole Information

Bore Hole ID:	10044564	***Elevation:***	
DP2BR:	9	***Elevrc:***	
Spatial Status:		***Zone:***	18
Code OB:	r	***East83:***	
Code OB Desc:	Bedrock	***North83:***	
Open Hole:		***Org CS:***	
Cluster Kind:		***UTMRC:***	9
Date Completed:	7/26/1988	***UTMRC Desc:***	unknown UTM
Remarks:		***Location Method:***	na
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	931052481
Layer:	1
Color:	2
General Color:	GREY
Mat1:	05
Most Common Material:	CLAY
Mat2:	
Other Materials:	
Mat3:	
Other Materials:	
Formation Top Depth:	0
Formation End Depth:	9

Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931052482
Layer: 2
Color: 2
General Color: GREY
Mat1: 15
Most Common Material: LIMESTONE
Mat2: 82
Other Materials: SHALY
Mat3:
Other Materials:
Formation Top Depth: 9
Formation End Depth: 184
Formation End Depth UOM: ft

Method of Construction & Well Use

Method Construction ID:
Method Construction Code: 5
Method Construction: Air Percussion
Other Method Construction:

Pipe Information

Pipe ID: 10593134
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930077940
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 185
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930077939
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 22
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 991522755
Pump Set At:
Static Level: 5
Final Level After Pumping: 100

Recommended Pump Depth: 100
Pumping Rate: 20
Flowing Rate:
Recommended Pump Rate: 20
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 2
Water State After Test: CLOUDY
Pumping Test Method: 1
Pumping Duration HR: 1
Pumping Duration MIN: 0
Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934647904
Test Type:
Test Duration: 45
Test Level: 100
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934386920
Test Type:
Test Duration: 30
Test Level: 100
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934111497
Test Type:
Test Duration: 15
Test Level: 100
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934905113
Test Type:
Test Duration: 60
Test Level: 100
Test Level UOM: ft

Water Details

Water ID: 933480764
Layer: 1
Kind Code: 3
Kind: SULPHUR
Water Found Depth: 55
Water Found Depth UOM: ft

Water Details

Water ID: 933480765
Layer: 2
Kind Code: 1
Kind: FRESH
Water Found Depth: 180
Water Found Depth UOM: ft

Site:
lot 4 ON

Database:
WWIS

Well ID:	1525902	***Data Entry Status:***	
Construction Date:		***Data Src:***	1
Primary Water Use:	Domestic	***Date Received:***	12/6/1991
Sec. Water Use:		***Selected Flag:***	Yes
Final Well Status:	Water Supply	***Abandonment Rec:***	
Water Type:		***Contractor:***	3644
Casing Material:		***Form Version:***	1
Audit No:	92125	***Owner:***	
Tag:		***Street Name:***	
Construction Method:		***County:***	OTTAWA-CARLETON
Elevation (m):		***Municipality:***	HUNTLEY TOWNSHIP
Elevation Reliability:		***Site Info:***	
Depth to Bedrock:		***Lot:***	004
Well Depth:		***Concession:***	
Overburden/Bedrock:		***Concession Name:***	
Pump Rate:		***Easting NAD83:***	
Static Water Level:		***Northing NAD83:***	
Flowing (Y/N):		***Zone:***	
Flow Rate:		***UTM Reliability:***	
Clear/Cloudy:			

Bore Hole Information

Bore Hole ID:	10047637	***Elevation:***	
DP2BR:	8	***Elevrc:***	
Spatial Status:		***Zone:***	18
Code OB:	r	***East83:***	
Code OB Desc:	Bedrock	***North83:***	
Open Hole:		***Org CS:***	
Cluster Kind:		***UTMRC:***	9
Date Completed:	10/7/1991	***UTMRC Desc:***	unknown UTM
Remarks:		***Location Method:***	na
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	931062624
Layer:	1
Color:	2
General Color:	GREY
Mat1:	28
Most Common Material:	SAND
Mat2:	
Other Materials:	
Mat3:	
Other Materials:	
Formation Top Depth:	0
Formation End Depth:	8
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931062625
Layer:	2
Color:	1
General Color:	WHITE

Mat1: 15
Most Common Material: LIMESTONE
Mat2:
Other Materials:
Mat3:
Other Materials:
Formation Top Depth: 8
Formation End Depth: 103
Formation End Depth UOM: ft

Method of Construction & Well Use

Method Construction ID:
Method Construction Code: 5
Method Construction: Air Percussion
Other Method Construction:

Pipe Information

Pipe ID: 10596207
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930083430
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 103
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930083429
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 22
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 991525902
Pump Set At:
Static Level: 15
Final Level After Pumping: 95
Recommended Pump Depth: 95
Pumping Rate: 8
Flowing Rate:
Recommended Pump Rate: 8
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 2
Water State After Test: CLOUDY
Pumping Test Method: 1
Pumping Duration HR: 1

Pumping Duration MIN: 0
Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934105678
Test Type:
Test Duration: 15
Test Level: 95
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934649838
Test Type:
Test Duration: 45
Test Level: 95
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934389312
Test Type:
Test Duration: 30
Test Level: 95
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934907453
Test Type:
Test Duration: 60
Test Level: 95
Test Level UOM: ft

Water Details

Water ID: 933485032
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 30
Water Found Depth UOM: ft

Site:
lot 3 ON

Database: ***WWIS***

Well ID: 1527046
Construction Date:
Primary Water Use: Domestic
Sec. Water Use:
Final Well Status: Water Supply
Water Type:
Casing Material:
Audit No: 125379
Tag:
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:
Static Water Level:

Data Entry Status:
Data Src: 1
Date Received: 5/26/1993
Selected Flag: Yes
Abandonment Rec:
Contractor: 3142
Form Version: 1
Owner:
Street Name:
County: OTTAWA-CARLETON
Municipality: HUNTLEY TOWNSHIP
Site Info:
Lot: 003
Concession:
Concession Name:
Easting NAD83:
Northing NAD83:

Flowing (Y/N):
Flow Rate:
Clear/Cloudy:

Zone:
UTM Reliability:

Bore Hole Information

Bore Hole ID:	10048725	***Elevation:***	
DP2BR:	0	***Elevrc:***	
Spatial Status:		***Zone:***	18
Code OB:	h	***East83:***	
Code OB Desc:	Mixed in a Layer	***North83:***	
Open Hole:		***Org CS:***	
Cluster Kind:		***UTMRC:***	9
Date Completed:	5/20/1993	***UTMRC Desc:***	unknown UTM
Remarks:		***Location Method:***	na
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	931065871
Layer:	1
Color:	6
General Color:	BROWN
Mat1:	05
Most Common Material:	CLAY
Mat2:	26
Other Materials:	ROCK
Mat3:	79
Other Materials:	PACKED
Formation Top Depth:	0
Formation End Depth:	8
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931065874
Layer:	4
Color:	1
General Color:	WHITE
Mat1:	18
Most Common Material:	SANDSTONE
Mat2:	73
Other Materials:	HARD
Mat3:	
Other Materials:	
Formation Top Depth:	22
Formation End Depth:	120
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931065872
Layer:	2
Color:	3
General Color:	BLUE
Mat1:	05
Most Common Material:	CLAY

Mat2: 77
Other Materials: LOOSE
Mat3:
Other Materials:
Formation Top Depth: 8
Formation End Depth: 18
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931065873
Layer: 3
Color: 2
General Color: GREY
Mat1: 14
Most Common Material: HARDPAN
Mat2: 73
Other Materials: HARD
Mat3:
Other Materials:
Formation Top Depth: 18
Formation End Depth: 22
Formation End Depth UOM: ft

Annular Space/Abandonment Sealing Record

Plug ID: 933112164
Layer: 1
Plug From: 0
Plug To: 15
Plug Depth UOM: ft

Annular Space/Abandonment Sealing Record

Plug ID: 933112165
Layer: 2
Plug From: 15
Plug To: 25
Plug Depth UOM: ft

Method of Construction & Well Use

Method Construction ID:
Method Construction Code: 1
Method Construction: Cable Tool
Other Method Construction:

Pipe Information

Pipe ID: 10597295
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930085227
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE

Depth From:
Depth To: 120
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930085226
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 26
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 991527046
Pump Set At:
Static Level: 18
Final Level After Pumping: 60
Recommended Pump Depth: 80
Pumping Rate: 15
Flowing Rate:
Recommended Pump Rate: 9
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 2
Water State After Test: CLOUDY
Pumping Test Method: 2
Pumping Duration HR: 2
Pumping Duration MIN: 0
Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934902543
Test Type:
Test Duration: 60
Test Level: 60
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934653749
Test Type:
Test Duration: 45
Test Level: 60
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934109604
Test Type:
Test Duration: 15
Test Level: 60
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934393239

Test Type:
Test Duration: 30
Test Level: 60
Test Level UOM: ft

Water Details

Water ID: 933486534
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 64
Water Found Depth UOM: ft

Water Details

Water ID: 933486535
Layer: 2
Kind Code: 1
Kind: FRESH
Water Found Depth: 116
Water Found Depth UOM: ft

Site:
lot 4 ON

Database:
WWIS

Well ID: 1526955
Construction Date:
Primary Water Use: Domestic
Sec. Water Use:
Final Well Status: Water Supply
Water Type:
Casing Material:
Audit No: 52730
Tag:
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:
Static Water Level:
Flowing (Y/N):
Flow Rate:
Clear/Cloudy:

Data Entry Status:
Data Src: 1
Date Received: 2/8/1993
Selected Flag: Yes
Abandonment Rec:
Contractor: 3323
Form Version: 1
Owner:
Street Name:
County: OTTAWA-CARLETON
Municipality: HUNTLEY TOWNSHIP
Site Info:
Lot: 004
Concession:
Concession Name:
Easting NAD83:
Northing NAD83:
Zone:
UTM Reliability:

Bore Hole Information

Bore Hole ID: 10048642
DP2BR:
Spatial Status:
Code OB: o
Code OB Desc: Overburden
Open Hole:
Cluster Kind:
Date Completed: 6/11/1992
Remarks:
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Elevation:
Elevrc:
Zone: 18
East83:
North83:
Org CS:
UTMRC: 9
UTMRC Desc: unknown UTM
Location Method: na

Overburden and Bedrock Materials Interval

Formation ID: 931065640
Layer: 2
Color: 2
General Color: GREY
Mat1: 11
Most Common Material: GRAVEL
Mat2:
Other Materials:
Mat3:
Other Materials:
Formation Top Depth: 6
Formation End Depth: 240
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931065639
Layer: 1
Color: 6
General Color: BROWN
Mat1: 02
Most Common Material: TOPSOIL
Mat2: 81
Other Materials: SANDY
Mat3:
Other Materials:
Formation Top Depth: 0
Formation End Depth: 6
Formation End Depth UOM: ft

Annular Space/Abandonment Sealing Record

Plug ID: 933112090
Layer: 1
Plug From: 5
Plug To: 22
Plug Depth UOM: ft

Method of Construction & Well Use

Method Construction ID:
Method Construction Code: 5
Method Construction: Air Percussion
Other Method Construction:

Pipe Information

Pipe ID: 10597212
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930085109
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:

Depth To: 22
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 991526955
Pump Set At:
Static Level: 15
Final Level After Pumping: 230
Recommended Pump Depth: 40
Pumping Rate: 30
Flowing Rate:
Recommended Pump Rate: 30
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 1
Pumping Duration HR:
Pumping Duration MIN: 0
Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934910868
Test Type: Draw Down
Test Duration: 60
Test Level: 15
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934393166
Test Type: Draw Down
Test Duration: 30
Test Level: 30
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934653676
Test Type: Draw Down
Test Duration: 45
Test Level: 150
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934109531
Test Type: Draw Down
Test Duration: 15
Test Level: 45
Test Level UOM: ft

Water Details

Water ID: 933486424
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 235
Water Found Depth UOM: ft

Site:
lot 3 ON

Database:
WWIS

Well ID:	1524136	***Data Entry Status:***	
Construction Date:		***Data Src:***	1
Primary Water Use:	Domestic	***Date Received:***	1/26/1990
Sec. Water Use:		***Selected Flag:***	Yes
Final Well Status:	Water Supply	***Abandonment Rec:***	
Water Type:		***Contractor:***	3644
Casing Material:		***Form Version:***	1
Audit No:	56471	***Owner:***	
Tag:		***Street Name:***	
Construction Method:		***County:***	OTTAWA-CARLETON
Elevation (m):		***Municipality:***	HUNTLEY TOWNSHIP
Elevation Reliability:		***Site Info:***	
Depth to Bedrock:		***Lot:***	003
Well Depth:		***Concession:***	
Overburden/Bedrock:		***Concession Name:***	
Pump Rate:		***Easting NAD83:***	
Static Water Level:		***Northing NAD83:***	
Flowing (Y/N):		***Zone:***	
Flow Rate:		***UTM Reliability:***	
Clear/Cloudy:			

Bore Hole Information

Bore Hole ID:	10045908	***Elevation:***	
DP2BR:	7	***Elevrc:***	
Spatial Status:		***Zone:***	18
Code OB:	r	***East83:***	
Code OB Desc:	Bedrock	***North83:***	
Open Hole:		***Org CS:***	
Cluster Kind:		***UTMRC:***	9
Date Completed:	10/31/1989	***UTMRC Desc:***	unknown UTM
Remarks:		***Location Method:***	na
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	931056966
Layer:	2
Color:	2
General Color:	GREY
Mat1:	15
Most Common Material:	LIMESTONE
Mat2:	82
Other Materials:	SHALY
Mat3:	
Other Materials:	
Formation Top Depth:	7
Formation End Depth:	63
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931056965
Layer:	1
Color:	2

General Color: GREY
Mat1: 11
Most Common Material: GRAVEL
Mat2:
Other Materials:
Mat3:
Other Materials:
Formation Top Depth: 0
Formation End Depth: 7
Formation End Depth UOM: ft

Method of Construction & Well Use

Method Construction ID:
Method Construction Code: 5
Method Construction: Air Percussion
Other Method Construction:

Pipe Information

Pipe ID: 10594478
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930080370
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 63
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930080369
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 22
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 991524136
Pump Set At:
Static Level: 18
Final Level After Pumping: 40
Recommended Pump Depth: 40
Pumping Rate: 12
Flowing Rate:
Recommended Pump Rate: 10
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 2
Water State After Test: CLOUDY
Pumping Test Method: 1

Pumping Duration HR: 1
Pumping Duration MIN: 0
Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934910116
Test Type:
Test Duration: 60
Test Level: 40
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934652496
Test Type:
Test Duration: 45
Test Level: 40
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934107717
Test Type:
Test Duration: 15
Test Level: 40
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934391946
Test Type:
Test Duration: 30
Test Level: 40
Test Level UOM: ft

Water Details

Water ID: 933482679
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 55
Water Found Depth UOM: ft

Site:
lot 3 con 2 ON

Database: ***WWIS***

Well ID: 1303505
Construction Date:
Primary Water Use:
Sec. Water Use:
Final Well Status:
Water Type:
Casing Material:
Audit No:
Tag:
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:

Data Entry Status: Yes
Data Src:
Date Received: 2/27/1987
Selected Flag: Yes
Abandonment Rec:
Contractor: 1702
Form Version: 1
Owner:
Street Name:
County: OTTAWA-CARLETON
Municipality: HUNTLEY TOWNSHIP
Site Info:
Lot: 003
Concession: 02
Concession Name: FC W
Easting NAD83:

Static Water Level:
Flowing (Y/N):
Flow Rate:
Clear/Cloudy:

Northing NAD83:
Zone:
UTM Reliability:

Bore Hole Information

Bore Hole ID:	1006182672	***Elevation:***	
DP2BR:		***Elevrc:***	
Spatial Status:		***Zone:***	
Code OB:		***East83:***	
Code OB Desc:		***North83:***	
Open Hole:		***Org CS:***	UTM83
Cluster Kind:		***UTMRC:***	9
Date Completed:	2/26/1986	***UTMRC Desc:***	unknown UTM
Remarks:		***Location Method:***	wwr
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Site:
con 1 ON

Database:
WWIS

Well ID:	1514784	***Data Entry Status:***	
Construction Date:		***Data Src:***	1
Primary Water Use:	Domestic	***Date Received:***	7/23/1975
Sec. Water Use:		***Selected Flag:***	Yes
Final Well Status:	Water Supply	***Abandonment Rec:***	
Water Type:		***Contractor:***	3658
Casing Material:		***Form Version:***	1
Audit No:		***Owner:***	
Tag:		***Street Name:***	
Construction Method:		***County:***	OTTAWA-CARLETON
Elevation (m):		***Municipality:***	HUNTLEY TOWNSHIP
Elevation Reliability:		***Site Info:***	
Depth to Bedrock:		***Lot:***	
Well Depth:		***Concession:***	01
Overburden/Bedrock:		***Concession Name:***	CON
Pump Rate:		***Easting NAD83:***	
Static Water Level:		***Northing NAD83:***	
Flowing (Y/N):		***Zone:***	
Flow Rate:		***UTM Reliability:***	
Clear/Cloudy:			

Bore Hole Information

Bore Hole ID:	10036754	***Elevation:***	
DP2BR:	36	***Elevrc:***	
Spatial Status:		***Zone:***	18
Code OB:	r	***East83:***	
Code OB Desc:	Bedrock	***North83:***	
Open Hole:		***Org CS:***	
Cluster Kind:		***UTMRC:***	9
Date Completed:	5/27/1975	***UTMRC Desc:***	unknown UTM
Remarks:		***Location Method:***	na
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock

Materials Interval

Formation ID:	931027299
Layer:	1
Color:	6
General Color:	BROWN
Mat1:	28
Most Common Material:	SAND
Mat2:	13
Other Materials:	BOULDERS
Mat3:	77
Other Materials:	LOOSE
Formation Top Depth:	0
Formation End Depth:	36
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	931027300
Layer:	2
Color:	2
General Color:	GREY
Mat1:	15
Most Common Material:	LIMESTONE
Mat2:	78
Other Materials:	MEDIUM-GRAINED
Mat3:	73
Other Materials:	HARD
Formation Top Depth:	36
Formation End Depth:	105
Formation End Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	
Method Construction Code:	5
Method Construction:	Air Percussion
Other Method Construction:	

Pipe Information

Pipe ID:	10585324
Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930064971
Layer:	2
Material:	4
Open Hole or Material:	OPEN HOLE
Depth From:	
Depth To:	105
Casing Diameter:	6
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Construction Record - Casing

Casing ID:	930064970
Layer:	1
Material:	1

Open Hole or Material: STEEL
Depth From:
Depth To: 38
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 991514784
Pump Set At:
Static Level: 7
Final Level After Pumping: 30
Recommended Pump Depth:
Pumping Rate: 10
Flowing Rate:
Recommended Pump Rate:
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 1
Pumping Duration HR: 2
Pumping Duration MIN: 0
Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934100600
Test Type:
Test Duration: 15
Test Level: 30
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934644601
Test Type:
Test Duration: 45
Test Level: 30
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934902070
Test Type:
Test Duration: 60
Test Level: 30
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934383615
Test Type:
Test Duration: 30
Test Level: 30
Test Level UOM: ft

Water Details

Water ID: 933470745
Layer: 2
Kind Code: 1
Kind: FRESH

Water Found Depth: 100
Water Found Depth UOM: ft

Water Details

Water ID: 933470744
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 90
Water Found Depth UOM: ft

Site:
lot 3 ON

Database:
WWIS

Well ID: 1522519
Construction Date:
Primary Water Use: Domestic
Sec. Water Use:
Final Well Status: Water Supply
Water Type:
Casing Material:
Audit No: 32893
Tag:
Construction Method:
Elevation (m):
Elevation Reliability:
Depth to Bedrock:
Well Depth:
Overburden/Bedrock:
Pump Rate:
Static Water Level:
Flowing (Y/N):
Flow Rate:
Clear/Cloudy:

Data Entry Status:
Data Src: 1
Date Received: 7/21/1988
Selected Flag: Yes
Abandonment Rec:
Contractor: 1558
Form Version: 1
Owner:
Street Name:
County: OTTAWA-CARLETON
Municipality: HUNTLEY TOWNSHIP
Site Info:
Lot: 003
Concession:
Concession Name:
Easting NAD83:
Northing NAD83:
Zone:
UTM Reliability:

Bore Hole Information

Bore Hole ID: 10044331
DP2BR: 4
Spatial Status:
Code OB: r
Code OB Desc: Bedrock
Open Hole:
Cluster Kind:
Date Completed: 6/12/1988
Remarks:
Elevrc Desc:
Location Source Date:
Improvement Location Source:
Improvement Location Method:
Source Revision Comment:
Supplier Comment:

Elevation:
Elevrc:
Zone: 18
East83:
North83:
Org CS:
UTMRC: 9
UTMRC Desc: unknown UTM
Location Method: na

Overburden and Bedrock Materials Interval

Formation ID: 931051736
Layer: 1
Color: 6
General Color: BROWN
Mat1: 28
Most Common Material: SAND
Mat2: 11
Other Materials: GRAVEL
Mat3: 01

Other Materials: FILL
Formation Top Depth: 0
Formation End Depth: 4
Formation End Depth UOM: ft

Overburden and Bedrock Materials Interval

Formation ID: 931051737
Layer: 2
Color: 2
General Color: GREY
Mat1: 15
Most Common Material: LIMESTONE
Mat2:
Other Materials:
Mat3:
Other Materials:
Formation Top Depth: 4
Formation End Depth: 150
Formation End Depth UOM: ft

Method of Construction & Well Use

Method Construction ID:
Method Construction Code: 5
Method Construction: Air Percussion
Other Method Construction:

Pipe Information

Pipe ID: 10592901
Casing No: 1
Comment:
Alt Name:

Construction Record - Casing

Casing ID: 930077537
Layer: 1
Material: 1
Open Hole or Material: STEEL
Depth From:
Depth To: 22
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Construction Record - Casing

Casing ID: 930077538
Layer: 2
Material: 4
Open Hole or Material: OPEN HOLE
Depth From:
Depth To: 150
Casing Diameter: 6
Casing Diameter UOM: inch
Casing Depth UOM: ft

Results of Well Yield Testing

Pump Test ID: 991522519

Pump Set At:
Static Level: 25
Final Level After Pumping: 100
Recommended Pump Depth: 125
Pumping Rate: 12
Flowing Rate:
Recommended Pump Rate: 5
Levels UOM: ft
Rate UOM: GPM
Water State After Test Code: 1
Water State After Test: CLEAR
Pumping Test Method: 1
Pumping Duration HR: 1
Pumping Duration MIN: 0
Flowing: N

Draw Down & Recovery

Pump Test Detail ID: 934655663
Test Type: Draw Down
Test Duration: 45
Test Level: 100
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934110437
Test Type: Draw Down
Test Duration: 15
Test Level: 100
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934904488
Test Type: Draw Down
Test Duration: 60
Test Level: 100
Test Level UOM: ft

Draw Down & Recovery

Pump Test Detail ID: 934385303
Test Type: Draw Down
Test Duration: 30
Test Level: 100
Test Level UOM: ft

Water Details

Water ID: 933480433
Layer: 1
Kind Code: 1
Kind: FRESH
Water Found Depth: 143
Water Found Depth UOM: ft

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ***Note:*** *Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Abandoned Aggregate Inventory: Provincial AAGR

The MAAP Program maintains a database of abandoned pits and quarries. Please note that the database is only referenced by lot and concession and city/town location. The database provides information regarding the location, type, size, land use, status and general comments.*

Government Publication Date: Sept 2002*

Aggregate Inventory: Provincial AGR

The Ontario Ministry of Natural Resources maintains a database of all active pits and quarries. The database provides information regarding the registered owner/operator, location name, operation type, approval type, and maximum annual tonnage.

Government Publication Date: Up to Sep 2018

Abandoned Mine Information System: Provincial AMIS

The Abandoned Mines Information System contains data on known abandoned and inactive mines located on both Crown and privately held lands. The information was provided by the Ministry of Northern Development and Mines (MNDM), with the following disclaimer: "the database provided has been compiled from various sources, and the Ministry of Northern Development and Mines makes no representation and takes no responsibility that such information is accurate, current or complete". Reported information includes official mine name, status, background information, mine start/end date, primary commodity, mine features, hazards and remediation.

Government Publication Date: 1800-Oct 2018

Anderson's Waste Disposal Sites: Private ANDR

The information provided in this database was collected by examining various historical documents which aimed to characterize the likely position of former waste disposal sites from 1860 to present. The research initiative behind the creation of this database was to identify those sites that are missing from the Ontario MOE Waste Disposal Site Inventory, as well as to provide revisions and corrections to the positions and descriptions of sites currently listed in the MOE inventory. In addition to historic waste disposal facilities, the database also identifies certain auto wreckers and scrap yards that have been extrapolated from documentary sources. Please note that the data is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1860s-Present

Automobile Wrecking & Supplies: Private AUWR

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 1999-Jan 31, 2019

Borehole: Provincial BORE

A borehole is the generalized term for any narrow shaft drilled in the ground, either vertically or horizontally. The information here includes geotechnical investigations or environmental site assessments, mineral exploration, or as a pilot hole for installing piers or underground utilities. Information is from many sources such as the Ministry of Transportation (MTO) boreholes from engineering reports and projects from the 1950 to 1990's in Southern Ontario. Boreholes from the Ontario Geological Survey (OGS) including The Urban Geology Analysis Information System (UGAIS) and the York Peel Durham Toronto (YPDT) database of the Conservation Authority Moraine Coalition. This database will include fields such as location, stratigraphy, depth, elevation, year drilled, etc. For all water well data or oil and gas well data for Ontario please refer to WWIS and OOGW.

Government Publication Date: 1875-Jul 2018

Certificates of Approval: Provincial CA

This database contains the following types of approvals: Air & Noise, Industrial Sewage, Municipal & Private Sewage, Waste Management Systems and Renewable Energy Approvals. The MOE in Ontario states that any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste, must have a Certificate of Approval before it can operate lawfully. Fields include approval number, business name, address, approval date, approval type and status. This database will no longer be updated, as CofA's have been replaced by either Environmental Activity and Sector Registry (EASR) or Environmental Compliance Approval (ECA). Please refer to those individual databases for any information after Oct.31, 2011.

Government Publication Date: 1985-Oct 30, 2011*

Dry Cleaning Facilities: Federal CDRY

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

Government Publication Date: Jan 2004-Dec 2017

Commercial Fuel Oil Tanks: Provincial CFOT

List of commercial underground fuel oil tanks made available by the Fuels Safety Program of the Technical Standards & Safety Authority (TSSA). Ontario Regulation 213/01 of the Technical Standards and Safety Act (2000) requires that all underground tanks be registered with the TSSA. Note: the Fuels Safety Division does not register waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of commercial fuel tanks in the province. The TSSA updates information in its system on an ongoing basis; this listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

Chemical Register: Private CHEM

This database includes information from both a one time study conducted in 1992 and private source and is a listing of facilities that manufacture or distribute chemicals. The production of these chemical substances may involve one or more chemical reactions and/or chemical separation processes (i.e. fractionation, solvent extraction, crystallization, etc.).

Government Publication Date: 1999-Jan 31, 2019

Compressed Natural Gas Stations: Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 2012 - Mar 2019

Inventory of Coal Gasification Plants and Coal Tar Sites: Provincial COAL

This inventory includes both the "Inventory of Coal Gasification Plant Waste Sites in Ontario-April 1987" and the Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars in Ontario-November 1988) collected by the MOE. It identifies industrial sites that produced and continue to produce or use coal tar and other related tars. Detailed information is available and includes: facility type, size, land use, information on adjoining properties, soil condition, site operators/occupants, site description, potential environmental impacts and historic maps available. This was a one-time inventory.*

Government Publication Date: Apr 1987 and Nov 1988*

Compliance and Convictions: Provincial CONV

This database summarizes the fines and convictions handed down by the Ontario courts beginning in 1989. Companies and individuals named here have been found guilty of environmental offenses in Ontario courts of law.

Government Publication Date: 1989-Jul 2019

Certificates of Property Use: Provincial CPU

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all CPU's on the registry such as (EPA s. 168.6) - Certificate of Property Use.

Government Publication Date: 1994-Jul 31, 2019

Drill Hole Database: Provincial DRL

The Ontario Drill Hole Database contains information on more than 113,000 percussion, overburden, sonic and diamond drill holes from assessment files on record with the department of Mines and Minerals. Please note that limited data is available for southern Ontario, as it was the last area to be completed. The database was created when surveys submitted to the Ministry were converted in the Assessment File Research Image Database (AFRI) project. However, the degree of accuracy (coordinates) as to the exact location of drill holes is dependent upon the source document submitted to the MNDM. Levels of accuracy used to locate holes are: centering on the mining claim; a sketch of the mining claim; a 1:50,000 map; a detailed company map; or from submitted a "Report of Work".

Government Publication Date: 1886 - Oct 2018

Environmental Activity and Sector Registry: Provincial EASR

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. The EASR allows businesses to register certain activities with the ministry, rather than apply for an approval. The registry is available for common systems and processes, to which preset rules of operation can be applied. The EASR is currently available for: heating systems, standby power systems and automotive refinishing. Businesses whose activities aren't subject to the EASR may apply for an ECA (Environmental Compliance Approval), Please see our ECA database.

Government Publication Date: Oct 2011-Jul 30, 2019

Environmental Registry: Provincial EBR

The Environmental Registry lists proposals, decisions and exceptions regarding policies, Acts, instruments, or regulations that could significantly affect the environment. Through the Registry, thirteen provincial ministries notify the public of upcoming proposals and invite their comments. For example, if a local business is requesting a permit, license, or certificate of approval to release substances into the air or water; these are notified on the registry. Data includes: Approval for discharge into the natural environment other than water (i.e. Air) - EPA s. 9, Approval for sewage works - OWRA s. 53(1), and EPA s. 27 - Approval for a waste disposal site. For information regarding Permit to Take Water (PTTW), Certificate of Property Use (CPU) and (ORD) Orders please refer to those individual databases.

Government Publication Date: 1994-Jul 31, 2019

Environmental Compliance Approval: Provincial ECA

On October 31, 2011, a smarter, faster environmental approvals system came into effect in Ontario. In the past, a business had to apply for multiple approvals (known as certificates of approval) for individual processes and pieces of equipment. Today, a business either registers itself, or applies for a single approval, depending on the types of activities it conducts. Businesses whose activities aren't subject to the EASR may apply for an ECA. A single ECA addresses all of a business's emissions, discharges and wastes. Separate approvals for air, noise and waste are no longer required. This database will also include Renewable Energy Approvals. For certificates of approval prior to Nov 1st, 2011, please refer to the CA database. For all Waste Disposal Sites please refer to the WDS database.

Government Publication Date: Oct 2011-Jul 30, 2019

Environmental Effects Monitoring: Federal EEM

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Government Publication Date: 1992-2007*

ERIS Historical Searches: Private EHS

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Apr 30, 2019

Environmental Issues Inventory System: Federal EIIS

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Government Publication Date: 1992-2001*

Emergency Management Historical Event: Provincial EMHE

List of locations of historical occurrences of emergency events, including those assigned to the Ministry of Natural Resources by Order-In-Council (OIC) under the Emergency Management and Civil Protection Act, as well as events where MNR provided requested emergency response assistance. Many of these events will have involved community evacuations, significant structural loss, and/or involvement of MNR emergency response staff. These events fall into one of ten (10) type categories: Dam Failure; Drought / Low Water; Erosion; Flood; Forest Fire; Soil and Bedrock Instability; Petroleum Resource Center Event, EMO Requested Assistance, Continuity of Operations Event, Other Requested Assistance. EMHE record details are reproduced by ERIS under License with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2017.

Government Publication Date: Dec 31, 2016

Environmental Penalty Annual Report: Provincial EPAR

This database contains data from Ontario's annual environmental penalty report published by the Ministry of the Environment and Climate Change. These reports provide information on environmental penalties for land or water violations issued to companies in one of the nine industrial sectors covered by the Municipal Industrial Strategy for Abatement (MISA) regulations.

Government Publication Date: Jan 1, 2011 - Dec 31, 2018

List of TSSA Expired Facilities: Provincial EXP

List of facilities and tanks - for which there was once a registration - no longer registered with the Fuels Safety Program of the Technical Standards and Safety Authority (TSSA). Includes private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc. Tanks which have been removed from the ground are included in the expired facilities inventory held by the TSSA. Notes: the Fuels Safety Division did not register private fuel underground/aboveground storage tanks prior to January of 1990, or furnace oil tanks prior to May 1, 2002; nor does the Division register waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of expired tanks/tank facilities in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

Federal Convictions: Federal FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land: Federal FCS

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government.

Government Publication Date: Jun 2000-May 2019

Fisheries & Oceans Fuel Tanks: Federal FOFT

Fisheries & Oceans Canada maintains an inventory of aboveground & underground fuel storage tanks located on Fisheries & Oceans property or controlled by DFO. Our inventory provides information on the site name, location, tank owner, tank operator, facility type, storage tank location, tank contents & capacity, and date of tank installation.

Government Publication Date: 1964-Sep 2018

Fuel Storage Tank: Provincial FST

List of registered private and retail fuel storage tanks made available by the Fuels Safety Program of the Technical Standards & Safety Authority (TSSA). Ontario Regulation 213/01 of the Technical Standards and Safety Act (2000) requires that all underground tanks be registered with the TSSA. Notes: the Fuels Safety Division did not register private fuel underground/aboveground storage tanks prior to January of 1990, or furnace oil tanks prior to May 1, 2002; nor does the Division register waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of fuel storage tanks/tank facilities in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

Fuel Storage Tank - Historic: Provincial FSTH

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks. Public records of private fuel storage tanks are only available since the registration became effective in September 1989. This information is now collected by the Technical Standards and Safety Authority.

Government Publication Date: Pre-Jan 2010*

Ontario Regulation 347 Waste Generators Summary: Provincial GEN

Regulation 347 of the Ontario EPA defines a waste generation site as any site, equipment and/or operation involved in the production, collection, handling and/or storage of regulated wastes. A generator of regulated waste is required to register the waste generation site and each waste produced, collected, handled, or stored at the site. This database contains the registration number, company name and address of registered generators including the types of hazardous wastes generated. It includes data on waste generating facilities such as: drycleaners, waste treatment and disposal facilities, machine shops, electric power distribution etc. This information is a summary of all years from 1986 including the most currently available data. Some records may contain, within the company name, the phrase "See & Use..." followed by a series of letters and numbers. This occurs when one company is amalgamated with or taken over by another registered company. The number listed as "See & Use", refers to the new ownership and the other identification number refers to the original ownership. This phrase serves as a link between the 2 companies until operations have been fully transferred.

Government Publication Date: 1986-Jul 31, 2019

Greenhouse Gas Emissions from Large Facilities: Federal GHG

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO2 eq).

Government Publication Date: 2013-Dec 2017

TSSA Historic Incidents: Provincial HINC

List of historic incidences of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen recorded by the TSSA in their previous incident tracking system. The TSSA's Fuels Safety Program administers the Technical Standards & Safety Act 2000, providing fuel-related safety services associated with the safe transportation, storage, handling and use of fuels such as gasoline, diesel, propane, natural gas and hydrogen. Under this Act, the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of historical fuel spills and leaks in the province. This listing is a copy of the data captured at one moment in time and is hence limited by the record date provided here.

Government Publication Date: 2006-June 2009*

Indian & Northern Affairs Fuel Tanks: Federal IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

TSSA Incidents: Provincial INC

List of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen reported to the Spills Action Centre (SAC) and made available by the Technical Standards and Safety Authority (TSSA). Under the Technical Standards & Safety Act (2000), the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors, and equipment or appliances that use fuels. Includes incidents from fuel-related hazards such as spills, fires, and explosions. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of fuel-related leaks, spills, and incidents in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

Landfill Inventory Management Ontario: Provincial LIMO

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the ministry compiles new and updated information. The inventory will include small and large landfills. Additionally, each year the ministry will request operators of the larger landfills complete a landfill data collection form that will be used to update LIMO and will include the following information from the previous operating year. This will include additional information such as estimated amount of total waste received, landfill capacity, estimated total remaining landfill capacity, fill rates, engineering designs, reporting and monitoring details, size of location, service area, approved waste types, leachate of site treatment, contaminant attenuation zone and more. The small landfills will include information such as site owner, site location and certificate of approval # and status.

Government Publication Date: Feb 28, 2019

Canadian Mine Locations: Private MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Mineral Occurrences: Provincial MNR

In the early 70's, the Ministry of Northern Development and Mines created an inventory of approximately 19,000 mineral occurrences in Ontario, in regard to metallic and industrial minerals, as well as some information on building stones and aggregate deposits. Please note that the "Horizontal Positional Accuracy" is approximately +/- 200 m. Many reference elements for each record were derived from field sketches using pace or chain/tape measurements against claim posts or topographic features in the area. The primary limiting factor for the level of positional accuracy is the scale of the source material. The testing of horizontal accuracy of the source materials was accomplished by comparing the plan metric (X and Y) coordinates of that point with the coordinates of the same point as defined from a source of higher accuracy.

Government Publication Date: 1846-Jan 2019

National Analysis of Trends in Emergencies System (NATES): Federal NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

Non-Compliance Reports: Provincial NCPL

The Ministry of the Environment provides information about non-compliant discharges of contaminants to air and water that exceed legal allowable limits, from regulated industrial and municipal facilities. A reported non-compliance failure may be in regard to a Control Order, Certificate of Approval, Sectoral Regulation or specific regulation/act.

Government Publication Date: Dec 31, 2017

National Defense & Canadian Forces Fuel Tanks: Federal NDFT

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills: Federal NDSP

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Apr 2018

National Defence & Canadian Forces Waste Disposal Sites: Federal NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents: Federal NEBI

Locations of pipeline incidents from 2008 to present, made available by the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-Dec 31, 2018

National Energy Board Wells: Federal NEBP

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES): Federal NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003*

National PCB Inventory: Federal NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008*

National Pollutant Release Inventory: Federal NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-May 2017

Oil and Gas Wells: Private OGWE

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-May 31, 2019

Ontario Oil and Gas Wells: Provincial OOGW

In 1998, the MNR handed over to the Ontario Oil, Gas and Salt Resources Corporation, the responsibility of maintaining a database of oil and gas wells drilled in Ontario. The OGSR Library has over 20,000+ wells in their database. Information available for all wells in the ERIS database include well owner/operator, location, permit issue date, and well cap date, license No., status, depth and the primary target (rock unit) of the well being drilled. All geology/stratigraphy table information, plus all water table information is also provide for each well record.

Government Publication Date: 1800-Jun 2019

Inventory of PCB Storage Sites: Provincial OPCB

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of PCB storage sites within the province. Ontario Regulation 11/82 (Waste Management - PCB) and Regulation 347 (Generator Waste Management) under the Ontario EPA requires the registration of inactive PCB storage equipment and/or disposal sites of PCB waste with the Ontario Ministry of Environment. This database contains information on: 1) waste quantities; 2) major and minor sites storing liquid or solid waste; and 3) a waste storage inventory.

Government Publication Date: 1987-Oct 2004; 2012-Dec 2013

Orders: Provincial ORD

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all Orders on the registry such as (EPA s. 17) - Order for remedial work, (EPA s. 18) - Order for preventative measures, (EPA s. 43) - Order for removal of waste and restoration of site, (EPA s. 44) - Order for conformity with Act for waste disposal sites, (EPA s. 136) - Order for performance of environmental measures.

Government Publication Date: 1994-Jul 31, 2019

Canadian Pulp and Paper: Private PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009-2014

Parks Canada Fuel Storage Tanks: Federal PCFT

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Government Publication Date: 1920-Jan 2005*

Pesticide Register: Provincial PES

The Ontario Ministry of the Environment and Climate Change maintains a database of licensed operators and vendors of registered pesticides.

Government Publication Date: 1988-Mar 2019

TSSA Pipeline Incidents: Provincial PINC

List of pipeline incidents (strikes, leaks, spills) made available by the Technical Standards and Safety Authority (TSSA). Under the Technical Standards & Safety Act (2000), the TSSA regulates fuel suppliers, storage facilities, transport trucks, pipelines, contractors, and equipment or appliances that use fuels. Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of pipeline incidents in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

Private and Retail Fuel Storage Tanks: Provincial PRT

The Fuels Safety Branch of the Ontario Ministry of Consumer and Commercial Relations maintained a database of all registered private fuel storage tanks and licensed retail fuel outlets. This database includes an inventory of locations that have gasoline, oil, waste oil, natural gas and/or propane storage tanks on their property. The MCCR no longer collects this information. This information is now collected by the Technical Standards and Safety Authority (TSSA).

Government Publication Date: 1989-1996*

Permit to Take Water: Provincial PTTW

This is a subset taken from Ontario's Environmental Registry (EBR) database. It will include all PTTW's on the registry such as OWRA s. 34 - Permit to take water.

Government Publication Date: 1994-Jul 31, 2019

Ontario Regulation 347 Waste Receivers Summary: Provincial REC

Part V of the Ontario Environmental Protection Act ("EPA") regulates the disposal of regulated waste through an operating waste management system or a waste disposal site operated or used pursuant to the terms and conditions of a Certificate of Approval or a Provisional Certificate of Approval. Regulation 347 of the Ontario EPA defines a waste receiving site as any site or facility to which waste is transferred by a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents registered receivers of regulated wastes, identified by registration number, company name and address, and includes receivers of waste such as: landfills, incinerators, transfer stations, PCB storage sites, sludge farms and water pollution control plants. This information is a summary of all years from 1986 including the most currently available data.

Government Publication Date: 1986-2016

Record of Site Condition: Provincial RSC

The Record of Site Condition (RSC) is part of the Ministry of the Environment's Brownfields Environmental Site Registry. Protection from environmental cleanup orders for property owners is contingent upon documentation known as a record of site condition (RSC) being filed in the Environmental Site Registry. In order to file an RSC, the property must have been properly assessed and shown to meet the soil, sediment and groundwater standards appropriate for the use (such as residential) proposed to take place on the property. The Record of Site Condition Regulation (O. Reg. 153/04) details requirements related to site assessment and clean up.
RSCs filed after July 1, 2011 will also be included as part of the new (O.Reg. 511/09).

Government Publication Date: 1997-Sept 2001, Oct 2004-Jul 2019

Retail Fuel Storage Tanks: Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Jan 31, 2019

Scott's Manufacturing Directory: Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011*

Ontario Spills: Provincial SPL

This database identifies information such as location (approximate), type and quantity of contaminant, date of spill, environmental impact, cause, nature of impact, etc. Information from 1988-2002 was part of the ORIS (Occurrence Reporting Information System). The SAC (Spills Action Centre) handles all spills reported in Ontario. Regulations for spills in Ontario are part of the MOE's Environmental Protection Act, Part X.

Government Publication Date: 1988-Feb 2019

Wastewater Discharger Registration Database: Provincial SRDS

Information under this heading is combination of the following 2 programs. The Municipal/Industrial Strategy for Abatement (MISA) division of the Ontario Ministry of Environment maintained a database of all direct dischargers of toxic pollutants within nine sectors including: Electric Power Generation; Mining; Petroleum Refining; Organic Chemicals; Inorganic Chemicals; Pulp & Paper; Metal Casting; Iron & Steel; and Quarries. All sampling information is now collected and stored within the Sample Result Data Store (SRDS).

Government Publication Date: 1990-Dec 31, 2017

Anderson's Storage Tanks: Private TANK

The information provided in this database was collected by examining various historical documents, which identified the location of former storage tanks, containing substances such as fuel, water, gas, oil, and other various types of miscellaneous products. Information is available in regard to business operating at tank site, tank location, permit year, permit & installation type, no. of tanks installed & configuration and tank capacity. Data contained within this database pertains only to the city of Toronto and is not warranted to be complete, exhaustive or authoritative. The information was collected for research purposes only.

Government Publication Date: 1915-1953*

Transport Canada Fuel Storage Tanks: Federal TCFT

List of fuel storage tanks currently or previously owned or operated by Transport Canada. This inventory also includes tanks on The Pickering Lands, which refers to 7,530 hectares (18,600 acres) of land in Pickering, Markham, and Uxbridge owned by the Government of Canada since 1972; properties on this land has been leased by the government since 1975, and falls under the Site Management Policy of Transport Canada, but is administered by Public Works and Government Services Canada. This inventory provides information on the site name, location, tank age, capacity and fuel type.

Government Publication Date: 1970-Aug 2018

TSSA Variances for Abandonment of Underground Storage Tanks: Provincial VAR

List of variances granted for abandoned tanks. Under the Technical Standards and Safety Authority (TSSA) Liquid Fuels Handling Code and Fuel Oil Code, all underground storage tanks must be removed within two years of disuse. If removal of a tank is not feasible, an application may be sought for a variance from this code requirement.
Records are not verified for accuracy or completeness. This is not a comprehensive or complete inventory of tank variances in the province. The TSSA updates information in its system on an ongoing basis; this listing is hence limited by the record date provided here.

Government Publication Date: Feb 28, 2017

Waste Disposal Sites - MOE CA Inventory: Provincial WDS

The Ontario Ministry of Environment, Waste Management Branch, maintains an inventory of known open (active or inactive) and closed disposal sites in the Province of Ontario. Active sites maintain a Certificate of Approval, are approved to receive and are receiving waste. Inactive sites maintain Certificate(s) of Approval but are not receiving waste. Closed sites are not receiving waste. The data contained within this database was compiled from the MOE's Certificate of Approval database. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number. All new Environmental Compliance Approvals handed out after Oct 31, 2011 for Waste Disposal Sites will still be found in this database.

Government Publication Date: Oct 2011-Jul 30, 2019

Waste Disposal Sites - MOE 1991 Historical Approval Inventory: Provincial WDSH

In June 1991, the Ontario Ministry of Environment, Waste Management Branch, published the "June 1991 Waste Disposal Site Inventory", of all known active and closed waste disposal sites as of October 30st, 1990. For each "active" site as of October 31st 1990, information is provided on site location, site/CA number, waste type, site status and site classification. For each "closed" site as of October 31st 1990, information is provided on site location, site/CA number, closure date and site classification. Locations of these sites may be cross-referenced to the Anderson database described under ERIS's Private Source Database section, by the CA number.

Government Publication Date: Up to Oct 1990*

Water Well Information System: Provincial WWIS

This database describes locations and characteristics of water wells found within Ontario in accordance with Regulation 903. It includes such information as coordinates, construction date, well depth, primary and secondary use, pump rate, static water level, well status, etc. Also included are detailed stratigraphy information, approximate depth to bedrock and the approximate depth to the water table.

Government Publication Date: Feb 28, 2019

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

APPENDIX F

MECP FOI Search Results

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.**

Requester Data			**For Ministry Use Only**	
Name, Title, Company Name and Mailing Address of Requester Julie Crooks Pinchin Ltd. 1 Hines Road, Suite 200 Kanata, Ontario K2K 3C7 For questions or concerns please contact **Julie Crooks** at: jcrooks@pinchin.com			FOI Request No.	FOI Co-ordinator Review date
			Date Request Received Response Due Date	Fee Paid ~ ACCT ~ CHQ ☑ VISA ~ CASH
Telephone/Fax Nos. Tel: (613) 592-3387 ext 1833 Fax (613) 592-5897	Your Project/Reference No. 247211	Signature of Requester	☐ CNR ☐ ER ☐ NOR ☐ SWR ☐ WCR ☐ SAC ☐ IEB ☐ EAA ☐	

Request Parameters

Municipal Address / Lot, Concession, Geographic Township **(Municipal address essential for cities, towns or regions**)

Part of Lots 3 and 4 concession 1 Lots 37, 38 and 39 Ottawa, ON (one Site)

Present Property Owner(s) and Date(s) of Ownership

M-O Freight Works

Previous Property Owner(s) and Date(s) of Ownership

Present/Previous Tenant(s),(if applicable)

Search Parameters Files older than 2 years may require $60.00 retrieval cost. There is no guarantee that records responsive to your request will be located.	**Specify Year(s) Requested**
Environmental concerns (General correspondence, occurrence reports, abatement)	ALL
Orders	ALL
Spills	ALL
Investigations/prosecutions ▸ Owner/tenant information must be provided	**ALL**
Waste Generator number/classes	**ALL**

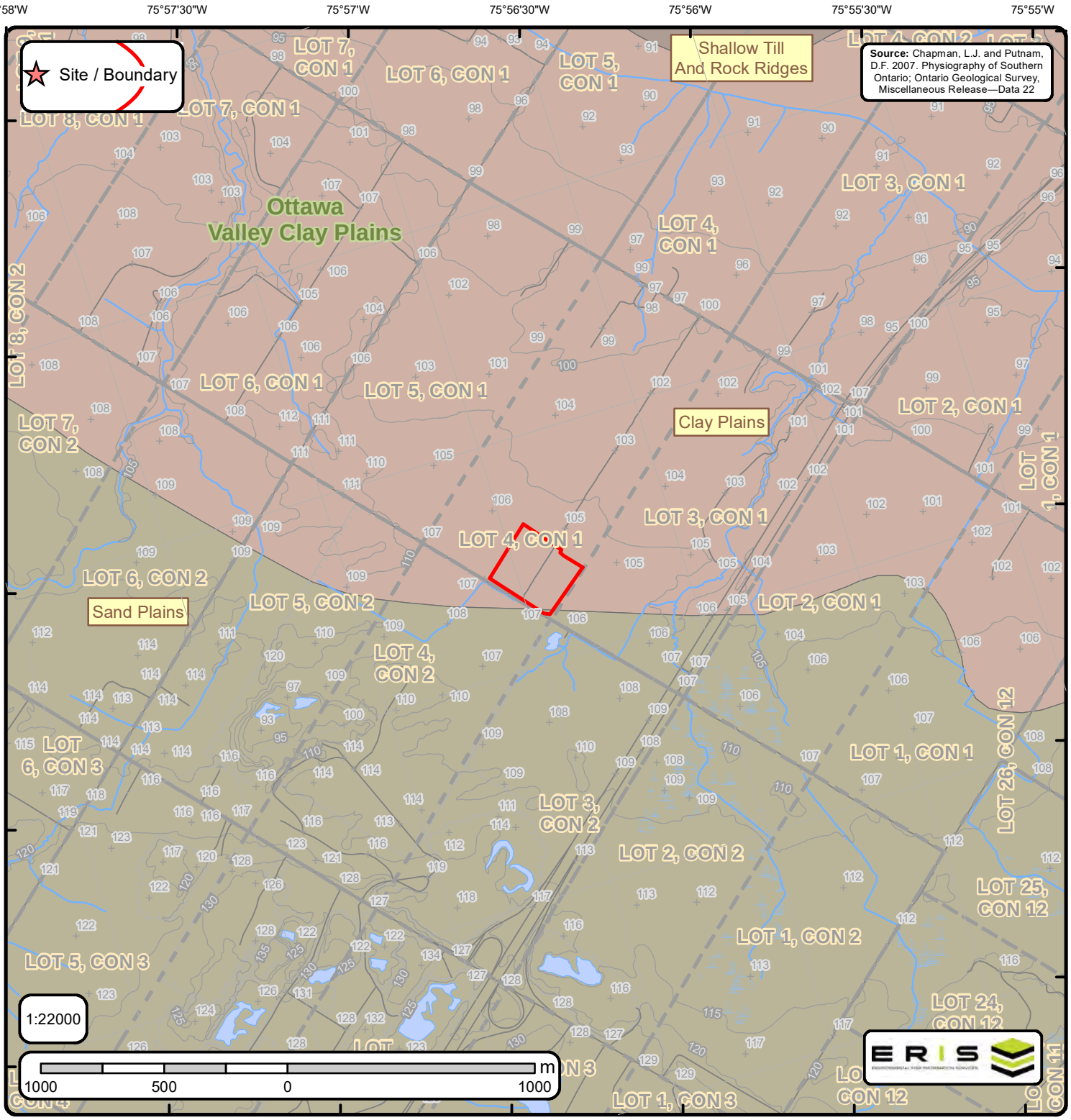
Certificates of Approval ▸ Proponent information must be provided

1985 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, hydrogeological reports, etc.

		SD	**Specify Year(s) Requested**
air – *emissions*			
water - *mains, treatment, ground level, standpipes & elevated storage, pumping stations (local & booster)*			
sewage - *sanitary, storm, treatment, stormwater, leachate & leachate treatment & sewage pump stations*			
waste water - *industrial discharge*			
waste sites - *disposal, landfill sites, transfer stations, processing sites, incinerator sites*			
waste systems	*- haulers: sewage, non-hazardous & hazardous waste*		
	- mobile waste processing units		
	- PCB destruction		
pesticides - *licenses*			

APPENDIX G

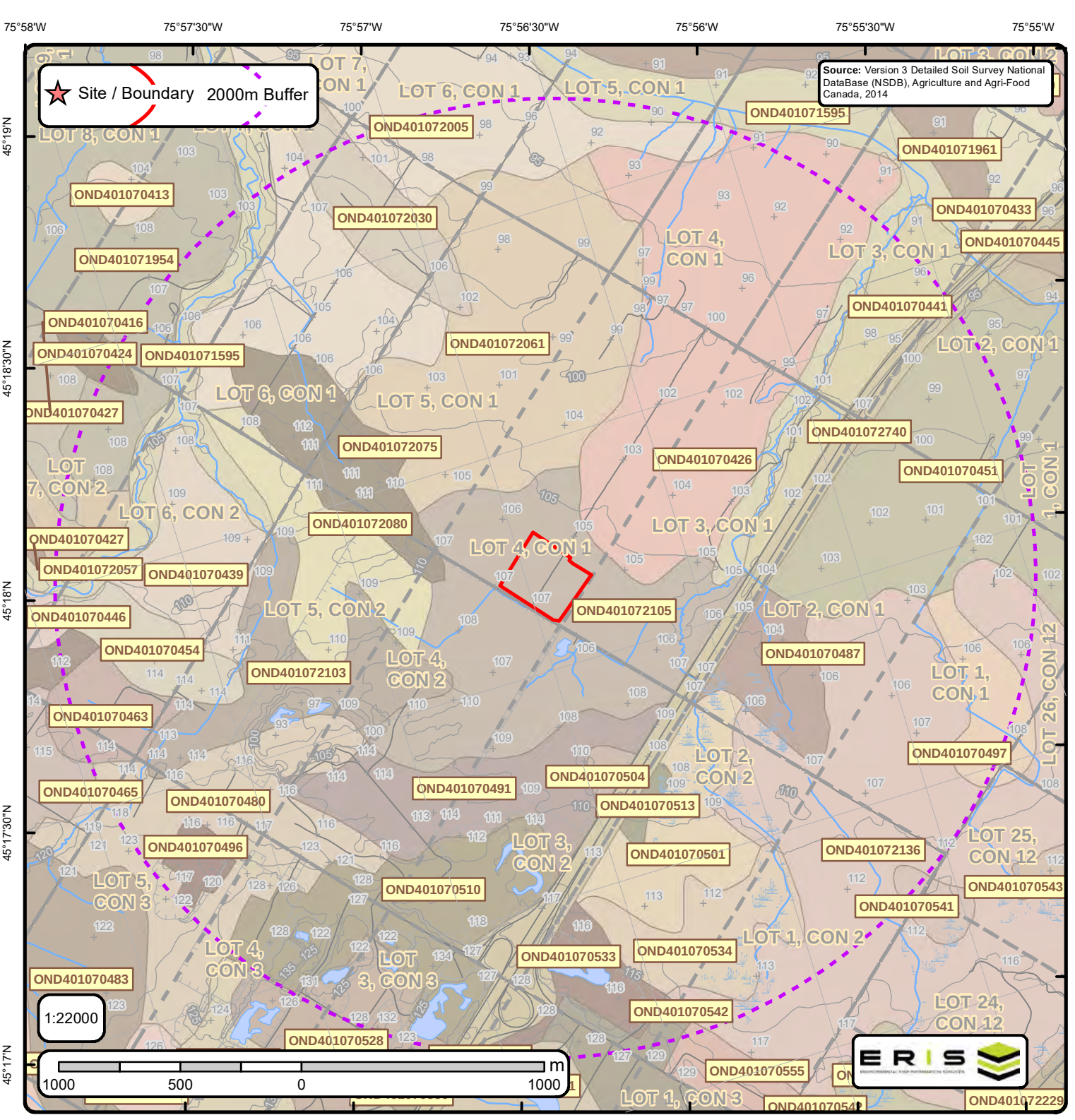
Maps



Physiography of Southern Ontario

Order No. 20190815063

- Spot Height
- Roads
- Railroads
- Contour Lines
- Streams
- Lots
- Pit or Quarry
- Airports
- Wetlands
- Waterbody
- Boulder Pavement
- Dissected Terrain
- Mud Flow Scars
- Sand Dunes
- escarpment
- shorecliff
- shorecliff (weakly developed)
- Physiography Regions
- Bare Rock Ridges And Shallow Till
- Beaches
- Bevelled Till Plains
- Clay Plains
- Drumlins
- Escarpments
- Eskers
- Kame Moraines
- Limestone Plains
- Peat And Muck
- Sand Plains
- Shale Plains
- Shallow Till And Rock Ridges
- Spillways
- Till Moraines
- Till Plains (Drumlinized)
- Till Plains (Undrumlinized)



Detailed Soil Survey (ON Soils)

Order No. 20190815063

- Spot Height
- Railroads
- Roads
- Contour Lines
- Streams
- Lots
- Pit or Quarry
- Airports
- Wetlands
- Waterbody

Soils Report

Soil Map Units Found within 2000 m of Palladium Dr

Order No. 20190815063

Soil ID: OND401070534

Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONBOK~~~~~N | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : Natural grazing only; no improvements feasible. | **First CLI Limitation Subclass** : Presence of consolidated bedrock within one metre of the soil surface | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-18 | **Horizon** : Ah | **Layer No** : 1 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 59 | **Total Silt(%)** : 32 | **Total Clay(%)** : 9 | **Organic Carbon(%)** : 5.3 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 1.969 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 18-48 | **Horizon** : Bmgjk | **Layer No** : 2 | **Very Fine Sand(%)** : 13 | **Total Sand(%)** : 84 | **Total Silt(%)** : 12 | **Total Clay(%)** : 4 | **Organic Carbon(%)** : 1.1 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 3.014 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 48-100 | **Horizon** : Ckg | **Layer No** : 3 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 89 | **Total Silt(%)** : 8 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 4.72 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070551

Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZOR~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Very Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-99 | **Horizon** : Oh | **Layer No** : 1 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : 20.0 | **pH in Calc Chloride** : 5.5 | **Saturated Hydraulic Conductivity(cm/h)** : 3.455 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 99-149 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 23 | **Total Silt(%)** : 17 | **Total Clay(%)** : 60 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 5.9 | **Saturated Hydraulic Conductivity(cm/h)** : 0.21 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070439

Component No : 1 | **Components(%)** : 60 | **Soil Name ID** : ONSPD~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Imperfectly | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-4 | **Horizon** : Ae | **Layer No** : 1 | **Very Fine Sand(%)** : 35 | **Total Sand(%)** : 67 | **Total Silt(%)** : 23 | **Total Clay(%)** : 10 | **Organic Carbon(%)** : 5.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.975 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 4-18 | **Horizon** : Bf | **Layer No** : 2 | **Very Fine Sand(%)** : 30 | **Total Sand(%)** : 89 | **Total Silt(%)** : 7 | **Total Clay(%)** : 4 | **Organic Carbon(%)** : 3.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 6.081 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 18-25 | **Horizon** : Bfgj | **Layer No** : 3 | **Very Fine Sand(%)** : 47 | **Total Sand(%)** : 90 | **Total Silt(%)** : 8 | **Total Clay(%)** : 2 | **Organic Carbon(%)** : 2.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 7.891 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-42 | **Horizon** : Bfgj | **Layer No** : 4 | **Very Fine Sand(%)** : 43 | **Total Sand(%)** : 92 | **Total Silt(%)** : 7 | **Total Clay(%)** : 1 | **Organic Carbon(%)** : 1.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 9.131 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 42-59 | **Horizon** : Bgj | **Layer No** : 5 | **Very Fine Sand(%)** : 55 | **Total Sand(%)** : 92 | **Total Silt(%)** : 8 | **Total Clay(%)** : 0 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 6.0 | **Saturated Hydraulic Conductivity(cm/h)** : 9.133 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 59-76 | **Horizon** : Bg | **Layer No** : 6 | **Very Fine Sand(%)** : 1 | **Total Sand(%)** : 98 | **Total Silt(%)** : 2 | **Total Clay(%)** : 0 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 9.139 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 76-100 | **Horizon** : Cg | **Layer No** : 7 | **Very Fine Sand(%)** : 66 | **Total Sand(%)** : 90 | **Total Silt(%)** : 10 | **Total Clay(%)** : 0 | **Organic Carbon(%)** : 0.2 | **pH in**

Soils Report

Soil Map Units Found within 2000 m of Palladium Dr

Soil ID: OND401070439

Component No : 2 | **Components(%)** : 40 | **Soil Name ID** : ONSPD~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : None | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : OND401070439-ONSPD~~~~~N | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : -6-0 | **Horizon** : LFH | **Layer No** : 1 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : 18.0 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 2.588 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 0-4 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 35 | **Total Sand(%)** : 67 | **Total Silt(%)** : 23 | **Total Clay(%)** : 10 | **Organic Carbon(%)** : 7.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.975 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 4-18 | **Horizon** : Bf | **Layer No** : 3 | **Very Fine Sand(%)** : 30 | **Total Sand(%)** : 89 | **Total Silt(%)** : 7 | **Total Clay(%)** : 4 | **Organic Carbon(%)** : 3.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 6.081 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 18-25 | **Horizon** : Bfgj | **Layer No** : 4 | **Very Fine Sand(%)** : 47 | **Total Sand(%)** : 90 | **Total Silt(%)** : 8 | **Total Clay(%)** : 2 | **Organic Carbon(%)** : 2.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 7.891 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-42 | **Horizon** : Bfgj | **Layer No** : 5 | **Very Fine Sand(%)** : 43 | **Total Sand(%)** : 92 | **Total Silt(%)** : 7 | **Total Clay(%)** : 1 | **Organic Carbon(%)** : 1.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 9.131 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 42-59 | **Horizon** : Bgj | **Layer No** : 6 | **Very Fine Sand(%)** : 55 | **Total Sand(%)** : 92 | **Total Silt(%)** : 8 | **Total Clay(%)** : 0 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 6.0 | **Saturated Hydraulic Conductivity(cm/h)** : 9.133 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 59-76 | **Horizon** : Bg | **Layer No** : 7 | **Very Fine Sand(%)** : 1 | **Total Sand(%)** : 98 | **Total Silt(%)** : 2 | **Total Clay(%)** : 0 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 9.139 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 76-100 | **Horizon** : Cg | **Layer No** : 8 | **Very Fine Sand(%)** : 66 | **Total**

Soil ID: OND401070555

Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Not Applicable | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND401070513

Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONFRM~~~~~N | **Surface Stoniness Class** : Very stony | **Slop Steepness(%)** : 7.0 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : Natural grazing only; no improvements feasible. | **First CLI Limitation Subclass** : Presence of consolidated bedrock within one metre of the soil surface | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-21 | **Horizon** : Ah | **Layer No** : 1 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 44 | **Total Silt(%)** : 44 | **Total Clay(%)** : 12 | **Organic Carbon(%)** : 3.7 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 1.969 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 21-38 | **Horizon** : Bm | **Layer No** : 2 | **Very Fine Sand(%)** : 13 | **Total Sand(%)** : 49 | **Total Silt(%)** : 45 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 3.1 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 3.014 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-50 | **Horizon** : C | **Layer No** : 3 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 57 | **Total Silt(%)** : 36 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 1.3 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 1.979 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 50-100 | **Horizon** : R | **Layer No** : 4 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : None | **pH in Calc Chloride** : None | **Saturated Hydraulic Conductivity(cm/h)** : None | **Electrical Conductivity(dS/m)** : None |

Soils Report

Soil Map Units Found within 2000 m of
Palladium Dr

Soil ID: OND401070513
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONOKA~~~~~A | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-12 | **Horizon** : Apk | **Layer No** : 1 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 70 | **Total Silt(%)** : 22 | **Total Clay(%)** : 8 | **Organic Carbon(%)** : 4.0 | **pH in Calc Chloride** : 6.9 | **Saturated Hydraulic Conductivity(cm/h)** : 5.409 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 12-30 | **Horizon** : Bmk | **Layer No** : 2 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 71 | **Total Silt(%)** : 20 | **Total Clay(%)** : 9 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 3.079 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 30-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 91 | **Total Silt(%)** : 6 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 6.109 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070528
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONKRS~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-20 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 10 | **Total Sand(%)** : 63 | **Total Silt(%)** : 31 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 3.537 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 20-32 | **Horizon** : Bmk | **Layer No** : 2 | **Very Fine Sand(%)** : 8 | **Total Sand(%)** : 68 | **Total Silt(%)** : 25 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 3.783 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 32-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 2 | **Total Sand(%)** : 92 | **Total Silt(%)** : 7 | **Total Clay(%)** : 1 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.5 | **Saturated Hydraulic Conductivity(cm/h)** : 7.817 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070510
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Not Applicable | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soils Report

Soil Map Units Found within 2000 m of
Palladium Dr

Soil ID: OND401072061
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONBDO~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-12 | **Horizon** : Apg | **Layer No** : 1 | **Very Fine Sand(%)** : 11 | **Total Sand(%)** : 14 | **Total Silt(%)** : 52 | **Total Clay(%)** : 34 | **Organic Carbon(%)** : 2.1 | **pH in Calc Chloride** : 5.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.223 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 12-38 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 7 | **Total Sand(%)** : 11 | **Total Silt(%)** : 46 | **Total Clay(%)** : 43 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 6.6 | **Saturated Hydraulic Conductivity(cm/h)** : 0.211 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-70 | **Horizon** : Bg | **Layer No** : 3 | **Very Fine Sand(%)** : 7 | **Total Sand(%)** : 11 | **Total Silt(%)** : 47 | **Total Clay(%)** : 42 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 6.9 | **Saturated Hydraulic Conductivity(cm/h)** : 0.211 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 70-105 | **Horizon** : Cg | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 8 | **Total Silt(%)** : 45 | **Total Clay(%)** : 47 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.197 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072005
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONOGO~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-20 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 34 | **Total Sand(%)** : 41 | **Total Silt(%)** : 42 | **Total Clay(%)** : 17 | **Organic Carbon(%)** : 1.5 | **pH in Calc Chloride** : 6.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.832 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 20-40 | **Horizon** : Bmg | **Layer No** : 2 | **Very Fine Sand(%)** : 33 | **Total Sand(%)** : 39 | **Total Silt(%)** : 40 | **Total Clay(%)** : 21 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 6.5 | **Saturated Hydraulic Conductivity(cm/h)** : 0.547 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 40-70 | **Horizon** : Bmg | **Layer No** : 3 | **Very Fine Sand(%)** : 28 | **Total Sand(%)** : 35 | **Total Silt(%)** : 42 | **Total Clay(%)** : 23 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 6.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.454 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 70-100 | **Horizon** : Cg | **Layer No** : 4 | **Very Fine Sand(%)** : 25 | **Total Sand(%)** : 31 | **Total Silt(%)** : 46 | **Total Clay(%)** : 23 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 6.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.324 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072005
Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONBIV~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-17 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 31 | **Total Sand(%)** : 53 | **Total Silt(%)** : 34 | **Total Clay(%)** : 13 | **Organic Carbon(%)** : 3.1 | **pH in Calc Chloride** : 6.8 | **Saturated Hydraulic Conductivity(cm/h)** : 2.052 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 17-33 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 18 | **Total Sand(%)** : 30 | **Total Silt(%)** : 39 | **Total Clay(%)** : 31 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.273 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 33-62 | **Horizon** : Bg | **Layer No** : 3 | **Very Fine Sand(%)** : 40 | **Total Sand(%)** : 52 | **Total Silt(%)** : 28 | **Total Clay(%)** : 20 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.683 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 62-84 | **Horizon** : Ckg | **Layer No** : 4 | **Very Fine Sand(%)** : 45 | **Total Sand(%)** : 62 | **Total Silt(%)** : 26 | **Total Clay(%)** : 12 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 1.597 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 84-100 | **Horizon** : Ckg | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 4 | **Total Silt(%)** : 54 | **Total Clay(%)** : 42 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 7.6 | **Saturated Hydraulic Conductivity(cm/h)** : 0.194 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072103
Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONMTD~~~~~A | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Imperfectly | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : Presence of surface stones > 15 cm diameter. | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-22 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 35 | **Total Sand(%)** : 47 | **Total Silt(%)** : 39 | **Total Clay(%)** : 14 | **Organic Carbon(%)** : 2.1 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 1.383 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 22-35 | **Horizon** : Bmgj | **Layer No** : 2 | **Very Fine Sand(%)** : 34 | **Total Sand(%)** : 49 | **Total Silt(%)** : 43 | **Total Clay(%)** : 8 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 7.6 | **Saturated Hydraulic Conductivity(cm/h)** : 2.361 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 35-100 | **Horizon** : Ckgj | **Layer No** : 3 | **Very Fine Sand(%)** : 12 | **Total Sand(%)** : 48 | **Total Silt(%)** : 44 | **Total Clay(%)** : 8 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 7.7 | **Saturated Hydraulic Conductivity(cm/h)** : 1.46 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072103
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONLYS~~~~~A | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-15 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 69 | **Total Silt(%)** : 20 | **Total Clay(%)** : 11 | **Organic Carbon(%)** : 2.3 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 3.066 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-23 | **Horizon** : Ap | **Layer No** : 2 | **Very Fine Sand(%)** : 8 | **Total Sand(%)** : 72 | **Total Silt(%)** : 22 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 1.3 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 4.797 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 23-35 | **Horizon** : Bmgj | **Layer No** : 3 | **Very Fine Sand(%)** : 11 | **Total Sand(%)** : 73 | **Total Silt(%)** : 20 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 7.5 | **Saturated Hydraulic Conductivity(cm/h)** : 3.985 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 35-100 | **Horizon** : Ckg | **Layer No** : 4 | **Very Fine Sand(%)** : 16 | **Total Sand(%)** : 59 | **Total Silt(%)** : 34 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 7.6 | **Saturated Hydraulic Conductivity(cm/h)** : 2.123 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401071954
Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : silt loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND401071954
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONBDOC~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-12 | **Horizon** : Apg | **Layer No** : 1 | **Very Fine Sand(%)** : 11 | **Total Sand(%)** : 39 | **Total Silt(%)** : 34 | **Total Clay(%)** : 27 | **Organic Carbon(%)** : 2.1 | **pH in Calc Chloride** : 5.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.223 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 12-38 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 7 | **Total Sand(%)** : 30 | **Total Silt(%)** : 30 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 6.6 | **Saturated Hydraulic Conductivity(cm/h)** : 0.211 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-70 | **Horizon** : Bg | **Layer No** : 3 | **Very Fine Sand(%)** : 7 | **Total Sand(%)** : 30 | **Total Silt(%)** : 30 | **Total Clay(%)** : 40 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 6.9 | **Saturated Hydraulic Conductivity(cm/h)** : 0.211 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 70-105 | **Horizon** : Cg | **Layer No** : 4 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 8 | **Total Silt(%)** : 45 | **Total Clay(%)** : 47 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.197 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070533
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Not Applicable | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND401072105
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOGO~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-20 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 34 | **Total Sand(%)** : 41 | **Total Silt(%)** : 42 | **Total Clay(%)** : 17 | **Organic Carbon(%)** : 1.5 | **pH in Calc Chloride** : 6.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.832 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 20-40 | **Horizon** : Bmg | **Layer No** : 2 | **Very Fine Sand(%)** : 33 | **Total Sand(%)** : 39 | **Total Silt(%)** : 40 | **Total Clay(%)** : 21 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 6.5 | **Saturated Hydraulic Conductivity(cm/h)** : 0.547 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 40-70 | **Horizon** : Bmg | **Layer No** : 3 | **Very Fine Sand(%)** : 28 | **Total Sand(%)** : 35 | **Total Silt(%)** : 42 | **Total Clay(%)** : 23 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 6.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.454 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 70-100 | **Horizon** : Cg | **Layer No** : 4 | **Very Fine Sand(%)** : 25 | **Total Sand(%)** : 31 | **Total Silt(%)** : 46 | **Total Clay(%)** : 23 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 6.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.324 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070487
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOGO~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-20 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 34 | **Total Sand(%)** : 41 | **Total Silt(%)** : 42 | **Total Clay(%)** : 17 | **Organic Carbon(%)** : 1.5 | **pH in Calc Chloride** : 6.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.832 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 20-40 | **Horizon** : Bmg | **Layer No** : 2 | **Very Fine Sand(%)** : 33 | **Total Sand(%)** : 39 | **Total Silt(%)** : 40 | **Total Clay(%)** : 21 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 6.5 | **Saturated Hydraulic Conductivity(cm/h)** : 0.547 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 40-70 | **Horizon** : Bmg | **Layer No** : 3 | **Very Fine Sand(%)** : 28 | **Total Sand(%)** : 35 | **Total Silt(%)** : 42 | **Total Clay(%)** : 23 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 6.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.454 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 70-100 | **Horizon** : Cg | **Layer No** : 4 | **Very Fine Sand(%)** : 25 | **Total Sand(%)** : 31 | **Total Silt(%)** : 46 | **Total Clay(%)** : 23 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 6.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.324 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070480
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONKRS~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-20 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 10 | **Total Sand(%)** : 63 | **Total Silt(%)** : 31 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 3.537 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 20-32 | **Horizon** : Bmk | **Layer No** : 2 | **Very Fine Sand(%)** : 8 | **Total Sand(%)** : 68 | **Total Silt(%)** : 25 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 3.783 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 32-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 2 | **Total Sand(%)** : 92 | **Total Silt(%)** : 7 | **Total Clay(%)** : 1 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.5 | **Saturated Hydraulic Conductivity(cm/h)** : 7.817 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070504
Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONFRM~~~~~N | **Surface Stoniness Class** : Very stony | **Slop Steepness(%)** : 7.0 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : Natural grazing only; no improvements feasible. | **First CLI Limitation Subclass** : Presence of consolidated bedrock within one metre of the soil surface | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-21 | **Horizon** : Ah | **Layer No** : 1 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 44 | **Total Silt(%)** : 44 | **Total Clay(%)** : 12 | **Organic Carbon(%)** : 3.7 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 1.969 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 21-38 | **Horizon** : Bm | **Layer No** : 2 | **Very Fine Sand(%)** : 13 | **Total Sand(%)** : 49 | **Total Silt(%)** : 45 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 3.1 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 3.014 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-50 | **Horizon** : C | **Layer No** : 3 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 57 | **Total Silt(%)** : 36 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 1.3 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 1.979 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 50-100 | **Horizon** : R | **Layer No** : 4 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : None | **pH in Calc Chloride** : None | **Saturated Hydraulic Conductivity(cm/h)** : None | **Electrical Conductivity(dS/m)** : None |

Soil ID: OND401070504
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONOKA~~~~~A | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-12 | **Horizon** : Apk | **Layer No** : 1 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 70 | **Total Silt(%)** : 22 | **Total Clay(%)** : 8 | **Organic Carbon(%)** : 4.0 | **pH in Calc Chloride** : 6.9 | **Saturated Hydraulic Conductivity(cm/h)** : 5.409 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 12-30 | **Horizon** : Bmk | **Layer No** : 2 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 71 | **Total Silt(%)** : 20 | **Total Clay(%)** : 9 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 3.079 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 30-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 91 | **Total Silt(%)** : 6 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 6.109 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072080
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONNGW~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : silt loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-25 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 43 | **Total Silt(%)** : 41 | **Total Clay(%)** : 16 | **Organic Carbon(%)** : 3.9 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 1.375 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-37 | **Horizon** : Bgj | **Layer No** : 2 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 45 | **Total Silt(%)** : 40 | **Total Clay(%)** : 15 | **Organic Carbon(%)** : 3.3 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.752 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 37-100 | **Horizon** : Cg | **Layer No** : 3 | **Very Fine Sand(%)** : 5 | **Total Sand(%)** : 20 | **Total Silt(%)** : 63 | **Total Clay(%)** : 17 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.29 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072080
Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONPPV~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Imperfectly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : silt loam | **Field Crops Capability** : No significant limitations in use for Crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-15 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 41 | **Total Sand(%)** : 52 | **Total Silt(%)** : 31 | **Total Clay(%)** : 17 | **Organic Carbon(%)** : 3.2 | **pH in Calc Chloride** : 7.5 | **Saturated Hydraulic Conductivity(cm/h)** : 1.455 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 15-24 | **Horizon** : Bmgj | **Layer No** : 2 | **Very Fine Sand(%)** : 38 | **Total Sand(%)** : 53 | **Total Silt(%)** : 39 | **Total Clay(%)** : 8 | **Organic Carbon(%)** : 1.6 | **pH in Calc Chloride** : 6.2 | **Saturated Hydraulic Conductivity(cm/h)** : 2.56 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 24-50 | **Horizon** : Bmgj | **Layer No** : 3 | **Very Fine Sand(%)** : 40 | **Total Sand(%)** : 73 | **Total Silt(%)** : 23 | **Total Clay(%)** : 4 | **Organic Carbon(%)** : 0.7 | **pH in Calc Chloride** : 5.8 | **Saturated Hydraulic Conductivity(cm/h)** : 5.837 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 50-54 | **Horizon** : Bmgj | **Layer No** : 4 | **Very Fine Sand(%)** : 35 | **Total Sand(%)** : 78 | **Total Silt(%)** : 19 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 5.8 | **Saturated Hydraulic Conductivity(cm/h)** : 6.904 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 54-63 | **Horizon** : Bg | **Layer No** : 5 | **Very Fine Sand(%)** : 57 | **Total Sand(%)** : 61 | **Total Silt(%)** : 32 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 5.8 | **Saturated Hydraulic Conductivity(cm/h)** : 2.989 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 63-86 | **Horizon** : Bg | **Layer No** : 6 | **Very Fine Sand(%)** : 28 | **Total Sand(%)** : 56 | **Total Silt(%)** : 33 | **Total Clay(%)** : 11 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 5.8 | **Saturated Hydraulic Conductivity(cm/h)** : 1.634 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 86-100 | **Horizon** : Cg | **Layer No** : 7 | **Very Fine Sand(%)** : 32 | **Total Sand(%)** : 37 | **Total Silt(%)** : 47 | **Total Clay(%)** : 16 | **Organic Carbon(%)** : 0.0 |

Soil ID: OND401070441
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONNGW~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : silt loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-25 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 43 | **Total Silt(%)** : 41 | **Total Clay(%)** : 16 | **Organic Carbon(%)** : 3.9 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 1.375 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-37 | **Horizon** : Bgj | **Layer No** : 2 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 45 | **Total Silt(%)** : 40 | **Total Clay(%)** : 15 | **Organic Carbon(%)** : 3.3 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.752 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 37-100 | **Horizon** : Cg | **Layer No** : 3 | **Very Fine Sand(%)** : 5 | **Total Sand(%)** : 20 | **Total Silt(%)** : 63 | **Total Clay(%)** : 17 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.29 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070446
Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONSPD~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Imperfectly | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : None | **Depth(cm)** : -6-0 | **Horizon** : LFH | **Layer No** : 1 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : 18.0 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 2.588 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 0-4 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 35 | **Total Sand(%)** : 67 | **Total Silt(%)** : 23 | **Total Clay(%)** : 10 | **Organic Carbon(%)** : 7.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.975 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 4-18 | **Horizon** : Bf | **Layer No** : 3 | **Very Fine Sand(%)** : 30 | **Total Sand(%)** : 89 | **Total Silt(%)** : 7 | **Total Clay(%)** : 4 | **Organic Carbon(%)** : 3.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 6.081 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 18-25 | **Horizon** : Bfgj | **Layer No** : 4 | **Very Fine Sand(%)** : 47 | **Total Sand(%)** : 90 | **Total Silt(%)** : 8 | **Total Clay(%)** : 2 | **Organic Carbon(%)** : 2.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 7.891 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-42 | **Horizon** : Bfgj | **Layer No** : 5 | **Very Fine Sand(%)** : 43 | **Total Sand(%)** : 92 | **Total Silt(%)** : 7 | **Total Clay(%)** : 1 | **Organic Carbon(%)** : 1.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 9.131 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 42-59 | **Horizon** : Bgj | **Layer No** : 6 | **Very Fine Sand(%)** : 55 | **Total Sand(%)** : 92 | **Total Silt(%)** : 8 | **Total Clay(%)** : 0 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 6.0 | **Saturated Hydraulic Conductivity(cm/h)** : 9.133 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 59-76 | **Horizon** : Bg | **Layer No** : 7 | **Very Fine Sand(%)** : 1 | **Total Sand(%)** : 98 | **Total Silt(%)** : 2 | **Total Clay(%)** : 0 | **Organic Carbon(%)** : 0.3 | **pH in**

Soil ID: OND401070446
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONMUA~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Imperfectly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-19 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 18 | **Total Sand(%)** : 80 | **Total Silt(%)** : 13 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 1.3 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 4.622 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 19-28 | **Horizon** : Bm | **Layer No** : 2 | **Very Fine Sand(%)** : 18 | **Total Sand(%)** : 80 | **Total Silt(%)** : 14 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 6.8 | **Saturated Hydraulic Conductivity(cm/h)** : 4.787 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 28-46 | **Horizon** : Bmgj | **Layer No** : 3 | **Very Fine Sand(%)** : 12 | **Total Sand(%)** : 81 | **Total Silt(%)** : 14 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 0.2 | **pH in Calc Chloride** : 6.5 | **Saturated Hydraulic Conductivity(cm/h)** : 5.474 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 46-66 | **Horizon** : Cgj | **Layer No** : 4 | **Very Fine Sand(%)** : 14 | **Total Sand(%)** : 24 | **Total Silt(%)** : 32 | **Total Clay(%)** : 44 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 5.8 | **Saturated Hydraulic Conductivity(cm/h)** : 0.216 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 66-100 | **Horizon** : Cgj | **Layer No** : 5 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 3 | **Total Silt(%)** : 26 | **Total Clay(%)** : 71 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 5.7 | **Saturated Hydraulic Conductivity(cm/h)** : 0.193 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070463
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONSPD~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Imperfectly | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : None | **Depth(cm)** : -6-0 | **Horizon** : LFH | **Layer No** : 1 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : 18.0 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 2.588 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 0-4 | **Horizon** : Ae | **Layer No** : 2 | **Very Fine Sand(%)** : 35 | **Total Sand(%)** : 67 | **Total Silt(%)** : 23 | **Total Clay(%)** : 10 | **Organic Carbon(%)** : 7.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 0.975 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 4-18 | **Horizon** : Bf | **Layer No** : 3 | **Very Fine Sand(%)** : 30 | **Total Sand(%)** : 89 | **Total Silt(%)** : 7 | **Total Clay(%)** : 4 | **Organic Carbon(%)** : 3.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 6.081 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 18-25 | **Horizon** : Bfgj | **Layer No** : 4 | **Very Fine Sand(%)** : 47 | **Total Sand(%)** : 90 | **Total Silt(%)** : 8 | **Total Clay(%)** : 2 | **Organic Carbon(%)** : 2.1 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 7.891 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-42 | **Horizon** : Bfgj | **Layer No** : 5 | **Very Fine Sand(%)** : 43 | **Total Sand(%)** : 92 | **Total Silt(%)** : 7 | **Total Clay(%)** : 1 | **Organic Carbon(%)** : 1.2 | **pH in Calc Chloride** : 5.0 | **Saturated Hydraulic Conductivity(cm/h)** : 9.131 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 42-59 | **Horizon** : Bgj | **Layer No** : 6 | **Very Fine Sand(%)** : 55 | **Total Sand(%)** : 92 | **Total Silt(%)** : 8 | **Total Clay(%)** : 0 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 6.0 | **Saturated Hydraulic Conductivity(cm/h)** : 9.133 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 59-76 | **Horizon** : Bg | **Layer No** : 7 | **Very Fine Sand(%)** : 1 | **Total Sand(%)** : 98 | **Total Silt(%)** : 2 | **Total Clay(%)** : 0 | **Organic Carbon(%)** : 0.3 | **pH in**

Soil ID: OND401070541
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZOR~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Very Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-99 | **Horizon** : Oh | **Layer No** : 1 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : 20.0 | **pH in Calc Chloride** : 5.5 | **Saturated Hydraulic Conductivity(cm/h)** : 3.455 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 99-149 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 23 | **Total Silt(%)** : 17 | **Total Clay(%)** : 60 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 5.9 | **Saturated Hydraulic Conductivity(cm/h)** : 0.21 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070542
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONKRS~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-20 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 10 | **Total Sand(%)** : 63 | **Total Silt(%)** : 31 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 3.537 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 20-32 | **Horizon** : Bmk | **Layer No** : 2 | **Very Fine Sand(%)** : 8 | **Total Sand(%)** : 68 | **Total Silt(%)** : 25 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 3.783 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 32-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 2 | **Total Sand(%)** : 92 | **Total Silt(%)** : 7 | **Total Clay(%)** : 1 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.5 | **Saturated Hydraulic Conductivity(cm/h)** : 7.817 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070465
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Not Applicable | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND401070547
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONKRS~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-20 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 10 | **Total Sand(%)** : 63 | **Total Silt(%)** : 31 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 3.537 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 20-32 | **Horizon** : Bmk | **Layer No** : 2 | **Very Fine Sand(%)** : 8 | **Total Sand(%)** : 68 | **Total Silt(%)** : 25 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 3.783 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 32-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 2 | **Total Sand(%)** : 92 | **Total Silt(%)** : 7 | **Total Clay(%)** : 1 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.5 | **Saturated Hydraulic Conductivity(cm/h)** : 7.817 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070427
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOKA~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-12 | **Horizon** : Apk | **Layer No** : 1 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 70 | **Total Silt(%)** : 22 | **Total Clay(%)** : 8 | **Organic Carbon(%)** : 4.0 | **pH in Calc Chloride** : 6.9 | **Saturated Hydraulic Conductivity(cm/h)** : 5.409 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 12-30 | **Horizon** : Bmk | **Layer No** : 2 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 71 | **Total Silt(%)** : 20 | **Total Clay(%)** : 9 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 3.079 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 30-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 91 | **Total Silt(%)** : 6 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 6.109 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070426
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONNGW~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : silt loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-25 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 43 | **Total Silt(%)** : 41 | **Total Clay(%)** : 16 | **Organic Carbon(%)** : 3.9 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 1.375 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-37 | **Horizon** : Bgj | **Layer No** : 2 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 45 | **Total Silt(%)** : 40 | **Total Clay(%)** : 15 | **Organic Carbon(%)** : 3.3 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.752 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 37-100 | **Horizon** : Cg | **Layer No** : 3 | **Very Fine Sand(%)** : 5 | **Total Sand(%)** : 20 | **Total Silt(%)** : 63 | **Total Clay(%)** : 17 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.29 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070424
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONGVI~~~~~A | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : Presence of surface stones > 15 cm diameter. | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-19 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 18 | **Total Sand(%)** : 59 | **Total Silt(%)** : 30 | **Total Clay(%)** : 11 | **Organic Carbon(%)** : 2.3 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 2.565 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 19-35 | **Horizon** : Ap | **Layer No** : 2 | **Very Fine Sand(%)** : 18 | **Total Sand(%)** : 62 | **Total Silt(%)** : 33 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 1.5 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 5.087 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 35-55 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 21 | **Total Sand(%)** : 63 | **Total Silt(%)** : 32 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 4.441 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 55-77 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 56 | **Total Silt(%)** : 26 | **Total Clay(%)** : 18 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.856 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 77-92 | **Horizon** : BC | **Layer No** : 5 | **Very Fine Sand(%)** : 20 | **Total Sand(%)** : 61 | **Total Silt(%)** : 28 | **Total Clay(%)** : 11 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 1.805 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 92-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 22 | **Total Sand(%)** : 65 | **Total Silt(%)** : 30 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.6 | **Saturated Hydraulic Conductivity(cm/h)** : 3.082 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070501
Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONVUD~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-18 | **Horizon** : Ah | **Layer No** : 1 | **Very Fine Sand(%)** : 46 | **Total Sand(%)** : 75 | **Total Silt(%)** : 16 | **Total Clay(%)** : 9 | **Organic Carbon(%)** : 1.9 | **pH in Calc Chloride** : 4.9 | **Saturated Hydraulic Conductivity(cm/h)** : 3.869 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 18-31 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 43 | **Total Sand(%)** : 82 | **Total Silt(%)** : 15 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.6 | **Saturated Hydraulic Conductivity(cm/h)** : 6.065 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 31-63 | **Horizon** : Bg | **Layer No** : 3 | **Very Fine Sand(%)** : 53 | **Total Sand(%)** : 90 | **Total Silt(%)** : 8 | **Total Clay(%)** : 2 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 5.7 | **Saturated Hydraulic Conductivity(cm/h)** : 7.127 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 63-78 | **Horizon** : Bg | **Layer No** : 4 | **Very Fine Sand(%)** : 44 | **Total Sand(%)** : 86 | **Total Silt(%)** : 7 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 6.3 | **Saturated Hydraulic Conductivity(cm/h)** : 3.942 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 78-100 | **Horizon** : Cg | **Layer No** : 5 | **Very Fine Sand(%)** : 39 | **Total Sand(%)** : 93 | **Total Silt(%)** : 4 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 6.1 | **Saturated Hydraulic Conductivity(cm/h)** : 6.172 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070501
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONZOR~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Very Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-99 | **Horizon** : Oh | **Layer No** : 1 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : 20.0 | **pH in Calc Chloride** : 5.5 | **Saturated Hydraulic Conductivity(cm/h)** : 3.455 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 99-149 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 23 | **Total Silt(%)** : 17 | **Total Clay(%)** : 60 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 5.9 | **Saturated Hydraulic Conductivity(cm/h)** : 0.21 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072030
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONGVI~~~~~A | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : Presence of surface stones > 15 cm diameter. | **Second CLI Limitation Subclass** : Presence of adverse Topography | **Depth(cm)** : 0-19 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 18 | **Total Sand(%)** : 59 | **Total Silt(%)** : 30 | **Total Clay(%)** : 11 | **Organic Carbon(%)** : 2.3 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 2.565 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 19-35 | **Horizon** : Ap | **Layer No** : 2 | **Very Fine Sand(%)** : 18 | **Total Sand(%)** : 62 | **Total Silt(%)** : 33 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 1.5 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 5.087 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 35-55 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 21 | **Total Sand(%)** : 63 | **Total Silt(%)** : 32 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 4.441 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 55-77 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 56 | **Total Silt(%)** : 26 | **Total Clay(%)** : 18 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.856 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 77-92 | **Horizon** : BC | **Layer No** : 5 | **Very Fine Sand(%)** : 20 | **Total Sand(%)** : 61 | **Total Silt(%)** : 28 | **Total Clay(%)** : 11 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 1.805 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 92-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 22 | **Total Sand(%)** : 65 | **Total Silt(%)** : 30 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.6 | **Saturated Hydraulic Conductivity(cm/h)** : 3.082 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401071595
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZER~~~~~N | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 37.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : No capability for agriculture. | **First CLI Limitation Subclass** : Presence of adverse Topography | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-100 | **Horizon** : Ah | **Layer No** : 1 | **Very Fine Sand(%)** : 5 | **Total Sand(%)** : 15 | **Total Silt(%)** : 60 | **Total Clay(%)** : 25 | **Organic Carbon(%)** : 3.9 | **pH in Calc Chloride** : 6.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.589 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072136
Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONFRM~~~~~N | **Surface Stoniness Class** : Very stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : Natural grazing only; no improvements feasible. | **First CLI Limitation Subclass** : Presence of consolidated bedrock within one metre of the soil surface | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-21 | **Horizon** : Ah | **Layer No** : 1 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 44 | **Total Silt(%)** : 44 | **Total Clay(%)** : 12 | **Organic Carbon(%)** : 3.7 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 1.969 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 21-38 | **Horizon** : Bm | **Layer No** : 2 | **Very Fine Sand(%)** : 13 | **Total Sand(%)** : 49 | **Total Silt(%)** : 45 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 3.1 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 3.014 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 38-50 | **Horizon** : C | **Layer No** : 3 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 57 | **Total Silt(%)** : 36 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 1.3 | **pH in Calc Chloride** : 7.0 | **Saturated Hydraulic Conductivity(cm/h)** : 1.979 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 50-100 | **Horizon** : R | **Layer No** : 4 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : None | **pH in Calc Chloride** : None | **Saturated Hydraulic Conductivity(cm/h)** : None | **Electrical Conductivity(dS/m)** : None |

Soil ID: OND401072136
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Very stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Imperfectly | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : Natural grazing only; no improvements feasible. | **First CLI Limitation Subclass** : Presence of consolidated bedrock within one metre of the soil surface | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND401070416
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZOR~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Very Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-99 | **Horizon** : Oh | **Layer No** : 1 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : 20.0 | **pH in Calc Chloride** : 5.5 | **Saturated Hydraulic Conductivity(cm/h)** : 3.455 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 99-149 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 23 | **Total Silt(%)** : 17 | **Total Clay(%)** : 60 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 5.9 | **Saturated Hydraulic Conductivity(cm/h)** : 0.21 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072075
Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONGVI~~~~~A | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils with moderate infiltration rates when completely wetted. Soils are sandy loam soils with moderately fine to moderately coarse textures. | **Soil Texture of A Horizon** : medium - moderately fine loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : Presence of surface stones > 15 cm diameter. | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-19 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 18 | **Total Sand(%)** : 59 | **Total Silt(%)** : 30 | **Total Clay(%)** : 11 | **Organic Carbon(%)** : 2.3 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 2.565 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 19-35 | **Horizon** : Ap | **Layer No** : 2 | **Very Fine Sand(%)** : 18 | **Total Sand(%)** : 62 | **Total Silt(%)** : 33 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 1.5 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 5.087 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 35-55 | **Horizon** : Ae | **Layer No** : 3 | **Very Fine Sand(%)** : 21 | **Total Sand(%)** : 63 | **Total Silt(%)** : 32 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 4.441 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 55-77 | **Horizon** : Bt | **Layer No** : 4 | **Very Fine Sand(%)** : 19 | **Total Sand(%)** : 56 | **Total Silt(%)** : 26 | **Total Clay(%)** : 18 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 7.1 | **Saturated Hydraulic Conductivity(cm/h)** : 0.856 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 77-92 | **Horizon** : BC | **Layer No** : 5 | **Very Fine Sand(%)** : 20 | **Total Sand(%)** : 61 | **Total Silt(%)** : 28 | **Total Clay(%)** : 11 | **Organic Carbon(%)** : 0.3 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 1.805 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 92-100 | **Horizon** : Ck | **Layer No** : 6 | **Very Fine Sand(%)** : 22 | **Total Sand(%)** : 65 | **Total Silt(%)** : 30 | **Total Clay(%)** : 5 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.6 | **Saturated Hydraulic Conductivity(cm/h)** : 3.082 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072075
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONOKA~~~~~A | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-12 | **Horizon** : Apk | **Layer No** : 1 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 70 | **Total Silt(%)** : 22 | **Total Clay(%)** : 8 | **Organic Carbon(%)** : 4.0 | **pH in Calc Chloride** : 6.9 | **Saturated Hydraulic Conductivity(cm/h)** : 5.409 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 12-30 | **Horizon** : Bmk | **Layer No** : 2 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 71 | **Total Silt(%)** : 20 | **Total Clay(%)** : 9 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 3.079 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 30-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 91 | **Total Silt(%)** : 6 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 6.109 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401072740
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Not Applicable | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND401070491
Component No : 2 | **Components(%)** : 30 | **Soil Name ID** : ONZOR~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Very Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-99 | **Horizon** : Oh | **Layer No** : 1 | **Very Fine Sand(%)** : -9 | **Total Sand(%)** : -9 | **Total Silt(%)** : -9 | **Total Clay(%)** : -9 | **Organic Carbon(%)** : 20.0 | **pH in Calc Chloride** : 5.5 | **Saturated Hydraulic Conductivity(cm/h)** : 3.455 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 99-149 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 0 | **Total Sand(%)** : 23 | **Total Silt(%)** : 17 | **Total Clay(%)** : 60 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 5.9 | **Saturated Hydraulic Conductivity(cm/h)** : 0.21 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070491
Component No : 1 | **Components(%)** : 70 | **Soil Name ID** : ONVUD~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-18 | **Horizon** : Ah | **Layer No** : 1 | **Very Fine Sand(%)** : 46 | **Total Sand(%)** : 75 | **Total Silt(%)** : 16 | **Total Clay(%)** : 9 | **Organic Carbon(%)** : 1.9 | **pH in Calc Chloride** : 4.9 | **Saturated Hydraulic Conductivity(cm/h)** : 3.869 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 18-31 | **Horizon** : Bg | **Layer No** : 2 | **Very Fine Sand(%)** : 43 | **Total Sand(%)** : 82 | **Total Silt(%)** : 15 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.4 | **pH in Calc Chloride** : 5.6 | **Saturated Hydraulic Conductivity(cm/h)** : 6.065 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 31-63 | **Horizon** : Bg | **Layer No** : 3 | **Very Fine Sand(%)** : 53 | **Total Sand(%)** : 90 | **Total Silt(%)** : 8 | **Total Clay(%)** : 2 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 5.7 | **Saturated Hydraulic Conductivity(cm/h)** : 7.127 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 63-78 | **Horizon** : Bg | **Layer No** : 4 | **Very Fine Sand(%)** : 44 | **Total Sand(%)** : 86 | **Total Silt(%)** : 7 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 6.3 | **Saturated Hydraulic Conductivity(cm/h)** : 3.942 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 78-100 | **Horizon** : Cg | **Layer No** : 5 | **Very Fine Sand(%)** : 39 | **Total Sand(%)** : 93 | **Total Silt(%)** : 4 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 6.1 | **Saturated Hydraulic Conductivity(cm/h)** : 6.172 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070496
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Not Applicable | **Slop Steepness(%)** : None | **Slop Length(m)** : -9 | **Drainage** : Not Applicable | **Hydrological Soil Groups** : None | **Soil Texture of A Horizon** : None | **Field Crops Capability** : None | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

Soil ID: OND401070497
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONZUN~~~~~N | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils with slow infiltration rates when thoroughly wetted and these soils typically are silty-loam soils with an impeding layer or soils with moderately fine to fine texture. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : moderately severe limitations on use for crops. | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Soil Name** : UNCLASSIFIED | **Water Table Charateristics** : Unspecified period | **Soil Drainage Class** : Not applicable | **Kind of Surface Material** : Unclassified | **Layer that Restricts Root Growth** : No root restricting layer | **Type of Root Restricting Layer** : n/a | **Parent Material 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Mode of Deposition 1|2|3** : Not Applicable; Not Applicable; Not Applicable | **Parent Material Chemical Property 1|2|3** : Not Applicable; Not Applicable; Not Applicable |

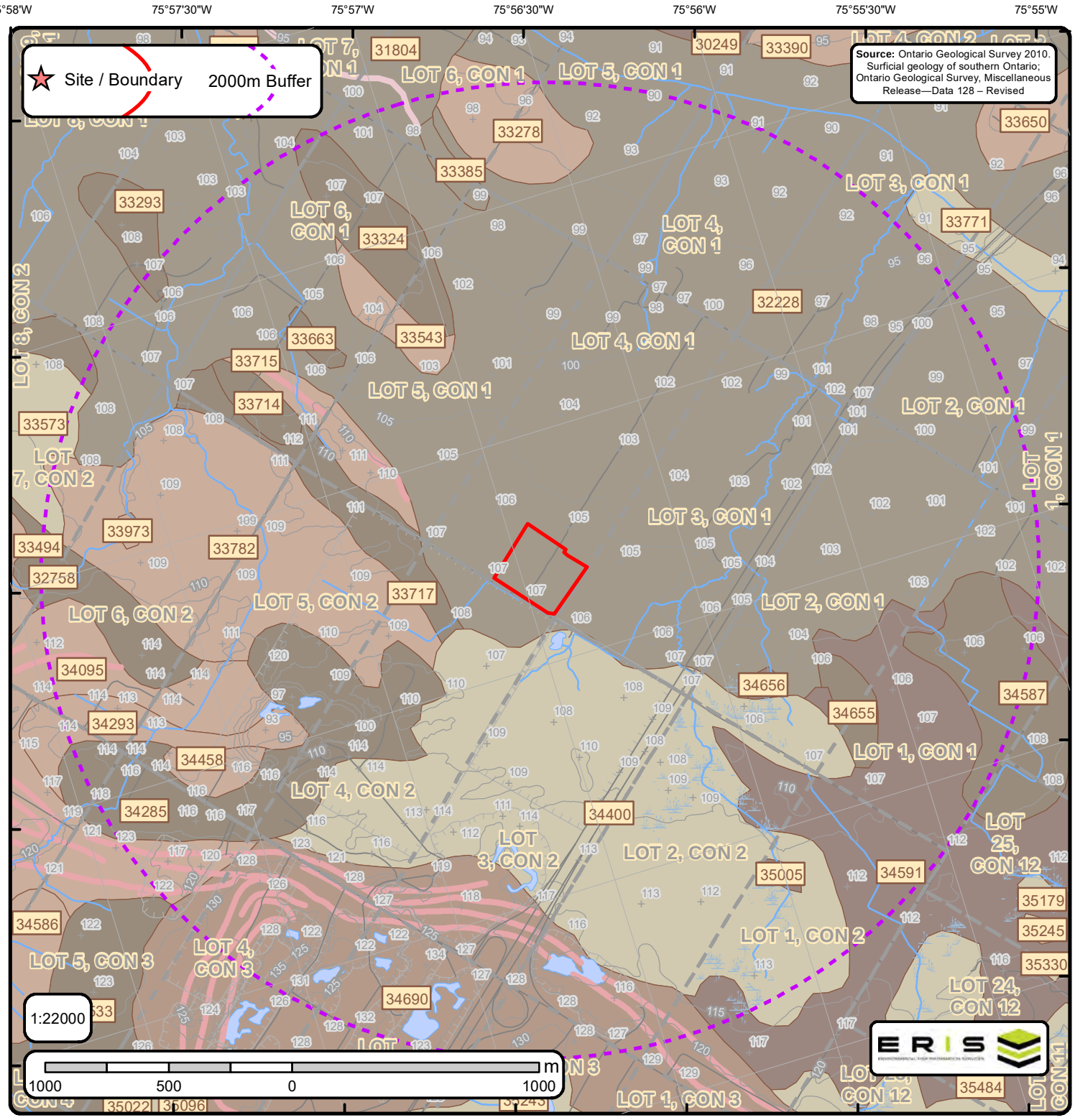
Soil ID: OND401070454
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONOKA~~~~~A | **Surface Stoniness Class** : Slightly stony | **Slop Steepness(%)** : 3.5 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-12 | **Horizon** : Apk | **Layer No** : 1 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 70 | **Total Silt(%)** : 22 | **Total Clay(%)** : 8 | **Organic Carbon(%)** : 4.0 | **pH in Calc Chloride** : 6.9 | **Saturated Hydraulic Conductivity(cm/h)** : 5.409 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 12-30 | **Horizon** : Bmk | **Layer No** : 2 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 71 | **Total Silt(%)** : 20 | **Total Clay(%)** : 9 | **Organic Carbon(%)** : 0.6 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 3.079 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 30-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 3 | **Total Sand(%)** : 91 | **Total Silt(%)** : 6 | **Total Clay(%)** : 3 | **Organic Carbon(%)** : 0.1 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 6.109 | **Electrical Conductivity(dS/m)** : 0 |

Soil ID: OND401070450
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONKRS~~~~~A | **Surface Stoniness Class** : Moderately stony | **Slop Steepness(%)** : 7.0 | **Slop Length(m)** : -9 | **Drainage** : Well | **Hydrological Soil Groups** : Soils that have a low runoff potential and high infiltration rate, as the soils typically are sands and gravel. | **Soil Texture of A Horizon** : None | **Field Crops Capability** : Severe limitations on use for crops. | **First CLI Limitation Subclass** : Low inherent soil Fertility | **Second CLI Limitation Subclass** : Low inherent Moisture holding capacity | **Depth(cm)** : 0-20 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 10 | **Total Sand(%)** : 63 | **Total Silt(%)** : 31 | **Total Clay(%)** : 6 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.2 | **Saturated Hydraulic Conductivity(cm/h)** : 3.537 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 20-32 | **Horizon** : Bmk | **Layer No** : 2 | **Very Fine Sand(%)** : 8 | **Total Sand(%)** : 68 | **Total Silt(%)** : 25 | **Total Clay(%)** : 7 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 3.783 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 32-100 | **Horizon** : Ck | **Layer No** : 3 | **Very Fine Sand(%)** : 2 | **Total Sand(%)** : 92 | **Total Silt(%)** : 7 | **Total Clay(%)** : 1 | **Organic Carbon(%)** : 0.0 | **pH in Calc Chloride** : 7.5 | **Saturated Hydraulic Conductivity(cm/h)** : 7.817 | **Electrical Conductivity(dS/m)** : 0 |

Soils Report

Soil Map Units Found within 2000 m of
Palladium Dr

Soil ID: OND401070451
Component No : 1 | **Components(%)** : 100 | **Soil Name ID** : ONNGW~~~~~A | **Surface Stoniness Class** : Nonstony | **Slop Steepness(%)** : 1.2 | **Slop Length(m)** : -9 | **Drainage** : Poorly | **Hydrological Soil Groups** : Soils have a high runoff potential and very slow infiltration rate when thoroughly wetted. Soils include clay soils with high swelling potential, soils in a permanent high water table and shallow soils over nearly impervious material. | **Soil Texture of A Horizon** : silt loam | **Field Crops Capability** : moderate limitations on use for crops | **First CLI Limitation Subclass** : None | **Second CLI Limitation Subclass** : None | **Depth(cm)** : 0-25 | **Horizon** : Ap | **Layer No** : 1 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 43 | **Total Silt(%)** : 41 | **Total Clay(%)** : 16 | **Organic Carbon(%)** : 3.9 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 1.375 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 25-37 | **Horizon** : Bgj | **Layer No** : 2 | **Very Fine Sand(%)** : 9 | **Total Sand(%)** : 45 | **Total Silt(%)** : 40 | **Total Clay(%)** : 15 | **Organic Carbon(%)** : 3.3 | **pH in Calc Chloride** : 7.4 | **Saturated Hydraulic Conductivity(cm/h)** : 0.752 | **Electrical Conductivity(dS/m)** : 0] | **Depth(cm)** : 37-100 | **Horizon** : Cg | **Layer No** : 3 | **Very Fine Sand(%)** : 5 | **Total Sand(%)** : 20 | **Total Silt(%)** : 63 | **Total Clay(%)** : 17 | **Organic Carbon(%)** : 0.5 | **pH in Calc Chloride** : 7.3 | **Saturated Hydraulic Conductivity(cm/h)** : 0.29 | **Electrical Conductivity(dS/m)** : 0 |



The Surficial Geology of Southern Ontario

Order No. 20190815063

Spot Height	Streams	Dune	Beach	Esker	karst	pitsg		
Waterbody	Contour Lines	Lake	Bluff	Esker ND	linfeat	popup		
Wetlands	Roads	Rib	Crevasse	Fluvial DL	megarip	ribl		
Airports	Railroads	Scab	Crest	fluvndl	mfluvdl	slidel		
Pit or Quarry	Morains	Slide	End	iceberg	mfluvndl	slumpb		
Lots		NOF Dune	Escarpment	icslope	moraine	terrace		

Surface Geology Report

Surface Geology units found within 2000 m of Palladium Dr

Order No. 20190815063

ID: 31804 | **Unit Name:** Offshore marine deposits |
Deposit Type Code: 3a | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** clay, silt | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** foreshore/basinal | **Veneer:** silt, sand | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** Low | **Material Description:** Clay and silt underlying erosional terraces; upper part of marine deposits removed to varia

ID: 32228 | **Unit Name:** Offshore marine deposits |
Deposit Type Code: 3 | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** clay, silt | **Primary Material Modifier:** | **Secondary Material:** sand | **Primary General:** glaciomarine | **Primary General Modifier:** foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** Low | **Material Description:** Clay, silty clay and silt, commonly calcareous and fossiliferous; locally overlain by thin sands. Upper parts are generally mottled or laminated reddish brown and bluish grey and may contain lenses and pockets of sand, but at depth the clay is uniform a

ID: 32758 | **Unit Name:** Till |
Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 33278 | **Unit Name:** Nearshore sediments |
Deposit Type Code: 5b | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** sand | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Fine-to medium-grained sand, calcareous and commonly fossiliferous; nearshore sand generally occurs as a sheet or as bars or spits associated with glaciofluvial materials.

ID: 33293 | **Unit Name:** Till |
Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 33324 | **Unit Name:** Till |
Deposit Type Code: 1b | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (approx. 198 m (650 ft) a.s.l.) it is

ID: 33385 | **Unit Name:** Offshore marine deposits |
Deposit Type Code: 3 | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** clay, silt | **Primary Material Modifier:** | **Secondary Material:** sand | **Primary General:** glaciomarine | **Primary General Modifier:** foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** Low | **Material Description:** Clay, silty clay and silt, commonly calcareous and fossiliferous; locally overlain by thin sands. Upper parts are generally mottled or laminated reddish brown and bluish grey and may contain lenses and pockets of sand, but at depth the clay is uniform a

ID: 33543 | **Unit Name:** Nearshore sediments |
Deposit Type Code: 5b | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** sand | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Fine-to medium-grained sand, calcareous and commonly fossiliferous; nearshore sand generally occurs as a sheet or as bars or spits associated with glaciofluvial materials.

ID: 33573 | **Unit Name:** Organic deposits |
Deposit Type Code: 7 | **Deposit Age:** Recent | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** organic deposits | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** wetland | **Primary General Modifier:** | **Veneer:** | **Episode:** Hudson | **Sub Episode:** | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Mainly muck and peat in bogs, fens, swamps and poorly drained areas.

ID: 33663 | **Unit Name:** Till |
Deposit Type Code: 1b | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (approx. 198 m (650 ft) a.s.l.) it is

ID: 33714 | **Unit Name:** Till |
Deposit Type Code: 1b | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (approx. 198 m (650 ft) a.s.l.) it is

ID: 33715 | **Unit Name:** Nearshore sediments |
Deposit Type Code: 5a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** sand, gravel | **Primary Material Modifier:** bouldery | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** littoral/foreshore | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Gravel, sand and boulders; beaches commonly fossiliferous; nature of sediment controlled by underlying material (gravel, sand and boulders where developed from till and glaciofluvial deposits; slabs and shingles where developed from sedimentary bedrock).

ID: 33717 | **Unit Name:** Till |
Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 33782 | **Unit Name:** Nearshore sediments |
Deposit Type Code: 5b | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** sand | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Fine-to medium-grained sand, calcareous and commonly fossiliferous; nearshore sand generally occurs as a sheet or as bars or spits associated with glaciofluvial materials.

ID: 33973 | **Unit Name:** Nearshore sediments |
Deposit Type Code: 5a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** sand, gravel | **Primary Material Modifier:** bouldery | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** littoral/foreshore | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Gravel, sand and boulders; beaches commonly fossiliferous; nature of sediment controlled by underlying material (gravel, sand and boulders where developed from till and glaciofluvial deposits; slabs and shingles where developed from sedimentary bedrock).

ID: 34095 | **Unit Name:** Nearshore sediments |
Deposit Type Code: 5a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** sand, gravel | **Primary Material Modifier:** bouldery | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** littoral/foreshore | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Gravel, sand and boulders; beaches commonly fossiliferous; nature of sediment controlled by underlying material (gravel, sand and boulders where developed from till and glaciofluvial deposits; slabs and shingles where developed from sedimentary bedrock).

ID: 34285 | **Unit Name:** Till |
Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 34293 | **Unit Name:** Nearshore sediments |
Deposit Type Code: 5b | **Deposit Age:** Quaternary (Champlain Sea) | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** sand | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** foreshore/basinal | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Fine-to medium-grained sand, calcareous and commonly fossiliferous; nearshore sand generally occurs as a sheet or as bars or spits associated with glaciofluvial materials.

ID: 34400 | **Unit Name:** Organic deposits |
Deposit Type Code: 7 | **Deposit Age:** Recent | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** organic deposits | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** wetland | **Primary General Modifier:** | **Veneer:** | **Episode:** Hudson | **Sub Episode:** | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Mainly muck and peat in bogs, fens, swamps and poorly drained areas.

ID: 34458 | **Unit Name:** Nearshore sediments |
Deposit Type Code: 5a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** sand, gravel | **Primary Material Modifier:** bouldery | **Secondary Material:** | **Primary General:** glaciomarine | **Primary General Modifier:** littoral/foreshore | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Gravel, sand and boulders; beaches commonly fossiliferous; nature of sediment controlled by underlying material (gravel, sand and boulders where developed from till and glaciofluvial deposits; slabs and shingles where developed from sedimentary bedrock).

ID: 34533 | **Unit Name:** Till |
Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 34587 | **Unit Name:** Till |
Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 34591 | **Unit Name:** Bedrock |
Deposit Type Code: Pa | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** Paleozoic Bedrock | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** | **Primary General Modifier:** | **Veneer:** clay, silt, sand, gravel, diamicton | **Episode:** | **Sub Episode:** | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** Variable | **Material Description:** Limestone, dolomite, sandstone, and locally shale; relatively flat lying; mainly occuring as bare, tabular outcrops; includes areas thinly veneered by unconsolidated Quaternary sediments up to 1 m (3 ft) thick.

ID: 34655 | **Unit Name:** Till |
Deposit Type Code: 1a | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** diamicton | **Primary Material Modifier:** sandy silt to silty sand | **Secondary Material:** | **Primary General:** glacial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** N-NE | **Carbon Content:** | **Formation:** Undifferentiated silty-sandy till on Paleozoic terrain | **Permeability:** Low-Medium | **Material Description:** Sandy and silty compact diamicton, grey at depth but brown where oxidized; calcareous where derived from sedimentary rocks and not leached; consists dominantly of lodgment till. In areas that lie below marine limit (198 m a.s.l.) it is overlain by a disc

ID: 34656 | **Unit Name:** Bedrock |
Deposit Type Code: Pa | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** Paleozoic Bedrock | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** | **Primary General Modifier:** | **Veneer:** clay, silt, sand, gravel, diamicton | **Episode:** | **Sub Episode:** | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** Variable | **Material Description:** Limestone, dolomite, sandstone, and locally shale; relatively flat lying; mainly occuring as bare, tabular outcrops; includes areas thinly veneered by unconsolidated Quaternary sediments up to 1 m (3 ft) thick.

ID: 34690 | **Unit Name:** Glaciofluvial deposits |
Deposit Type Code: 2 | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** sand, gravel | **Primary Material Modifier:** | **Secondary Material:** diamicton | **Primary General:** glaciofluvial | **Primary General Modifier:** | **Veneer:** | **Episode:** Wisconsin | **Sub Episode:** Michigan | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** High | **Material Description:** Gravel and sand, poorly to well sorted and bedded, mainly coarse-to medium-grained with numerous cobbles, boulders and lenses of till

ID: 34725 | **Unit Name:** Bedrock |
Deposit Type Code: Pa | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** Paleozoic Bedrock | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** | **Primary General Modifier:** | **Veneer:** clay, silt, sand, gravel, diamicton | **Episode:** | **Sub Episode:** | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** Variable | **Material Description:** Limestone, dolomite, sandstone, and locally shale; relatively flat lying; mainly occuring as bare, tabular outcrops; includes areas thinly veneered by unconsolidated Quaternary sediments up to 1 m (3 ft) thick.

ID: 35005 | **Unit Name:** Bedrock |
Deposit Type Code: Pa | **Deposit Age:** Quaternary | **Map Number:** of3103 | **Map Name:** Ottawa | **Source Map Scale:** 1:50 000 | **Primary Material:** Paleozoic Bedrock | **Primary Material Modifier:** | **Secondary Material:** | **Primary General:** | **Primary General Modifier:** | **Veneer:** clay, silt, sand, gravel, diamicton | **Episode:** | **Sub Episode:** | **Phase:** | **Stratus Modifier:** Surface | **Provenance:** | **Carbon Content:** | **Formation:** | **Permeability:** Variable | **Material Description:** Limestone, dolomite, sandstone, and locally shale; relatively flat lying; mainly occuring as bare, tabular outcrops; includes areas thinly veneered by unconsolidated Quaternary sediments up to 1 m (3 ft) thick.

Surface Geology Report Metadata

Ontario Geological Survey 2010. Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release - Data 128 - Revised.

ONTARIO MINISTRY OF NORTHERN DEVELOPMENT, MINES AND FORESTRY

ID - ID applied to the Unit

Unit Name - Name of deposit

Deposit Type Code - The geological unit number taken from the original map legend.

Deposit Age - to show the age when the sediments were deposited, e.g., Wisconsinan, postglacial or recent.

Map Number - Original map series number, eg., 'M2402' or 'P1973'. Each sgu_point feature is tagged to its original map.

Map Name - Usually NTS area where mapping was completed, e.g., 'Golden Lake'

Source Map Scale - The scale at which the original map was captured, e.g., '1:50 000'

Primary Material - This attribute provides the user with information regarding the most prevalent material present within a given area.

Primary Material Modifier- This attribute provides the user with a more refined description of the lithological classification of the primary material.

Secondary Material - This attribute provides the user with information regarding subordinate materials present within a given area.

Primary General - This attribute provides the user with an interpretation of the depositional environment within which the primary material was deposited.

Primary General Modifier - This attribute provides the user with a refined interpretation of the primary genetic modifier.

Veneer - This attribute provides the user with information regarding the type of material that forms a thin, discontinuous veneer over the primary material.

Sub Episode - A diachronic stratigraphic unit in a lower order than Episode and the proposed sequence-stratigraphic classification, consists in descending order of Michigan, Elgin and Ontario in the eastern and northern Great Lakes area in the Wisconsin Episode (Johnson et al. 1997; Karrow et al. 2000).

Sub Episode - A diachronic stratigraphic unit in a lower order than Episode and the proposed sequence-stratigraphic classification, consists in descending order of Michigan, Elgin and Ontario in the eastern and northern Great Lakes area in the Wisconsin Episode (Johnson et al. 1997; Karrow et al. 2000).

Phase - A diachronic stratigraphic unit in a lower order than Subepisode, and the proposed sequence-stratigraphic classification is listed in the following table in the eastern and northern Great Lakes area (Karrow et al. 2000)

Stratus Modifier - This attribute provides the user information regarding the stratigraphic position of the mapped unit (i.e., whether the unit occurs primarily on the surface or in the subsurface).

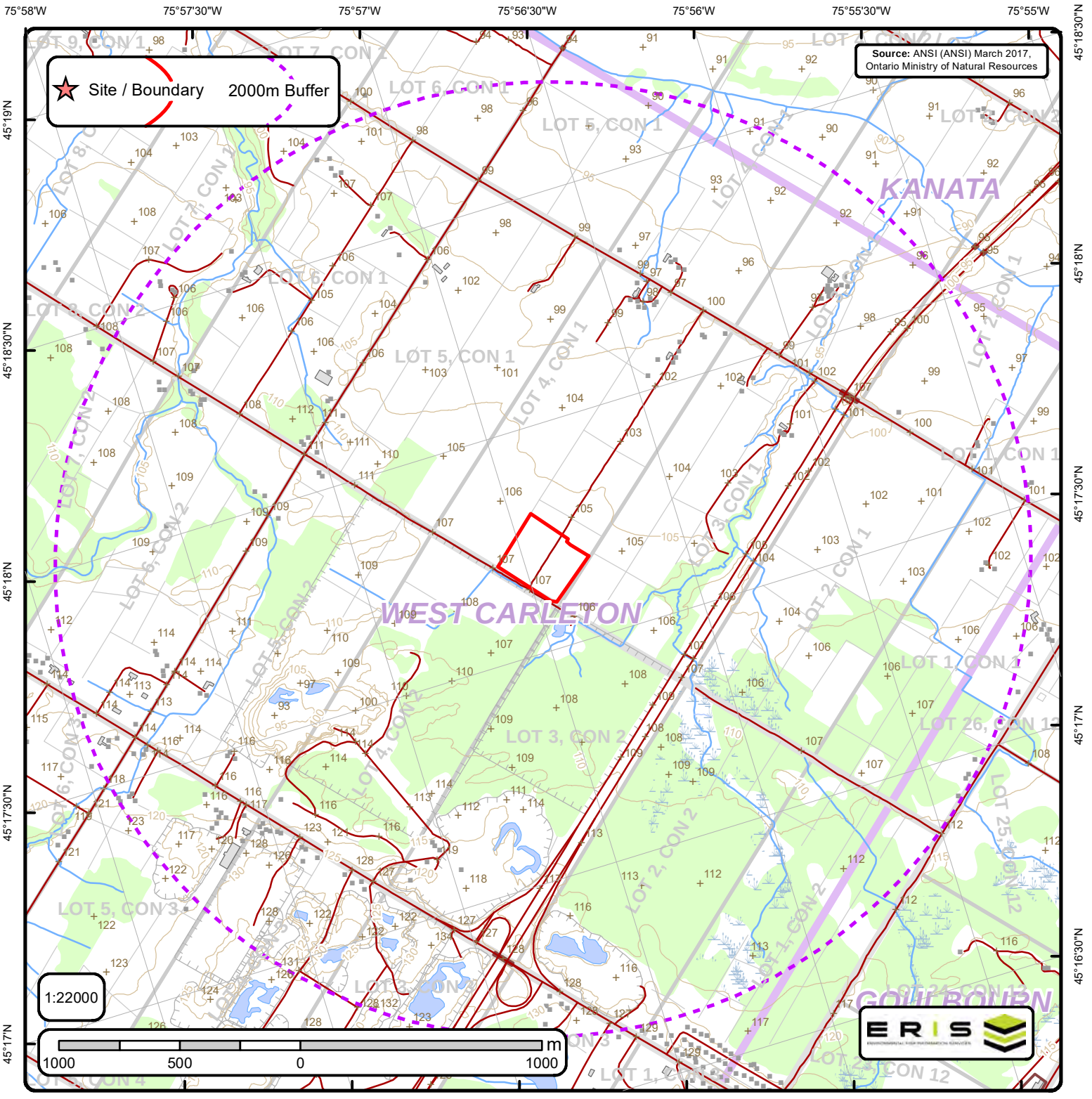
Provenance - This attribute provides the user with information regarding the provenance of a particular till unit (i.e. direction or lobe from which the till is derived).

Carbon Content - This attribute provides the user with information regarding the carbonate content of till.

Formation - This attribute provides the user with information regarding the formation to which a given primary material belongs (e.g., Tavistock Till, Port Stanley Till, Scarborough Formation). This attribute is seamless and allows the user to create a map based on formation.

Permeability - This attribute provides the user with basic information about permeability of the sediments in a ranking of high, medium and low.

Material Description - Material or sediment description, e.g., 'sand and silty fine sand', 'silty sand and gravel' and 'silty till with low stone content'.



Area of Natural & Scientific Interest (ANSI) Order No. 20190815063

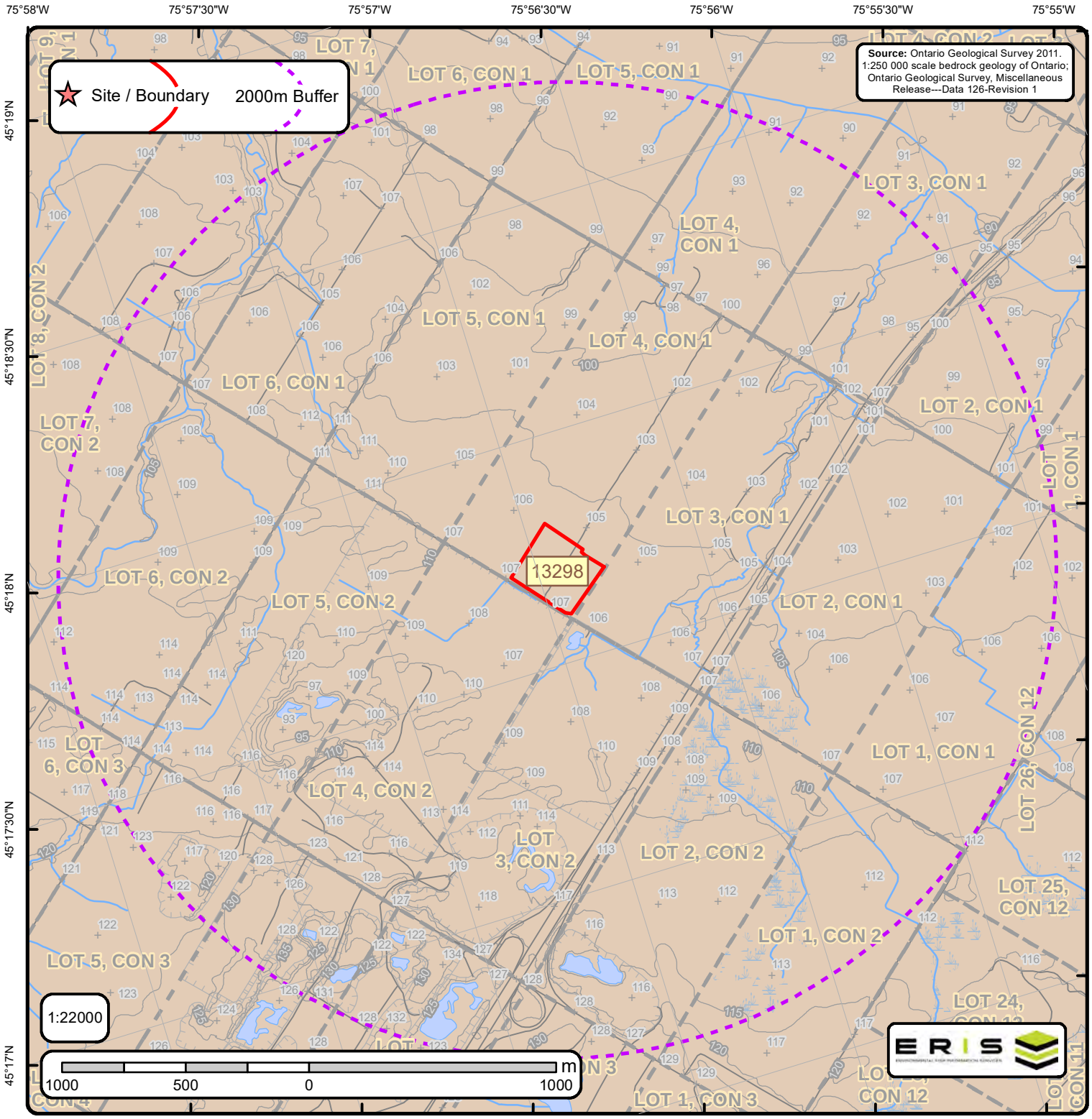
- Spot Height
- Building Point
- Towers
- Utility Site Point
- Misc. Line
- Railroads
- Roads
- Trail
- Transportation Structure
- Utility Line
- Water Structure
- Drainage Line Feature
- River or Stream
- Airports
- Tanks
- Building to Scale
- Contour Line
- Pit or Quarry
- Waterbody
- Wetlands
- Concession
- Lots
- Municipalitiy
- Land Ownership
- Wooded Area
- Conservation Authority
- Conservation Area
- Municipal Park
- Provincial Park
- National Park
- Nature Reserve
- ANSI Area

ANSI Report

ANSI Units Found within 2000 m of Palladium Dr

Order No. 20190815063

No ANSI units found within search area.



Bedrock Geology of Ontario

Order No. 20190815063

Spot Height
Roads
Contour Lines
Streams
Railroads
Lots
Pit or Quarry
Airports
Waterbody
Wetlands

Bedrock Geology Lines

- CONTACT, GEOPHYSICAL, TREND, INTERPRETED
- CONTACT, SHARP, TREND, INTERPRETED
- CONTACT, SHARP, TREND, OBSERVED
- FAULT, DEXTRAL HORIZONTAL COMPONENT, TREND, INTERPRETED, UNKNOWN GENERATION
- FAULT, PROJECTED FAULT, INTERPRETED, UNKNOWN GENERATION
- FAULT, SINISTRAL HORIZONTAL COMPONENT, TREND, INTERPRETED, UNKNOWN GENERATION
- FAULT, SINISTRAL HORIZONTAL COMPONENT, TREND, OBSERVED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, INCLINED-REVERSE, INTERPRETED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, INCLINED-REVERSE, OBSERVED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, TREND, INTERPRETED, UNKNOWN GENERATION
- FAULT, UNKNOWN HORIZONTAL COMPONENT, TREND, OBSERVED, UNKNOWN GENERATION
- NEATLINE
- ONTARIO BORDER
- Marble, chert, iron formation, minor metavolcanic rocks

Dikes

- Abitibi mafic dike
- Biscotasing mafic dike
- Empey Lake mafic dike
- Felsic to intermediate intrusive rocks
- Fort Frances mafic dike
- Frontenac mafic dike
- Grenville mafic dike
- Logan and Nipigon mafic sills
- Mackenzie mafic dike
- Mafic dikes of uncertain age
- Mafic sills and dikes
- Marathon mafic dike
- Marathon, Kapuskasing or Biscotasing mafic dike
- Matachewan mafic dike
- Mine Centre mafic dike
- Molson mafic dike
- North Channel mafic dike
- Pickle Crow mafic dike (Molson swarm) normal
- Pickle Crow mafic dike (Molson swarm) reverse
- Rideau mafic dike
- Sudbury mafic dike
- Ultramafic, gabbroic and granophyric intrusions
- Unsubdivided mafic dike
- Unsubdivided mafic dike (Keweenawan age)
- unknown

C Lines

- FOLD, ANTICLINE, INTERPRETED, UNKNOWN GENERATION
- FOLD, ANTICLINE, OBSERVED, UNKNOWN GENERATION
- FOLD, ANTICLINE, SYNFORMAL, INTERPRETED, SECOND GENERATION
- FOLD, ANTIFORM, INTERPRETED, UNKNOWN GENERATION
- FOLD, SYNCLINE, INTERPRETED, UNKNOWN GENERATION
- FOLD, SYNCLINE, OBSERVED, UNKNOWN GENERATION
- FOLD, SYNFORM, INTERPRETED, UNKNOWN GENERATION

Kimberlite

Bedrock Geology Report

Bedrock Geology units found within 2000 m of Palladium Dr

Order No. 20190815063

ID: 13298 | **Unit Name:** |
Type (All): 54a | **Type (Primary):** 54a | **Type (Secondary):** | **Type (Tertiary):** | **Rock Type (Primary):** Limestone, dolostone, shale, arkose, sandstone | **Strata (Primary):** Ottawa Group; Simcoe Group; Shadow Lake Formation | **Super Eon (Primary):** | **Eon (Primary):** PHANEROZOIC (Present to 542.0 Ma) | **Era (Primary):** PALEOZOIC (251.0 Ma to 542.0 Ma) | **Period (Primary):** ORDOVICIAN (443.7 Ma to 488.3 Ma) | **Epoch (Primary):** MIDDLE ORDOVICIAN (now considered UPPER DEVONIAN) | **Province (Primary):**

Bedrock Geology Report Metadata

Ontario Geological Survey 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release-Data 126 Revision1

ONTARIO MINISTRY OF NORTHERN DEVELOPMENT, MINES AND FORESTRY

ID - Unit ID **Unit Name** - Generalized geological unit classification

Type (All) - The geological unit number(s) or code(s) for all rock types present in an individual polygon.

Type (Primary) - The primary geological unit number or code for the primary rock type in an individual polygon

Type (Secondary) - The secondary geological unit number or code for the secondary rock type, if present, in an individual polygon

Type (Tertiary) - The tertiary geological unit number or code for the tertiary rock type, if present, in an individual polygon

Rock Type (Primary) - Rock type or sub-unit description

Status (Primary) - The Stratigraphic unit. Divided into:

```
Supergroup (two or more groups and lone formations)
Group (two or more formations)
Formation (primary unit of lithostratigraphy)
Member (named lithologic subdivision of a formation)
Bed (named distinctive layer in a member or formation)
```

Super Eon (Primary) - A name given to the largest defined unit of geological time, divided into Eons. Unique values which this field may contain (Domains) are:

```
PRECAMBRIAN (0.542 Ga to <3.85 Ga)
```

Eon (Primary) - A name given to a defined unit of geological time, divided into Eras. Unique values which this field may contain (Domains) are:

```
ARCHEAN (2.5 Ga to <3.85 Ga)
PROTEROZOIC (0.542 Ga to 2.50 Ga)
PHANEROZOIC (Present to 542.0 Ma)
```

Era (Primary) - A name given to a defined unit of geological time, divided into Periods. Each era on the scale is separated from the next by a major event or change. Unique values which this field may contain (Domains) are:

```
MESOARCHEAN (2.8 Ga to 3.2 Ga)                MESOPROTEROZOIC (1.0 Ga to 1.6 Ga)
NEO-TO MESOARCHEAN (2.5 Ga to 3.2 Ga)         EARLY PALEOZOIC TO NEOPROTEROZOIC (443.7 Ma to 1.0 Ga)
NEOARCHEAN (2.5 Ga to 2.8 Ga)                 NEO-TO MESOPROTEROZOIC (0.542 Ga to 1.6 Ga)
PALEOPROTEROZOIC (1.6 Ga to 2.5 Ga)           PALEOZOIC (251.0 Ma to 542.0 Ma)
MESO-TO PALEOPROTEROZOIC (1.0 Ga to 2.5 Ga)   MESOZOIC (65.5 Ma to 251.0 Ma)
```

Period (Primary) - A name given to a defined unit of geological time, divided into Epochs. Unique values which this field may contain (Domains) are:

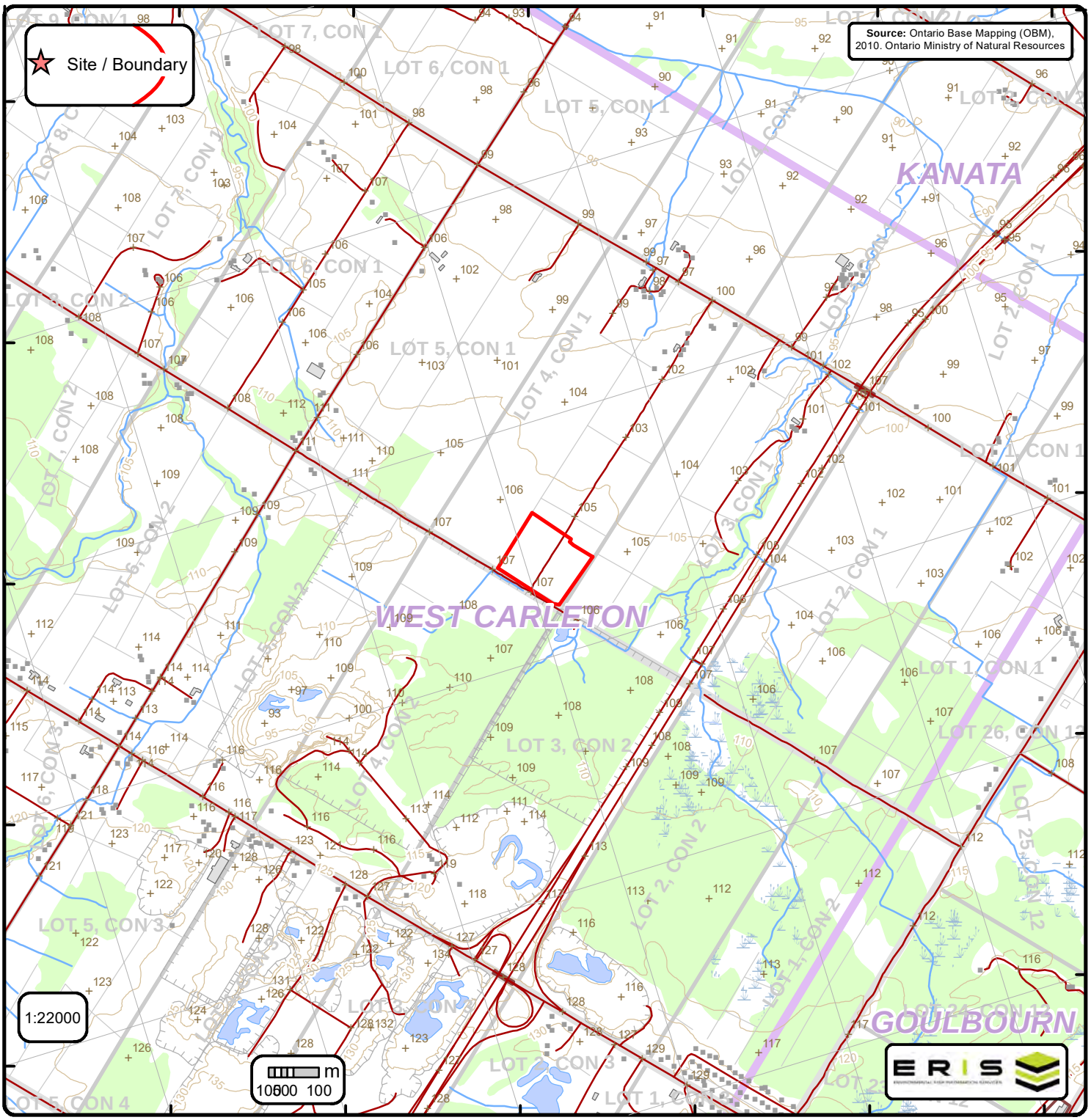
```
CAMBRIAN (488.3 Ma to 542.0 Ma)
ORDOVICIAN (443.7 Ma to 488.3 Ma)
SILURIAN (416.0 Ma to 443.7 Ma)
DEVONIAN (359.2 Ma to 416.0 Ma)
MISSISSIPPIAN TO DEVONIAN (318.1 Ma to 416.0 Ma)
JURASSIC (145.5 Ma to 199.6 Ma)
CRETACEOUS AND JURASSIC (65.5 Ma to 199.6 Ma)
```

Epoch (Primary) - A name given to a defined unit of geological time. Unique values which this field may contain (Domains) are:

```
LOWER ORDOVICIAN                    UPPER SILURIAN
MIDDLE ORDOVICIAN                   LOWER DEVONIAN
UPPER ORDOVICIAN                    MIDDLE DEVONIAN
MIDDLE AND LOWER SILURIAN           UPPER DEVONIAN
UPPER SILURIAN TO LOWER DEVONIAN    LOWER CRETACEOUS AND MIDDLE JURASSIC
```

Province (Primary) - The Geological Province the geological unit is in. Unique values which this field may contain (Domains) are:

```
SUPERIOR
SOUTHERN
SUPERIOR
GRENVILLE
```



Ontario Base Mapping (OBM) Data

Order No. 20190815063

Spot Height (metre)	Transportation Structure	Contour Line	Wooded Area
Building Point	Utility Line	Pit or Quarry	Conservation Authority
Towers	Water Structure	Waterbody	Conservation Area
Utility Site Point	Drainage Line Feature	Wetlands	Municipal Park
Misc. Line	River or Stream	Concession	Provincial Park
Railroads	Airports	Lots	National Park
Roads	Tanks	Municipalitiy	Nature Reserve
Trail	Building to Scale	Land Ownership	