

Phase I Environmental Site Assessment

Kam Lake Development Area (Lot 32, Block 568, Plan 4452)

Yellowknife, Northwest Territories

Prepared for:
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Executive Summary

This executive summary provides an overview of the main findings of the study to which it pertains. This executive summary does not provide a comprehensive report, and its review should not be considered a substitute for reading the report in its entirety.

BluMetric Environmental Inc. (BluMetric®) has been retained by the City of Yellowknife to prepare a Phase I Environmental Site Assessment (ESA) for the property located at of Lot 32, Block 568, Plan 4452, in the City of Yellowknife, Northwest Territories (NT) (herein referred to as the 'Phase I Property' or 'Site'). It is our understanding that the ESA is being completed for due diligence purposes to determine the environmental condition of Site prior to development.

The Phase I Property does not have a municipal address. It is situated in Kam Lake Industrial Area of the City of Yellowknife, NT, and consists of 68.1 hectares (ha) of mostly vacant natural land, bounded by Enterprise Drive to the northeast, Grace Lake Boulevard to the south, and Commissioner's Land (part of the Interim Land Withdrawal) to the west, and Deh Cho Boulevard to the north.

There are no permanent structures or utility services connected to any part of the Phase I Property. The Phase I Property has not been subject to significant grading activities and comprises a large undeveloped tract of land (approximately 68 ha) characterized by gently to moderately undulating Canadian Shield terrain, consisting of densely vegetated woodlands, wetlands, and bedrock outcrops.

The northern tip of the Site has been used as a snow dumping area since approximately 2008. In addition, industrial/commercial development along the northeast and east boundaries of the Site since the 1990s has resulted in some land disturbance, levelling, and debris along the northeast and east boundaries of the Site. In the mid-2010s, a linear berm 210 m long and 20 m wide comprised of aggregates (i.e. gravel, boulders, blast rock) was developed on the central-east side of the site.

Ground surface elevations across the Phase I Property range from approximately 182 to 192 metres (m) above sea level (asl), resulting in localized variations in slope and drainage patterns across the property. Surface drainage and groundwater flow is inferred to follow local topographic gradients, with runoff flowing from elevated bedrock ridges and knolls toward lower-lying wetlands and surface water features. Due to the irregular nature of the terrain, drainage patterns are expected to be localized rather than uniform across the property.

The presence of structural features such as mature trees, rock crevices, cavities, and anthropogenic structures off-site further enhances habitat suitability for species requiring specialized nesting or roosting sites. It is therefore reasonable to conclude that Species-At-Risk (SAR) species may have ranges that overlap the site, utilize it seasonally, or pass through the site area.

Based on a records review, a Site reconnaissance and an interview with Site personnel, potentially contaminating activities (PCAs) were identified on the Phase I Property and within the Phase I Study Area that may cause potential environmental concern to the Phase I Property. The PCAs were assessed based on activity type, date, distance, topography, Site conditions, local geology and hydrogeology, and other information gathered during Site interviews to determine if they are of potential environmental concern to the Phase I Property. Based on the findings of this Phase I ESA, the qualified professional (QP) concluded the following:

Phase I Property

Eight (8) on-site PCAs were identified on the Phase I Property:

- A Snow Disposal Site is located on the northern tip of the Phase I Property, in operation since 2008. The snow disposal site was assessed as a moderate risk to the site, since it is operated by the City of Yellowknife Public Works and regulated through proper licensing. However, the snow and built-up aggregate material could contain de-icing chemicals and/or salts. These chemicals could also be carried with runoff into the surface water features on-site.
- Land disturbance and levelling with imported fill material along the northeast and east boundaries of the Site was assessed as a low risk to the Site, since it is expected that the material used was likely obtained from a local aggregate source.
- Use of on-site areas for the storage of equipment, machinery, vehicles, totes, fuel tanks, and other debris at the rear of building lots along the northeast and east boundaries of the Site, was assessed as being a low to moderate risk to the site since the contents of tanks and totes is unknown, proximity to the site and inferred drainage pathways, and their storage over bare ground.
- A linear berm, consisting of blast rock approximately 210 m in length and 20 m width, extending onto the southeast portion of the Phase I Property was not considered likely to be a risk to the Phase I Property given it was likely obtained from a local aggregate source.

- The recent use of the Site (and general area) for 'fuel breaks' during the 2023 wildfire in the City of Yellowknife. This was assessed as being a low risk to the Site since the method(s) used for creating the fuel breaks remains unknown but typically involves the use of drip torches and selective controlled burning, and any chemicals/fuels used would likely have been burned off in the controlled burns, but residues could remain.

Phase I Study Area

Off-site PCAs were also identified within the Phase I Study Area, which included the following:

- Several spill records for properties located along the northeast and east boundaries of the Site were assessed as a low risk to the Site, due to lack of details, the spill quantity, and/or based on topography and inferred direction of surface and groundwater flow.
- A commercial printing, engravers (manufacturer and wholesaler) at 128 Enterprise Drive, adjacent to the east boundary of the Site, was assessed as a low risk to the Site, based on proximity and since there were no other records of concern identified for this property.

Based on the information available and the Site observations made during the Phase I ESA, the above PCAs were evaluated by the QP as posing a low to moderate level of environmental risk to the Site. A Phase II ESA is recommended to assess the environmental conditions of soil, groundwater, and surface water along the northeast and east boundaries of the Site. Likewise, a Species at Risk (SAR) Survey would be warranted to determine what/if any SAR species identified with ranges in the vicinity of the Phase I Property do have habitat and/or occur on the Site.

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1 Introduction

1.1 Terms of Reference

BluMetric Environmental Inc. (BluMetric®) has been retained by the City of Yellowknife (the “Client”) to prepare a Phase I Environmental Site Assessment (ESA) for the Kam lake Development Area property located at Lot 32, Block 568, Plan 4434, in the City of Yellowknife, Northwest Territories (NT) (herein referred to as the ‘Phase I Property’ or ‘Site’). It is our understanding that the ESA is being completed for due diligence purposes to determine the environmental condition of the property prior to development.

This Phase I ESA was performed in accordance with the substance and intent of the Phase I ESA documents produced by the Canadian Standards Association (CSA) Z768-01 and Update No. 1 (Amended 2022).

In general terms, the purpose of a Phase I ESA is to determine if a property is subject to actual or potential contamination. The tasks of a Phase I ESA typically include the following:

- Reviewing historical property use information regarding the Phase I Property;
- Inspecting the Phase I Property for activities, conditions, or features that could result in contaminants being released into the natural environment or into on-site structures;
- Noting activities, conditions, and/or features observed on neighbouring lands that could alter environmental conditions at the Phase I Property;
- Interviewing Site personnel, neighbours, or other knowledgeable parties about past and present operations and activities;
- Reviewing environmental documentation that the property owner, operator, or client has provided;
- Making inquiries to federal, territorial, and municipal agencies for access to any environmental records on file; and,
- Using the assembled information to prepare a report.

Since Phase I ESAs do not include the testing of samples or the measuring of environmental parameters, the conclusions presented in a Phase I ESA report often are limited to identifying potentially contaminating activities (PCAs) that may contribute to environmental concerns for the Phase I Property.

1.2 General Description of the Phase I Property

Municipal and Legal Address, and Property Description

The Phase I Property does not have a municipal address. It is situated in Kam Lake Industrial Area of the City of Yellowknife, NT, and consists of 68.1 hectares (ha) of mostly vacant natural land, bounded by Enterprise Drive to the northeast, Grace Lake Boulevard to the south, Commissioner's Land (part of the Interim Land Withdrawal) to the west, and Deh Cho Boulevard to the north.

- Legal description: Lot 32, Block 568, Plan 4452, City of Yellowknife
- Property Identification Number (PIN): 9,004,814
- Roll Number: 0568003200
- Survey Plan: 100967 CLSR NT

The Phase I Property features are shown in Figure 1. The general location of the Phase I Property is shown in Figure 2. The Plan of Survey (and Certificate of title) is included in Appendix A.

There are no permanent structures on any part of the property or utility services connected to any part of the Phase I Property. The Phase I Property is zoned as Growth Management (GM) Use, according to the City of Yellowknife's Schedule #1 Zoning Map, which is a special management use zone.

Name of Current Property Owner

The Site consists of Crown land, held by the City of Yellowknife. The individual who engaged BluMetric to conduct this work was:

Tatsuyuki Setta, RPP, MCIP, AICP
Manager, Planning and Environment
Planning and Development
City of Yellowknife
Tel: 867-920-5622
Fax: 867-920-5649

Phase I Study Area

The Phase I Study Area consists of a mix of undeveloped natural land and commercial, industrial, and residential land uses that extend 250 metres (m) from the boundaries of the Phase I Property. The outline of the Phase I Study Area is shown in Figure 3.

1.3 Scope of Work

The following tasks were undertaken in May and June 2026 to prepare this report:

- Information requests were sent via email to relevant Municipal and Territorial government departments for pertinent information on Site use and operations;
- Historical aerial photographs were ordered from the National Air Photo Library (NAPL) for the years 1956, 1966, 1970, 1974, 1981, 1984, and 1991; additional aerials were retrieved from Northwest Territories ATLAS interactive web-based mapping service for 2002, 2008, 2014, and 2025;
- A search of the Hazardous Materials Spills Database, curated by the GNWT Department of Environment and Climate Change (ECC), was performed;
- A search of Environment Canada's Environmental Offenders Registry was performed;
- A search of the Federal Contaminated Site Inventory (FCSI) was performed;
- An environmental multi-database search was performed by Environmental Risk Information Services (ERIS);
- An aerial imagery survey using a remotely piloted aircraft system (RPAS) covering the site with an additional 50 to 75-meter buffer around the site perimeter was completed on June 9 and June 15, 2026 by Connor McClelland of BluMetric; following the completion of the aerial survey, the imagery was reviewed to determine areas of potential environmental interest and concern on the Phase I Property. A site reconnaissance of these areas was subsequently completed on June 15, 2026 by Connor McClelland of BluMetric;
- The above information was compiled, including information on Site features, geological formations, and habitats and species at risk (SAR), which was evaluated for the identification of any potential environmental concerns on the Phase I Property or within the Study Area; and
- The findings were compiled and presented in this Phase I ESA report.

2 Physical Setting

2.1 Topography

The topography of the Study Area is shown on Figure 3.

The Phase I Property has not been subject to significant grading activities and comprises a large undeveloped tract of land (approximately 68 ha) characterized by gently to moderately undulating Canadian Shield terrain. Ground surface elevations range from approximately 182 to 192 m above sea level (asl), resulting in localized variations in slope and drainage patterns across the property.

The Phase I Property consists of exposed and shallow bedrock outcrops interspersed with boreal forest vegetation, localized poorly drained wetland areas, and small surface water features. Based on review of aerials and mapping resources, several low-lying areas and wetlands were identified within the property boundaries, reflecting the natural bedrock-controlled topography. Seasonally saturated areas may also occur within topographic depressions.

Surface drainage is inferred to follow local topographic gradients, with runoff flowing from elevated bedrock ridges and knolls toward lower-lying wetlands and surface water features. Due to the irregular nature of the terrain, drainage patterns are expected to be localized rather than uniform across the property. Surface runoff is anticipated to collect within natural depressions and wetland areas prior to discharging to adjacent drainage features.

Shallow groundwater flow, where present, would be expected to generally mimic surface topography, moving from areas of higher elevation toward local wetlands, depressions, and surface water features. However, groundwater flow within fractured bedrock may be influenced by local subsurface geological conditions and may not directly correspond to surface drainage patterns.

2.2 Soil and Geology

The surficial geology of the study area consists of undifferentiated bedrock of the Slave province of the Canadian Shield, with greater than 75% rock outcrop, overlain with a discontinuous veneer of till comprised of loosely compacted and stoney diamicton of silt and sand less than 2 m thick (NRCAN, 2014).

Widespread, bare granitic outcrops are surrounded by low-lying areas filled in by glaciofluvial and glaciolacustrine sediments. Organic soils occupy low-lying areas of poorly defined watercourses and drainage.

The bedrock geology is described as Neoarchean intrusive rocks consisting mainly of igneous rock types like granodiorites, tonalites, and granites, comprised of mafic minerals like quartz, plagioclase, and K-feldspar (NRCAN, 1956).

2.3 Surface Water

No major watercourses were identified on the Phase I Property. As previously noted in Section 2.1, several low-lying pond areas and wetlands were identified within the property boundaries, reflecting the natural bedrock-controlled topography. Additional seasonally saturated areas may also occur within topographic depressions.

The closest surface water features are several small unnamed lakes to the west-northwest and Grace Lake to the south of the Site. These lakes and other surface water drain towards Kam Lake located 500 m southwest of the Site, at its closest.

The NWT Map of Arsenic Concentrations Measured in Water Bodies in the Yellowknife Area (July 5, 2019) indicated that dissolved arsenic levels in Kam Lake (450 m southeast of the Phase I Property) were 238 parts per billion (ppb) – with safe levels being less than 10 - and has advised not to consume the water or fish, and not to swim in the lake. Arsenic concentrations measured in Grace Lake (235 m south of the Phase I Property boundary) were 10.3 ppb, making it safe to swim and fish from, and Lake YK-62, located 800 west of the Phase I Property boundary, had measured arsenic levels of 29.80 ppb, also said to be safe to swim in.

2.4 Hydrogeology

No water well records were identified on the Phase I Property or within the Phase I Study Area.

The Phase I Property is located within the Slave geological province of the Canadian Shield physiographic region, with a thin till and glaciofluvial sediments forming the prevalent surficial materials within a glacial landscape including bedrock outcrops and small lakes (NRCAN, 2019).

Surface drainage and shallow groundwater flow across the Phase I Property is expected to follow local topographic gradients, with runoff flowing from elevated bedrock ridges and knolls toward lower-lying wetlands, ponded areas, and other surface water features. Due to the irregular nature of the terrain, drainage patterns are expected to vary locally across the property (and study area).

Permafrost in the area is classified as extensive discontinuous permafrost with medium to low ground ice content (20% to <10%) with sparse ice wedges (NRCAN, 1995). Shallow groundwater flow is expected to be confined to overburden deposits in the active permafrost zone that thaws in the summer months.

2.5 Species at Risk (SAR) and Habitat Review

2.5.1 Habitat Characterization

Terrestrial vegetation within the site reflects a transition between boreal forest and tundra ecosystems, ranging from open, sparsely vegetated tundra and barren areas to patches of mature conifer-dominated forest. Plant communities are primarily composed of grasses, sedges, mosses, dwarf shrubs, and other herbaceous species. Extensive areas of exposed bedrock and coarse substrates limit soil development, resulting in shallow, poorly structured soils and discontinuous vegetation cover.

Aquatic habitats with potential fish habitat within the site include several small waterbodies, with some larger water bodies present to the north of the site. These features are typically associated with grass-sedge riparian vegetation and wet meadow communities along shorelines and drainage areas. Together, these aquatic and shoreline environments provide important habitat for fish, aquatic invertebrates, and semi-aquatic species, contributing to the overall ecological diversity of the site.

2.5.2 Species at Risk

Species at Risk (SAR) are identified by both the federal and Northwest Territories governments. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is an independent group of experts that assesses whether species are at risk in Canada and assigns a conservation status. A federal Minister then decides, following consultation, whether to list the species on Schedule 1 of the Species at Risk Act (SARA). Once listed, the species is legally recognized as a federal SAR.

A total of 12 SAR (plants and animals) are on the Northwest Territories territorial list of species at risk. There are many additional species that are part of SARA that are present in the Northwest Territories. All SAR that are present in the Northwest Territories and listed either territorially or federally are included in the Species at Risk in the Northwest Territories guidance (Government of the Northwest Territories, 2024). The Northwest Territories Species and Habitat Viewer web mapping application provides information on SAR including their approximate ranges. This tool was consulted in June 2026 and provided records for 19 SAR for which their approximate range include

the Site. Of these 19 species, only two are considered SAR by the Government of Northwest Territories (i.e., barren-ground caribou and little brown myotis). The table below includes information for the species identified in the mapping tool based on their ranges.

Table 1: Species at Risk in Yellowknife, NT

Common Name	Scientific Name	NWT SAR Committee	COSEWIC	SARA	Habitat
MAMMALS					
Barren-ground Caribou	<i>Rangifer tarandus groenlandicus</i>	Threatened	Threatened	Under consideration	Open tundra, areas with vegetation
Wolverine	<i>Gulo gulo</i>	Not At Risk	Special Concern	Special Concern	Boreal forest to alpine tundra and barren-lands
Hoary Bat	<i>Lasiurus cinereus</i>	Not assessed	Endangered	Under consideration	Large mature trees near the edge clearings
Little Brown Myotis	<i>Myotis lucifugus</i>	Special Concern	Endangered	Endangered	Caves, tree cavities, man-made structures, rock crevices
BIRDS					
Bank Swallow	<i>Riparia riparia</i>	Not applicable	Threatened	Threatened	Along rivers, streams, lakes and gravel pits
Barn Swallow	<i>Hirundo rustica</i>	Not applicable	Special Concern	Threatened	Caves, crevices, buildings, garages, barns, bridges, and road culverts
Common Nighthawk	<i>Chordeiles minor</i>	Not applicable	Special Concern	Special Concern	Open forests, clearings, rocky outcrops, peat bogs, marshes, lakeshores, riverbanks, gravel areas
Evening Grosbeak	<i>Coccothraustes verspertinus</i>	Not applicable	Special Concern	Special Concern	Open, mature conifer-dominated forests
Harris's Sparrow	<i>Zonotrichia querula</i>	Not applicable	Special Concern	Special Concern	
Horned Grebe	<i>Podiceps auritus</i>	Not applicable	Special Concern	Special Concern	Small ponds, marshes and wetlands
Lesser Yellowlegs	<i>Tringa flavipes</i>	Not applicable	Threatened	Under Consideration	Muskeg and open forests in the boreal ecozone
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Not applicable	Special Concern	Special Concern	Wetlands, mature conifer forests, and areas with young trees
Red-necked Phalarope	<i>Phalaropus lobatus</i>	Not applicable	Special Concern	Special Concern	Grass-sedge vegetation near freshwater wetlands, lakes, ponds, rivers, or streams
Rusty Blackbird	<i>Euphagus carolinus</i>	Not assessed	Special Concern	Special Concern	Boreal forest, and wetland areas
Short-eared Owl	<i>Asio flammeus</i>	Not assessed	Threatened	Special Concern	Grasslands, tundra, bogs, marshes and other open (non-forested) areas

Common Name	Scientific Name	NWT SAR Committee	COSEWIC	SARA	Habitat
Yellow Rail	<i>Coturnicops noveboracensis</i>	Not applicable	Special Concern	Special Concern	Marshes dominated by sedges and grasses, wet meadows and shrubby wetlands
FISH					
Shortjaw Cisco	<i>Coregonus zenithicus</i>	Not applicable	Threatened	No status	Deep waters, 55 to 180 m, with reports of movement into shallower waters during the spawning season
INSECTS					
Transverse Lady Beetle	<i>Coccinella transversoguttata</i>	Not assessed	Special Concern	Special Concern	Wide range of habitats and are found on a variety of plants
Yellow-banded Bumble Bee	<i>Bombus terricola</i>	Not at Risk	Special Concern	Special Concern	Wide range of habitats, nests underground in pre-existing cavities like abandoned rodent burrows and rotten logs

Based on the mapping, the Site is located within the expected range of all species listed in the table above. The habitat requirements of each species are also included in the table.

As described above, the Site provides potential habitat for the SAR listed within the table to be present at or within the area of the Site. Although many of the species would likely avoid areas impacted by human activity (i.e., the larger mammals), based on the size of the Site and location at the edge of human development, these species may still inhabit the area and be present at the Site part of the time. Migratory species may not be present at the Site for the whole year, but migratory bird species would have potential nesting and foraging habitat, and mammals such as barren-ground caribou and wolverine may pass through the Site.

Based on the diversity and distribution of habitat types present within and surrounding the Site, there is potential for suitable habitat to occur for SAR identified. The mosaic of boreal forest, tundra, and aquatic environments—including open conifer stands, grass-sedge communities, and shoreline/riparian areas—provides a variety of foraging, breeding, and sheltering opportunities. The presence of structural features such as mature trees, rock crevices, cavities, and anthropogenic structures off-site further enhances habitat suitability for species requiring specialized nesting or roosting sites. As noted above, the Site is relatively small and located near civilization, therefore, some species such as the barren-ground caribou and wolverine may avoid the Site or not be present for long periods of time.

Additionally, the network of ponds, and adjacent larger waterbodies contribute to habitat connectivity and support both resident and migratory species, including fish and semi-aquatic wildlife. Given the availability of these suitable habitat characteristics, it is reasonable to conclude

that the SAR species identified as having ranges which overlap the Site may occur within the Site, utilize it seasonally, or pass through the Site area.

3 Historical Review

3.1 Information Sources

A recent history of land uses and activities on the Phase I Property and the neighbouring lands was prepared by reviewing information from the following sources:

- Plan of Survey of Lot 32, Block 568, Plan 4452 (CLSR 100697 NT) (see Appendix A);
- Environmental records provided by the ERIS database (see Appendix B);
- Environment Canada Environmental Offenders Registry search results (see Appendix B);
- Federal Contaminated Site Inventory (FCSI) search results (see Appendix B);
- Environment and Climate Change Canada (ECCC) Spills database search results (see Appendix B);
- Aerial photographs from NAPL/ERIS and the GNWT ATLAS interactive web-based mapping service (see Appendix C).

3.2 The Phase I Property

The Phase I Property originally consisted of undeveloped Crown land consisting of densely vegetated woodlands, wetlands, and bedrock outcrops. The Phase I Property remains largely untouched by development. However, industrial/commercial development along the northeast and east boundary of the Site since the 1990s has resulted in some land disturbance, levelling, and debris along the northeast and east boundaries of the Site.

The northern tip of the Site has been used as a snow dumping area since approximately 2008. In the mid-2010s, a linear feature comprised of aggregates (i.e. gravel, boulders, blast rock) like the size of a road (210 m long and 20 m wide) was developed on the central-east side of the site.

In addition, during the 2023 wildfires and evacuation of Yellowknife, 100 m wide 'fuel breaks' were carved out of the property along Deh Cho Boulevard, to starve and prevent the progression and extent of the wildfires. Prescribed fires and hand thinning are expected to have been methods used to create the fuel breaks.

As discussed in Section 3.3, the land was originally subdivided as part of a larger lot (Lot 1, Block 568) in 2007, which underwent various land severing/resurveying between 2007 and 2012. The current property limits of the Phase I Property (Lot 32, Block 568) were established in Plan 4452, in August 2012.

3.3 Titles Information

Based on review of available Plans of Survey (4139, 4155, 4435, and 4452) retrieved from Canada Lands Survey Records system, the Phase I Property was first unsurveyed Crown lands, prior to 2007. The land was subdivided as part of a larger lot (Lot 1, Block 568) in 2007, which underwent various land severing/resurveying between 2007 and 2012. The current property limits of the Phase I Property (Lot 32, Block 568) were established in Plan 4452, in August 2012.

A signature seal noted on Survey Plan 4452 (dated July 2012) denotes the City of Yellowknife as the owner of Lot 15, Block 568 (now Lot 32, Block 568 – the Phase I Property), under certificate of title No. 72272, Plan 4435 L.T.O.

3.4 Previous Environmental Reports

The following documents related to the Phase I Property were provided for review:

- “*The City of Yellowknife Black Dirt Investigation*”, completed by Gartner Lee Limited, prepared for the City of Yellowknife, dated 12 July 2007 (Reference GLL 70430).
- *City of Yellowknife, Planning and Lands Division By-Law 4487 – Schedule 1: Black Dirt Quarries*, dated 11 June 2008.

Summary

- GLL (2007) investigated a 35-hectare area of the Phase I Property to assess the depth and quality of black dirt (organic soil/peat) to determine its suitability for extraction and horticultural use.
- A field survey completed in May 2007 included sampling from 34 sample sites mapped using UTM coordinates. Soil and geotechnical data were collected at each site, including depths of permafrost, water table, organic and mineral layers, and terrain characteristics. Samples were analysed for soil nutrient content (nitrogen phosphorous, pH and potassium).

- Five terrain units were identified across the area including – deep fen, deep forest, shallow fen, shallow forest and granite. Areas deemed most suitable for black dirt extraction were identified within the deep fen and deep forest areas. Soil nutrients within the other units showed nutrient deficiencies and would need to be treated before use.
- Three main drainage pathways and one minor drainage course were identified in the area.
- Extraction/harvesting of black dirt would require drainage of the area, removal of vegetation, and drying out of the organic layer.
- For commercial/industrial use – following extraction, the area would need to be infilled with clean rock to restore the elevation. Alternatively, to restore the peatland, leave some peat on site to re-establish vegetation and manage the water table.
- It was concluded that the depth and extent of suitable black dirt was less than ideal for commercial extraction (less than 50 hectares [ha] and 2 m thick); however, the demand for fertile peat soils was high.

A copy of the above report is provided in Appendix B.

3.5 Environmental Source Information

3.5.1 ERIS Database Records

A search of federal government, provincial/territorial government, and private source databases was undertaken by Environmental Risk Information Services Inc. (ERIS) for the Phase I Property and Phase I Study Area. A list and description of all databases searched is provided within the ERIS report provided in Appendix B.

A total of 25 database records were identified within a 250 m radius of the Phase I Property boundary (i.e., within the Phase I Study Area). No records were identified on the Phase I Property. One unplotable record was identified within the Phase I Study Area.

The following databases returned records for the Phase I Study Area:

- Automobile Wrecking & Supplies (AUWR)
- Federal Identification Registry for Storage Tank Systems (FIRSTS)
- Scott's Manufacturing Directories (SCT)
- Spills (SPL)

Records which were determined to be of environmental interest are summarized in the table below.

Table 2: Summary of Federal, Municipal, and Private Database Records

Address	On-Site or Off-Site (distance/direction)	Company/Involved Parties	Activity Type	Database	Potentially Contaminating Activity Identified? (Yes/No)
270 Utsingi Drive	Off-Site (40 m N)	1456982 Alberta Ltd.	Fuel tank system (ID 31941) having a 75,000 litre (L) diesel aboveground tank, installed in 2014. Tank system included a spill box at fill point and overflow alarm and overflow automatic shutoff. The tank system was mounted on a concrete pad with a sump.	FRST	Yes – Gasoline and associated product storage in Fixed Tanks (AST)
270 Utsingi Drive	Off-Site (40 m N)	1456982 Alberta Ltd.	Spill record (spill-2013172) for petroleum – fuel oil spill of unknown quantity on 1 January 2013; and 1800 L of petroleum fuel oil from a tank leak (spill-2025125) on 14 March 2025.	SPL	Yes – Spill incident (SPL)
270 Utsingi Drive	Off-Site (40 m N)	Unknown	Overflow event involving fuel oil on January 1, 2013; and a tank leak of 1800 L of fuel oil on March 14, 2025.	SPL	Yes – Spill incident (SPL)
212 Grace Lake Blvd.	Off-Site (Adjacent S)	Transportation Company	Spill record (spill-2022443) for 5 L of wastewater spilled from a truck on 1 September 2022.	SPL	Yes – Spill incident (SPL)
112 Enterprise Drive	Off-Site (Adjacent SE)	Unknown	Spill record (spill-2008240) for 25 L of chemicals (including transformer oils) spilled on 26 May 2008.	SPL	Yes – Spill incident (SPL)
120 Enterprise Drive	Off-Site (Adjacent SE)	Transportation Company	Spill record (spill-2014106) for 200 L of petroleum – fuel oil from a truck - pipe leak on 12 April 2014.	SPL	Yes – Spill incident (SPL)
123 Enterprise Drive	Off-Site (115 m E)	Bernie's Limited	Spill record (spill-2000132) for 400 L of petroleum – fuel oil from a storage tank > 4000 L capacity on 21 March 2000.	SPL	Yes – Spill incident (SPL)
128 Enterprise Drive	Off-Site (Adjacent E)	Artech Engrave Ltd.	Commercial printing, engravers (manufacturer and wholesaler) since 2020.	SCT	Yes – Printing Operation (PRNT)
27 Melville Drive	Off-Site (205 m SE)	Artisan Press Solutions	Printing, Copying and Publishing.	SCT	Yes – Printing Operation (PRNT)

Address	On-Site or Off-Site (distance/direction)	Company/Involved Parties	Activity Type	Database	Potentially Contaminating Activity Identified? (Yes/No)
262 Utsingi Drive, Lot 61	Off-Site (140 m N)	Tlicho Logistics Inc.	Fuel tank system (ID 31941) having two 61,000 L double-walled aboveground diesel tanks on a concrete pad. Tank system included reinforced secondary containment liner with sump access, and a catch basin under connect point. Spill kit on site. Trained offload personnel.	FRST	Yes – Gasoline and associated product storage in Fixed Tanks (AST)
31 Melville Drive	Off-Site (140 m SE)	Unknown	Spill record (spill-1992159) for unknown quantity of petroleum from a truck into the ditch on 3 July 1992.	SPL	Yes - Spill incident (SPL)
106 Talthieilei Drive	Off-Site (Adjacent NE)	Industry	Spill record (spill-2022175) of 20 litres (L) of wastewater/ impacted water due to break on 9 May 2022 – contaminated area noted as 1 square metre (m ²)	SPL	Yes - Spill incident (SPL)
104 Talthieilei Drive	Off-Site (Adjacent NE)	Unknown	Spill record (spill-2014228) of unknown quantity of fuel oil from a <4000 L storage tank on 16 June 2025.	SPL	Yes - Gasoline and associated product storage in Fixed Tanks (AST) & Spill incident (SPL)
102 Talthieilei Drive	Off-Site (Adjacent NE)	Transportation Company	Spill record (spill-2020307) of 8 L of fuel oil from truck on 3 September 2020 – contaminated area noted as 1 m ²	SPL	Yes - Spill incident (SPL)
Deh Cho Blvd. & Talthieilei Drive	Off-Site (45 m northeast)	Private Individuals	Spill record (spill-2002566) of unknown quantity of chemicals (including transformer oils) on 5 November 2002.	SPL	Yes - Spill incident (SPL)
Deh Cho Blvd. & Talthieilei Drive	Off-Site (45 m northeast)	Territorial Government	Spill record (spill-2014417) of unknown quantity of wastewater/impacted water from a truck due to fitting leak on 21 November 2014.	SPL	Yes - Spill incident (SPL)
102 Etthen Drive	Off-Site (154 m northeast)	CAMCO Construction	Record for Automobile Wrecking & Supplies, including scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry.	AUWR	Yes – Automotive Operation (AUTO)
176 Enterprise Drive	Off-Site (Adjacent E)	Private Individuals	Spill record (spill-2002322) of 2,273 L of fuel oil from < 4000 L storage tank due to fitting leak, reported on 13 May 2002.	SPL	Yes - Gasoline and associated product storage in Fixed Tanks (AST) & Spill incident (SPL)

Address	On-Site or Off-Site (distance/direction)	Company/Involved Parties	Activity Type	Database	Potentially Contaminating Activity Identified? (Yes/No)
135 Enterprise Drive	Off-Site (122 m E)	Westburne/ Rexel Canada Electrical Inc.	Electrical distributor, sales office, supplier since 2002.	SCT	No – No PCA Identified
135 Enterprise Drive	Off-Site (122 m E)	Westburne/ Rexel Canada Electrical Inc.	Spill record (spill-2022161) for unknown quantity of petroleum – fuel oil spilled on 2 May 2022.	SPL	Yes - Spill incident (SPL)
142 Enterprise Drive	Off-Site (Adjacent E)	Transportation Company	Spill record (spill-2016421) for 100 L of chemicals (including transformer oils) on 7 December 2016.	SPL	Yes - Spill incident (SPL)
139 Enterprise Drive	Off-Site (131 m ENE)	Foraco Drilling Ltd.	Support for diamond mining since 2026.	SCT	No – No PCA Identified
Etthen Drive	Off-Site (200 m NE)	YB Services Yard	Spill record (spill-2019029) for a spill of 48 L of petroleum – lubricating oil from a truck in the YB Services Yard.	SPL	Yes - Spill incident (SPL)

The PCAs identified in the above table are further discussed in Section 6.

3.5.2 City of Yellowknife Water Licence MV2021L3-0003

A review of the City of Yellowknife's Type A Water Licence MV2021L3-003 for Municipal Operations was completed along with pertinent documents from the Mackenzie Valley Land and Water Board (MVLWB) Registry. The operation of the Deh Cho Blvd. Snow Dump falls under the City's Water Licence. The Municipal Stormwater Management Plan - Version 2 (City of Yellowknife, October 2024) states that stormwater drainage from the Deh Cho Blvd. Snow Dump drains to the stormwater drainage ditch along Deh Cho Blvd. with about 10% of the snow dump area draining into the wetlands toward the rear of the site (assumed to be outside the property boundary). The Water Licence required a Surveillance Network Program (SNP) sampling location for the Deh Cho Blvd. snow dump but the Stormwater Management Plan found that the Coronation Drive stormwater sampling point (Site N4) was representative as most of the drainage flows through this location. This sampling location is not considered representative of surface water quality within the Study Area as it is located approximately 800m from the nearest surface water body on the Site. No information pertaining to areas of potential environmental concern was identified associated with Water Licence MV2021L3-0003.

The associated water licence documents are provided in Appendix B.

3.5.3 Environment Canada

A search of the Environment Canada Environmental Offenders Registry (Environment Canada, 2021) was completed for the City of Yellowknife, NT. This registry identifies offenders of 11 Environment Canada and Parks Canada Acts including:

- Environment Canada – Antarctic Environmental Protection Act
- Environment Canada – Canada Wildlife Act
- Environment Canada – Canadian Environmental Protection Act, 1999
- Environment Canada – International River Improvements Act
- Environment Canada – Migratory Birds Convention Act, 1994
- Environment Canada – Pollution Prevention Provisions of Fisheries Act
- Environment Canada – Species at Risk Act
- Environment Canada – Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act
- Parks Canada – Canada National Marine Conservation Areas Act
- Parks Canada – Canada National Parks Act
- Parks Canada – Saguenay-St. Lawrence Marine Park Act

This search did not identify any registered environmental offenders or offences on the Phase I Property or within the Phase I Study Area.

The results of this search are provided in Appendix B.

3.5.4 Federal Contaminated Sites Inventory

A search of the Federal Contaminated Sites Inventory (FCSI) was completed by BluMetric using the DFRP/FCSI - Map Navigator to locate all records within 2 km of the Site. No records were identified on the Phase I Property or within the Phase I Study Area.

One record was identified approximately 575 m east-southeast of the Phase I Property for a closed Federal Contaminated Site (FCS No. 00016208). The record indicated the record was for “Yellowknife MCTS – Federal Real Property Number 83511” at 11 Coronation Drive. The record also indicates that the site is closed. No other details were available in the record.

The results of this search are provided in Appendix B.

3.5.5 Hazardous Materials Spills Database

A search of the GNWT Department of Environment and Climate Change Hazardous Materials Spill Database was completed through a request made with ERIS in order to identify any documented hazardous spills that may have occurred within a 250 m radius of the Phase I Property.

No spill records were identified on the Phase I Property. Seventeen (17) records were identified within the Study Area (Section 3.5.1). Nine (9) unplottable spill records were identified by ERIS – however, based on the details provided, none of these records were presumed to have occurred on the Phase I Property.

The results of the database search are provided in Appendix B.

3.5.6 Aerial Photographs

Historical aerial photographs for the years 1956, 1966, 1970, 1974, 1981, 1984, and 1991 were obtained from the NAPL through a request made with ERIS. Aerial photographs for 2002, 2008, 2014, and 2025 were obtained from the Northwest Territories ATLAS interactive web-based mapping service. The information gleaned from reviewing the above images is summarized in the table below.

Table 3: Summary of Historical Aerial Photographs

Year(s)	Description
1956, 1966, 1970, 1974	Phase I Property
	The Phase I Property consisted of natural woodland and wetland landscape with areas of exposed bedrock and shallow valleys. A small lake borders the northwest boundary of the Site, with ponds through the valley on the north and central areas of the Site. There was no identifiable development within the boundaries of the Site at this time.
	Study Area
	Kam Lake Road has been developed running from northeast of the Site to the southeast part of the Phase I Study Area. No other discernable development in the Study Area was noted.
1981, 1984	Phase I Property
	No significant changes in use to the Site since 1974. The Phase I Property remains unaltered natural woodland and wetland landscape with outcrops and small ponds through the central valley.
	Study Area
	The Phase I Study Area remains predominantly unaltered natural landscape. Deh Cho Blvd. has been developed along the north boundary of the Site, running from the northwest to east of the Study Area where it intersects Kam Lake Road. West of the Phase I Property, there has been some commercial/industrial development.

Year(s)	Description
1991	Phase I Property
	No significant changes in land use to the Phase I Property since 1984. The Phase I Property remains unaltered natural woodland and wetland landscape with outcrops and small ponds through the central valley.
	Study Area
	No development has occurred to the south, west, or north of the Site, which remains unaltered natural landscape. The east-northeast portion of the Phase I Study Area has undergone significant changes in use since 1982. The land has been cleared, graded, and partitioned for roadways, and many commercial/industrial properties are visible east of the Site, within and outside of the study area boundary.
2002	Phase I Property
	On the northeast part of the Site, at the terminus of Enterprise Drive, there is an area of disturbance and surface water ponding on the Phase I Property. The disturbance appears to be aggregate, fill, and/or other debris originating from the property at Lots 10 and 11, Block 537, Plan 4145. No other discernable disturbances or changes in use were noted on the Phase I Property since 1991.
	Study Area
	South and west of the Site remain undeveloped natural land and lakes. North of the Site is Deh Cho Blvd., and undeveloped, natural land. Along the east of the Site, industrial and commercial development has expanded along Taltheilei Drive, Enterprise Drive, Nahanni Drive, and other roadways to the east of the Site, with several industrial and commercial development lots actively in use adjacent to the boundary of the Site.
2008	Phase I Property
	The northern tip of the Phase I Property appears to be used as a snow dump site. The area appears to have been cleared and levelled prior to use, with an entrance for vehicles from Deh Cho Blvd. into the Site. The area appears to have several wet areas and snow piles. In addition, a linear feature comprised of boulders and other large aggregates similar to the size of a roadway (210 m long and 20 m wide) has been constructed onto the central-east part of the Site from an easement between two industrial lots (Lot 1 Block 535 Plan 1991 and Lot 38 Block 534 Plan 4592). No other discernable disturbances or changes in use were noted on the Phase I Property since 2002.
	Study Area
	South, west, and northwest of the Site remain undeveloped natural land and lakes. Northeast of the Site has undergone land clearing, levelling, and development along Utsingi Drive since 2002. To the east of the Site is now heavily developed for commercial and industrial uses – however, the southeast boundary remains undeveloped.
2014	Phase I Property
	The northern tip of the Phase I Property is still being used as a snow disposal area. On the northeast area of the Site (at the rear of Lot 10 and 11, Block 537) has been presumably partially levelled and is being used as a storage and parking area – several vehicles and other equipment are noted on the Phase I Property. Likewise, land clearings, ground disturbances, and debris are noted at the rear of Lots 8 to 12, Block 537 on the northeastern boundary; Lots 1 to 9 Block 535 Plan 2094 along the eastern boundary; and Lot 5 Block 534 Plan 1991 along southeast boundary.
	Study Area
	South, west, and northwest of the Site remain undeveloped natural land and lakes. Northeast and east of the Site are fully developed with commercial and industrial properties. Southeast of the Site remains partially undeveloped; however, land clearing, levelling, and fill stockpiles are visible to the southeast of the Phase I Property, presumably in preparation for development activities.

Year(s)	Description
2025	Phase I Property
	There have been no significant changes in use of the Site since 2014. There are disturbed areas in the north part of the Site where the original woodland vegetation appears to have been removed and/or burned – these are expected to be areas of prescribed burning for fuel breaks (circa 2023).
	Study Area
	West and northwest of the Site remain undeveloped natural land and lakes. A cleared/burned area assumed to be a fuel break is visible west of the Site. East of the Site remains fully developed – Kam Lake Industrial Area. South of the Site has also now been developed with mixed use properties along Grace Lake Blvd., including large residential properties along the south boundary of the Site.

Based on the review of historical aerial photographs, the Phase I Property has remained predominantly undeveloped natural land, consisting of densely vegetated woodlands, wetlands, and bedrock outcrops. Industrial/commercial development along the northeast and east boundary of the Site since the 1990s has resulted in some land disturbance, levelling, and debris along the northeast and east boundaries of the Site. In the mid-2010s, a linear feature comprised of aggregates (i.e. gravel, boulders, blast rock) like the size of a road (210 m long and 20 m wide) was developed on the central-east side of the site. Likewise, the northern tip of the Site has been used as a snow dumping area since 2008.

The aerial photographs are provided in Appendix C.

4 Interviews

An information request was sent via email to the Government of Northwest Territories, Environment and Climate Change, Regulatory and Permitting Division for information pertaining to the operations and use of the Site.

A response was received on 5 June 2026 from Mr. Joshua McCarthy, Hazardous Materials Specialist with the Government of the Northwest Territories' Department of Environment and Climate Change. Mr. McCarthy indicated that following an internal search for records, there is no information contained on file for the subject property.

In addition, an email interview was sent to Mr. Ashley Rivers, Manager of Works Operations of the City of Yellowknife on 3 June 2026. Mr. Rivers has been with the City of Yellowknife for 13.5 years and has been Manager of Works operations for 8 years. Works Operations looks after Roads, Fleet, Water, and Sewer Maintenance and Repair. The snow dump is used and maintained by the Roads Division. Mr. Rivers forwarded the emailed questions to Mr. Chris Greencorn, Director of Public

Works. Mr. Greencorn has been with the city for 22 years. In a response received on 23 June 2026, the following information was provided:

- The City of Yellowknife, Public Works has operated a snow dump site on the north end of the Site that has been in place for many years. Loaders and dozers push the piled snow over a berm throughout the winter season. Mr. Greencorn indicated that the Site has never been used for waste disposal, and that there are no plans to relocate the operation. The locations of snow dumps are governed by Class A water licence and cannot be easily moved or altered.
- Mr. Greencorn indicated that crushed rock material is embedded within the snow that is hauled to the site. The material stays onsite and builds up as the snow melts on the property. Summer Maintenance is performed to level this material on the Site prior to the next snow season.
- Surface drainage/meltwater from the snow dump flows southward, through the storm drain system, and eventually into Kam Lake.
- There are no other known previous uses of this parcel. Mr. Greencorn made note that during the 2023 wildfires and evacuation of Yellowknife, 100 m wide 'fuel breaks' were carved out of the property along Deh Cho Boulevard, to starve and prevent the progression and extent of the wildfires. He did not provide any details on methods used.
- Mr. Greencorn indicated that there is a dead-end road on the central-east side of the property that has been filled in with blast rock to prevent vehicle traffic and parking and for any future use.
- There are no underground piped municipal water or sewer services in Kam Lake.
- To his knowledge, there are no fuel tanks or chemical storage on the property.
- Mr. Greencorn indicated that he has some knowledge of a Black dirt extraction project and provided two background documents for review, including a drawing showing the lands that were proposed for Black Dirt Quarries in 2007. To his knowledge, there has been no activity on this parcel due to the relatively difficult means of access.

Additional information gleaned from the above email interview (and background documents) is included in the discussion in Section 3.4 of this report.

5 Current Site Uses and Operations

The Phase I Property was visited on 9 and 15 June 2026 by Connor McClelland of BluMetric Environmental. The Site reconnaissance consisted of an aerial survey and a walkabout of select areas of the Phase I Property. Due to the scale of the Phase I Property and the various wetland areas, a thorough walkabout of the entire Site was not possible. Instead, a RPAS was used to obtain high-resolution imagery of the entire Phase I Property. A pre-programmed flight plan was developed to systematically collected nadir-looking (top down) photos of the entire Phase I Property, ensuring complete and thorough coverage of the Site. The collected imagery was processed to generate an orthoimage of the entire Phase I Property. In addition to the nadir-looking photos, oblique photographs were collected to provide additional insight to the conditions of the Phase I Property and the surrounding properties. The orthoimage and oblique photographs were used to support this ESA and to support the interpretation of observed Site features. Following the completion of the aerial survey, an additional site reconnaissance was completed at select areas that were identified during the review of the orthoimage and oblique photographs.

The Phase I Study Area, a 250 m radius area from the Phase I Property boundary, was also observed from publicly accessible areas during the Site reconnaissance. Photographs were taken during the Site reconnaissance, which are included in Appendix D. Details gleaned of the Phase I Property from the Site reconnaissance are discussed below.

As described in Section 1.2, the Phase I Property is situated in the Kam Lake Industrial Area of the City of Yellowknife and covers 68.1 ha of undeveloped land. There are no permanent structures in any area of the property and there are no utility services connected to any part of the property.

As described in Section 2.0, the Phase I Property consists of exposed and shallow bedrock outcrops interspersed with boreal forest vegetation, localized poorly drained wetland areas, and small surface water features.

5.1 Processes and Operations

A City of Yellowknife, Public Works snow disposal site is located at the north tip of the Phase I Property, discussed in Section 4.0. Loaders and dozers push the piled snow over a berm throughout the winter season. As the snow melts, it leaves behind sand and crushed rock that was embedded in the snow piles. The sand and crushed rock has accumulated over a berm on the northern tip of the Site. No other processes and/or operations occur on the Phase I Property.

Commercial/industrial properties line the east and northeast property line of the Phase I Property. At the rear of some of these properties, levelled fill has been pushed onto the Site and equipment, vehicles, and debris are stored on the Phase I Property.

- At the northeast boundary of the Site at the rear of Lot 10 and 11, Block 537 (116 Taltheilei Drive), an area of levelled fill material was noted extending onto the Phase I Property. Items stored in this area on the Phase I Property includes approximately 20 totes of unknown quantity and contents, vehicles, a trailer, an AST, and other debris on a low area adjacent to surface ponding. No staining or sheens were observed on the adjacent surface water.
- At the rear of Lot 7, Block 535 (164 Enterprise Drive), approximately 25 totes and approximately 15 55-gallon plastic drums of unknown contents were stored along the east boundary of the Site. In addition, a fuel AST with a fueling pump is visible in proximity to the rear property line of the lot. No evidence of staining can be seen in the aerial imagery collected of this area. In addition, the grade of the lot appears to slope downward towards Enterprise Drive and away from the Site.
- A vertical AST was visible at the rear of Lot 3, Block 535 (148 Enterprise Drive). No evidence of staining can be seen in the aerial imagery collected of this area.
- An area of levelled fill material was observed extending from the property at Lot 38, Block 534 (132-136 Enterprise Drive). Items stored in this area includes several decommissioned ASTs, a rusted UST, concrete lego blocks, building materials, and vehicles. No evidence of staining can be seen in the aerial imagery collected of this area.
- A linear berm of blast rock, approximately 210 m in length and 20 m width, extends onto the central-east portion of the Phase I Property.

5.2 Waste Management Practices

Based on the information collected from the interviews in Section 4.0, it is understood that other than the snow disposal site, no processes or operations occur directly on the Phase I Property. It is therefore understood that no wastes are generated or stored on the Phase I Property, and the Site has never been used for waste disposal.

5.3 Other Conditions of Concern

5.3.1 Aboveground Storage Tanks (ASTs)

As discussed in Section 5.1, debris and equipment from neighbouring properties were observed in the aerial survey photographs along the north and east boundaries of the Site. This included an AST and several plastic totes stored at the rear of Lot 10, Block 537. The contents of the AST and totes, if any, are unknown.

5.3.2 Underground Storage Tanks (USTs)

As discussed in Section 5.1, debris and equipment from neighbouring properties were observed in the aerial survey photographs along the north and east boundaries of the Site. This included an unearthed, rusted UST at the rear of Lot 38, Block 534. The contents of the UST, if any, are unknown.

5.3.3 Imported Fill

As previously discussed, the Phase I Property consists of vacant natural land and is bordered by a combination of commercial, industrial and residential properties. Although there has been no development of the Phase I Property, some areas of imported fill have been identified. The source and quality of the imported fill materials is unknown.

- The City-operated snow dump site is located at the northern point of the Phase I Property. Imported fill material is expected to have been used as part of the development of this area of the site. In addition, the snow disposed of at the snow dump contains a large amount of aggregate (i.e. sand, gravel, and crushed rock) which is typically applied to the roadways during the winter months. As the snow melts, these aggregates build up on the property and/or are carried with runoff into the on-site wetland areas.
- The linear berm, consisting of blast rock approximately 210 m in length and 20 m width, extends onto the southeast portion of the Phase I Property.

In addition to the above-mentioned areas of imported fill, two additional cleared areas which extend from neighbouring properties into the Phase I Property have been identified and are indicated on Figure 4. The fill was used by the occupants of the associated neighbouring property in order to create additional storage space at the rear of the building lots, on the Phase I Property.

5.3.4 Sources of Potable Water

There is no municipal water or septic service provided in the Kam Lake Industrial Park. Likewise, there are no permanent buildings or underground utilities on the Phase I Property.

5.3.5 Chemical Use and Storage

As discussed in Section 5.1, although there has been no development of the Phase I Property, debris and equipment from neighbouring properties were observed in the aerial survey photographs along the north and east boundaries of the Site. This included an AST and several plastic totes stored at the rear of Lot 10, Block 537. The contents of the AST and totes, if any, are unknown.

5.4 Uses and Operations of Neighbouring Lands

Based on information gathered during the Site reconnaissance and interview with building personnel, the Phase I Study Area consists of the following:

- North: The northern tip of the Phase I Property is bordered by Deh Cho Boulevard and a snow dump site that is partially on the Phase I Property. The Yellowknife Lodge (GRC Camp Services) at 266 Utsingi Drive is located to the northeast of the snow dump site. To the northwest of the Phase I Property is undeveloped natural land consisting of forested land and an unnamed lake that borders the northwest corner of the Phase I Property. No potential environmental concerns for the Site were identified at the Lodge property. The snow dump site is considered to be an on-site potential environmental concern and is further discussed in Section 6. No other potential environmental concerns were identified.
- East: The Phase I Property is bordered to the east by several industrial/commercial use properties lining Taltheilei Drive and Enterprise Drive, including: ATCO Frontec Ltd. at 112 Taltheilei Drive; Renew-It Car Wash & Detailing Commercial NDS at 114 and 116 Taltheilei Drive; Overland West Freight Lines Ltd. at 172 Enterprise Drive; Polar Bear Storage Inc. at 168 Enterprise Drive; CR Enterprises Ltd. at 164 Enterprise Drive; Canadian Dewatering LP at 152 Enterprise Drive; Grimshaw Trucking LP at 142 Enterprise Drive; Westburne Electric Supply at 135 Enterprise Drive; Artech Engrave Ltd. at 128 Enterprise Drive; Allied Van Lines and Manitoulin Transport at 120 Enterprise Drive; Blue Diamond mechanic at 119 Enterprise Drive; NWT Fish Company at 94 Enterprise Drive; Impact Diesel Services mechanic at 90 Enterprise

Drive. Other unidentified commercial/industrial operations were also along the eastern boundary of the Site. Many of these properties have repair garages, exterior storage tanks for fueling vehicles and machinery, and/or exterior storage areas for contracting equipment, vehicles, machines, and debris. Due to proximity to the Site, these properties are considered to be potential environmental concerns and are further discussed in Section 6.

In addition, the following observations of adjacent properties were made:

- At the northeast boundary of the Site at the rear of Lot 10 and 11, Block 537 (116 Taltheilei Drive), an area of levelled fill material was noted extending onto the Phase I Property. Items stored in this area on the Phase I Property includes approximately 20 totes of unknown quantity and contents, vehicles, a trailer, an AST, and other debris on a low area adjacent to surface ponding. No staining or sheens were observed on the adjacent surface water.
- At the rear of Lot 7, Block 535 (164 Enterprise Drive), approximately 25 totes and approximately 15 55-gallon plastic drums of unknown contents were stored along the east boundary of the Site. In addition, a fuel AST with a fueling pump is visible in proximity to the rear property line of the lot. No evidence of staining can be seen in the aerial imagery collected of this area. In addition, the grade of the lot appears to slope downward towards Enterprise Drive and away from the Site.
- A vertical AST was visible at the rear of Lot 3, Block 535 (148 Enterprise Drive). No evidence of staining can be seen in the aerial imagery collected of this area.
- An area of levelled fill material was observed extending from the property at Lot 38, Block 534 (132-136 Enterprise Drive). Items stored in this area includes several decommissioned ASTs, a rusted UST, concrete lego blocks, building materials, and vehicles. No evidence of staining can be seen in the aerial imagery collected of this area.

South: To the south of the Phase I Property are predominantly residential use properties located along Grace Lake Boulevard. Based on the inferred direction of groundwater flow and surface runoff, these properties are not considered to represent an environmental concern.

West: To the west of the Phase I Property is undeveloped natural land. This area is not considered to be an environmental concern.

Power lines run along Enterprise Drive, Taltheilei Drive, Deh Cho Boulevard, Grace Lake Boulevard with pole mounted transformers located at various locations along each roadway. There are no powerlines or pole mounted transformers directly adjacent to or passing over any portion of the Phase I Property.

6 Discussion of Phase I ESA Findings

Information collected from each of the components of the Phase I ESA was evaluated and considered in determining the areas of actual or potential environmental concern at the Phase I Property. BluMetric has evaluated the information collected during this Phase I ESA based on the concepts of source, pathways, and receptors. Due to the size and topography of the Site, surface water drainage and groundwater flow across the Site are expected to follow local topographic gradients and are expected to collect within natural depressions and wetland areas.

6.1 Potentially Contaminating Activities (PCAs)

Based on the Site information collected through a records review, Site reconnaissance, and interview, PCAs were identified on the Phase I Property and within the Phase I Study Area that are of potential environmental concern to the Phase I Property.

Records have been assessed based on activity type, date, distance, topography, Site conditions, local geology and hydrogeology, and other information gathered during Site interviews to determine if they are of potential environmental concern to the Phase I Property. These are described in Table 4 below and illustrated on Figure 4.

Table 4: Summary of Potentially Contaminating Activities (PCAs)

Potentially Contaminating Activity	Description of Potentially Contaminating Activity	Potential Environmental Concern to the Phase I Property (Yes/No)
PCA-1	Snow Disposal Site on the northern tip of the Phase I Property, in operation since 2008.	Yes – Moderate Risk The snow disposal site is operated by the City of Yellowknife Public Works and is governed by Class A water licence. However, the snow and built-up aggregate material could contain de-icing chemicals and/or salts. These chemicals could also be carried with runoff into the surface water features on-site.
PCA-2	Land disturbance and levelling with fill material along the northeast boundary of the Site.	Yes – Low Risk The source and quality of the fill material is presumably sourced from a local aggregate source.

Potentially Contaminating Activity	Description of Potentially Contaminating Activity	Potential Environmental Concern to the Phase I Property (Yes/No)
PCA-3	Use of on-site areas for the storage of equipment, machinery, vehicles, totes, tanks, and other debris at the rear of Lots 10 and 11, Block 537 (116 Taltheilei Drive).	Yes – Moderate Risk The contents of the totes and AST are unknown. However, the equipment was stored directly over the bare earth and any spills or leaks would have either infiltrated the ground on-site or flowed overland into the pond, also on the Phase I Property.
PCA-4	A fuel AST, approximately 25 totes and 15 55-gallon plastic drums of unknown contents were stored along the east boundary of the Site at the rear of Lot 7, Block 535 (164 Enterprise Drive).	Yes – Low Risk There was no evidence of staining in the vicinity of the totes and drums along the boundary of the Site. In addition, the grade of the lot appeared to slope downward towards Enterprise Drive, away from the Site.
PCA-5	A vertical AST of unknown contents was visible at the rear of Lot 3, Block 535 (148 Enterprise Drive), along the east site boundary.	Yes – Low Risk No evidence of staining was seen in the vicinity of the tank. Likewise, the tank appeared in good condition and was potentially a potable water tank for construction trailers on the property.
PCA-6	Land disturbance and levelled fill material was observed extending from the property at Lot 38, Block 534 (132-136 Enterprise Drive) onto the east part of the Site.	Yes – Low Risk The source and quality of the fill material is presumably sourced from a local aggregate source.
PCA-7	Several decommissioned ASTs, a rusted UST, concrete lego blocks, building materials, and vehicles stored at the rear of Lot 38, Block 534 (132-136 Enterprise Drive) onto the east part of the Site.	Yes – Moderate Risk The contents of the tanks are unknown. However, the equipment was stored directly over the bare earth and any spills or leaks would have either infiltrated the ground on-site or flowed overland into surface water, also on the Phase I Property.
PCA-8	A linear berm, consisting of blast rock approximately 210 m in length and 20 m width, extends onto the southeast portion of the Phase I Property.	Yes – Low Risk The source and quality of the fill material is presumably sourced from a local aggregate source.
PCA-9 PCA-10	Spills (SPL) and fuel storage tank (AST) records for 270 Utsingi Drive, north of the Site.	No Property is crossgradient from the Site and separated by Deh Cho Blvd.
PCA-11	Spill record (spill-2008240) for 25 L of chemicals (including transformer oils) spilled on 26 May 2008 at 112 Enterprise Drive.	Yes – Low Risk Property is located adjacent to the Site and there is a potential that spills could flow onto the Site.
PCA-12	Spill record (spill-2014106) for 200 L of petroleum – fuel oil from a truck - pipe leak on 12 April 2014 at 120 Enterprise Drive.	Yes – Low Risk Property is located adjacent to the Site and there is a potential that spills could flow onto the Site.
PCA-13	Spill record (spill-2000132) for 400 L of petroleum – fuel oil from a storage tank > 4000 L capacity on 21 March 2000 at 123 Enterprise Drive.	No Property is crossgradient and located more than 100 m from the Site.

Potentially Contaminating Activity	Description of Potentially Contaminating Activity	Potential Environmental Concern to the Phase I Property (Yes/No)
PCA-14	Spill record (spill-2022443) for 5 L of wastewater spilled from a truck on 1 September 2022 at 212 Grace Lake Blvd.	No Spill quantity was minor and property is downgradient from the Site.
PCA-15	Commercial printing, engravers (manufacturer and wholesaler) since 2020 at 128 Enterprise Drive.	Yes – Low Risk Property is located adjacent to the Site and there is a potential that spills could flow onto the Site. However, there were no records of spills associated with this activity.
PCA-16	Printing, Copying and Publishing at 27 Melville Drive.	No Property is crossgradient and located more than 100 m from the Site.
PCA-17	Fuel tank system (ID 31941) having two 61,000 L double-walled aboveground diesel tanks on a concrete pad at 262 Utsingi Drive, Lot 61.	No Property is crossgradient and located more than 100 m from the Site. In addition, the tank system included reinforced secondary containment liner with sump access, and a catch basin under connect point. Spill kit on site. Trained offload personnel.
PCA-18	Spill record (spill-1992159) for unknown quantity of petroleum from a truck into the ditch on 3 July 1992 at 31 Melville Drive.	No Property is crossgradient and located more than 100 m from the Site.
PCA-19	Spill record (spill-2022175) of 20 L of wastewater/ impacted water due to break on 9 May 2022 – contaminated area noted as 1 m ² at 106 Taltheilei Drive.	Yes – Low Risk Property is located adjacent to the Site and there is a potential that spills could flow onto the Site.
PCA-20	Spill record (spill-2014228) of unknown quantity of fuel oil from a <4000 L storage tank on 16 June 2025 at 104 Taltheilei Drive.	Yes – Low Risk Property is located adjacent to the Site and there is a potential that spills could flow onto the Site.
PCA-21	Spill record (spill-2020307) of 8 L of fuel oil from truck on 3 September 2020 – contaminated area noted as 1 m ² at 102 Taltheilei Drive.	Yes – Low Risk Property is located adjacent to the Site and there is a potential that spills could flow onto the Site.
PCA-22	Spill records (spill-2002566) of unknown quantity of chemicals (including transformer oils) on 5 November 2002 and (spill-2014417) unknown quantity of wastewater /impacted water from a truck due to fitting leak on 21 November 2014 at Deh Cho Blvd. & Taltheilei Drive.	No Record is crossgradient to the Site.
PCA-23	Record for Automobile Wrecking & Supplies, including scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry at 102 Etthen Drive.	No Property is crossgradient and located more than 100 m from the Site.
PCA-24	Spill record (spill-2019029) for a spill of 48 L of petroleum – lubricating oil from a truck in the YB Services Yard on Etthen Drive.	No Property is crossgradient and located more than 100 m from the Site.

Potentially Contaminating Activity	Description of Potentially Contaminating Activity	Potential Environmental Concern to the Phase I Property (Yes/No)
PCA-25	Spill record (spill-1992159) for unknown quantity of petroleum from a truck into the ditch on 3 July 1992 at 31 Melville Drive.	No Property is crossgradient and located more than 100 m from the Site.
PCA-26	Spill record (spill-2002322) of 2,273 L of fuel oil from < 4000 L storage tank due to fitting leak, reported on 13 May 2002 at 176 Enterprise Drive.	Yes – Low Risk Property is located adjacent to the Site and there is a potential that spills could flow onto the Site.
PCA-27	Spill record (spill-2022161) for unknown quantity of petroleum – fuel oil spilled on 2 May 2022 at 135 Enterprise Drive.	No Property is crossgradient and located more than 100 m from the Site.
PCA-28	Spill record (spill-2016421) for 100 L of chemicals (including transformer oils) on 7 December 2016 at 142 Enterprise Drive.	Yes – Low Risk Property is located adjacent to the Site and there is a potential that spills could flow onto the Site.
PCA-29	Recent use of the Site (and general area) for ‘fuel breaks’ during the 2023 wildfire in the City of Yellowknife.	Yes – Low Risk The method(s) used for creating the fuel breaks remains unknown but typically involves the use of drip torches and selective controlled burning. It is expected that any chemicals/fuels used would likely have been burned off in the controlled burns, but residues could remain.

7 Phase I ESA Conclusions

BluMetric® has been retained by the City of Yellowknife to prepare a Phase I ESA for the Kam lake Development Area property located at Lot 32, Block 568, Plan 4434, in the City of Yellowknife, NT. It is our understanding that the ESA is being completed for due diligence purposes to determine the environmental condition of the property prior to development. Based on the information collected during this Phase I ESA and the conditions of the Phase I Property as observed in June 2026, it is the opinion of the Qualified Person (QP) that:

Phase I Property

Eight (8) on-site PCAs were identified on the Phase I Property:

- A Snow Disposal Site is located on the northern tip of the Phase I Property, in operation since 2008. The snow disposal site was assessed as a moderate risk to the site, since it is operated by the City of Yellowknife Public Works and regulated through proper licensing. However, the snow and built-up aggregate material could contain de-icing chemicals and/or salts. These chemicals could also be carried with runoff into the surface water features on-site.

- Land disturbance and levelling with imported fill material along the northeast and east boundaries of the Site was assessed as a low risk to the Site, since it is expected that the material used was likely obtained from a local aggregate source.
- Use of on-site areas for the storage of equipment, machinery, vehicles, totes, fuels tanks, and other debris at the rear of Lots along the northeast and east boundaries of the Site, was assessed as being a low to moderate risk to the site since the contents of tanks and totes is unknown, proximity to the site and inferred drainage pathways, and their storage over bare ground.
- A linear berm, consisting of blast rock approximately 210 m in length and 20 m width, extending onto the southeast portion of the Phase I Property was not considered likely to be a risk to the Phase I Property given it was likely obtained from a local aggregate source.
- The recent use of the Site (and general area) for 'fuel breaks' during the 2023 wildfire in the City of Yellowknife. This was assessed as being a low risk to the Site since the method(s) used for creating the fuel breaks remains unknown but typically involves the use of drip torches and selective controlled burning, and any chemicals/fuels used would likely have been burned off in the controlled burns, but residues could remain.

Phase I Study Area

Off-site PCAs were also identified within the Phase I Study Area, which included the following:

- Several spill records for properties located along the northeast and east boundaries of the Site were assessed as a low risk to the Site, due to lack of details, the spill quantity, and/or based on topography and inferred direction of surface and groundwater flow.
- A commercial printing, engravers (manufacturer and wholesaler) at 128 Enterprise Drive, adjacent to the east boundary of the Site, was assessed as a low risk to the Site, based on proximity and since there were no other records of concern identified for this property.

Based on the information available and the Site observations made during the Phase I ESA, the above PCAs were evaluated by the QP as posing a low to moderate level of environmental risk to the Site. A Phase II ESA is recommended to assess the environmental conditions of soil, groundwater, and surface water along the northeast and east boundaries of the Site. Likewise, a Species at Risk (SAR) Survey would be warranted to determine what/if any SAR species identified with ranges in the vicinity of the Phase I Property do have habitat and/or occur on the Site.

8 Closure and Limiting Conditions

This Phase I ESA report was performed in accordance with the substance and intent of the Phase I ESA document produced by the Canadian Standards Association (CSA Z768-01 and Update No. 1).

The conclusions presented in this report represent our professional opinion and are based on the conditions observed on the dates set out in the report, the information available at the time this report was prepared, the scope of work, and any limiting conditions noted herein. BluMetric provides no assurances regarding changes to conditions subsequent to the time of the assessment. BluMetric makes no warranty as to the accuracy or completeness of the information provided by others or of the conclusions and recommendations predicated on the accuracy of that information.

This report has been prepared for the City of Yellowknife. Any use a third party makes of this report, any reliance on the report, or decisions based upon the report, are the responsibility of those third parties unless authorization is received from BluMetric in writing. BluMetric accepts no responsibility for any loss or damages suffered by any unauthorized third party as a result of decisions made or actions taken based on this report.

Respectfully submitted,
BluMetric Environmental Inc.



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Senior Risk Assessor



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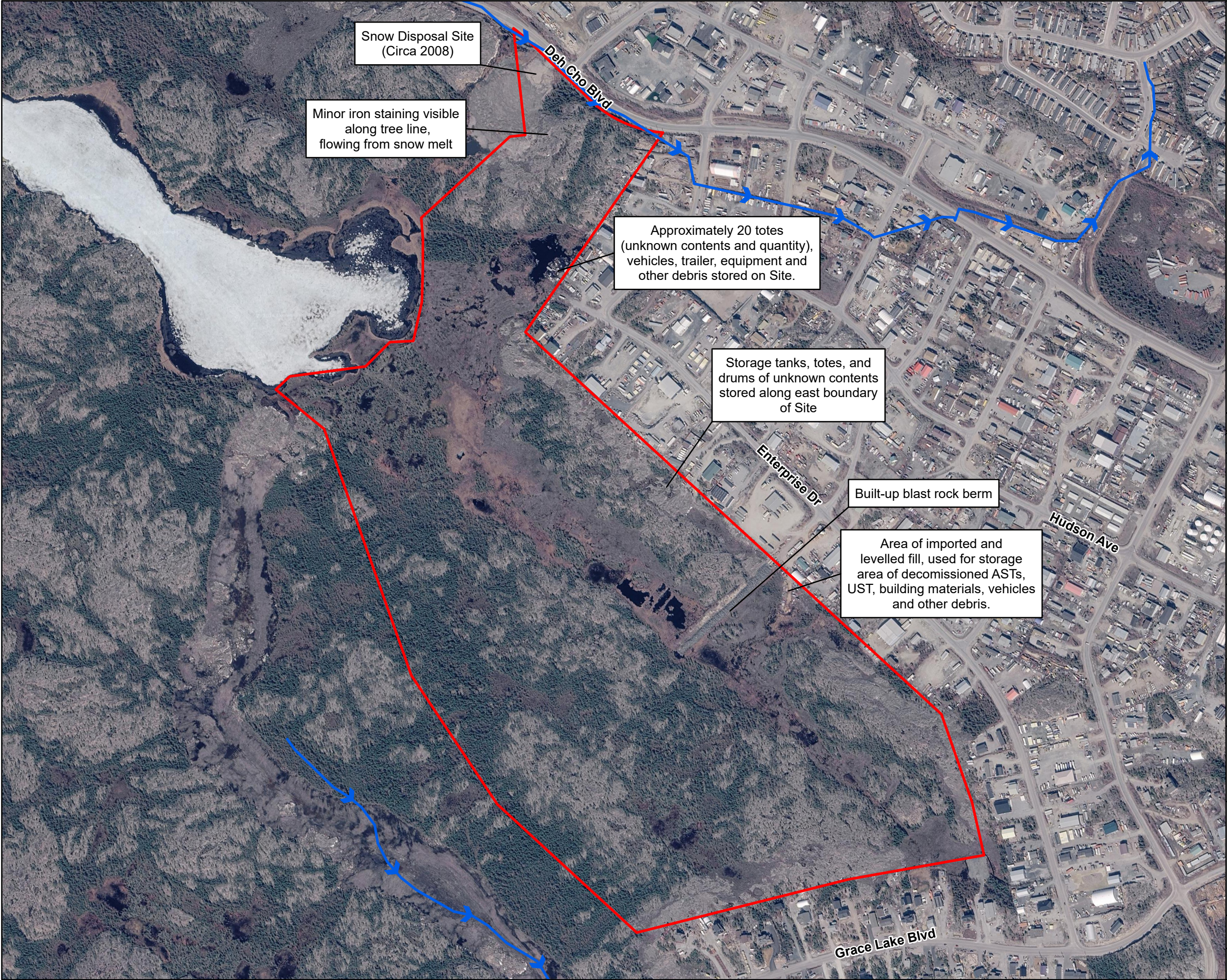
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Figures





LEGEND

Phase I Property Boundary

Watercourse

1				
REV.	DESCRIPTION	YY/MM/DD	BY	CHK
REFERENCES PROPRIETARY INFORMATION MAY NOT BE REPRODUCED OR DIVULGED WITHOUT PRIOR WRITTEN CONSENT OF BLUMETRIC ENVIRONMENTAL INC. DO NOT SCALE DRAWING. THIS DRAWING MAY HAVE BEEN REDUCED. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS. 0150300Metres 1:6,000 N W E S				
CLIENT				
City of Yellowknife				
PROJECT				
Phase I Environmental Site Assessment Lot 32, Block 568, Plan 4452. Yellowknife, NWT				
TITLE				
Phase I Property				
BluMetric™ Environmental 4916 49th Street, PO Box 11086 Yellowknife, NT, X1A 1P3 TEL: (867) 873-3500 FAX: (867) 873-3499 Email: info@blumetric.ca Web: http://www.blumetric.ca				
PROJECT #		DATE		
260423		June 30, 2026		
DRAWN	CHECKED	FIG NO.	REV	
EB	AG	01	0	



LEGEND

Phase I Property Boundary

1				
REV.	DESCRIPTION	YY/MM/DD	BY	CHK

REFERENCES

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0250500Metres

1:10,000

CLIENT

City of Yellowknife

PROJECT

Phase I Environmental Site Assessment
Lot 32, Block 568, Plan 4452. Yellowknife, NWT

TITLE

General Site Location

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PO Box 11086
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PROJECT # 260423		DATE June 30, 2026	
DRAWN EB	CHECKED AG	FIG NO. 02	REV 0

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LEGEND

- Phase I Property Boundary
- Phase One Study Area
- Flow Direction
- Watercourse
- Elevation Contour (2 m)

1				
REV.	DESCRIPTION	YY/MM/DD	BY	CHK

REFERENCES

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City of Yellowknife

PROJECT

Phase I Environmental Site Assessment
Lot 32, Block 568, Plan 4452. Yellowknife, NWT

TITLE

Phase I Study Area

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PROJECT # 260423		DATE June 30, 2026	
DRAWN EB	CHECKED AG	FIG NO. 03	REV 0

This aerial map displays a residential area with a red boundary line. The area is divided into two main sections by a diagonal road. The top section is a residential area with many houses and streets. The bottom section is a large, open area with some trees and a few buildings. A blue line with arrows indicates a path or route. Numbered markers (1-29) are placed throughout the map. Street names include 'Deh Cho Blvd', 'Enterprise Dr', 'Hudson Ave', and 'Grace Lake Blvd'.

LEGEND

Phase One Property Boundary

Watercourse

Potentially Contaminating Activities (PCAs)

52

Off-Site

52

On-Site

1				
REV.	DESCRIPTION	YY/MM/DD	BY	CHK

REFERENCES

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CLIENT

City of Yellowknife

PROJECT

Phase I Environmental Site Assessment
Lot 32, Block 568, Plan 4452. Yellowknife, NWT

TITLE

Conceptual Site Model

BluMetric™

Environmental

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PROJECT #	DATE		
260423	June 30, 2026		
DRAWN	CHECKED	FIG NO.	REV
EB	AG	04	0