

KINROSS

Great Bear

Great Bear Gold Project Impact Statement

Appendix Q-2:

Marine Archaeological Assessment



Marine Archaeological Licences 2024-34 and 2025-21

GREAT BEAR RESOURCES LTD.

GREAT BEAR PROJECT

MARINE ARCHAEOLOGICAL ASSESSMENT AND VISUAL INSPECTION

FEBRUARY 2026



REVISION 1





GREAT BEAR PROJECT MARINE ARCHAEOLOGICAL ASSESSMENT AND VISUAL INSPECTION

GREAT BEAR RESOURCES LTD.,
A KINROSS COMPANY

REVISION 1


CLIENT PROJECT NO.: OMEMA2303
FEBRUARY 2026

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EXECUTIVE SUMMARY

Great Bear Resources Ltd. (Great Bear Resources), a wholly owned subsidiary of Kinross Gold Corporation, is proposing to complete an advanced exploration (AEX) program and develop a gold mine (the Great Bear Project) at the Great Bear Property (Property). The Property is located approximately 25 kilometres (km) southeast of the Municipality of Red Lake (Figure 1), within the unorganized District of Kenora in northwestern Ontario.

WSP Canada Inc. (WSP) was retained by Great Bear Resources to conduct a marine archaeological assessment for all watercourses and lakes within the Property to support an Impact Assessment process being completed under the *Impact Assessment Act* (Figure 1 and Figure 2). Visual inspections were also conducted for three Local Study Areas (LSAs) related to the proposed Chukuni discharge pipeline and diffuser in the Chukuni River, and Unnamed Waterbody 1. The Property and LSAs coincide with Property limits and proposed designs provided by Great Bear (Appendix A). The Property is legally described as part of unorganized territory in the Geographic Townships of Byshe, Dixie Lake, and Bruce Lake Area, District of Kenora, Ontario.

This marine archaeological assessment has resulted in the following recommendations (Figure 8):

1. Chukuni River LSA

1.1. The visual inspection of the two LSAs in the Chukuni River for the Chukuni AEX discharge pipeline and mine diffuser did not identify surficial archaeological materials or features. No further assessment is required for these two LSAs.

2. Unnamed Waterbody 1 LSA

2.1. The visual inspection of the LSA Unnamed Waterbody 1 did not identify surficial archaeological materials or features. No further assessment is required for this LSA.

3. Waterbodies and tributaries identified as having Low Marine Archaeological Potential, as outlined in Figures 8a and 8b:

3.1. Pursuant to the findings of the Desktop Study, Genesse Lake, Gullrock Lake, Stone Lake, Unnamed Waterbody 3, Unnamed Waterbody 4 and the identified tributaries have been classified as possessing Low Marine Archaeological Potential (Table 3) and, accordingly, are not recommended for further archaeological assessment.

4. Waterbodies and tributaries identified as having Marine Archaeological Potential, as outlined in Figures 8a and 8b:

4.1. Should additional LSAs be incorporated into the project scope within areas identified in the Desktop Study as having Marine Archaeological Potential (Table 3), such as Unnamed Waterbody 2, Unnamed Waterbody 6, Dixie Lake, Dixie Creek, Pakwash Lake, and the Chukuni River, it is recommended that a marine archaeological assessment with a visual survey be conducted prior to any disturbance of the lakebed, riverbed, or creek bed. An appropriate methodology, as determined by a licensed marine archaeologist, should be applied to evaluate the presence of archaeological features or materials during future investigations within the Property to ensure that any future LSAs are thoroughly assessed for marine archaeological potential. The specific methodological approach will be determined by the geography and characteristics of each location.

4.2. All additional LSAs should undergo a visual inspection utilizing methods capable of providing high-resolution imagery of the basal surface of the waterbody if disturbance is proposed. Appropriate techniques may include the use of ROVs, drop cameras, or aerial drones. Further, it is important to examine the substrate to understand the depositional environment and to screen for archaeological materials. This may involve intrusive techniques, when possible, such as coring or test-pitting, or non-intrusive remote techniques like magnetometry or sub-bottom profiling, depending on the waterbody conditions.

4.3. Given the Chukuni River's historical use as a transportation corridor by Indigenous peoples and fur traders, it is considered to possess marine archaeological potential (Table 3). Therefore, if there is planned physical disturbance to the bed or banks of the Chukuni River, outside the LSAs assessed in this report, it is recommended that the areas be visually inspected by a licensed marine archaeologist prior to disturbance.

4.4. Unnamed Waterbody 2, Unnamed Waterbody 6 and Pakwash Lake have been broadly identified as possessing archaeological potential, mainly due to proximity to known archaeological sites and cultural heritage resources (Table 3). However, these areas or portions thereof are not anticipated to be affected by planned development activities, and no features have been observed to confirm archaeological potential at these locations to date. If areas within these locations are proposed to be disturbed by Great Bear Resources in the future, archaeological assessments should be conducted to assess potential archaeological resources.

4.5. The rapids on Dixie Creek, situated approximately 4.2 km, 4.8 km, and 5.0 km from its outlet into Dixie Lake, have been identified as having high potential (Table 3) for the presence of fish traps based on ethnographic criteria described in Rogers and Black (1976). If additional LSAs encompassing these rapids are included in the future Great Bear Resources work scope, a marine archaeological assessment should be conducted to determine the presence of anthropogenically placed timber or stones, in the event that disturbance is planned.

5. Implementation of the Marine Archaeological Inadvertent Discoveries Plan (IDP):

5.1. Notwithstanding the previous recommendations, the visual survey cannot guarantee that no archaeological resources will be encountered during AEX program or Great Bear Project activities that could potentially disturb lakebed sediments. Therefore, the marine archaeological IDP should be implemented during AEX program and Great Bear Project activities that could potentially disturb the lakebed and riverbed within the study areas. The IDP provides information on the types of Indigenous and Euro-Canadian archaeological resources that may be located within the Property and recommends appropriate procedures to address unexpected discoveries. The IDP is specific to marine archaeological potential and intends to complement the Chance Find Procedure already in place for terrestrial archaeology.

5.2. If archaeological features or materials are encountered during Great Bear Resources' activities, they should initially be left undisturbed (in situ), except in circumstances where they are at immediate risk of impact. This initial action paired with the IDP-directed management measures ensure that any potential cultural resources are protected until they can be properly assessed by a qualified archaeologist. Following the assessment of the features or material, mitigation actions will be implemented as appropriate—such as controlled excavation, collection, or other recommended mitigation actions. Work may resume once all required mitigation and documentation measures have been completed in accordance with the IDP.

ABBREVIATIONS

AA	Archaeological Assessment
AEX	Advanced Exploration
BP	Before Present
CE	Common Era
CHVI	Cultural Heritage Value or Interest
CPR	Canadian Pacific Railway
Great Bear Resources	Great Bear Resources Ltd.
HBC	Hudson's Bay Company
IDP	Inadvertent Discoveries Plan
LSA	Local Study Area
MCM	Ministry of Citizenship and Multiculturalism
NOEGTS	Northern Ontario Engineering Geology Terrain Study
OASD	Ontario Archaeological Sites Database
ROV	Remotely Operated Vehicle
The Project	The Great Bear Project
The Property	The Great Bear Property
WSP	WSP Canada Inc.



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1 INTRODUCTION

1.1 STUDY BACKGROUND

Great Bear Resources (Great Bear Resources), a wholly owned subsidiary of Kinross Gold Corporation, is proposing to complete an advanced exploration (AEX) program and develop a gold mine (the Great Bear Project) at the Great Bear Property (Property). The Property is located approximately 25 kilometres (km) southeast of the Municipality of Red Lake (Figure 1), within the unorganized District of Kenora in northwestern Ontario.

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1.2 OBJECTIVE

This report has been prepared by WSP to summarize the findings of the marine archaeological assessment and visual inspection conducted for the Property. The objectives include:

- Conduct background research to characterize the archaeological potential of the Property and identify known archaeological resources within and in the vicinity of the Property
- Provide information on previous archaeological investigations conducted in the area
- Visual inspection of LSAs using appropriate recording tools, such as waterproof camera, drop-camera, or remotely operated vehicle (ROV), as applicable
- Recommend appropriate methodologies for additional assessment, mitigation or avoidance and protection strategies for known and potential archaeological resources within the Property.

2 HISTORICAL CONTEXT

The following sections provide a brief outline of the regional history, as well as a detailed examination of the past and present land use of the Property and area. The sections are divided into the pre-contact period, post-contact period, and Property-specific history, with the former two sections providing more generalized historical context, while the latter presents a detailed account of the historical land use within the Property.

The pre-contact period represents the time of Indigenous land-use prior to European influence within a region. In Ontario, this is generally considered to be the time before 1650 Common Era (CE), or 300 years Before Present (BP; present refers to 1950 CE), and the pursuant period considered to be the post-contact period. Historically, the events used to delineate these time periods are not in fact uniform and, in northern Ontario especially, a proto-contact transition period has been observed whereby European influence (e.g. material goods and diseases) were introduced without the physical presence of European settlers in the region. The dates of the proto-contact period vary considerably across northern Ontario.

It should be noted that the following text provides a generalized cultural history of Indigenous people within the region. Information is primarily derived from the archaeological record and the interpretations of archaeologists. Technological or temporal divisions have been defined to describe adaptations to changing climates, physiography, subsistence patterns, and geopolitical pressures which do not necessarily provide an accurate reflection of fluid cultural practices of Indigenous people spanning thousands of years. Further, the information below presents a cultural history that appears homogenous across northern Ontario with linear chronological and technological changes. This should be regarded as an over-simplification of what would otherwise be complex adaptive variability of individuals and culture groups who have independent agency that is not captured by archaeological methods.

2.1 REGIONAL PRE-CONTACT INDIGENOUS HISTORY

The pre-contact subarctic has historically been interpreted as geographically removed wilderness devoid of culture and excessively constrained by remote and challenging landscapes (Hamilton 2013; Holly 2002). While the archaeological record is comparatively sparse in northern Ontario compared to other regions across North America, new evidence continually illustrates Indigenous peoples lived on these lands for millennia. The sparse archaeological record is likely a direct result of limited archaeological research, rather than a paucity of archaeological sites. The following sections present a history of land use patterns, as evidenced by material culture within the archaeological record. These materials have been interpreted through a western scientific lens, which may not align with Indigenous history. These periods are the:

- Paleo Period
 - Middle Period (formerly Archaic Period)
 - Woodland Period.
-

2.1.1 PALEO PERIOD

The Paleo period represents the earliest archaeological evidence of human occupation of the region and is divided into the Early (12,000 to 10,000 BP) and Late (10,000 to 7,500 BP) Paleo periods. In northwestern Ontario, there is no confirmed evidence of an Early Paleo occupation, largely because deglaciation did not occur until around 11,400 BP when the Laurentide Ice Sheet retreated from the northern shores of Lake Huron and Lake Superior. Following deglaciation, the newly exposed land became covered by glacial Lake Agassiz until around 9,300 BP (Thorleifson 1996).

A tundra-like environment emerged after deglaciation, providing a suitable habitat for grazing animals such as cervids (caribou, moose, deer and elk) (Hamilton 2013). It is presumed that Paleo populations would have been drawn to the area by migrating caribou herds, supplementing their diet as required with small game, fishing, and gathering of wild edible plants (Julig 2002). Generally, the acidic soils of the boreal forest are typically averse to the survival of organic material from the Paleo period, such as floral and faunal remains and bone tools (Hamilton 2013), and as such interpretation of subsistence strategy is largely based on the relationship between the paleoenvironment, lithic assemblages, and settlement patterns. There are some exceptions to the level of organic preservation in this region. Preserved organics have been discovered in this region in dry and anaerobic soils. In addition calcined bone (bone that has been heated to temperatures exceeding 600 degrees; Lanting et al. 2011) appears to degrade more slowly in acidic soils (Dawson 1974; Cousineau 2021) and calcined bones have been found on Paleo sites across northeastern North America (Peers 1985).

Various Peoples in Canada, especially around the Great Lakes, retrace their relationship, over generations, with the plant known as *manoomin* and tie this relationship to their origin stories, migration narratives and use it in ceremonies (Nyblade 2023). Taking care of *manoomin* holds great cultural, ecological and spiritual significance (David et al. 2019; Hosterman et al. 2023). This sample food and sacred aquatic plant is also referred to as wild rice (*Zizania palustris*) in some “western” scientific literature but referring to it as *manoomin* (from Anishinaabemowin in the Ojibwe language) is more appropriate in the present context.

Archaeological evidence suggests that Paleo peoples migrated into the peninsula between glacial Lake Agassiz, Lake Minong, and the receding Laurentide Ice Sheet into what is now northwestern Ontario. From similarities of point types and lithic selection, archaeologists attributed early sites into four cultural complexes: Lakehead Complex, Reservoir Lakes Complex, Lake Superior / Quetico Complex, and Lake of the Woods / Rainy River Complex. These complexes are grouped together into what is called the Interlakes Composite (Ross 1995).

Sites attributed to the Interlakes Composite are typically large coalescent littoral habitation sites (Hamilton 2013), particularly near the presence of lithic outcrops. However, the abundance of sites found along lake shores and sandy beaches compared to sites in the interior forests may be a result of bias in archaeological reconnaissance and does not appropriately capture Pre-contact land use across the landscape (Hamilton 2000).

2.1.2 MIDDLE PERIOD

The Middle period (formerly Archaic period) in northwestern Ontario roughly dates to 7,500 to 2,500 BP. This period in North America represents a transition from big game hunting to broader, more generalized subsistence strategies dependent on characteristics of the local environment that focus primarily on small game and plant resources (Ross and Arthurs 1979). The period is characterized by the following traits: an increase in stone tool variation and reliance on local stone sources; the emergence of notched and stemmed projectile point types; a reduction in extensively flaked tools; the use of native copper; the use of bone tools for hooks, gorges, and harpoons; an increase in extensive trade networks; and the production of ground stone tools (Ellis et al. 1990). It is important to note that not all of the traits above are expressed by more northern Middle period cultures (Hamilton 1991).

The Middle period in Ontario is generally divided into the Early (8,000 to 7,000 BP), Middle (7,000 to 4,500 BP), and Late (4,500 to 2,300 BP). Little is known of the Middle period in the boreal forest, with most sites being attributed to the Shield Archaic culture (8,000 to 2,500 BP), which encompasses all three subperiods.

In 1972, J.V. Wright proposed the concept of the Shield Archaic to include the various, lesser-known Middle cultures spread across the Canadian Shield. It is believed that these cultures operated in small, nomadic, kin-based units who moved to various locations based on available resources and seasonal constraints. A broad-spectrum foraging strategy was adapted to survive in the harsh and fluctuating dependency of the boreal forest. It has been suggested that the production of side-notched lanceolate

projectile points and wide variety of unifacial scrapers are representative tools for the Middle period in northeastern Ontario (Hamilton 1991; Wright 1972).

The concept of the Shield Archaic is not fully accepted by all archaeologists (Buchner 1979; Buchner 1980; Hamilton 1991). The primary issue is the unlikelihood that all archaeological sites ascribed to the Shield Archaic can be attributed to a single culture. Despite this, the Shield Archaic has been used historically by archaeologists to provide some level of classification in older archaeological literature.

Archaeologists also refute Wright's theory that the Shield Archaic represents the migration of peoples eastward from the Keewatin District over thousands of years into Quebec and the Maritimes. In northwestern Ontario, Hamilton believes that the Middle populations derive from the Paleo populations present in the region. He theorizes that, despite the focus of Paleo sites associated with relic shorelines, Paleo utilization of the upland landscape is probable, and it is likely that these early inhabitants pushed further north as the glacial frontier receded, gradually shifting into a Middle period lifestyle as the boreal forest environment became established (Hamilton 1991). This is likely the case in northwestern Ontario as well.

2.1.3 WOODLAND PERIOD

The Woodland period began ca. 2,300 BP with the introduction of pottery to the region, although little change in the lifeways of the inhabitants is suspected. This occurred during the Middle Woodland period with the Laurel Complex (2,050 to 650 BP), who represent either a migration of peoples or ideas into the area (Wright 1967; Reid and Rajnovich 1991). Although the Woodland period includes an Early Woodland stage in southern Ontario, Early Woodland tool types do not appear in the northern archaeological record. Instead, archaeologists typically define the northern Ontario Woodland period as having an Initial Woodland (2,300 to 1,000 BP) and Terminal Woodland (1,000 to 400 BP) cultural periods.

The people in the Laurel Complex was influenced by the Hopewell interaction sphere, constructing burial mounds and introducing pottery to the region. It first appeared in Minnesota and along the boundary waters near Rainy River, before spreading across a large geographic area, encompassing northeastern central Saskatchewan, central Manitoba, northern Minnesota, northern Ontario, and northwestern Quebec. The Laurel Complex likely had similar lifeways as the Middle Period (i.e. broad-spectrum forest foraging), an adaptation to inhabiting the boreal forest, but with the addition of pottery (Hamilton et al. 2011). Laurel sites are typically identified by specific pottery traits present on the ceramic artifacts (e.g. smoothed conical to sub-conical with elaborate decorations) (Taylor-Hollings 2017). Reid and Rajnovich (1991) organized the Laurel Complex into three composites based on subtle differences between the pottery in these areas: Manitoba Lakes, Boundary Waters and Superior. In northeastern Ontario, specifically north of the height of land, an Eastern Laurel phase is distinguished. Dominant materials attributed to the Eastern Laurel phase include: pseudo-scallop shell, dentate stamp, and dragged stamp ceramics; side-notched and stemmed points similar to Laurel traditions found more westerly; limited copper use; and tools with a stronger affinity to those found in the Point Peninsula complex found in southern Ontario (Pollock 1975).

The Late Woodland period saw the emergence of different pottery styles and improved construction methods. The Blackduck Composite began to appear as evidence of the Laurel Complex faded. This culture extended across most of northern Ontario and northern Manitoba, and includes sites on the Plains, indicating adaptation to a completely different biome. It is believed that Indigenous populations continued to live in small groups within the boreal forest where broad spectrum hunting and gathering provided sustenance, but on the Plains, there is evidence of larger gatherings and sophisticated bison hunting strategies (Hamilton et al. 2007).

Blackduck ware is manufactured differently than Laurel ware. It is hypothesized that Blackduck ceramicists manufactured their pottery using a vertically oriented textile bag as a mould that allowed them to produce thinner walled vessels, rather than the coiled method employed by the Laurel peoples (Taylor-Hollings 2017).

The Selkirk Composite (ca. 850 to 250 BP) appeared later than the Blackduck, spreading south from the area north of Lake Winnipeg. The Winnipeg River Complex has long been considered to belong to the Selkirk Composite, however some archaeologists argue it should belong to the Rainy River Composite. In either case, the Winnipeg River Complex is identified by the presence of Winnipeg Fabric-Imprinted Ware, mainly composed of Alexander Fabric-Imprinted and Sturgeon Falls Fabric-Imprinted, which were both recovered from the Swan Lake site (Taylor-Hollings 2017; Kenyon and Cameron 1961; Rajnovich, 1983).

During the Woodland period, the repeated occupation of sites has been noted in numerous locations across northwestern Ontario. For example, Laurel, Blackduck, and Selkirk pottery were recovered from sites at Kirkness and Stormer Lakes in the Pikangikum Whitefeather Forest, as well as other areas in the Lake of the Woods region (Hamilton et al. 2007; Taylor-Hollings 2006).

Early European contact at the end of the Late Woodland period, resulted in extensive changes to traditions of most populations that inhabited northern Ontario.

2.2 POST-CONTACT REGIONAL HISTORY

2.2.1 THE FUR TRADE IN NORTHERN ONTARIO

The post-contact period is generally considered to begin in Ontario in 1650 CE; however, on a regional level, this period begins following regular interaction between First Nation populations and Euro-Canadians. The transition from the time before European influence and this regular contact has been termed the proto-contact period and is a period where European influence begins to appear on Indigenous sites (e.g. metal cookware, trade items and firearms), or when European-introduced disease begins to greatly impact Indigenous populations.

The arrival of European explorers and the introduction of the fur trade initiated the proto-contact period, which was followed by the post-contact period when more permanent European settlements were established. The French were the first Europeans to begin westward exploration from the Atlantic coast. Beginning in the early 1600s, exploration and trade focused primarily on the St. Lawrence River, the Three Rivers, what is now New York state, and southern Ontario south of Lake Nipissing (Innis 2017). European influence preceded their presence in lands north of Lake Nipissing with Algonquin and Nipissing becoming early traders in the proto-contact period. However, as demand for beaver increased, beaver populations drastically reduced around the Three Rivers. By 1635, beaver populations had been severely impacted, forcing the trade into more remote areas (Innis 2017).

After the establishment of the Hudson's Bay Company (HBC) in 1670, the fur trade and westward expansion of European colonies intensified. HBC created their first official post, Moose Factory, at the mouth of the Moose River in James Bay in 1673. HBC, which was an English corporation, severely affected the once French monopoly on the fur trade, so much so that the Governor of New France organized a military expedition to capture the rapidly expanding HBC posts in Rupert's Land.

While the locations of these fur trade outposts do not directly overlap with the Property, the expedition allowed later French access to northwestern Ontario and created a more competitive territory in which HBC and later the Northwest Company would use for their fur trade exploits. The eventual establishments of HBC, Northwest Company and independent factors' fur trade posts solidified European presence in northwestern Ontario.

To the northwest of Lake Superior, French traders and missionaries from the St. Lawrence settlements of New France were quick to establish connections in the region in the post-contact period. By the late 17th Century, the French established trading posts to the immediate north and west Lake Superior which included the Kaministiquia River (1678), Nipigon River (1678), Lake Nipigon (1684), and Rainy Lake (1688). The further westward expansion of French fur trading commenced in the 1730s where posts were extended to the Manitoba Lake regions and beyond, which included the operation of Fort Lac a La Carpe located on Sturgeon Lake, with Fort Maurepas and Fort Tete de Boeuf in the southern Lake Winnipeg

area, a small post on the English River, and additional forts to the south within the Lake of the Woods and Rainy Lake area (Lytwyn 1981).

Following the conquest of New France, fur trading activities to the north of Lake Superior and west towards the Lake Winnipeg area followed a route by the 1770's that came from the Grand Portage Post on Lake Superior, channelled through a series of lakes and rivers that would lead westward to Rainy Lake, Lake of the Woods, and down the Winnipeg River to Lake Winnipeg (Lytwyn 1981). With the ratification of Jay's Treaty in 1796, which defined northern border regions between British North America and the United States, a new post was set at Fort William at the mouth of the Kaministiquia River and commenced operations in 1803 to avoid the new American levy duties imposed on the Grand Portage Post.

Secondary routes were also expanded by the late 1700s, with one following from Lake Nipigon to Sturgeon Lake, to Lac Seul, through rivers like the Chukuni River to Red Lake, through the Bloodvein River out to the Lake Winnipeg area. This route was initially monopolized by the end of the 1770s by a merchant named Ezekiel Solomon that operated from Montreal, created posts all along the route, and was one of the largest employers of fur traders from the city. It was during this period when traders documented the origin story of the Red Lake name. The story describes a battle between two Ojibwe warriors and a mystical creature at the lake. Initially solely claimed by Solomon's company, the area came to have posts from other various factors (Lytwyn 1981).

James Sutherland from HBC established Red Lake trading house in 1790. By 1821, HBC also had a presence in the Red Lake area and its vicinities with outposts to the east at Trout Lake, to the west at Bad Lake on the Bloodvein River tract, and to the south at Pakwash Lake. Red Lake Post had been moved to five different locations along the Lake but was closed in 1806, only to be reconstituted from 1816 to 1822 and then was largely abandoned. Traders continued their presence in the area, heading from Lac Seul post to gather furs from Red Lake area First Nations. HBC re-established Red Lake Post at Post Narrows in 1918 to maintain market share of the local fur trade. The post was later moved closer to the town of Red Lake in 1925 to supply gold prospectors and was moved again within the town in 1933 by a modern HBC store (Ontario Heritage Trust 2024; Figure 3).

2.2.2 POST-FUR TRADE SETTLEMENT

The fur trade floundered in Ontario in the early 20th Century. The decline of the fur trade and the signing of Treaty 3, 1873 between First Nations and the Government of Canada meant that seasonal movements of First Nations communities in the Red Lake region was replaced by fixed reserves and government-built homes, where the relationships of trade between Europeans and First Nations was replaced by a relationship with government bureaucracy (Felice 2020; Lytwyn 1981).

Mineral exploration, logging, and other forms of resource extraction became the dominant industries in northwestern Ontario. These economic drivers coupled with expansions in transportation and infrastructure acted as a catalyst for permanent Euro-Canadian settlement across the boreal forest, including the Red Lake region. Census records from 1871 list 15,000 people inhabiting all northern Ontario, clustered in a few settlements in the south. By 1911, driven by new railways, the population had increased to 215,000 people scattered over a wide geographical area (Bray 1984). The lumber and mining industries propelled population growth during the early and mid-20th century from 215,000 in 1921 to 722,000 in 1961 (Bray 1984). Census data from 2016 indicates that the population of northern Ontario is just over 780,000 and is clustered in regional centres (Statistics Canada 2016a; 2016b). Government policy in the early 20th Century drove much of the expansion of northern Ontario through infrastructure creation and geological surveys.

Mining played an important role in northern Ontario's expansion and settlement, and largely came after the Canadian Pacific Railway (CPR) was built in 1874. Following this, the industry expanded rapidly with the discovery of significant gold, silver, iron, and nickel deposits along the CPR line. In 1890, the Ontario government began supporting mine expansion through the Bureau of Mines, which also sponsored classes in prospecting and provided some specialized equipment to miners (Gilbert 1984).

A series of discoveries in 1924 to 1925 led the Ontario Department of Mines to publish a geological report, founding the Red Lake Mining District and triggering a gold rush for the region. Notable stakes were created by the Howey brothers and their brother-in-law George McNeely who together incorporated as Howey Gold Mines and began one of the earliest productive mines in the region by 1930. By the end of 1961, over \$200,000 worth of gold had been extracted from the district (Ontario Heritage Trust 2024; Red Lake Museum 2024)

Infrastructure, including roads, was difficult to build in northern Ontario due to challenging terrain and environmental conditions. Aerial transportation became a primary mode of travel for passengers and material to and from the Red Lake mining district, where by 1936 Howey Bay airport in the town could claim to be one of the busiest airports in the world (Red Lake Museum 2024). As early as 1912, the province began to fund roads, bridges, and transportation facilities in northern Ontario. Highway 105 was built to better develop and create greater access to gold resources in the Red Lake area, completed in 1946, stretching 174 km from an intersection between Kenora and Dryden to the northern terminus in Red Lake (Shragge and Bagnato 1984).

Governments began developing hydroelectric dams and power stations in the early to mid 20th Century to supply the expanding resource extraction industry and growing settlements across northwest Ontario and Manitoba with much needed electric energy. The Federal Government constructed a dam at the head of Lac Seul in Ear Falls in the late 1920's, turning the lake into a large reservoir that retained the spring runoff for power generation and for use of further power developments downstream on the English River and Winnipeg River systems. An additional dam was created at Manitou Falls in 1956, approximately 20 km downstream of Ear Falls. These, and other hydroelectric projects, raised water levels in many lakes and rivers across the landscape, including the Chukuni River and Lac Seul, covering landforms, putting potential archaeological resources underwater, and flooding Reserve lands displacing First Nations peoples who lived on the shores (Township of Ear Falls 2024).

3 ARCHAEOLOGICAL CONTEXT

3.1 SUMMARY OF ENVIRONMENTAL CONDITIONS

The Property is situated in northern Ontario on Canadian Shield Terrain. The Northern Ontario Engineering Geology Terrain Study (NOEGTS) interprets air photographs, supported by available literature and limited fieldwork to determine the terrain conditions of northern Ontario. NOEGTS identifies the land and water of the Property as being primarily a sandy to clay glaciolacustrine plain with occasional bedrock exposures, with the land exhibiting a mainly low local relief plain with mixed wet and dry drainage (Figure 4; Neilson 1989). The bedrock comprises mainly of Precambrian felsic to intermediate metavolcanic rock types (MINES 2024).

Ecoregions are parts of an ecozone and are characterized by distinctive regional ecological factors including climate, flora, fauna, physiography, soil, water, and land usage. The Property is located in the Lake Wabigoon Ecoregion (4S) within the Ontario Shield Ecozone. The ecoregion is greatly influenced by the adjacent prairie climate (Crins et al. 2009). The landscape is predominantly covered by forest (65.3%) and water (24%). Over one third of the forest cover is sparse, with shallow substrate when bedrock is not exposed. The Property is located within the Boreal Forest Region, with forests composed of jack pine, black spruce, balsam fir, trembling aspen, white birch and white spruce (Rowe 1972). Unnamed Lake 2 and Unnamed Lake 6 historically and currently contain abundant *manoomin* stands (wild rice; *Zizania* spp.).

3.1.1 REGIONAL GEOGRAPHY AND GEOLOGY

3.1.1.1 CHUKUNI RIVER

The soil at the LSAs located in the Chukuni River consist of clay on the riverbanks and bed, with an overlying organic-rich layer along the shores. This information was provided through personal communication with Simon Gautrey (WSP 2025). In previous geology studies conducted in the area, the LSAs show a coverage of glaciolacustrine sediments (Figure 4, Neilson 1989).

3.1.1.2 UNNAMED WATERBODY 1

Surface soil composition at Unnamed Waterbody 1 consists mainly of peat deposits, including organic clay and other Holocene deposits (WSP 2024). Five boreholes were recovered from Unnamed Waterbody 1 during geotechnical field investigations:

- Borehole BH24-201 presents a top layer about 2 m thick of brown-black organics (Holocene), followed by about 60 cm of very loose grey fine sand containing some silt and clay (glaciolacustrine shoreline). Beneath this is an approximate 2.6 m layer of silty clay (glaciolacustrine upper), underlain by a roughly 4 m layer of fine orange silty sand with trace clay (glaciofluvial), followed by another layer of silty sand, about 1.4 m in thickness, greyer in colour with traces of clay (glaciofluvial). Glacial till is reached at 11.4 m depth and comprised of a 3.4 m thick layer of sand, fine to coarse with some gravel, and occasional cobbles and boulders. Bedrock is reached at 15.7 m depth.
- Borehole BH24-202 presents a top layer about 2.2 m thick of brown to black fibrous peat (Holocene), underlain by roughly 5 m of grey silt and clay with increasing sand content (glaciolacustrine upper), followed by 3 m of sandy silt with traces of clay and gravel (glaciolacustrine lower), then about 2.2 m of fine sand with some silt and trace clay. Glacial till is reached at 13.3 m and is comprised of a 5 m silt and sand layer with occasional cobbles and boulders. Bedrock is reached at around 18.4 m depth.
- Borehole BH24-203 presents a top layer about 2 m thick of brown to black organics (Holocene), underlain by roughly 8 m of clay with silt, with trace sand and increasing silt content for the last meter (glaciolacustrine upper), followed by about 80 cm of sandy silt with fine grains (glaciolacustrine

lower). Glacial till is reached at 10.8 m depth with a silty sand layer with occasional cobbles and boulders approximately 30 m thick. Bedrock is reached at 44.8 m depth.

- Borehole BH24-204 presents a top layer about 2.2 m thick of brown organics (Holocene), underlain with an approximate 5 m thick layer of silt and clay (glaciolacustrine upper), followed by an about 1.5 m thick layer of silt with some clay and trace sand (glaciolacustrine lower), and by about 70 cm of silty sand (glaciolacustrine lower). Glacial till is reached at about 10.8 m depth and consists of fine sand with some silt for about 9 m, followed by about 7.7 m of sand and gravel with trace silt and occasional cobbles and boulders, underneath which is another sand layer about 9 m thick composed of medium to fine sand with trace silt and occasional cobbles and boulders. Bedrock is reached at 36.3 m depth.
- Borehole BH24-205 shows a 3 m brown fibrous peat layer (Holocene), followed by 5 m of silty clay with trace sand (glaciolacustrine upper), then 1.5 m silt with some clay and trace sand, and a 2.3 m sand-silt layer (both glaciolacustrine lower). Glacial till appears at 11.8 m, consisting of about 4 m sand and silt with coarse sand, gravel, trace clay, and occasional cobbles or boulders. Bedrock is reached at 15.9 m depth.

In summary, sediment deposition at Unnamed Waterbody 1 typically consists of a 2 to 3 m layer of highly organic material, followed by a layer of glaciofluvial / glaciolacustrine deposits that vary in thickness between approximately 13 m and 42 m, with bedrock occurring between 15 m and 45 m.

3.2 PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

A search of the MCM Ontario Public Register of Archaeological Reports indicates that three archaeological assessments have been completed on or within 50 m of the Property (Table 1; Figure 5), all completed by Northwest Archaeological Assessments Ltd. A fourth Report from 2024 was made available by Northwest Archaeological Assessments Ltd. but is not yet published on the MCM Public Register.

Table 1: Previous Local Archaeological Assessments

Year	PIF	Title	Researcher
2023	P236-0208-2022	Stage 1 Archaeological Assessment, Proposed Kinross Gold Corporation Great Bear Project, Unorganized Territory, District of Kenora	Northwest Archaeological Assessments (2023a)
2023	P236-0222-2023	Stage 2 Archaeological Assessment, Proposed Kinross Gold Corporation Great Bear Project, Unorganized Territory, District of Kenora	Northwest Archaeological Assessments (2024a)
2023	P236-0232-2023	Stage 1 Archaeological Assessment, Proposed Natural Gas Connection at Tuzycks [sic] Road and Highway 105, Unorganized Territory, District of Kenora, Ontario	Northwest Archaeological Assessments (2023b)
2024	P236-0240-2024	Stage 3 Archaeological Site-Specific Assessment, EfKj-1, Teardrop Lake, Kinross Gold Corporation Great Bear Project, Unorganized Territory, District of Kenora.	Northwest Archaeological Assessments (2024b)

A Stage 1 terrestrial archaeological assessment was completed by Northwest Archaeological Assessments (2023a) for terrestrial components of the Great Bear Project Area. The assessment included a high-level overview of the Great Bear Project Area and a property inspection on foot and by boat for all accessible parts of the Area. Areas were marked for archaeological potential based on distance from water or the transition from marsh to dry forest, geological features on the landscape, historic travel routes, and proximity to registered archaeological sites. Northwest Archaeological Assessments identifies the Chukuni River as a significant 18th-century route interconnecting several

waterways and trade posts in the region. Prior to its integration into colonial economic systems, this network of routes had been traveled for millennia by Indigenous communities. Due to the long history of travel along this artery, a Stage 2 archaeological assessment was recommended within 100 metres (m) of the river.

Northwest Archaeological Assessments (2024a) continued the archaeological investigation for the Great Bear Project Area through a Stage 2 AA. Pre-contact sites EfKj-1, EfKj-2, EfKj-3, EfKj-4 and Eeki-4 were identified and registered during the survey.

Northwest Archaeological Assessments (2023b) also completed a Stage 1 AA for a proposed natural gas connection in the northern end of the Property nearer Highway 105. They determined that the study area of that report held low archaeological potential and was not recommended for further assessment.

Northwest Archaeological Assessments (2024b) conducted a Stage 3 AA at the pre-contact site EfKj-1. This report is not currently available through the MCM Public Register. The late Woodland site is associated with a single occupation, likely used for resource gathering. The cultural material consisted of Blackduck ceramic and lithic artifacts, as well as faunal materials showing signs of consumption. The small lake adjacent to the site is recognized as providing resources such as wild rice (*manoomin* in indigenous contexts) and game.

3.3 KNOWN ARCHAEOLOGICAL SITES

The primary source of information regarding known archaeological sites is the MCM Ontario Archaeological Sites Database (OASD), consulted on October 16, 2024. Seven registered archaeological sites are within 1 km of the Property, five of which are located within the Property. A listing of these sites is provided in Table 2.

Table 2: Registered archaeological sites within 1 km of the Property

Borden	Site Name	Time Period	Cultural Affinity	Site Type	Current Development Status
EfKj-1	Data not available	Pre-Contact	Anishinaabeg	Campsite	Further cultural heritage value or interest CHVI
EfKj-2	Data not available	Pre-Contact	Anishinaabeg	Campsite	Further CHVI
EfKj-3	Data not available	Pre-Contact	Anishinaabeg	Scatter	Further CHVI
EfKj-4	Data not available	Late Paleo	Anishinaabeg	Other knapping station	Further CHVI
EeKi-3	Snake Falls	Data not available	Data not available	Data not available	Data not available
EeKi-4	Data not available	Woodland	Anishinaabeg	Campsite	Further CHVI

Sites EfKj-1, EfKj-2, EfKj-3, EfKj-4, and EeKi-4 were located by Northwest Archaeological Assessments (2024a) during Stage 2 survey as part of the Great Bear Project. EfKj-1, EfKj-2, EfKj-3, and EfKj-4 were all identified through lithic debitage. EfKj-2 defined as a habitation site and EfKj-4 is defined as a Late Paleo period site through the recovery of a diagnostic spear point base. EeKi-4 represents a multicomponent Middle and Late Woodland period habitation.

Site EeKi-3 is located outside the Great Bear Property on the east bank of the Chukuni River at Snake Falls. Another site 1 km from the Property, EeKi-2, is located on the east shore of Pakwash Lake, within the provincial park boundary. Although EeKi-2 does not contribute to the determination of archaeological potential on the Property, it provides physical evidence of Indigenous land use along Pakwash Lake. Both sites are identified as a pre-contact camp; however, no additional information can be found on the OASD for both registered sites.

3.4 ASSESSING UNDERWATER ARCHAEOLOGICAL POTENTIAL

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a specific study area. Factors indicating marine archaeological potential are listed in the *Criteria for Evaluating Marine Archaeological Potential: A Checklist for Non-Marine Archaeologists* (MCM 2016). Indicators of marine archaeological potential include:

- Proximity to known marine or land-based archaeological sites
- Indigenous or local knowledge of marine or land-based archaeological sites
- Indigenous knowledge or historically documented evidence of past Indigenous use on or near the study area
- Known burial sites or cemeteries on or adjacent to the study area
- The property is recognized for its cultural heritage value
- Proximity to potential built heritage or cultural heritage landscape resources adjacent to the waterbody
- Proximity to reported or registered shipwreck sites or lost ships
- Proximity to active or historic harbours, seaplane or floatplane base, tunnel, ferry route, marine terminal, or winter road
- Proximity to existing narrows, rapids, waterfalls or entrance / exit to a waterbody
- Inundated beaches, bluffs, lakeshores, streams or riverbanks

Types of archaeological sites that can be found underwater in northern Ontario generally fall into three categories. The first are sites created by intentional use of the water and can include fish weirs, cribbing, piers and shipwrecks. The second are unintentional underwater sites that include any form of terrestrial site that has been inundated, either by natural hydrologic processes or by control dams, or terrestrial sites that have eroded into the waterbody. The third category comprises sites connected to landscape cultivation, with resources such as *manoomin* and associated material.

Many submerged pre-contact sites in northern Ontario were once terrestrial sites that have been inundated by the development of control dams such as those found in Lac Seul, Dog Lake (north of Thunder Bay), Boulevard Lake, or Lake Nipigon (Hamilton et al 2015; Stephenson 2019; Dawson 1976). Since most research efforts have focused on reservoir lakes, very few intentional Indigenous sites have been found and very few investigations into interior lakes and rivers have been completed to date. However, Euro-Canadian explorers and surveyors recorded an abundance of fish traps, weirs, and trap-weirs used by Lake Winnipeg Salteaux (Hind 1971 p. 163), Ojibway (Rogers and Black 1976 pp. 7-9; Camsell 1912 p. 93, McInnes 1912 p. 134) and Swampy Cree (Hanks 1980 p. 79) on rivers in Subarctic Canada. The plenitude of copper gaff fishing hooks found throughout northern Ontario is also indicative of fishing subsistence on lakes and rivers since at least the Archaic Period (Steinbring 1967; Dawson 1984). These accounts support Indigenous water use throughout Subarctic Canada, and the lack of visibility in the archaeological record is potentially a result of the paucity of archaeological assessment, rather than the absence of potential archaeological sites.

Landscape resources such as *manoomin* (also known as Psij or the good berry) can be an important indicator when evaluating underwater archaeological potential in shallow lakes and rivers. Characteristics of ideal ancient harvest sites typically include flat terrain, shallow water with consistent flow, and organic-rich sediments such as clay or silt loam. Factors such as water clarity, pH, and pollutants are harder to assess due to environmental changes. Archaeological evidence can include the presence of canoes, wooden knockers (paired wooden sticks used to gently tap the rice stalks, dislodging grains into the

canoe without damaging the plant), and shoreline hearths. Modern presence and Indigenous oral histories can help identify former harvesting locations.

Table 3 presents the indicators of marine archaeological potential identified through the desktop study for the various waterbodies and watercourses situated within the Property.

Table 3: Indicators of Marine Archaeological Potential

Waterbodies and Watercourses	Proximity to Known Archaeological Sites	Use of the Waterbody as Indigenous and/or Historical Portage Routes	Proximity to potential built heritage or cultural heritage landscape resources adjacent to the waterbody	Proximity to rapids with high potential for the presence of fish weirs
Unnamed Waterbody 1	X		X	
Unnamed Waterbody 2	X		X	
Unnamed Waterbody 3	--	--	--	--
Unnamed Waterbody 4	--	--	--	--
Unnamed Waterbody 6	X		X	
Chukuni River		X		
Dixie Creek	X			X
Dixie Lake		X		
Genessee Lake	--	--	--	--
Gullrock Lake	--	--	--	--
Pakwash Lake	X	X	X	
Stone Lake	--	--	--	--
Unnamed Watercourse 1	--	--	--	--
Unnamed Watercourse 3	--	--	--	--
Unnamed Watercourse 5	--	--	--	--
Unnamed Watercourse 6	--	--	--	--

Waterbodies and Watercourses	Proximity to Known Archaeological Sites	Use of the Waterbody as Indigenous and/or Historical Portage Routes	Proximity to potential built heritage or cultural heritage landscape resources adjacent to the waterbody	Proximity to rapids with high potential for the presence of fish weirs
Unnamed Watercourse 6A	--	--	--	--
Unnamed Watercourse 6B	--	--	--	--
Unnamed Watercourse 6C	--	--	--	--
Unnamed Watercourse 7	--	--	--	--
Unnamed Watercourse 7A	--	--	--	--
Unnamed Watercourse 7A – 01	--	--	--	--
Unnamed Watercourse 7A – 03	--	--	--	--
Unnamed Watercourse 7A – 07	--	--	--	--
Unnamed Watercourse 8	--	--	--	--
Unnamed Watercourse 8B	--	--	--	--
Unnamed Watercourse 11	--	--	--	--

X Indicators of marine archaeological potential identified

-- No indicators of marine archaeological potential identified

3.5 FEATURES INDICATING ARCHAEOLOGICAL POTENTIAL HAS BEEN REMOVED

Archaeological potential can be determined not to be present when the area has been subject to recent, extensive, and intensive land alterations that damaged the integrity to known or potential archaeological resources, including:

- Excavations including quarrying and mining
- Dredging
- Structural footprints and associated construction areas where the structure has deep foundations or footings

- Infrastructure development such as dams, pipelines, power lines or other utility trenches, causeways or bridges

Disturbance does not include:

- Aqua-cultural activities, such as a fish farm
- Areas of traditional or commercial harvesting of fish, shellfish or water-based vegetation
- Traditional agricultural areas that have been inundated

The placement of fill material over a known or potential archaeological site is not considered to be a land disturbance activity and does not negate the potential for archaeological resources unless there are known extensive and deep land alteration activities within the immediate location.

3.6 POTENTIAL FOR ARCHAEOLOGICAL RESOURCES

An evaluation of underwater archaeological potential was completed based on the background historical research and review of archaeological databases. A number of characteristics associated with archaeological potential, as discussed in Section 3.4, were identified for the LSAs. Specifically, there is potential for historical and pre-contact resources within the Chukuni River and potential for pre-contact resources within Unnamed Waterbody 1.

The Chukuni River is a substantial waterway, and historical records indicate that it has been used in the past as a navigation route for trade. This is closely linked to the fur trade in Northern Ontario and evidence for multiple trading posts within the region provides additional evidence for this historical use of the river. The prominence of Indigenous pre-contact sites within the region and evidence for interaction with the water resources in the area, from these sites, indicates potential for pre-contact resources within the Chukuni River. As mentioned in Section 3.4, archaeological evidence for these activities will largely exist as net sinkers, fish weirs, canoes, and other items associated with resource collection.

Unnamed Waterbody 1 was identified as having potential for *manoomin* cultivation. This constitutes a cultural landscape with potential for associated archaeological materials.

Based on this review of archaeological potential a field program was established to further investigate archaeological potential at both LSAs at the Chukuni River and Unnamed Waterbody 1.

4 FIELD METHODS

4.1 VISUAL INSPECTION

The visual inspection for the marine archaeological assessment was carried out through two distinct surveys, each evaluating separate LSAs in accordance with the provided designs and prior to the commencement of work. The first survey covered one location along the Chukuni River assessed under licence 2024-34 (held by Jason Stephenson, WSP) in September 2024, and the second survey covered two locations (Chukuni River and Unnamed Waterbody 1) assessed under licence 2025-21 (held by Emilie Teasdale, WSP), in June 2025. The LSAs are on Crown Land and Great Bear Resources did not place any limits on access.

4.1.1 CHUKUNI RIVER AEX DISCHARGE

A visual inspection was conducted for a potential location for an effluent discharge pipeline for the AEX program that extends into the Chukuni River. A LSA was defined as a 20 x 20 m area in the river to account for minor design changes of the pipeline location. Field activities were conducted on September 11, 2024. Conditions were overcast with a temperature of 18 degrees Celsius. The flow rate of the river was fast but allowed for controlled transects using the ROV. The river conditions were favourable for the assessment and turbidity allowed for visibility of approximately 1.5 m for the assessment.

A Deep Trekker DTG3 ROV was used to complete a visual inspection of the LSA. The DTG3 is a dual-thruster ROV with a 200 m tether and includes a primary 1,000 lumen light and two 1,000 lumen auxiliary lights on the front of the vehicle. A 4K ultra low-light camera is mounted on a vertical axis with real-time imagery projected on the controller and stored on an internal micro-SD card. All ROV video was reviewed in real time during the field survey. Image locations were approximated by a GPS point on shore, at the place of deployment, and distance marks on the tether. The direction lock feature was used on the ROV to maintain linear transects from the shore.

The shallows were approximately 20 cm deep and vegetated with water plantain and other aquatic species. The depth allowed for visual inspection without technological assistance. The river bottom, as observed through the visual inspection, comprises a soft silt bottom with scattered tree limbs and rocks that have been naturally deposited. The western portion of the LSA slopes down easterly to a maximum depth of approximately 2.9 m deep. The riverbed then sharply declines to a maximum depth of 8.3 m. This sharp decline may represent the original river channel before the Chukuni River water level was raised. As such, the drop off was closely inspected to determine if any terrestrial archaeological sites have been inundated. Additionally, the modern shore outside of the river was inspected to determine if cultural materials were visible.

No archaeological materials or features were observed in the LSA or on shore during the visual inspection.

4.1.2 CHUKUNI RIVER MINE DIFFUSER AND DISCHARGE

A visual inspection was conducted for a potential location for the mine effluent discharge pipeline including a diffuser port (mine diffuser) that will enter into and partially cross the Chukuni River. A LSA was defined 50 m along the shoreline, extending across the width of the river. Field activities were conducted on June 25, 2025. Conditions were overcast with a temperature starting at 11 degrees Celsius and progressively warming up through the day to reach 20 degrees Celsius. The flow rate of the river was fast; therefore the turbidity resulted in a maximum visibility of approximately 30 cm. The eastern shore of the river had more substantial rooted vegetation, stabilizing the shoreline in the shallows and therefore allowing for better visibility, but the eastern shoreline and deeper portions had very thin loose sediments that made visibility of the riverbed difficult.

In the western portion, the shallows ranged from approximately 10 cm deep and vegetated with water plantain and other aquatic species to about 1 m deep and looser sediment, when reaching approximately 15 m away from shore. The depth allowed for visual inspection in transects, without the ROV. The river bottom, as observed in the previous LSA, comprises a soft silty organic bottom with scattered tree limbs and rocks naturally deposited. The usage of an aquascope (also sometimes referred to as bathyscope) was implemented to survey underwater. The aquascope is a specialized underwater viewing device that is designed to eliminate the surface glare, providing a clearer view beneath the surface of the water. By reducing the reflective distortion caused by sunlight hitting the surface, the viewer can better observe underwater features such as submerged archaeological material. In low visibility areas, the aquascope can greatly enhance the visual survey. When brought within a few centimeters of the riverbed, matching the low visibility range, the aquascope allows clearer viewing of bottom features otherwise concealed by turbidity and loose sediment.

The eastern shore of the LSA began at a seemingly greater depth, where loose sediment made walking difficult. Despite the presence of only a few centimetres of water above the sediment, conducting transects was unfeasible due to soil instability extending over a metre in depth. Note that there is no planned disturbance near the eastern shore.

According to collected bathymetry data (Figure 6), the middle of the river appears to be approximately 5 m deep at this location.

No archaeological cultural materials or features were observed in the LSA or within the nearshore environment during the visual inspection.

4.1.3 UNNAMED WATERBODY 1

The defined LSA at Unnamed Waterbody 1 was surveyed over a period of three days in June 2025. A total of over 1,300 m of shallow waters, extending to depths of up to 1 m, were surveyed.

On June 24, 2025, conditions were sunny, slightly overcast, and with an air temperature of approximate 20 degrees Celsius. The site visit consisted of a reconnaissance tour with local archaeologist Andrew Hinshelwood, who had previously conducted terrestrial assessments at this location. Photographs were taken, and a distance of about 250 m was covered on the southeastern portion of the LSA, working counterclockwise. This initial visit was not the primary assessment, but rather served to facilitate information sharing prior to the visual survey. It was noted that the waterline varies seasonally, and an area of the lake currently submerged was likely wetland beforehand. Evidence for this included specific vegetation types and mushrooms observed underwater during the visit. The seasonal variability of the flood zone for this lake means that some portions of the LSA are seasonally exposed. As a result, it was deemed prudent to examine some terrestrial areas adjacent to the lake as part of the marine archaeological assessment, as these areas would otherwise be designated low-lying wet as part of a terrestrial assessment

On June 25, 2025, conditions were overcast with temperatures starting at 11 degrees Celsius and progressively warming up through the day to reach 20 degrees Celsius. The visual survey started in the southwest of the LSA, moving clockwise for about 300 m. Two marine archaeologists walked and inspected roughly 7 m apart, with one at the deepest walkable depth prior to the drop-off in depth. The day's survey ended at a marked drilling access trail, and GPS coordinates were recorded for location accuracy.

On June 26, 2025, conditions were sunny, and temperatures ranged from 10 to 24 degrees Celsius, warming progressively through the day. The visual survey proceeded from the designated marked starting point, systematically advancing in a clockwise direction to complete the inspection of the lake's remaining perimeter. The two marine archaeologists maintained an approximate separation of 7 m throughout the survey. On this day, approximately 1,000 m of shoreline were methodically surveyed.

Manoomin was not observed during this visual survey. Anecdotal information gained from discussions with other teams working in the area indicate that the beginning of September is a better time to observe it at full maturity.

Anthropogenic material found throughout the survey was modern, presenting no archaeological concern. No archaeological cultural materials or features were observed in this LSA or on shore during the visual inspection of Unnamed Waterbody 1.

5 SUMMARY AND CONCLUSIONS

An evaluation of underwater archaeological potential was completed, based on the *Criteria for Evaluating Marine Archaeological Potential: A Checklist for Non-Marine Archaeologists* (MCM 2016) and international standards of best practice noted in Section 1.1. Five terrestrial pre-contact archaeological sites are in the Property: EfKj-1 is located on the shore of Unnamed Waterbody 1 and Unnamed Waterbody 2; EfKj-2 is located along Dixie Creek, EfKj-3 and EfKj-4 are located on the shore of Unnamed Waterbody 6, and EeKj-4 is located within 100 m of Pakwash Lake. Snake Falls (EeKi-3) is located at the entrance of Pakwash Lake along the Chukuni River, and EeKi-2 is located along Pakwash Lake, further afield. The presence of archaeological sites in proximity to these watercourses and waterbodies is indicative of Indigenous land and water use within the region. Further, the presence of *manoomin*, a valuable resource for First Nations, on Unnamed Lake 1, Unnamed Lake 2, and Unnamed Lake 6 is an indicator of potential land and water use on the Property.

A search through various marine heritage databases, including Save Ontario Shipwrecks, indicates no registered shipwrecks are within a 5 km radius of the Property. The Property is not within 1 km of an active or historic harbour, seaplane or floatplane base, tunnel, ferry route, marine terminal or winter road. The Chukuni River and Dixie Lake were utilized as a transportation route before and during the fur trade. Chukuni River is not a reservoir but does have existing dams at Ear Falls and Manitou Falls impacting its flow, which has inundated its original riverbanks. Pakwash Lake is a reservoir and has the potential to have inundated beaches.

The marine archaeological assessment of the Great Bear Property resulted in the determination that Unnamed Waterbody 1, Unnamed Waterbody 2, Unnamed Waterbody 6, Pakwash Lake, Dixie Lake, Dixie Creek, and the Chukuni River meet characteristics for marine archaeological potential due to proximity to terrestrial archaeological sites, evidence of past Indigenous and Euro-Canadian use as transportation routes, or the presence of *manoomin*. These waterbodies and watercourses were recommended for further marine archaeological assessment in advance of any disturbance to the lake or riverbed.

Following this recommendation, three LSAs were surveyed where the proposed Great Bear Project could potential disturb marine archaeological resources if present: two locations in the Chukuni River and one comprising the entire Unnamed Waterbody 1.

In the Chukuni River, a 20 m by 20 m LSA (referred to as the AEX discharge location), located approximately 250 m south of the existing hydro corridor, has been visually confirmed to have low archaeological potential and is not recommended for further assessment. An additional LSA (referred to as the mine diffuser location) of approximately 50 m by 100 m, located approximately 70 m south of the previous LSA, has been visually surveyed, where possible. This LSA is assessed to have low archaeological potential and is not recommended for further assessment (Figure 8). Observations noted that due to a thick silty organic layer, any potential marine archaeological features would likely remain buried and would not be visible at the surface without sediment disturbance.

The entire perimeter and shallow waters of Unnamed Waterbody 1 were visually surveyed, and no archaeological targets were detected (Figure 8). Observations noted that due to dense vegetation, both submerged and exposed, any potential marine archaeological features would likely remain buried and not visible at the surface without sediment disturbance. Unless a LSA presents specific and targeted archaeological potential, non-invasive methods are prioritized. Intrusive investigation is only undertaken when deemed necessary by the consultant archaeologist and explicitly permitted under the terms of the licence issued by the Ministry of Citizenship and Multiculturalism (MCM).

As the present assessment is visual in nature, all data collected was non-intrusive. However, given the multidisciplinary scope of operations for this mining project, the marine archaeology team also reviewed data provided by other disciplines with direct knowledge of the site and area, including draft borehole logs from Unnamed Waterbody 1, bathymetric data from the Chukuni River, and LiDAR coverage of the areas of interest.

An overview of the general stratigraphy was possible through draft borehole logs (WSP 2025), personal communications with the WSP hydrogeology team, and a 1989 geological map (Nielson 1989). The soil at the Chukuni River LSAs consist of clay on the riverbanks and bed, with an over-lying organic-rich layer at the shores, as per personal communication with Simon Gautrey (WSP 2025). The LSA area shows a coverage of glaciolacustrine sediments (Figure 4, Nielson 1989). Surficial soil composition at Unnamed Waterbody 1 consists mainly of peat coverage, including organic clay and other Holocene deposits (WSP 2024). A thick layer of organic material is observed (Figure 4, Nielson 1989). Borehole logs indicate that the depth of sediments at the centre of the lake are substantial (WSP 2025). Therefore, it is understood that this lake would have experienced low velocity flow throughout most of its life as sediment deposition is significant. This aligns closely with expectations for a lake or watershed that would carry potential as a *manoomin* cultural landscape.

Bathymetric data collected for the Chukuni River, as part of the hydrology assessment for the Great Bear Project (Figure 6), provided valuable insights into the original river morphology and helped identify areas with stronger archaeological potential for submerged terrestrial features and material. This data revealed a gradual incline along the riverbanks, an important characteristic when evaluating archaeological potential. Shallow, gently sloping plateaus are particularly significant, as these areas may have once been exposed land suitable for human activity.

Within the three LSAs visually surveyed for this report, accessible shallow plateaus adjacent to the original river channel and lake were examined for evidence of submerged terrestrial archaeological sites. Detailed bathymetric data could not be obtained for Unnamed Waterbody 1 due to dense aquatic vegetation interfering with the transducer's ability to produce accurate readings. However, the gently sloping perimeter of the waterbody was visually assessed and thoroughly investigated during fieldwork. In addition, point-source depth measurements were collected to the extent possible during baseline work and these measurements provided a reliable representation of the waterbody's current depth profile. The relevance of these gradual slopes when assessing archaeological potential, lies in their suitability for past human occupation. A study by Golder Associates Ltd. (2016), based on data from numerous inclined midden sites (n=154) and using site boundaries defined in PHR and LiDAR based elevations (Natural Resources Canada 2016), found that slopes ranging from 0.5 to 29.4% are the most comfortable for occupation as they provide a greater ease for settlement. The 0.5% minimum is essential for appropriate drainage and avoiding water-logging (Golder 2016).

LiDAR data collected by Great Bear Resources in September 2022 and provided to WSP in February 2023 was processed and presented as a hillshade figure (Figure 7), enabling a detailed review of shoreline morphology across all LSAs prior to fieldwork. This remote sensing method is particularly effective in detecting subtle topographic features such as depressions or anomalies that may indicate archaeological targets, even in areas obscured by dense vegetation or organic cover. By revealing terrain features that are not easily visible through traditional survey methods, LiDAR data supports the prioritization of field survey zones and informs logistical planning for remote access. No archaeological targets were identified through LiDAR analysis within the three LSAs outlined for this report.

Satellite imagery of all watercourses was reviewed within the Property limits to locate the presence of rapids. Using Rogers and Black (1976) as an ethnographic proxy, satellite imagery of watercourses was examined for rapids that would be favourable for fish traps or weirs, or for rapids that would require portage. Three sets of rapids were observed on Dixie Creek, draining from Dixie Lake, which would be favourable for setting a fish trap in or above the rapids. They are located 4.2, 4.8, and 5.0 km cross country from the outlet to Dixie Lake (Figure 8). No other rapids were observed on Property.

Given its historical use as a transportation corridor by Indigenous peoples and fur traders (Figure 3), the Chukuni River is considered to have marine archaeological potential. Similarly, Unnamed Waterbody 1 holds potential due to its proximity to registered archaeological site EfKj-1 and the presence of *manoomin*. This assessment was undertaken to evaluate the presence and extent of marine archaeological potential at both locations.

Although no marine archaeological resources were observed during the archaeological assessment at the three LSAs, the Inadvertent Discoveries Plan (IDP) developed for the Great Bear Project should be implemented during AEX or Great Bear Project activities that may disturb the lakebed or riverbed. The

IDP provides information regarding the representative types of marine archaeological resources that may be located within the Great Bear Property and includes appropriate procedures to address any marine archaeological resources that may be discovered unexpectedly. This document serves as an addition to the current Chance Find Procedure for the Great Bear Project, noting that marine archaeology methodology and mitigation procedures are distinct from those used in terrestrial archaeology. As such, this document will be distributed among all construction and investigation personnel to ensure enhanced accessibility to the plan. Any further discovery will require immediate notification and should be relayed to the Indigenous Nations. Although formal interviews with local Indigenous Nations were not conducted for this specific assessment, all requested and available information was provided. A site visit was carried out with participation from a WSP marine archaeologist, the Client, and a representative from the Indigenous community. Contact information was exchanged to support future continued dialogue. As such, while the assessment may not include direct Indigenous Knowledge of specific sites or past use near the Property, meaningful conversations helped inform the evaluation of marine archaeological potential.

6 RECOMMENDATIONS

This marine archaeological assessment has resulted in the following recommendations (Figure 8):

1. Chukuni River LSA

1.1. The visual inspection of the two LSAs in the Chukuni River for the Chukuni AEX discharge pipeline and mine diffuser did not identify surficial archaeological materials or features. No further assessment is required for these two LSAs.

2. Unnamed Waterbody 1 LSA

2.1. The visual inspection of the LSA Unnamed Waterbody 1 did not identify surficial archaeological materials or features. No further assessment is required for this LSA.

3. Waterbodies and tributaries identified as having Low Marine Archaeological Potential, as outlined in Figures 8a and 8b:

3.1. Pursuant to the findings of the Desktop Study, Genesse Lake, Gullrock Lake, Stone Lake, Unnamed Waterbody 3, Unnamed Waterbody 4 and the identified tributaries have been classified as possessing Low Marine Archaeological Potential (Table 3) and, accordingly, are not recommended for further archaeological assessment.

4. Waterbodies and tributaries identified as having Marine Archaeological Potential, as outlined in Figures 8a and 8b:

4.1. Should additional LSAs be incorporated into the project scope within areas identified in the Desktop Study as having Marine Archaeological Potential (Table 3), such as Unnamed Waterbody 2, Unnamed Waterbody 6, Dixie Lake, Dixie Creek, Pakwash Lake, and the Chukuni River, it is recommended that a marine archaeological assessment with a visual survey be conducted prior to any disturbance of the lakebed, riverbed, or creek bed. An appropriate methodology, as determined by a licensed marine archaeologist, should be applied to evaluate the presence of archaeological features or materials during future investigations within the Property to ensure that any future LSAs are thoroughly assessed for marine archaeological potential. The specific methodological approach will be determined by the geography and characteristics of each location.

4.2. All additional LSAs should undergo a visual inspection utilizing methods capable of providing high-resolution imagery of the basal surface of the waterbody if disturbance is proposed. Appropriate techniques may include the use of ROVs, drop cameras, or aerial drones. Further, it is important to examine the substrate to understand the depositional environment and to screen for archaeological materials. This may involve intrusive techniques, when possible, such as coring or test-pitting, or non-intrusive remote techniques like magnetometry or sub-bottom profiling, depending on the waterbody conditions.

4.3. Given the Chukuni River's historical use as a transportation corridor by Indigenous peoples and fur traders, it is considered to possess marine archaeological potential (Table 3). Therefore, if there is planned physical disturbance to the bed or banks of the Chukuni River, outside the LSAs assessed in this report, it is recommended that the areas be visually inspected by a licensed marine archaeologist prior to disturbance.

4.4. Unnamed Waterbody 2, Unnamed Waterbody 6 and Pakwash Lake have been broadly identified as possessing archaeological potential, mainly due to proximity to known archaeological sites and cultural heritage resources (Table 3). However, these areas or portions thereof are not anticipated to be affected by planned development activities, and no features have been observed to confirm archaeological potential at these locations to date. If areas within these locations are proposed to be disturbed by Great Bear Resources in the future, archaeological assessments should be conducted to assess potential archaeological resources.

4.5. The rapids on Dixie Creek, situated approximately 4.2 km, 4.8 km, and 5.0 km from its outlet into Dixie Lake, have been identified as having high potential (Table 3) for the presence of fish traps based on ethnographic criteria described in Rogers and Black (1976). If additional LSAs encompassing these rapids are included in the future Great Bear Resources work scope, a marine archaeological assessment should be conducted to determine the presence of anthropogenically placed timber or stones, in the event that disturbance is planned.

5. Implementation of the Marine Archaeological Inadvertent Discoveries Plan (IDP):

5.1. Notwithstanding the previous recommendations, the visual survey cannot guarantee that no archaeological resources will be encountered during AEX program or Great Bear Project activities that could potentially disturb lakebed sediments. Therefore, the marine archaeological IDP should be implemented during AEX program and Great Bear Project activities that could potentially disturb the lakebed and riverbed within the study areas. The IDP provides information on the types of Indigenous and Euro-Canadian archaeological resources that may be located within the Property and recommends appropriate procedures to address unexpected discoveries. The IDP is specific to marine archaeological potential and intends to complement the Chance Find Procedure already in place for terrestrial archaeology.

5.2. If archaeological features or materials are encountered during Great Bear Resources' activities, they should initially be left undisturbed (in situ), except in circumstances where they are at immediate risk of impact. This initial action paired with the IDP-directed management measures ensure that any potential cultural resources are protected until they can be properly assessed by a qualified archaeologist. Following the assessment of the features or material, mitigation actions will be implemented as appropriate—such as controlled excavation, collection, or other recommended mitigation actions. Work may resume once all required mitigation and documentation measures have been completed in accordance with the IDP.

7 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ministry of Citizenship and Multiculturalism, as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ontario Ministry of Consumer Services is also immediately notified.

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48(1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

8 IMPORTATION INFORMATION AND LIMITATIONS OF THIS REPORT

WSP Canada Inc. (WSP) has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the archaeological profession currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied is made.

This report has been prepared for the specific site, design objective, developments and purpose described to WSP by Great Bear Resources Ltd. (the Client). The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location.

The information, recommendations and opinions expressed in this report are for the sole benefit of the Client. No other party may use or rely on this report or any portion thereof without WSP's express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the client, WSP may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to WSP. The report, all plans, data, drawings and other documents as well as all electronic media prepared by WSP are considered its professional work product and shall remain the copyright property of WSP, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of WSP. The Client acknowledges the electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore the Client cannot rely upon the electronic media versions of WSP's report or other work products.

Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project.

Special risks occur whenever archaeological investigations are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain archaeological resources. The sampling strategies incorporated in this study comply with those identified in the *Standards and Guidelines for Consultant Archaeologists* (MCM 2011).

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10 IMAGES

10.1 CHUKUNI RIVER DISCHARGE



Image 1: View of LSA from the Chukuni River, facing west.



Image 2: View of Chukuni River from western shore, facing east.



Image 3: View of bottom of the Chukuni River in the western portion of the LSA showing sediments and natural timber, facing west.

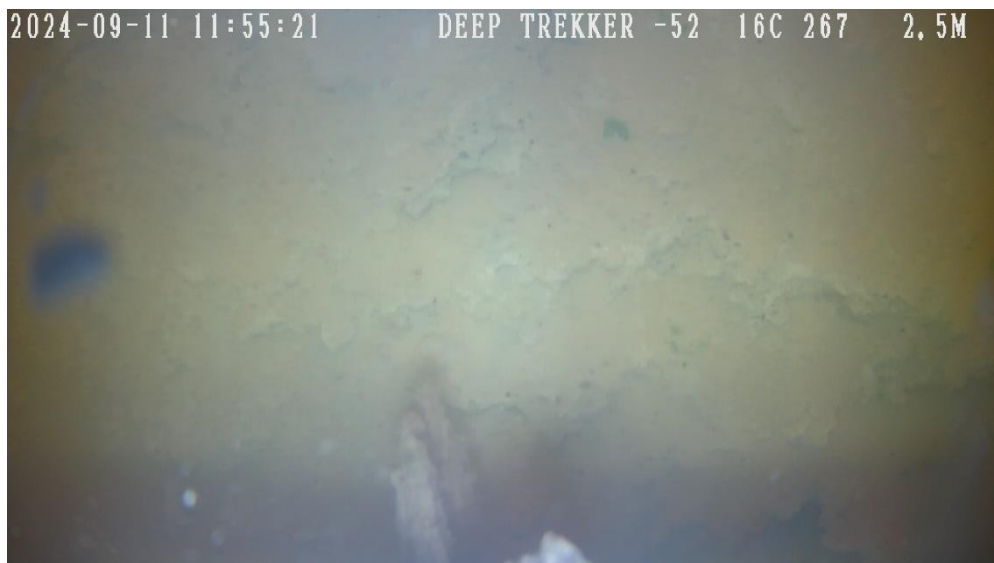


Image 4: View of bottom of the Chukuni River in the western portion of the LSA showing steep decline, facing west.

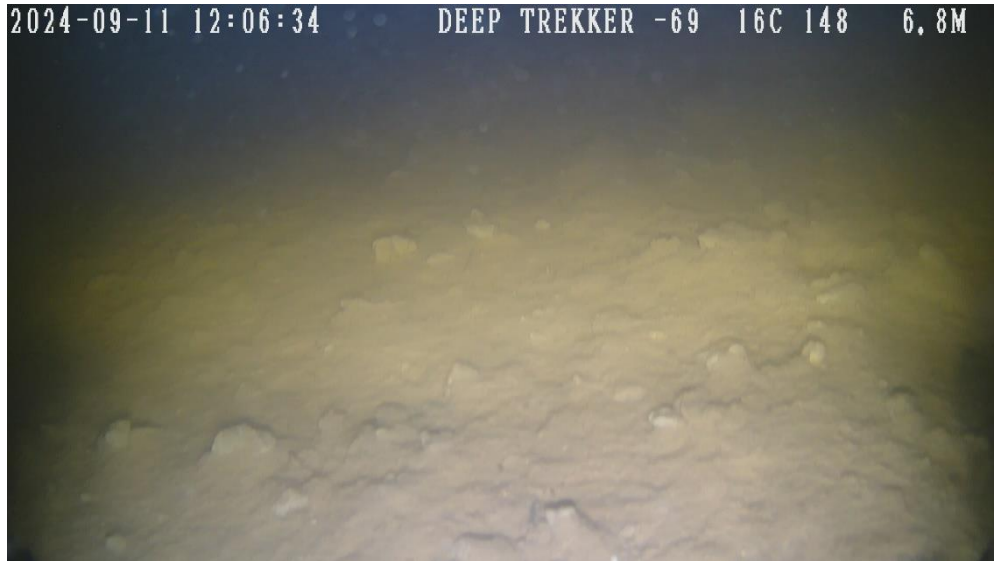


Image 5: View of bottom of the Chukuni River in the eastern portion of the LSA showing rocks at the bottom of the deep channel, facing southeast.

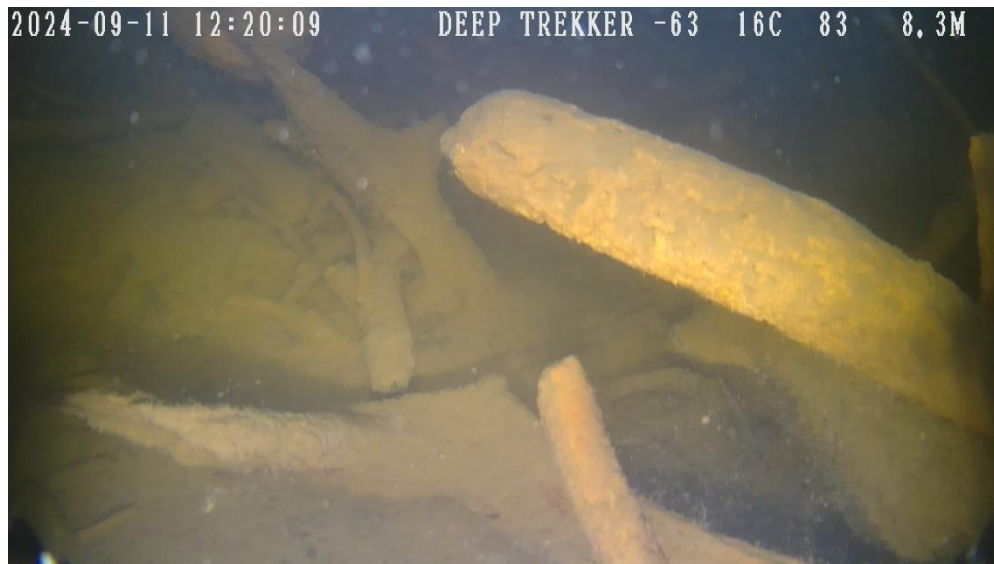


Image 6: View of natural timbers in the deep channel of the Chukuni River, facing east.



Image 7: View of the western Chukuni River bank showing vegetation-stabilized slope, facing north.



Image 8: View of the western Chukuni River bank showing vegetation-stabilized slope, facing southeast.

10.2 CHUKUNI RIVER DIFFUSER



Image 9: View of the western Chukuni River riverbank showing vegetation-stabilized slope and natural tree limbs, facing southeast.



Image 10: View of the western Chukuni River riverbank showing natural tree limbs, facing northwest.



Image 11: View of the western Chukuni River riverbank showing natural tree limbs, facing northwest.



Image 12: View of the western Chukuni River riverbank showing natural tree limbs, facing northwest.



Image 13: Underwater view of natural timbers and branches in the Chukuni River, in the shallows, facing east.



Image 14: Underwater view of natural timbers and branches in the Chukuni River, in the shallows, facing east.



Image 15: View of natural timbers and branches in the Chukuni River, facing southeast.



Image 16: View of the western Chukuni River riverbank showing vegetation-stabilized slope and natural tree limbs, facing northwest.



Image 17: View of the eastern Chukuni River riverbank showing a vegetation-stabilized slope above the waterline, with loose, unstabilized sediment below in the absence of submerged vegetation, facing northeast.

10.3 UNNAMED WATERBODY 1



Image 18: View of Unnamed Waterbody 1, from the access road, facing north.



Image 19: View from the southeast of Unnamed Waterbody 1 and landscape, facing north.



Image 20: View from the southeast of Unnamed Waterbody 1, showing the landscape and different vegetation lines, facing north.



Image 21: View from the southwest of Unnamed Waterbody 1, showing the landscape, flood zones, and different vegetation lines, facing north.



Image 22: View from the west of Unnamed Waterbody 1, showing the landscape, flood zones, and distance of the most in-land archaeologist in comparison to the vegetation's edge, facing north.



Image 23: View from the southeast of Unnamed Waterbody 1, showing the landscape, depth, and distance of the most in-water archaeologist in comparison to the vegetation's edge, facing southwest.



Image 24: View from the northwest of Unnamed Waterbody 1, showing drilling markers, facing northwest; the location also marks the easily identifiable transition point between assessment days.



Image 25: View from the north of Unnamed Waterbody 1, showing the landscape and flood zones, facing north.



Image 26: View from the north of Unnamed Waterbody 1, showing a tributary, facing north.



Image 27: View from the northeast of Unnamed Waterbody 1, showing landscape and vegetation, facing south.



Image 28: Underwater image of submerged lakebed, in Unnamed Waterbody 1, showing moss coverage.



Image 29: Underwater image of submerged lakebed, in Unnamed Waterbody 1, showing moss coverage.



Image 30: Underwater image of submerged lakebed, in Unnamed Waterbody 1, showing moss coverage.



Image 31: Underwater image of submerged lakebed, in Unnamed Waterbody 1, showing rooted vegetation.



Image 32: Underwater image of submerged lakebed, in Unnamed Waterbody 1, showing rooted vegetation.



Image 33: Underwater image of submerged lakebed, in Unnamed Waterbody 1, showing rooted vegetation.



Image 34: Underwater picture in Unnamed Waterbody 1, showing deposited organic material breaking down.



Image 35: Soil and vegetation variability observed at Unnamed Waterbody 1.



Image 36: Soil and vegetation variability observed at Unnamed Waterbody 1.



Image 37: Soil and vegetation variability observed at Unnamed Waterbody 1.



Image 38: Soil and vegetation variability observed at Unnamed Waterbody 1.



Image 39: Soil and vegetation variability observed at Unnamed Waterbody 1.



Image 40: Soil and vegetation variability observed at Unnamed Waterbody 1.



Image 41: Soil and vegetation variability observed at Unnamed Waterbody 1.



Image 42: Soil and vegetation variability observed at Unnamed Waterbody 1.



Image 43: Mushroom observed emerging from underwater, from the easter side of Unnamed Waterbody 1, suggesting recent flooding of the area.



Image 44: Anthropropic material found throughout the survey at Unnamed Waterbody 1 was modern, presenting no archaeological concern.



Image 45: Anthropogenic material found throughout the survey at Unnamed Waterbody 1 was modern, presenting no archaeological concern.

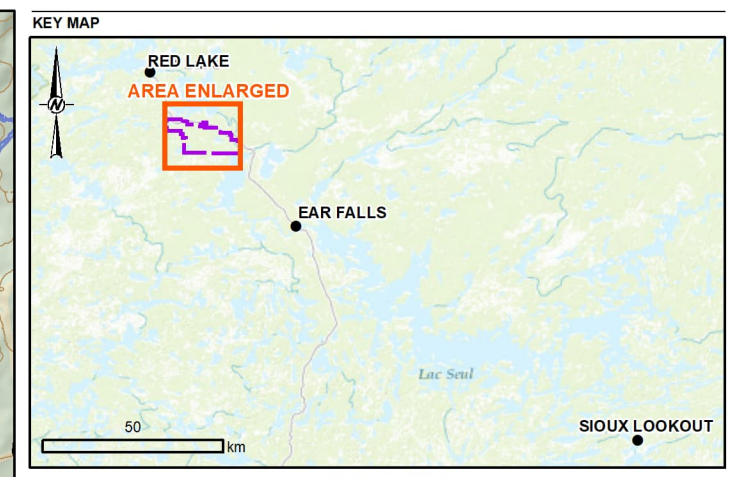
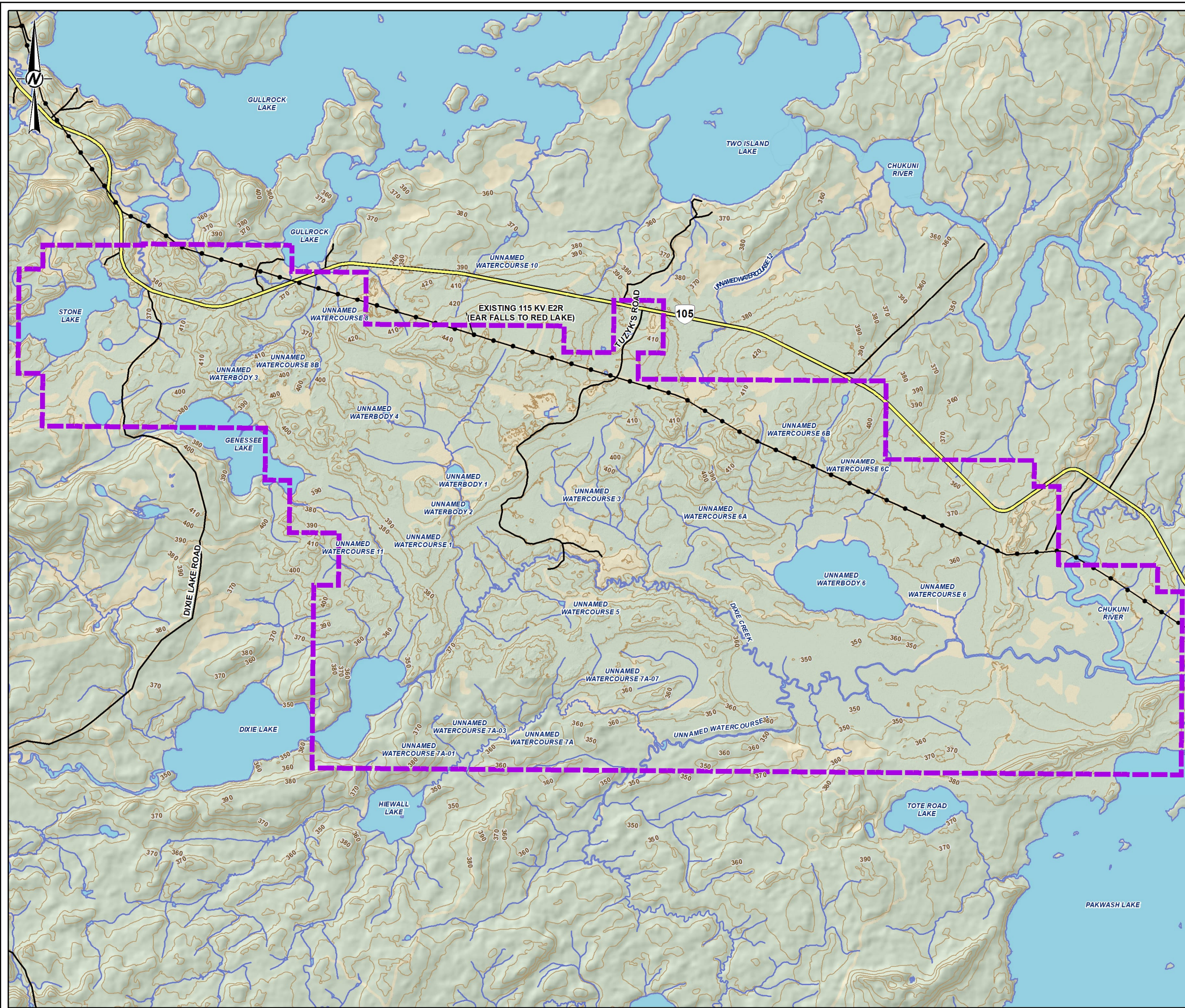


Image 46: Anthropogenic material found throughout the survey at Unnamed Waterbody 1 was modern, presenting no archaeological concern.



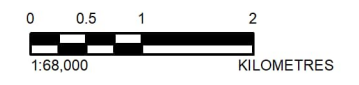
Image 47: Anthropogenic material found throughout the survey at Unnamed Waterbody 1 was modern, presenting no archaeological concern.

11 FIGURES



SCALE 1:2,100,000

- LEGEND**
- PROJECT AREA (PROPERTY LIMIT)
 - HIGHWAY
 - LOCAL ROAD
 - EXISTING TRANSMISSION LINE
 - CONTOURS (10 M INTERVAL)
 - WATERCOURSE
 - WATERBODY



- NOTE(S)**
1. ALL LOCATIONS ARE APPROXIMATE
- REFERENCE(S)**
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
 2. CONTOURS ACQUIRED FROM 2022 LIDAR SURVEY.
 3. PROPERTY BOUNDARY PROVIDED BY KINROSS, AUGUST 2024.
 4. ROADS INFORMATION PROVIDED BY KINROSS, AUGUST 2022.
 5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES LTD.

PROJECT
GREAT BEAR PROJECT

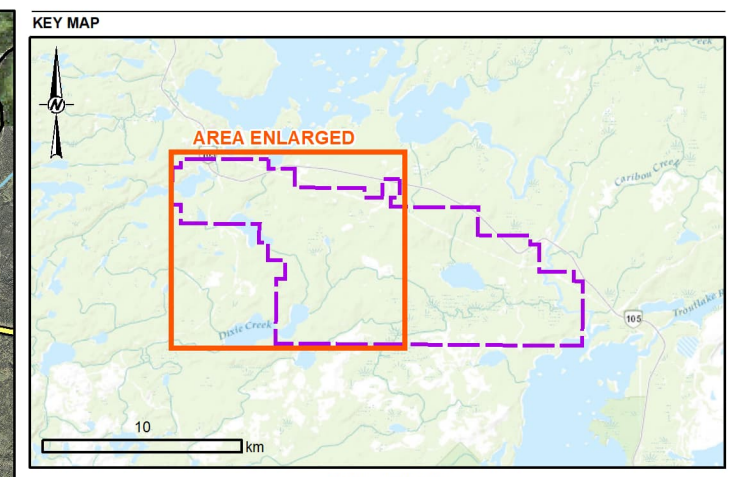
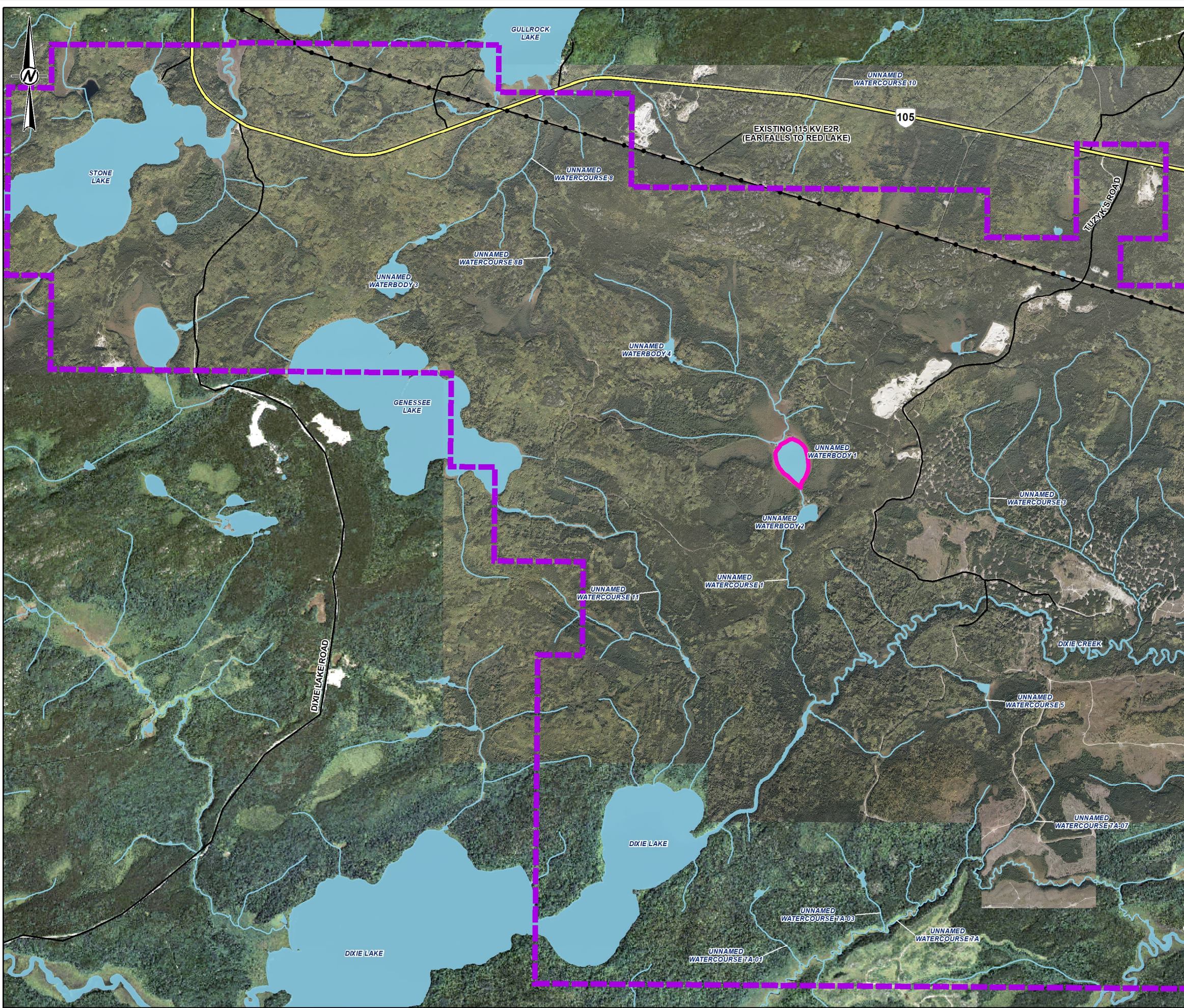
TITLE
PROJECT LOCATION

CONSULTANT	DATE
	YYYY-MM-DD 2025-07-14
	DESIGNED ---
	PREPARED KB
	REVIEWED ET
	APPROVED MM

PROJECT NO. CA0031272	CONTROL 0001	REV. A	FIGURE 1
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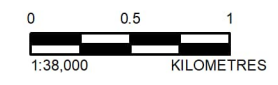
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: A16 B



SCALE 1:380,000

LEGEND

	PROJECT AREA (PROPERTY LIMIT)
	VISUAL CONFIRMATION LOCAL STUDY AREA (LSA)
	HIGHWAY
	LOCAL ROAD
	EXISTING TRANSMISSION LINE
	WATERCOURSE
	WATERBODY



NOTE(S)
 1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
 1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
 2. PROPERTY BOUNDARY PROVIDED BY KINROSS, AUGUST 2024.
 3. ROADS INFORMATION PROVIDED BY KINROSS, AUGUST 2022.
 4. AERIAL IMAGERY PROVIDED BY KINROSS (SCENE DATE: SEPTEMBER 2022).
 5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

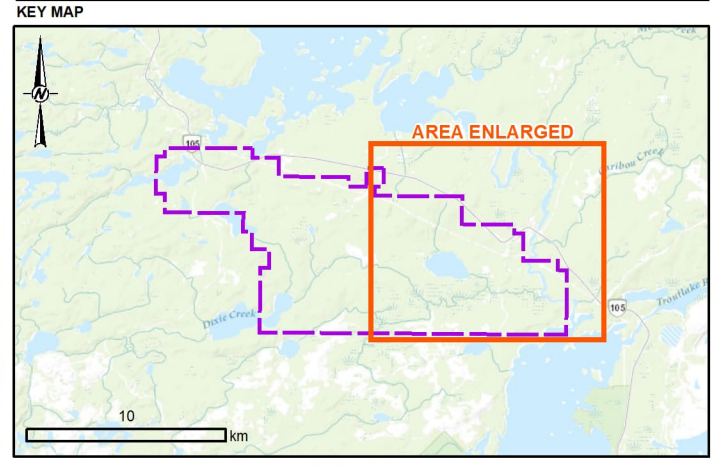
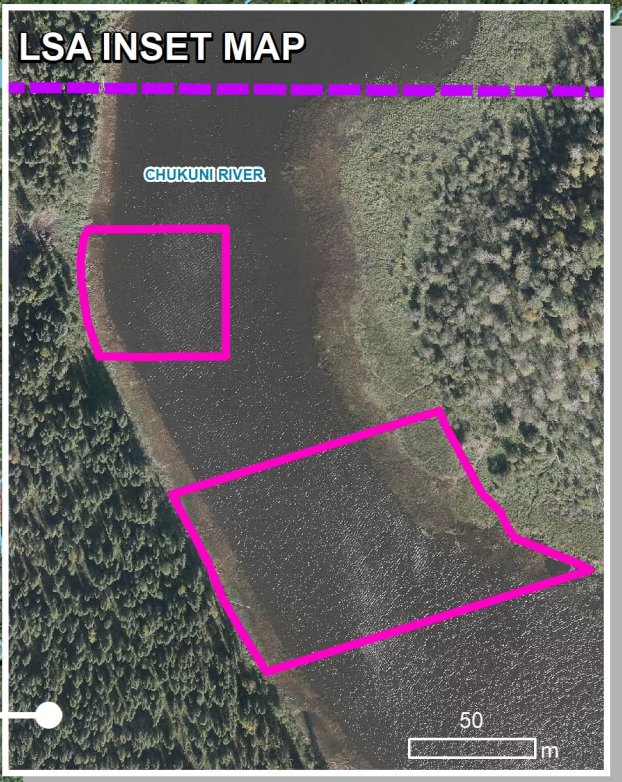
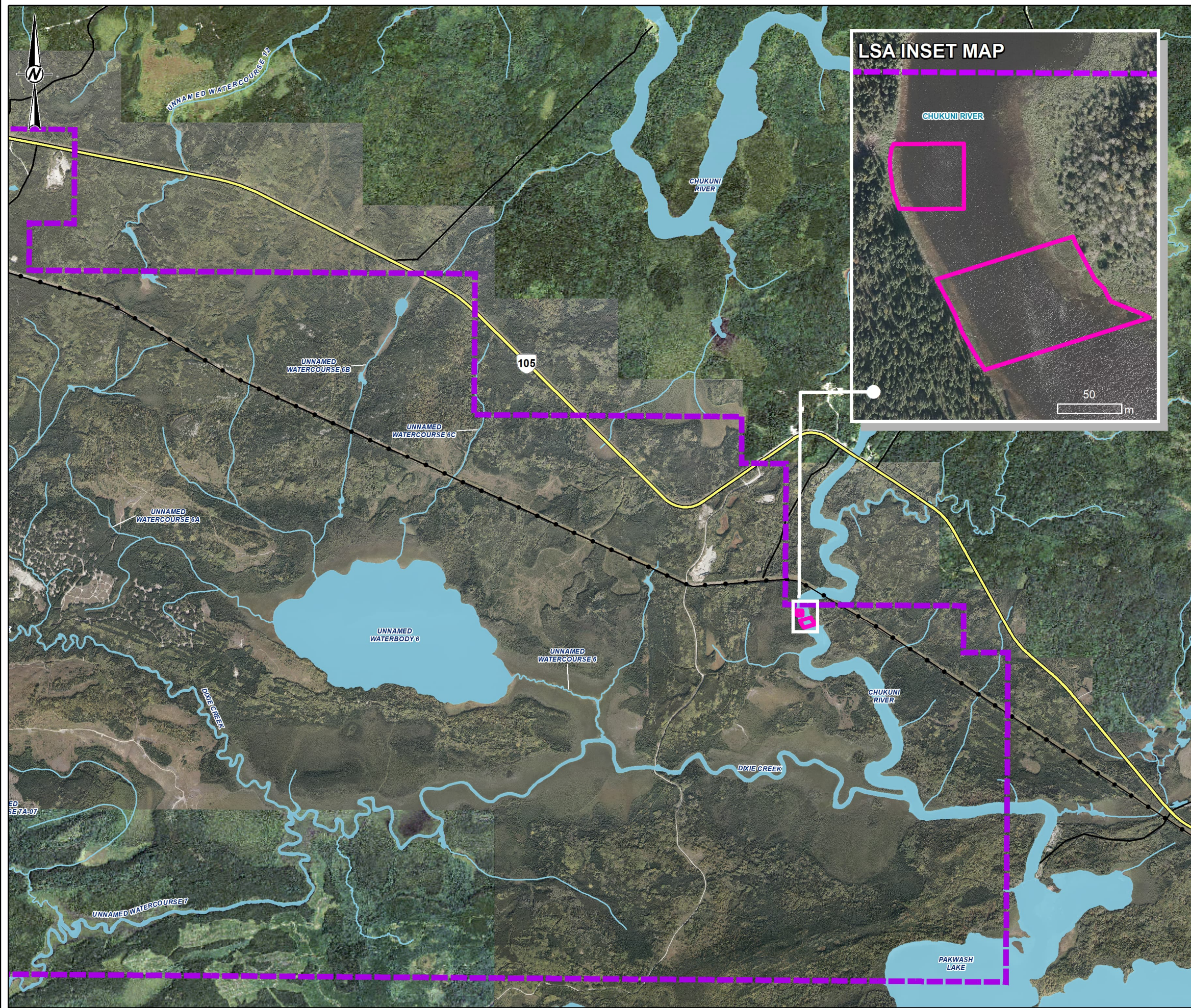
CLIENT	
GREAT BEAR RESOURCES LTD.	
PROJECT	
GREAT BEAR PROJECT	
TITLE	
STUDY AREA (WEST PART)	
CONSULTANT	YYYY-MM-DD 2025-07-14
DESIGNED	---
PREPARED	KB
REVIEWED	ET
APPROVED	MM

PROJECT NO. CA0031272 CONTROL 0001 REV. A FIGURE 2a

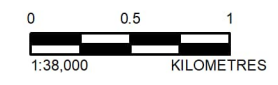
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: A36 B

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- LEGEND**
- PROJECT AREA (PROPERTY LIMIT)
 - VISUAL CONFIRMATION LOCAL STUDY AREA (LSA)
 - HIGHWAY
 - LOCAL ROAD
 - EXISTING TRANSMISSION LINE
 - WATERCOURSE
 - WATERBODY



- NOTE(S)**
1. ALL LOCATIONS ARE APPROXIMATE
- REFERENCE(S)**
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
 2. PROPERTY BOUNDARY PROVIDED BY KINROSS, AUGUST 2024.
 3. ROADS INFORMATION PROVIDED BY KINROSS, AUGUST 2022.
 4. AERIAL IMAGERY PROVIDED BY KINROSS (SCENE DATE: SEPTEMBER 2022).
 5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES LTD.

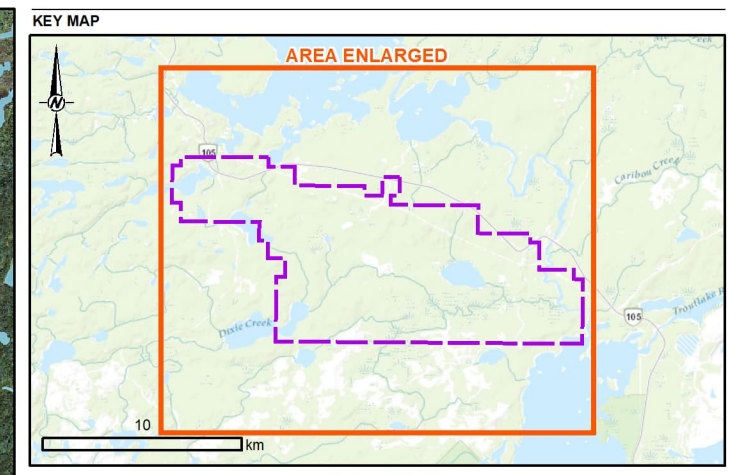
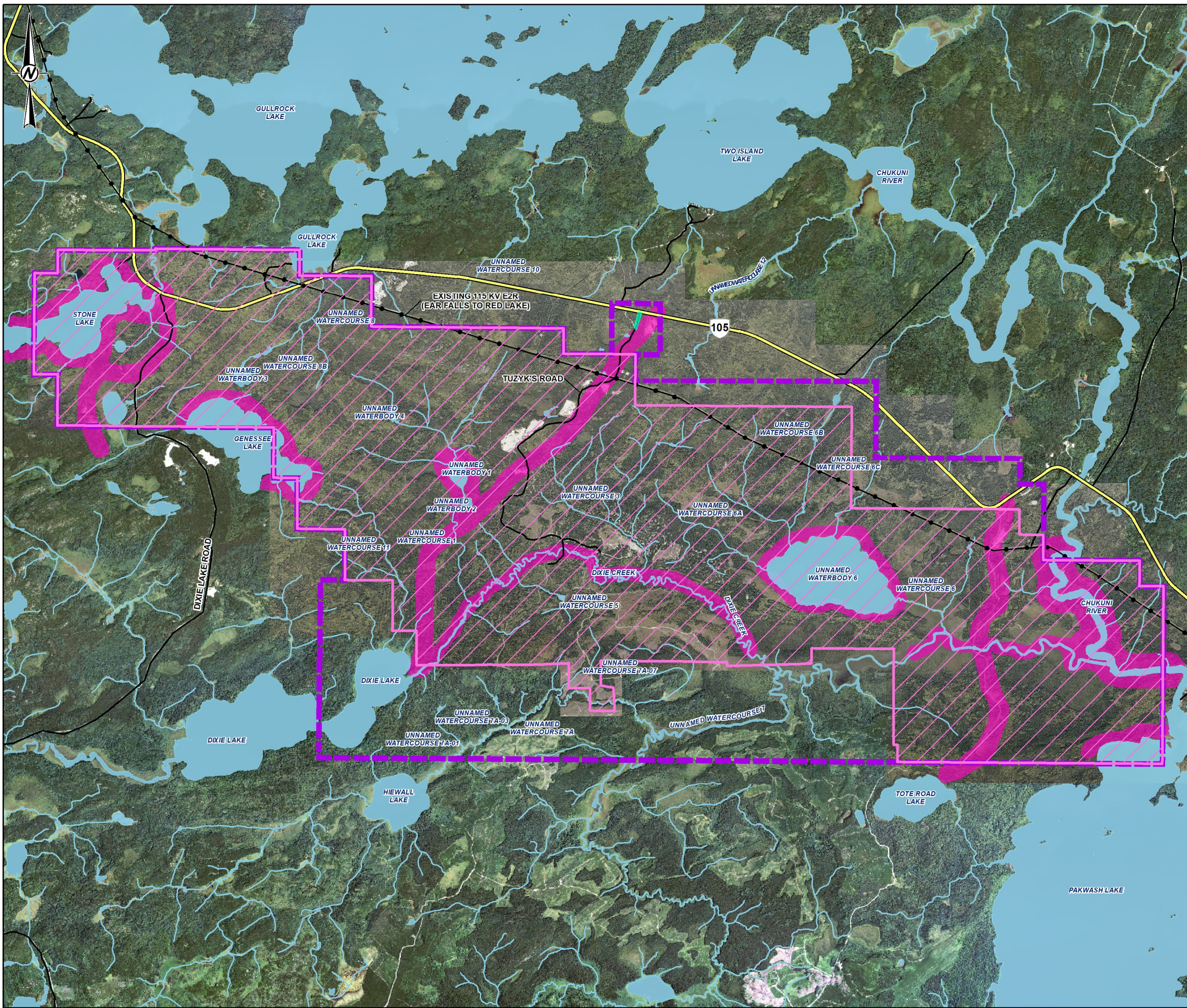
PROJECT
GREAT BEAR PROJECT

TITLE
STUDY AREA (EAST PART)

CONSULTANT	YYYY-MM-DD	2025-07-14
	DESIGNED	---
	PREPARED	KB
	REVIEWED	ET
	APPROVED	MM

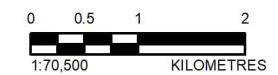
PROJECT NO. CA0031272	CONTROL 0001	REV. A	FIGURE 2b
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: A16 B



SCALE 1:380,000

- LEGEND**
- PROJECT AREA (PROPERTY LIMIT)
 - PREVIOUS ASSESSMENT: NORTHWEST ARCHAEOLOGICAL ASSESSMENTS LTD. (P236-0208-2022)
 - PREVIOUS ASSESSMENT: NORTHWEST ARCHAEOLOGICAL ASSESSMENTS LTD. (P236-0232-2023)
 - PREVIOUS ASSESSMENT: NORTHWEST ARCHAEOLOGICAL ASSESSMENTS LTD. (P236-0222-2023)
 - HIGHWAY
 - LOCAL ROAD
 - EXISTING TRANSMISSION LINE
 - WATERCOURSE
 - WATERBODY



- NOTE(S)**
1. ALL LOCATIONS ARE APPROXIMATE
- REFERENCE(S)**
1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
 2. PROPERTY BOUNDARY PROVIDED BY KINROSS, AUGUST 2024.
 3. ROADS INFORMATION PROVIDED BY KINROSS, AUGUST 2022.
 4. AERIAL IMAGERY PROVIDED BY KINROSS (SCENE DATE: SEPTEMBER 2022).
 5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES LTD.

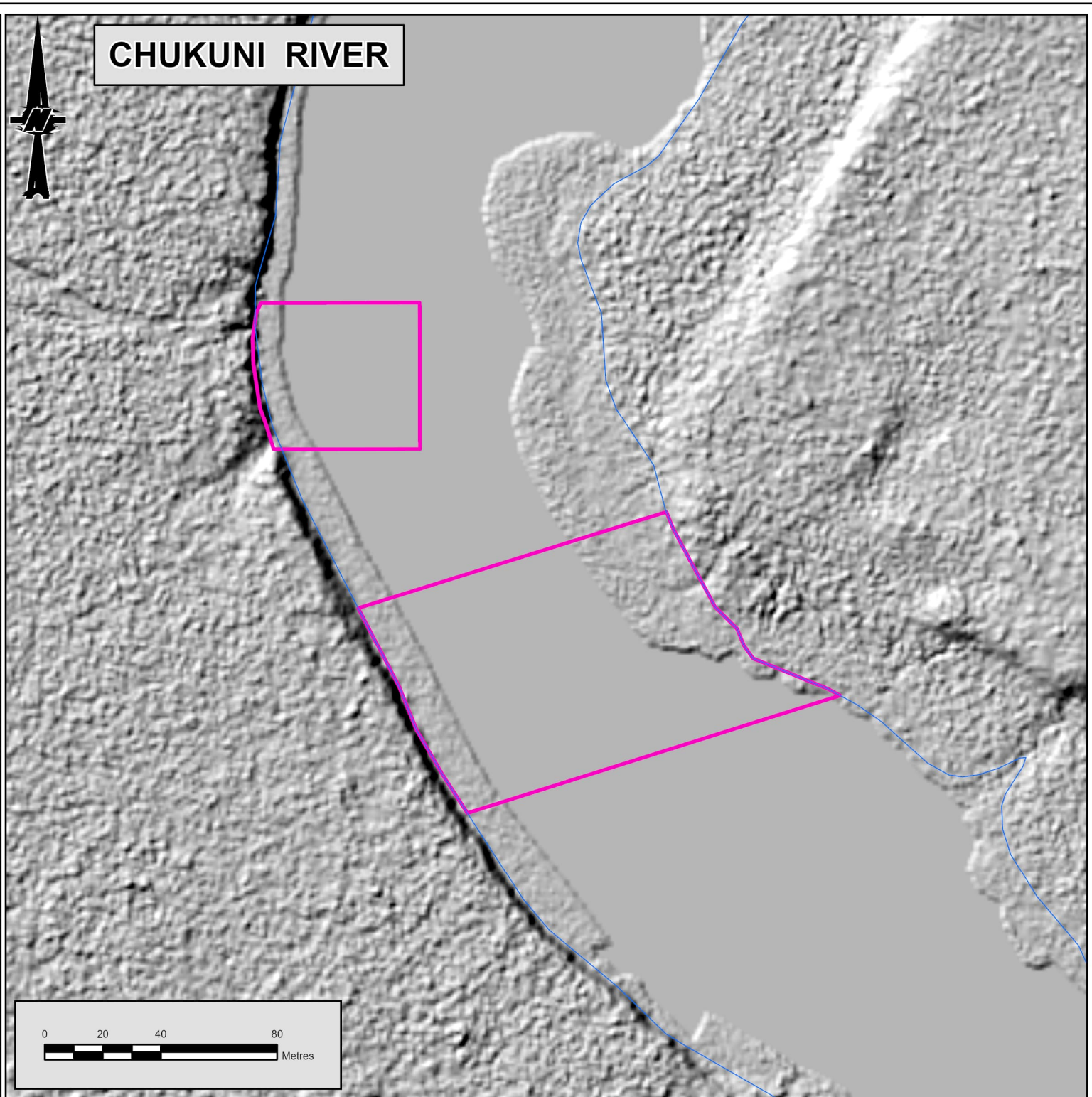
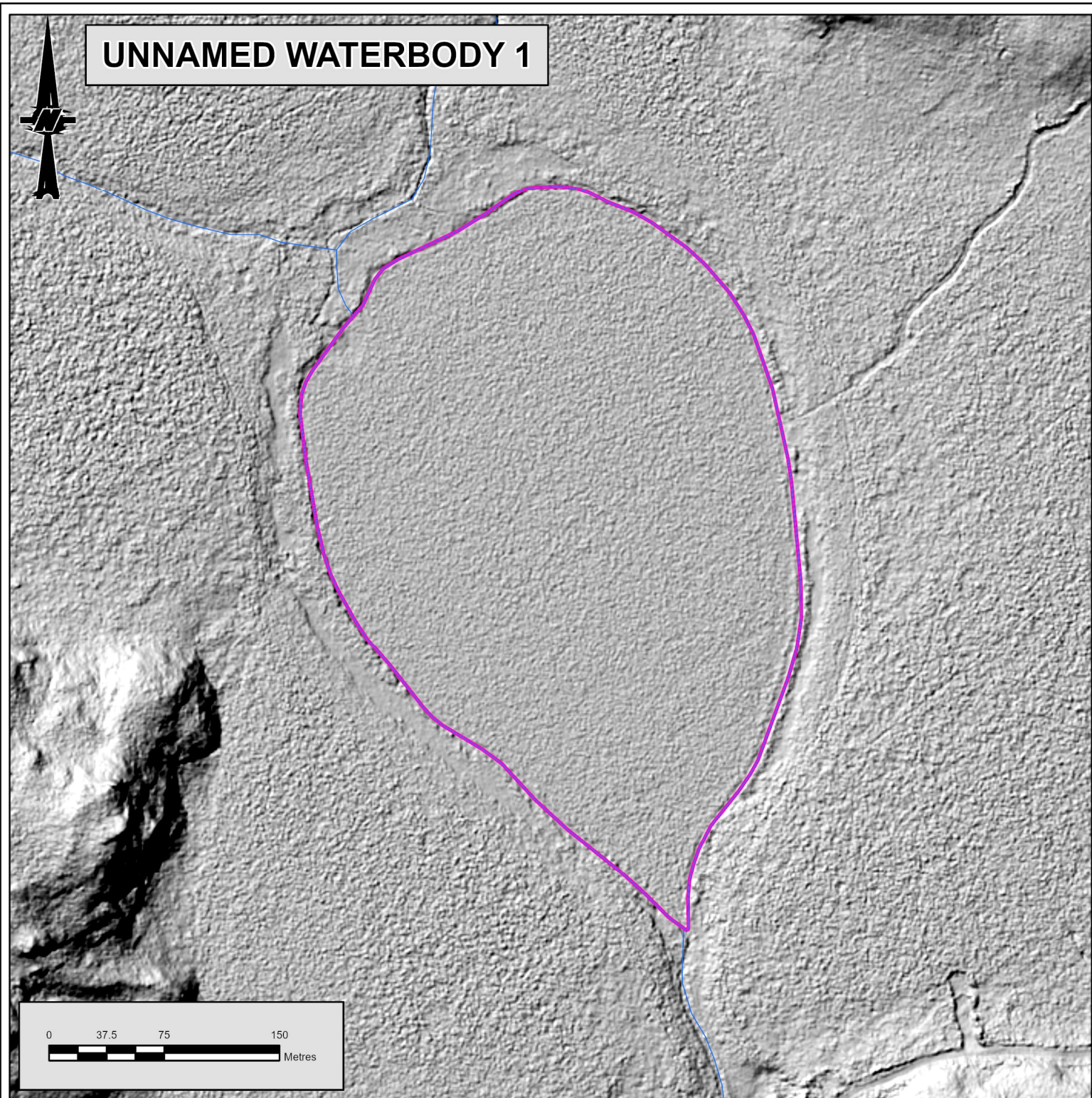
PROJECT
GREAT BEAR PROJECT

TITLE
PREVIOUS ASSESSMENTS

CONSULTANT	YYYY-MM-DD	2025-07-15
	DESIGNED	---
	PREPARED	KB
	REVIEWED	ET
	APPROVED	MM

PROJECT NO.	CONTROL	REV.	FIGURE
CA0031272	0001	A	5

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 IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: A36 B



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- LEGEND**
- VISUAL CONFIRMATION LOCAL STUDY AREA (LSA)
 - ~ WATERCOURSE
 - WATERBODY OUTLINE

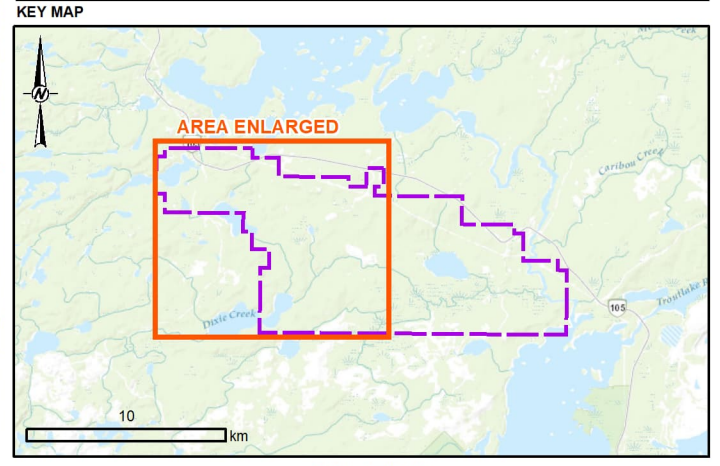
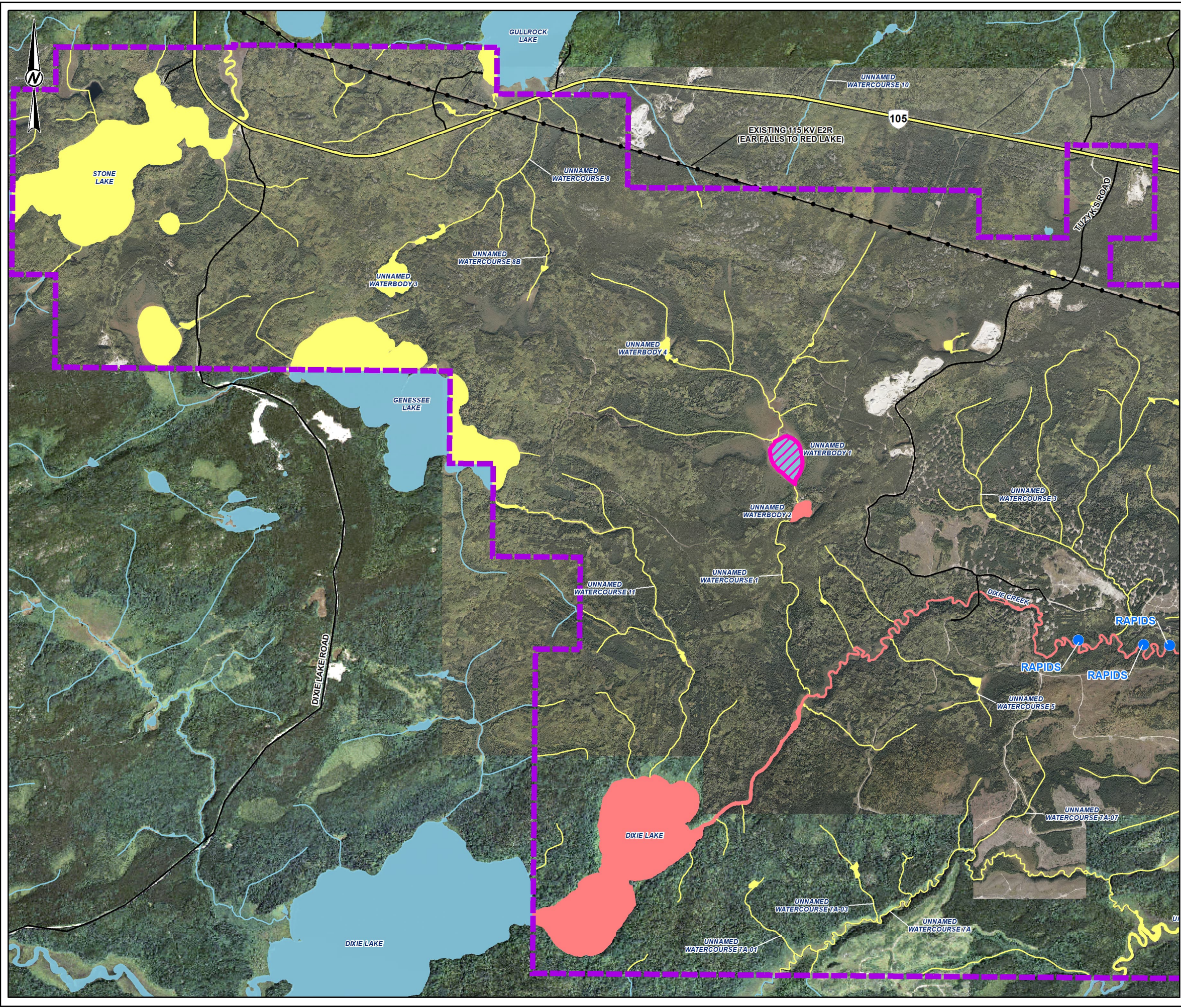
NOTE(S)
 1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
 1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
 2. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N
 3. LIDAR SURVEY CONDUCTED ON SEPTEMBER 29, 2022. DATA PROVIDED BY GREAT BEAR RESOURCES ON FEBRUARY 2, 2023.

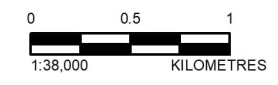
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PROJECT GREAT BEAR PROJECT	
TITLE LIDAR BARE EARTH TOPOGRAPHY HILLSHADE AND LOCAL STUDY AREAS	
CONSULTANT	YYYY-MM-DD 2025-07-15
DESIGNED	---
PREPARED	KB
REVIEWED	ET
APPROVED	MM
PROJECT NO. CA0031272	CONTROL 0001
REV. A	FIGURE 7



IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A4(5)



- LEGEND**
- PROJECT AREA (PROPERTY LIMIT)
 - RAPIDS
 - VISUAL CONFIRMATION LOCAL STUDY AREA (LSA) CONDUCTED - NO FURTHER ASSESSMENT REQUIRED
 - MARINE ARCHAEOLOGICAL POTENTIAL - FURTHER ASSESSMENT REQUIRED
 - LOW MARINE ARCHAEOLOGICAL POTENTIAL - NO FURTHER ASSESSMENT REQUIRED
 - HIGHWAY
 - LOCAL ROAD
 - EXISTING TRANSMISSION LINE
 - WATERCOURSE
 - WATERBODY



NOTE(S)
 1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
 1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
 2. PROPERTY BOUNDARY PROVIDED BY KINROSS, AUGUST 2024.
 3. ROADS INFORMATION PROVIDED BY KINROSS, AUGUST 2022.
 4. AERIAL IMAGERY PROVIDED BY KINROSS (SCENE DATE: SEPTEMBER 2022).
 5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
GREAT BEAR RESOURCES LTD.

PROJECT
GREAT BEAR PROJECT

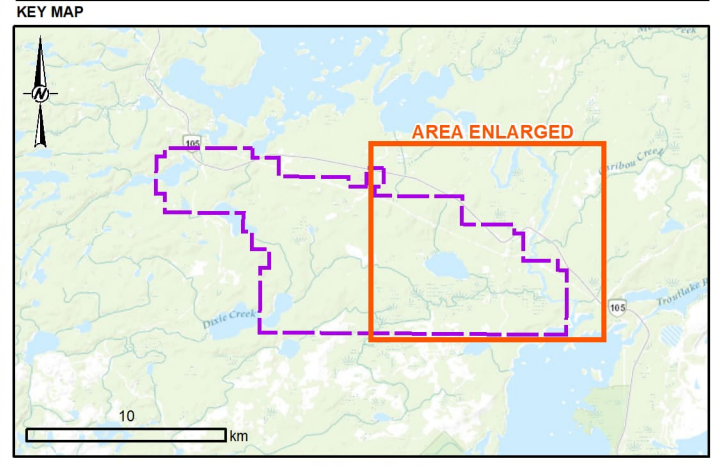
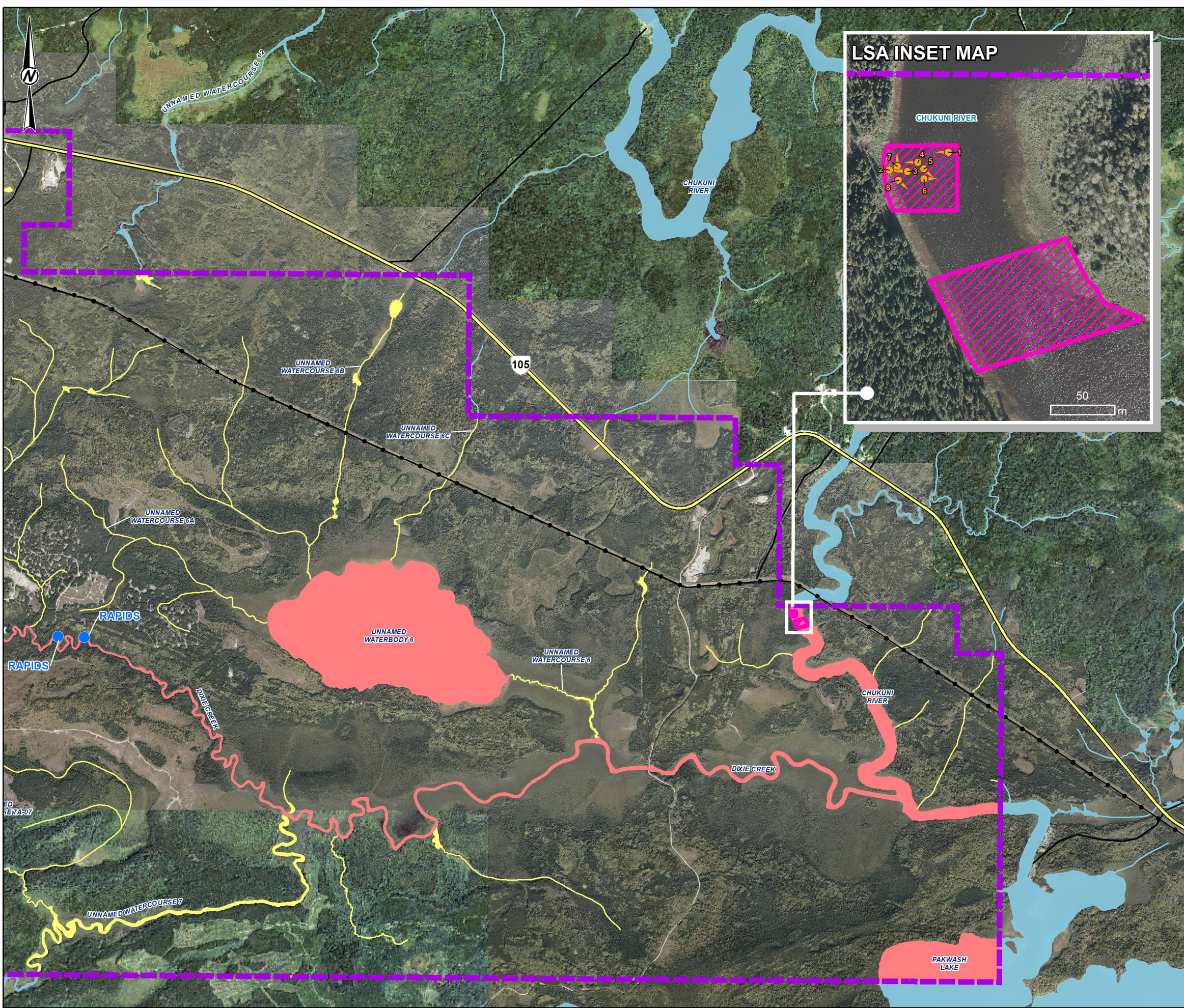
TITLE
ASSESSMENT RESULTS (WEST PART)

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	DESIGNED	---
	PREPARED	KB
	REVIEWED	ET
	APPROVED	MM

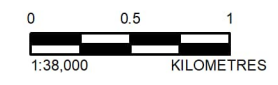
PROJECT NO. CA0031272 CONTROL 0001 REV. A FIGURE 8a

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: A3S B



- LEGEND**
- PROJECT AREA (PROPERTY LIMIT)
 - RAPIDS
 - PHOTO LOCATIONS (LSA INSET MAP) – LABELLED WITH ID AND INDICATING PHOTO TAKING DIRECTION
 - VISUAL CONFIRMATION LOCAL STUDY AREA (LSA) CONDUCTED - NO FURTHER ASSESSMENT REQUIRED
 - MARINE ARCHAEOLOGICAL POTENTIAL - FURTHER ASSESSMENT REQUIRED
 - LOW MARINE ARCHAEOLOGICAL POTENTIAL - NO FURTHER ASSESSMENT REQUIRED
 - HIGHWAY
 - LOCAL ROAD
 - EXISTING TRANSMISSION LINE
 - WATERCOURSE
 - WATERBODY



NOTE(S)
 1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
 1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO
 2. PROPERTY BOUNDARY PROVIDED BY KINROSS, AUGUST 2024.
 3. ROADS INFORMATION PROVIDED BY KINROSS, AUGUST 2022.
 4. AERIAL IMAGERY PROVIDED BY KINROSS (SCENE DATE: SEPTEMBER 2022).
 5. COORDINATE SYSTEM: NAD 1983 UTM ZONE 15N

CLIENT
 GREAT BEAR RESOURCES LTD.

PROJECT
 GREAT BEAR PROJECT

TITLE
ASSESSMENT RESULTS (EAST PART)

CONSULTANT	YYYY-MM-DD	2025-07-14
	DESIGNED	---
	PREPARED	KB
	REVIEWED	ET
	APPROVED	MM



PROJECT NO. CA0031272 CONTROL 0001 REV. A FIGURE 8b

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: A36 B

Appendix A
Proposed Designs



