Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
INTERSECTION OF PEARSON DRIVE AND ESTEN DRIVE NORTH
ELLIOT LAKE, ONTARIO

Prepared for: **City of Elliot Lake**
45 Hillside Dr. N.
Elliot Lake, Ontario
P5A 1X5

Attention: Mr. Steve Antunes

File No 5-21-0300-41
April 27, 2022

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1.0 EXECUTIVE SUMMARY

The City of Elliot Lake (City) retained Terraprobe Inc. (Terraprobe) to complete a Phase One Environmental Site Assessment (Phase One ESA) of the Property located on the north side of Pearson Drive and west of Esten Drive North in the City of Elliot Lake, Ontario, hereafter referred to as "*the Property*".

Based on historic information, the former landfill site activity covers an area of about 6 ha. The Property is currently vacant and generally covered by sparse brush. There are a number of small roads and trails through the site, which appear to be used for recreational purposes (e.g., ATVs and Snowmobiles).

The Property is currently zoned as Clean Industrial (CM) and Public Open Space (O) and is classified as community Property use as defined by the Ontario Ministry of the Environment, Conservation, and Parks (MECP). It is understood that the City is considering utilizing the area within 500 m of the closed landfill for mixed-use development. A Phase One ESA was completed in accordance with the requirements of Ontario Regulation 153/0 (O. Reg. 153/04) in order to determine the current site conditions.

Based on the records reviewed and site inspection, the following Potentially Contaminating Activities (PCAs) were identified within the Phase One Property and Phase One Study Area (Study Area), which have the potential to cause Area of Potential Environmental Concerns (APECs) on the Property.

On-Site PCAs

- #58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than the use of biosoils as soil conditions.
- #30 – Importation of Fill Material of Unknown Quality
- #55 – Transformer Manufacturing, Processing and Use

Off-Site PCAs

- No Off-Site PCAs were identified

The Phase One ESA identified the following Areas of Potential Environmental Concern (APECs) on the Property:

Area of Potential Environmental Concern	Location of Potentially Contaminating Activities	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1 Entire Phase One Property	Phase One Property	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than the use of biosoils as a soil conditioner	Metals, As, Sb, Se, B-HWS, CH-, Hg, Cr(VI), pH, VOCs, PHCs (F1-F4), PAHs and PCBs	Soil and Groundwater
APEC 2 East central portion of the Phase One Property	Phase One Property	#30 – Importation of Fill Material of Unknown Quality	PAHs, PCBs, PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CH-, Hg, Cr(VI), pH	Soil and Groundwater
APEC 3 Northern portion of the Phase One Property	Phase One Property	#55 – Transformer Manufacturing, Processing and Use	PCBs	Soil and Groundwater

Based upon the review of the information gathered from the Phase One ESA, Three (3) Areas of Potential Environmental Concern (APECs) have been identified at the Phase One Property and within Phase One Study Area.

Based on the findings of the Phase One ESA, a Phase Two Environmental Site Assessment (Phase Two ESA) to be completed in accordance with the requirements of O.Reg. 153/04 is recommended.

2.0 INTRODUCTION

Terraprobe Inc. (Terraprobe) was retained by the City of Elliot Lake (City) to complete a Phase One Environmental Site Assessment (ESA) of the Property (Herein referred to as "Property") situated on the north side of Pearson Drive and west of Esten Drive North. The municipal address of the site is the Intersection of Pearson Drive and Esten Drive North, Elliot Lake, Ontario. The general location of the Property is present on Figure 1.

The Property was formerly used as a municipal landfill site by the Town of Elliot Lake. Based on historic information, the former landfill site activities cover an area of about 6 ha. The Property is bound by Pearson Drive and Esten Drive North. There are a number of small roads and trails through the site, which appear to be used for recreational purposes (e.g. ATVs and Snowmobiles).

The Property is currently zoned as Clean Industrial (CM) and Public Open Space (O) and is classified as community Property use as defined by the Ontario Ministry of the Environment, Conservation, and Parks (MECP). It is understood that the city is considering utilizing the area within 500 m of the closed landfill for mixed-use development. A Phase One ESA was completed in accordance with the requirements of Ontario Regulation 153/0 (O. Reg. 153/04) in order to determine the current site conditions.

2.1 Phase One Property Information

The Property information is provided below:

Legal Description	(Pt Mining Claim S101390) Except 1M437 & 1M438
PIN(s)	31623-0345 (LT) & 31623-0149 (LT)
Municipal Address	NW Corner Pearson Drive & Esten Drive., Elliott Lake, Parcel 5597 Sec AES
Zoning	CM – Clean Industrial & O – Public Open Space
Area	Approximately 6 Hectares
Property Owner Information	The Corporation of the Township of Elliot Lake
Persons other than Property Owner who engaged the Qualified Person to conduct the Phase One ESA	**Steve Antunes** City of Elliot Lake 45 Hillside Dr. N. Elliot Lake, Ontario P5A 1X5 santunes@city.elliotlake.on.ca

3.0 SCOPE OF INVESTIGATION

3.1 Purpose of Investigation

The Phase One ESA was conducted to satisfy the intent of the requirements, methodology and practices for a Phase One ESA as described in Ontario Regulation 153/04, as amended (O.Reg. 153/04). The objectives of the Phase One ESA were as follow, per O.Reg. 153/04:

- To develop a preliminary determination of the likelihood that one or more contaminants have affected any land or water on, in or under the Phase One Property.
- To determine the need for a Phase Two Environmental Site Assessment.
- To provide a basis for carrying out any Phase Two Environmental Site Assessment required.
- To provide adequate preliminary information about environmental conditions in the land or water on, in or under the Phase One Property for the conducting of a Risk Assessment following completion of a Phase Two Environmental Site Assessment (if required).

The Phase One ESA involved the following principal tasks:

- A review of records and reports regarding historical and current use and activities for the Property and Study Area,
- Interviews with available individuals having knowledge of current and/or past site activities,
- An inspection of the Property and observation of the Study Area,
- Evaluation of the information obtained and documentation of the results of the review.

Sampling and analysis of soil, ground water, or other materials (e.g., construction materials, air) were not conducted as part of Phase One ESA.

3.2 Records Review

The records review provides information on historical and current activities. The objectives of the records review were as follows:

- To obtain and review records that relate to the current and past uses, site features and activities at the Property.
- To obtain and review records that relate to Potentially Contaminating Activities (PCAs), water bodies, and areas of natural significance in the Phase One Study Area and the Property.
- To provide an assessment of actual and/or potential contaminating activities and concerns with respect to the environmental condition of the Property.

The following information was reviewed:

- Archival information for the Property, including aerial photographs, topographic maps, historical maps and drawings.

- Property-specific environmental reports and/or operating records (e.g., Certificates of Approval, waste generator registration, approvals, permits) were provided to Terraprobe Inc.
- Geological and hydrogeological information in published government maps reports and/or databases.
- Databases maintained by Risk Information Services (ERIS) containing environmentally related information from private, provincial, and federal sources.
- Available fire insurance plans and insurance inspection reports.
- Published Ontario MECP directories related to registered PCB storage sites and active and closed landfill sites.
- The Ontario Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre database for information specific to natural areas, such as locations of environmentally sensitive areas.
- Published information regarding an Official Plan and zoning information for the area.
- Sensitivity mapping by the local Conservation Authority.
- Wellhead protection mapping by the local Conservation Authority

3.3 Interviews

The objectives of the interview were:

- To identify PCAs and/or potential contaminant pathways in, on or under the Property.

Key personnel were interviewed and asked questions related to specific site activities, such as:

- The nature of the operations.
- Handling and storage of environmentally sensitive products and related wastes.
- Environmental approvals and registrations.
- Knowledge of previous reports related to the environmental condition of the Property.
- Issues related to non-compliance, orders, or charges related to environmental conditions on the Property.
- Construction or renovation work was conducted on the Property.

3.4 Site Reconnaissance

The objectives of the site reconnaissance were:

- To identify PCAs on the Property based on observations of current and past uses.
- To identify PCAs in the Study Area based on observations of current and past uses.

- To identify potential pathways for contamination migration at the Property and Study Area.

The site reconnaissance included a review and evaluation of PCAs, including the following:

- Activities and practices, including site operations, processes and waste management currently carried out on the Property.
- Evidence of past waste disposal, landfill or fill placement on the Property.
- The presence of hazardous or toxic chemicals, materials or processes on the Property.
- The presence of existing or former aboveground or underground fuel storage tanks on the Property.
- Identification of heating and cooling systems on the Property.
- The presence of floor cracks, hydraulic hoists, elevators, sumps and drains, wells, pits and lagoons on the Property.
- Identification of the water supply source for the Property.
- The presence of various designated substances and building materials, including friable and non-friable asbestos, PCB-containing materials and electrical equipment, lead-based paint, mould, and chlorofluorocarbons (CFCs) in air-conditioning and refrigeration equipment on the Property.
- Evidence of stained or odourous soils and stressed vegetation on the Property.

In addition, an inspection of adjacent properties and the properties located within the Phase One Study Area was completed. The inspection of off-site properties was completed to identify Potentially Contaminating Activities, which may cause an Area of Environmental Concern to be identified for the Property. The inspection of off-site properties was limited to inspection from the Property boundaries and publicly accessible areas (roads, sidewalks, etc.).

3.5 Documentation and Evaluation of Information

The information obtained from the records review, interviews and site reconnaissance was described, documented and evaluated as summarized below:

- Documentation of information, as noted in subsequent sections of the report;
- Description of past occupants and site uses;
- Description of PCAs (PCAs);
- Description of Areas of Potential Environmental Concerns (APECs); an
- Development of a Phase One Conceptual Site Model (Phase One CSM).

4.0 RECORDS REVIEW

4.1 General

4.1.1 Phase One Study Area Determination

As required under O.Reg. 153/04, the Phase One Study Area (Study Area) consisted of the area including the Phase One Property and any other properties that are located, wholly or partly, within 250 m from the nearest point on a boundary of the Phase One Property. Based on the geology, the historical development and land use on the Property and surrounding area, the Qualified Person determined that a 250 m radius around the Property was sufficient to identify PCAs that could potentially cause APECs on the Property. No additional properties outside the 250 m radius were included in the Study Area. The Phase One Study Area is shown on Figure 3.

4.1.2 First Developed Use Determination

The determination of first developed use was based on the review of aerial photographs, fire insurance plans, and property ownership records. The details and evaluation of the above-noted information sources are provided in subsequent sections of this report.

Based on the evaluated information:

- The Property was transferred from Crown ownership to private individuals in 1840.
- The Property was transferred from private individuals to a private corporation in 1960.
- It appears that the Property was first developed for a commercial use in 1971.

The information is presented on the Table of Current and Past Land Uses in Appendix A.

4.1.3 Fire Insurance Plans and Insurance Inspection Reports

Insurance inspection reports and Fire Insurance Plans (FIP) was searched through municipal sources and private organizations. The FIPs, with reference to the Property location, are provided in Appendix E. The search was completed through Opta on January 31, 2022. No Records were found reading the Property and Study Area.

4.1.4 Chain of Title

A Chain of Title search for the Property dating back to Crown ownership was completed and summarized below. Previous owners of the Phase One Property included private owners prior to 1959, and various other businesses owned the Property afterwards.

Owner	Date
Crown	Prior to August 24th. 1959
Heat Gold Mines Limited	August 24th. 1959 to May 3rd, 1962,

Reno Rinaldi & Helen McKinnon	May 3rd, 1962, to October 16th. 1975
The Corporation of the Township of Elliot Lake	October 16th, 1975, to Present

The Chain of Title is also presented as the Table of Current and Past Land Uses in Appendix A.

4.1.5 City Directory Search

A City Directory search for the Property and Properties located within the Study Area was completed by ERIS on January 28, 2022. It is noted on the City Directory that "Elliot Lake, Ontario, is not listed within the City Directory archives". No PCAs were identified as the results of the City Directory Search. The search results can be found in Appendix H.

4.1.6 Environmental Reports

Previous environmental reports for the subject Property were searched and reviewed as a part of the investigation. Terraprobe prepared a preliminary environmental impact study for the client on December 23, 2009. The report is provided in Appendix M. Details from the report is summarized below.

Report Title	Draft, Preliminary Environmental Impact Study, Pearson Drive Industrial Area, Elliot Lake, Ontario
Author	Paul W. Bowen
Report Date	December 23, 2009
File/Project Number	5-09-4009
Prepared By	Terraprobe Inc.
Prepared For	Mr. Brad Parsons

- The purpose of the report was to identify natural and cultural features in the area and to assess potential constraints with respect to the proposed industrial development.
- There is a former landfill situated on the north side of Pearson Drive near the eastern portion of the site.
- No evidence that a Certificate of Approval was issued for the Landfill. Based on available information, the sit began operation in 1972 and was closed approximately in 1980.
- The waste was placed on a scattered and random basis. There is no accurate information available regarding the precise extent or thickness of waste placement.
- There is a former shallow lake or marshland area located to the north of the landfill, which arrears to have been filled.

- There is a cul-de-sac roadway which runs south from Pearson Drive and is found near the western portion of the site. The lands around the roadway have been apparently levelled and filled.

Based on the results of the investigation, the following PCA was identified on the Phase One Property and within the Study Area:

Location of PCA	PCA	Details
North Side of Pearson Drive near the eastern portion of the site Phase One Property	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than the use of biosoils as a soil conditioner	Report: There is a former landfill that is situated on the north side of Pearson Drive near the eastern portion of the site. There is no evidence that a Certificate of Approval was issued for the landfill. It began operation in 1972 and was shut down approximately in 1980.
East Central Side of the Phase One Property Phase One Property	#30 – Importation of Fill Material of Unknown Quality	Report: There used to be a shallow lake or marshland area located on the east side of the landfill, which now appears to have been filled with Fill Material.

4.2 Environmental Source Information

4.2.1 ERIS

Environmental Risk Information Services Ltd. (ERIS) is an organization that maintains and searches various government and private databases for property-related environmental information. A search of the ERIS databases was requested for the Property and Study Area. The ERIS Report is provided in Appendix J. There was one (1) record found for the Property and no records found for the Study Area.

- One (1) Urban Municipal/Domestic Waste Site

The PCAs identified in the ERIS report are summarized below.

Location of PCA	PCA	Details
Approximately 1.4 km Southeast of Elliot Lake. Elliot Lake, Ontario 0 m Southwest	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than the use of biosoils as soil conditions	ERIS: There is a potential environmental impact due to an Urban Municipal/Domestic Waste facility. This waste facility shut down its operation on November 1, 1982.

4.2.2 Other Source Information

Other environmental source information was searched as part of the Phase One ESA. The information that was searched includes:

- Freedom of Information (FOI) request to the MECP. The FOI request determines if information regarding orders, investigations or other information is on file with respect to the Property.
- Technical Standards and Safety Authority (TSSA) was contacted in regards to records related to storage tanks for petroleum-related products with respect to the Property
- The local Conservation Authority was contacted to determine if the Property was considered regulated under the Conservation Authorities Act and Ontario Regulations 42/06, 146/06 to 182/06 and 97/04.
- Municipal Zoning and Official Plan information was reviewed

The information requests and responses are provided in Appendix M and are summarized below.

Information Request	Response
MECP FOI	An FOI request was submitted to the MECP. A response has not been received to the FOI request as of the date of this report. Once the information requested in the FOI has been received, the information will be provided separately.
TSSA	A Response to the TSSA request was received on January 25, 2022. As a result of the TSSA response, no records were found for the Property and Study Area. The search inquiry memo is provided in Appendix I.
Conservation Authority	There is no defined Conservation Authority for the City of Elliot Lake.
Zoning	The City of Elliot Lake Zoning By-Law was reviewed. The Property is zoned as "*Clean Industrial"* (CM) and *"Public Open Space"* (O) per sections 17 and 19 of City of Elliot Lake By-Law 18-36.

4.3 Physical Setting Sources

4.3.1 Aerial Photographs and Historic Mapping

Aerial photographs, satellite imagery and historic maps were reviewed. Aerial photographs, satellite images and historic maps were selected based on available dates and scale in order to provide as much information as reasonably practical regarding the development of the Property and Study Area from the first developed land use until the present development of the Property. The state of development of the Property and Study Area is summarized in below:

Date	Source	Property	Study Area
1951	Aerial	The Property appears to be undeveloped land, there are no roads or developments nearby. Porridge Lake traverses down south through the Property.	*North* – Appears to be vacant land that is undeveloped *South* – Appears to be vacant land that is undeveloped *East* – Appears to be vacant land that is undeveloped *West* – Appears to be vacant land that is undeveloped

Date	Source	Property	Study Area
1971	Aerial	The Property appears to show some development. There are certain road present all around the Property and Study Area. .	*North* – Appears to have roadways developed *South* – No significant change *East* – Appears to have roadways developed *West* – Appears to have roadways developed
1989	Aerial	The Property appears to show some major developments. There are residential dwellings on the east and additional roadways on the west, north and south of the Property.	*North* – No significant changes *South* – Appears to have roadways developed *East* – Appears to have residential dwellings developed *West* – No significant changes
2004	Aerial	There appears to be a paved trail running directly through the Property (north to south). The East of the Property seems to have developed some commercial dwellings along with residential dwellings.	*North* – Appears to be a paved trail running directly through the Property *South* – No significant changes *East* – Appears to have some commercial dwellings along with residential dwellings *West* – No significant changes
2009	Aerial	No significant change	*North* – No significant changes *South* – No significant changes *East* – No significant changes *West* – No significant changes
2012	Aerial	No significant changes	*North* – No significant changes *South* – No significant changes *East* – No significant changes *West* – No significant changes
2018	Aerial	No significant changes	*North* – No significant changes *South* – No significant changes *East* – No significant changes *West* – No significant changes
2021	Aerial	No significant changes	*North* – No significant changes *South* – No significant changes *East* – No significant changes *West* – No significant change

No applicable PCAs were identified, and a selection of aerial photographs and historic maps are presented in Appendix F.

4.3.2 Topography, Hydrology, Geology

MNRF topographical map, Toporama, Ontario Basic Mapping (OBM), geological maps produced by Ontario Geological Survey, and the Property Survey Plan were reviewed. A geotechnical report completed by Terraprobe and nearby MECP Water Well Records were also assessed for a supplementary review. The information gleaned from the mapping is summarized below. The maps are provided in Appendix K.

Topography	MNRF topographical map, Toporama, Ontario Basic Mapping (OBM), geological maps produced by Ontario Geological Survey, and Site Survey were reviewed. It was identified that the elevation of the Property ranges from approximately 324 m northside to 305 m southside above sea level (mASL). The Property slopes to the south.
Hydrology and Hydrogeology	The nearest water body is Porridge Lake, which is located approximately 98 m north of the Property. Local ground water is expected to flow southwest towards a creek, and the regional ground water is anticipated to flow southeast.
Geology (overburden)	The overburden material is generally Till, which consists of undifferentiated, predominantly sand to silty sand matrix, high content of clasts, often low in matric carbonate content.
Geology (bedrock)	The bedrock on the site if of Serpentine Formation of the Bruce Group, which is comprised of Gneissic tonalite suite Tonalite to granodiorite-foliated to gneissic with minor supracrustal inclusion.
Geology (depth to bedrock)	The depth of the bedrock was not defined for this report.

4.3.3 Fill Materials

Based on the aerial photography reviews, site reconnaissance, and the previous geotechnical investigation, fill material of unknown quality was observed at the site (See section 4.1.6).

4.3.4 Water Bodies, Wetlands, Areas of Natural Significance, and Ground Water Information

MNRF Natural Heritage Map, MECP Ontario Source Protection Atlas, City of Elliot Lake Official Plan, Elliot Lake Natural Area Inventory and MECP Water Well Records were reviewed and are summarized in the table below. The reviewed information is provided in Appendix D.

Water Bodies (Property)	There is a creek of water identified on the Property, it flows in from Porridge Lake located north of the Property.
Water Bodies (Study Area)	Porridge Lake is located approximately 98 m north of the Property.

Wetland (Property)	Provincially Significant • No Provincially Significant wetlands were present on the Property Non-Provincially Significant • No Non-Provincially Significant wetlands were present on the Property Unevaluated • One Unevaluated wetland is present on the north side of the Property
Wetland (Study Area)	Provincially Significant • No Provincially Significant wetlands were present in the Study Area. Non-Provincially Significant • No Non-Provincially Significant wetlands were present in the Study Area Unevaluated • There are two areas of Unevaluated wetlands present in the Study Area, one located northside and the other located southside
Area of Natural Significance (Property)	An area designated by a municipality in its official plan as environmentally significant • The Natural Heritage and Hazards Overlay Rural Map (Schedule C) map obtained from the Official Plan for the City of Elliot Lake portrays that The Property is not part of any designated area by a municipality.
Area of Natural Significance (Study Area)	An area designated by a municipality in its official plan as environmentally significant • The Natural Heritage and Hazards Overlay Rural Map (Schedule C) map obtained from the Official Plan for the City of Elliot Lake portrays that The Property is not part of any designated area by a municipality.
Wellhead Protection Area (Property)	Any well-head protection areas or other designation identified by the municipality in its official plan for the protection of ground water • No well-head protection areas were identified on the property.
Wellhead Protection Area (Study Area)	Any well-head protection areas or other designation identified by the municipality in its official plan for the protection of ground water • No well-head protection areas were identified in the Study Area.
Municipal Drinking Water System (Property)	Property is served by a municipal drinking water system, as defined in the Safe Drinking Water Act, 2002. • Due to the long- standing urban development in the area and the commercial development at the Phase One Property, it is inferred that the property is served by a municipal drinking water system operated by the City of Elliot Lake.

Municipal Drinking Water System (Study Area)	Property is served by a municipal drinking water system, as defined in the Safe Drinking Water Act, 2002. • Due to the long-standing urban development in the area and the commercial and residential development in the Phase One Study Area, it is inferred that the property is served by a municipal drinking water system operated by the City of Elliot Lake.
Supply Wells for Human Consumption (Property)	Observations related to the presence of any well on the Phase One Property that supplies water used for human consumption or agricultural use**. (This section only applies if its determined that all properties within the phase one study area are served by a municipal drinking water system)** • According to the MECP well records, no supply wells are present at the Phase One Property.
Supply Wells for Human Consumption (Study Area)	Observations related to the presence of any well on the Phase One Property that supplies water used for human consumption or agricultural use**. (This section only applies if its determined that all properties within the phase one study area are served by a municipal drinking water system)** • According to the MECP well records, one (1) domestic well is present in the Phase One Study Area. Given the fact that this well was drilled in 1959 and longstanding urban development has been in place in the Phase One Study Area, it is inferred that the supply well is no longer in operation.

4.3.5 Archaeological Resources or Areas of Archaeological Potential

The Property is not designated as of provincial heritage significance under the Ontario Heritage Act. No additional archaeological evaluation of the Property was conducted as part of the Phase One ESA.

4.3.6 Species at Risk

No science-based assessment of potential species at risk or species habitat was conducted as part of the Phase One ESA.

4.3.7 Well Records

The MECP well records database was searched through the MECP online Water Well Database for records located on the Property and in the Study Area (within 250 m). A copy of the Well Records are provided in Appendix L and are summarized below.

Water Wells (Property)	No wells were recorded on the Property as per the MECP online Water Well Database.
Water Wells (Study Area)	• One (1) Domestic well located in the Study Area
Stratigraphy	• 0 to 0.61 m – Topsoil • 0.61 to 16.76 m – Clay, Red • 16.76 to 18.89 m – Medium Sand, Gravel
Depth to Water Table	The approximate depth to groundwater was obtained through the ERIS document as it provided additional information about the Domestic Well located in the Study Area. It can be assumed that the groundwater depth in the local area ranges from approximately 4.72 to 9.14 mbgs.
Depth to Bedrock	The depth to bedrock in the area of the Property has not been identified.

4.4 Site Operating Records

No site operating records were provided for review.

5.0 INTERVIEWS

Terraprobe has conducted an extensive environmental investigation in the vicinity of the property and previous environmental studies on the Property and is familiar with the environmental condition of the area. No individual with additional knowledge of the historical environmental condition of the Property was available for interview during the investigation. Based upon the historic information reviewed and the fact that the Property has previously been investigated by Terraprobe, in QP's opinion, sufficient information about the history, use, and environmental conditions of the Property were available; and not being able to interview knowledgeable individuals did not pose a significant void in the information on historical or current activities that would significantly affect the Conceptual Site Model.

6.0 SITE RECONNAISSANCE

6.1 General Requirements

Date of Investigation	2022-02-16
Time of Investigation	9:00 am to 11:00 am
Weather Conditions	Cloudy, -10 ^{o}C
Duration of Investigation	Approximately 2.0 Hour
Was the Facility Operating? (only for enhanced investigation)	Not Applicable
Person Conducting Investigation and Qualifications	Darren Tegel, Pits & Quarries & Aerial Surveying Services

Photographs, written descriptions, and an explanation of relevant features noted during the site visit are provided in Appendix G.

6.2 Specific Observations at Phase One Property

The site reconnaissance included a thorough drone tour of the Property, with several aerial photographs and videos. Site features are presented on Figure 2, and site photographs are presented in Appendix G. Due to the large area of the Property, Terraprobe contacted a local drone company to conduct the Site Reconnaissance.

6.2.1 Building and Structure Descriptions

Address: Pearson Drive and Esten Drive North	
Building Component	**Description**
Building Configuration	There is one structure present on the north side of the Property it is an electrical sub station. The rest of the Property is comprised primarily of agricultural land, trees, and bushes.
Footprint	Estimated area of the sub station is 30 m x 30 m.
Height	The metal fence height is about 8 feet tall.
Roof	No roof present, open to the environment.
Construction Date	Approximately 2004
Exterior Finish	Metal Fence
Interior Walls	Metal Fence

Interior Ceiling	No ceiling present, open to the environment
Interior Floors	Gravel
Interior Lighting	Light poles
Building Entry and Exit Points	Entry and exit from the trail road connecting to Pearson Drive
Heating Systems	No Heating system present
Cooling Systems	No Cooling system present
Drains, Pits and Sumps	No drains, pits or sumps were noticed during the site visit
Unidentified Substances	No unidentified substances were observed during the site visit.
Staining and Corrosion	No staining or corrosion was observed during the site visit.

6.2.2 Below Ground Structures

No below-ground structures or evidence of historical below-ground structures were observed on the Property during the site inspection. There is a potential for contamination as the Property was previously used as a landfill site.

6.2.3 Designated substances and Other Special Attention Items

The inspection was carried out in accessible areas and included an assessment of the potential presence of the following materials:

- Designated substances (i.e., acrylonitrile, asbestos, arsenic, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica, vinyl chloride).
- Polychlorinated biphenyls (PCBs).
- Ozone- depleting substances.
- Urea-formaldehyde foam insulation (UFFI).
- Special attention items (i.e., mould, radioactive materials).

The presence of these materials is summarized below.

Asbestos	No construction materials containing asbestos were observed during the site inspection.
Lead	No materials containing lead were observed during the site inspection.
Mercury	No materials containing mercury were observed during the site inspection.

PCBs	An electrical substation was observed on the north side portion of the Property. Possible PCBs contamination.
Ozone Depleting Substances	No ozone- depleting substances were observed during the site inspection.
UFFI	No UFFI products were observed during the site inspection.
Mould	No mould or areas of excessive dampness were observed during the site inspection.
Radioactive Materials	No manmade sources of radiation were observed during the site inspection.
Herbicides and Pesticides	No materials containing herbicides or pesticides were observed to be stored or used at the site

6.2.4 Above Ground Storage Tanks

No aboveground storage tanks, or evidence of historical aboveground storage tanks, were observed at the Property.

6.2.5 Under Ground Storage Tanks

No underground storage tanks (or evidence of underground storage tanks) were observed on the Property at the time of the site inspection.

6.2.6 Other Site Conditions

The majority of the site is a vacant lot that is undeveloped. Additional details of the Property are provided below.

Potable and Non-potable Water Sources	Other than the municipal water supply via underground piping, no other potable or non-potable water sources were found at the property.
Underground Utility and Service Corridors	No underground utility and service corridors were observed at the Property.
Current and Former Wells	One (1) domestic well was observed outside the Property boundary, located near residential land within the Project Area.
Sewage Works	Municipal sanitary and storm service on the east end of the Property.
Ground Surface	Based on the Drone Aerial Videos, vegetated areas cover a large portion of the Property. The remainder of the Property consists of gravel access routes and gravel land used as a snow dump area.
Railways	No existing rail lines were located on or adjacent to the Property.
Stained and Odorous Soils	Possibility of stained or odorous soil present due to the previous use of the Property as a landfill site.

Stressed Vegetation	No stressed vegetation was identified on the Property during the site visit.
Fill Materials	Fill material was identified on the east-central portion of the Property. Area was used as a snow dump.
Potentially Contaminating Activity	An electrical substation was observed on the northern portion of the Property.
Unidentified Substances	Terraprobe did not observe any unidentified substances during the site visit.

6.3 Enhanced Investigation Property

The Site is not classed as an Enhanced Investigation Property.

6.4 Investigation of Phase One Study Area

At the time of the site inspection, the following property uses were observed on the sites immediately adjacent to the Phase One Property. The land uses of the adjacent properties are shown on Figure 4.

Direction	Land Uses
North	Agricultural Land Use (Porridge Lake)
East	Residential Land Use (Taylor Blvd)
South	Agricultural Land Use (Intersection of Pearson Drive and Esten Drive North)
West	Agricultural Land Use

6.5 Written Description of Investigation

The site reconnaissance included an aerial tour of the Property via a drone conducted on February 16. 2022 by Darren Tegel, Pits & Quarries & Aerial Surveying Services. The investigation of the Phase One Property included an inspection of the Property and the surrounding environment. Written and Photographic records regarding the condition of the Property are provided in Appendix G.

The Phase One Property consisted of an irregular shape land determined as the location of the closed non-operational landfill. The municipal address of the Property is The Intersection of Pearson Drive and Esten Drive North, Elliot Lake, Ontario.

The PCA identified during the site reconnaissance is summarized below.

Location of PCA	PCA	Details
Northern Portion of the Phase One Property	#55 – Transformer Manufacturing, Processing and Use	Site Reconnaissance: An electrical substation only accessible through the gravel roads connected to Esten Drive North

7.0 REVIEW AND EVALUATION OF INFORMATION

7.1 Current and Past Uses

Current and past uses of the Property were determined from historical aerial photographs, FIPs, chain of title documents and city directories. The table of the current and past uses of the site are provided in Appendix A, in a form approved by the MECP under O.Reg. 153/04.

7.2 Potentially Contaminating Activities

The Phase One Environmental Site Assessment identified the following PCAs on the Property and within the Study Area. The locations of the PCAs are illustrated on Figure 5.

Location of PCA	PCA	Potential APEC (Yes/No)	Details
Entire Phase One Property	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as a soil conditioner	YES (APEC 1)	ERIS: There is a potential environmental impact due to an Urban Municipal/Domestic Waste facility. This waste facility shutdown operation on November 1, 1982. Given the location of the landfill site situated directly on the property, this PCA will cause and APEC.
East Central Portion of the Phase One Property	#30 – Importation of Fill Material of Unknown Quantity	YES (APEC 2)	SITE RECONNAISSANCE: There used to be a shallow lake or marchland area located to the east side of the landfill, which now appears to have been filled with Fill Material. Given the location of the fill, the topography and the flow of shallow groundwater and surface water provides confirmation that this PCA will cause an APEC.
Northern portion of the Phase One Property	#55 – Transformer Manufacturing, Processing, and Use	YES (APEC 3)	SITE RECONNAISSANCE: An electrical substation is only accessible through the gravel roads connected to Esten Drive North Given the location of the electrical substation, the topography and flow of shallow groundwater and surface water provides confirmation that this PCA will cause an APEC

7.3 Areas of Potential Environmental Concern

The Potentially Contaminating Activities identified in Section 7.2 were evaluated for their potential to create an Area of Potential Environmental Concern on the Phase One Property through consideration of:

- The type of PCA;
- The potential magnitude of the PCA (e.g., small-scale waste generation versus significant commercial activity);
- The Contaminants of Potential Concern (CoPCs) associated with the PCA;
- The nature of those CoPCs in terms of their mobility in soil, ground water, and sediment as applicable;
- The anticipated direction of ground water flow;
- The anticipated hydraulic conductivity of saturated media; an
- The distance between the PCA and the Property.

The analysis and rationale used to determine that a particular PCA does or does not create an APEC is provided in Section 7.2. The APECs identified are presented in a form approved by the Director in Appendix B.

The physical area of each APEC is illustrated on Figure 6. Please note that the area illustrated does not necessarily represent the complete potential area of impact, but represents the most likely potential area of impact, and thus represents the area that would first require intrusive investigation in a Phase Two ESA should a Phase Two ESA be conducted.

7.4 Phase One Conceptual Site Model

The Phase One Conceptual Site Model is presented in Appendix C.

7.4.1 Uncertainty or Absence of Information

A discussion and description of how any uncertainties or absence of information may affect the conclusion as to the presence of any Area of Potential Environmental Concern or the validity of the Phase One Conceptual Site Model is provided in the table below.

Component	Uncertainty of Absence of Information	Effect on Phase One CSM
Fire Insurance Plans	Fire Insurance Plans, which include the Phase One Property, were not obtained as a part of the investigation. As such, there exists no known void or absence of information for this component.	No anticipated effect upon the Phase One CSM
Chain of Title	Chain of Title dating back to Crown ownership was obtained as part of the investigation. As such, there exists no known void or absence of information for this component.	No anticipated effect upon the Phase One CSM

Component	Uncertainty of Absence of Information	Effect on Phase One CSM
Environmental Reports	Previous environmental reports for the Phase One Property were searched and reviewed as a part of the investigation. One Previous environmental report pertaining to the Site was available for Terraprobe for review. A Preliminary Environmental Impact Study report was prepared for the client on December 23, 2009.	No anticipated effect upon the Phase One CSM
Environmental Source Information	Environmental Source Information was searched through a combination of Environmental Risk Information Services (ERIS) and Freedom of Information requests (FOI). The FOI has not been received as of the date of this report; once it is received, the information will be provided separately.	No anticipated effect upon the Phase One CSM
Aerial Photographs	Aerial Photographs were obtained from a combination federal, provincial, municipal and private sources. The series of air photos selected represent the development of the Phase One Property and Phase One Study Area. As such, there exists no known void or absence of information for this component.	No anticipated effect upon the Phase One CSM
Topography, Hydrogeology and Geology	The Topography, Hydrogeology and Geology were evaluated through available resources from the MNRF as well as Water Well Records. As such, there exists no known void or absence of information for this component	No anticipated effect upon the Phase One CSM
Water Bodies, Areas and Natural Significance, and Ground water Information	Water Bodies, Areas and Natural Significance, and Ground water Information were evaluated through available resources from the MNRF, local conservation authorities and the MECP. As such, there exists no known void or absence of information for this component	No anticipated effect upon the Phase One CSM
Well Records	Well Records through the summary provided by Environmental Risk Information Services (ERIS), MECP Water Well Information System (WWIS), and Terraprobe's geotechnical report As such, there exists no known void or absence of information for this component	No anticipated effect upon the Phase One CSM
Site Reconnaissance	Unrestricted access to the Phase One Property was provide during the Site Reconnaissance. As such, there exists no known void or absence of information for this component	No anticipated effect upon the Phase One CSM
Interviews	Interviews with persons knowledgeable regarding the current and historic environmental condition of the Phase One Property were conducted. As such, there exists no known void or absence of information for this component	No anticipated effect upon the Phase One CSM

Based upon the information obtained, as noted above, it is the belief of the QP_{ESA} that there are no significant uncertainties or absence of information that would affect the conclusion as to the presence of an APEC or the validity of the Phase One Conceptual Site Model.

8.0 CONCLUSIONS

Based on the records reviewed and site inspection, the following Potentially Contaminating Activities (PCAs) were identified within the Phase One Property and Phase One Study Area (Study Area), which have the potential to cause Area of Potential Environmental Concerns (APECs) on the Property.

On-Site PCAs

- #58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditions.
- #30 – Importation of Fill Material of Unknown Quality
- #55 – Transformer Manufacturing, Processing and Use

Off-Site PCAs

- No Off-Site PCAs were identified

The Phase One ESA identified the following Areas of Potential Environmental Concern (APECs) on the Property:

Area of Potential Environmental Concern	Location of Potentially Contaminating Activities	Potentially Contaminating Activity	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1 Entire Phase One Property	Phase One Property	#58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as a soil conditioner	Metals, As, Sb, Se, B-HWS, CH-, Hg, Cr(VI), pH, VOCs, PHCs (F1-F4), PAHs and PCBs	Soil and Groundwater
APEC 2 East central portion of the Phase One Property	Phase One Property	#30 – Importation of Fill Material of Unknown Quality	PAHs, PCBs, PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CH-, Hg, Cr(VI), pH	Soil and Groundwater
APEC 3 Northern portion of the Phase One Property	Phase One Property	#55 – Transformer Manufacturing, Processing and Use	PCBs	Soil and Groundwater

Based upon the review of the information gathered from the Phase One ESA, Three (3) Areas of Potential Environmental Concern (APECs) have been identified at the Phase One Property and within Phase One Study Area.

Based on the findings of the Phase One ESA, a Phase Two Environmental Site Assessment (Phase Two ESA) to be completed in accordance with the requirements of O.Reg. 153/04 is recommended.

8.1 Signatures

The Phase One Environmental Site Assessment has been completed under the direction and supervision of Samuel Oyedokun, P.Eng, QP_{ESA}. The findings and conclusions presented in this report have been determined on the basis of the information that was obtained and reviewed and on an assessment of the existing conditions on the Phase One Property and properties within the Phase One Study Area.

DRAFT

Asem Quadiri, E.I.T.
Engineer-In-Training

DRAFT

Alysson Johnson, P.Eng., QP_{ESA}
Project Manager

DRAFT

Samuel Oyedokun, P.Eng., QP_{ESA}
Associate

9.0 REFERENCES

1. 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 407/19 on December 4, 2019
2. Ontario Geological Survey 2011. *1:250,000 scale bedrock geology of Ontario.* Ontario Geological Survey. Miscellaneous Release---Data 126-Revision 1.
3. Ontario Geological Survey. 2010. *Surficial geology of Southern Ontario.* Ontario Geological Survey. Miscellaneous Release--Data 128-Revised.
4. Chapman, L.J. and Putnam, D.F. 2007. *The Physiography of Southern Ontario*. Ontario Geological Survey. Miscellaneous Release--Data 228.
5. Ontario Geological Survey. 2000. *Quaternary geology, seamless coverage of the Province of Ontario.* Ontario Geological Survey. Data Set 14---Revised.
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8. Ministry of the Environment, Conservation and Parks, Map: Well Records, Retrieved from: https://www.ontario.ca/environment-and-energy/map-well-records
9. Ministry of the Environment, Conservation and Park, Source Protection Information Atlas, Retrieved from: https://www.gisapplication.lrc.gov.on.ca/SourceWaterProtection/Index.html?site=SourceWaterProtection&viewer=SWPViewer&locale=en-US
10. Ontario Basic Mapping , Retrieved from http://www.geographynetwork.ca/website/obm/viewer.htm
11. Peel Region Natural Areas Inventory, Retrieved from: https://www.peelregion.ca/planning-maps/NAI/map/nai_map.html#11/43.6711/-79.4157
12. Schedule D – Natural Heritage Features and Areas, City of Brampton Official Plan, Retrieved from: https://geohub.brampton.ca/search?type=PDF&q=OP&sort=name
13. Toporama, Retrieved from https://atlas.gc.ca/toporama/en/index.html

10.0 LIMITATIONS AND USE OF THE REPORT

This report was prepared for the exclusive use of the City of Elliot Lake and is intended to provide an assessment of the environmental condition on the Phase One Property located at located at the north side of Pearson Drive and west of Esten Drive North.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Terraprobe Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report, including consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The assessment should not be considered a comprehensive audit that eliminates all risks of encountering environmental problems. The information presented in this report is based on information collected during the completion of the Phase One Environmental Site Assessment by Terraprobe Inc. It was based on the conditions on the Phase One Property at the time of the site inspection, supplemented by a review of historical information to assess the environmental conditions regarding the Phase One Property, as reported herein.

Sampling and analysis of soil, ground water or any other material was not carried out as part of this assessment. Consequently, the presence and/or extent of any adverse environmental impact cannot be verified. The potential for environmental liability and/or environmental impact is an opinion that has been arrived at within the scope of this assessment.

In assessing the environmental conditions/history of the Phase One Property, Terraprobe Inc. has relied in good faith on information provided by others, as noted in this report, and has assumed that the information provided by those individuals is factual and accurate. Terraprobe Inc. accepts no responsibility for any deficiency, misstatement or inaccuracy in this report resulting from the information provided by those individuals.

There is no warranty expressed or implied by this report regarding the environmental status of the Phase One Property. Professional judgement was exercised in gathering and analysing information collected by our staff, as well as that submitted by others. The conclusions presented are the product of professional care and competence, and cannot be construed as an absolute guarantee.

In the event that during future work, new information regarding the environmental condition of the Phase One Property is encountered, or in the event that the outstanding responses from the regulatory agencies indicate outstanding issues on file with respect to the Phase One Property, Terraprobe Inc. should be notified in order that we may re-evaluate the findings of this assessment and provide amendments, as required.

FIGURES

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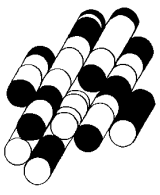

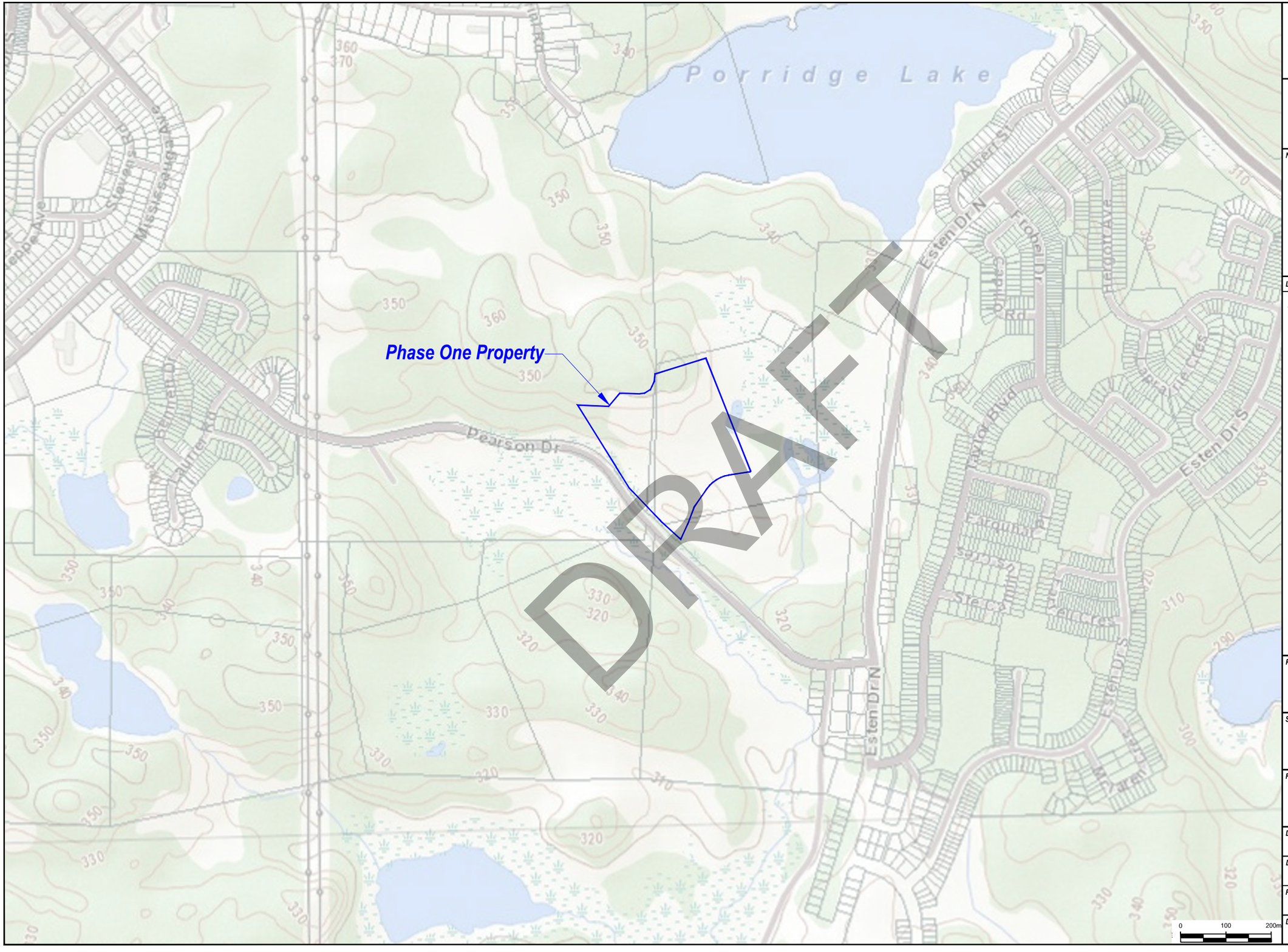

Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
MNR Maps

Notes:

Legend:

Phase One Property Boundary

Project Title:
Phase One Environmental Site Assessment

Site Location:
Pearson Drive and Esten Drive N,
Elliot Lake, Ontario

Figure Title:
Property Location Plan

Designed By: AQ	***File No.:*** 5-21-0300-41
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: SO	***Figure No.:*** 1
Date: March 2022	

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Reference: MNR Maps

Notes:

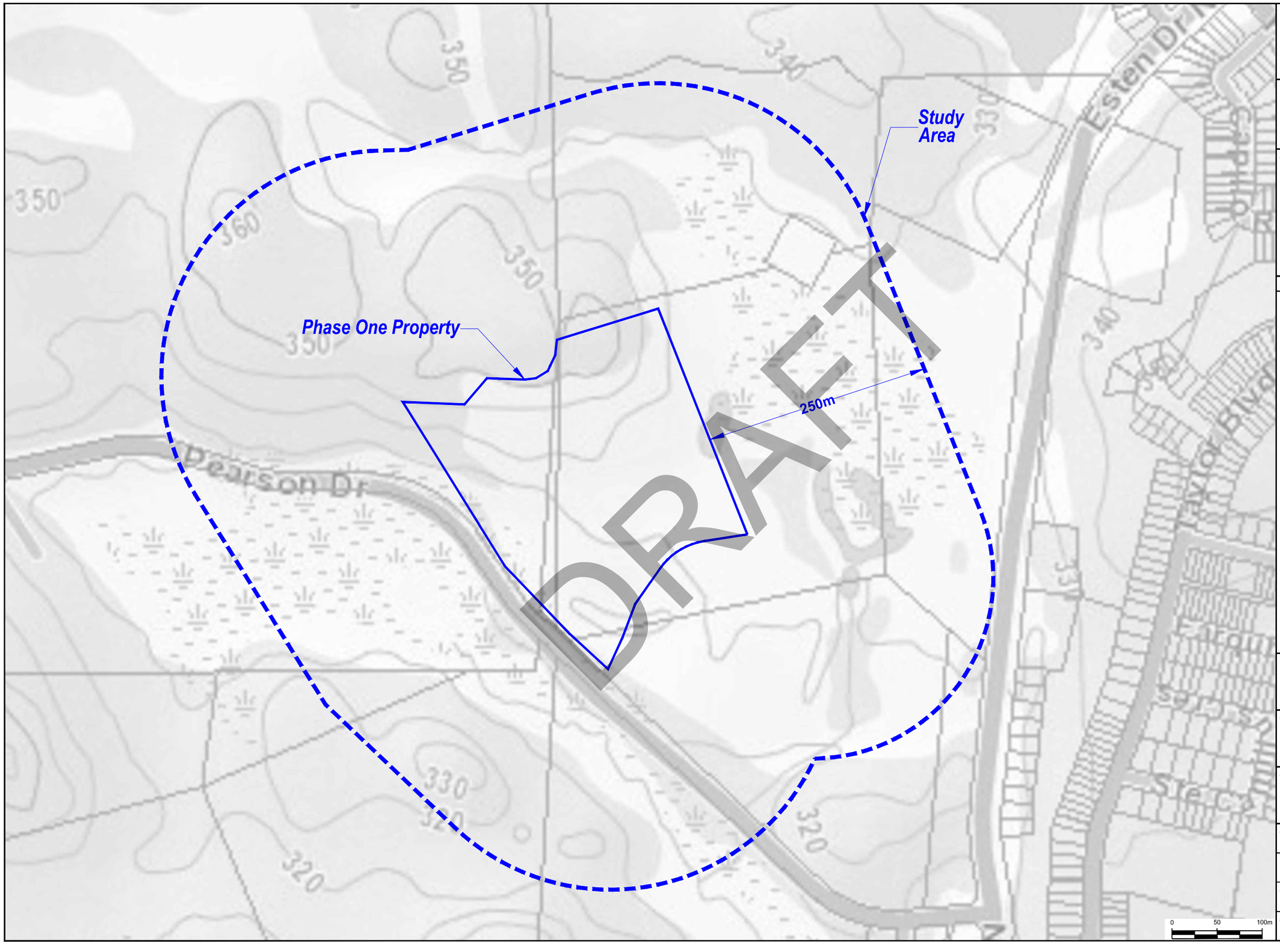
Legend:
Phase One Property Boundary
Hydro Station

Project Title: Phase One Environmental Site Assessment

Site Location: Pearson Drive and Esten Drive N, Elliot Lake, Ontario

Figure Title: PHASE ONE PROPERTY

Designed By: AQ	File No.: 5-21-0300-41
Drawn By: SSK	Scale: As Shown
Reviewed By: SO	Figure No.: 2
Date: March 2022	



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Reference:
MNR Maps

Notes:

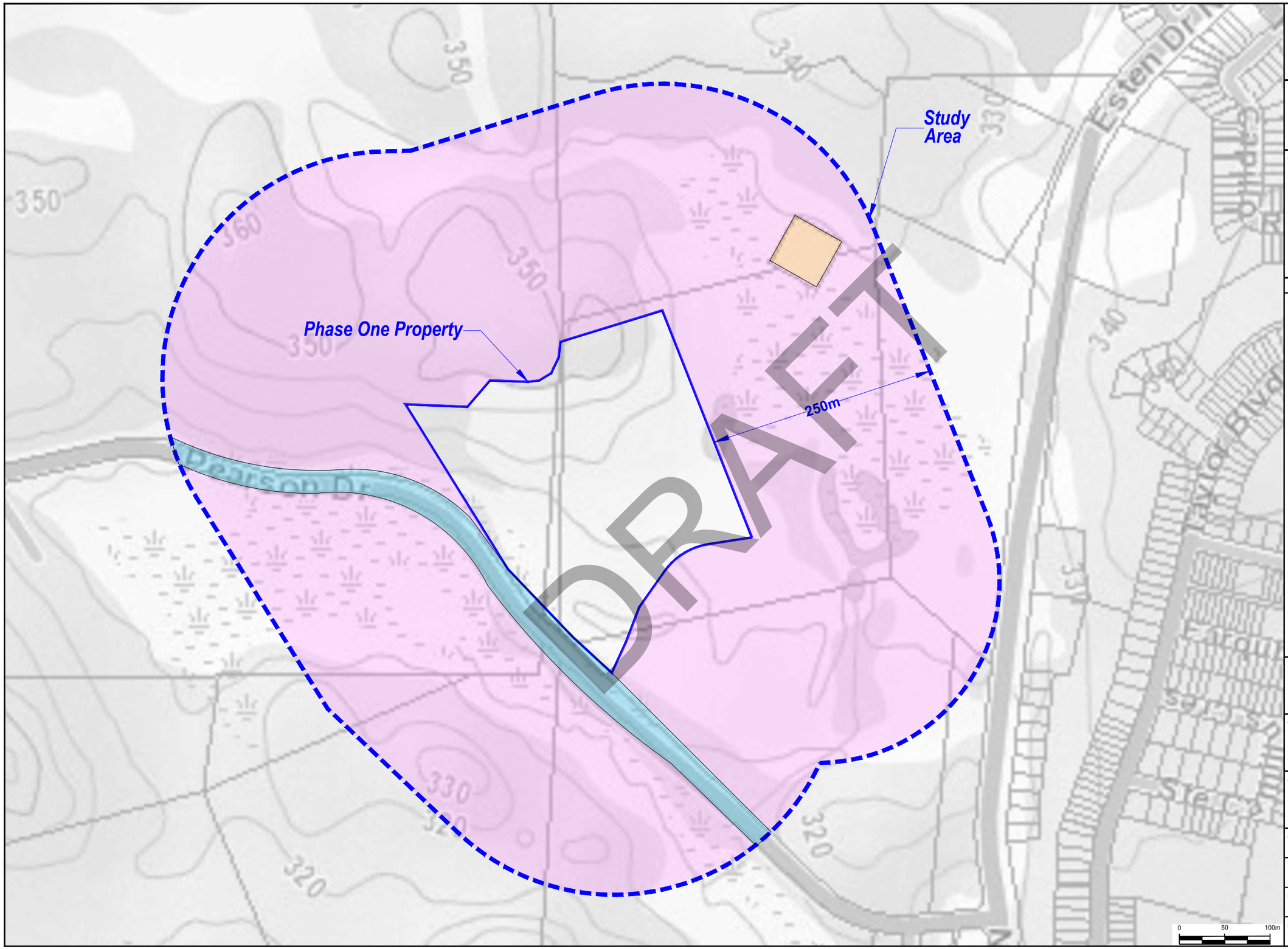
Legend:
- Phase One Property Boundary
- Phase One Study Area, 250m

Project Title:
Phase One Environmental Site Assessment

Site Location:
Pearson Drive and Esten Drive N,
Elliot Lake, Ontario

Figure Title:
PHASE ONE STUDY AREA

Designed By: AQ	*File No.:* 5-21-0300-41
Drawn By: SSK	*Scale:* As Shown
Reviewed By: SO	*Figure No.:* 3
Date: March 2022	



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Reference:
MNR Maps

Notes:

Legend:

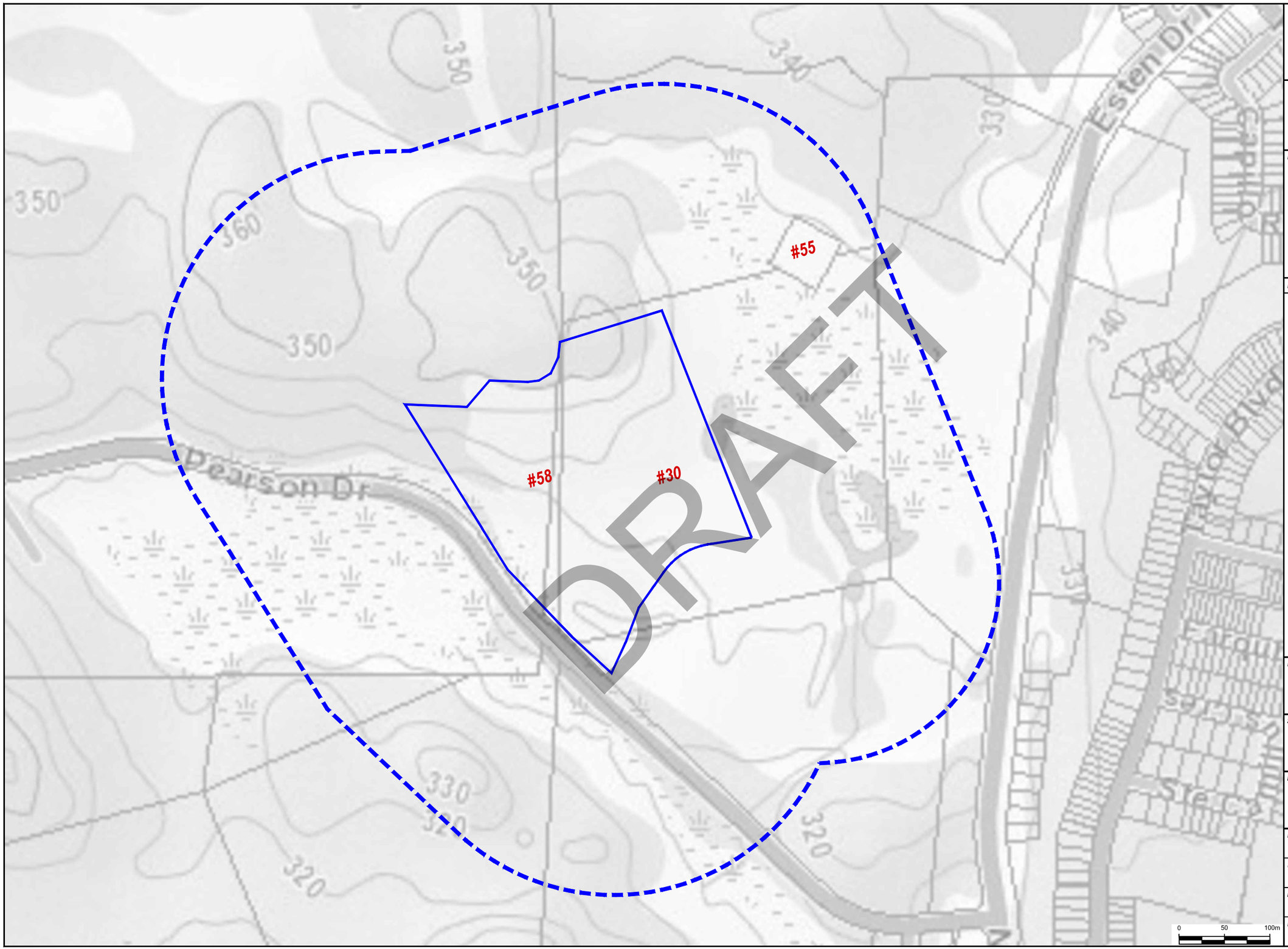
- Phase One Property Boundary
- Community Land Use (Roads)
- Industrial Land Use
- Agricultural / Other Land Use

Project Title:
Phase One Environmental Site Assessment

Site Location:
Pearson Drive and Esten Drive N,
Elliot Lake, Ontario

Figure Title:
ADJACENT PROPERTY LAND USES

Designed By: AQ	*File No.:* 5-21-0300-41
Drawn By: SSK	*Scale:* As Shown
Reviewed By: SO	*Figure No.:* 4
Date: March 2022	



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Reference:
MNR Maps

Notes:

PCA - Potentially Contaminating Activity
#00 PCA Causing APEC
#00 PCA Not Causing APEC

Legend:

	Phase One Property Boundary
	Phase One Study Area, 250m
#30	Importation of Fill Material of Unknown Quality
#55	Transformer Manufacturing, Processing and Use
#58	Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners

Project Title:
Phase One Environmental Site Assessment

Site Location:
Pearson Drive and Esten Drive N,
Elliot Lake, Ontario

Figure Title:
PCA LOCATIONS

Designed By: AQ	***File No.:*** 5-21-0300-41
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: SO	***Figure No.:*** 5
Date: March 2022	

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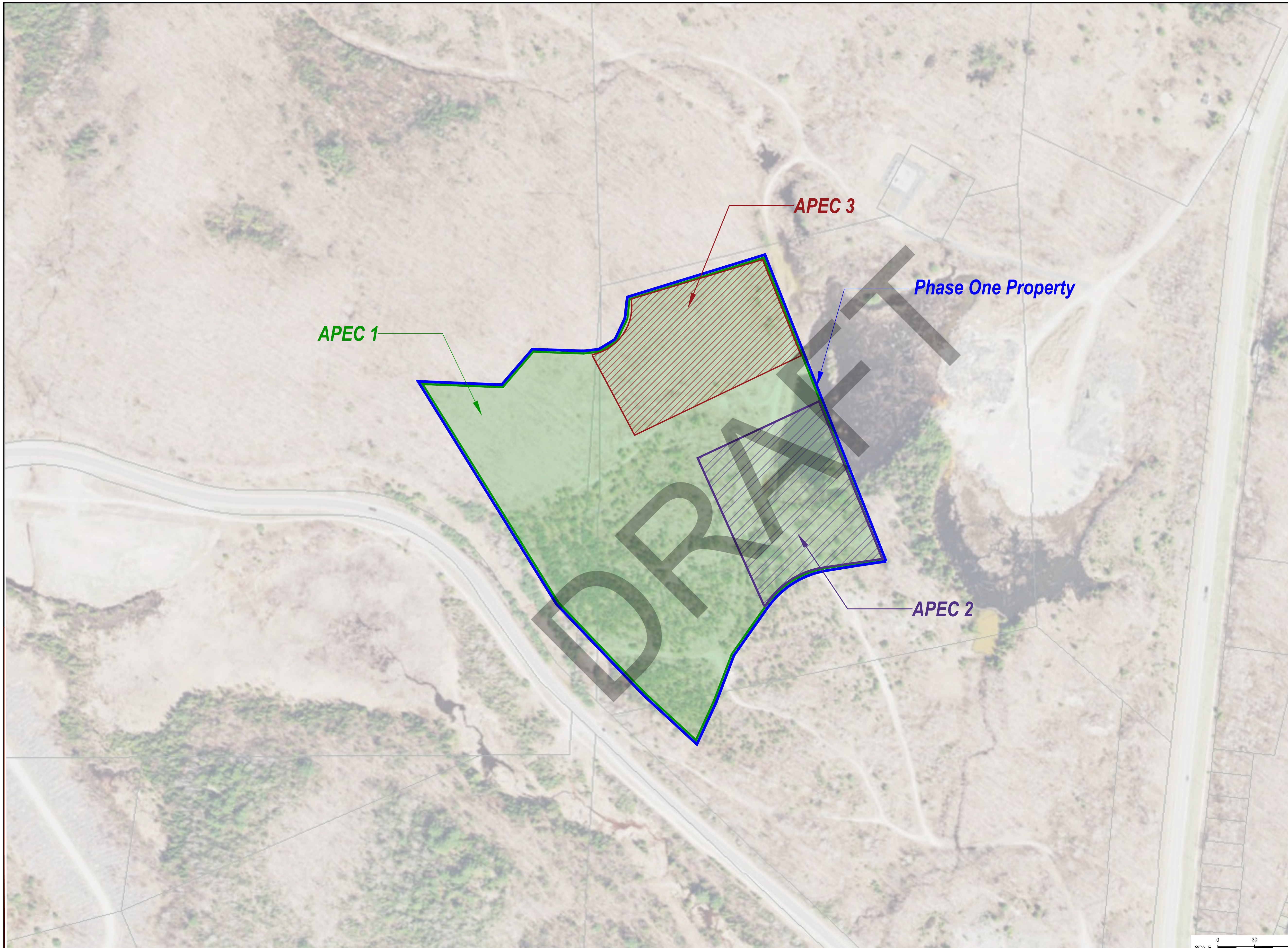

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N

Reference: MNR Maps

Notes:

APEC - Area of Potential Environmental Concern

Legend:

- Phase One Property Boundary
- APEC 1
- APEC 2
- APEC 3

Project Title: Phase One Environmental Site Assessment

Site Location: Pearson Drive and Esten Drive N, Elliot Lake, Ontario

Figure Title: APEC LOCATIONS

Designed By:	AQ	*File No.:*	5-21-0300-41
Drawn By:	SSK	*Scale:*	As Shown
Reviewed By:	SO		
Date:	March 2022	*Figure No.:*	6

APPENDICES

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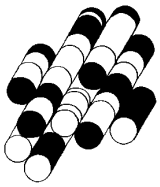

APPENDIX A

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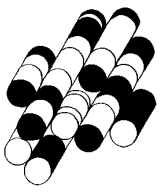

TABLE OF CURRENT AND PAST USES OF THE PHASE ONE PROPERTY
(Refer to clause 16(2)(b), Schedule D, O. Reg. 153/04)

Legal Description **(Pt Mining Claim S101390) Except 1M437 & 1M438**
Pin # **31623-0345 (LT) & 31623-0149 (LT)**

Year	Name of Owner	Description of Property Use	Property Use	Other Observations from Aerial Photographs, Fire Insurance Plans, Etc.
1975 to Present	The Corporation of the Township of Elliot Lake	The vacant land was used as an Urban Municipal/Domestic Waste facility from the year 1972 to 1982 (shutdown year).	Community Use	Aerial Photograph (2004): No presense of a landfill area, the land is covered with trees and bushes,with the some dirt roads accessible by trucks or ATVs.
1962-1975	Reno Rinaldi & Helen McKinnon			Aerial Photograph (1971): Shows the presense of a landfill area surrounded by a forest
1959 to 1962	Heath Gold Mines Limited	Other than the names of the owners, no other information were available for the Property. As such, the property use is interpreted.		Other than the Chain of Title information, no details were available for this time period. As such, the property use is interpreted.
prior to 1959	Crown			

1 - For each owner, specify one of the following types of property use (as defined in O. Reg. 153/04) that applies: Agriculture or other use, Commercial use, Community use, Industrial use, Institutional use, Parkland use, Residential use

2 - When submitting a record of site condition for filing, a copy of this table must be attached

Cette publication hautement spécialisée n'est disponible qu'en anglais en vertu du règlement 671/92, qui en exempte l'application de la Loi sur les services en français. Pour obtenir de l'aide en français, veuillez communiquer avec le ministère de l'Environnement, de la Protection de la nature et des Parcs au 1-800-461-6290.

APPENDIX B

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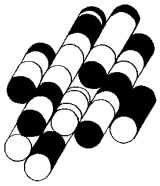


TABLE OF AREAS OF POTENTIAL ENVIRONMENTAL CONCERN
(Refer to clause 16(2)(a), Schedule D, O. Reg. 153/04)

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
APEC 1	Phase One Property, Pearson Drive and Esten Drive	#58 - Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, othe rthan use of biosoils as a soil conditioner	On-Site	Metals, As, Sb, Se, B-HWS, CH-, Hg, Cr(VI), pH, VOCs, PHCs (F1-F4), PAHs and PCBs	Soil and Groundwater
APEC 2	Northern Portion of the Phase One Property	#30 - Importation of Fill Material of Unknown Quality	On-Site	PAHs, PCBs, PHCs, VOCs, BTEX, Metals, As, Sb, Se, B-HWS, CH-, Hg, Cr(VI), pH	Soil and Groundwater
APEC 3	Northern Portion of the Phase One Property	#55 - Transformer Manufacturing, Processing and Use	On-Site	PCBs	Soil and Groundwater

Notes:

2 - Area of Potential Environmental Concern means the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through,

(a) identification of past or present uses on, in or under the phase one property, and

(b) identification of potentially contaminating activity.

3 - Potentially Contaminating Activity means 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

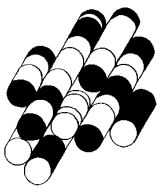
4 - when completing this column, identify all contaminants of potential concern using the Method Groups as identified in the Protocol for in the Assessment of Properties under Part XV.1 of the Environmental Protection Act, March 9, 2004, amended as of July 1, 2011, as specified below:

ABNs	Metals
CPs	As, Sb, Se
1,4-Dioxane	Na
Dioxins/Furans, PCDDs/PCDFs	B-HWS
OCs	Cl-
PHCs	CN-
PCBs	Electrical Conductivity
PAHs	Cr (VI)
THMs	Hg
VOCs	Methyl Mercury
BTEX	Low or high pH,
Ca, Mg	SAR

5 - when submitting a record of site condition for filing, a copy of this table must be attached

APPENDIX C

TERRAPROBE INC.



PHASE ONE CONCEPTUAL SITE MODEL

Pearson Drive and Esten Drive North, Elliot Lake, Ontario

Phase One CSM		Information Pertaining to Property
Figures of the Phase One Study Area are provided that:		
i.	Show any existing buildings and structures,	The Site is currently vacant. The Site is identified with municipal address of Intersection of Pearson Drive and Esten Drive North, Elliot Lake, Ontario Location of the vacant site are shown on Figure 2.
ii.	Identify and locate water bodies located in whole or in part on the Phase One Study Area	The nearest water body is Porridge Lake approximately 0.1 km to the north of the Site. Groundwater and surface water is expected to flow southwest. All water bodies on the Phase One Property and Phase Once Study Area are shown on Figure 1.
iii.	Identify and locate any Areas of Natural Significance located in whole or in part on the Phase One Study Area	Terraprobe reviewed the Ontario Ministry of Natural Resources and Forestry (MNRF) NHIC database based on the information no Area of Natural or Scientific Interests (ANSIs) were located within the Phase One Study Area.
iv.	Locate any drinking water wells at the Phase One Site	No drinking water wells, are located on the on the Phase One Site.
v.	Show roads, including names, within the Phase One Study Area	The Site is situated on the on the north side of Pearson Drive and west of Esten Drive North in the City of Elliot Lake, Ontario. Other roads and properties within the Study Area are presented on Figure 4.
vi.	Show use of properties adjacent to the Phase One Site	The Land Uses of the adjacent properties are shown on Figure 4.
vii.	Identify and locate area where any potentially contaminating activity has occurred, and show tanks in such areas	Potentially Contaminating Activities (PCAs) located on the Site and within the Study Area are shown on Figure 5.
viii.	Identify and locate any areas of potential environmental concern	Three (3) Areas of Potential Environmental Concern (APECs) were identified on the Site.
The following is a description and assessment of:		
i.	Any areas where potentially contaminating activity on or potentially affecting the Phase One Property has occurred,	Three (3) PCAs were located off-site and were determined not to cause APECs on the Property. • #58 – Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditions. • #30 – Importation of Fill Material of Unknown Quality • #55 – Transformer Manufacturing, Processing and Use

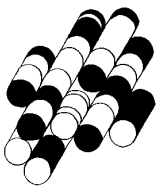
Phase One CSM		Information Pertaining to Property
ii.	Any contaminants of potential concern	The following Contaminants of Potential Concern (CoPCs) were identified for the Site or Phase One Study Area: • Metals, As, Sb, Se, B-HWS, CH-, Hg, Cr(VI), pH, VOCs, PHCs (F1-F4), PAHs and PCBs
iii.	The potential for underground utilities, if any present, to affect contaminant distribution and transport,	No underground utilities present at the Site as it is vacant land.
iv.	Available regional or site specific geological and hydrogeological information,	Topography • The approximate elevation of the Site ranges from approximately 324 m north side to 305 m south side above sea level (mASL). The Property slopes to the south. Hydrogeology • The nearest water body is Porridge Lake, which is located approximately 98 m north of the Property. Local ground water is expected to flow southwest towards a creek and the regional ground water is anticipated to flow southeast. Geology (overburden) • The overburden material is generally Till which consists of undifferentiated, predominantly sand to silty sand matrix, high content of clasts, often low in matric carbonate content. Geology (bedrock) • The bedrock on the site if of Serpentine Formation of the Bruce Group, which is comprised of Gneissic tonalite suite Tonalite to granodiorite-foliated to gneissic with minor supracrustal inclusion. Geology (depth to bedrock) • The appropriate depth was not identified within the Phase One Property or the Phase One Study Area
v.	How any uncertainty or absence of information obtained in each of the components of the Phase One ESA could affect the validity of the model.	No uncertainty was encountered while conducting the Phase One ESA that could affect the validity of the model.

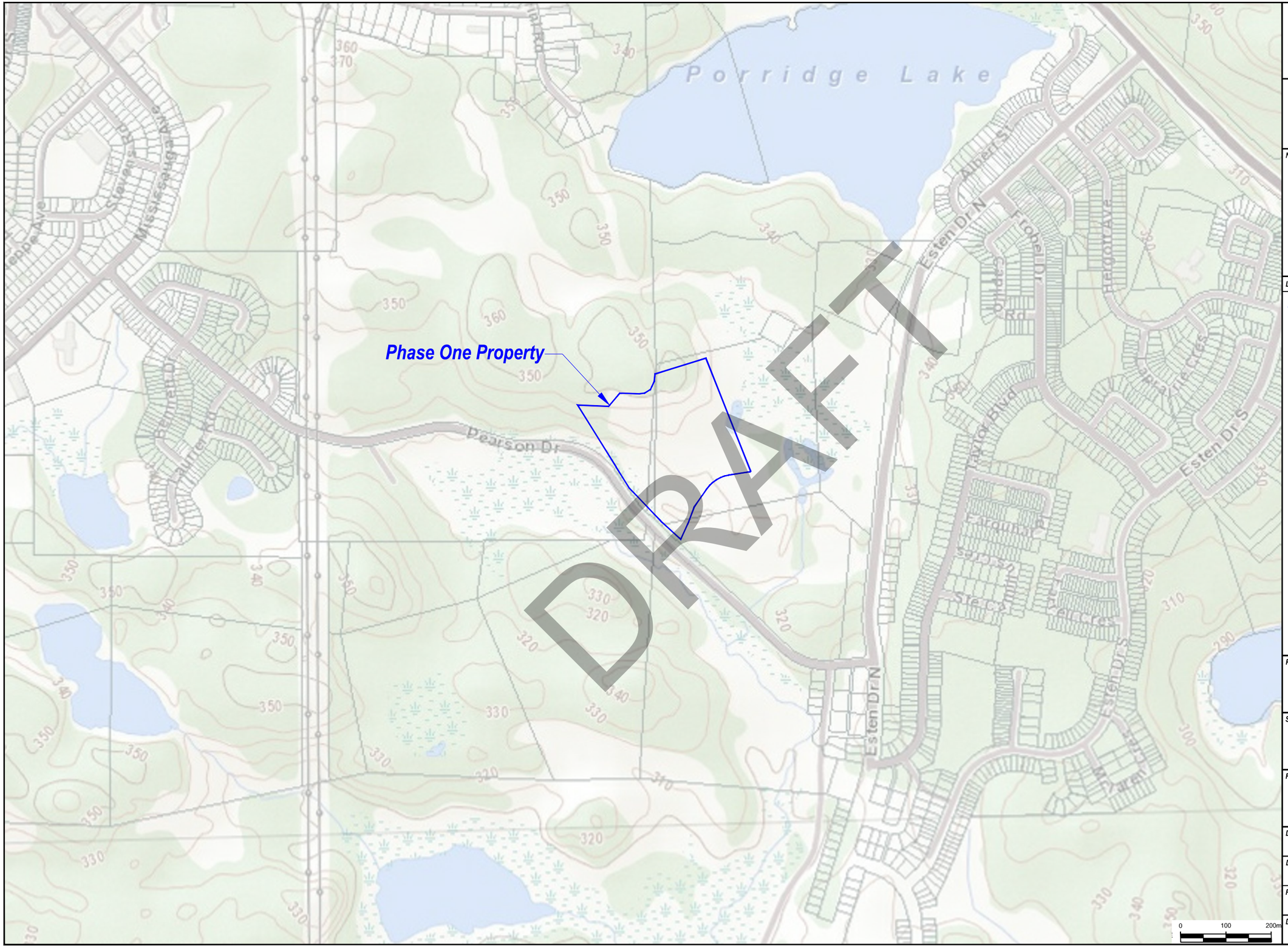
Figures:

Figure 1 – Phase One Property Location
Figure 2 – Phase One Property
Figure 3 – Phase One Study Area
Figure 4 – Adjacent Land Uses
Figure 5 – PCA Locations
Figure 6 – APEC Locations

FIGURES

TERRAPROBE INC.





Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
MNR Maps

Notes:

Legend:

Phase One Property Boundary

Project Title:
Phase One Environmental Site Assessment

Site Location:
Pearson Drive and Esten Drive N,
Elliot Lake, Ontario

Figure Title:
Property Location Plan

Designed By: AQ	***File No.:*** 5-21-0300-41
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: SO	***Figure No.:*** 1
Date: March 2022	

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Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference: MNR Maps

Notes:

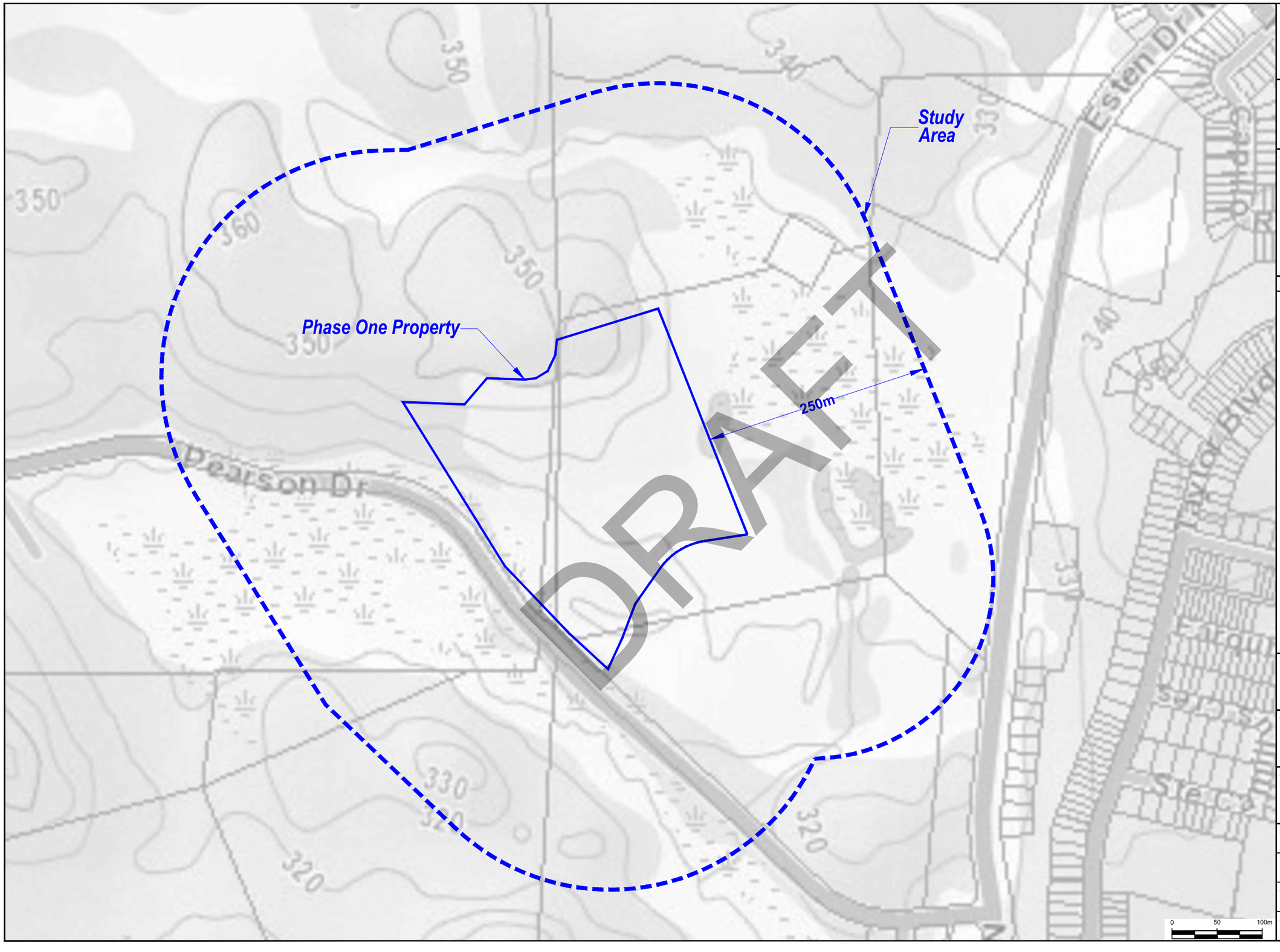
Legend:
- Phase One Property Boundary
- Hydro Station

Project Title: Phase One Environmental Site Assessment

Site Location: Pearson Drive and Esten Drive N, Elliot Lake, Ontario

Figure Title: PHASE ONE PROPERTY

Designed By: AQ	**File No.:** 5-21-0300-41
Drawn By: SSK	**Scale:** As Shown
Reviewed By: SO	**Figure No.:** 2
Date: March 2022	



Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
MNR Maps

Notes:

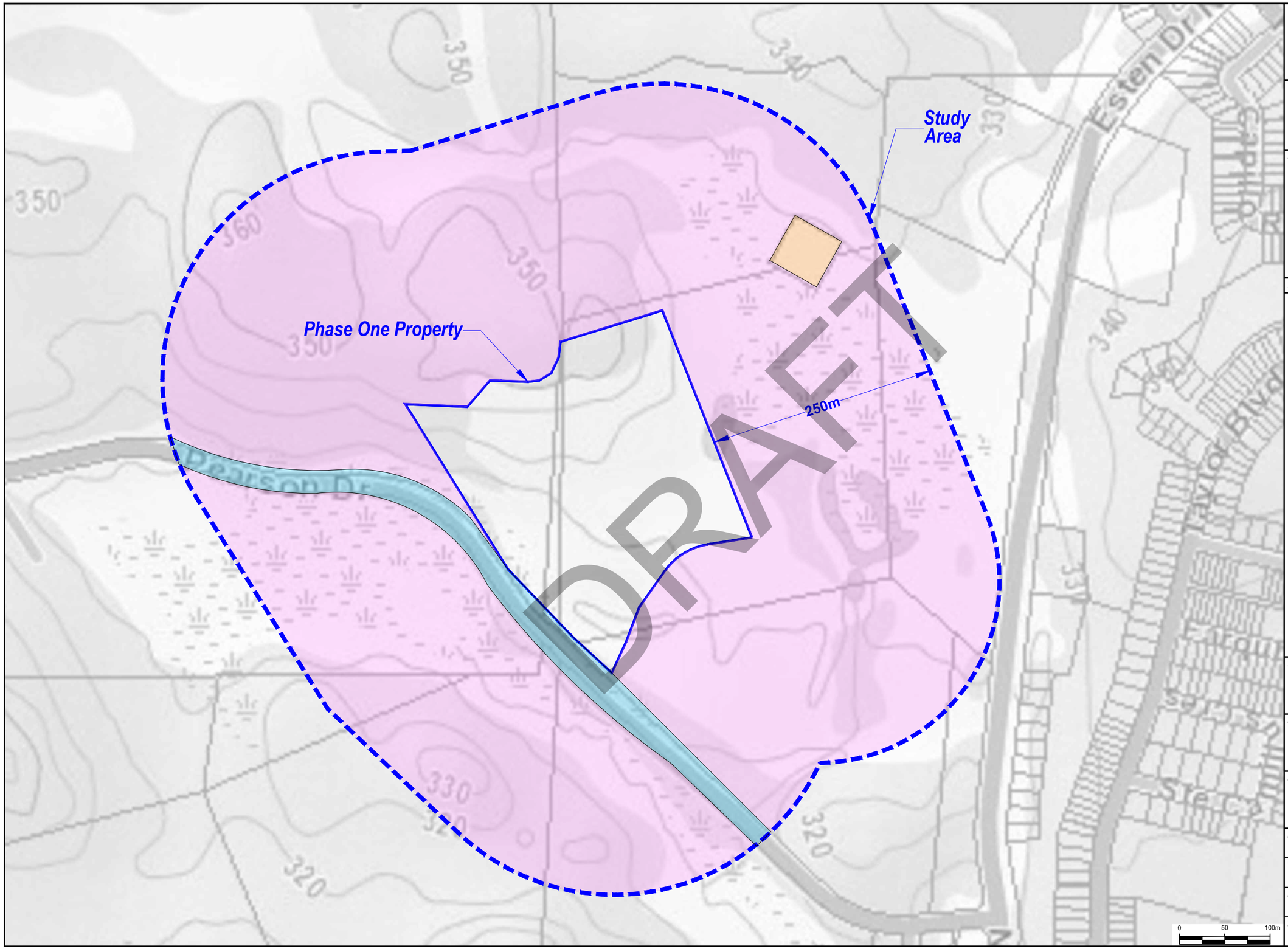
Legend:
- Phase One Property Boundary
- Phase One Study Area, 250m

Project Title:
Phase One Environmental Site Assessment

Site Location:
Pearson Drive and Esten Drive N,
Elliot Lake, Ontario

Figure Title:
PHASE ONE STUDY AREA

Designed By: AQ	*File No.:* 5-21-0300-41
Drawn By: SSK	*Scale:* As Shown
Reviewed By: SO	*Figure No.:* 3
Date: March 2022	



Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
MNR Maps

Notes:

Legend:

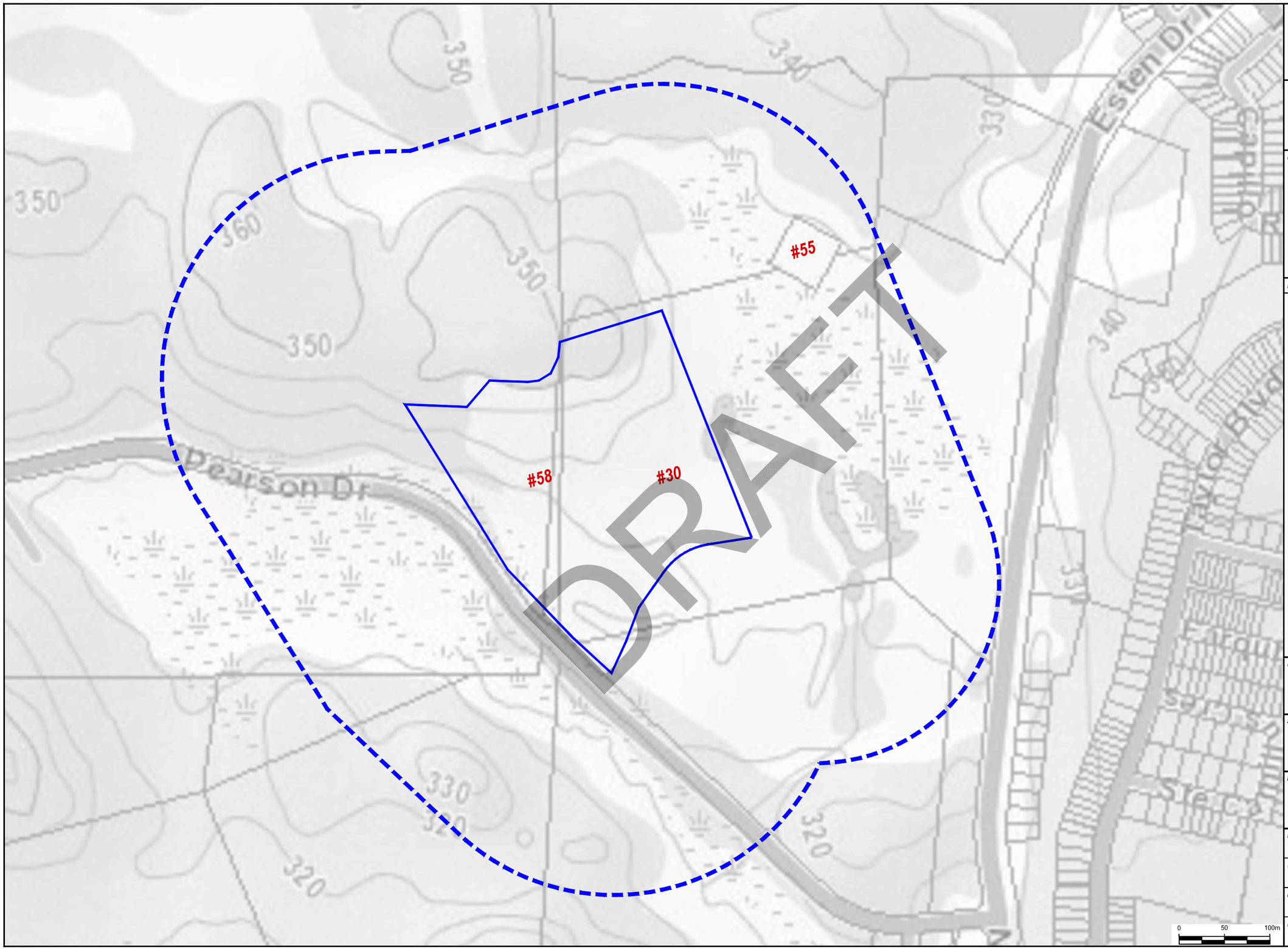
- Phase One Property Boundary
- Community Land Use (Roads)
- Industrial Land Use
- Agricultural / Other Land Use

Project Title:
Phase One Environmental Site Assessment

Site Location:
Pearson Drive and Esten Drive N,
Elliot Lake, Ontario

Figure Title:
ADJACENT PROPERTY LAND USES

Designed By: AQ	*File No.:* 5-21-0300-41
Drawn By: SSK	*Scale:* As Shown
Reviewed By: SO	*Figure No.:* 4
Date: March 2022	



Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference:
MNR Maps

Notes:

PCA - Potentially Contaminating Activity
#00 PCA Causing APEC
#00 PCA Not Causing APEC

Legend:

	Phase One Property Boundary
	Phase One Study Area, 250m
#30	Importation of Fill Material of Unknown Quality
#55	Transformer Manufacturing, Processing and Use
#58	Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners

Project Title:
Phase One Environmental Site Assessment

Site Location:
Pearson Drive and Esten Drive N,
Elliot Lake, Ontario

Figure Title:
PCA LOCATIONS

Designed By: AQ	***File No.:*** 5-21-0300-41
Drawn By: SSK	***Scale:*** As Shown
Reviewed By: SO	***Figure No.:*** 5
Date: March 2022	

Y:\Shared\GA1\Temporal\Brampton\+Project Files\2021\Branch Folders\5-21-0300 - Pearson Drive and Esten Drive N, Elliot Lake, ON\41 - Phase 1 ESA\5-21-0300 Drwgs.
Logic\AutoCAD\5-21-0300-41 - Phase One ESA.dwg, 4/7/2022 7:13:53 PM, _pwg to PDF.pc3

Terraprobe Inc.
Consulting Geotechnical & Environmental Engineering
Construction Materials, Inspection & Testing
11 Indell Lane - Brampton Ontario L6T 3Y3 (905) 796-2650

Reference: MNR Maps

Notes:
APEC - Area of Potential Environmental Concern

Legend:
- Phase One Property Boundary
- APEC 1
- APEC 2
- APEC 3

Project Title: Phase One Environmental Site Assessment

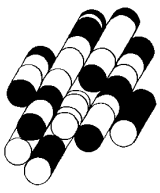
Site Location: Pearson Drive and Esten Drive N, Elliot Lake, Ontario

Figure Title: APEC LOCATIONS

Designed By: AQ	*File No.:* 5-21-0300-41
Drawn By: SSK	*Scale:* As Shown
Reviewed By: SO	
Date: March 2022	*Figure No.:* 6

APPENDIX D

TERRAPROBE INC.



Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

5-21-0300-41

Map created:1/24/2022

Notes:

Enter map notes

Legend

- Greenbelt Area Boundary
- Greenbelt Hamlets
- ORM Boundary
- NEP Boundary
- NEP Parks and Open Space System
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Woodland
- Conservation Reserve
- Provincial Park
- ORM Land Use Designation
- Countryside Area/zone de campagne
- Natural Core Area/zone centrale naturelle
- Natural Linkage Area/lien naturel
- Palgrave Estates Residential Community/communauté résidentielle de Palgrave Estates
- Rural Settlement/zone de peuplement rurale
- Settlement Area/zone de peuplement
- NEP Land Use Designation
- Escarpment Natural Area/zone naturelle de l'escarpement
- Escarpment Protection Area/zone protégée l'escarpement
- Escarpment Recreation Area/zone récréative de l'escarpement
- Escarpment Rural Area/zone rurale de l'escarpement
- Mineral Resource Extraction Area/zone d'extraction de resources minérales
- Urban Area/zone urbaine
- Natural Heritage System
- Greenbelt Specialty Crop Area

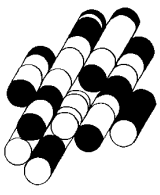
0.3 0 0.16 0.3 Kilometres

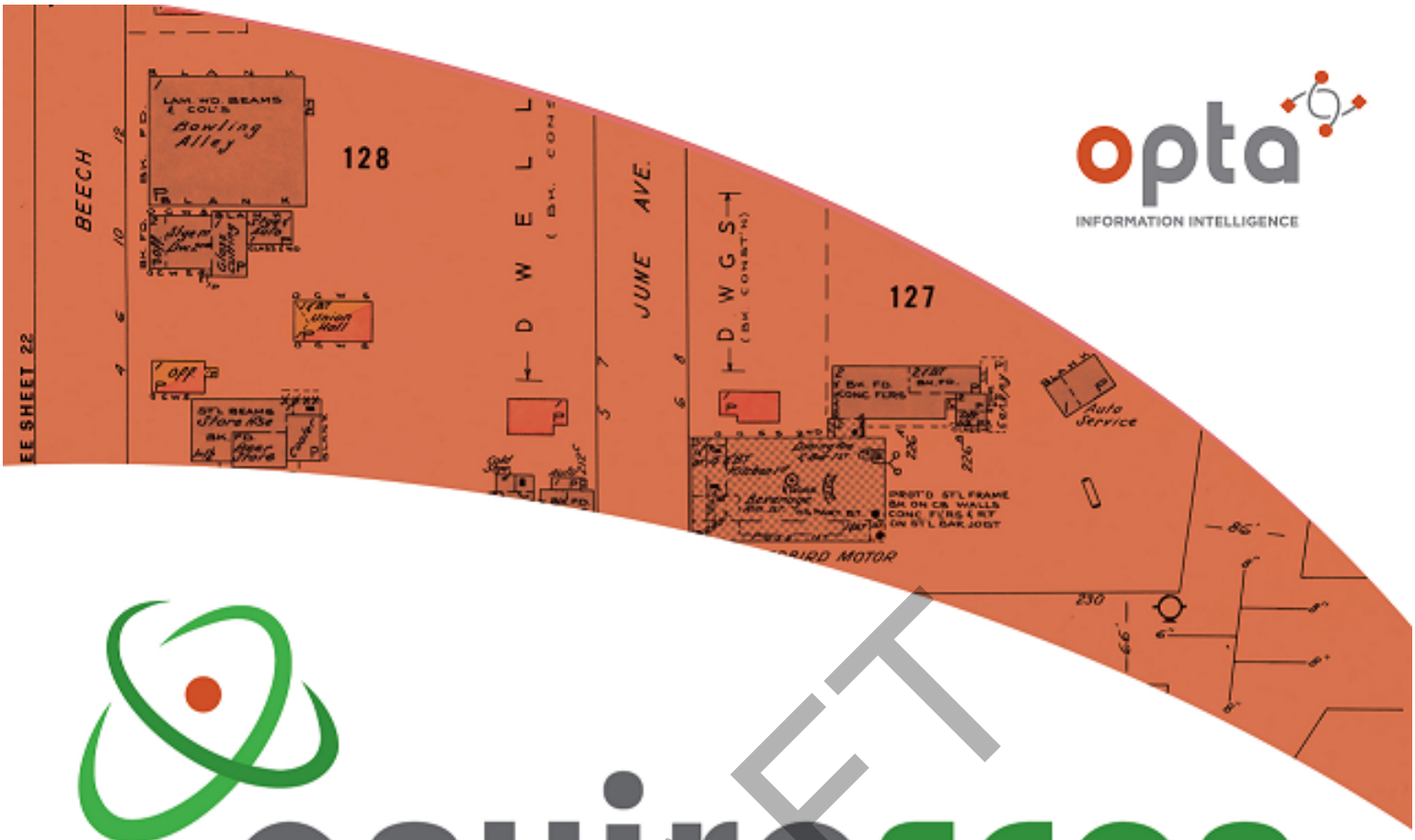
Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

APPENDIX E

TERRAPROBE INC.





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:

Swati

Site Address:

Northwest Corner of Pearson Drive and Esten DriveElliot Lake ON Canada

Project No:

22012401257

Opta Order ID:

104068

Requested By:

Eleanor Goolab
ERIS

Date Completed:

1/31/2022 8:08:28 AM

Project Name: Northwest Corner of Pearson Drive and Esten Drive

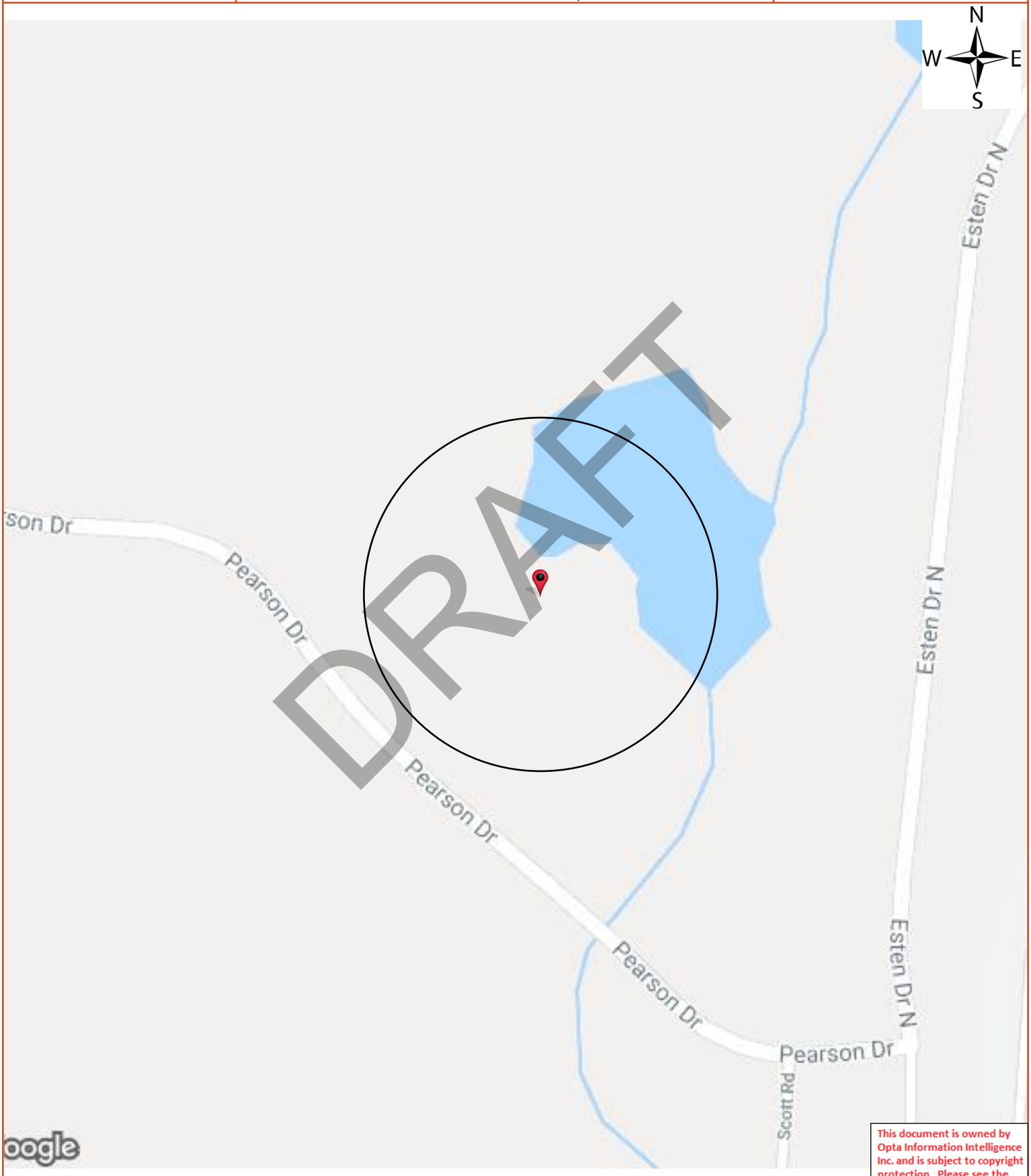
Project #: 22012401257
P.O. #: 521030041

ENVIROSCAN Report

Search Area: Northwest Corner of Pearson Drive and Esten DriveElliot Lake ON Canada

Requested by:
Eleanor Goolab
Date Completed: 01/31/2022 08:08:28

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.

ENVIROSCAN Report

No Records Found

Requested by:
Eleanor Goolab
Date Completed: 01/31/2022 08:08:28

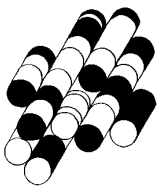
enviroscan
OPTA INFORMATION INTELLIGENCE

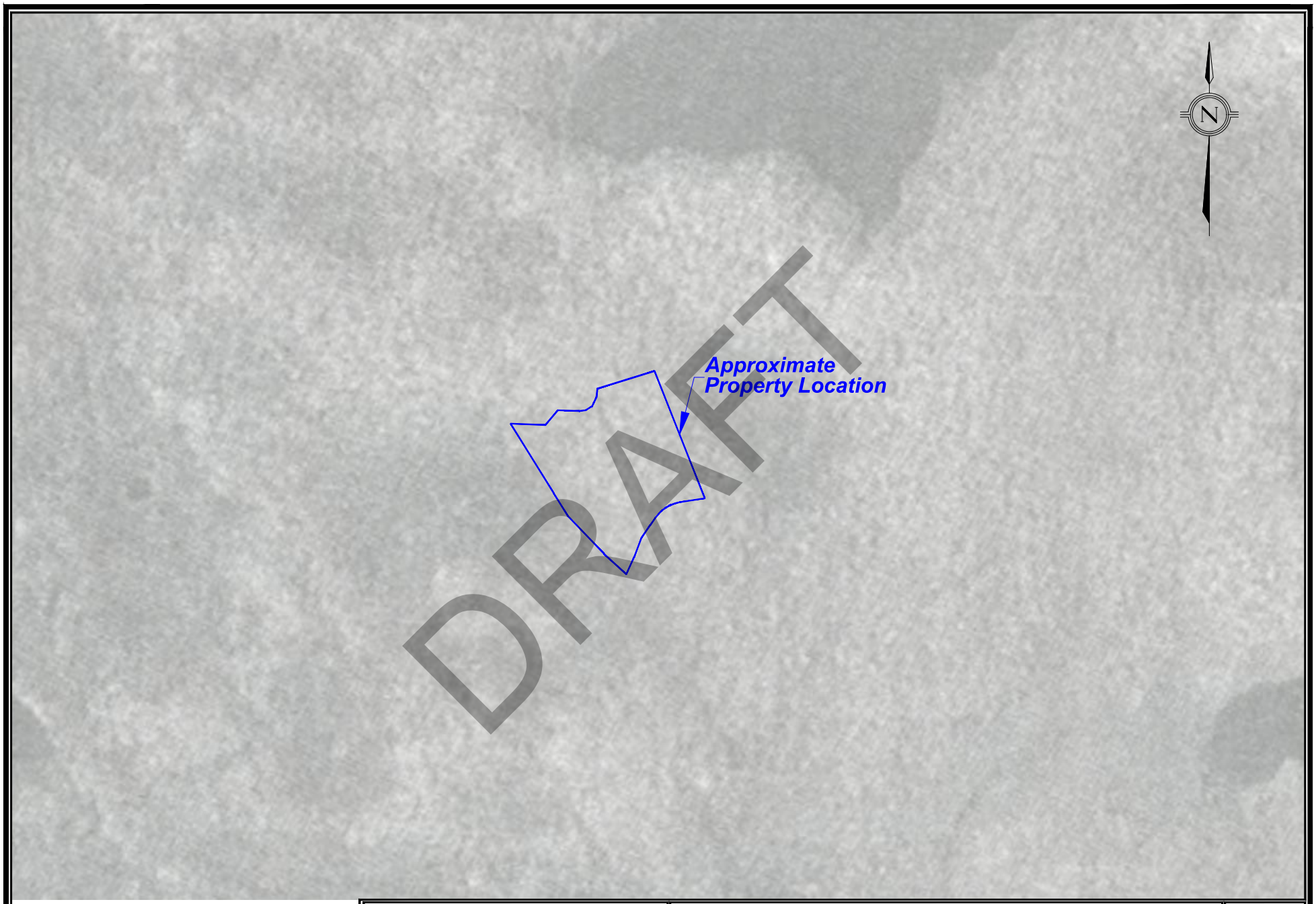
No Records Found

N
W E
S

APPENDIX F

TERRAPROBE INC.





SCALE 0 100 200m

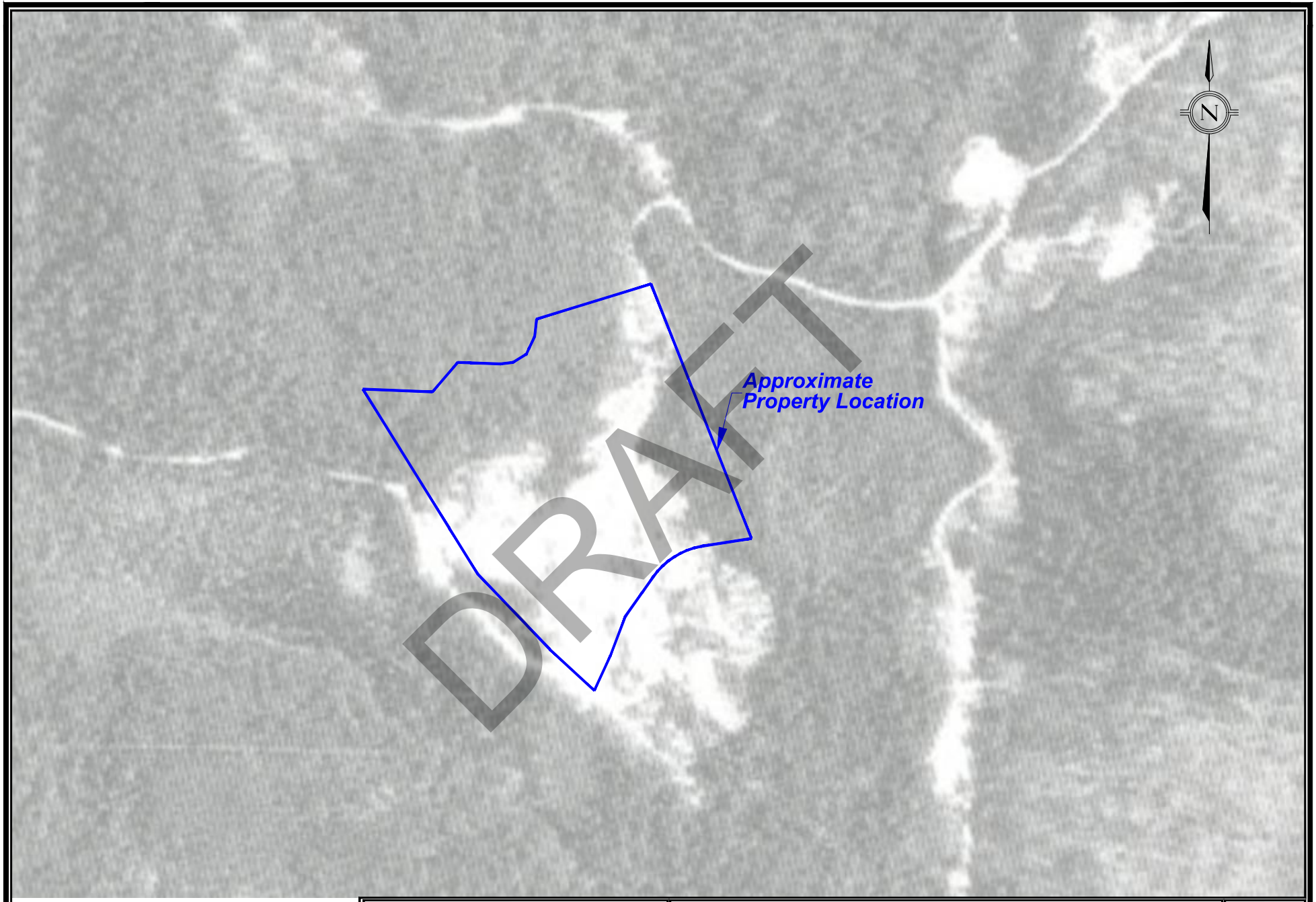
Terraprobe

11 Indell Lane, Brampton, Ontario, L6T 3Y3
Tel: (905) 796-2650 Fax: (905) 796-2250

Title: AERIAL PHOTOGRAPH

File No. 5-21-0300-41

YEAR : 1951



SCALE 0 50 100m

Terraprobe

11 Indell Lane, Brampton, Ontario, L6T 3Y3
Tel: (905) 796-2650 Fax: (905) 796-2250

Title: AERIAL PHOTOGRAPH

File No. 5-21-0300-41

YEAR : 1971

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Terraprobe

11 Indell Lane, Brampton, Ontario, L6T 3Y3
Tel: (905) 796-2650 Fax: (905) 796-2250

Title: AERIAL PHOTOGRAPH

File No. 5-21-0300-41

YEAR : 1989

SCALE 0 50 100m

Terraprobe
11 Indell Lane, Brampton, Ontario, L6T 3Y3
Tel: (905) 796-2650 Fax: (905) 796-2250

Title: AERIAL PHOTOGRAPH

File No. 5-21-0300-41

YEAR : 2004

SCALE 0 50 100m

Terraprobe
11 Indell Lane, Brampton, Ontario, L6T 3Y3
Tel: (905) 796-2650 Fax: (905) 796-2250

Title: AERIAL PHOTOGRAPH

File No. 5-21-0300-41

YEAR : 2009

SCALE 0 50 100m

Terraprobe
11 Indell Lane, Brampton, Ontario, L6T 3Y3
Tel: (905) 796-2650 Fax: (905) 796-2250

Title: AERIAL PHOTOGRAPH

File No. 5-21-0300-41

YEAR : 2012

SCALE 0 50 100m

Terraprobe
11 Indell Lane, Brampton, Ontario, L6T 3Y3
Tel: (905) 796-2650 Fax: (905) 796-2250

Title: AERIAL PHOTOGRAPH

File No. 5-21-0300-41

YEAR : 2018

SCALE 0 50 100m

Terraprobe
11 Indell Lane, Brampton, Ontario, L6T 3Y3
Tel: (905) 796-2650 Fax: (905) 796-2250

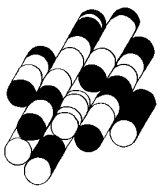
Title: AERIAL PHOTOGRAPH

File No. 5-21-0300-41

YEAR : 2021

APPENDIX G

TERRAPROBE INC.



Photograph 1

Location:	Entrance to Phase I Property
Viewing:	Northeast
Description:	Viewing from the entrance to the Property from Esten Drive North. Esten Drive is a paved road while the entrance to the Property is gravel (based on google maps).

Photograph 2

Location:	Phase I Property
Viewing:	South
Description:	Viewing of east side of the Property. Surrounded by trees and bushes. The ground elevation is uneven.

Photograph 3

Location:	Phase I Property
Viewing:	South
Description:	Viewing of the central portion of the Property. Accessible by a vehicle and is used as a snow dump site.

Photograph 4

Location:	Phase I Property
Viewing:	South
Description:	Viewing of the south side of the Property. Left side of the image shows the intersection between Esten Drive North and Pearson Drive. Property contains several trees, bushes, and a trail road.

Photograph 5

Location:	Phase 1 Property
Viewing:	South
Description:	Viewing of the portion of the Property across Pearson Drive. Property is surrounded by trees and bushes.

Photograph 6

Location:	Phase I Property
Viewing:	Southwest
Description:	Viewing of the Property with Pearson Drive. A lot of trees and bushes covering the area.

Photograph 7

Location:	Phase 1 Property
Viewing:	West
Description:	Viewing of the west side of the Property. Pearson Drive is located on the left side of the image. A lot of trees and bushes covering the area.

Photograph 8

Location:	Phase I Property
Viewing:	Northwest
Description:	Viewing of the northwest side of the Property. Higher elevation of land on the northwest side covered with trees and bushes.

Photograph 9

Location:	Phase 1 Property
Viewing:	Northwest
Description:	Viewing of the trial road intersection located on the northside of the Property. Area covered with trees and bushes.

Photograph 10

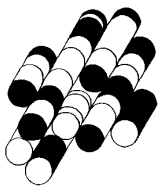
Location:	Phase I Property
Viewing:	Northeast
Description:	Viewing of a substation located on the northern side of the Property. Accessible by a trail road connected to Esten Drive North.

Photograph 11

Location:	Phase 1 Property
Viewing:	East
Description:	Viewing of the trail road and entrance towards the Property merging onto Esten Road North.

APPENDIX H

TERRAPROBE INC.



ENVIRONMENTAL RISK INFORMATION SERVICES

CITY DIRECTORY

Project Property: *Northwest Corner of Pearson Drive and Esten Drive, Elliot Lake, Ontario*

Report Type: *City Directory*

Order No: *22012401257*

Information Source: *No Source*

Date Completed: *28/01/2022*

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

City Directory Information Source
No Source

PROJECT NUMBER: 22012401257	
Site Address:	Northwest Corner of Pearson Drive and Esten Drive, Elliot Lake, Ontario
Year:	
Site Listing:	-No Civic Address
Adjacent Properties:	
Pearson Drive	-No Civic Addresses Within Requested Radius

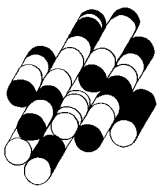
-All listings for businesses were listed as they are in the city directory.

-Listings that are residential are listed as “residential” with the number of tenants. The name of the residential tenant is not listed in the above city directory.

Elliot Lake, Ontario is not listed within the city directory archives*

APPENDIX I

TERRAPROBE INC.



RE: TSSA Search Inquiry for a Property in Elliot Lake, ON

Public Information Services <publicinformationservices@tssa.org>

Tue 1/25/2022 11:49 AM

To: John Biesiadecki <jbiesiadecki@terraprobe.ca>

Please refrain from sending documents to head office and only submit your requests electronically via email along with credit card payment. We are all working remotely and mailing in applications with cheques will lengthen the overall processing time.

NO RECORD FOUND

Hello,

Thank you for your request for confirmation of public information.

- We confirm that there are no records in our database of any fuel storage tanks at the subject addresses.

For a further search in our archives please complete our release of public information form found at https://www.tssa.org/en/about-tssa/release-of-public-information.aspx?_mid_=392 and email the completed form to publicinformationservices@tssa.org along with a fee of $56.50 (including HST) per location. The fee is payable with credit card (Visa or MasterCard).

Although TSSA believes the information provided pursuant to your request is accurate, please note that TSSA does not warrant this information in any way whatsoever.

Kind regards,

Sherees

Public Information Agent
Facilities and Business Services
345 Carlingview Drive
Toronto, Ontario M9W 6N9
Tel: +1-416-734-6222 | Fax: +1-416-734-3568 | E-Mail: publicinformationservices@tssa.org
www.tssa.org

From: John Biesiadecki <jbiesiadecki@terraprobe.ca>
Sent: January 24, 2022 5:49 PM
To: Public Information Services <publicinformationservices@tssa.org>
Subject: TSSA Search Inquiry for a Property in Elliot Lake, ON

Hello,

I am doing a Phase One Assessment and would like to request a preliminary basic record search for the following properties in Elliot Lake, Ontario:

595d Esten Dr N, Elliot Lake, ON P5A 2Y7

124 Taylor Blvd, Elliot Lake, ON P5A 3K8

73 Farquhar Pl, Elliot Lake, ON P5A 3J5

65 Albert St, Elliot Lake, ON P5A 2Y7

112 Taylor Blvd, Elliot Lake, ON P5A 3K1

135 Taylor Blvd, Elliot Lake, ON P5A 3K7

148 Taylor Blvd, Elliot Lake, ON P5A 3K8

134 Taylor Blvd, Elliot Lake, ON P5A 3K8

68 Taylor Blvd, Elliot Lake, ON P5A 3H7

Thank you,

John S. Biesiadecki, M.Sc., G.I.T.

Environmental Engineering

Terraprobe Inc.

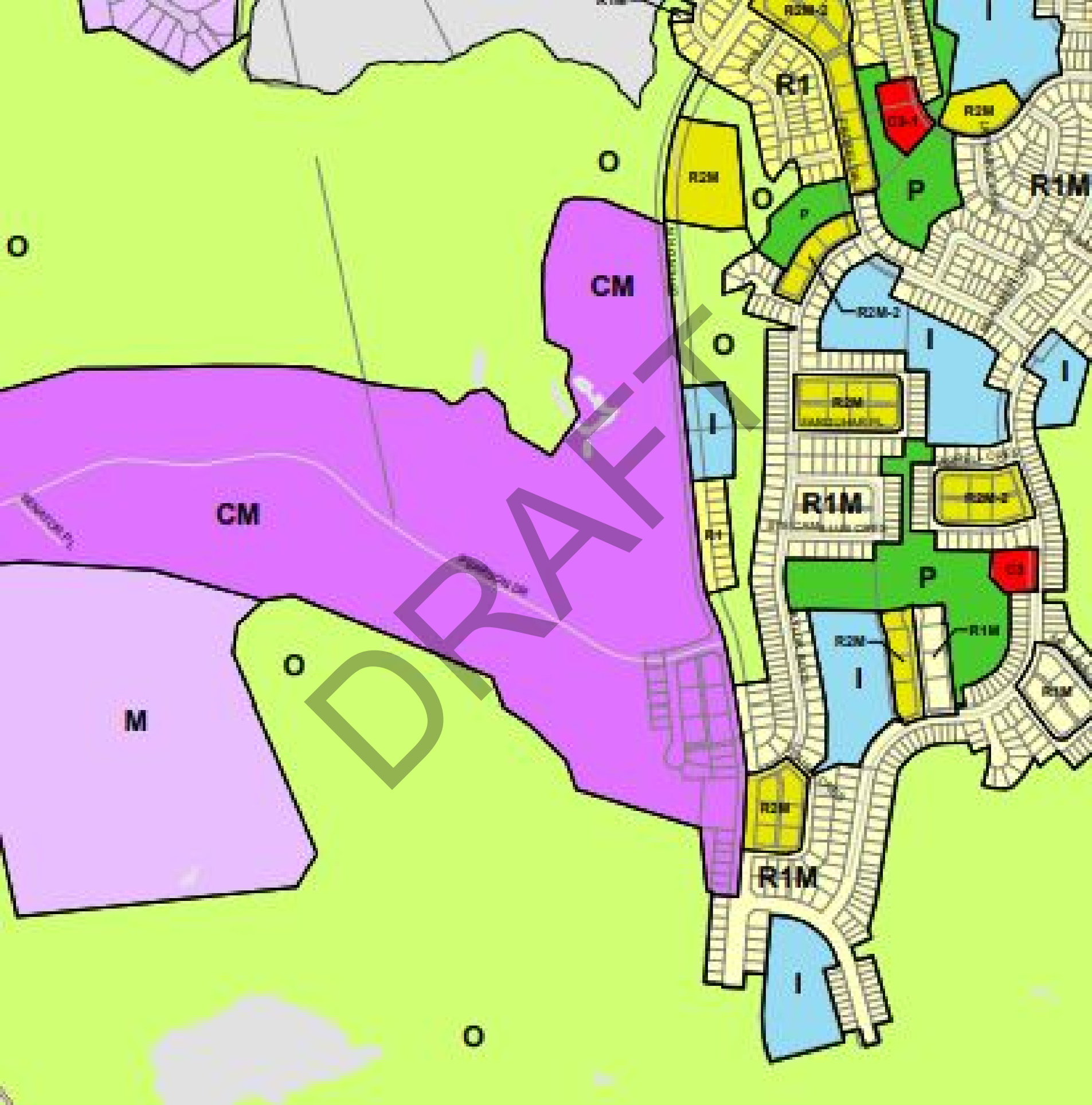
Geotechnical, Geostructural, & Environmental Engineering

Construction Materials, Inspection & Testing

11 Indell Lane, Brampton, Ontario L6T 3Y3

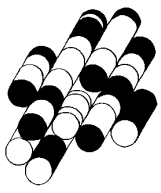
t: 905. 796. 2650 f: 905. 796.2250

www.terraprobe.ca


R1
R2M-2
C3-1
R2M
P
R1M
O
CM
I
R2M
R1M
C3
M
DRAFT

APPENDIX J

TERRAPROBE INC.



DATABASE REPORT

Project Property:	*Northwest Corner of Pearson Drive and Esten Drive* *Northwest Corner of Pearson Drive and Esten Drive* *Elliot Lake ON*
Project No:	*5-21-0300-41*
Report Type:	*Quote - Custom-Build Your Own Report*
Order No:	*22012401257*
Requested by:	*Terraprobe Ltd.*
Date Completed:	*January 27, 2022*

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

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Executive Summary

Property Information:

Project Property:	*Northwest Corner of Pearson Drive and Esten Drive* *Northwest Corner of Pearson Drive and Esten Drive Elliot Lake ON*
Project No:	*5-21-0300-41*

Order Information:

Order No:	*22012401257*
Date Requested:	*January 24, 2022*
Requested by:	*Terraprobe Ltd.*
Report Type:	*Quote - Custom-Build Your Own Report*

Historical/Products:

City Directory Search	*CD - Subject Site plus 250m Radius*
Insurance Products	*Fire Insurance Maps/Inspection Reports/Site Plans*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.26km	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
AST	*Aboveground Storage Tanks*	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 Manufacturers and Distributors*	Y	0	0	0
CHM	*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
DTNK	*Delisted Fuel Tanks*	Y	0	0	0
EASR	*Environmental Activity and Sector Registry*	Y	0	0	0
EBR	*Environmental Registry*	Y	0	0	0
ECA	*Environmental Compliance Approval*	Y	0	0	0
EEM	*Environmental Effects Monitoring*	Y	0	0	0
EHS	*ERIS Historical Searches*	Y	0	0	0
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 Expired Fuels Safety 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
FRST	*Federal Identification Registry for Storage Tank Systems (FIRSTS)*	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	0	0
GHG	*Greenhouse Gas Emissions from Large Facilities*	Y	0	0	0
HINC	*TSSA Historic Incidents*	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.26km	Total
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
INC	Fuel Oil Spills and Leaks	Y	0	0	0
LIMO	Landfill Inventory Management Ontario	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
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	Pipeline Incidents	Y	0	0	0
PRT	Private and Retail Fuel Storage Tanks	Y	0	0	0
PTTW	Permit to Take Water	Y	0	0	0
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	1	1
SPL	Ontario Spills	Y	0	0	0
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	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	1	0	1
WWIS	Water Well Information System	Y	0	1	1
	Total:		1	2	3

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number
1	WDSH		Approx 1.4 km SE of Elliot Lk. ELLIOT LAKE ON	SW/0.0	-3.87	12

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
2	WWIS		lot 6 ON ***Well ID:*** 1100324	ENE/100.1	12.74	12
3	SCT	BARKER INDUSTRIAL EQUIPMENT	88 FARQUHAR PL ELLIOT LAKE ON P5A 3J6	E/139.1	17.43	15

Executive Summary: Summary By Data Source

SCT - Scott's Manufacturing Directory

A search of the SCT database, dated 1992-Mar 2011* has found that there are 1 SCT site(s) within approximately 0.26 kilometers of the project property.

Site	Address	Distance (m)	Map Key
BARKER INDUSTRIAL EQUIPMENT	88 FARQUHAR PL ELLIOT LAKE ON P5A 3J6	139.1	3

WDSH - Waste Disposal Sites - MOE 1991 Historical Approval Inventory

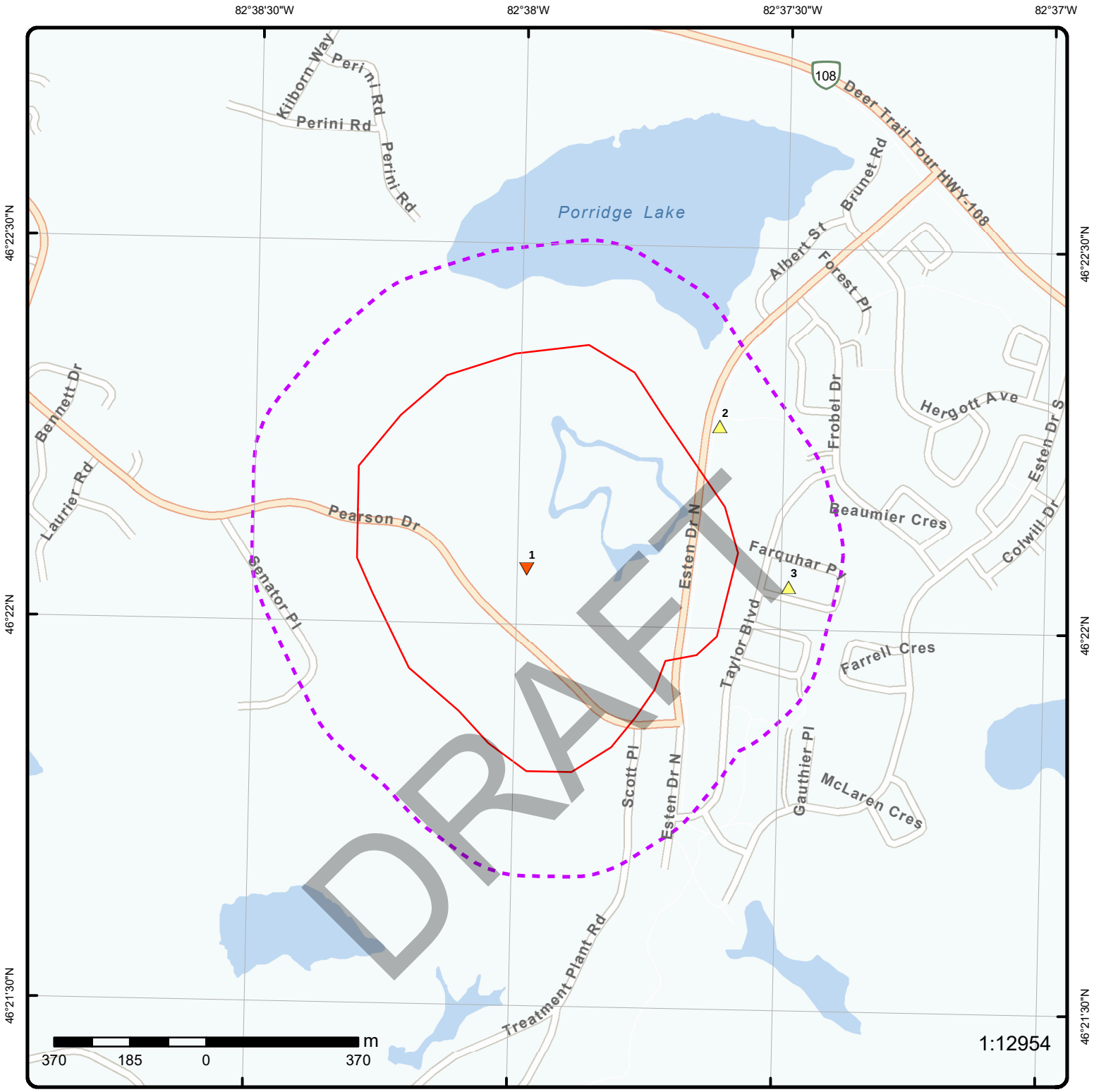
A search of the WDSH database, dated Up to Oct 1990* has found that there are 1 WDSH site(s) within approximately 0.26 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	Approx 1.4 km SE of Elliot Lk. ELLIOT LAKE ON	0.0	1

WWIS - Water Well Information System

A search of the WWIS database, dated Apr 30, 2021 has found that there are 1 WWIS site(s) within approximately 0.26 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	lot 6 ON ***Well ID:*** 1100324	100.1	2



Map: 0.255 Kilometer Radius

Order Number: 22012401257

Address: Northwest Corner of Pearson Drive and Esten Drive, Elliot Lake, ON

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major Arterial; Minor Arterial
- Local Road
- Service Road; Traffic Circle; Ramp
- Rail
- Beach
- Airport
- Industrial Area
- Military Base
- Aircraft Roads
- Native Reservation
- Hospital
- Shopping & Sports Area
- University/College
- Cemetery; Golf Course
- Parkt (National)
- Park (City/County)

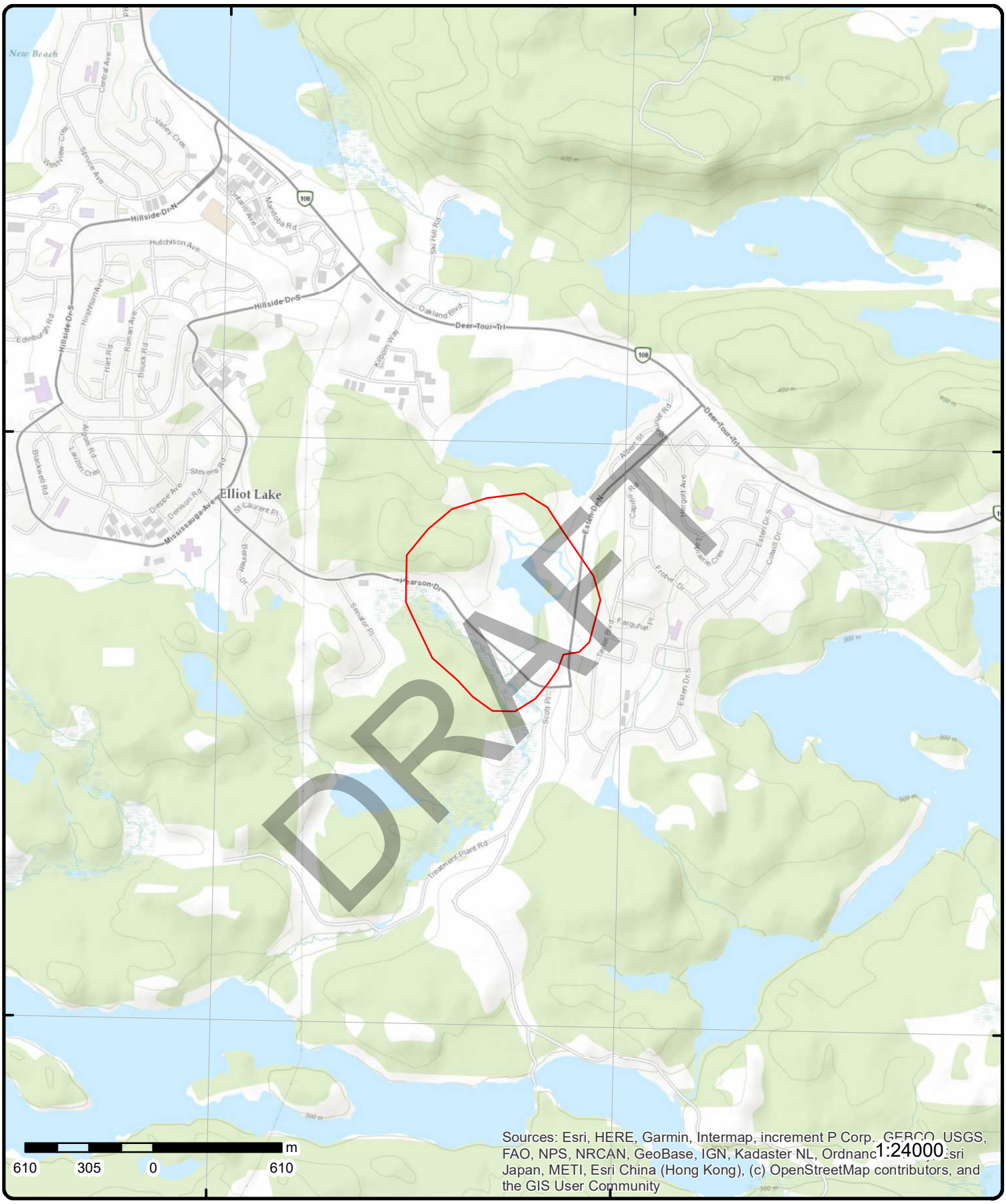
Aerial

Year: 2018

Order Number: 22012401257

Address: Northwest Corner of Pearson Drive and Esten Drive, Elliot Lake, ON

Source: ESRI World Imagery



Topographic Map

Order Number: 22012401257

Address: Northwest Corner of Pearson Drive and Esten Drive, ON

Source: ESRI World Topographic Map

Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	1 of 1	SW/0.0	318.0 / -3.87	Approx 1.4 km SE of Elliot Lk. ELLIOT LAKE ON	WDSH

Site No.: A560803
Region: NORTHEAST
County: ALGOMA
Concession:
Lot: Approx 1.4 km SE of Elliot Lk.
Easting: 374390
Northing: 5136000
Zone: 17
Date Closed: 1982/11/1
Status: CLOSED
Classification: B3 - POTENTIAL ENVIRONMENT IMPACT-URBAN MUNICIPAL/DOMESTIC WASTE - CLOSED <10 YRS
%CommericialWste: n/a
%DomesticWste Rec: n/a
%LiquidWste Rec: n/a
%HazardousWste Rec: n/a
%Non-haz.Wste Rec: n/a
%Sewage/Sludge Rec: n/a
%Other Wste Rec: n/a

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
2	1 of 1	ENE/100.1	334.6 / 12.74	lot 6 ON	WWIS

Well ID: 1100324
Construction Date:
Primary Water Use: Domestic
Sec. Water Use: 0
Final Well Status: Water Supply
Water Type:
Casing Material:
Audit No:
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: 11/12/1959
Selected Flag: True
Abandonment Rec:
Contractor: 1502
Form Version: 1
Owner:
Street Name:
County:
Municipality: JOHNSON TOWNSHIP
Site Info:
Lot: 006
Concession:
Concession Name: DL
Easting NAD83:
Northing NAD83:
Zone:
UTM Reliability:

PDF URL (Map): https://d2khazk8e83rdv.cloudfront.net/moe_mapping/downloads/2Water/Wells_pdfs/110\1100324.pdf

Additional Detail(s) (Map)

Well Completed Date: 1959/08/15
Year Completed: 1959
Depth (m): 18.8976

Latitude:	46.371074888833
Longitude:	-82.6269965544675
Path:	110\1100324.pdf

Bore Hole Information

Bore Hole ID:	10000324	**Elevation:**	335.278472
DP2BR:		**Elevrc:**	
Spatial Status:		**Zone:**	17
Code OB:	o	**East83:**	374863.50
Code OB Desc:	Overburden	**North83:**	5136564.00
Open Hole:		**Org CS:**	
Cluster Kind:		**UTMRC:**	5
Date Completed:	15-Aug-1959 00:00:00	**UTMRC Desc:**	margin of error : 100 m - 300 m
Remarks:		**Location Method:**	p5
Elevrc Desc:			
Location Source Date:			
Improvement Location Source:			
Improvement Location Method:			
Source Revision Comment:			
Supplier Comment:			

Overburden and Bedrock Materials Interval

Formation ID:	930903109
Layer:	3
Color:	
General Color:	
Mat1:	09
Most Common Material:	MEDIUM SAND
Mat2:	11
Mat2 Desc:	GRAVEL
Mat3:	
Mat3 Desc:	
Formation Top Depth:	55.0
Formation End Depth:	62.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	930903107
Layer:	1
Color:	
General Color:	
Mat1:	02
Most Common Material:	TOPSOIL
Mat2:	
Mat2 Desc:	
Mat3:	
Mat3 Desc:	
Formation Top Depth:	0.0
Formation End Depth:	2.0
Formation End Depth UOM:	ft

Overburden and Bedrock Materials Interval

Formation ID:	930903108
Layer:	2
Color:	7

General Color:	RED
Mat1:	05
Most Common Material:	CLAY
Mat2:	
Mat2 Desc:	
Mat3:	
Mat3 Desc:	
Formation Top Depth:	2.0
Formation End Depth:	55.0
Formation End Depth UOM:	ft

Method of Construction & Well Use

Method Construction ID:	961100324
Method Construction Code:	1
Method Construction:	Cable Tool
Other Method Construction:	

Pipe Information

Pipe ID:	10548894
Casing No:	1
Comment:	
Alt Name:	

Construction Record - Casing

Casing ID:	930000484
Layer:	1
Material:	1
Open Hole or Material:	STEEL
Depth From:	
Depth To:	62
Casing Diameter:	5
Casing Diameter UOM:	inch
Casing Depth UOM:	ft

Results of Well Yield Testing

Pump Test ID:	991100324
Pump Set At:	
Static Level:	15.0
Final Level After Pumping:	30.0
Recommended Pump Depth:	
Pumping Rate:	2.0
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:	24
Pumping Duration MIN:	0
Flowing:	No

Water Details

Water ID:	933425574
Layer:	1
Kind Code:	1

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
Kind:		FRESH			
Water Found Depth:		62.0			
Water Found Depth UOM:		ft			
3	1 of 1	E/139.1	339.3 / 17.43	BARKER INDUSTRIAL EQUIPMENT 88 FARQUHAR PL ELLIOT LAKE ON P5A 3J6	SCT
Established:		1956			
Plant Size (ft²):		1200			
Employment:		3			
--Details--					
Description:		INDUSTRIAL MACHINERY & EQUIPMENT			
SIC/NAICS Code:		5084			

Unplottable Summary

Total: 1 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
SPL	PRIVATE OWNER	SENATOR TRAILER PARK PEARSON DRIVE STORAGE TANK/BARREL	ELLIOT LAKE CITY ON	

Unplottable Report

Site: ***PRIVATE OWNER***
SENATOR TRAILER PARK PEARSON DRIVE STORAGE TANK/BARREL ELLIOT LAKE CITY ON

Database: ***SPL***

Ref No:	69192	***Discharger Report:***	
Site No:		***Material Group:***	
Incident Dt:	//	***Health/Env Conseq:***	
Year:		***Client Type:***	
Incident Cause:	OTHER CONTAINER LEAK	***Sector Type:***	
Incident Event:		***Agency Involved:***	
Contaminant Code:		***Nearest Watercourse:***	
Contaminant Name:		***Site Address:***	
Contaminant Limit 1:		***Site District Office:***	
Contam Limit Freq 1:		***Site Postal Code:***	
Contaminant UN No 1:		***Site Region:***	
Environment Impact:	CONFIRMED	***Site Municipality:***	80102
Nature of Impact:	Soil Contamination	***Site Lot:***	
Receiving Medium:	LAND	***Site Conc:***	
Receiving Env:		***Northing:***	
MOE Response:		***Easting:***	MOE, WORKS DEPT.
Dt MOE Arvl on Scn:		***Site Geo Ref Accu:***	
MOE Reported Dt:	4/15/1992	***Site Map Datum:***	
Dt Document Closed:		***SAC Action Class:***	
Incident Reason:	ERROR	***Source Type:***	
Site Name:			
Site County/District:			
Site Geo Ref Meth:			
Incident Summary:	PRIVATE TRAILER - 3L FUR-NACE OIL TO GRAVEL & SNOWAT SENATOR TRAILER PARK.		
Contaminant Qty:			

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 Nov 2021

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

Aboveground Storage Tanks: Provincial AST

Historical listing of aboveground storage tanks made available by the Department of Natural Resources and Forestry. Includes tanks used to hold water or petroleum. This dataset has been retired as of September 25, 2014 and will no longer be updated.

Government Publication Date: May 31, 2014

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-Sep 30, 2021

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 2019

Commercial Fuel Oil Tanks: Provincial CFOT

Locations of commercial underground fuel oil tanks. This is not a comprehensive or complete inventory of commercial fuel tanks in the province; this listing is a copy of records of registered commercial underground fuel oil tanks obtained under Access to Public Information.
Note that the following types of tanks do not require registration: waste oil tanks in apartments, office buildings, residences, etc.; aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Chemical Manufacturers and Distributors: 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, 2020

Chemical Register: Private CHM

This database includes a listing of locations of facilities within the Province or Territory that either manufacture and/or distributes chemicals.

Government Publication Date: 1999-Sep 30, 2021

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 -Nov 2021

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 2021

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 - Dec 31, 2021

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 - Sep 2020

Delisted Fuel Tanks: Provincial DTNK

List of fuel storage tank sites that were once found in - and have since been removed from - the list of fuel storage tanks made available by the regulatory agency under Access to Public Information.

Government Publication Date: May 31, 2021

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- Nov 30, 2021

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 - Dec 31, 2021

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- Nov 30, 2021

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-Nov 30, 2021

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, 2020

List of Expired Fuels Safety Facilities: Provincial EXP

List of facilities and tanks for which there was once a fuel registration. This is not a comprehensive or complete inventory of expired tanks/tank facilities in the province; this listing is a copy of previously registered tanks and facilities obtained under Access to Public Information. Includes private fuel outlets, bulk plants, fuel oil tanks, gasoline stations, marinas, propane filling stations, liquid fuel tanks, piping systems, etc; includes tanks which have been removed from the ground.
Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2020

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. Includes fire training sites and sites at which Per- and Polyfluoroalkyl Substances (PFAS) are a concern.

Government Publication Date: Jun 2000-Nov 2021

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 2019

Federal Identification Registry for Storage Tank Systems (FIRSTS): Federal FRST

A list of federally regulated Storage tanks from the Federal Identification Registry for Storage Tank Systems (FIRSTS). FIRSTS is Environment and Climate Change Canada's database of storage tank systems subject to the Storage Tank for Petroleum Products and Allied Petroleum Products Regulations. The main objective of the Regulations is to prevent soil and groundwater contamination from storage tank systems located on federal and aboriginal lands. Storage tank systems that do not have a valid identification number displayed in a readily visible location on or near the storage tank system may be refused product delivery.

Government Publication Date: May 31, 2018

Fuel Storage Tank: Provincial FST

List of registered private and retail fuel storage tanks. This is not a comprehensive or complete inventory of private and retail fuel storage tanks in the province; this listing is a copy of registered private and retail fuel storage tanks, obtained under Access to Public Information.
Notes: registration was not required for private fuel underground/aboveground storage tanks prior to January 1990, nor for furnace oil tanks prior to May 1, 2002; registration is not required for waste oil tanks in apartments, office buildings, residences, etc., or aboveground gas or diesel tanks. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

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-Nov 30, 2021

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 2019

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*

Fuel Oil Spills and Leaks: Provincial INC

Listing of spills and leaks of diesel, fuel oil, gasoline, natural gas, propane, and hydrogen reported to the Spills Action Centre (SAC). This is not a comprehensive or complete inventory of fuel-related leaks, spills, and incidents in the province; this listing in a copy of incidents reported to the SAC, obtained under Access to Public Information. Includes incidents from fuel-related hazards such as spills, fires, and explosions. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

Landfill Inventory Management Ontario: Provincial LIMO

The Landfill Inventory Management Ontario (LIMO) database is updated every year, as the Ministry of the Environment, Conservation and Parks compiles new and updated information. Includes small and large landfills currently operating as well as those which are closed and historic. Operators of larger landfills provide landfill information for the previous operating year to the ministry for LIMO including: 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 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-Dec 2020

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, 2019

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 Canada Energy Regulator (CER) - previously 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-Jun 30, 2021

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-Nov 30, 2021

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-Jan 2021

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 - Dec 31, 2021

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: Oct 2011- Nov 30, 2021

Pipeline Incidents: Provincial PINC

List of pipeline incidents (strikes, leaks, spills). This is not a comprehensive or complete inventory of pipeline incidents in the province; this listing in an historical copy of records previously obtained under Access to Public Information. Records are not verified for accuracy or completeness.

Government Publication Date: May 31, 2021

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 - Dec 31, 2021

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: 1986-1990, 1992-2019

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-Dec 2021

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-Sep 30, 2021

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

List of spills and incidents made available the Ministry of the Environment, Conservation and Parks. 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-Sep 2020

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, 2018

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 - Dec 2020

Variances for Abandonment of Underground Storage Tanks: Provincial VAR

Listing of variances granted for storage tank abandonment. This is not a comprehensive or complete inventory of tank abandonment variances in the province; this listing is a copy of tank abandonment variance records previously obtained under Access to Public Information. In Ontario, registered 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.

Government Publication Date: May 31, 2021

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- Nov 30, 2021

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: Apr 30, 2021

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.

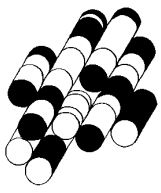
Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number 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 K

TERRAPROBE INC.



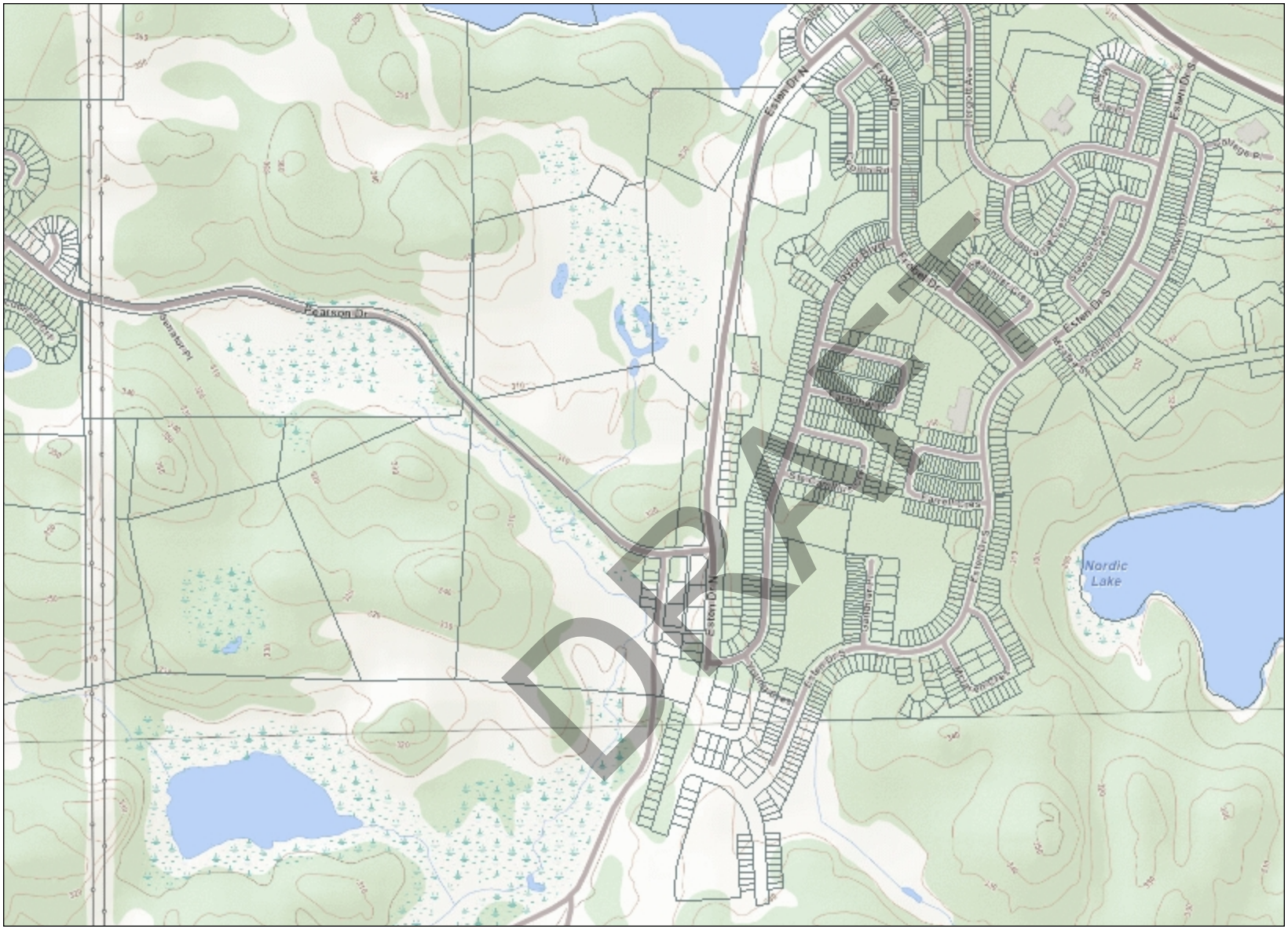
Ontario

MINISTRY OF NATURAL RESOURCES AND FORESTRY

Make a Topographic Map

Notes:

3-21-0300-41



Legend

- Building as Symbol
- Building to Scale
- Airport
- Heliport \ Hospital Heliport
- Seaplane Base
- Ferry Route
- Trail Head \ Trail
- Railway \ Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major → Minor)
- Winter Road
- Road with Bridge
- Road with Tunnel
- Primary, Kings or 400 Series Highway
- Secondary Highway
- Tertiary Highway
- District, County, Regional or Municipal Road
- Toll Highway
- One Way Road
- Road with Permanent Blocked Passage
- Road with Address Ranges
- Hydro Line, Communication Line or Unknown Transmission Line
- Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
- Spot Height
- Index Contour
- Contour
- Wooded Area
- Wetland
- Waterbody
- Waterbody Elevation
- Watercourse
- Falls
- Rapids
- Rapids \ Falls
- Rapids
- Rocks
- Lock Gate
- Dam \ Hydro Wall
- Dam \ Hydro Wall
- Provincial \ State Boundary
- International Boundary
- Upper Tier \ District Municipal Boundary
- Lower Tier \ Single Tier Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

0 0.6 km

Projection: Web Mercator

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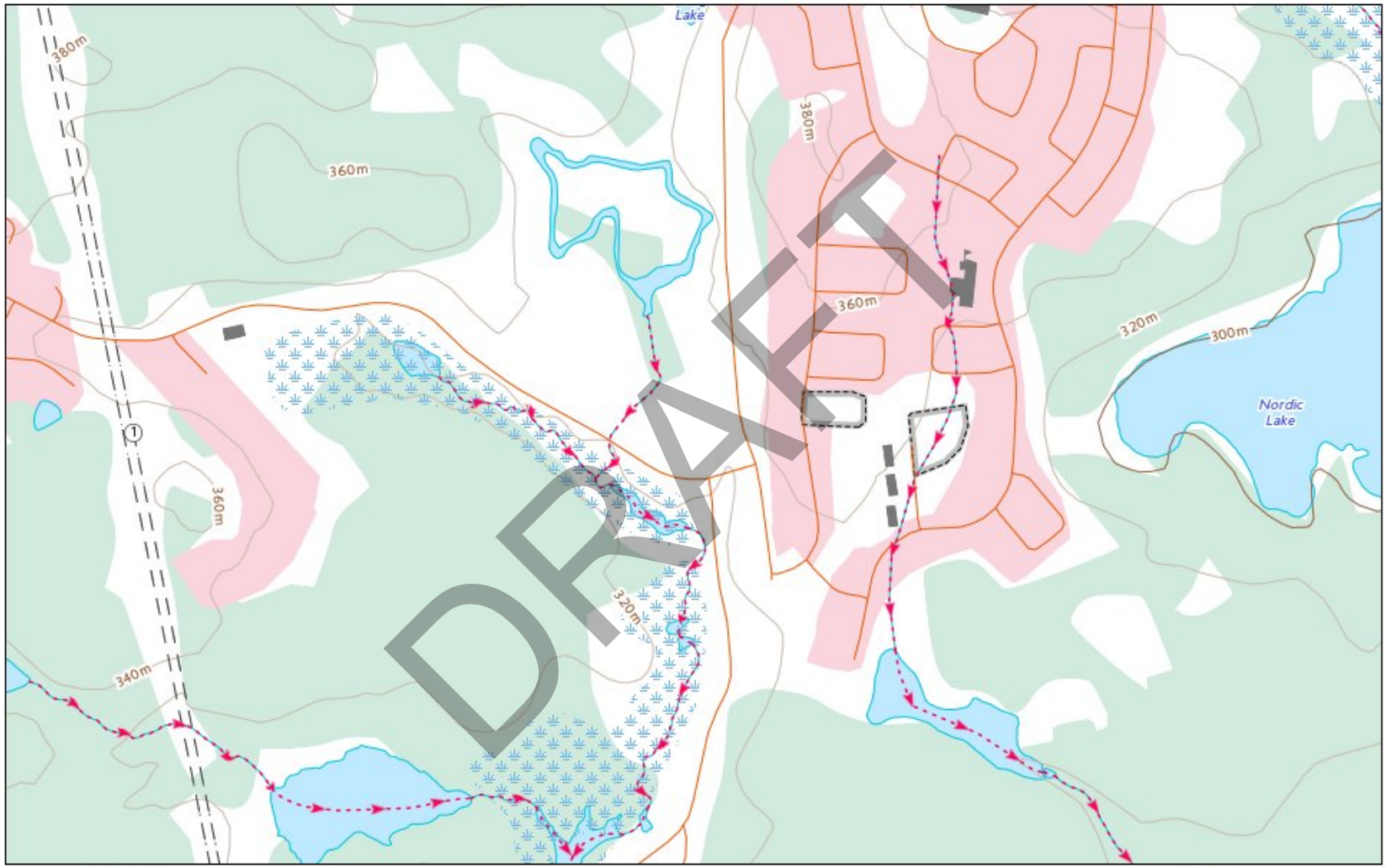
Toporama



January 24, 2022

1:11,212

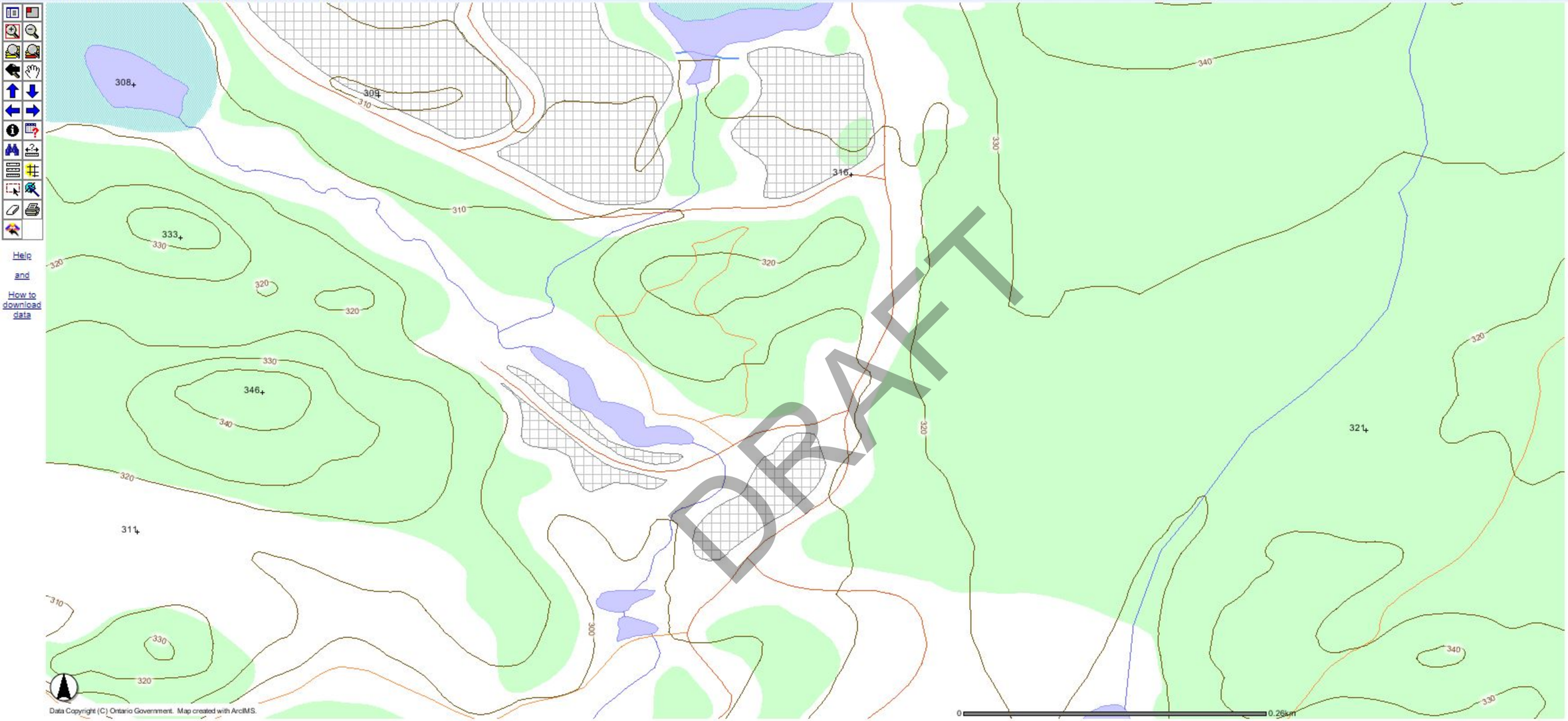
0 0.075 0.15 0.3 mi

0 0.15 0.3 0.6 km

Natural Resources Canada | Ressources naturelles Canada

Canada

Ontario Basic Mapping (OBM)



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Water Segments (South Central)
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Tanks
Conservation Authority Areas
Water Polygons (Northeast
Waterbody Segment
Wetland Area, Permanent
Water Polygons (Northwes
Waterbody Segment
Wetland Area, Permanent
Water Polygons (South Central)
Waterbody Segment
Wetland Area, Permanent
Municipal Parks
Conservation Reserve Regulated
Conservation Areas
National Parks
National Wildlife Areas
Provincial Parks
NGO Nature Reserves
Wetlands
Wooded Areas

Zoom In

Ontario

Ontario Geological Survey

Ten Mile Lake

639

108

Elliot Lake

Whiskey Lake

Till

undifferentiated, predominantly sand to silty sand matrix, high content of clasts, often low in matrix carbonate content

Pleistocene

Directions: To here - From here

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Ontario

Ontario Geological Survey

Elliot Lake

Hillside Dr N

Hillside Dr S

Mississauga Ave

Pearson Dr

108

108

108

11

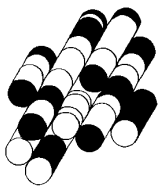
Gneissic tonalite suite
Tonalite to granodiorite-foliated to gneissic-with minor supracrustal inclusions

Image © 2022 CNES / Airbus

Google Earth

APPENDIX L

TERRAPROBE INC.



Water Well Records

Monday, January 24, 2022

6:30:14 PM

TOWNSHIP CON LOT	UTM	DATE CNTR	CASING DIA	WATER	PUMP TEST	WELL USE	SCREEN	WELL	FORMATION
JOHNSON TOWNSHIP DL 006	17 374864 5136564 W	1959/08 1502	5	FR 0062	15/30/2/24:0	DO		1100324 ()	LOAM 0002 RED CLAY 0055 MSND GRVL 0062

Notes:
UTM: UTM in Zone, Easting, Northing and Datum is NAD83; L: UTM estimated from Centroid of Lot; W: UTM not from Lot Centroid
DATE CNTR: Date Work Completedand Well Contractor Licence Number
CASING DIA: Casing diameter in inches
WATER: Unit of Depth in Fee. See Table 4 for Meaning of Code

PUMP TEST: Static Water Level in Feet / Water Level After Pumping in Feet / Pump Test Rate in GPM / Pump Test Duration in Hour : Minutes
WELL USE: See Table 3 for Meaning of Code
SCREEN: Screen Depth and Length in feet
WELL: WEL (AUDIT #) Well Tag . A: Abandonment; P: Partial Data Entry Only
FORMATION: See Table 1 and 2 for Meaning of Code

1. Core Material and Descriptive terms

Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
BLDR	BOULDERS	FCRD	FRACTURED	IRFM	IRON FORMATION	PORS	POROUS	SOFT	SOFT
BSLT	BASALT	FGRD	FINE-GRAINED	LIMY	LIMY	PRDG	PREVIOUSLY DUG	SPST	SOAPSTONE
CGRD	COARSE-GRAINED	FGVL	FINE GRAVEL	LMSN	LIMESTONE	PRDR	PREV. DRILLED	STKY	STICKY
CGVL	COARSE GRAVEL	FILL	FILL	LOAM	TOPSOIL	QRTZ	QUARTZITE	STNS	STONES
CHRT	CHERT	FLDS	FELDSPAR	LOOS	LOOSE	QSND	QUICKSAND	STNY	STONEY
CLAY	CLAY	FLNT	FLINT	LTCL	LIGHT-COLOURED	QTZ	QUARTZ	THIK	THICK
CLN	CLEAN	FOSS	FOSILIFEROUS	LYRD	LAYERED	ROCK	ROCK	THIN	THIN
CLYY	CLAYEY	FSND	FINE SAND	MARL	MARL	SAND	SAND	TILL	TILL
CMTD	CEMENTED	GNIS	GNEISS	MGRD	MEDIUM-GRAINED	SHLE	SHALE	UNKN	UNKNOWN TYPE
CONG	CONGLOMERATE	GRNT	GRANITE	MGVL	MEDIUM GRAVEL	SHLY	SHALY	VERY	VERY
CRYS	CRYSTALLINE	GRSN	GREENSTONE	MRBL	MARBLE	SHRP	SHARP	WBRG	WATER-BEARING
CSND	COARSE SAND	GRVL	GRAVEL	MSND	MEDIUM SAND	SHST	SCHIST	WDFR	WOOD FRAGMENTS
DKCL	DARK-COLOURED	GRWK	GREYWACKE	MUCK	MUCK	SILT	SILT	WTHD	WEATHERED
DLMT	DOLOMITE	GVLY	GRAVELLY	OBDN	OVERBURDEN	SLTE	SLATE		
DNSE	DENSE	GYPS	GYPSUM	PCKD	PACKED	SLTY	SILTY		
DRTY	DIRTY	HARD	HARD	PEAT	PEAT	SNDS	SANDSTONE		
DRY	DRY	HPAN	HARDPAN	PGVL	PEA GRAVEL	SNDY	SANDYOAPSTONE		

2. Core Color

Code	Description
WHIT	WHITE
GREY	GREY
BLUE	BLUE
GREN	GREEN
YLLW	YELLOW
BRWN	BROWN
RED	RED
BLCK	BLACK
BLGY	BLUE-GREY

3. Well Use

Code	Description	Code	Description
DO	Domestic	OT	Other
ST	Livestock	TH	Test Hole
IR	Irrigation	DE	Dewatering
IN	Industrial	MO	Monitoring
CO	Commercial	MT	Monitoring TestHole
MN	Municipal		
PS	Public		
AC	Cooling And A/C		
NU	Not Used		

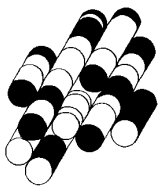
4. Water Detail

Code	Description	Code	Description
FR	Fresh	GS	Gas
SA	Salty	IR	Iron
SU	Sulphur		
MN	Mineral		
UK	Unknown		

*Your search returns **1** well record, which are displayed as red pins over blue dots.*

APPENDIX M

TERRAPROBE INC.



Terraprobe

Consulting Geotechnical & Environmental Engineering
Construction Materials Engineering, Inspection & Testing

D R A F T

GUIDELINE D-4 STUDY
CLOSED PEARSON DRIVE LANDFILL
ELLIOT LAKE, ONTARIO

Prepared For: City of Elliot Lake
45 Hillside Drive North
Elliot Lake, ON P5E 1X5

Attention: Mr. Brad Parsons

File No. 5-09-4008
October 19, 2009

Distribution of Draft Report:

3 copies - City of Elliot Lake
1 copy - Terraprobe Limited

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Figures

1.0 INTRODUCTION

Terraprobe Limited was retained by the City of Elliot Lake to conduct a study of a closed landfill site situated near Pearson Drive and Esten Drive. The landfill was in active operation as a municipal landfill between the early 1970's and early 1980's.

The purpose of the study was to determine the potential impact of the closed landfill on proposed industrial development in the area. The impact study was conducted using MOE Guideline D-4 - *Land Use On or Near Landfills and Dumps*.

2.0 SCOPE OF WORK

The scope of work for the study generally consisted of a review of available information and detailed site inspection. The scope of work included the following:

- Review of previous reports prepared for the landfill site while it was in operation. The reports include the results of subsurface investigation and monitoring of ground water quality in the vicinity of the site.
- A review of geologic and topographic mapping for the site.
- A detailed site inspection conducted in June 2009.
- Discussions with the City of Elliot Lake Planning and Engineering staff regarding site history and available background information.
- A review of applicable regulations and guidelines from the Ministry of Environment regarding landfill site closure. Generally, MOE Guideline D-4 - *Land Use On or Near Landfills and Dumps,* provides the basis for the study. This Guideline generally requires consideration of the potential impact of the closed landfill on lands within 500 m of the boundary of the closed landfill area.

A complete list of the documents available for review is provided on the accompanying List of References.

The City of Elliot Lake is proposing to develop lands in the vicinity of the site for a mixture of light industrial purposes. The potential extent of the proposed industrial development area is shown on the accompanying Figure 4. The purpose of the study was to determine the potential impact of the closed landfill on the proposed industrial development of the adjacent lands.

3.0 SITE HISTORY AND DESCRIPTION

3.1 Site Location and Description

The site is located on the north side of Pearson Drive and west of Esten Drive in the City of Elliot Lake, as shown on the accompanying Figure 1. The site is currently vacant and generally covered by sparse brush. The site was formerly used as a municipal landfill site by the Town of Elliot Lake. Based on historic information, the former landfill site activity covers an area of about 6 ha, as shown on Figure 2.

There are a number of small roads and trails through the site, which appear to be used for recreational purposes (e.g. ATVs and snowmobiles).

Most of the site is covered by sparse brush and trees. There is no evidence of significant volumes of exposed refuse found at the ground surface. Locally, there are small volumes of building debris, tires and the like found scattered through the property.

3.2 Site Topography and Drainage

Current topographic mapping is not available for the site. However, the site generally slopes down in a southerly direction. There is a significant bedrock ridge at the northwestern portion of the site. The elevation of the site drops approximately 10 to 15 m to the south toward Pearson Drive. The site topography is hummocky, both as a result of bedrock outcrop and miscellaneous filling activities which have occurred at the site.

The locations of local drainage features are shown on Figure 2. Generally, there is a significant watercourse which flows through the eastern portion of the site and crosses beneath Pearson Drive. There are a number of smaller intermittent watercourses found on the property, in response to the uneven topography. Immediately to the south of the landfill, there is a low-lying marshy area.

3.3 Site Geology

Site geology was assessed on the basis of geologic mapping and the results of subsurface investigations conducted by others (CRA 1980). The locations of boreholes drilled at the site by CRA are shown on the accompanying Figure 3. These investigations indicate that the northern portion of the site generally consists of bedrock outcrops of granodiorite and metasedimentary rocks. The central and southern portion of the property is covered with a mixture of glacial deposits. The glacial deposits are variable in nature, but typically consist of coarse granular material (sand or sand and gravel). There are occasional layers of finer materials such as silt and silty sand glacial till.

The depth to bedrock across the site is highly variable. At the southern portion of the site, in the vicinity of OW1-80, the depth to bedrock exceeds 25 m.

Locally, the site has been disturbed as a result of earth moving activities and the placement of refuse while it operated as a landfill. It appears that the site may have been utilized as a borrow pit, and the excavation may have been filled with refuse. Based on investigations, the thickness of refuse is greatest near the central and northern portion of the site in the vicinity of OW7. In this area, the refuse is approximately 8 m in thickness. Toward the perimeter of the site, the refuse is generally less than 1 m in thickness.

3.4 Site Hydrogeology

The hydrogeologic conditions at the site were assessed on the basis of a study conducted by others (CRA 1980). The study included installation of monitoring well nests at 7 locations at, and around the perimeter of, the landfill. The monitoring was conducted for a short period of time in 1980. The results indicate that ground water flow is generally toward the south (i.e., toward the marsh area and watercourse found to the south and west of the site). It appears that there is a component of shallow ground water discharge which occurs into the watercourse area to the south of the site.

3.5 Site History

Information regarding the history of development and closure of the site was obtained based on discussions with City of Elliot Lake staff, and a review of previous studies conducted by others (CRA 1980).

There is little specific information available regarding the development and history of the site. The site was not operated under an Operation and Management Plan, and there is no evidence that a Certificate of Approval was provided for the landfill.

Based on the available information, the site began operation in approximately May 1972. It appears that the site was formerly a borrow pit and that refuse materials were placed in excavations within the borrow pit. Placement of waste was apparently conducted on a scattered and random basis. No significant burning of the waste was reported.

The site was apparently closed in approximately 1980. At that time, a soil cover was placed over the remaining waste. Reports available from 1980 suggest that a closure plan was developed for the site. The closure plan consists of placing a uniform earth cover over the property area and grading the cover for positive drainage.

The precise volume of waste which was disposed of at the site is not known with certainty. However, based on the site area, and thickness of refuse which was encountered, it is estimated that the volume of waste is less than 100,000 m^3.

The current inspection of the site indicates that the property is somewhat hummocky and uneven. It is not known if a final graded earth cover was placed over the property; however, this is unlikely based on the appearance of the property.

There is no evidence of waste or refuse exposed over the site. Locally, there is evidence of random surface dumping of small piles of debris or waste such as tires. The approximate extent of the waste was determined by CRA in 1980. The determination was based on site inspection and excavation of a number of shallow test pits. The locations of the test pits are shown on the accompanying Figure 3. Based on these studies, the approximate boundary of the waste disposal area, as determined by CRA, is also shown on Figure 3.

3.6 Results of Surface and Ground Water Monitoring

Monitoring of surface and ground water was conducted by CRA in 1980. The monitoring included chemical analysis of soil and ground water samples. The samples were generally analysed for a range of indicator parameters including alkalinity, hardness, chloride, phenols, and COD. Based on this analysis, it was concluded that there was no significant ground water impact associated with the landfill. It is noted that analysis was not conducted for a wide range of parameters including petroleum hydrocarbons or volatile organic compounds. However, there is no evidence in the CRA report that suggests that these were parameters of concern at the time.

It is considered that the most reliable indicator parameters available from the previous studies are chloride, hardness, alkalinity and iron in the ground water. A summary of the range of concentrations of these parameters, as compared to the typical concentration found in landfill leachate, is provided below:

Summary of Ground Water Monitoring Conducted in 1980

Parameter	*Typical Concentration in Leachate*	*Location*						
		OW1-80	*OW2-80*	*OW3-80*	*OW4-80*	*OW5-80*	*OW6-80*	*OW7-80*
Hardness	1,000 to 10,000	119	118	158	109	203	85	653
Alkalinity	500 to 10,000	107	68	101	93	105	77	978
Chloride	300 to 3,000	4	7	29	2	11	10	107
Iron	10 to 1,000	0.64	10	42	1.1	4.0	12	300

Note: all values in mg/ℓ

As noted, the concentration of most of these indicator parameters is low. The highest concentrations are noted in the central portion of the landfill where the refuse is deepest (OW7-80). At the downgradient boundary of the landfill, such as OW1, OW2 and OW3, the concentration of these parameters is significantly less.

On this basis, there is no evidence of significant off-site impact as a result of leachate when the monitoring was conducted in 1980.

3.7 Surface Water Monitoring

Surface water monitoring was conducted in 1980 at locations upstream and downstream of the landfill. The monitoring was conducted in the watercourses found immediately to the south and east of the landfill site. It is noted that, at the time of the sampling in 1980, a sewage treatment plant also discharged into the watercourse to the east. Therefore, it is difficult to interpret the results reliably. However, CRA concluded there was no evidence of significant impact as a result of the landfill occurring in the watercourse.

A detailed site inspection was conducted in June 2009. The inspection included a visual examination of the creek. Typically, leachate impact to surface water bodies is evidenced by significant iron staining or discolouration. There was no evidence of discolouration noted in the watercourse adjacent to, or downstream of, the site.

3.8 Landfill Gas Generation

The presence of combustible landfill gases was monitored in 1980 as part of the ground water and surface water monitoring program. Generally, landfill gas was consistently detected only in the monitors installed directly into refuse (including TH8, TH11, and OW7). Generally the monitors installed at the perimeter of the site (including TH1 through TH6, TH10 and TH12) did not encounter significant concentrations of methane gas. CRA concluded that there were no significant issues with respect to off-site migration of landfill gases based on their study in 1980.

Native soils at the site are often granular, consisting of sand and gravel materials. Similarly, the cover over the landfill appears to be granular, based on surface inspection. In addition, in many areas the waste appears to be thin or absent. These factors permit venting of the landfill gas through the soil materials around the refuse.

4.0 SURROUNDING LAND USES

The existing land uses in the vicinity of the site were examined based on visual inspection and review of aerial photographs. MOE Guideline D-4 requires assessment of potential impacts arising from a closed landfill in areas within 500 m of the landfill boundary. On this basis, the inspection included all of those areas within 500 m of the landfill boundary, as determined from the CRA studies of 1980.

The site location, along with the 500 m buffer zone, is shown on the aerial photograph on Figure 4.

4.1 Existing Land Uses

As noted on Figure 4, the closed landfill site and the immediately surrounding area consists of vacant wooded land. The most significant land uses in the area are shown on the aerial photograph on Figure 4 and include the following:

- Existing municipal roadways (Esten Drive North and Pearson Drive).
- Existing residential developments to the east, primarily along Taylor Boulevard. Most of the dwellings in this area consist of single-family residential dwellings that were constructed in the 1980's. These are located approximately 450 m from the boundary of the closed landfill site.
- Existing residential development to the west. There is existing residential development found on Laurier Road. This development is located approximately 800 m beyond the western boundary of the closed landfill.
- Existing municipal roadway (Senator Place) found to the south of Pearson Drive. It is noted that there is no development in this area, although the area has been used for stockpiling of materials such as asphalt and aggregate.

The boundary of the proposed industrial area is shown on Figure 4. As noted, the landfill site is located within the proposed industrial area; also a significant portion of the proposed industrial area is found within 500 m of the landfill boundary.

4.2 Natural Areas and Wildlife

A review of Ministry of Natural Resource and Environment Canada publications was conducted to assess the status of natural areas within approximately 1,000 m of the site. A review of available documents indicated that there are no environmentally sensitive areas, areas of natural or scientific interest, or other special environmental areas designated within 1,000 m of the site.

A detailed biophysical inventory of the surrounding area was not conducted as part of the scope of work for this study. However, visual inspection generally indicates the following:

- Most of the closed landfill and surrounding areas are covered with a mixture of brush and low-lying marsh areas.
- There has been significant disturbance in the study area through the construction of roadways (Pearson Drive and Senator Place) and tree-clearing activities.
- There are a number of informal ATV and snowmobile trails found throughout the landfill site area. There has been loss of vegetation and disturbance to the natural environment in these areas.

There is a significant marsh area found on the south side of Pearson Drive, immediately west of the enclosed landfill site. The marsh is drained by a watercourse which runs parallel to the south side of Pearson Drive.

A detailed visual inspection of the landfill site indicates there is no significant evidence of impact as a result of landfill leachate or gas generation. Generally, significant gas generation will result in loss of vegetative cover or damage to trees. Similarly, there was no evidence of staining or leachate present in the surface watercourse found immediately to the east of the landfill.

5.0 APPLICATION OF D-4 GUIDELINE

The Ministry of Environment provides guidelines for consideration of land developments situated on or near closed landfill sites. These are presented in MOE Guideline D-4 - *Land Use On or Near Landfills and Dumps*. In summary, the guideline generally requires the following:

- Restriction of land uses within 30 m of the fill area. Typically, no active land use is permitted within 30 m of the fill area.
- Land use within 500 m of the fill area. Land use in this area must consider the potential influence of the closed landfill (including landfill leachate and gas) on future land uses.
- Land use beyond 500 m of the fill area. Typically, land use beyond 500 m of the landfill is considered only in specialized circumstances.

The potential impacts from the landfill site are considered for each of the criteria provided in Guideline D-4.

5.1 Ground Water Impact from Leachate

There has been limited ground water monitoring conducted at the site. Monitoring was conducted in 1980. However, based on these results, there was no evidence of significant off-site impact arising as a result of the leachate from the site. The lack of impact observed at that time was due to a number of factors, including:

- The relatively small volume and thin nature of the waste at the site.
- The relatively high dilution as a result of significant infiltration through the landfill cover and ground water flow through the underlying granular deposits.
- The nature of the refuse which consists mostly of municipal domestic waste.

The site and surrounding area are serviced with municipal piped water. The water is obtained from a lake-based source (Elliot Lake). Elliot Lake is situated approximately 3 km from the site, in an upgradient or upstream direction. The developed areas in the vicinity of the site are serviced with piped municipal water. It is proposed to service the proposed industrial area with piped municipal water. There are no known wells for water supply found in the immediate area. On this basis, the potential risk to ground water supply (for potable water uses) is considered to be low.

5.2 Surface Water Contamination from Leachate

The results of surface water monitoring conducted in 1980 suggest there are no significant landfill-related impacts to local surface water. A visual inspection of surface water features on the site indicates no evidence of staining or other impact to surface water quality.

It appears that a component of local ground water flow may discharge into the surface water in the vicinity of the site. There is no evidence of leachate springs or seeps which drain directly to the surface. Therefore, any ground water discharge to local water courses is likely to be dilute. On this basis, it is concluded that the potential impact of the landfill to local surface water quality is low.

5.3 Landfill Gas Generation

Significant concentrations of landfill gas were noted in monitoring conducted in 1980, near the central portion of the site only. Significant concentrations of landfill gas were not noted at the perimeter of the site. It is likely there is significant natural venting of landfill gas through the granular materials which form the cover of the landfill.

In addition, it is noted that there have been no significant volumes of waste deposited at the site since approximately 1980 (30 years). The potential for significant generation of methane gas is further limited as a result of the age of the waste.

It is expected that there will continue to be generation of landfill gas near the central portion of the site where the waste is thickest. It is expected there will be no significant generation or migration of landfill gas beyond the site boundaries. This is based on the absence of waste from the vicinity of the site boundaries and the granular nature of the local soils.

5.4 Ground Settlement

Ground settlement will occur as the waste degrades and decomposes. The waste is expected to be thin in most areas except the extreme central portion of the site. Given the age of the waste (i.e., generally greater than 30 years), it is expected that there will be no significant future settlement, with the exception of the central portion of the site. This must be considered for future site use or maintenance.

5.5 Vectors and Vermin

There was no evidence of exposed waste at the site. The waste is adequately covered with soil. On this basis, there are no unusual conditions with respect to vectors or vermin (such as gulls, rats, or the like) associated with the site.

5.6 Visual Impact

The site is not operating. There is no waste exposed at the surface with the exception of some small localized areas of random surface dumping. The site does not pose a significant concern with respect to visual impact.

5.7 Summary of Site Impacts

A summary of the potential impacts of the site is provided below. The potential impacts are compared to the following criteria:

- Hazard or impact to human health.
- Degradation of the natural environment.
- Nuisance impacts.

Summary of Potential Impacts

Potential Impact	*Hazard to Human Health*		*Degradation of Natural Environment*		*Nuisance Impact*	
	On-Site	*Off-Site*	*On-Site*	*Off-Site*	*On-Site*	*Off-Site*
Ground Water	low	low	low	low	nil	nil
Surface Water	low	low	low	low	nil	nil
Landfill Gas	low	nil	nil	nil	nil	nil
Settlement	low	nil	low	nil	-	-
Vectors	nil	nil	nil	nil	nil	nil
Visual Impact	-	-	-	-	low	nil

Notes - On-site includes waste disposal area plus 50 m buffer.

In summary, the site does not pose any significant concerns with respect to human health, the natural environment or nuisance-related impacts.

It is noted that this conclusion is based on studies which were conducted in 1980, and a detailed visual inspection of the site. As noted subsequently, it is recommended that additional studies be conducted to confirm this conclusion. Nonetheless, the available information is sufficient for current preliminary planning purposes.

6.0 ADDITIONAL STUDIES

It is recommended that additional studies be conducted to confirm the results of the monitoring conducted in 1980. The additional studies should consist of the following:

- Limited sampling of surface water quality at locations upstream and downstream of the landfill. This will confirm potential impact to local ground water quality. The program will consist of sampling of surface water quality at approximately 6 locations. Surface water samples will be sampled for indicator parameters associated with landfill leachate, including chloride, hardness, alkalinity and volatile organic compounds.

- Assessment of soil cover and extent of waste. There is no reliable information available regarding the final closure of the landfill following the investigations in 1980. Although there is no significant volume of refuse exposed at the surface, the thickness and nature of the soil cover over the landfill is not known. It is recommended that test pits be excavated across the site to confirm the thickness and nature of the soil cover; and to further confirm the extent of the waste.

- Monitoring of landfill gas generation. It is recommended that gas probes be installed in the test pits installed through the landfill cover as noted above. The gas probes should be monitored through the winter months (when the ground surface is frozen) to assess potential landfill gas generation.

7.0 DEVELOPMENT CONSIDERATIONS

Based on the studies conducted to date, the closed landfill site does not pose significant constraints to development on the adjacent lands. Some specialized consideration must be given to development or use of the landfill site itself. The following is a summary of the considerations which must be made for development on and around the site.

7.1 Development on Landfill Site

The approximate boundaries of the landfill site, as determined in the CRA study in 1980, are shown on Figures 2 and 4. As noted previously, further investigation should be conducted to confirm these boundaries. However, the following constraints will generally apply to development on, or within 50 m of, these boundaries:

- The presence of the landfill boundary, and 50 m buffer, should be registered on the title of the land. The purpose of the registration is to ensure that there is warning to future landowners or users regarding the presence of waste materials in this area.
- There should be no active use of the site including the construction of enclosed structures. Generally, the site can be used for passive recreational purposes such as trails, park land and the like.
- Any future grading or excavation activities at the site must consider the presence of waste materials. Generally, the landfill cap should not be removed or disturbed so that the waste materials become exposed.

Depending on expected land use in the area, it may be desirable to conduct site grading activities. For example, site grading could be conducted to level the land so that it is more amenable to park or other uses. In this case, additional investigation should be conducted to confirm the thickness and nature of the soil cover. A fill placement and grading plan must be developed to ensure that the site is properly drained, and that the waste is adequately covered.

It is also possible that, with further detailed studies, the extent of the landfill will be refined. It may be possible to excavate and consolidate the waste materials into a centralized location and permit development within the current closed landfill area. However, based on the availability of undeveloped land in the area, it appears unlikely that this would occur in the near future.

7.2 Development Beyond Landfill Area

The available information suggests there are no significant constraints to development in areas which lie more than 50 m beyond the landfill boundary as shown on Figure 4. The 50 m buffer should provide adequate setback to address any minor impacts with respect to landfill gas generation or the like.

It is recommended that a by-law be developed to prohibit drilling of wells or extraction of ground water within 300 m of the landfill. Although there is no evidence of off-site migration of leachate, this would ensure there are no significant ground water related uses. The by-law could permit use of the ground water in the event that more detailed studies were conducted to assess potential ground water impacts. The detailed studies would consist of installation of monitoring wells and sampling of ground water quality.

8.0 SUMMARY AND CONCLUSIONS

In summary, the results of the study indicate the following:

(i) The landfill site operated between approximately 1972 and 1980. The exact volume of refuse at the site is unknown, however the site occupies an area of approximately 6 ha. The site appears to have received mostly municipal refuse.

(ii) A hydrogeologic investigation of the site was conducted in 1980. At that time, there was no evidence of significant impact of the landfill to local surface water or ground water. Similarly, there was no evidence of migration of landfill gas beyond the site boundaries.

(iii) An inspection of the site conducted in 2009 indicates that there is no significant volume of refuse exposed at the surface. It appears all the refuse is adequately covered with soil. There was no direct visual evidence of leachate or methane gas impact associated with the landfill.

(iv) It is emphasized that detailed studies of the site have not been conducted since 1980. It is recommended that some additional site investigation be conducted to confirm the extent of waste, thickness of cover, and the potential impacts to surface water in the area..

(v) It is expected there will be no significant development of the landfill site itself. Under current conditions, the landfill site could be used for passive park purposes such as walking trails, playing fields and the like. The construction of any significant or enclosed structures on the landfill would require further more detailed studies. Similarly, any site grading or excavation activities at the site will require the preparation of detailed studies. The purpose of these studies would be to ensure that the waste is not inadvertently exposed, and that the activities do not create any significant hazard with respect to landfill gas or leachate migration.

(vi) Based on the available information, the landfill does not pose a significant concern with respect to development of the surrounding properties for industrial uses. It is recommended that a nominal 50 m buffer be established around the landfill boundary to provide protection against any minor leachate or landfill gas-related impacts.

(vii) It is recommended that the boundary of the landfill site be surveyed and that the presence of the waste material be registered on title of the property. In addition, a caution should be issued which would limit development or land uses within 50 m of the site boundary. The caution should include a requirement to prepare a work plan for any excavation or development work within the 50 m buffer zone. The work program should address the potential that there may

be waste present within these areas, or minor leachate or landfill gas impacts which must be considered.

(viii) It is recommended that a by-law be developed to prohibit drilling of wells or extraction of ground water within 300 m of the landfill. Although there is no evidence of off-site migration of leachate, this would ensure there are no significant ground water related uses. The by-law could permit use of the ground water in the event that more detailed studies were conducted to assess potential ground water impacts. The detailed studies would consist of installation of monitoring wells and sampling of ground water quality.

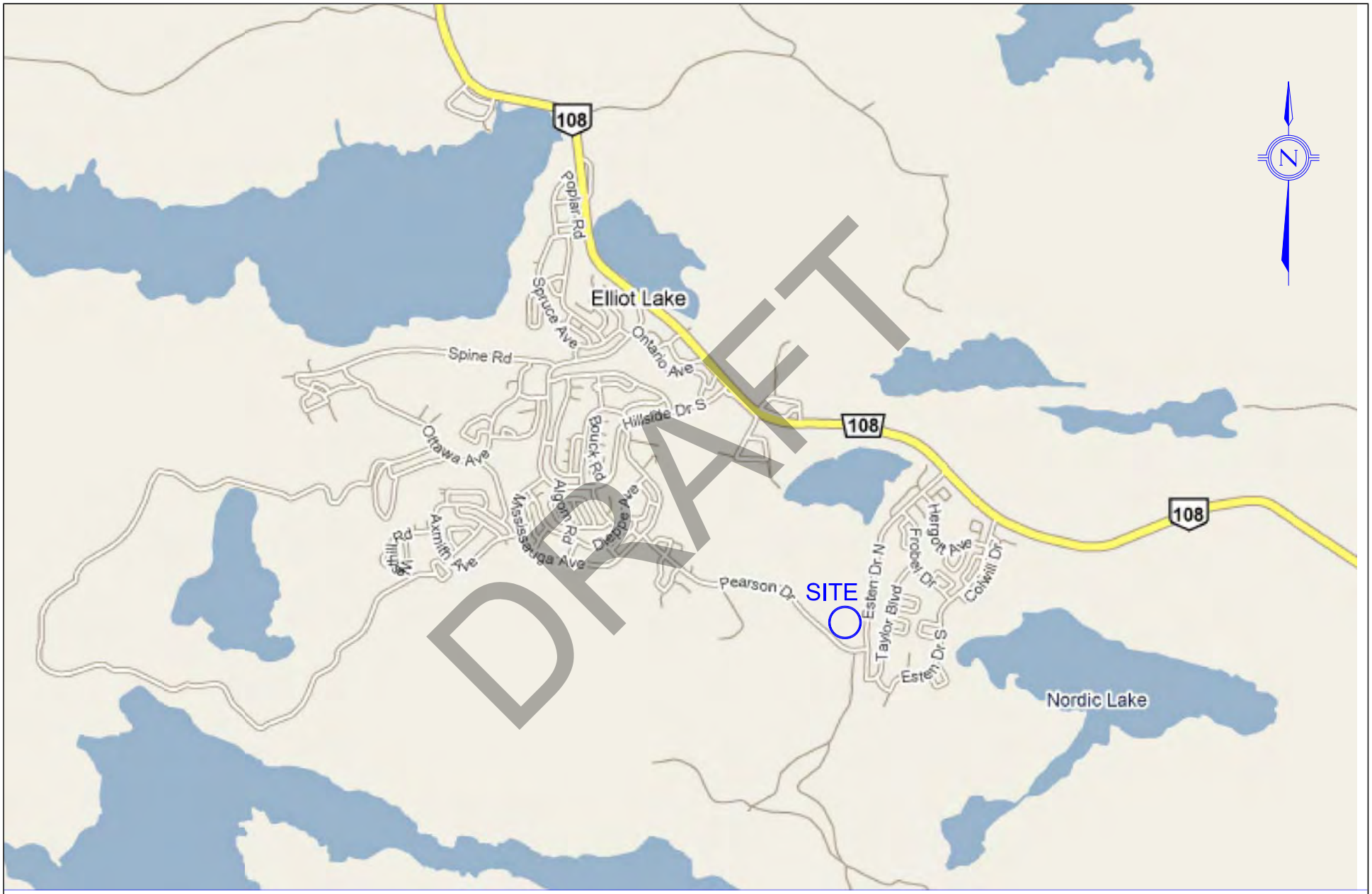
(ix) The closed landfill does not pose any significant constraints to development of areas more than 50 m from the landfill boundary, for light industrial purposes.

Yours truly,

Terraprobe Limited

Paul W. Bowen, P.Geo., P.Eng.
Principal

FIGURES



N.T.S.

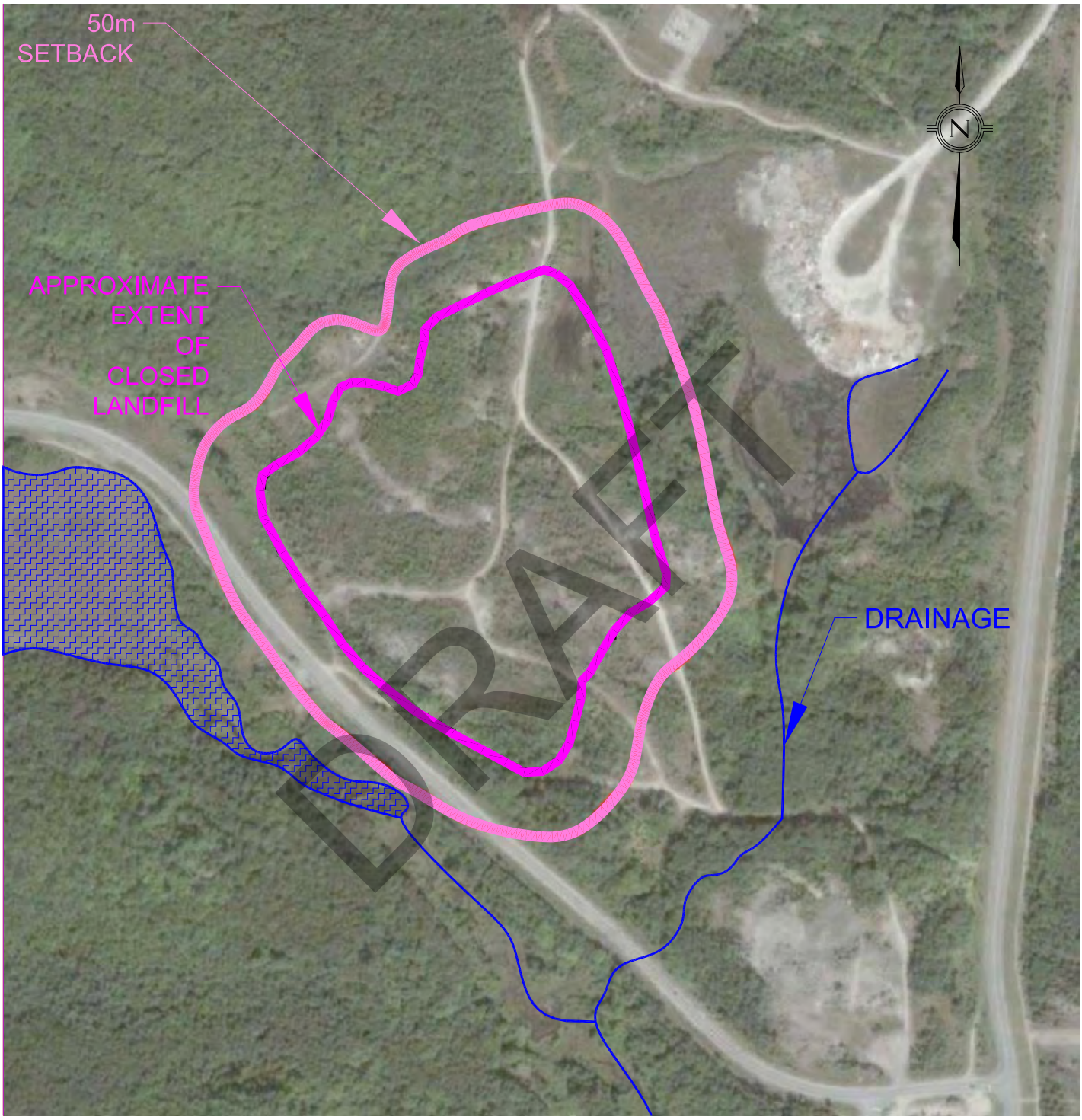
SITE LOCATION PLAN

TERRAPROBE

File No. 5-09-4008

FIGURE 1

Z:\Terraprobe Limited\Active Projects\2009 File Numbers\Branch Files\5-09-4008 Elliot Lake\A. Dwgs. Logs\AutoCAD\AutoCAD\Pearson Drive\5-09-4008 Fig 1 3 Pearson Drive Landfill Boundary.dwg, SANDY



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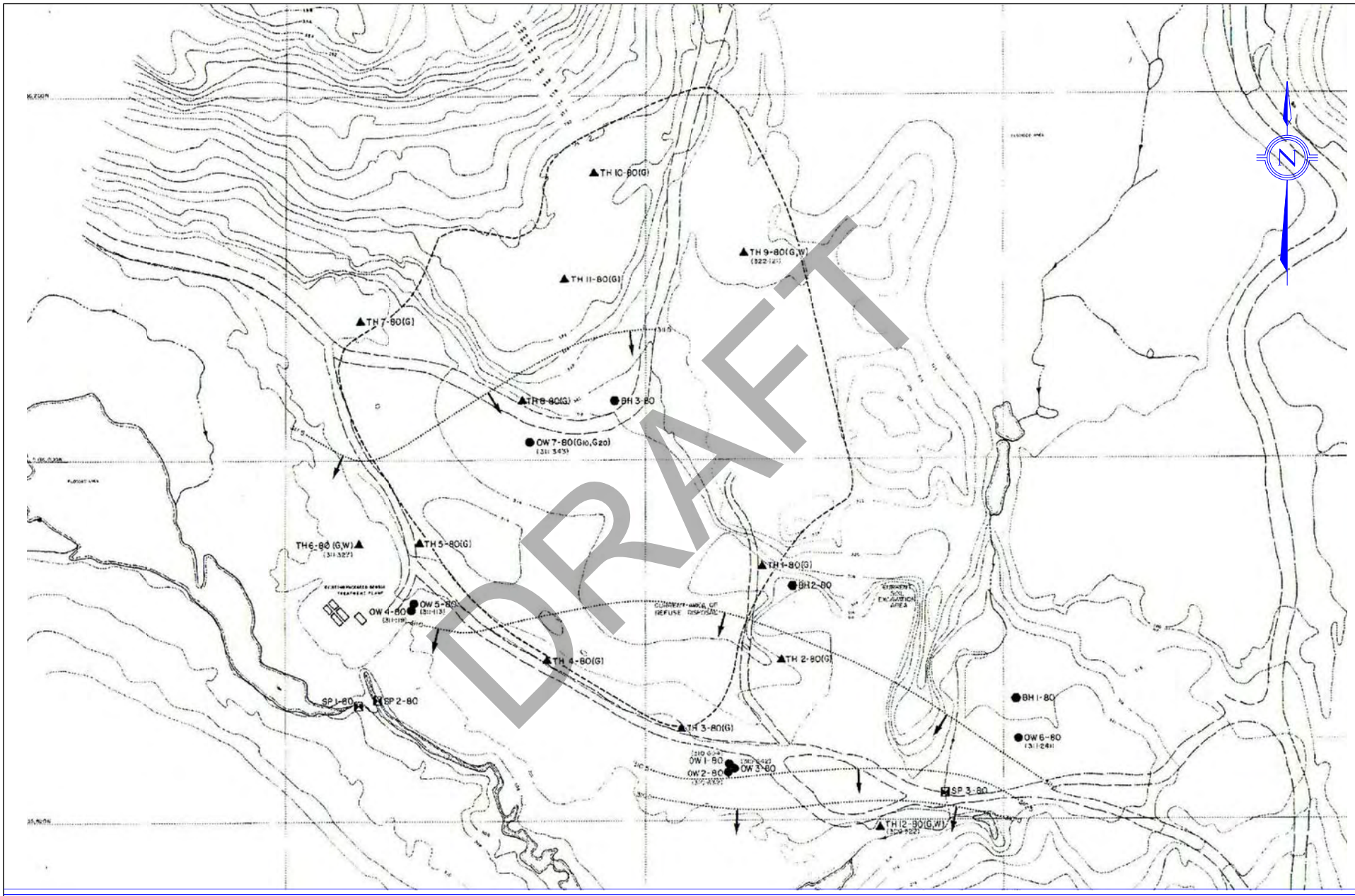
SITE PLAN

TERRAPROBE

File No. 5-09-4008

FIGURE 2



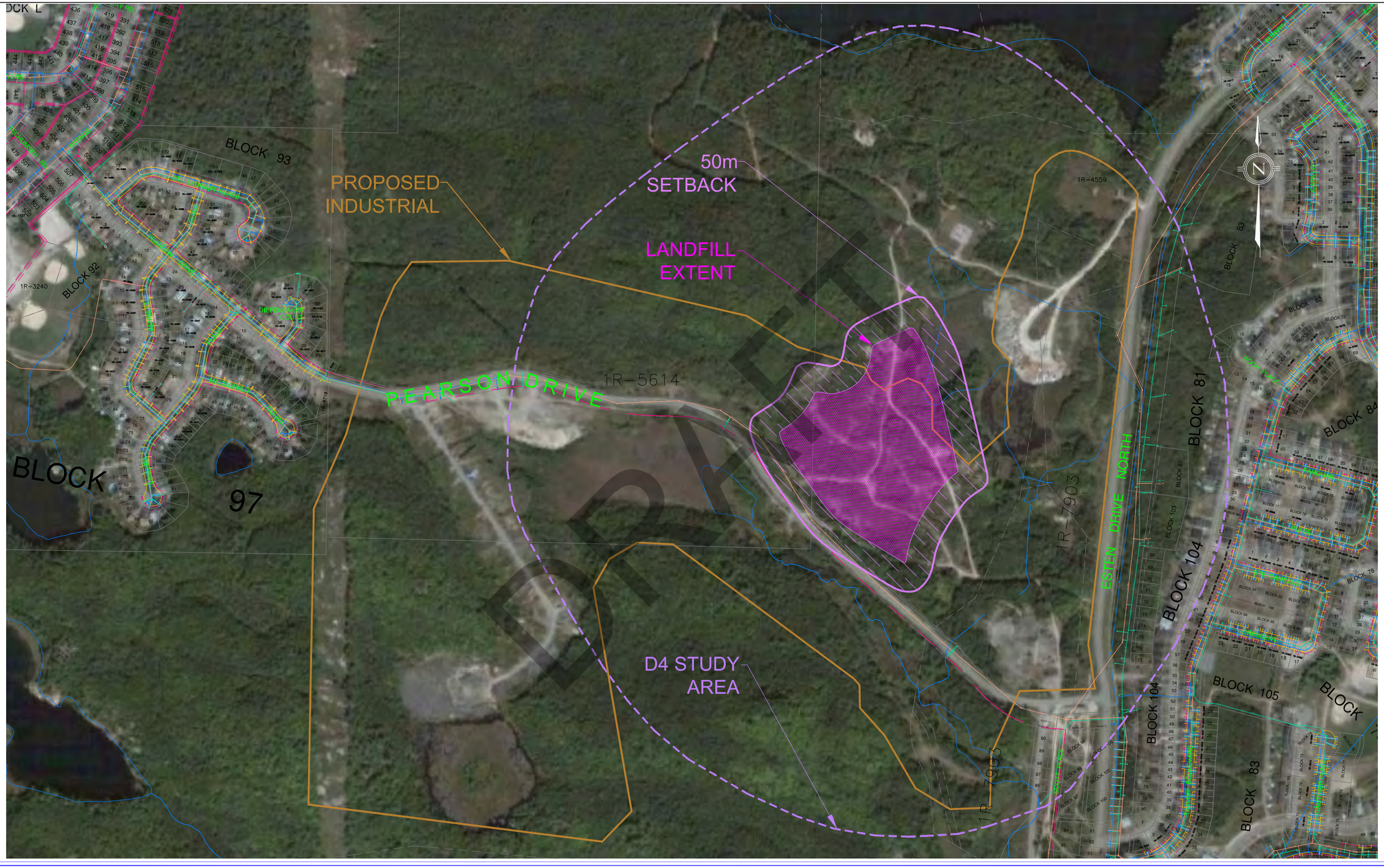
PREVIOUS STUDIES - APPROXIMATE LANDFILL BOUNDARY

N.T.S.

TERRAPROBE

File No. 5-09-4008

FIGURE 3



N.T.S.

D4 STUDY AREA

TERRAPROBE

File No. 5-08-4008

FIGURE 4

Z:\Terraprobe Limited\Active Projects\2009 File Numbers\Branch Files\5-09-4008 Elliot Lake\A_Dwgs_Logs\AutoCAD\AutoCAD\Pearson Drive\5-09-4008 Fig 4 Pearson Drive Landfill Boundary.dwg, SANDY

Terraprobe
Consulting Geotechnical & Environmental Engineering
Construction Materials Inspection & Testing

DRAFT
PRELIMINARY
ENVIRONMENTAL IMPACT STUDY
PEARSON DRIVE INDUSTRIAL AREA
ELLIOT LAKE, ONTARIO

Prepared For: City of Elliot Lake
45 Hillside Drive
Elliot Lake, ON P5E 1X5

Attention: Mr. Brad Parsons

File No. 5-09-4009
December 23, 2009

Distribution of Report:

1 copy - City of Elliot Lake
1 copy - Terraprobe Inc.

TABLE OF CONTENTS

1.0 INTRODUCTION

Terraprobe Limited was retained by the City of Elliot Lake to conduct a preliminary Environmental Impact Study (EIS) for a proposed new industrial area to be developed near Pearson Drive and Eston Drive in the City of Elliot Lake. The purpose of the study was to identify natural and cultural features in the area, and to assess potential constraints with respect to the proposed industrial development.

2.0 POLICY CONSIDERATIONS

Land development is subject to a variety of Federal, Provincial, and local policies. The following policies were considered in the development of the EIS:

- **Provincial Policy Statement**. The Provincial Policy Statement (Ministry of Municipal Affairs and Housing 2005), provides direction to planning authorities to develop policies for the protection and management of natural heritage features and resources. The Provincial Policy Statement defines the following natural heritage features and provides policies for each:

  - Significant wetlands.
  - Significant habitat of endangered and threatened species.
  - Fish habitat.
  - Significant woodlands.
  - Significant valley lands.
  - Significant areas of natural and scientific interest.
  - Significant wildlife habitat.

  Each of these features is protected according to Provincial guidelines and regulations.

- **Federal Fisheries Act**. The Fisheries Act has provisions that address fish habitat for the purposes of planning applications. Generally, the Act prohibits a harmful alteration, disruption, or destruction of fish habitat.

- **Existing Official Plan or Related Planning Documents**. It is our understanding that the City of Elliot Lake is in the process of developing new planning policy related to the Pearson Drive industrial area. There is no existing planning policy in place for the area.

3.0 SCOPE OF WORK

The scope of work for the study consisted of the following:

- A review of published information to assess the presence of significant natural heritage features.
- Detailed site inspection conducted in June 2009. The purpose of the inspection was to assess general site conditions with respect to existing land use, topography, and natural features.
- Discussions with the City of Elliot Lake regarding the availability of municipal servicing in the area.
- Review of background documentation regarding the presence of a former closed landfill in the area.
- Review of topographic mapping to assess site topography and drainage.
- Review of geologic mapping to assess local and regional geologic features.

A complete list of the references reviewed in the preparation of the study is provided on the accompanying List of References.

4.0 DESCRIPTION OF STUDY AREA

The existing conditions in the study area are described in this section of the report. It is noted that the description of existing conditions is based on a visual site inspection and a review of available published and background information. Detailed studies and surveys were not conducted as part of this preliminary assessment. Further more detailed studies and site assessments are recommended in order to develop detailed planning documentation for the area.

4.1 Site Location and Description

The site is situated in the vicinity of Pearson Drive and Eston Drive in the City of Elliot Lake, as shown on the accompanying Figure 1. The site is an irregular shaped parcel centred along Pearson Drive. It is proposed to utilize the site for industrial development purposes. The site will likely be divided into a number of development parcels or lots. The configuration and nature of the development have not been are not finalized at this time.

The lands immediately to the north and south of the site are generally vacant woodlot and bush. The lands immediately to the east and west consist of single and multiple family residential dwellings.

The following significant existing features are found on the site:

- A former municipal landfill area situated near the northeast portion of the property to the north of Pearson Drive.
- A former shallow lake or marshland area located to the north of the landfill which appears to have been filled.
- A cul-de-sac roadway which runs south from Pearson Drive, and is found near the western portion of the site. The lands around the roadway have been apparently levelled and filled.

Most of the remainder of the site is occupied by undulating bedrock ridges, and mixed deciduous and coniferous forest. A large shallow pond or marsh is found in the central portion of the site, immediately south of Pearson Drive.

4.2 Site Geology and Hydrogeology

The site geology and hydrogeology were assessed on the basis of subsurface investigations which were conducted for the former landfill near the northeast portion of the site, and available geologic mapping.

Much of the site comprises bedrock outcrops of granodorite and medisedimentary rocks. The eastern portion of the site, in the vicinity of the closed landfill, were covered with a mixture of glacial soil deposits. These

deposits are variable in composition but include coarse sand and gravel. The remainder of the area consists of bedrock outcrop, or a thin mantle of glacial drift.

It appears that fill materials have been placed over a number of area of the site. These include the following:

- The former landfill area.
- A former shallow pond or marsh to the northeast of the landfill.
- The cul-de-sac roadway and surrounding areas found at the western portion of the site.

Ground water occurrence is noted in the overburden deposits. Ground water flow in these deposits will generally follow local topography.

4.3 Site Topography and Drainage

Detailed topographic mapping is currently not available for the site. Site topography and drainage conditions were assessed based on 1:10,000 Ontario base mapping, and site inspection.

Site topography is dominated by bedrock knobs and ridges. Elevated bedrock ridges are found particularly on the northern portion of the site, to the north of Pearson Drive, and the western portion of the site, west of the existing cul-de-sac road.

It is noted that site topography has been altered through filling activities associated with the landfill and the cul-de-sac roadway.

The locations of local drainage features are shown on the accompanying Figures 2 and 3. In summary, there are three significant water-related features found on the site:

- Existing shallow pond or marsh to the south of Pearson Drive, near the central portion of the site.
- Water course which flows south and easterly from the pond, parallel to Pearson Drive.
- Water course which flows to the eastern portion of the site, adjacent to the former landfill property.

All of these features appear to be permanent flowing features.

4.4 Aquatic Resources

There are no aquatic resources on or within the immediate vicinity of the site which have been designated as significant natural heritage features. Specifically, Ministry of Natural Resource mapping does not indicate the presence of any significant wetlands, habitat, or areas of natural and scientific interest associated with aquatic habitat in this area.

An inventory of aquatic habitat species was not conducted. It can be expected that the watercourse features on the site provide or contribute to fish habitat.

4.5 Terrestrial Resources

As noted previously, significant areas of the site have been disturbed as a result of previous activities. The undisturbed terrestrial areas of the site are generally covered with mixed forest. A review of Ministry of Natural Resources mapping indicates that there are no areas of significant habitat or areas of natural or scientific interest associated with the terrestrial features on the site.

A detailed inventory of terrestrial features and habitat was not conducted. It can be expected that the site will provide habitat to species common to the area, including a range of birds and mammals.

4.6 Servicing Considerations

Based on discussions with the City of Elliot Lake, it is understood that full municipal servicing is available for proposed development in the area. This includes municipal piped water, sanitary sewers, and electricity.

4.7 Former Landfill Site

There is a former municipal landfill situated on the north side of Pearson Drive near the eastern portion of the site, as shown on Figure 2.

There is little specific information available regarding the development and history of the site. There is no evidence that a Certificate of Approval was issued for the landfill. Based on available information, the site began operation in 1972, and was closed in approximately 1980. The site was a former borrow pit and refuse materials were placed in excavations within the pit. The waste was apparently placed in a scattered and random basis. There is no accurate information available regarding the precise extent or thickness of waste placement.

A study of the closed landfill was conducted by Terraprobe *(Guideline D4 Study, Closed Pearson Drive Landfill, Elliot Lake, Ontario*, October 19, 2009). The study indicates that the landfill does not pose a significant concern with respect to development of an area for industrial purposes, provided a nominal buffer is provided around the landfill boundary. The buffer is required to provide protection against minor leachate or landfill gas related impacts. Recommendations are provided for additional studies to confirm the extent of waste and potential impacts of the landfill.

4.8 Previous Activity

It is evident that there has been previous activity within the site area, in addition to those related to the landfill. In particular, it appears that a shallow pond or marsh once existed immediately to the north and east of the landfill. This feature is evident on Ontario Base Mapping from 1986 (Figure 3). This feature has now been filled. There are an access roadway and several paths and ATV trails which lead through this area.

A cul-de-sac roadway has been constructed to the south of Pearson Drive near the western portion of the site. It appears that the construction involved levelling of the ground and placement of fill. This area is reportedly used for outdoor storage activities.

5.0 DEVELOPMENT CONSTRAINTS

Based on site conditions, a series of potential development constraints were identified. It is noted that these constraints are preliminary, and based on available information. Further more detailed information and inventory will be required to develop final planning policy for the site.

Potential development constraints were considered with respect to the following criteria:

- Aquatic resources.
- Terrestrial resources.
- Site development and servicing considerations.
- Landfill impacts.

A matrix of potential constraints relating to the above factors was developed and is presented below. The potential constraints with respect to each criteria were rated according to the following categories:

- **None**. This indicates that there is no constraint with respect to this category.
- **Low**. This indicates some constraint with respect to the category. The level of constraint is sufficiently low that it can be accommodated without major impact to the planning process. There may be a requirement for minor mitigation measures to minimize impacts.
- **Moderate**. This indicates some constraint will be posed. Mitigation measures will definitely be required to manage the constraint. Mitigation measures must be included as part of development. Mitigation measures may include setbacks, reconstruction or compensation of a feature, or limitations to the nature of development.
- **High**. This indicates a significant level of constraint. This will include exclusion of development from certain areas, or provision of significant setbacks or compensating or control measures.

Potential Constraint	***Level of Constraint***
Aquatic Resource	**Low** - further study required to determine if setbacks or other mitigation is appropriate.
Terrestrial Resource	**Low** - further study required to determine if setbacks or other mitigation is appropriate.
Site Development and Servicing	**Moderate** - presence of filled areas, bedrock outcrop, and rolling topography will increase costs of development
Landfill Impacts	**High** - development generally not feasible within 50 m of former landfill

As noted, a significant portion of the site is subject to moderate to high constraints. These constraints are the result of the following:

- Development will generally be precluded within the landfill area and a zone of 50 m beyond the landfill boundary.
- The presence of bedrock outcrop and steep topography. This will require significant rock blasting and excavation in order to create suitable topography for development.
- The presence of fill areas. The presence of fill areas may pose geotechnical constraints with respect to the construction of buildings.
- Water course and water features. The shallow pond or marsh and water course features potentially provide aquatic habitat. In addition, development within the pond/shallow marsh would require placement of fill, which may pose geotechnical and cost constraints.

6.0 REQUIREMENTS FOR FURTHER STUDY

The available information indicates that there are moderate to significant constraints to development in the site area. In order to fully assess the cost and planning implications of these constraints, the following detailed studies are required:

- Further detailed studies of the landfill area as recommended in Terraprobe's report of October 19, 2009.
- Detailed topographic mapping to assess potential cost constraints related to rock blasting and excavation.
- On-site terrestrial and aquatic biophysical inventory to assess the significance of the water-related features on the site.
- Geotechnical evaluation of fill materials for the cul-de-sac roadway and areas to the northeast of the former landfill. These are required to assess potential constraints of the construction of roads, servicing, and buildings in these areas.

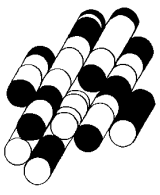
Yours truly,

Terraprobe Inc.

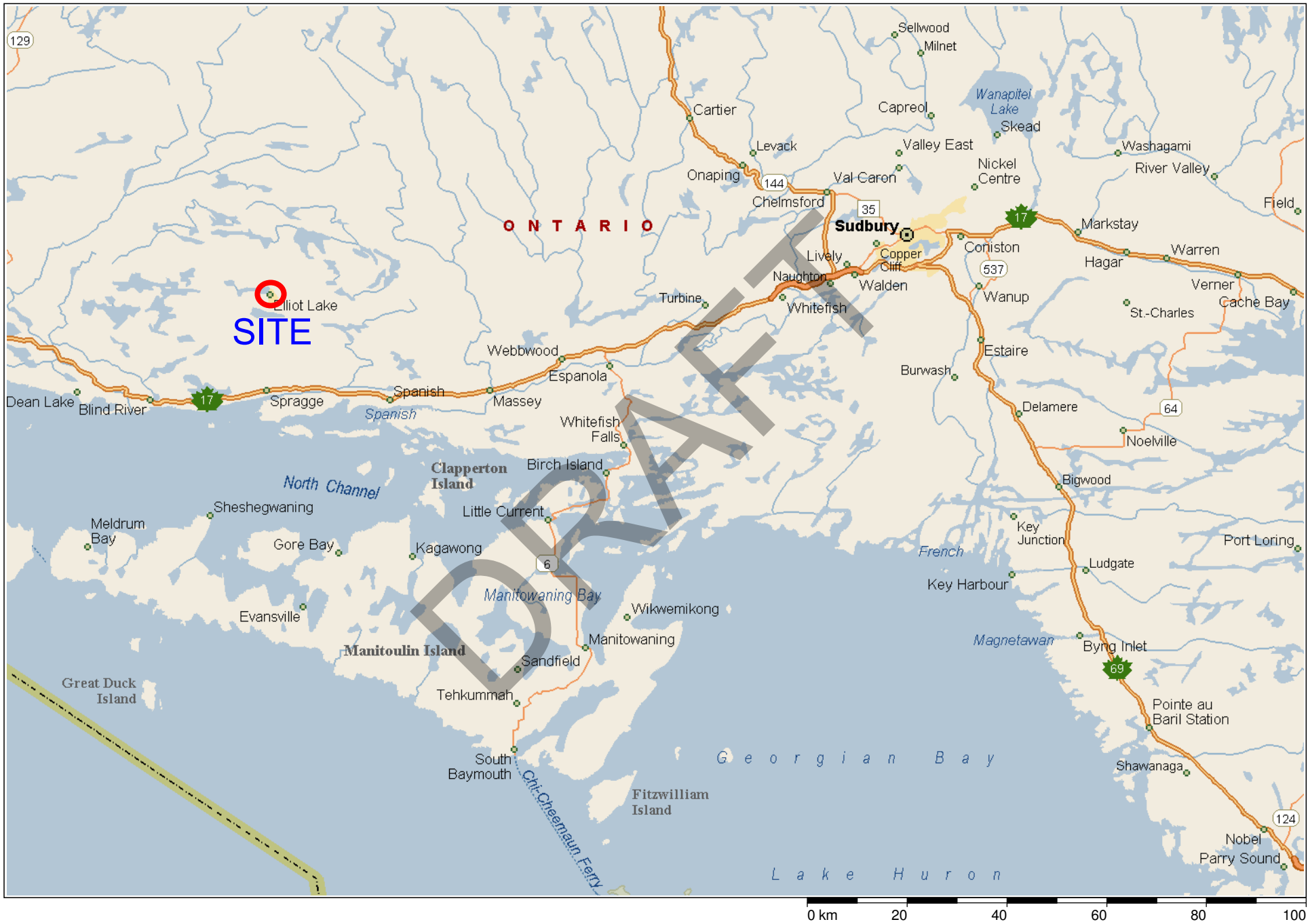
Paul W. Bowen, P.Geo., P.Eng.
Principal

FIGURES

TERRAPROBE INC.



ELLIOT LAKE, ONTARIO

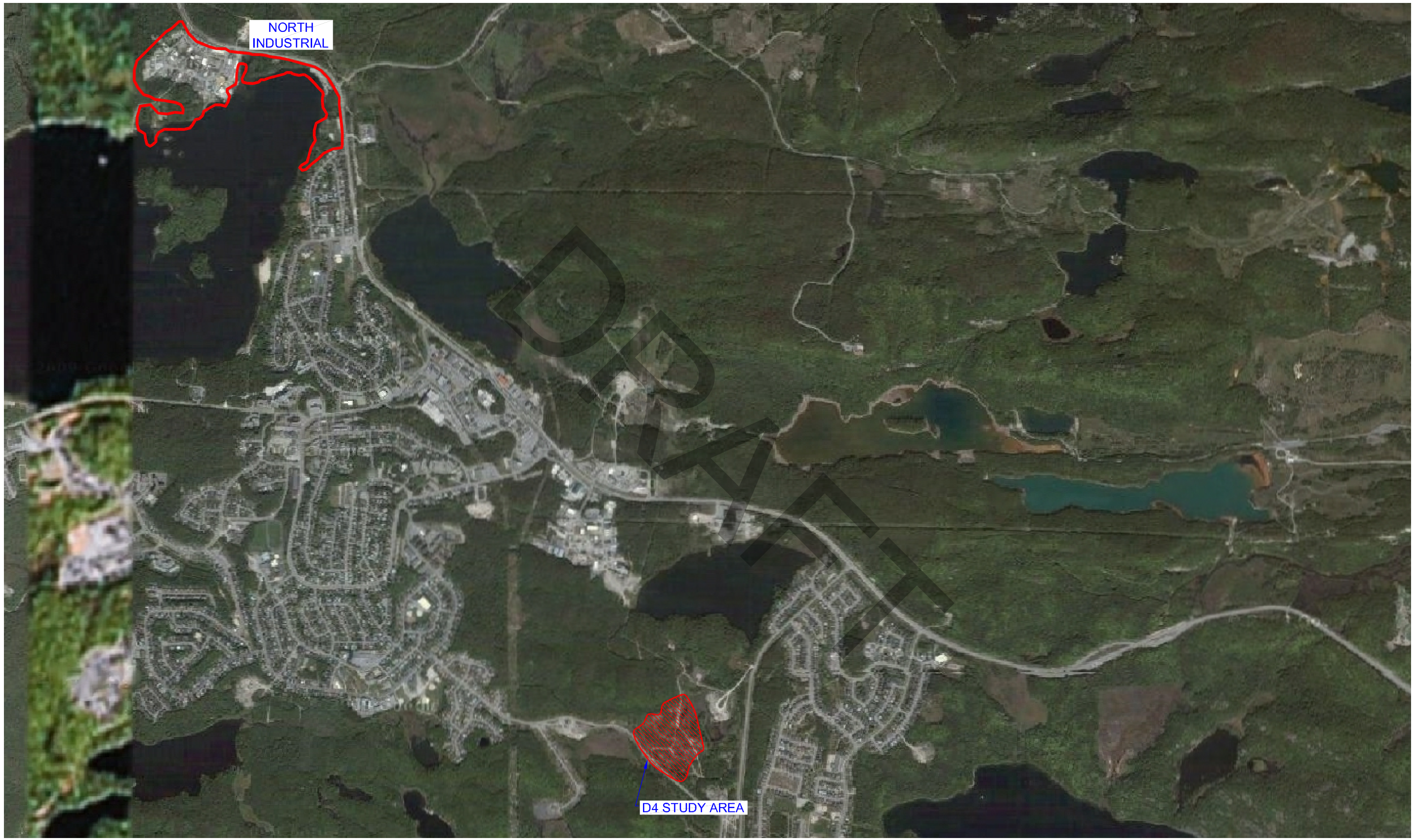


SITE LOCATION PLAN

TERRAPROBE

FILE No. 5-09-4009

FIGURE 1



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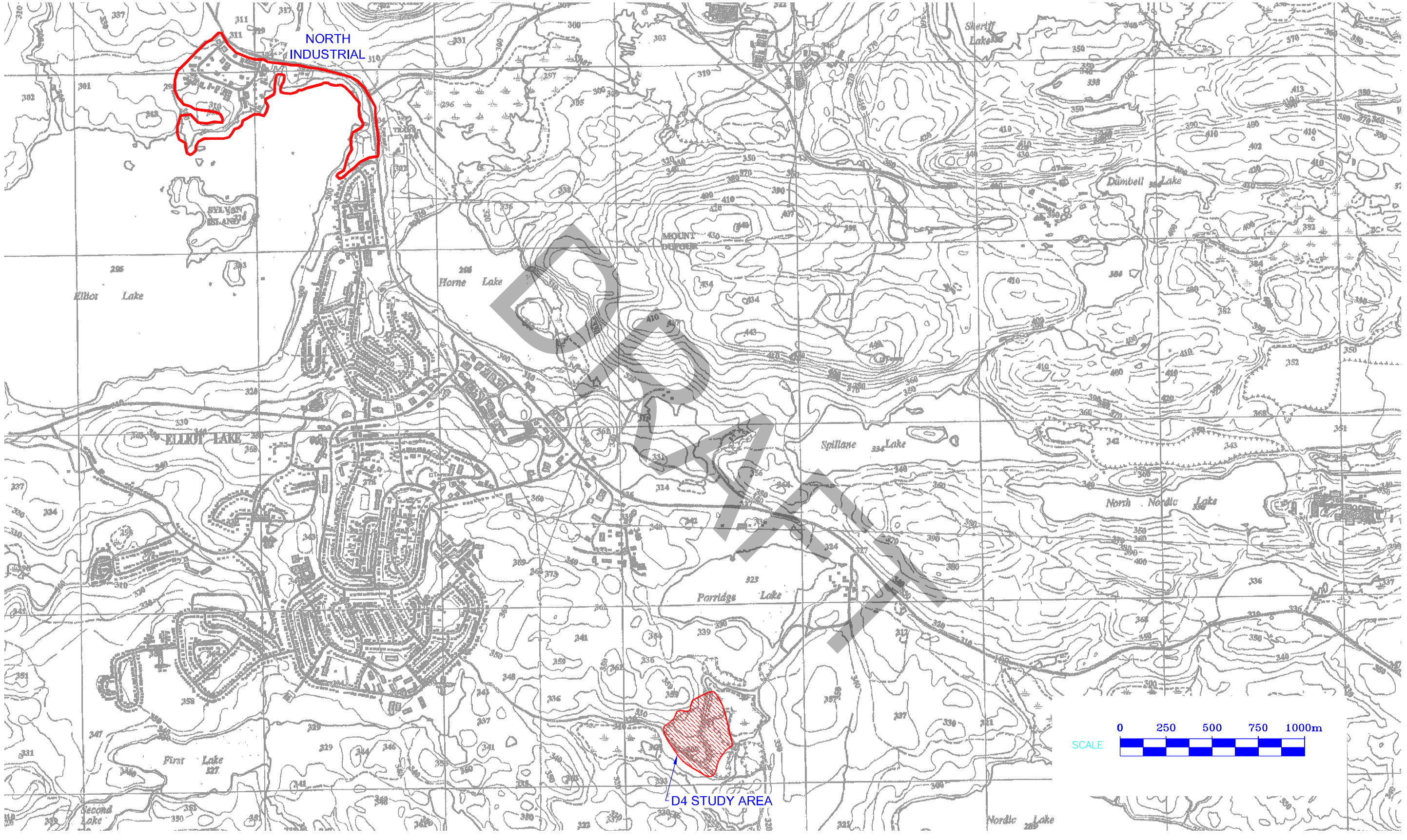
STUDY AREA - AIR PHOTO

TERRAPROBE

File No. 5-09-4009

FIGURE 2



STUDY AREA - BASE MAP

TERRAPROBE

File No. 5-09-4009

FIGURE 3

LEGEND

- Bedrock and Steep Topography
- Water Course or Water Feature
- Closed Landfill Area
- Fill Area - Former Water Feature
- Fill Area

BOUNDARY OF PROPOSED INDUSTRIAL LANDS

PEARSON DRIVE

ESTEN DRIVE NORTH

BLOCK 93

BLOCK 92

BLOCK 97

BLOCK 83

BLOCK 81

BLOCK 82

BLOCK 84

BLOCK 104

BLOCK 105

1R-3240

1R-5614

1R-7903

1R-4529

N.T.S.

SUMMARY OF POTENTIAL CONSTRAINTS - PEARSON INDUSTRIAL AREA

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File No. 5-08-4009

FIGURE 4

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