

ATTACHMENT 31

LTWP Archaeological Assessment

Archaeological Impact Assessment and Mitigation

City of Iqaluit Long-Term Water Project, Iqaluit, Nunavut
NU Class 2 Permit 2024-052A

City of Iqaluit

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Type of Report: Final
Project Number: 60707448

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March 2025
Original Report

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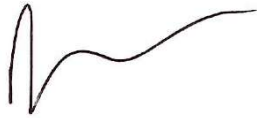
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Quality Information

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Revision History

Rev #	Revision Date	Revised By:	Revision Description
0			
1			
2			

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Executive Summary

The City of Iqaluit' Engineering and Capital Projects department (the City) has contracted AECOM Canada ULC. (AECOM) to undertake an Archaeological Impact Assessment and Mitigation (AIA) for their Long-Term Water Project (the Project). The Project is required to support Iqaluit's growth as the amount of natural replenishment from Lake Geraldine's watershed has been inadequate to refill the reservoir resulting in three water shortage emergencies in 2018, 2019 and 2022. Currently the City has been addressing low water levels in Lake Geraldine by pumping water from the nearby Apex River and Unnamed Lake. The goal of the Project is to eliminate future water shortage emergencies and make the overall water distribution system more resilient to external factors. The Project consists of raw water extraction and conveyance infrastructure and storage between Unnamed Lake and Lake Geraldine. As planned the Project consists of a pipeline, access road, new reservoir, several borrow pits and quarries and an equipment laydown area.

The AIA was completed between September 15 to 18, 2024 consisting of pedestrian survey of all areas that may be impacted by the development of the Project under Nunavut Archaeological Class 2 Permit 2024-052A issued by the Government of Nunavut, Department of Culture and Heritage (GN-CH) to Brent Murphy of AECOM. The AIA consisted of areas that were not covered in the 2023 survey including portions of the pipeline right of way, access road, borrow areas and laydown area as well as revisiting the previously recorded sites KkDn-54, KkDn-55, KkDn-56 and KkDn-58 with KkDn-54 and 58 being mitigated as they will be impacted by the Project. Robert Qimirpik from Iqaluit assisted with the survey and site interpretation and mitigation.

As a result of the AIA, the City of Iqaluit has fulfilled the requirements of the current program to identify and mitigate potential impacts to archaeological resources resulting from the development of the Project. However, if it recommended that any changes to the Project plans be reviewed by an archaeologist and further AIA studies may be required.

Project Personnel

Field Studies

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Archaeological Assistant	Robert Qimirpik

Analysis and Reporting

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Table of Contents

	page
Executive Summary	4
Project Personnel.....	5
Table of Contents	6
1. Introduction	8
2. Physical and Cultural Setting.....	9
2.1 Environmental Context	9
2.2 Cultural Setting.....	9
2.2.1 Arctic Small Tool Tradition (4,200 BP to 2,800 BP).....	10
2.2.2 Dorset Culture (2,500 BP to 600 BP).....	10
2.2.3 Thule (800 BP to 400 BP).....	11
2.2.4 Ethnographic Setting	11
2.2.5 Contemporary Settings	12
2.2.6 Heritage Studies	12
3. Methodology.....	18
3.1 Field Inventory and Assessment	18
3.2 Reporting and Conservation.....	19
3.3 Community Consultation and Inuit Qaujimajatuqangit.....	19
4. Archaeological Impact Assessment Results	20
4.1 City of Iqaluit Long-Term Water Project	20
4.2 Archaeology Sites	21
4.2.1 KkDn-54	21
4.2.2 KkDn-55	21
4.2.3 KkDn-56	21
4.2.4 KkDn-58	22
5. Recommendations	23
6. References.....	24
7. Photos.....	30
8. Figures.....	38
Appendix.....	45

List of Figures

Figure 1: Site Location and Components	39
Figure 2: Planned Developments and Survey Tracks.	40
Figure 3: Site Sketch, KkDn-54.....	41
Figure 4: Feature 1 Map, KkDn-54.	42
Figure 5: Site Sketch, KkDn-58.....	43
Figure 6: Feature 1 Map, KkDn-58.	44

List of Tables

Table 1: Previously Recorded Archaeological Sites within 10 km of the Project.	13
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1. Introduction

Between September 15 and 18, 2024 AECOM Canada ULC (AECOM) conducted an Archaeological Impact Assessment (AIA) on behalf of the City of Iqaluit's (the City) Department of Public Works and Engineering to support the City's Long-Term Water Project (the Project) located both within the City's municipal limits and to the northwest of Unnamed Lake (Figure 1). All required fieldwork was completed under Nunavut Archaeological Class 2 Permit 2024-052A issued by the Government of Nunavut, Department of Culture and Heritage (GN-CH) to Brent Murphy of AECOM.

The Project is required to support Iqaluit's growth as the amount of natural replenishment from Lake Geraldine's watershed has been inadequate to refill the reservoir resulting in three water shortage emergencies in 2018, 2019 and 2022. Currently the City has been addressing low water levels in Lake Geraldine by pumping water from the nearby Apex River and Unnamed Lake. The goal of the Project is to eliminate future water shortage emergencies and make the overall water distribution system more resilient to external factors. The Project consists of raw water extraction and conveyance infrastructure and storage between Unnamed Lake and Lake Geraldine. As planned, this includes a new reservoir that is connected to Lake Geraldine, a pipeline from Unnamed Lake to the new reservoir, an access road, four borrow pits, two quarries, an equipment laydown area and upgrades to the existing bridge on the Road to Nowhere (Figure 1).

The 2024 AIA included pedestrian survey of all areas that will be impacted by the Project that were not previously assessed for related projects (Murphy 2019b, 2023 and Youell 2020) and revisiting the previously recorded sites, KkDn-54, KkDn-55, KkDn-56 and KkDn-58. The 2024 AIA included portions of the water pipeline at the inlet of Unnamed Lake and along the road, the north end of the proposed reservoir, the access road to the new reservoir, borrow pits along the road to Unnamed Lake, quarry areas, laydown area and around the bridge on the Road to Nowhere. Sites KkDn-54 and KkDn-58 were also mitigated as they will be impacted by the construction of the Project.

The objective of the AIA was to inventory archaeological sites within the study area and to assess the potential impacts of the various project components on archaeological resources. This report presents a summary of background information including the environmental and cultural context of the AIA (Section 2), describes its methodology and objectives (Section 3), provides the results of the AIA (Section 4), and provides recommendations for continued management of archaeological resources in relation to the Project (Section 5).

2. Physical and Cultural Setting

2.1 Environmental Context

Baffin Island is part of the Canadian Shield, an old erosion surface of Precambrian rocks. The Project area is mostly Precambrian bedrock with some areas of littoral and nearshore sediments and intertidal sediments that consist of well-sorted gravels deposited as beaches, gravely sand, sand, and silty sand.

The Project is within the Northern Arctic Ecozone and is one of the coldest and driest landscapes in Canada and considered a polar desert. Snow falls in all months of the year and may persist on the ground for at least 10 of those (September to June). The landscape is predominantly covered in exposed bedrock or glacial moraines and marine deposits. Waters are generally frozen and ice lasts through the summer, however in the south, open water is more common in the summer, but pack ice persists offshore. Permafrost is continuous, and soils are generally Cryosolic (EFC n.d.a).

The cold, dry climate, high winds, and lack of soil create conditions unsuitable for most vegetation except for sparse and dwarfed plants. Herb and lichen communities dominate. This Ecozone is a major breeding ground for migratory birds including snow geese, brant, Canada geese, eider, and long-tailed ducks (EFC n.d.b). Mammals include Peary and barren-ground caribou, muskox, wolf, arctic fox, polar bear, arctic hare, and brown and collared lemmings.

Iqaluit occurs in the Meta Incognita Ecoregion. Mean annual temperature is -8.6°C with summer mean of 5.6°C and winter mean of -23.6°C. Mean annual precipitation of 361.2 mm (Government of Canada 2024). Having a low-arctic ecoclimate, the landscape is dominated by shrub tundra vegetation with species such as dwarf birch, willow, northern Labrador tea, Dryas, and Vaccinium. Tall dwarf birch, willow, and alder occur on warm microsites and wet sites are dominated by willow and sedges.

2.2 Cultural Setting

Archaeology is the study of human history through material culture remains with the goal to describe these cultures and the events responsible for the creation and deposition of the artifacts and features at given archaeological sites. Archaeologists study the material remains and their context to understand the nature and age of occupations at a site.

Prehistoric archaeological sites include artifacts and features typically characterized by modified bone and stone, and stone structures that predate the arrival of Europeans. Historic sites are those structures, features, and objects of European influence that date to the earliest contacts with the Europeans but can also represent more recent activity of greater than 50 years.

Based on the context, sites less than 50 years in age may represent modern land use sites and are identified as cultural markers of recent occupation and activity.

Archaeological resources are non-renewable and are vulnerable to alteration, damage, and destruction by development activities. In the study of archaeology, it is the context of the artifacts, features, and sites and their spatial and temporal relationships that is most important for interpretation. Archaeologists interpret the significance of a site based on an understanding of the landscape, the relationship between archaeological sites, and in some cases between occupations within a single site. Therefore, removal or mixing of cultural material or sites negatively affects their interpretative value.

2.2.1 Arctic Small Tool Tradition (4,200 BP to 2,800 BP)

Archaeological materials in the Project area represent human activity after the ice sheet receded from Baffin Island about 5,000 years before present (BP). Soon afterward the Arctic was colonized by peoples whose cultural representation archaeologists refer to as the Arctic Small Tool tradition (ASTt) (Maxwell 1985) with Southwestern Baffin Island, Melville Peninsula, Southampton Island, and the northern portion of Quebec being considered core areas of ASTt Culture Development (Desrosiers 2005:193).

The ASTt represents a widespread archaeological culture that covers all of the Canadian Arctic as well as parts of Alaska and Greenland. Early ASTt is typically thought to date between approximately 4,200 and 2,800 BP (McGhee 1990) and includes the Denbigh Flint Complex in northern Alaska, the Independence I Culture of the Canadian High Arctic, the Inuvik Phase, the Pre-Dorset Culture in Arctic Canada, and the Sarqaq Culture in Greenland. The ASTt is named and characterized by a toolkit of lithic artifacts that are finely made and smaller than tools of similar function and age from elsewhere in North America. These include microblades and microcores, burins, graters, small side and end scrapers, side and end blades, and bipointed (arrow) and triangular (harpoon) projectile points (Wright 1995); organic artifacts include harpoon heads crafted of bone, antler and ivory, as well as needles that are oval in cross section with round eyes created by drilling (Maxwell 1984; Bielawski 1988). ASTt structures are generally round to oval with a central hearth feature (Bielawski 1988), and subsistence is thought to have involved more emphasis on terrestrial mammals like caribou than is seen in subsequent groups. Baffin Island was first inhabited by ASTt peoples approximately 4,200 BP, supported by archaeological sites identified at Mansel Island, Lake Harbour, Frobisher Bay, and Pond Inlet (Desrosiers 2005:193). In Alaska, Early ASTt appears to have developed into the cultures of the Norton tradition while in Canada it developed into the Late ASTt or the Dorset Culture. The regions of Southwestern Baffin Island, Melville Peninsula, Southampton Island, and northern Quebec are considered the central regions of Pre-Dorset and Dorset cultural development (Desrosiers 2005:193).

2.2.2 Dorset Culture (2,500 BP to 600 BP)

The Dorset Culture of the Canadian Arctic may be best known for miniature carvings; however, they appear to have had more successful adaptation technologies to the conditions of the north than did preceding ASTt cultures from which it developed. The Dorset are defined by technological changes associated with a greater focus on sea ice hunting of marine mammals. This reliance on sea mammals may have resulted from the onset of a period of colder temperatures that drove caribou further the south in winter (Coltrain et al 2004). However, recent evidence suggests that, in areas with a paucity of sea mammals, both along the coast and at inland sites, caribou remained the primary subsistence resource (Howse 2008; Milne et al 2012).

The Dorset culture is subdivided into early, middle, and late periods according to a typological sequence of harpoon head design. The early and middle periods are also distinguished by the presence of tip-fluted lithic points (Park and Stenton 1998; Plumet and Lebel 1997), while the late period is marked by proliferating use of native copper and meteoric iron from sources in the Coppermine River area and at Greenland's Cape York, respectively (Jolicœur 2021), as well as increasing frequency of small bone/antler/ivory carvings characterized by detailed portrayals of human and animal subjects (McGhee 2001).

Dorset caribou hunting was limited to the warmer summer months when herds could be driven into vulnerable positions and speared at close range, rather than stalked with the bow and arrow (Maxwell 1984). Barren Lands Dorset sites are also located near good fishing areas and are often associated with fishing weirs (Maxwell 1984). Dorset material culture is characterized by ground and chipped slate tools, and flaked stone microblades, transverse knives, side-notched end blades and expanding end scrapers, as well as organic implements for cutting snow and stone oil lamps. An oddity of the Dorset culture is the creation of ovoid holes in wood, bone or ivory by cutting or gouging rather than the round holes created by drilling. Though circular tent rings are common during throughout this period, the long and narrow rectangular stone alignments of Dorset longhouses are distinctive

features of late period of Dorset culture that suggest periodic population aggregations on a larger scale than was previously the case (Friesen 2007).

Thule or Neo-Inuit groups entered the area during the final 200 years of the Dorset occupation. These two archaeologically distinct cultures may have coexisted, but the character of this relationship is unclear (McGhee 2001, 2009; Wright 1999)

2.2.3 Thule (800 BP to 400 BP)

The Thule tradition dates from approximately 800 to 400 BP in the Canadian Arctic and is derived from the Norton tradition in northern Alaska. More specifically, Thule grows out of the Old Bering Sea and Punuk traditions, which have numerous similarities to Thule cultural assemblages. The Thule cultural assemblages suggest subsistence based on maritime resources such as seals and whales hunted from kayaks or umiaks in open water as identified by harpoon drag floats. The large skin boats and the use of dogs to pull large sleds were other Thule innovations. Winters were spent in large communities of semi-subterranean houses, subsisting on a stored surplus typically obtained by hunting bowhead whales. The arrival of Thule into the Canadian Arctic is noted by a distinct change in a number of cultural markers from the Dorset Culture. It is unclear whether the Thule migration displaced an existing Dorset culture or if they moved into a vacuum created by an earlier decline of the Dorset. One of the main differences between the Dorset and Thule cultures was the Thule reliance on open water hunting of whales as opposed to Dorset sea mammal exploitation, which focused on sea ice hunting of seals.

The earliest Thule occupations currently recognized are on islands in the Bering Strait and exhibit an almost complete reliance on maritime resources; however, later sites demonstrate that both maritime and terrestrial resources were utilized (McGhee 1990). Climatic changes following the thirteenth century likely caused the Thule to modify their way of life into that of the various historic Inuit groups. Indicative Thule tools include a strong emphasis on ground stone tools, such as adzes and blades, rather than the flaked stone technology emphasized by the Dorset. This change in manufacturing required a reliance on slate and similar materials, rather than flakeable stone types such as chert and quartz. Other characteristic features of the Thule are semi-subterranean houses framed with wood or bone and insulated with sod, along with clear evidence for extensive use of bow and arrow technology, dogs, and dog sleds (McGhee 1984; Park and Stenton 1998).

2.2.4 Ethnographic Setting

Historic use of the Project area is identified with the 'Baffin Inuit'. This group inhabited the southern two-thirds of Baffin Island and some of the nearby islands off its shores (Kemp 1984:464). Much of the information known of the historic Thule, or Baffin Inuit, is based on Franz Boas' ethnographic recordings from the late 1800s (Boas 1964). At this time, Boas recognized seven distinct regional populations within the Baffin Inuit area who were "linked together by [bilateral] kinship and the mutual use of hunting and territory, to form larger territorial and social groupings...bands" (Kemp 1984:464). By the time of Boas' ethnography, the Baffin Inuit possessed many European goods which influenced and altered the traditional lifeways of the local groups.

European contact with the Baffin Inuit populations began in the 16th Century with the Frobisher Expedition (Kemp 1984:467), whose task it was to find the Northwest Passage (Desrosiers 2005:193). However, previously Baffin Bay had been explored by the Norse (Heinrichs 2005:191). During the 10th Century Norseman built settlements on Greenland and the Island of Newfoundland, but little evidence remains of where and how far they had actually travelled, as these same settlements collapsed during the 13th Century.

Baffin Bay was next explored and mapped by John Davis in 1587. European interaction gradually increased with the rise of European whale hunting; whaling stations began operating throughout the eastern arctic in the 1880s (Kemp 1984:466). Such whaling activities around Davis Strait originated in the 1700s, but it was not until the 1850s that all the inhabitants of the Cumberland Sound and Davis Strait regions were in contact with whalers (Kemp

1984:466). The whaling industry was eventually eclipsed by fur trapping by 1910 (Kemp 1984:474). It was also at this time that Anglican missionaries entered the region (Kemp 1984:474).

The Baffin Inuit have historically utilized a vast array of subsistence resources, including marine, terrestrial, avian, and freshwater game (Kemp 1984:467). Hunting weapons included breathing-hole harpoons that had compound elements, and single-curve bows (Kemp 1984:469). Metal, along with driftwood, antler, bone, and stone were used in the construction of these implements. In addition, Baffin Inuit technology allowed for water transportation via kayaks and umiaks, or women's boats (Kemp 1984:469); the form of the kayaks was not consistent throughout the Baffin Inuit area. Dogsleds were used as well and were the dominant method of transportation until the 1960s when snowmobiles were introduced. With these forms of transportation, the Baffin Inuit interacted with neighbouring groups such as those from northern Quebec (Kemp 1984:465). However, this interaction did not occur regularly.

The seasonal movements of the Baffin Inuit were influenced by the location of the game they were pursuing. Although they resided primarily in the coastal regions, hunting caribou resulted in traveling into the interior where certain lakes were favoured hunting locals; i.e. Nettling, Amadjuak, and Sylvia Grinnell Lakes (Kemp 1984:468). Any excess caribou meat from the interior hunts was cached at these interior locations and retrieved in times of food stress during the winter months. Dwellings also changed with the seasons with winter houses commonly being snow houses (although sometimes early Thule houses were reused) and summer dwellings being skin tents of varied forms and sizes (Kemp 1984:470). A further seasonal distinction is found in Baffin Inuit clothing; only caribou skin was used for winter clothing, and seal skin was used in addition to caribou for summer clothes (Kemp 1984:470).

2.2.5 Contemporary Settings

The location of modern-day Iqaluit has been a traditional fishing place for thousands of years; Iqaluit being Inuktitut for 'place of many fish'. In the 1940s it became the location selected by the US Air Force for the Crystal Two base to provide a stopover for refueling planes during WWII. With the presence of the Crystal Two base at Frobisher Bay, the Hudson's Bay Company moved its trading post from Ward Inlet to Apex to take advantage of the runway. The community that sprung up around that base and trading post was named Frobisher Bay by the Government of Canada.

With the construction of the Distant Early Warning (DEW) Line sites in the mid-1950s, the population of Frobisher Bay grew rapidly with both southern workers and Inuit moving to the community for work and access to government services. By 1959 the Government of Canada established permanent social services and encouraged Inuit to settle in the community. The US Air Force left Frobisher Bay in 1963 and it became an administrative and logistical centre for the eastern arctic. In 1987 the name of the community was officially changed from Frobisher Bay to Iqaluit, and in 1995 Iqaluit was chosen as the capital of Nunavut by a territory-wide referendum.

2.2.6 Heritage Studies

Professional archaeological research in the Project area started in the late 1940s with the excavations by the Smithsonian Institution at the multicomponent Crystal II and Shaymark sites (Collins 1950). These were followed by several revisits and subsequent excavation programs, as the Crystal II site was the first site where Thule and Dorset occupations could be differentiated. Many of these excavations were undertaken by researchers associated with the University of Michigan (Dekin 1967; Maxwell 1972, 1976, and 1980), and the results were widely reported by the National Museum of Canada (Taylor 1958, 1963, 1968a, and 1968b). Research continued in Silvia Grinnell Territorial Park and Frobisher Bay generally in the 1980s by the territorial archaeologists and researchers from the University of Windsor (Jacobs and Stenton 1985; Stenton 1987), and in the 1990s by the territorial archaeologists and researchers from the University of Waterloo (Park 1996, 1997; Stenton 1990a, 1991). More recently, research has included work on lithic sourcing by the University of Manitoba (Milne 2012), excavations at the Crystal II site for

the Inuit Heritage Trust (Ducharme 2016; Rast 2017) and additional research in Sylvia Grinnell Territorial Park (Prager 2021; Swayze 2024).

Consultant led research has been conducted in advance of several infrastructure related projects including marine infrastructure (Murphy 2017, 2018), municipal aggregate development, (Murphy 2019a) and to support the diversion of water into Geraldine Lake from Unnamed Lake into the Apex River (Murphy 2023; Youell 2020) and from the Apex River (Murphy 2019b).

There are 99 previously recorded sites within 10 km of the Project (Table 1). These are mostly located along the coast or along the Sylvie Grinnell River, and include 53 sites recorded as undetermined, 33 prehistoric sites, , 11 historic or historic indigenous sites, and two contemporary sites. The recorded site types include campsites (n=49), meat caches (n=18), fox traps (n=16), graves (n=3), lithic scatters (n=4), hearths (n=3), stone cairns (n=3), an inuksuk, an isolated find and a village site.

Table 1: Previously Recorded Archaeological Sites within 10 km of the Project.

Borden	Classification	Type/Features	Site Name	Permit/Reference	Distance from Project (KM)
KkDn-58	prehistoric	cairn	AECOM Site 1	Murphy 2023	Within New Reservoir
KkDn-56	undetermined	campsite; tent ring, hearth	Field Site #1	Youell 2019	0.07 from Borrow Pit 3
KkDn-54	prehistoric	cache	Apex Site 1	Murphy 2019b	0.12 from Borrow Pit 1
KkDn-55	prehistoric	cairn	Apex Site 2	Murphy 2019b	0.18 from Borrow Pit 1
KkDn-40	prehistoric	hearth box	Macdonald 2000-1	McDonald 2000	3.11 from Borrow Pit 4
KkDn-63	undetermined	cache, inuksuk		Swayze 2024	3.48 from the New Reservoir
KkDn-57	undetermined	campsite		Prager 2021	3.66 from the New Reservoir
KkDn-41	prehistoric	campsite; tent ring		McDonald 2000	from Borrow Pit 1
KkDn-68	undetermined	campsite; tent ring		Swayze 2024	3.74 from the New Reservoir
KkDn-72	undetermined	campsite; tent rings		Swayze 2024	3.78 from the New Reservoir
KkDn-69	undetermined	campsite; tent ring, caches		Swayze 2024	3.79 from the New Reservoir
KkDn-70	historic Indigenous	campsite; caches, tent rings, hearth		Swayze 2024	3.83 from the New Reservoir
KkDn-71	historic Indigenous	campsite; inuksuk, tent ring		Swayze 2024	3.92 from the New Reservoir
KkDn-53	contemporary	campsite; tent ring	Port Site 12	Murphy 2017	3.92 from the New Reservoir
KkDn-7	prehistoric	campsite; tent ring		Stenton 1985	4.01 from the Bridge
KkDn-15	undetermined	campsite; tent ring		Stenton 1990a	4.06 from the New Reservoir
KkDn-48	prehistoric	cache	Port Site 5	Murphy 2017	4.08 from the New Reservoir
KkDn-49	prehistoric	cache	Port Site 6	Murphy 2017	4.1 from the New Reservoir
KkDn-47	prehistoric	cache	Port Site 4	Murphy 2017	4.16 from the Quarry Areas

City of Iqaluit
Archaeological Impact Assessment
Long-Term Water Project

KkDn-62	historic indigenous	cache		Swayze 2024	4.18 from the New Reservoir
KkDn-13	undetermined	grave (cairn)		Stenton 1990a	4.19 from the New Reservoir
KkDn-46	prehistoric	campsite; cache	Port Site 3	Murphy 2017	4.19 from the Quarry Areas
KkDn-19	prehistoric	cache		Stenton 1991	4.2 from the New Reservoir
KkDn-44	prehistoric	campsite; stone feature, cache, cairn	Port Site 1	Murphy 2017	4.21 from the Quarry Areas
KkDn-24	undetermined	fox trap		Stenton 1991	4.21 from the New Reservoir
KkDn-42	undetermined; prehistoric	grave		Stenton 1990a, 1999	4.22 from the New Reservoir
KkDn-16	undetermined	cache		Stenton 1991	4.22 from the New Reservoir
KkDn-18	undetermined	cache		Stenton 1991	4.22 from the New Reservoir
KkDn-3	prehistoric	scatter (lithic)		Maxwell 1962	4.23 from the New Reservoir
KkDn-25	undetermined	cache		Stenton 1991	4.23 from the New Reservoir
KkDn-17	undetermined	fox trap		Stenton 1991	4.23 from the New Reservoir
KkDn-1	prehistoric	campsite; house (semi-subterranean), tent ring, cache, scatter (lithic), hearth	Crystal II	Collins 1950; Maxwell 1962; Milne 2012; Taylor 1958; Stenton 1998; Rast 2016	4.24 from the New Reservoir
KkDn-20	undetermined	fox trap		Stenton 1991	4.24 from the New Reservoir
KkDn-45	prehistoric	campsite; tent ring, cache	Port Site 2	Murphy 2017	4.26 from the Quarry Areas
KkDn-23	undetermined	campsite; shelter		Stenton 1991	4.27 from the New Reservoir
KkDn-22	undetermined	campsite; tent ring		Stenton 1991	4.28 from the New Reservoir
KkDn-21	undetermined	fox trap		Stenton 1991	4.29 from the New Reservoir
KkDn-52	prehistoric	cairn, lithic scatter	Port Site 11	Murphy 2017	from the Quarry Areas
KkDn-2	prehistoric	campsite; tent ring	Shaymark	Dekin 1967; Maxwell 1962, 1966, 1967, 1970, 1971; Stenton 1987; 1999	4.3 from the New Reservoir
KkDn-14	undetermined	campsite; tent ring		Stenton 1990a	4.32 from the New Reservoir
KkDn-26	undetermined	inuksuk		Stenton 1991	4.32 from the New Reservoir
KkDn-51	prehistoric	tent ring, campsite	Port Site 9	Murphy 2017	4.38 from the Quarry Areas
KkDn-50	prehistoric	lithic scatter	Port Site 8	Murphy 2017	4.38 from the Quarry Areas
KkDn-37	undetermined	cache		Stenton 1991	4.38 from the New Reservoir
KkDn-27	undetermined	cache		Stenton 1991	4.39 from the New Reservoir

City of Iqaluit
Archaeological Impact Assessment
Long-Term Water Project

KkDn-28	prehistoric, indigenous historic	campsite; tent ring		Stenton 1991	4.41 from the New Reservoir
KkDn-29	indigenous historic	campsite; tent ring, scatter (bone)		Stenton 1991	4.43 from the New Reservoir
KkDn-30	prehistoric, indigenous historic	cache, scatter (bone)		Stenton 1991	4.49 from the New Reservoir
KkDn-33	undetermined	campsite; tent ring, cache		Stenton 1991	4.54 from the New Reservoir
KkDn-36	prehistoric	campsite; tent ring		Stenton 1991	4.54 from the New Reservoir
KkDn-34	prehistoric, indigenous historic	campsite; tent ring, cache, grave (cairn)		Stenton 1991	4.55 from the New Reservoir
KkDn-66	undetermined	hearth	514 Hearth	Swayze 2024	4.57 from the New Reservoir
KkDn-31	prehistoric	campsite; house, scatter (bone), tent ring, stone feature (alignment)		Park 1996, 1997; Stenton 1991	4.59 from the New Reservoir
KkDn-38	prehistoric	scatter (lithic)		Stenton 1991	4.59 from the New Reservoir
KkDn-32	undetermined	hearth		Stenton 1991	4.6 from the New Reservoir
KkDn-59	undetermined	fox trap	434 fox trap	Swayze 2024	4.61 from the New Reservoir
KkDn-65	undetermined	fox trap		Swayze 2024	4.61 from the New Reservoir
KkDn-60	undetermined	fox trap	435 fox trap	Swayze 2024	4.61 from the New Reservoir
KkDn-35	prehistoric, indigenous historic	campsite; tent ring, cache		Stenton 1991	4.64 from the New Reservoir
KkDn-64	undetermined	cache	348	Swayze 2024	4.68 from the New Reservoir
KkDn-39	indigenous historic	isolated find	MK-1	Park 1996	4.82 from the New Reservoir
KkDn-61	modern Indigenous	campsite; tent rings		Swayze 2024	4.85 from the New Reservoir
KkDn-12	historic	wood feature (structure), cut wood, drum (fuel), komatik		Stenton 1990a	5.49 from the New Reservoir
KkDn-67	undetermined	fox trap		Swayze 2024	5.51 from the New Reservoir
KkDn-79	undetermined	cache		Swayze 2024	5.77 from the New Reservoir
KkDn-78	undetermined	campsite; shelter, tent ring/blind, fox trap, caches		Swayze 2024	5.81 from the New Reservoir
KkDn-82	undetermined	grave		Swayze 2024	5.88 from the New Reservoir
KkDn-81	undetermined	fox trap		Swayze 2024	5.91 from the New Reservoir
KkDn-77	undetermined	campsite; dwelling, caches		Swayze 2024	5.92 from the New Reservoir

KkDn-76	undetermined	fox trap, cache		Swayze 2024	5.95 from the New Reservoir
KkDn-75	undetermined	fox trap		Swayze 2024	6.03 from the New Reservoir
KkDn-80	undetermined	campsite; tent rings, caches		Swayze 2024	6.04 from the New Reservoir
KkDn-74	undetermined	cache		Swayze 2024	6.08 from the New Reservoir
KkDn-73	undetermined	fox trap		Swayze 2024	6.12 from the New Reservoir
KkDn-83	undetermined	campsite; tent rings		Swayze 2024	6.31 from the New Reservoir
KkDn-6	prehistoric	campsite; tent ring, cache		Jacobs 1981	7.08 from the Bridge
KkDn-43	prehistoric	campsite; fox trap, scatter (lithic)	PE Site 5	Hamilton 2009	7.26 from the New Reservoir
KkDn-11	undetermined	fox trap		Stenton 1990a	7.49 from the New Reservoir
KkDn-10	prehistoric	campsite; tent ring, scatter (lithic)	PE Site 4	Stenton 1990a; Hamilton 2009	7.74 from the New Reservoir
KkDn-9	contemporary	campsite; tent ring		Stenton 1990a	8.02 from the New Reservoir
KkDn-8	indigenous historic, contemporary	campsite; tent ring, fox trap		Stenton 1990a	8.12 from the New Reservoir
KkDo-25	indigenous historic, contemporary	campsite; tent ring, cache, hearth, stand (kayak), grave		Stenton 1990a	8.31 from the New Reservoir
KkDo-31	prehistoric	stone feature, scatter (lithic)	PE Site 3	Hamilton 2009	8.41 from the New Reservoir
KkDo-24	undetermined	campsite; tent ring, toy (tent ring)		Stenton 1990a	8.42 from the New Reservoir
KkDo-22	undetermined	fox trap		Stenton 1990a	8.45 from the New Reservoir
KkDo-21	undetermined	campsite; tent ring		Stenton 1990a	8.54 from the New Reservoir
KkDo-20	indigenous historic, contemporary	campsite; tent ring, cache, foundation (rectangular)		Stenton 1990a	8.54 from the New Reservoir
KkDo-19	indigenous historic, contemporary	campsite; tent ring, stand (kayak), cache		Stenton 1990a	8.62 from the New Reservoir
KkDo-18	undetermined	cache		Stenton 1990a	8.63 from the New Reservoir
KkDo-23	undetermined	fox trap		Stenton 1990a	8.68 from the New Reservoir
KkDo-3	prehistoric, indigenous historic	village; house (semi-subterranean), tent ring, cache, hearth, grave		Park 1998, 1999; Stenton 1984, 1990a, 1990b, 1991, 1992, 1994, 1995	8.8 from the New Reservoir
KkDo-28	undetermined	campsite; tent ring		Stenton 1990a	8.88 from the New Reservoir
KkDo-26	prehistoric, indigenous	campsite; tent ring		Stenton 1990a	9.03 from the New Reservoir

		historic, contemporary		
KkDo-34	undetermined	campsite; caches, tent rings, dwellings, kayak stand	Swayze 2024	9.04 from the New Reservoir
KkDo-33	undetermined	campsite; dwellings, caches, kayak stand	Swayze 2024	9.18 from the New Reservoir
KkDo-17	undetermined	cache, stand (kayak)	Stenton 1990a	9.28 from the New Reservoir
KkDo-27	undetermined	fox trap	Stenton 1990a	9.31 from the New Reservoir
KkDo-16	prehistoric, indigenous historic	campsite; tent ring	Stenton 1990a	9.58 from the New Reservoir
KkDo-15	undetermined	campsite; tent ring, scatter (refuse)	Stenton 1990a	9.84 from the New Reservoir

3. Methodology

3.1 Field Inventory and Assessment

All archaeological fieldwork in Nunavut requires a valid Class 1 or Class 2 Nunavut Archaeology Permit issued by GN-CH. The objective of an AIA field investigation is to identify archaeological sites, document their location and characteristics, and provide data to be used in the development of recommendations for mitigation or avoidance. Inventory and assessment techniques follow established practices; when appropriate, they consist of the following:

- Visual examination of the Project area to determine the presence of surficial features such as stone cache pits, house or tent rings, standing or collapsed buildings, and exposed Precontact cultural materials such as stone tools and tool making debris;
- Visual examination of bedrock exposures or gravels for Precontact quarrying activity;
- Subsurface testing comprised of shovel tests in contexts with elevated archaeological potential where surface visibility is limited by ground cover, sediment deposition and/or soil formation, with shovel test size, depth, stratigraphy, content and location documented;
- Documentation of the location (GPS coordinates), nature, size, and complexity of each identified site; and,
- Documentation of the structure, content and context of individual site features to assist in identifying site type and age, and to provide the information required to develop a mitigation program.

In this instance, absence of substantive ground cover, sediment deposition or soil formation ensured high levels of surface visibility, and shovel testing was not necessary. Instead, the assessment was comprised exclusively of pedestrian survey spaced at 30 m transects generally and 10 m for detailed surface examination. These transects extended across the entirety of the Project footprint and 100 m buffer to ensure the identification of any sites which may be impacted by the Project.

During an AIA, all sites and related features that are recorded or revisited are evaluated based on perceived heritage resource value and community cultural value, as well as the predicted impact from the proposed development. Community input plays an important role in the evaluation of site value, and the inclusion of members of the local community on a field crew allows in-field discussions regarding site significance.

Determination of archaeological resource value informs selection of mitigative options when these are required to offset potential impacts. Mitigative measures such as documentation and collection of artifacts and features or controlled excavation are only considered when site avoidance is not possible. In areas of no sediment deposition or soil formation, surface mapping and collection of artifacts and features may satisfy regulatory requirements for mitigation. In cases where excavation is required recommendations may include a controlled mitigative plan specifying the number of square metres to be excavated and suggesting locations for excavation units and/or blocks. Overall, mitigative options in relation to archaeological resource value can be generally described as follows:

- For sites with low archaeological resource value, documentation and collection at the time of the field assessment;
- For sites with high archaeological resource value, avoidance, if feasible;
- For sites with high archaeological resource value where avoidance is not feasible, mitigative excavation.

In all instances, a management plan for required mitigative measurements relative to the proposed construction schedule will be discussed with the Project team. Results of the archaeological assessment, site mitigation and mitigative recommendations and updates, are also provided in written submissions to the GN-CH as required by the archaeological permit and discussed with the Territorial Archaeologist.

3.2 Reporting and Conservation

Analysis of collected artifacts includes consultation with a professional conservator regarding specific conservation requirements. With any such considerations in mind, cleaning, cataloguing, identification, inventory and description of each individual piece is undertaken for inclusion in the final permit report.

Specific site locational information as recorded by GPS is provided to the GN-CH for archival purposes and is used for mapping each identified site but is not included in the final version of the report. Archaeological site maps and photographs are prepared as digital files. All identified sites are documented on appropriate site inventory forms.

Based on the collected cultural material and site observations, recommendations regarding final site management and disposition relative to future development activity are developed. Upon completion of the fieldwork and analysis of results, a final permit report is prepared on behalf of the proponent for review by the Territorial Archaeologist. This report includes a project description, environmental setting, cultural and archaeological context for the project area, field methodology, and the results of the field reconnaissance, as well as the recommendations based on these results and an evaluation of research methods.

3.3 Community Consultation and Inuit Qaujimajatuqangit

Community consultation for the project to date has included notification letters sent to both the City and the Amaruq Hunters and Trappers Association (HTA) with our AIA permit application. The permit application was also reviewed by the Inuit Heritage Trust (IHT) through the internal review process of the GN-CH. A copy of the final non-technical report will also be submitted to the City, the Amaruq HTA and the IHT for their files. The incorporation of Inuit Qaujimajatuqangit (IQ) (or Inuit traditional knowledge) into the archaeology program for the project will include a literature review of available information such as the Nunavut Planning Commission website and informal interviews with Iqaluit community members involved in the Project.

Frobisher Bay, in general, is known to have several camping and fishing sites as well as major travel routes and has been rated as having a high intensity level of Inuit land use (INAC 2018). The portion of the Davis Strait along the coast of the Lemieux Islands is used by Iqaluit hunters for caribou and polar bear hunting and they hunt caribou and wolves during the summer in the coastal region of Hall Peninsula and Blunt Peninsula. Walrus and ringed seals are hunted year-round in this area while bearded seals and harp seals are hunted mostly during the summer around Loks Land. Iqaluit residents hunt for harbour seals at Cyrus Field Bay, Lupton Channel, Beare Sound, and the north-west and east coasts of Lok Lands in conjunction with waterfowl hunting (NPC 2018). This area has also been identified as a polar bear denning area (NPC 2018).

Closer to the Project the mouth of the Sylvie Grinnell River has been a popular fish harvesting location for thousands of years, the word Iqaluit meaning 'place of many fish' in Inuktitut. The project area itself has been reported as having been lightly used for hunting and camping activities.

4. Archaeological Impact Assessment Results

The AIA field program for the Project included pedestrian survey and surface examination of the footprint for all areas that were not previously examined with a 100 m buffer. As a result of the AIA no sites were newly recorded, sites KkDn-55 and KkDn-56 were revisited and sites KkDn-54 and KkDn-58 were mitigated.

4.1 City of Iqaluit Long-Term Water Project

The AIA for the Project consisted of pedestrian and visual inspection of the new reservoir proposed to be connected to Lake Geraldine, a pipeline from Unnamed Lake to the new reservoir, an access road, four borrow pits, two quarries, an equipment laydown area and upgrades to the existing bridge on the Road to Nowhere. The assessment of all Project components included a 100 buffer (Figure 2). The pedestrian survey consisted of walking 30 m transects, where the topography permitted, and 10 m transects along landforms that were interpreted as having potential for yet unrecorded archaeological resources. Within the Project area these included higher well drained areas that offered good visibility of the surrounding areas, well drained benches along drainages and lakes and boulders fields.

The new reservoir will impact 25.75 ha to the east of Lake Geraldine and include excavating the bedrock to join three existing small lakes into a single reservoir and building berms to contain water (Figure 1). The area is undisturbed consisting of rolling hills surrounding the small lakes (Photo 1). Most of the reservoir footprint was examined during the 2023 AIA (Murphy 2023) that resulted in the recording of the stone feature site KkDn-58 and a contemporary land use site. The 2024 AIA included pedestrian survey of areas along the north and south end of the revised reservoir footprint (Figure 2) and the mitigation of site KkDn-58 as it will be impacted by the construction of the Project. KkDn-58 is discussed in more detail in Section 4.2 below.

The access road to the new reservoir is approximately 1 km long and connects the proposed reservoir with the Road to Nowhere just south of Road to Nowhere Park (Figure 2). As planned the access road will travel through the two potential quarry areas and two small lakes (Figure 2; Photo 2). The access road right of way (ROW) and buffers are undisturbed and only a small portion was examined during the 2023 AIA.

There are two potential **quarry areas** located along the access road to the new reservoir just off the Road to Nowhere (Figure 2). The northern quarry is 1.74 ha and the southern is 1.2 ha and both are small bedrock hills (Photo 3 and 4). There are several modern inuksuit on the northern quarry area and a modern camp and fire pit between the two quarry areas. The proposed **laydown area** is 2.57 ha located off the access road and Road to Nowhere (Figure 2). It is located in a relatively flat undisturbed area between the potential quarry sites and the Road to Nowhere Park (Photo 5).

The proposed **pipeline ROW** is 4.31 km long between Unnamed Lake to the New Reservoir (Figure 2). For the most part, the pipeline ROW parallels the road to Unnamed Lake to the Iqaluit Shooting Range and then crosses the Apex River to the new reservoir (Figure 2; Photo 6). The ROW is mostly undisturbed with sections of disturbed areas through the Iqaluit Shooting Range, and borrows for the road to Unnamed Lake. The 2024 AIA focused on the ROW along the road as the remaining ROW was examined in 2023 (Figure 2). The previously recorded site KkDn-54, a stone cache site, along the Apex River will be impacted by the construction of the pipeline and was mitigated during the 2024 AIA. KkDn-54 is discussed in more detail in Section 4.2 below.

There are four potential **borrow pits** that were examined for the Project, all of which have been used as borrow sources previously (Figure 2). The largest, Borrow Pit 1 is 8.09 ha and surrounds the Iqaluit Shooting Range which is disturbed and includes the end of the Road to Nowhere (Photo 7). The 2024 AIA focused on the undisturbed areas in the buffer of Borrow Pit 1 and several modern tent rings and fire pits observed. As planned Borrow Pit 2 is 0.32 ha of an existing borrow and consist mostly of sand (Photo 8), similarly Borrow Pit 3 is located on the road to

Unnamed Lake and is larger at 1.19 ha of a previously used borrow (Photo 9). Borrow Pit 4 is located near the terminus of the road at Unnamed Lake (Photo 10).

The **bridge crossing** of the Apex River on the Road to Nowhere was also examined during the 2024 AIA in case the existing bridge needs to be upgraded or replaced for the construction of the Project. The study area is 0.33 ha and includes previous disturbance from the construction of the road and installation of the bridge (Photo 11). Within the 100 m buffer, the east side of the road has been heavily disturbed and used as a borrow and currently used for camping. The west side of the road includes the Road to Nowhere Park on the south side of the Apex River, the north side is undisturbed. .

4.2 Archaeology Sites

Four previously recorded sites, KkDn-54, KkDn-55, KkDn-56 and KkDn-58, were revisited for the AIA and sites KkDn-54 and KkDn-58 were mitigated as they will be impacted by the Project. Mitigation included documenting the stone features through photography and detailed mapping and then subject to staged dismantling and controlled excavation of any soils that were present.

4.2.1 KkDn-54

KkDn-54 is a prehistoric stone feature site that was recorded in 2019 for the Apex Water Supply Project (Murphy 2019b) consisting of a single stone meat cache located along the Apex River in a small exposed boulder field (Figure 3; Photo 12 and 13). KkDn-54 is 7 m from the proposed pipeline ROW and will therefore be impacted by the Project. The feature was recorded as being 130 cm by 180 cm and constructed with at least 45 stones (Murphy 2019b; Figure 4). The feature was dismantled by removing the boulders at the top of the feature and no cultural material observed or collected. Once the mitigation was complete the boulders were returned partially filling in the cache. KkDn-54 is interpreted as a stone meat cache that was created by removing boulders in a natural boulder field to create a recession that was then used to store meat with boulders placed on top to keep animals out of it.

4.2.2 KkDn-55

KkDn-55 is a prehistoric stone feature site that was recorded in 2019 for the Apex Water Supply Project (Murphy 2019b) and revisited for the current Project in 2023 (Murphy 2023). KkDn-55 consists of two stone cairns on a slightly raised beach within the Apex River floodplain. The cairns consist of 20+ stones, 150 to 180 cm in diameter and 3 m apart. KkDn-55 is located 117 m south of the centreline of the proposed pipeline ROW and will not be impacted by the Project.

KkDn-55 has interpretive value and considered to be of local significance. Avoidance of KkDn-55 is recommended. If it cannot be avoided, it is recommended that preconstruction mitigation be undertaken consisting of detailed mapping of the stone feature, dismantling of the feature, and mitigative excavations.

4.2.3 KkDn-56

KkDn-56 is a campsite that was recorded along the access road to Unnamed Lake in 2019 for the City of Iqaluit 2019 Water Supplementation Project - Unnamed Lake to Apex River (Youell 2020). The site was described as an undisturbed tent ring and hearth of undetermined age and was revisited for this Project in 2023 (Murphy 2023). The 2023 revisit determined that the site had been completely disturbed and did not have any interpretive value (Murphy 2023). The site area is close to Borrow Pit 3 and was examined as part of the 2024 AIA. **KkDn-56 has been completely disturbed and is thought to have limited interpretive value. Therefore, not further work is recommended.**

4.2.4 KkDn-58

KkDn-58 is a prehistoric stone feature site consisting of a stone cairn located on a height of land within the footprint of the new reservoir (Figure 5). The site was recorded during the 2023 AIA for the Project (Murphy 2023) and described as consisting of 10 boulders in a diameter of 1.25 m and was somewhat dispersed (Photo 14). As KkDn-58 is located within the proposed new reservoir it will be impacted by the Project and was therefore mitigated. The feature was dismantled and no cultural material observed or collected (Photo 15; Figure 6). KkDn-58 is interpreted as a stone cairn that was constructed on a height of land possibly for navigation.

5. Recommendations

The AIA conducted under Nunavut Archaeologist Permit 2024-052A assessed all portions of the Project for archaeological resources which may be affected by any planned development. The AIA included pedestrian survey of all areas that may be impacted by the development of the Project. This consisted of areas that were not covered in the 2023 survey including portions of the pipeline ROW, access road, borrow areas and laydown area as well as the mitigation of sites KkDn-54 and 58 that will be impacted by the construction of the Project and revisiting sites KkDn-55 and 56.

As a result of the AIA the previously recorded sites KkDn-54 and 58 have been mitigated and site KkDn-56 has been completely disturbed and does not have any remaining interpretive value and, therefore, no further work is recommended. KkDn-55 has interpretive value and considered to be of local significance. Avoidance of KkDn-55 is recommended. If it cannot be avoided, it is recommended that preconstruction mitigation be undertaken consisting of detailed mapping of the stone feature, dismantling of the feature, and mitigative excavations. Robert Qimirpik from Iqaluit assisted with the survey and site interpretation and mitigation.

As a result of the AIA, the City of Iqaluit has fulfilled the requirements of the current program to identify potential impacts to archaeological resources resulting from the development of the Project. However, if it recommended that any changes to the Project plans be reviewed by an archaeologist and further AIA studies may be required.

The field methods employed during this AIA are described in the permit for Class 2 Nunavut Archaeologist Permit 2024-52A issued to Brent Murphy of AECOM, and in Section 3 of this report. These methods included pedestrian survey and inspection of surface exposures throughout all portions of the Project. As such, opportunities for buried or obscured archaeological resources and associated areas suitable for subsurface testing were not identified during the assessment.

The field methodology met the objectives of the AIA for the Project, and the results are commensurate with what is considered typical and expected given the location and the environment of the study area. All recommendations are subject to review by staff of the Department of Culture and Heritage

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7. Photos



Photo 1: View northwest of New Reservoir with existing water pipeline.



Photo 2: View northwest along proposed access road to the new reservoir.



Photo 3: View southwest of quarry area with northern quarry area to the left of the photo.



Photo 4: View north from southern quarry to north quarry on the access road ROW.



Photo 5: View northeast from quarry area overlooking the laydown and road to Unnamed Lake.



Photo 6: View northeast of pipeline ROW on the west side of the road from Borrow Pit 3.



Photo 7: View south from Borrow 1 showing disturbance, the end of the Road to Nowhere.



Photo 8: View north of Borrow Pit 2 with road in the background.



Photo 9: View northeast of Borrow Pit 3 from Pipeline ROW.



Photo 10: View south of Borrow Pit 4.



Photo 11: View southwest of Apex River crossing on Road to Nowhere.



Photo 12: View north east of KkDn-54 being mapped with the current water intake in the background.



Photo 13: Detail of KkDn-54 prior to mitigation.



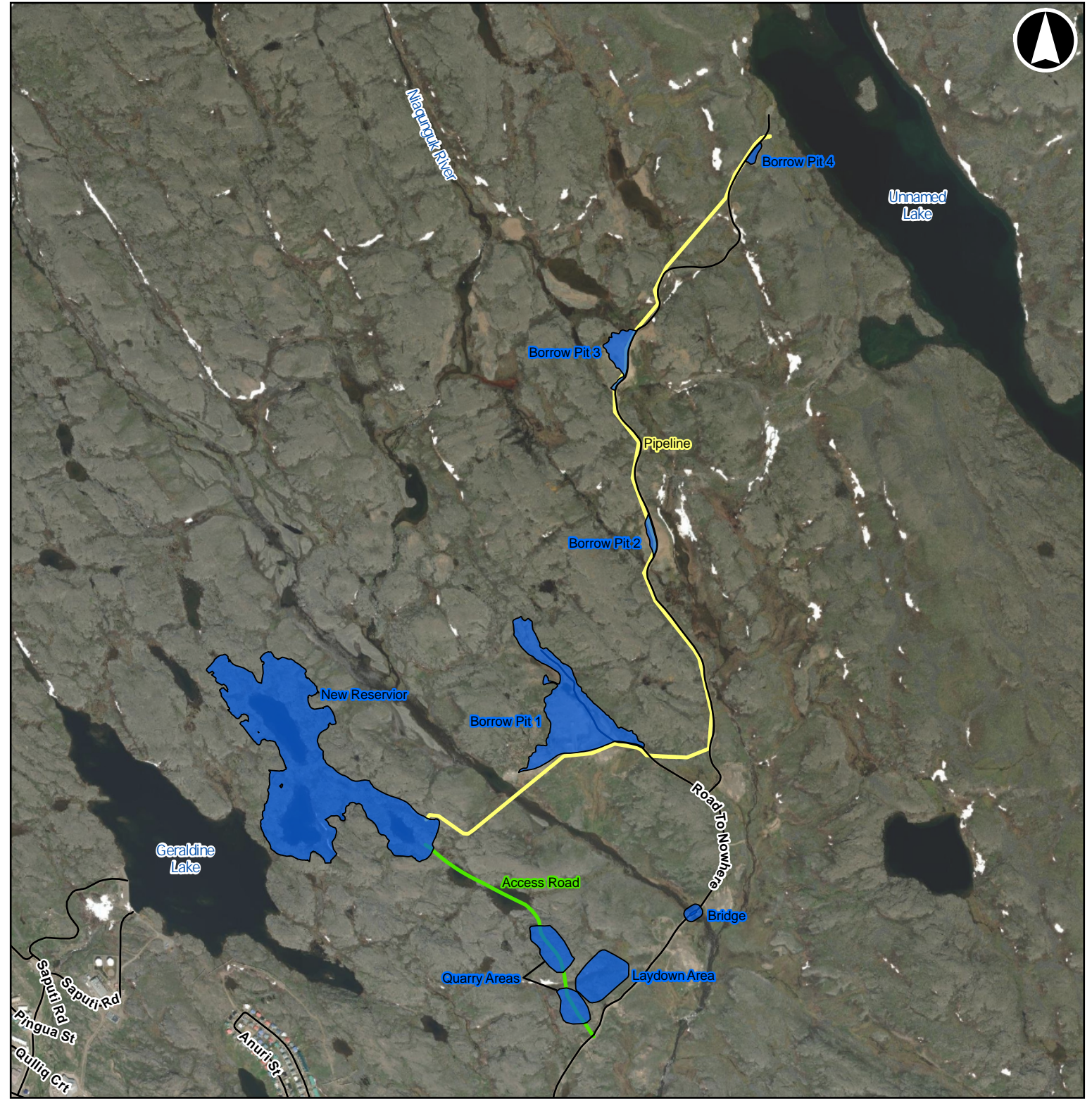
Photo 14: View north of KkDn-58 before mitigation.



Photo 15: Detail of partial excavation of KkDn-58.

8. Figures

All figures pertaining to the Archaeological Impact Assessment are provided within the following pages.

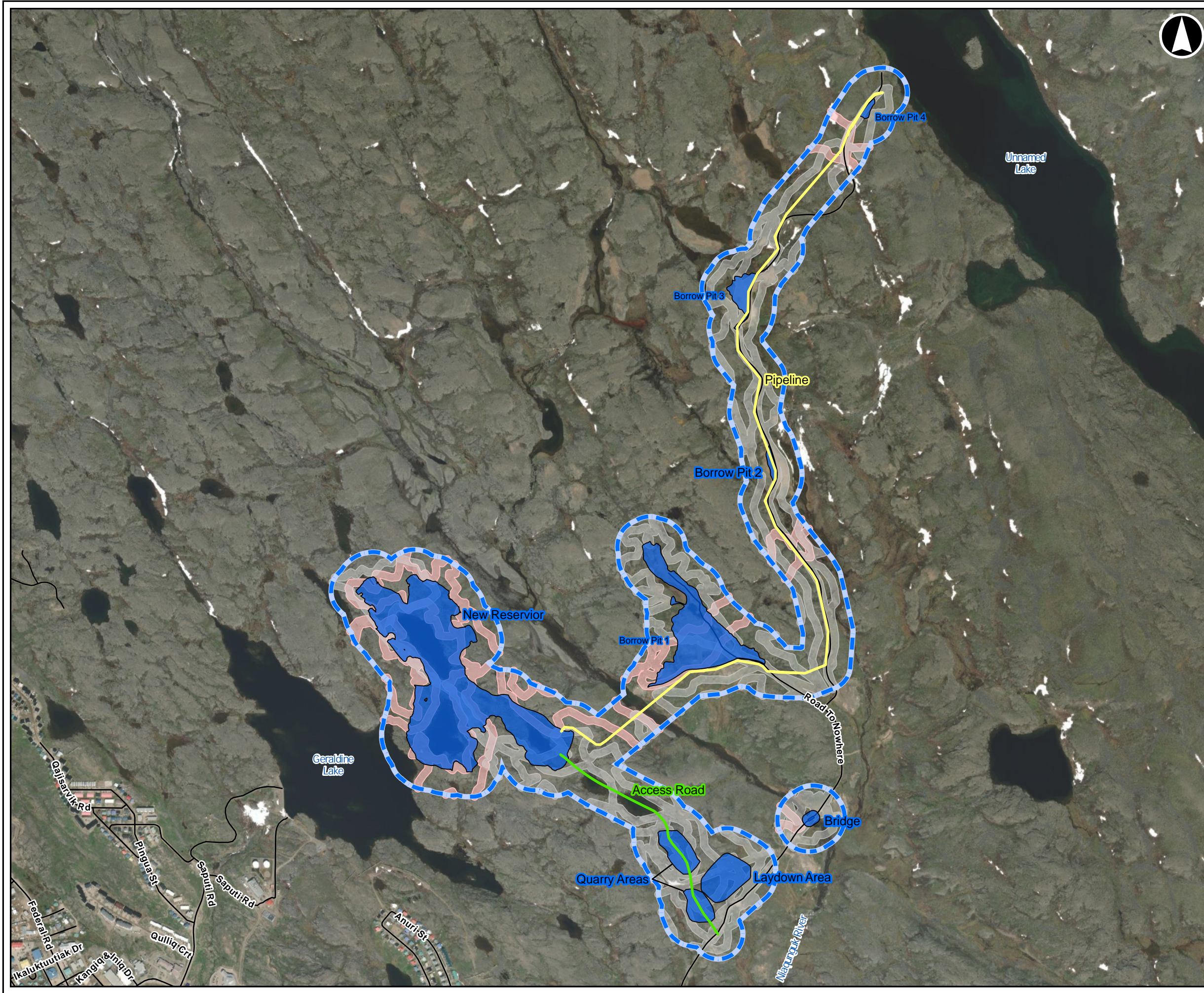


Legend

- Proposed Infrastructure Areas
- Proposed Access Road
- Proposed pipeline
- Road



CITY OF IQALUIT LONG TERM WATER PROJECT	
SITE LOCATION AND COMPONENTS	
0 200 400 600 800 1,000 Metres	
Datum: NAD 1983 UTM Zone 19N	
December 2024	1:20,000 *when printed 85x11"
PN#: 60707448	
Figure 1	
AECOM	
<small>Data Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NRCAN, Parks Canada, Meiar This drawing has been prepared for the use of AECOM's client and may not be used, reproduced or relied upon by third parties, except as agreed by AECOM and its client, as required by law or for use by governmental reviewing agencies. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that modifies this drawing without AECOM's express written consent.</small>	

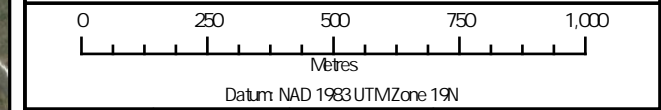


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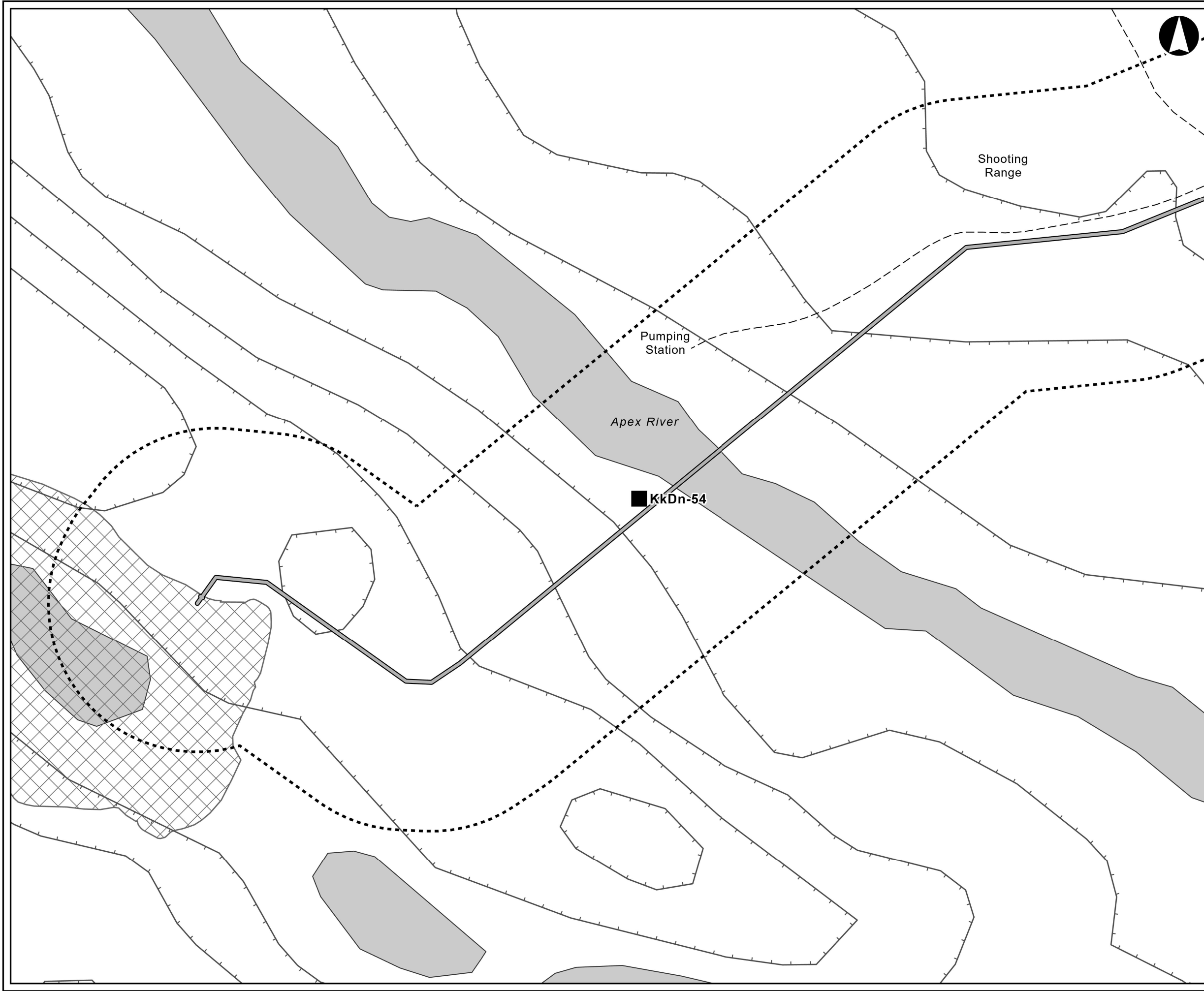
- Road
- Proposed Access Road
- Proposed Pipeline
- Proposed Infrastructure Areas
- Proposed Infrastructure 100 m Buffer
- 2024 Survey Track
- Assessed under 2023-52A

CITY OF IQALUIT LONG TERM WATER PROJECT

PLANNED DEVELOPMENTS AND SURVEY TRACKS



Jan, 2025	PN#: 60707448	1:15,000 *when printed 11"x17"	AECOM
Figure 2			
<small>Data Sources: Canvec, Esri Canada, Esri, TomTom, Garmin, SafeGraph, METANASA, USGS, EPA, USDA, NRCAN, Parks Canada, Maxar</small>			
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Legend

- Archaeological Site
- Proposed Pipeline
- Pipeline - 100m Buffer
- Road
- Contours (10m)
- New Reservoir
- Waterbody

CITY OF IQALUIT LONG TERM WATER PROJECT

SITE SKETCH, KkDn-54

02575100Metres

Datum: NAD 1983 UTM Zone 19N

Jan, 2025

PN#: 60707448

1:2,500
* when printed 11"x17"

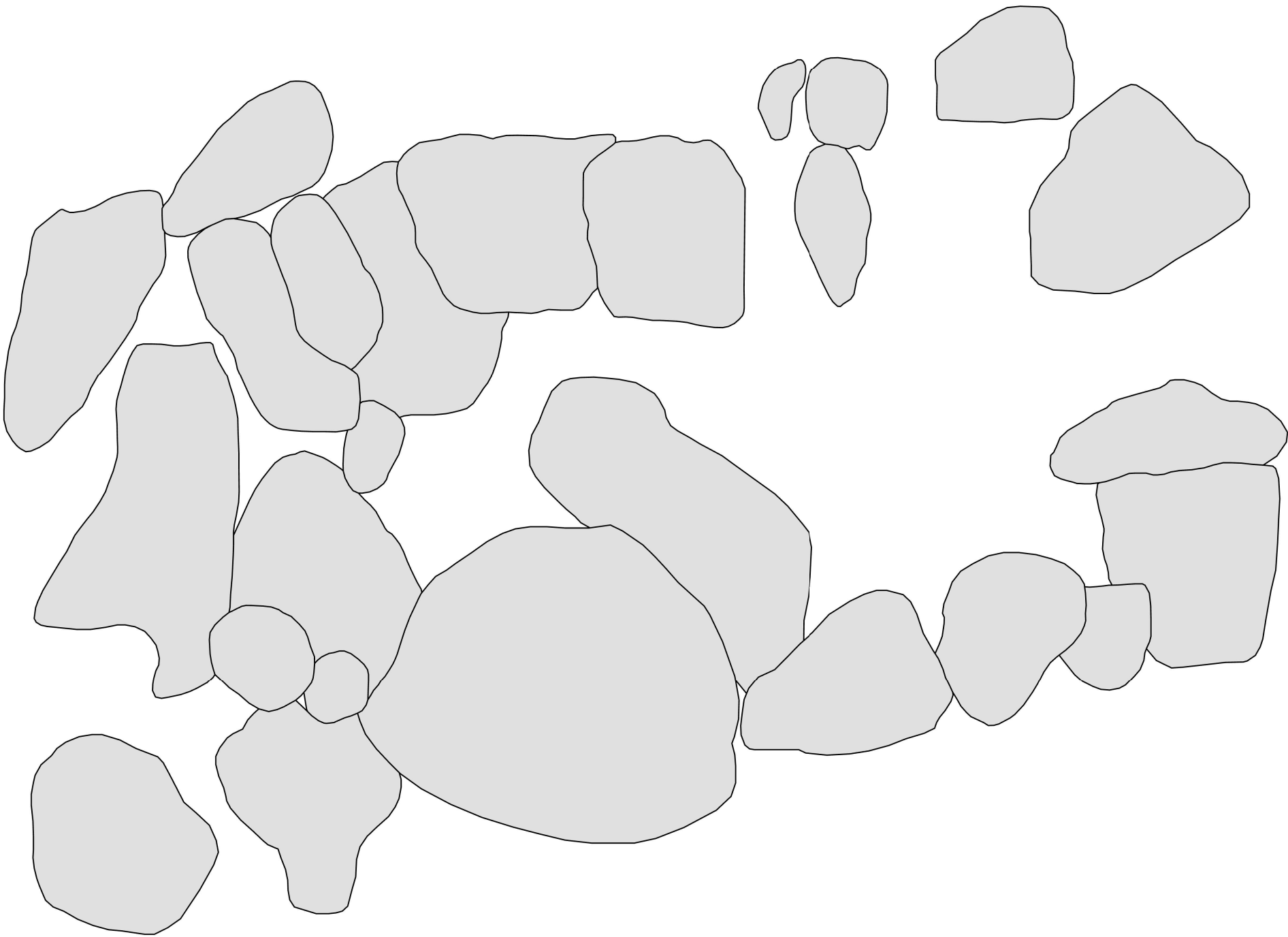
Figure 3

AECOM

Data Sources: Canvec
Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, USDA, NRCan, Parks Canada

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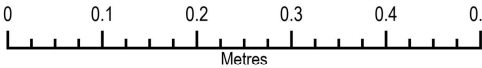


Legend

 Feature

CITY OF IQALUIT LONG TERM WATER PROJECT

FEATURE 1 MAP, KkDn-54



Datum: NAD 1983 UTM Zone 19N

Jan, 2025	PN#: 60707448	1:8 * when printed 11"x17"
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Figure 4

Data Sources: Canvec
Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, USDA, NRCan, Parks Canada

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Date Saved: 2025-01-09 User Name: page.crosman



Legend

- Archaeological Site
- New Reservoir
- Waterbody
- Contours (10m)

CITY OF IQALUIT LONG TERM WATER PROJECT

SITE SKETCH, KkDn-58

020406080100

Metres

Datum: NAD 1983 UTM Zone 19N

Jan, 2025

PN#: 60707448

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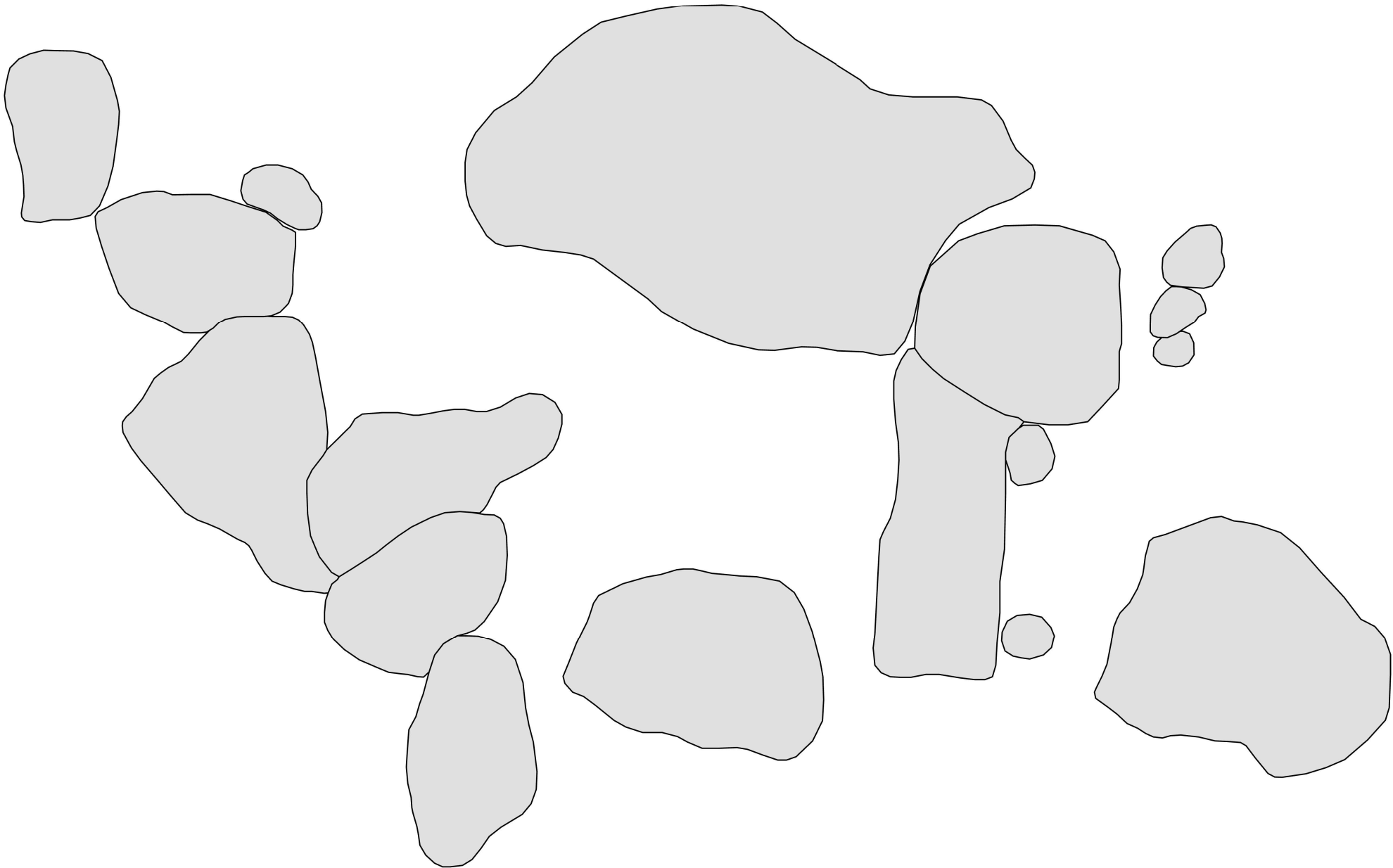
Figure 4

AECOM

Data Sources: Canvec
Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, USDA, NRCan, Parks Canada

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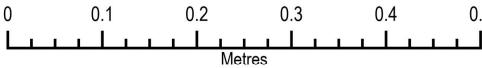


Legend

 Feature

CITY OF IQALUIT LONG TERM WATER PROJECT

FEATURE 1 MAP, KkDn-58



Datum: NAD 1983 UTM Zone 19N

Jan, 2025	PN#: 60707448	1:8 * when printed 11"x17"
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Figure 6

Data Sources: Canvec
Esri Canada, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, USDA, NRCan, Parks Canada

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Map Location: L:\C:\Users\jgibson\Documents\607448_City of Iqaluit\Design\1_Feature1\New Infrastructure.aprx
Date Saved: 2025-01-09 User Name: pjaige.crosman

Appendix

Appendix A: Nunavut Archaeologist Permit



T. (867) 975-5500
F. (867) 975-5504
www.gov.nu.ca

Permit Number 2024-52A

Permit Class Class 2

Under the authority of the *Nunavut Act* and the *Nunavut Archaeological and Palaeontological Sites Regulations*, authorization is granted to:

Permit Holder: Brent Murphy

Affiliation: AECOM Canada Ltd.

Name of Project: *Archaeological Impact Assessment City of Iqaluit Long-Term Water Project.*

For the purpose of: carrying out an archaeological impact assessment relating to the construction of infrastructure to extract, carry and store water between Unmamed Lake and Lake Geraldine. Areas to be assessed include: a pipeline, an access road, a new reservoir, several borrow sources and laydown area. The collection of artifacts or specimens is authorized under this permit.

Permit Period: This Permit is valid from June 18, 2024 to October 31, 2024.

Conditions:

1. *The Permittee shall abide by the Nunavut Archaeological and Palaeontological Sites Regulations*
2. *The Permittee shall abide by the Guidelines for Nunavut Archaeological and Palaeontological Sites*
3. *The Permittee shall comply with all conditions attached to this permit.*
4. *The Permittee shall distribute materials and documentation to the agencies identified below according to this schedule:*

	Government of Nunavut Department of Culture and Heritage Box 310 Igloolik, NU X0A 0L0	Canadian Museum of History Box 3100, Station 'B' Hull, PQ J8X 4H2	Canadian Museum of Nature 1740 Chemin Pink Gatineau, QC J9J 3N7	Inuit Heritage Trust Inc. Box 2080 Iqaluit, NU X0A 0H0
--	--	---	---	--

Required by September 30, 2024:

<p><i>One-page non-technical summary and two (2) colour photographs</i></p> <p><i>Borden Designation Form</i></p>	X			X
---	----------	--	--	----------

Required 60 days after return from field:

Site Forms and Maps Tracking /Shapefiles	X			
---	---	--	--	--

Required by March 31, 2025:

1. Report	X	X		X
2. Field Notes	X			
3. (1) Artifacts, (2) Catalogue and (3) Loan Arrangements	(2) (3)	(1) (2) (3)		

Approved by:

Minister
Department of Culture and Heritage
Government of Nunavut

Issued at: Iqaluit, Nunavut

Date of Issue: August 26, 2024

AECOM Canada ULC
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Calgary, AB T2C 5P2
Canada

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F: 403.270.0399

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